CONTENTS

2012
ALIGNMENT PRODUCT & TOOL CATALOG

NORTHSTAR®
MANUFACTURING COMPANY, INC.

PRORYDE SUSPENSION SYSTEMS

WINNER SEMA 2009 BEST NEW OFF-ROAD PRODUCT

UPDATE YOUR FRONT-END-LOW FACTORY LOOK

LEVEL your truck for an aggressive, lifted look and more clearance for oversized tire/wheel packages

INCREASED FRONT RIDE HEIGHT FOR COMMERCIAL VEHICLES

MORE FENDER CLEARANCE FOR OVERSIZED LOW-PROFILE OR OFF-ROAD TIRE/WHEEL COMBINATIONS

AN AGGRESSIVE, LIFTED APPEARANCE AT A FRACTION OF THE COST OF A 4-CORNER LIFT

ProRYDE QUICK-REFERENCE APPLICATION GUIDE

Make/Model	Year	2WD/4WD	Susp. Type	LIFTmachine Kit No.	Duck Head Kit No.	Front Lift Range	Max. Diam.
CADILLAC, CHEVROLET, GMC							
Avalanche 1500 (6-Lug)	2002-06	2WD/4WD	Torsion		64-1000G (1)	Up to 3.0"	33"
Avalanche 1500 (6-Lug)	2007-11	2WD/4WD	Strut	74-1000G (1)		2.0" to 3.0"	32"
Avalanche 2500 (8-Lug)	2002-10	2WD/4WD	Torsion		64-1200G (1)	Up to 2.0"	33"
Escalade/EXT/ESV (6-Lug)	2002-06	2WD/4WD	Torsion		64-1000G (1)	Up to 3.0"	33"
Escalade/EXT/ESV (6-Lug)	2007-11	2WD/4WD	Strut	74-1000G (1)		2.0" to 3.0"	32"
K-Series L.D. 1500 (6-Lug)	1988-98	4WD	Torsion		64-1000G (1)	Up to 3.0"	33"
Sierra/Silverado L.D.1500 (6-Lug)	1999-06	4WD	Torsion		64-1000G (1)	Up to 3.0"	33"
Sierra/Silverado L.D.1500 (6-Lug)	2007-11	2WD/4WD	Strut	74-1000G (1)		2.0" to 3.0"	32"
Sierra/Silv. H.D. 1500/2500 (8-Lug)	1999-10	2WD/4WD	Torsion		64-1200G (1)	Up to 2.0"	33"
Sierra/Silverado 3500 (8-Lug)	2002-10	2WD/4WD	Torsion		64-1200G (1)	Up to 2.0"	33"
Sierra/Silverado 2500/3500 (8-Lug)	2011-12	2WD/4WD	Torsion		64-1400G (1)	Up to 2.25"	33"
Suburban/Yukon XL 1500 (6-Lug)	2000-06	2WD/4WD	Torsion		64-1000G (1)	Up to 3.0"	33"
Suburban/Yukon XL 1500 (6-Lug)	2007-11	2WD/4WD	Strut	74-1000G (1)		2.0" to 3.0"	32"
Suburban/Yukon XL 2500 (8-Lug)	2000-10	2WD/4WD	Torsion		64-1200G (1)	Up to 2.0"	33"
Tahoe/Yukon (6-Lug)	1995-06	2WD/4WD	Torsion		64-1000G (1)	Up to 3.0"	33"
Tahoe/Yukon (6-Lug)	2007-11	2WD/4WD	Strut	74-1000G (1)		2.0" to 3.0"	32"
DODGE							
Ram 1500	1994-99	4WD	Coil	71-2500D*		1.5" to 2.0"	35"
Ram 1500	2000-01	4WD	Coil	71-2500D*		1.5" to 2.0"	35"
Ram 1500	2002-05	4WD	Torsion		64-2000D (1)	Up to 2.0"	35"
Ram 1500	2006-11	4WD	Strut	74-2000D (1)		2.0" to 3.0"	35"
Ram H.D. 2500/3500 (8-Lug)	1994-99	4WD	Coil	71-2500D*		1.5" to 2.0"	35"
Ram H.D. 2500/3500 (8-Lug)	2000-02	4WD	Coil	71-2500D*		1.5" to 2.0"	35"
Ram H.D. 2500/3500 (8-Lug)	2003-11	4WD	Coil	71-2500D*		1.5" to 2.0"	35"
Ram Mega Cab 1500/2500/3500	2006-09	4WD	Coil	71-2500D*		1.5" to 2.0"	35"
FORD, LINCOLN							
Ford Expedition	1997-02	4WD	Torsion		64-3000F (1)	Up to 2.0"	33"
Ford Expedition	2003-06	2WD/4WD	Strut	74-3000F (1)		2.0" to 3.0"	35"
Ford Expedition	2007-08	2WD/4WD	Strut	74-3000F (1)		2.0" to 3.0"	35"
Ford F150/F250 L.D. Incl. Heritage	1997-04	4WD	Torsion		64-3000F (1)	Up to 2.0"	33"
Ford F150 4WD	2004-08	4WD	Strut	74-3000F (1)		2.0" to 3.0"	35"
Ford F150 2WD	2004-08	2WD	Strut	74-3200F (1)		1.5" to 2.25"	33"
Ford F150	2009-11	2WD/4WD	Strut	74-3200F (1)		1.5" to 2.25"	33"
Ford F250/F350/F450/F500 S. Duty	2005-12	4WD	Coil	71-3500F**		2.0" to 2.5"	35"
Lincoln Navigator	1997-02	4WD	Torsion		64-3000F (1)	Up to 2.0"	33"
Lincoln Navigator	2003-06	2WD/4WD	Strut	74-3000F (1)		2.0" to 3.0"	35"
Lincoln Navigator	2007-08	2WD/4WD	Strut	74-3000F (1)		2.0" to 3.0"	35"
Lincoln Mark LT	2005-08	2WD/4WD	Strut	74-3000F (1)		2.0" to 3.0"	35"
HUMMER							
Hummer H2 (8-Lug)	2003-10	4WD	Torsion		64-1200G (1)	Up to 2.0"	35"
INFINITI, NISSAN							
Infiniti QX56	2004-07	2WD/4WD	Strut	74-4000N (1)		1.5" to 2.75"	33"
Nissan Armada	2004-07	2WD/4WD	Strut	74-4000N (1)		1.5" to 2.75"	33"
Nissan Titan	2004-07	2WD/4WD	Strut	74-4000N (1)		1.5" to 2.75"	33"
Nissan Titan	2008-11	2WD/4WD	Strut	74-4000N (1)		1.5" to 2.0"	33"
TOYOTA							
Toyota 4Runner**	2003-09	2WD/4WD	Strut	71-5000T (1)*		1.25" to 1.75"	32"
Toyota 4Runner**	2010-12	2WD/4WD	Strut	71-5000T (1)*		2.0" to 3.0"	32.6"
Toyota FJ Cruiser**	2007-11	2WD/4WD	Strut	71-5500T (1)*		1.25" to 1.75"	32"
Toyota Tacoma/PreRunner**	2005-11	2WD/4WD	Strut	71-5500T (1)*		1.5" to 2.25"	32"
Toyota Tundra	2007-10	2WD/4WD	Strut	74-5000T (1)		2.0" to 3.0"	33"

(1) Patented or Patent Pending Item
***Multi-Adjustable Kit: Adjusted PRIOR to installation**
****Not for use with X-REAS Suspension**

LEVELING...PERFECTED!

STRUT-TYPE SUSPENSIONS

TORSION BAR SUSPENSIONS

YOU CHOOSE THE FRONT RIDE HEIGHT!

All ProRYDE Leveling Kits are ADJUSTABLE to your exacting ride height preferences

WINNER! -- SEMA 2009 --
Best NEW offroad/4 wheel drive product!

visit us at www.ProRYDE.com

NEW PRODUCT

2011 GM H.D. 2500/3500 TORSION KEY LIFT/LEVELING KIT

Add a full range of adjustability, and up to 2.25” of front end lift!

64-1400G
GM 2011-Up HD 2500/3500 2WD/4WD

DODGE MULTI-ADJUSTABLE FRONT LIFT/LEVELING KIT

Provides front ride height options of 1.5", 1.75” or 2”

71-2500D
Dodge Ram HD 4x4 & older 1500 models

FORD ADJUSTABLE FRONT LIFT/LEVELING KIT

You choose the perfect front ride height - from 1.5” to 2.25”

LIFT machine™ ADJUSTABLE LEVELING

74-3200F
2009-Up Ford F150 2WD/4WD
2004-2008 Ford F150 2WD

FORD DUAL-ADJUSTABLE FRONT LIFT/LEVELING KIT

Provides front ride height options of 2” or 2.5”

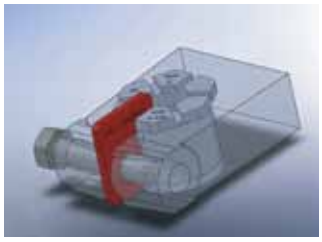
71-3500F
2005-Up Ford Super Duty F250/F350 4WD

NEW PRODUCT

TOYOTA MULTI-ADJUSTABLE LIFT/LEVELING KIT

Provides front ride height options of 2”, 2.5” or 3”, varying by model & year

71-5500T
2003-Up Toyota 4Runner
2007-Up Toyota FJ Cruiser
2005-Up Toyota Tacoma/PreRunner



"SUPERLOK" ALIGNMENT BUSHING RETENTION SYSTEM

PROBLEM:

- Potential bushing movement on Ford "E" series vans with unsecured pinch-bolt bushings on **MODIFIED CHASSIS & RECREATIONAL/COMMERCIAL APPLICATIONS**

SOLUTION:

- Patent pending bushing retention system securely "locks in" camber/caster bushings
- Prevents possibility of bushing rotation, maintaining alignment settings
- Designed specifically for modified chassis vehicles, or vehicles subjected to heavy wear and tear
- Available in 1/2 increments for camber/caster adjustment up to 3 degrees

PART/DEGREES*:	
42-970	(0°)
42-972	(1/2°)
42-974	(1°)
42-976	(1.5°)
42-978	(2°)
42-980	(2.5°)
42-982	(3°)

Year	Make/Model
1992-2011	Ford Econoline van (E150, E250, E350, E450)

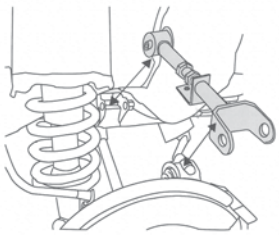
*Patent Pending

This part also listed on page 60

46-2186

2007-2011 HONDA CRV REAR CAMBER ADJUSTMENT LINK

Allows for rear positive or negative camber adjustments where no OE adjustments are available.



- Adjustment range -2° to +3° camber
- 1 per package (adjusts one side)

This part also listed on page 85

46-2192

2007-2011 HONDA/ACURA ADJUSTABLE REAR CAMBER ARM

Allows for rear positive or negative camber adjustments where no OE adjustments are available.

- Adjustment range -2° to +4° camber
- 1 per package (adjusts one side)

This part also listed on page 86

See Application Guide, pages 10-48, for specific models and years

44-2498
ADJUSTABLE GM LIGHT TRUCK BALL JOINT

- Adjustment range: -3° to + 3°
- Required: 1 kit per wheel

1999-2010 GM Pickups & SUVs 2500/3500 Models

2001-2010 GM 1500 HD Pickups

44-794
JEEP/DODGE FRONT CAMBER/CASTER KIT

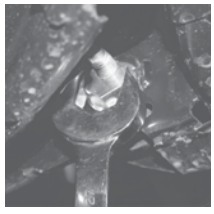
These kits provide a steel guide with cam assemblies to make 1° camber or caster adjustment.

2011 Jeep Grand Cherokee
2011 Dodge Durango

44-775 GM REAR OFFSET CAMBER/TOE CAM NUT

This cam nut replaces the non-adjustable nut on the rear lower control arm of GM's Theta platform. The offset nut provides ±1° of toe change when used in conjunction with the stock camber nut. This kit can be used to adjust either the camber or toe adjusting bolts.

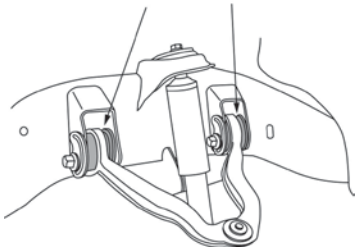
Year	Make/Model
2005-2011	Chevrolet Equinox
2005-2009	Pontiac Torrent
2006-2009	Saturn Vue
2007-2009	Suzuki XL7



This part also listed on page 67

(kit contains four bolt assemblies)

Replacement Cam Bolt with Quick Cams



41-8251

GM LIGHT TRUCK REPLACEMENT CAMBER/CASTER BOLT WITH QUICK CAMS

Problem:

- OE control arm adjustment bolt with cam either breaks or cannot be accessed for adjustment.

Solution:

- Northstar GM replacement bolt kit with Quick Cams are a direct replacement and will restore the factory adjustment. On many models this kit will greatly improve accessibility for easy adjustment.

Applications:

- 1999-2011 Chevrolet, GMC 1/2 & 3/4 ton pick-ups
- Suburban, Tahoe & Yukon
- Hummer H2 4x4 and 4x2
- 2003-2011 GM Express/Savanna vans

Additional GM Truck Adjustment Products:

* Pin replacement, 44-2508
* Offset camber bushings, 44-2509 and 44-2510

This part also listed on page 57

41-8259 CHRYSLER PRODUCT CAMBER ADJUSTING BOLT CAMS

Problem:

- No OE method to adjust camber or caster

Solution:

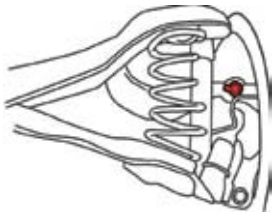
- Makes non-adjustable vehicles fully adjustable for camber and caster
- Adjustment range of ±0.3°

Year	Make/Model
2005-2008	Dodge Magnum 4x2 4x4
2006-2011	Dodge Charger
2004-2011	Chrysler 300 C 4x2 4x4
2008-2011	Dodge Challenger

This part also listed on page 58

See Application Guide, pages 10-48, for specific models and years

46-1705
Ford Focus AXIS CAM Bolt System



This kit replaces the outer bolt of the upper rear control arm and provides ±1° of camber adjustment. Perfect for lowered vehicles or standard alignments.

- Rear Camber adjustment range: -1° to + 1°
- Instllation time: .5 hour per side
- Required: 1 kit per axle

This part also listed on page 83

44-2495
JEEP UPPER CAMBER/CASTER ADJUSTABLE BALL JOINT

Designed to fit into factory upper control arm — no need to replace entire O/E control arm assembly.

- Adjustment range: -1° to + 1°
- Required: 1 kit per axle

2011 Jeep Grand Cherokee
2011 Dodge Durango

This part also listed on page 71

NEW!

CHEVROLET CRUZE REAR CAMBER/TOE SHIM PACK

Qty		Thickness
46-7110	.10″	12
46-7115	.15″	12
46-7120	.20″	12
46-7130	.30″	12

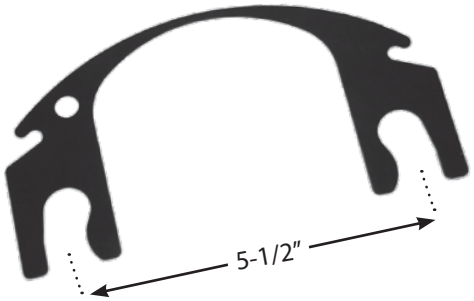
46-7100A
CHEVROLET CRUZE SHIM PACK ASSORTMENT

Assortment contains 12 of each size

This part also listed on page 87

HENDRICKSON (HTB) TORQUE ARM SHIM

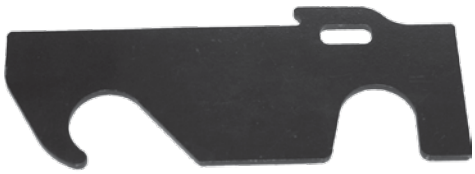
For 2007-Up International & Spartan HTB-400 Suspension



	Thickness	Qty
43-661	1/32"	12
43-662	1/16"	12
43-663	1/8"	12

This part also listed on page 63

43-674 HENDRICKSON (HTB) TRACK BOX SHIM KIT



For 2007-Up International & Spartan HTB-400 Suspension

Package of 5 shims, Including

Thickness	Qty
1/32"	2
1/16"	1
1/8"	2

This part also listed on page 63

43-680A HENDRICKSON (HTB) TRACK BOX SHIM STARTER KIT

- For 2007-Up International & Spartan HTB-400 Suspension
- Kit services 6 or more axles, 3 or more trucks
- Includes all of the following shims (shown above):

	Thickness	Qty
43-661	1/32"	12 pieces
43-662	1/16"	12 pieces
43-663	1/8"	12 pieces
43-674	n/a	6 kits

This part also listed on page 63

88-7822-1 DODGE/FORD TORSION BAR TOOL ADAPTER

This unique bracket is used on the vehicle crossmember to provide a safe, secure anchor point while using the GM Torsion Bar Tool (sold separately). This bracket works on all Fullsize Ford & Dodge light duty trucks with torsion bar suspensions. A "MUST HAVE" tool for any shop replacing torsion bar keys.

88-7822A GM TORSION BAR UNLOADING TOOL

These parts also listed on page 98

See Application Guide, pages 10-48, for specific models and years

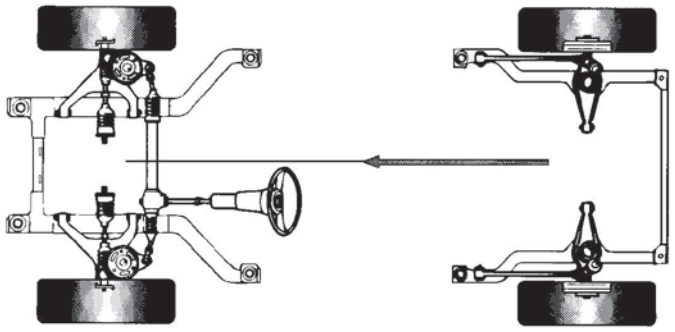
Well over one half of all cars on the road today, and approximately 85% of all new vehicles, require all four wheels to be aligned for proper handling, maximum tire wear and safety.

FOUR WHEEL "TOTAL" ALIGNMENT

This refers to setting the alignment angles on all four wheels so they are positioned straight ahead and parallel, and the vehicle's steering wheel is centered.
(See illustration at right).

WHAT IS DONE:

1. Angle readings are taken on all four wheels.
2. Rear wheels are set to specification. (Rear thrust line corresponds to vehicle centerline).
3. Steering wheel is centered
4. Front wheels are referenced to the rear thrust line and set to specifications.



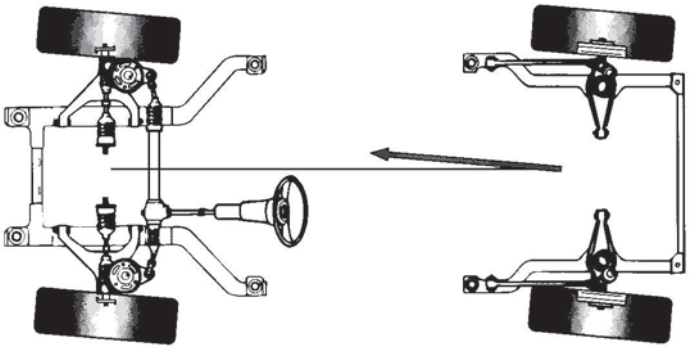
RESULT:
All four wheels are positioned straight ahead and parallel, and the steering wheel is centered.

FOUR WHEEL "THRUST LINE" ALIGNMENT

This refers to aligning the front wheels to the "Rear Thrust line" or driving direction of the Rear Wheels. This is done by taking angle readings on both front and rear wheels and referencing the front wheels to the driving direction of the rear wheels - thrust line. (See illustration below). The steering wheel is centered and the front wheels are then set to specifications.

WHAT IS DONE:

1. Angle readings are taken on all four wheels.
2. The Steering wheel is centered
3. Front wheels are referenced to the rear thrust line and set to specifications.



RESULT:
All four wheels are parallel and the steering wheel is centered. (Angles have been exaggerated to demonstrate condition)

Illustrations Courtesy of Hunter Engineering Co.

NORTHSTAR

PRODUCT APPLICATION QUICK TABLE

This portion of the catalog has been designed to aid you in the proper selection of Alignment Products and Tools for both Front and Rear applications on most Domestic and Imported Passenger Cars and Light Truck.

How to use the Product Application Quick Table, pages 11-48

Below is an example of the application section

MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
BUICK															
Buick Skylark	1980 - 1998	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-		82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Buick Somerset	1986 - 1987	X		- Magna Cam 16mm Axis Cam	Fac A 41-16 41-2						1200 -2300	46-1200 46-2300		88-050 8-1110 8-343	0.60 / 0.60 0.60 / 0.60
Buick Terraza FWD	2005 - 2007	X		Magna Cam 14mm Axis Cam	41-15 41-2						1300 400	4			0.60 / 0.60 0.60 / 0.60
Buick Terraza AWD	2005 - 2007	X		Magna Cam 14mm Axis Cam	41-15 41-2										- / -

When the finger icon appears, click on the part number to go directly to that product's page in the catalog!

In Example 1 above you are looking up both **front** and **rear** Alignment Products for some Buick vehicles. First, you are given information as to whether you should recommend a **4 wheel total** or **4 wheel thrust** alignment procedure. Next, you are given the **adjustment method**

The next column lists the actual part number for **front camber** correction, **front caster** correction, or **both**. In this case, there is a factory adjustment method, which is very difficult, or you have a choice of two aftermarket adjustment kits. The following column shows the **product page number**, which directs you to the page in this catalog giving information about the listed product, including the degree of change possible and a picture of each part number.

The next column is for a recommended **installation tool**, if one is needed.

The last column lists the **estimated installation time**, in hours, for that product. **NOTE:** All estimated installation times are for one side of the vehicle.

Continuing across the page to **rear alignment** you follow the same procedure, ***except*** you will be dealing with camber and toe. Again you have a choice of products. Notice that the same part often works for both front and rear applications.

				FRONT WHEEL ALIGNMENT						REAR WHEEL ALIGNMENT					
MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
ACURA															
Acura 2.2CL/2.3CL/3.0CL	1997 - 2003	X		Ball Joint Performance Kit Ball Joint	41-530 41-560 41-529	41-530 41-529	53 54 53	88-7800A	0.90 / 0.90 - / - 0.90	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Acura 3.2 CL	2001 - 2003	X		Ball Joint	41-532	Fac Adj.	53	88-7800A	0.90 / -	-	Non Adj.	Fac Adj.	-		- / -
Acura Integra	1986 - 1989	X		-	Non Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-343	0.60 / 0.60 0.60 / 0.60
Acura Integra / IntegraType R	1990 - 2001	X		Ball Joint Performance Kit	41-532 41-561	41-532	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Acura Legend	1986 - 1990	X		-	Non Adj.	Fac Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Acura Legend	1991 - 1995	X		Ball Joint Performance Kit	41-532 41-561	41-532	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Acura MDX 4WD	2001 - 2006	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	- Rear Arm	Non Adj. 46-2192	Fac Adj.	- 86		- / - 0.50
Acura MDX 4WD	2007 - 2011	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30			Fac Adj.			-
Acura NSX	1991 - 2005	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Acura RDX 4WD	2007 - 2011	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Acura 3.5RL	1996 - 2011	X		Ball Joint Performance Kit	41-532 41-561	41-532	53 54	88-7800A	0.90 / 0.90 -	-	Non Adj.	Fac Adj.	-		- / -
Acura RSX	2002	X		Cam Bolt	41-180	Non Adj.	50		0.30 / -	Rear Link	46-2180	Fac Adj.	85		0.50 / -
Acura RSX MID Year 02	2002 - 2006	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Rear Link	46-2180	Fac Adj.	85		0.50 / -
Acura SLX 4WD	1996 - 1999		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Acura 2.5 TL	1995 - 1998	X		Ball Joint Performance Kit	41-530 41-560	Fac Adj. 41-530	53 54	88-7800A	0.90 / - - / 0.90	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Acura 3.5TL	1996 - 2008	X		Ball Joint	41-532	41-532	53	88-7800A	0.90 / 0.90	Rear Link	46-2195	Fac Adj.	86		- / -
Acura 3.2 TL	1997 - 1998	X		Ball Joint Performance Kit	41-532 41-561	Fac Adj. 41-532	53 54	88-7800A	0.90 / - - / 0.90	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Acura 3.2 TL	1999 - 2003	X		Ball Joint Performance Kit	41-532 41-561	Fac Adj. 41-532	53 54	88-7800A	0.90 / - - / 0.90	Rear Arm	46-2190	Fac Adj.	86		0.70 / -
Acura 3.2 TL	2004 - 2008	X		Ball Joint	41-532	Fac Adj. 41-532	53	88-7800A	0.90 / - 0.90	Rear Link	46-2195	Fac Adj.	86		0.70 / -
Acura 3.2 TL	2009 - 2012	X		Ball Joint	41-532	Fac Adj. 41-532	53		0.90 / - 0.90	-	Non Adj.	Fac Adj.	-		- / -
Acura TSX	2004 - 2008	X		Ball Joint Performance Kit	41-532 41-561	41-532	53 54	88-7890A	0.90 / - -	Rear Link Rear Arm	46-2195 46-2192	Non Adj.	86 86		0.70 / - 0.50
Acura TSX	2009 - 2011	X		Ball Joint Performance Kit	41-532 41-561	41-532	53 54	88-7890A	0.90 / 0.90 0.90	-	Non Adj.	Fac Adj.	-		- / -
Acura Vigor	1992 - 1994	X		Ball Joint Performance Kit	41-530 41-560	41-530	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
AUDI															
Audi 100/200 FWD	1989 - 1994	X		-	Fac Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Audi 100/200 Quattro/S4	1989 - 1994	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi 5000 FWD	1978 - 1988	X		-	Fac Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Audi 90 FWD	1988	X		-	Fac Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Audi 5000 Quattro	1986 - 1988	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -

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AUDI															
Audi 80	1988 - 1992	X		-	Fac Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Audi 80/90 Quattro	1988 - 1995	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi A4, A4/ S4 Quattro	1996 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Audi A6	1995 - 2011		X	-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Audi A6 Avant	1999 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi A6 Allroad	2001 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi A6 Quattro	1995 - 1997	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi A6 Quattro	1998 - 2011	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi A8	1997 - 2000	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi A8 Quattro	1997 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi Allroad Quattro	2001 - 2005	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi Cabriolet	1994 - 1998		X	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Audi S4	2000 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi S6 Quattro	1995 - 2002	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi TT	2000 - 2010	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Audi TT/ Quattro	2000 - 2002	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Audi V8 Quattro	1990 - 1994	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
BMW															
BMW 3 Series (E36) M Coupe/ Roadster	1999 - 2004	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
BMW 3 Series (E46)	2001 - 2006	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-	88-9180	- / -
BMW 5 series (E28, E34)	1989 - 1995		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
BMW 5 series (E39)	2001 - 2009	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
BMW 7 series (E38)	1995 - 2001	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
BMW 8 series (E31)	1993 - 1997	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
BMW M1	1998 - 2002		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
BMW E46/M3	1999 - 2011	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
BMW M5, M5 Touring (E34)	1991 - 1993	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
BMW X5 (E53)	2000 - 2004	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
BMW Z1	1996 - 2002	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -

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BMW															
BMW Z8 (E52)	2000 - 2003	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
BRISTOL															
Peugeot All	1945 - 2009		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
BUICK															
Buick Rear Wheel Drive	1971 - 1996		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Buick Century FWD	1985 - 1996	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Buick Century FWD	1997 - 2005	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30
Buick Park Ave/Electra/Ultra LaSabre FWD	1985 - 1996	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam Shim Series Universal Shim	41-160[1] 46-1300 46-2400	Fac Adj. 46-1300 46-2400	49 82 84	88-050 88-1110 88-343	0.30 / - 0.60 / 0.60 0.60 / 0.60
Buick Enclave	2008 - 2011	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Buick Lacrosse	2005 - 2011	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj.	49 50		0.30 / - 0.30
Buick LeSabre	1986 - 1999	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam Shim Series Universal Shim	41-160[1] 46-1300 46-2400	Fac Adj. 46-1300 46-2400	49 82 84	88-050 88-1110 88-343	0.30 / - 0.60 / 0.60 0.60 / -
Buick LeSabre	2000 - 2005	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1900	Fac Adj.	72		0.80 / -
Buick Lucerne	2006 - 2011	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Buick Park Ave/Ultra	1997 - 2005	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1900	Fac Adj.	72		0.80 / -
Buick Rainier 2WD/4WD	2004 - 2007		X	Cam-Cas Tool	88-8929	88-8929	103		- / -	-	Non Adj.	Non Adj.	-		- / -
Buick Riviera/Reatta	1985 - 1993	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Camber Shim	46-1600	Fac Adj.	72		0.60 / -
Buick Regal	1988 - 1996	X		- Shim Series	Fac Adj. 45-7010[3]	Fac Adj.	- 78	88-060	- / - 0.50	Magna Cam 16mm Axis Cam	41-160[1] 41-216	Fac Adj.	49 50	88-8923	0.30 / - 0.30
Buick Regal	1997 - 2004	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30
Buick Regal	2011	X		12mm Axis Cam	41-212	Non Adj.	50		0.30 / -	-	Fac Adj.	Fac Adj.	-		- / -
Buick Rendezvous	2002 - 2007	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	- Shim Series Universal Shim	Fac Adj. 46-1300 SERIES 46-2400	Fac Adj. 46-1300 46-2400	- 82 84		0.60 / - 0.60 / 0.60 - / 0.60
Buick Riviera	1995 - 1999	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Buick Skyhawk	1985 - 1989	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60

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BUICK															
Buick Skylark	1980 - 1998	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Buick Somerset	1986 - 1987	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Buick Terraza FWD	2005 - 2007	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84		0.60 / 0.60 0.60 / 0.60
Buick Terraza AWD	2005 - 2007	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
CADILLAC															
Cadillac Allante	1987 - 1992	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Camber Shim	46-1600	Fac Adj.	72	88-050 88-1110 88-343	0.60 / -
Cadillac Allante	1993	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Cadillac Catera	1997 - 2001	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Cadillac Cimarron	1982 - 1988	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-343	0.60 / 0.60 0.60 / 0.60
Cadillac CTS	2003 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Cadillac DeVille	1985 - 1993	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam	41-160[1]	Fac Adj.	49		0.30 / -
Cadillac DeVille	1994 - 1999	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Cadillac DeVille	2000 - 2005	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1900	Fac Adj.	72		0.80 / -
Cadillac Eldorado	1967 - 1978		X	- Cam Bolt	Fac Adj. 41-8247	Fac Adj. 41-8247	- 56		- / - 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Cadillac Eldorado	1979 - 1985	X		- Cam Bolt	Fac Adj. 41-8247	Fac Adj. 41-8247	- 56		- / - 1.00 / 1.00	Shim Series Universal Shim	46-1300 46-2400	Fac Adj.	82 84	88-050 88-1110 88-343	0.60 / - 0.60
Cadillac Eldorado	1986 - 1992	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Fac Adj.	49 50		0.30 / - 0.30	Camber Shim	46-1600	Fac Adj.	72		0.50 / -
Cadillac Eldorado	1993 - 2002	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Cadillac Escalade	1999 - 2000		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Cadillac Escalade/EXT 4WD	2002 - 2011		X	- Camber Bushing Cam Bolt Kit Replacement Pins Quick Cam	Fac Adj. 44-2509[4] 41-8251 44-2508 44-2506	Fac Adj. 44-2509[4] 41-8251 44-2508 44-2506	- 72 57 72 72	88-7950A	- / - 0.80 / 0.80 0.50 / 0.50 0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Cadillac Fleetwood RWD	1975 - 1996		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Cadillac Fleetwood FWD	1985 - 1993	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30

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CADILLAC															
Cadillac Seville	1980 - 1985	X		- Cam Bolt	Fac Adj. 41-8247	Fac Adj. 41-8247	- 56		- / - 1.00 / 1.00	Shim Series Universal Shim	46-1300 46-2400	Fac Adj.	82 84	88-050 88-1110 88-343	0.60 / - 0.60
Cadillac Seville	1986 - 1992	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Camber Shim	46-1600	Fac Adj.	72		0.50 / -
Cadillac Seville/STS	1993 - 1997	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Cadillac Seville/STS	1998 - 2011	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1900	Fac Adj.	72		0.80 / -
CHEVROLET															
Chevrolet Astro 2WD	1985 - 2005		X	Shim	CC	CC	-		- / -			Non Adj.			-
Chevrolet Astro 4WD	1990 - 2003		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Avalanche 2500HD 2WD/4WD	2007 - 2010		X	- Camber Bushing Cam Bolt Kit Quick Cam Replacement Pins	Fac Adj. 44-2510 41-8251 44-2506 44-2508	Fac Adj. 44-2510 41-8251 44-2506 44-2508	- 73 57 72 72	88-7950A	- / - 0.80 / 0.80 0.50 / 0.50 0.30 / 0.30 0.30 / 0.30						
Chevrolet Avalanche 1500 2WD/4WD	2002 - 2006		X	- Camber Bushing	Fac Adj. 44-2509[4]	Fac Adj. 44-2509[4]	- 72	88-7950A	- / - 0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Aveo	2004 - 2011	X		Magna Cam 12mm Axis Cam	41-144 41-212	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84		0.60 / 0.60 0.60 / 0.60
Chevrolet Bel Air 2WD	1975		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Beretta/Corsica	1987 - 1995	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Chevrolet Beretta/Corsica	1996	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Chevrolet Blazer Full Size 4WD	1970 - 1974		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Blazer Full Size 4WD	1987 - 1994		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Chevrolet S10 Pickup Downsize 4WD	1983 - 2004		X	- Cam Bolt	Fac Adj. 41-8246	Fac Adj. 41-8246	- 56		- / - 0.40 / 0.40	-	Non Adj.	Non Adj.	-		- / -
Chevrolet C Series Pickup 2WD	1975 - 1986		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet C10/C20 Suburban 2WD	1972 - 1986		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet C Series Pickup 2WD	1988 - 1991		X	Cam Bolt	41-8250[4]	41-8250[4]	57	88-7491	0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Chevrolet C Series Pickup 2WD	1992 - 1998		X	Cam Bolt	41-8250[4]	41-8250[4]	57	88-7491	0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Chevrolet C Series Pickup w/rear drum brakes 2WD	1995 - 2000		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Kodiak C4500 C5500 4WD	2005 - 2009		X	Bushing Series Universal Bushing	44-6020 44-5037	44-6020 44-5037	75 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Kodiak C4500 C5500 2WD	2005 - 2009		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Camaro	1967 - 1981		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
CHEVROLET															
Chevrolet Camaro	1982 - 1992		X	-	Fac Adj.	Fac Adj.	-	88-8922 88-8923	- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Camaro	1993 - 2002		X	-	Fac Adj.	Fac Adj.	-	88-8925	- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Camaro	2010 - 2011	X		16mm Axis Cam	41-216	Non Adj.	50		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Chevrolet Cavalier	1982 - 1994	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Chevrolet Cavalier	1995 - 2005	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Chevrolet Celebrity	1982 - 1990	X		- Magna Cam Cam Bolt	Fac Adj. 41-160[1] 41-8245	Non Adj.	- 49 56		- / - 0.30 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Chevrolet Citation	1980 - 1983	X		- Magna Cam Cam Bolt	Fac Adj. 41-160[1] 41-8245	Non Adj.	- 49 56		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110	0.60 / 0.60 0.60 / 0.60
Chevrolet Cobalt	2005 - 2010	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1520	46-1520	71		0.60 / 0.60
Chevrolet Colorado 2WD	2004 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Colorado 4WD	2004 - 2011		X	- Quick Cam	Fac Adj. 44-2507	Fac Adj. 44-2507	- 72		- / - 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Corvette	1963 - 1982	X		- Shim	Fac Adj. CC	CC	- -		- / - -	- Cam Bolt	Fac Adj. 41-8243	Fac Adj. 46-6020 46-6030	- 56		- / - 0.60 / 0.30 0.30
Chevrolet Corvette	1984 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Chevy Cruze	2011	X		12mm Axis Cam Magna Cam	41-212 41-147[2]	Non Adj.	50 49		0.30 / - 0.30	-	46-7100	46-7100	87		- / -
Chevrolet El Camino 2WD	1965 - 1987		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Equinox	2005 - 2011	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	44-775	44-775	67		0.30 / 0.30
Express Van	1996 - 2002	X		- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57		- / - 0.60 / 0.60						
Chevrolet Express Van 2WD	2003 - 2011		X	- Quick Cam Cam Bolt Kit Replacement Pins Camber Bushing	Fac Adj. 44-2506 41-8251 44-2508 44-2509[4]	Fac Adj. 44-2506 41-8251 44-2508 44-2509[4]	- 72 57 72 72		- / - 0.30 / 0.30 0.50 / 0.50 0.30 / 0.30 0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Express Van 4WD	2003 - 2011		X	- Quick Cam Replacement Pins Cam Bolt Kit Camber Bushing	Fac Adj. 44-2506 44-2508 41-8251 44-2509[4]	Fac Adj. 44-2506 44-2508 41-8251 44-2509[4]	- 72 72 57 72		- / - 0.30 / 0.30 0.30 / 0.30 0.50 / 0.50 0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Chevrolet HHR	2006 - 2011	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1520	46-1520	71		- / -
Chevrolet Impala	2000 - 2011	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30
Chevrolet K Series (Dana 60) 4WD	1961 - 1990		X	-	44-910	Non Adj.	68		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet K Series (except Dana 60) 4WD	1970 - 1986		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Suburban 4WD	1970 - 1986		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -

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CHEVROLET

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
CHEVROLET															
Chevrolet Suburban 4WD	1992 - 1999		X	Cam Bolt	41-8250[4]	41-8250[4]	57	88-7090 88-7491	0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Chevrolet LLV Postal Vehicle 2WD	1987 - 1995		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Lumina	1990 - 1994	X		- Shim Series	Fac Adj. 45-7010[3]	Non Adj.	- 78	88-060	- / - 0.50	- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50	88-8923	- / - 0.30 0.30
Chevrolet Lumina	1995 - 2001	X		- Shim Series	Fac Adj. 45-7010[3]	Non Adj.	- 78	88-060 88-1112	- / - 0.50	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50	88-8923	- / - 0.30 0.30
Chevrolet Lumina APV	1990 - 1996	X		- Magna Cam Cam Bolt	Fac Adj. 41-160[1] 41-8245	Non Adj.	- 49 56		- / - 0.30 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Chevrolet Malibu/MonteCarlo	1965 - 1983		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Malibu	1997 - 2003	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 12mm Axis Cam	Fac Adj. 41-144 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30
Chevrolet Malibu / Maxx	2004 - 2011		X	Magna Cam 12mm Axis Cam Magna Cam	41-158[1] 41-212 41-147[2]	Non Adj.	49 50 49		0.30 / - 0.30 -	-	Fac Adj.	Fac Adj.	-		- / -
Chevrolet Metro	1998 - 2001	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Chevrolet Monte Carlo	1995 - 1999	X		- Shim Series	Fac Adj. 45-7010[3]	Fac Adj.	- 78	88-060 88-1112	- / - 0.50	- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30
Chevrolet Monte Carlo	2000 - 2007	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30
Chevrolet Nova	1969 - 1979		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Nova FWD	1985 - 1988	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim Magna Cam 12mm Axis Cam	46-1300 46-2400 41-147[2] 41-212	Fac Adj. 46-1300 46-2400	82 84 49 50	88-343	0.60 / - 0.60 / 0.60 0.30 / 0.60 0.30
Chevrolet P Series Van 2WD	1977 - 1999		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet P Series Van/I Beam Axle 2WD	1985 - 1999		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Prizm	1998 - 2002	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		0.30 / - 0.30 0.30	- 12mm Axis Cam	Fac Adj. 41-212	Fac Adj.	- 50		- / - 0.30
Chevrolet R Series Pickup 2WD	1987 - 1988		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet S10 Blazer 2WD	1983 - 1994		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Silverado HD 2500 2WD/4WD	1999		X	- Camber Bushing	Fac Adj. 44-2510	Fac Adj. 44-2510	- 73	88-7950A	- / - 0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Silverado 1500 2WD/4WD	1999 - 2011		X	- Camber Bushing Cam Bolt Kit Replacement Pins Quick Cam	Fac Adj. 44-2509[4] 41-8251 44-2508 44-2506	Fac Adj. 44-2509[4] 41-8251 44-2508 44-2506	- 72 57 72 72	88-7950A	- / - 0.80 / 0.80 0.50 / 0.50 0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -

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CHEVROLET															
Chevrolet Silverado HD 1500/2500/3500 2WD/4WD	2001 - 2011		X	- Camber Bushing Cam Bolt Kit Quick Cam Replacement Pins	Fac Adj. 44-2510 41-8251 44-2506 44-2508	Fac Adj. 44-2510 41-8251 44-2506 44-2508	- 73 57 72 72	88-7950A	- / - 0.80 / 0.80 0.60 / 0.60 0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Spectrum	1985 - 1988	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chevrolet Sprint	1985 - 1988	X		- Magna Cam Wedge	Fac Adj. 41-147[2] 41-300	Non Adj.	- 49 51		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Chevrolet SSR AWD	2003 - 2006		X	Cam-Cas Tool	88-8929	88-8929	103		- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Suburban 1500 2WD/4WD	2000 - 2011		X	- Camber Bushing Cam Bolt Kit Quick Cam Replacement Pins	Fac Adj. 44-2509[4] 41-8251 44-2506 44-2508	Fac Adj. 44-2509[4] 41-8251 44-2506 44-2508	- 72 57 72 72	88-7950A	- / - 0.80 / 0.80 0.50 / 0.50 0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Suburban 2500HD 2WD	2000 - 2011		X	- Camber Bushing Replacement Pins Cam Bolt Kit Quick Cam	Fac Adj. 44-2510 44-2508 41-8251 44-2506	Fac Adj. 44-2510 44-2508 41-8251 44-2506	- 73 72 57 72		- / - 0.80 / 0.80 0.30 / 0.30 0.50 / 0.50 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Suburban 2500HD 4WD	2000 - 2011		X	- Camber Bushing Replacement Pins Cam Bolt Kit Quick Cam	Fac Adj. 44-2510 44-2508 41-8251 44-2506	Fac Adj. 44-2510 44-2508 41-8251 44-2506	- 73 72 57 72		- / - 0.80 / 0.80 0.30 / 0.30 0.50 / 0.50 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Tahoe/Rear drum brakes 2WD	1995 - 2000		X	- Cam Bolt	Fac Adj. 41-8250[4]	41-8250[4]	- 57		- / 0.90 0.90	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Tahoe 4WD	1995 - 2000		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Tahoe 2WD/4WD	2000 - 2011		X	- Camber Bushing Cam Bolt Kit Quick Cam Replacement Pins	Fac Adj. 44-2509[4] 41-8251 44-2506 44-2508	Fac Adj. 44-2509[4] 41-8251 44-2506 44-2508	- 72 57 72 72	88-7950A	- / - 0.80 / 0.80 0.60 / 0.30 0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Tracker 2WD/4WD	1989 - 2005		X	- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Trail Blazer 2WD/4WD	2002 - 2009		X	Cam-Cas Tool	88-8929	88-8929	103	88-8929	- / -	-	Non Adj.	Non Adj.	-		- / -
Chevrolet Traverse	2009 - 2011	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Non Adj.	-		- / -
Chevrolet Uplander FWD/AWD	2005 - 2009	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Chevrolet Venture Van	1997 - 2005	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Chevrolet Venture AWD	2002 - 2005	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
CHRYSLER															
Chrysler 200	2011	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	-	Non Adj.	Fac Adj.	-		- / -
Chrysler 300C 2WD	2004 - 2011	X		Ball Joint Camber Bolt	41-232 41-8259	41-232 41-8259	51 58		0.90 / 0.90 0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
Chrysler 300C 4WD	2004 - 2011	X		Camber Bolt	41-8259	41-8259	58		0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
Chrysler 300M/LHS	1994 - 2004	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50	88-7200A	- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -

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CHRYSLER															
Chrysler Cirrus	1995 - 2000	X		- Ball Joint	Fac Adj. 41-230	41-230	- 51	88-7800A	- / 0.90 0.90	-	Fac Adj.	Fac Adj.	-		- / -
Chrysler Concorde LH Yorker	1993 - 1997	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Non Adj.	49 50	88-7100A	0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Chrysler Concorde	1998 - 2004	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Non Adj.	49 50	88-7200A	0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Chrysler Crossfire	2004 - 2008	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Chrysler Dynasty (Canada)	1991 - 1993	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler E Class/Exe Sedan	1983 - 1984	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler Fifth Avenue	1989	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler Imperial	1990 - 1993	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler Laser	1984 - 1986	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler LeBaron/GTS	1982 - 1995	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler New Yorker , LHS	1994 - 1997	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Non Adj.	49 50	88-7100A	0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Chrysler New Yorker/Ex/Fifth Ave	1983 - 1993	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler Pacifica	2004 - 2008	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Chrysler PT Cruiser	2001 - 2010	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-157[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler Sebring Coupe	1995 - 2000	X		Ball Joint Performance Kit	41-550 41-553	41-550	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Chrysler Sebring Convertible	1996 - 2010	X		Ball Joint Ball Joint	41-230 41-229	41-230 41-229	51 51	88-7800A	0.90 / - 0.90 / 0.90	-	Fac Adj.	Fac Adj.	-		- / -
Chrysler Sebring Sedan	1996 - 2005	X		Ball Joint	41-230	41-230	51		0.90 / 0.90	-	Non Adj.	Fac Adj.	-	88-7800A	- / -
Chrysler Sebring Coupe	2001 - 2010	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Chrysler Sebring Sedan & Conv	2007 - 2010	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - -	-	Non Adj.	Fac Adj.	-		- / -
Chrysler TC by Maserati	1990 - 1991	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler Twn Country Wgn	1982 - 1988	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler Town/CtryVan FWD	1990 - 1995	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Chrysler Town/CtryVan AWD	1992 - 1995		X	- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Chrysler Town/CtryVan FWD	1996 - 2011	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-157[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1120	46-1120	81	88-343 88-4519	0.60 / 0.60
Chrysler Town/CtryVan AWD	1997 - 2011		X	- Magna Cam 14mm Axis Cam	Fac Adj. 41-157[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Chrysler Voyager Van	2000 - 2008	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1120	Non Adj.	81		0.60 / -

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
DAEWOO															
Daewoo Lanos	1999 - 2002		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Daewoo Malteze	1999 - 2002		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Daewoo Leganza	1999 - 2002		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Daewoo Nubira	1999 - 2002	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
DAIHATSU															
Daihatsu Charade	1988 - 1992	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30
Daihatsu Charade GTX	1992	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Daihatsu Rocky	1990 - 1992		X	Shim	CC	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
DODGE															
Dodge 400	1982 - 1983	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge 600	1983 - 1988	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Aries	1981 - 1989	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Avenger	1995 - 2000	X		Ball Joint Performance Kit	41-550 41-553	41-550	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Dodge Avenger	2008 - 2011	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	-	Non Adj.	Fac Adj.	-		- / -
Dodge B100/200/300/350 2WD	1979 - 1983		X	- Cam Bolt	Fac Adj. 41-8243	Fac Adj. 41-8243	- 56		- / - 0.40 / 0.40	-	Non Adj.	Non Adj.	-		- / -
Dodge Caliber	2007 - 2011	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Dodge Caravan Van FWD	1984 - 1995	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Cavavan AWD	1990 - 1995	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Dodge Caravan AWD	1996 - 2007		X	Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Dodge Caravan Van FWD	1996 - 2007	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1120	46-1120	81	88-343	0.60 / 0.60
Dodge Challenger	2008 - 2011	X		Ball Joint Camber Bolt	41-232 41-8259	41-232 41-8259	51 58		0.90 / 0.90 0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
Dodge Charger	1983 - 1987	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Charger 2WD	2006 - 2011	X		Ball Joint Camber Bolt	41-232 41-8259	41-232 41-8259	51 58		0.90 / 0.90 0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
Dodge Colt / Vista	1979 - 1995		X	Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Dodge Colt Wagon 2WD/4WD	1992 - 1995	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Dodge Ram 50/D50/Arrow 2WD	1980 - 1993		X	-	Fac Adj.	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Dodge Dakota 2WD/4WD	1987 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Dodge Dart	1965 - 1976		X	Cam Bolt	41-8243	41-8243	56		0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Dodge Daytona	1984 - 1993	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60

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DODGE

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DODGE															
Dodge Durango 2WD/4WD	1998 - 2009		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Dodge Durango	2011	X		- Ball Joint	Fac Adj. 44-2495	Fac Adj. 44-2495	- 71		- / - 0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
Dodge Dynasty	1988 - 1993	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Intrepid	1993 - 1997	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Non Adj.	49 50	88-7100A	0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Dodge Intrepid	1998 - 2004	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50	88-7200A	- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Dodge Lancer	1985 - 1989	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Magnum 2WD	2005 - 2008	X		Ball Joint Camber Bolt	41-232 41-8259	41-232	51 58		0.90 / 0.90 0.90	-	Non Adj.	Fac Adj.	-		- / -
Dodge Magnum 4WD	2005 - 2008	X		Camber Bolt	41-8259	41-8259	58		0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
Dodge Monaco	1990 - 1992	X		Wedge	41-305	Non Adj.	51		0.30 / -	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Neon	1995 - 2005	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Wedge	41-300	Fac Adj.	51		0.30 / -
Dodge Omni/024	1978 - 1990	X		- Cam Bolt	Fac Adj. 41-8248	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Ram Raider 2WD	1987 - 1989		X	-	Fac Adj.	CC	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Dodge Full size P/U ind. front suspension 2WD	1994 - 2002		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Dodge 1500/2500 L.D. 4WD	1994 - 1999		X	Ball Joint	44-2492	Fac Adj. 44-2492	70	88-7900A	0.90 / - 0.90	-	Non Adj.	Non Adj.	-		- / -
Dodge 1500/2500 L.D. 4WD	2000 - 2001		X	Ball Joint	44-2494	Fac Adj. 44-2494	71	88-7900A	0.90 / - 0.90	-	Non Adj.	Non Adj.	-		- / -
Dodge 1500 2WD/4WD	2002 - 2005		X	Cam Kit	44-792	44-792	68	88-8928	0.50 / 0.50	-	Non Adj.	Non Adj.	-		- / -
Dodge 1500 2WD/4WD	2006 - 2010		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Dodge Full Size Van 2WD	1995 - 2003		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Dodge 2500 HD/3500 solid frt axle 2WD	1994 - 2002		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Dodge 2500 HD /3500 4WD	1994 - 1999		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Dodge 2500 HD /3500 4WD	2000 - 2002		X	Ball Joint	44-2496	Fac Adj.	71		0.90 / -	-	Non Adj.	Non Adj.	-		- / -
Dodge Truck 2500/3500 2WD	2003 - 2010		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Dodge 2500/3500 P/U Old body style 4WD	2003 - 2005		X	Ball Joint	44-2496	Fac Adj.	71		0.90 / -	-	Non Adj.	Non Adj.	-		- / -
Dodge 2500/3500 P/U NS 4WD	2003 - 2010		X	Ball Joint	44-2497	Fac Adj.	72		0.90 / -	-	Non Adj.	Non Adj.	-		- / -
Dodge Ramcharger 4WD	1974 - 1993		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Dodge Ramcharger 2WD	1977 - 1993		X	- Cam Bolt	Fac Adj. 41-8243	Fac Adj. 41-8243	- 56		- / - 0.40 / 0.40	-	Non Adj.	Non Adj.	-		- / -
Dodge Rampage	1982 - 1984	X		- Cam Bolt	Fac Adj. 41-8248	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Shadow	1987 - 1994	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60

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DODGE															
Dodge Spirit	1989 - 1995	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Dodge Sprinter	2003 - 2006	X		Camber Shim Camber Shim	42-4431 42-4434	Non Adj.	60 60		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Dodge Sprinter 2WD	2007 - 2009		X	14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Dodge Stealth 4x2 & AWD	1991 - 1996	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Dodge Stratus Sedan	1995 - 2006	X		- Ball Joint	Fac Adj. 41-230	41-230	- 51	88-7800A	- / 0.90 0.90	-	Fac Adj.	Fac Adj.	-		- / -
Dodge Stratus Coupe	1995 - 2000	X		- Ball Joint	Fac Adj. 41-550	41-550	- 53		- / - 0.90	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Dodge Stratus Coupe	2001 - 2005	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Dodge Viper RT/10Roadster	1992 - 1995	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Dodge Viper Roadster/GTS Coupe	1996 - 2006	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Dodge W100 thruW350 with 3500lb axle 4WD	1986 - 1989		X	Bushing Series	44-2460	44-2460	69		0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Dodge Full size P/U ind. front suspension 2WD	1972 - 1993		X	Cam Bolt	41-8243	41-8243	56		0.40 / 0.40	-	Non Adj.	Non Adj.	-		- / -
Dodge W200-W350 w/3500 lb. axle 4WD	1975 - 1980		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
EAGLE															
Eagle Medallion	1988 - 1989	X		Magna Cam Wedge	41-160[1] 41-305	Non Adj.	49 51		0.30 / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Eagle Premier	1988 - 1992	X		Magna Cam Wedge	41-160[1] 41-305	Non Adj.	49 51		0.30 / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Eagle Summit	1989 - 1992		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Eagle Summit	1993 - 1996	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Eagle Talon 2WD/4WD	1990 - 1994	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Eagle Talon 2WD/4WD	1995 - 1998	X		Ball Joint Performance Kit	41-550 41-553	41-550	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Eagle Vision	1993 - 1997	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Non Adj.	49 50	88-7100A	0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Eagle Vista Wagon 2WD/4WD	1989 - 1991		X	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
FIAT															
Fiat 128 Coupe Hatch Wagon	1971 - 1979		X	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Fiat 131/Brava	1975 - 1981		X	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Fiat Strada	1979 - 1982	X		Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Fiat X1/9	1974 - 1982	X		Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30	Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30
FORD															
Ford Aerostar 2WD/4WD	1986 - 1997		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
FORD															
Ford Aspire	1994 - 1997	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Ford Bronco 4WD	1980 - 1996		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Bronco II 2WD	1984 - 1988		X	Bushing Series	42-100	44-9412	58		1.00 / 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford Bronco II 4WD	1984 - 1989		X	Bushing Series Universal Bushing	44-600 44-5035	44-600 44-5035	65 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Bronco II 2WD	1989 - 1990		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Bronco II 4WD	1990		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 0.80 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Contour	1995 - 2000	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Ford Crown Victoria/LTD	1992 - 2002		X	-	Fac Adj.	Fac Adj.	-	88-9412	- / -	-	Non Adj.	Non Adj.	-		- / -
Ford Crown Victoria	2003 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Ford E100/E150 2WD	1980 - 1991		X	-	Non Adj.	42-4413	-		- / 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford E150, E250, E350, E450 2WD	1992 - 2011		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford E250/E350 2WD	1980 - 1991		X	-	Non Adj.	42-4412	-		- / 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford Edge	2007 - 2011	X		16mm Axis Cam Magna Cam	41-216 41-159[1]	Non Adj.	50 49		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Ford Escape FWD	2001 - 2011	X		Magna Cam Cam Bolt 12mm Axis Cam	41-147[2] 41-308 41-212	Fac Adj.	49 52 50		- / - - -	-	Non Adj.	Fac Adj.	-		- / -
Ford Escape 4WD	2001 - 2011	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Escort	1981 - 1985	X		-	Non Adj.	Non Adj.	-		- / -	Wedge	46-201	Fac Adj.	80		0.40 / -
Ford Escort	1986 - 1990	X		Tower Plate	41-4601	41-4601	55	88-4602	0.50 / 0.50	Wedge	46-201	Fac Adj.	80		0.40 / -
Ford Escort	1991 - 1996	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	46-205	49 50		0.30 / 0.30 0.40
Ford Escort	1997 - 2002	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj. 46-205	49 50		0.30 / - 0.30 / 0.40
Ford Escort X 2	1998 - 2003	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Ford Excursion 2WD	2000 - 2005		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Excursion 4WD	2000 - 2005		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford EXP	1982 - 1985	X		-	Non Adj.	Non Adj.	-		- / -	Wedge	46-201	Fac Adj.	80		0.40 / -
Ford EXP	1986 - 1988	X		Tower Plate	41-4601	41-4601	55	88-4602	0.50 / 0.50	Wedge	46-201	Fac Adj.	80		0.40 / -
Ford Expedition 1sr design (cam only) 2WD/4WD	1997 - 1998		X	Camber Kit	42-777[5]	42-777[5]	58	88-7829	0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Expedition 2nd design (cam bolt) 2WD/4WD	1997 - 2002		X	Cam Bolt	42-778[6]	42-778[6]	59		0.50 / 0.50	-	Non Adj.	Non Adj.	-		- / -

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
FORD															
Ford Expedition 2WD/4WD	**2003 - 2006**	X		Front Cam Kit	44-786[7]	44-786[7]	68		0.30 / 0.30	Cam Bolt	44-784	Fac Adj.	67		0.50 / -
Ford Expedition 2WD/4WD	**2007 - 2011**	X		Cam Kit Cam Kit	44-790 44-791	44-790 44-791	68 68		0.30 / 0.30 0.30 / 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Ford Explorer 2WD/4WD	**1991 - 1994**		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Explorer 2WD	**1995 - 2001**		X	Camber Kit Cam Bolt	44-767 44-768	44-767	66 66	88-7829	0.30 / 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Explorer/Explorer Sport 4WD	**1995 - 2001**		X	Camber Kit Cam Bolt	44-767 44-768	44-767 44-768	66 66		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Explorer 2WD/4WD	**2002 - 2005**	X		Front Cam Kit Alignment Washers	44-771[7] 44-769	44-771[7] 44-769	67 66	88-8926	0.30 / 0.30 0.30 / 0.30	Alignment Washers Camber Kit	44-769 44-773[7]	Fac Adj.	66 67		0.20 / - 0.20
Ford Explorer 2WD/4WD	**2006 - 2010**	X		-	Fac Adj.	Fac Adj.	-	88-8926	- / -	Alignment Washers Camber Kit	44-769 44-773[7]	Fac Adj.	66 67		0.20 / - 0.20
Ford Explorer 2WD/4WD	**2011**	X		- 16mm Axis Cam Magna Cam	Fac Adj. 41-216 41-159[1]	Non Adj.	- 50 49		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Ford Explorer Sport Trac 4WD	**2001 - 2005**		X	Camber Kit Cam Bolt	44-767 44-768	44-767 44-768	66 66		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford F150 4WD	**1975 - 1979**		X	Bushing Series	44-2460	44-2460 44-9412	69	88-7090	0.80 / 0.80 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford F150 4WD	**1980 - 1996**		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford F100/F150 2WD	**1982 - 1986**		X	Bushing Series	42-100	44-9412 42-4411	58		1.00 / 1.50 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford F150 2WD	**1987 - 1991**		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094 44-9413	59 74		1.00 / 1.00 1.00 / 1.00 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford F150 2WD	**1992 - 1996**		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094 44-9413	59 74		1.00 / 1.00 0.50 / 1.00 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford F150/F250 1st design (cam only) 2WD/4WD	**1997 - 1998**		X	Camber Kit	42-777[5]	42-777[5]	58		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford F150/F250 2nd design (cam bolt) 2WD/4WD	**1997 - 2003**		X	Cam Bolt	42-778[6]	42-778[6]	59		0.50 / 0.50	-	Non Adj.	Non Adj.	-		- / -
Ford F150 Supercrew 4WD	**2001 - 2003**		X	Cam Bolt	42-778[6]	42-778[6]	59		0.50 / 0.50	-	Non Adj.	Non Adj.	-		- / -
Ford F150 2WD	**2004 - 2008**		X	Cam Bolt Kit Cam Kit	44-789 44-791	44-789 44-791	68 68		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford F150 4WD	**2004 - 2008**		X	Cam Bolt Kit Cam Kit	44-789 44-791	44-789 44-791	68 68		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford F150 2WD/4WD	**2009 - 2011**		X	Cam Kit Cam Kit	44-790 44-791	44-790 44-791	68 68		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford F250 (twin I-beam) 4WD	**1980 - 1987**		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford F250/F350 2WD	**1981 - 1986**		X	Bushing Series	42-100	42-4412	58		1.00 / 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford Truck F250/F350 2WD	**1987 - 1991**		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford F250/F350 2WD	**1992 - 1998**		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford F250 LD 1st design (cam only) 4WD	**1997 - 1998**		X	Camber Kit	42-777[5]	42-777[5]	58		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford F250, F350, F450, F550 Super Duty (TIB) 2WD	**1997 - 2011**		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -

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FORD															
Ford F250, F350, F450, F550 Super Duty (MOB) 2WD	1999 - 2004		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / -	-	Non Adj.	Non Adj.	-		- / -
Ford F250, F350, F450, F550 Super Duty 4WD	1999 - 2004		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford F250/F350 Super Duty (MOB) 2WD	2005 - 2011		X	Bushing Series Universal Bushing	44-6000 44-5036	44-6000 44-5036	75 74		1.00 / 1.00 1.00 / -	-	Non Adj.	Non Adj.	-		- / -
Ford F250 Super Duty 4WD	2005 - 2011		X	Bushing Series Bushing Series	44-6000 44-5036	44-6000 44-5036	75 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford F350 w/Dana 60 4WD	1975 - 1991		X	-	44-910	Non Adj.	68		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Ford F350 w/ball joint suspension 4WD	1980 - 1997		X	Bushing Series Universal Bushing	44-5000 44-5032	44-5000 44-5032	73 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford F350 Super Duty 4WD	2005 - 2011		X	Bushing Series Universal Bushing	44-6000 44-5036	44-6000 44-5036	75 74		1.00 / 0.50 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford F450/550 Super Duty 2WD/4WD	2005 - 2011		X	Bushing Series Universal Bushing	44-6020 44-5037	44-6020 44-5037	75 74		1.00 / 0.50 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Fairmont	1978 - 1981		X	- Wedge	Fac Adj. 41-310	Non Adj.	- 52		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Festiva	1988 - 1993	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Ford Fiesta	1978 - 1980		X	- Magna Cam Wedge	Fac Adj. 41-147[2] 41-300	Non Adj.	- 49 51		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Fiesta	2011	X		12mm Axis Cam -	41-212 41-147[2]	Non Adj.	50 49		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Five Hundred FWD/AWD	2005 - 2007	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Ford Five Hundred 2WD	2005 - 2007	X		-	Fac Adj.	Fac Adj.	-		- / -	-	46-138	Fac Adj.	-		1.00 / -
Ford Focus	2000 - 2011	X		Tower Plate Rear Arm	41-4611 46-2188	Non Adj.	55 86	88-9416	0.60 / - -	Camber Shim Camber Bolt	46-1700 SERIES 46-1705	Fac Adj.	- -		0.80 / - 0.50
Ford Freestar	2004 - 2007	X		- Tower Plate	Fac Adj. 41-4609	Fac Adj.	- 55		- / - 0.60	-	Non Adj.	Non Adj.	-		- / -
Ford Freestyle FWD/AWD	2005 - 2007	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Ford Fusion	2006 - 2011	X		Ball Joint	41-236	41-236	51		0.90 / 0.90	-	Non Adj.	Non Adj.	-		- / -
Ford Granada	1975 - 1980		X	Cam Bolt	41-8243	Fac Adj.	56		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Ford Granada	1981 - 1982		X	- Wedge	Fac Adj. 41-310	Non Adj.	- 52		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Crown Victoria/LTD	1983 - 1986		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Ford Mustang	1979 - 1993		X	- Wedge Kit	Fac Adj. 41-307	Non Adj.	- 52		- / - 0.03	-	Non Adj.	Non Adj.	-		- / -
Ford Mustang 5.0	1990 - 1993		X	-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Ford Mustang 5.0	1994 - 1998		X	-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Ford Mustang	1994 - 2004	X		- Wedge Kit	Fac Adj. 41-307	Non Adj.	- 52	88-9414	- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Mustang Cobra	1999 - 2004	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -

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FORD															
Ford Mustang	2005 - 2011	X		Cam Bolt Wedge Kit 14mm Axis Cam	41-180 41-314 41-214	Fac Adj.	50 52 50		0.03 / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Probe	1989 - 1997	X		- Magna Cam Wedge	Fac Adj. 41-146[1] 41-300	Fac Adj.	- 49 51		- / - 0.30 0.30	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30
Ford Ranger 2WD	1983 - 1988		X	Bushing Series	42-100	44-9412	58		1.00 / 1.50	-	Non Adj.	Non Adj.	-		- / -
Ford Ranger 4WD	1983 - 1989		X	Bushing Series Universal Bushing	44-600 44-5035	44-600 44-5094	65 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Ranger 2WD	1989 - 1991		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Ranger 2WD/4WD	1992 - 1997		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Ford Ranger 2WD/4WD	1998 - 2011		X	Camber Kit Cam Bolt	44-767 44-768	44-767 44-768	66 66		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Taurus Sedan	1986 - 1990	X		- Tower Plate	Fac Adj. 41-4603	Fac Adj. 41-4603	- 55	88-9416	- / - 0.50 / 0.60	-	46-132	Fac Adj. 46-132	79	88-1302 88-9200	0.40 / - 0.40
Ford Taurus Wagon	1986 - 1990	X		- Tower Plate	Fac Adj. 41-4603	Fac Adj. 41-4603	- 55	88-9416	- / - 0.50 / 0.50	Cam Bolt	46-136	Fac Adj. 46-133	68	88-1300	0.80 / - 0.50
Ford Taurus Sedan	1991 - 1995	X		- Tower Plate	Fac Adj. 41-4605	Fac Adj. 41-4605	- 55	88-9416	- / - 0.50 / 0.50	Cam Bolt	46-132	Fac Adj.	79	88-1302 88-9200	0.40 / -
Ford Taurus Wagon	1991 - 1995	X		- Tower Plate	Fac Adj. 41-4605	Fac Adj. 41-4605	- 55	88-9416	- / - 0.50 / 0.50	Cam Bolt	46-136	Fac Adj. 46-133	68	88-1300	0.80 / - 0.50
Ford Taurus Sedan	1996 - 2004	X		- Tower Plate	Fac Adj. 41-4607	Fac Adj.	- 55	88-7870C 88-9416	- / - 0.90	Cam Bolt	46-134	46-134	79		0.40 / 0.50
Ford Taurus Wagon	1996 - 2005	X		- Tower Plate	Fac Adj. 41-4607	Fac Adj. 41-4607	- 55	88-9416	- / - 0.90 / 0.50	Cam Bolt	46-136	Fac Adj.	68		0.80 / -
Ford Taurus 2WD	2008 - 2010	X		-	Fac Adj.	Fac Adj.	-		- / -	-	46-138	Fac Adj.	-		1.00 / -
Ford Taurus Sedan	2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Taurus X 2WD	2008 - 2009	X		-	Fac Adj.	Fac Adj.	-		- / -	-	46-138	Fac Adj.	-		1.00 / -
Ford Tempo	1984 - 1994	X		Tower Plate	41-4601	41-4601	55	88-4602	0.50 / 0.50	Wedge Bushing	46-201 46-120	46-120	80 78	88-1303	0.40 / 0.40 0.50
Ford Tempo	1985 - 1994	X		Tower Plate	41-4601	41-4601	55	88-4602	0.50 / 0.50	Wedge	46-201	Fac Adj.	80	88-9200	0.40 / -
Ford Tempo AWD	1987 - 1992	X		Tower Plate	41-4601	41-4601	55	88-4602	0.50 / 0.50	Wedge	46-201	Fac Adj.	80		0.40 / -
Ford Thunderbird	1980 - 1988		X	- Wedge	Fac Adj. 41-310	Non Adj.	- 52		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Ford Thunderbird	1989 - 1997	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Ford Thunderbird	2002 - 2005	X		- Cam Bolt	Fac Adj. 41-8244	Fac Adj. 41-8244	- 56		- / - 0.70 / 0.70	-	Non Adj.	Fac Adj.	-		- / -
Ford Transit Connect	2010 - 2011	X		Tower Plate	41-4611	Non Adj.	55		0.60 / -	-	Non Adj.	Non Adj.	-		- / -
Ford Windstar	1995 - 2003	X		- Tower Plate	Fac Adj. 41-4609	Fac Adj.	- 55	88-9416	- / - 0.90	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
FREIGHTLINER															
Freightliner Sprinter 2WD	2002 - 2006	X		Camber Shim	42-4431	Non Adj.	60		- / -	-	Non Adj.	Non Adj.	-		- / -
GEO															
Geo Metro	1989 - 1997	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -

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GEO															
Geo Prizm	1989 - 1992	X		Magna Cam 15mm Axis Cam	41-149 41-215	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Geo Prizm	1993 - 1997	X		Magna Cam 15mm Axis Cam	41-149 41-215	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30
Geo Spectrum	1989	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.50 / 0.60 0.50 / 0.60
Geo Storm	1990 - 1993	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30
Geo Tracker 2WD/4WD	1989 - 1997		X	Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
GMC															
GMC Acadia 2WD/4WD	2008 - 2011	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
GMC C Series P/U 2WD	1979 - 1986		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
GMC C Series PU 2WD	1988 - 1991		X	Cam Bolt	41-8250[4]	41-8250[4]	57		0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
GMC C Series P/U 2WD	1992 - 1999		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
GMC Suburban 2WD	1983 - 1986		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
GMC 4WD Topkick C4500 C5500	2005 - 2009		X	Bushing Series Universal Bushing	44-6020 44-5037	44-6020 44-5037	75 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
GMC 2WD Topkick C4500 C550	2005 - 2009		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
GMC 2WD Canyon	2004 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
GMC 4WD Canyon	2004 - 2011		X	- Quick Cam	Fac Adj. 44-2507	Fac Adj. 44-2507	- 72		- / - 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
GMC Envoy 2WD/4WD	2002		X	- Cam Bolt	Fac Adj. 41-8246	Fac Adj. 41-8246	- 56		- / - 0.60 / -	-	Non Adj.	Non Adj.	-		- / -
GMC 2WD/4WD Envoy	2003 - 2009		X	Cam-Cas Tool	88-8929	88-8929	103	88-8929	- / -	-	Non Adj.	Non Adj.	-		- / -
GMC G Series Van 2WD	1979 - 1995		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
GMC Jimmy (Full Size) 4WD	1970 - 1991		X	Bushing Series	44-2460	44-2460	69		0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
GMC Jimmy (full size) 2WD	1974 - 1978		X	- Shim	Fac Adj. cc	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
GMC K Series P/U 4WD	1983 - 1986		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / -	-	Non Adj.	Non Adj.	-		- / -
GMC V Series P/U 4WD	1988 - 1991		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
GMC K Series P/U 4WD	1988 - 2000		X	Cam Bolt	41-8250[4]	41-8250[4]	57	88-7491	0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
GMC K Series P/U (rear drum brakes) 4WD	1992 - 1999		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
GMC R Series 2WD	1987 - 1991		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
GMC S15 P/U (downsize) 4WD	1982		X	- Cam Bolt	Fac Adj. 41-8247	Fac Adj. 41-8247	- 56		- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
GMC S15 P/U/Sonoma (downsize) 4WD	1983 - 1990		X	- Cam Bolt	Fac Adj. 41-8246	Fac Adj. 41-8246	- 56		- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
GMC S15/T15 Jimmy, Syclone, Typhoon 4WD	1983 - 1993		X	- Cam Bolt	Fac Adj. 41-8246	Fac Adj. 41-8246	- 56		- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -

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GMC															
GMC S15 Jimmy, Typhoon 2WD	1983 - 1993		X	- Shim	Fac Adj. cc	Fac Adj. cc	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
GMC Safari 2WD	1985 - 2005		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
GMC Safari 4WD	1990 - 2005		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
GMC Savana 2WD	1996 - 2002		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / -	-	Non Adj.	Non Adj.	-		- / -
GMC 2WD Savana Van	2003 - 2011		X	- Quick Cam Replacement Pins Cam Bolt Kit Camber Bushing	Fac Adj. 44-2506 44-2508 41-8251 44-2509[4]	Fac Adj. 44-2506 44-2508 41-8251 44-2509[4]	- 72 72 57 72		- / - 0.30 / 0.30 0.30 / 0.30 0.50 / 0.50 0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
GMC Sierra HD 1500/2500/3500 2WD/4WD	2007 - 2009		X	- Camber Bushing Replacement Pins Quick Cam Cam Bolt Kit	Fac Adj. 44-2510 44-2508 44-2506 41-8251	Fac Adj. 44-2510 44-2508 44-2506 41-8251	- 73 72 72 57	88-7950A	- / - 0.80 / 0.80 0.30 / 0.30 0.30 / 0.30 0.50 / 0.50	-	Non Adj.	Non Adj.	-		- / -
GMC Sierra 1500 2WD/4WD	1999 - 2011		X	- Camber Bushing Quick Cam Cam Bolt Kit Replacement Pins	Fac Adj. 44-2509[4] 44-2506 41-8251 44-2508	Fac Adj. 44-2509[4] 44-2506 41-8251 44-2508	- 72 72 57 72	88-7950A	- / - 0.80 / 0.80 0.30 / 0.30 0.50 / 0.50 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
GMC Suburban 4WD	1987 - 1991		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
GMC 4 WD Truck Yukon/Denali (rear drum brake)	1992 - 2000		X	- Cam Bolt	Fac Adj. 41-8250[4]	Fac Adj. 41-8250[4]	- 57	88-7491	- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
GMC Yukon/Denali 2WD/4WD	2000 - 2011		X	- Camber Bushing Replacement Pins Cam Bolt Kit Quick Cam	Fac Adj. 44-2509[4] 44-2508 41-8251 44-2506	Fac Adj. 44-2509[4] 44-2508 41-8251 44-2506	- 72 72 57 72	88-7950A	- / - 0.80 / 0.80 0.30 / 0.30 0.50 / 0.50 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
GMC 2WD Yukon XL	2000 - 2011		X	- Camber Bushing Cam Bolt Kit Quick Cam Replacement Pins	Fac Adj. 44-2509[4] 41-8251 44-2506 44-2508	Fac Adj. 44-2509[4] 41-8251 44-2506 44-2508	- 72 57 72 72		- / - 0.80 / 0.80 0.50 / 0.50 0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
GMC Yukon XL 1500 2WD	2000 - 2011		X	- Camber Bushing Cam Bolt Kit Quick Cam Replacement Pins	Fac Adj. 44-2509[4] 41-8251 44-2506 44-2508	Fac Adj. 44-2509[4] 41-8251 44-2506 44-2508	- 72 57 72 72	88-7950A	- / - 0.80 / 0.80 0.50 / 0.50 0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
GMC Yukon XL 2500HD 2WD/4WD	2000 - 2011		X	- Camber Bushing Replacement Pins Cam Bolt Kit Quick Cam	Fac Adj. 44-2510 44-2508 41-8251 44-2506	Fac Adj. 44-2510 44-2508 41-8251 44-2506	- 73 72 57 72	88-7950A	- / - 0.80 / 0.80 0.30 / 0.30 0.50 / 0.50 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
HONDA															
Honda Accord	1986 - 1989	X		Cam Stud Series	41-520	Fac Adj.	53		0.50 / -	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Honda Accord	1990 - 1997	X		Ball Joint Performance Kit	41-530 41-560	Fac Adj. 41-530	53 54	88-7800A	0.90 / - - / 0.90	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Honda Accord	1998 - 2002	X		Ball Joint Performance Kit	41-532 41-561	Fac Adj. 41-532	53 54	88-7800A	0.90 / - - / 0.90	Rear Arm	46-2190	Fac Adj.	86		0.70 / -
Honda Accord	2003 - 2007	X		Ball Joint Performance Kit	41-532 41-561	Fac Adj. 41-532	53 54	88-7890A	0.90 / - - / -	Rear Link Rear Arm	46-2195 46-2192	46-2195	86 86		0.50 / 0.50 0.50
Honda Accord	2008 - 2011	X		Ball Joint	41-532	Fac Adj.	53	88-7890A	0.90 / -	-	Non Adj.	Fac Adj.	-		- / -
Honda Civic	1980 - 1991	X		-	Non Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-343	0.60 / 0.60 0.60 / 0.60
Honda Civic Wagon	1984 - 1987	X		-	Non Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-343	0.60 / 0.60 0.60 / 0.60

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HONDA															
Honda CRX	1984 - 1987	X		-	Non Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-343	0.60 / 0.60 0.60 / 0.60
Honda Civic	1992 - 2000	X		Ball Joint	41-532	41-532	53	88-7800A	0.90 / 0.90	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Honda Civic	2001 - 2002	X		Cam Bolt	41-180	Non Adj.	50		0.30 / -	Rear Link	46-2180	Fac Adj.	85		0.50 / -
Honda Civic SI	2002 - 2005	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Rear Link	46-2180	Fac Adj.	85		0.50 / -
Honda Civic Hybrid	2003 - 2005	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	-	Non Adj.	Fac Adj.	-		- / -
Honda Civic	2003 - 2005	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Rear Link	46-2180	Fac Adj.	85		0.50 / -
Honda Civic / Civic Hybrid	2006 - 2011	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	Rear Arm	46-2187	Fac Adj.	86		0.50 / -
Honda Civic del Sol	1993 - 1997	X		Ball Joint Performance Kit	41-532 41-561	41-532	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Honda CR-V 4x2 and 4x4	1997 - 2001	X		Ball Joint Performance Kit	41-532 41-561	41-532	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Honda CR-V	2001 - 2006	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Rear Link	46-2185	Fac Adj.	85		0.50 / -
Honda CR-V 2WD/4WD	2007 - 2011	X		Camber Bolt 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		- / - -	Rear Link	46-2186	Fac Adj.	85		- / -
Honda CR-Z	2011	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Honda CRX	1988 - 1991	X		Ball Joint Performance Kit	41-532 41-561	41-532	53 54	88-7800A	0.90 / 0.90 -	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Honda Element	2003 - 2011	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Rear Link	46-2185	Non Adj.	85		0.50 / -
Honda Fit	2007 - 2011	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	Shim Series	46-1500	46-1500	71		0.60 / 0.60
Honda Insight	2000 - 2006		X	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Honda Insight	2010 - 2011	X		14mm Axis Cam Magna Cam	41-214 41-158[1]	Non Adj.	50 49		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Honda Odyssey	1995 - 1998	X		Ball Joint Performance Kit	41-530 41-560	41-530	53 54	88-7800A	0.90 / 0.90 -	-	Non Adj.	Fac Adj.	-		- / -
Honda Odyssey	1999 - 2004	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	- Rear Arm	Non Adj. 46-2192	Fac Adj.	- 86		- / - 0.50
Honda Odyssey	2005 - 2011	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30			Fac Adj.			-
Honda Passport 2WD/4WD	1994 - 2002		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Honda Pilot	2003 - 2008	X		16mm Axis Cam Magna Cam	41-216 41-159[1]	Non Adj.	50 49		0.30 / - 0.30	- Rear Arm	Non Adj. 46-2192	Fac Adj.	- 86		- / - 0.50
Honda Pilot	2009 - 2011	X		16mm Axis Cam Magna Cam	41-216 41-159[1]	Non Adj.	50 49		0.30 / - 0.30			Fac Adj.			-
Honda Prelude	1983 - 1987	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Honda Prelude 2 W/S	1988 - 1991	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Honda Prelude 4 W/S	1988 - 1991	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Honda Prelude 2 W/S	1992 - 1996	X		Ball Joint Performance Kit	41-530 41-560	Fac Adj. 41-530	53 54		0.90 / 0.90 - / -	Ball Joint	41-530	Fac Adj.	53		0.90 / -
Honda Prelude 4 W/S	1992 - 1995	X		Ball Joint	41-530	Fac Adj. 41-530	53	88-7800A	0.90 / - 0.90	Ball Joint	41-530	Fac Adj.	53	88-7800A	0.90 / -

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HONDA															
Honda Prelude except SH	1997 - 2001	X		Ball Joint Performance Kit	41-532 41-561	Fac Adj. 41-532	53 54	88-7800A	0.90 / - - / 0.90	Ball Joint	41-530	Fac Adj.	53	88-7800A	0.90 / -
Honda Prelude SH	1997 - 2001	X		Ball Joint	41-530	Fac Adj. 41-530	53	88-7800A	0.90 / - 0.90	Ball Joint	41-530	Fac Adj.	53	88-7800A	0.90 / -
Honda 4WD RidgeLine	2006 - 2011	X		16mm Axis Cam Magna Cam	41-216 41-159[1]	Non Adj.	50 49		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Honda S2000/SH	2000 - 2009	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
HUMMER															
Hummer H1	2002 - 2006		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Hummer H2	2003 - 2009		X	- Camber Bushing Cam Bolt Kit Replacement Pins Quick Cam	Fac Adj. 44-2510 41-8251 44-2508 44-2506	Fac Adj. 44-2510 41-8251	- 73 57 72 72	88-7950A	- / - 0.80 / 0.80 0.50 / 0.50 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Hummer H3	2006 - 2010		X	- Quick Cam	Fac Adj. 44-2507	Fac Adj. 44-2507	- 72		- / - 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
HYUNDAI															
Hyundai Accent	1995 - 2005	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Hyundai Accent	2006 - 2011	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1500	46-1500	71		0.60 / 0.60
Hyundai Elantra	1992 - 1996	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Hyundai Elantra	1997 - 2006	X		Magna Cam Magna Cam 12mm Axis Cam	41-146[1] 41-147[2] 41-212	Non Adj.	49 49 50		0.30 / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Hyundai Elantra	2007 - 2011	X		14mm Axis Cam Magna Cam	41-214 41-158[1]	Non Adj.	50 49		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Hyundai Excel	1986 - 1994		X	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Hyundai Santa Fe AWD	2001 - 2011	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Hyundai Scoupe	1991 - 1995		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Hyundai Sonata	1989 - 1994		X	Magna Cam Wedge	41-147[2] 41-305	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Hyundai Sonata	1995 - 1998	X		Magna Cam Wedge	41-147[2] 41-305	Non Adj.	49 51		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Hyundai Sonata	1999 - 2011	X		Ball Joint	41-550	41-550	53	88-7800A	0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
Hyundai Tiburon	1997 - 2001	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Hyundai Tiburon	2003 - 2008	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Hyundai Tuscon 4x4	2005 - 2011	X		14mm Axis Cam Magna Cam	41-214 41-158[1]	Non Adj.	50 49		0.30 / - 0.30	14mm Axis Cam Magna Cam	41-214 41-158[1]	Fac Adj.	50 49		0.30 / - 0.30
Hyundai XG300/XG350	2001 - 2005	X		Ball Joint	41-550	41-550	53		0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
INFINITI															
Infiniti FX35/FX45	2004 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Infiniti G20	1991 - 1996	X		-	Non Adj.	Non Adj.	-		- / -	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30

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INFINITI															
Infiniti G20	1999 - 2002		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Infiniti G35	2004 - 2008	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Infiniti I30	1996 - 2001		X	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Infiniti I35	2002 - 2004		X	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Infiniti J30	1993 - 1996	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Infiniti M30	1990 - 1992	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Infiniti M45	2003 - 2004	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Infiniti Q45	1990 - 2006	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Infiniti QX4	1997 - 2003		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
ISUZU															
Isuzu Amigo 2WD/4WD	1989 - 2000		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu Ascender 2WD/4WD	2003 - 2008		X	Cam-Cas Tool	88-8929	88-8929	103		- / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu Axiom 2WD/4WD	2002 - 2004		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu Axiom 4WD	2002 - 2004		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu Hombre 2WD	1996 - 2000		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu Hombre 4WD	1996 - 2000		X	- Cam Bolt	Fac Adj. 41-8246	Fac Adj. 41-8246	- 56		- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Isuzu I35/I28 4WD	2006		X	- Quick Cam	Fac Adj. 44-2507	Fac Adj. 44-2507	- 72		- / - 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Isuzu I-Mark FWD	1985 - 1989	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Isuzu Impulse	1990 - 1992		X	Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30
Isuzu Oasis	1996 - 1999	X		Ball Joint	41-530	41-530	53		0.90 / 0.90	Camber Shim	46-2160	Fac Adj.	85		0.20 / -
Isuzu Pickup 2WD/4WD	1981 - 1995		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu Rodeo 2WD/4WD	1991 - 2004		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu Stylus	1991 - 1993	X		Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30
Isuzu Trooper II 4WD	1988 - 2002		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu Trooper 4WD	1992 - 2002		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Isuzu VehiCross	1999 - 2001		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
JAGUAR															
Jaguar S Type	2000 - 2008	X		- Cam Bolt	Fac Adj. 41-8244	Fac Adj. 41-8244	- 56		- / - 0.70 / -	-	Non Adj.	Fac Adj.	-		- / -
Jaguar X Type	2002 - 2008	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Jaguar XJ Sedans	1995 - 1997	X		- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Fac Adj.	Fac Adj.	-		- / -

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JAGUAR															
Jaguar XJ6/XJ Sedan	1983 - 1994	X		- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Fac Adj.	Non Adj.	-		- / -
Jaguar XJR Sedan	1998 - 2002	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Jaguar XJS	1983 - 1996	X		- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Fac Adj.	Non Adj.	-		- / -
Jaguar XK8/XKR	1997 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
JEEP															
Jeep Cherokee (full size)	1974 - 1983		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Jeep Cherokee, Wagoneer (downsize)	1984 - 1989		X	Camber Ball Joint Bushing Series	44-2490 44-2480	Fac Adj. 44-2490	70 70	88-7900A	0.90 / - 0.80 / 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep Cherokee, Wagoneer (downsize)	1990 - 2001		X	Camber Ball Joint	44-2490	Fac Adj. 44-2490	70	88-7900A	0.90 / - 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep CJ Models	1977 - 1986		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Jeep Comanche	1986 - 1989		X	Camber Ball Joint Bushing Series	44-2490 44-2480	Fac Adj. 44-2490	70 70	88-7900A	0.90 / - 0.80 / 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep Comanche	1990 - 1992		X	Camber Ball Joint	44-2490	Fac Adj. 44-2490	70	88-7900A	0.90 / - 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep Commander	2006 - 2010	X		- Ball Joint	Fac Adj. 44-2493	44-2493	- 71		- / 0.90 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep Compass	2007 - 2011		X	14mm Axis Cam Magna Cam	41-214 41-158[1]	Fac Adj.	50 49		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Jeep Grand Cherokee	1993 - 1998		X	Camber Ball Joint	44-2490	41-8256 44-2490	70	88-7900A	0.90 / 0.30 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep Grand Chreokee	1999 - 2004		X	Ball Joint	44-2491	Fac Adj. 44-2491	70	88-7900A	0.90 / - 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep Grand Cherokee	2005 - 2010	X		- Ball Joint	Fac Adj. 44-2493	44-2493	- 71		- / 0.90 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep Grand Cherokee	2011	X		- Ball Joint	Fac Adj. 44-2495	44-2495	- 71		- / 0.90 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep J10/J20 Pickup	1977 - 1988		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Jeep Liberty 2WD/4WD	2002 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Jeep Patriot	2007 - 2011		X	14mm Axis Cam Magna Cam	41-214 41-158[1]	Fac Adj.	50 49		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Jeep Scrambler	1982 - 1985		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Jeep Wrangler	1987 - 1988		X	Camber Ball Joint Bushing Series	44-2490 44-2480	44-2490	70 70	88-7900A	0.90 / 0.90 0.80	-	Non Adj.	Non Adj.	-		- / -
Jeep Wrangler TJ	1997 - 2005		X	Camber Ball Joint	44-2490	41-8256 44-2490	70	88-7900A	0.90 / 0.30 0.90	-	Non Adj.	Non Adj.	-		- / -
Jeep Wrangler JK	2007 - 2011		X	Camber Ball Joint	44-2490	41-8257	70		0.90 / 0.30	-	Non Adj.	Non Adj.	-		- / -
KIA															
Kia Amanti	2004 - 2009	X		Ball Joint	41-550	Fac Adj.	53		0.90 / -	-	Non Adj.	Fac Adj.	-		- / -
Forte	2010 - 2011	X		14mm Axis Cam Magna Cam	41-214 41-158[1]	Non Adj.	50 49		0.30 / - 0.30	- -	46-2400 46-1300	46-2400 46-1300	84 82		0.60 / 0.60 0.60 / 0.60
Kia Optima	2001 - 2011		X	Ball Joint	41-550	Non Adj.	53	88-7800A	0.90 / -	-	Non Adj.	Non Adj.	-		- / -
Kia Rio	2001 - 2011	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84		0.60 / 0.60 0.60 / 0.60

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KIA															
Kia Sedona	2002 - 2011		X	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Kia Sephia	1994 - 2001	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Kia Sorenta 2WD/4WD	2003 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Kia Soul	2010 - 2011	X		14mm Axis Cam Magna Cam	41-214 41-158[1]	Non Adj.	50 49		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Kia Spectra	2000 - 2009	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Kia Sportage 2WD/4WD	2005 - 2011		X	14mm Axis Cam Magna Cam	41-214 41-158[1]	Fac Adj.	50 49		0.30 / - 0.30	14mm Axis Cam Magna Cam	41-214 41-158[1]	Non Adj.	50 49		0.30 / - 0.30
LADA															
LADA Canada All 4WDRWD	1983 - 1993		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
LADA Canada All FWD Models	1983 - 1993		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
LAND ROVER															
Rover Defender/Discovery	1993 - 2004		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Land Rover Freelander	2002 - 2006	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj.	49 50		0.30 / - 0.30
Range Rover	1987 - 2002		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Range Rover	2003 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
LEXUS															
Lexus ES 250	1990 - 1991	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Fac Adj.	49 50		0.30 / - 0.30	Magna Cam 16mm Axis Cam	41-160[1] 41-216	Fac Adj.	49 50		0.30 / - 0.30
Lexus ES 300	1992 - 2003	X		Magna Cam 17mm Axis Cam	41-151 41-217	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30
Lexus GS300	1993 - 1997	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lexus GS300/GS400	1998 - 2006	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lexus GS 430	2001 - 2007	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lexus IS 300	2001 - 2005	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lexus LS400	1995 - 2000	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lexus LS 430	2001 - 2006	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lexus LX450	1996 - 1997		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Lexus LX470	1998 - 2007		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Lexus RX 300 2WD/4WD	1999 - 2003	X		- Magna Cam 17mm Axis Cam	Fac Adj. 41-151 41-217	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30
Lexus SC 300/SC 400	1992 - 2000	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lexus SC 430	2002 - 2010	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
LINCOLN															
Lincoln Aviator	2003 - 2005	X		Front Cam Kit Alignment Washers	44-771[7] 44-769	44-771[7] 44-769	67 66	88-8926	0.30 / - 0.30 / 0.30	Alignment Washers Camber Kit	44-769 44-773[7]	Fac Adj.	66 67		0.30 / - 0.30
Lincoln Blackwood P/U 2WD/4WD	2002 - 2003		X	Cam Bolt	42-778[6]	42-778[6]	59		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Lincoln Continental	1982 - 1987		X	- Wedge	Fac Adj. 41-310	Non Adj.	- 52		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Lincoln Continental	1988 - 1994	X		-	Fac Adj.	Fac Adj.	-		- / -	Cam Kit	46-132	Fac Adj. 46-132	79	88-1302	0.40 / - 0.40
Lincoln Continental	1995 - 2002	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-	88-9066	- / -
Lincoln LS	2000 - 2006	X		- Cam Bolt	Fac Adj. 41-8244	Fac Adj. 41-8244	- 56		- / - 0.70 / -	-	Non Adj.	Fac Adj.	-		- / -
Lincoln Mark LT 2WD	2006 - 2008		X	Cam Bolt Kit Cam Kit	44-789 44-791	44-789 44-791	68 68		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Lincoln Mark LT 4WD	2006 - 2008		X	Cam Bolt Kit Cam Kit	44-789 44-791	44-789 44-791	68 68		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Lincoln Mark VII	1984 - 1992		X	- Wedge	Fac Adj. 41-310	Non Adj.	- 52		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Lincoln Mark VIII	1993 - 1998	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lincoln MKX	2007 - 2011	X		16mm Axis Cam Magna Cam	41-216 41-159[1]	Non Adj.	50 49		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Lincoln Navigator 1st design 2WD/4WD	1998		X	Camber Kit	42-777[5]	42-777[5]	58		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Lincoln Navigator 2nd design 2WD/4WD	1998 - 2002		X	Cam Bolt	42-778[6]	42-778[6]	59		0.30 / 0.50	-	Non Adj.	Non Adj.	-		- / -
Lincoln Navigator 2WD/4WD	2003 - 2006	X		Front Cam Kit	44-786[7]	44-786[7]	68		0.30 / 0.30	Cam Bolt	44-784	Fac Adj.	67		0.50 / -
Lincoln Navigator 2WD/4WD	2007 - 2011	X		Cam Kit	44-790	44-790	68		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Lincoln Town Car	1981 - 1990		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Lincoln Town Car	1991 - 2002		X	-	Fac Adj.	Fac Adj.	-	88-9412	- / -	-	Non Adj.	Non Adj.	-		- / -
Lincoln Town Car	2003 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Lincoln Versailles	1977 - 1980		X	Cam Bolt	41-8243	Fac Adj.	56		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Lincoln Zephyr MKZ	2006	X		Ball Joint	41-236	41-236	51		0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
MAZDA															
Mazda 3	2004 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	Rear Arm	46-2188	Fac Adj.	86		0.30 / -
Mazda 323/Protege 2WD/4WD	1986 - 1995	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Mazda 5	2006 - 2012	X		-	Non Adj.	Non Adj.	-		- / -	Rear Arm	46-2188	Non Adj.	86		0.50 / -
Mazda 6	2003 - 2011	X		Ball Joint	41-236	41-236	51		0.90 / 0.90	-	Non Adj.	Non Adj.	-		- / -
Mazda 626	1979 - 1982		X	- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Mazda 626	1983 - 2002	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30

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MAZDA

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
MAZDA															
Mazda 626 4WD	1988 - 1989	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Mazda 929	1988 - 1991	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Mazda 929	1992 - 1995	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Mazda B Series P/U 2WD	1972 - 1993		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Mazda B Series P/U 4WD	1972 - 1993		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Mazda B Series P/U 2WD/4WD	1994 - 1997		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Mazda B Series P/U 2WD/4WD	1998 - 2009		X	Camber Kit Cam Bolt Kit	44-767 44-768	44-767 44-768	66 66		0.30 / 0.30 0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Mazda CX-7	2007 - 2011	X		- 14mm Axis Cam	Fac Adj. 41-214	Fac Adj.	- 50		- / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Mazda GLC	1981 - 1985	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Mazda Millenia	1995 - 2002	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Mazda MPV 2WD	1989 - 2006		X	- Magna Cam Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-147[2] 41-212	Fac Adj.	- 49 49 50		- / - 0.30 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Mazda MPV 4WD	1989 - 2006		X	- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Fac Adj. 41-147[2]	- 49 50		- / - 0.30 / 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Mazda MPV	2000 - 2006		X	- Magna Cam Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-147[2] 41-212	Fac Adj.	- 49 49 50		- / - 0.30 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Mazda MX-3	1992 - 1996	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Mazda MX-5 Miata	2006 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Mazda MX-6	1988 - 1997	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Mazda Navajo 2WD	1991 - 1994	X		Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Mazda Navajo 4WD	1991 - 1994		X	Bushing Series Universal Bushing	42-950 44-5094	42-950 44-5094	59 74		1.00 / 1.00 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Mazda Protege	1990 - 2003	X		- Magna Cam 12mm Axis Cam Wedge Performance Kit	Fac Adj. 41-146[1] 41-212 41-300 41-1460	Fac Adj.	- 49 50 51 54		- / - 0.30 0.30 0.30 -	Magna Cam 12mm Axis Cam Wedge	41-147[2] 41-212 41-300	Fac Adj.	49 50 51		0.30 / - 0.30 0.30
Mazda RX7	1979 - 1985		X	- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Mazda RX7	1986 - 1991	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Mazda RX7	1993 - 1995	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-146[1] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Mazda Tribute AWD/FWD	2001 - 2011	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -

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MERCEDES-BENZ															
All Mercedes	1978 - 2011	X		-	Fac Adj.	Fac Adj.	-	88-9188	- / -	-	Non Adj.	Fac Adj.	-		- / -
Mercedes-Benz Sprinter	2004 - 2008		X	Camber Shim	42-4431	Non Adj.	60		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
MERCURY															
Mercury Capri	1980 - 1986		X	- Wedge	Fac Adj. 41-310	Non Adj.	- 52		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mercury Capri	1991 - 1994	X		- Magna Cam Wedge	Fac Adj. 41-147[2] 41-300	Fac Adj.	- 49 51		- / - 0.30 0.30	Magna Cam Wedge	41-147[2] 41-300	Fac Adj. 46-205	49 51		0.30 / - 0.30 / 0.30
Mercury Cougar	1980 - 1988		X	- Wedge	Fac Adj. 41-310	Non Adj.	- 52		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mercury Cougar	1989 - 1997	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Mercury Cougar	1999 - 2002	X		-	Non Adj.	Non Adj.	-	88-9416	- / -	-	Non Adj.	Fac Adj.	-		- / -
Mercury Grand Marquis	1991 - 2002		X	-	Fac Adj.	Fac Adj.	-	88-9412	- / -	-	Non Adj.	Non Adj.	-		- / -
Mercury Grand Marquis	2003 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Mercury LN7	1982 - 1983	X		-	Non Adj.	Non Adj.	-		- / -	Wedge	46-201	Fac Adj.	80		0.40 / -
Mercury Lynx	1981 - 1985	X		-	Non Adj.	Non Adj.	-		- / -	Wedge	46-201	Fac Adj.	80		0.40 / -
Mercury Lynx	1986 - 1987	X		Tower Plate	41-4601	41-4601	55	88-4602	0.50 / 0.50	Wedge	46-201	Fac Adj.	80		0.40 / -
Mercury Marauder	2003 - 2004		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Mercury Marquis	1983 - 1986		X	- Wedge	Fac Adj. 41-310	Non Adj.	- 52		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mercury Milan	2006 - 2010	X		Ball Joint	41-236	41-236	51		0.90 / 0.90	-	Non Adj.	Fac Adj.	-		- / -
Mercury Montego FWD/AWD	2005 - 2007	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Mercury	2005 - 2007	X		-	Fac Adj.	Fac Adj.	-		- / -	Camber Bushing	46-138	Fac Adj.	-		1.00 / -
Mercury Monterrey	2004 - 2007	X		- Tower Plate	Fac Adj. 41-4609	Fac Adj.	- 55		- / - 0.90	-	Non Adj.	Non Adj.	-		- / -
Mercury Mountaineer 2WD/4WD	1997 - 2001		X	Camber Kit Cam Bolt	44-767 44-768	44-767	66 66		0.30 / 0.30 0.30	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Mercury Mountaineer 2WD/4WD	2002 - 2005	X		Front Cam Kit Alignment Washers	44-771[7] 44-769	44-771[7] 44-769	67 66	88-8926	0.30 / 0.30 0.30 / 0.30	Alignment Washers Camber Kit	44-769 44-773[7]	Fac Adj.	66 67		0.30 / - 0.30
Mercury Mountaineer 2WD/4WD	2006 - 2010	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Mercury Mystique	1995 - 2000	X		-	Non Adj.	Non Adj.	-	88-9416	- / -	-	Non Adj.	Fac Adj.	-		- / -
Mercury Sable Sedan	1986 - 1990	X		- Tower Plate	Fac Adj. 41-4603	Fac Adj. 41-4603	- 55	88-1302 88-9200 88-9416	- / - 0.50 / 0.50	Cam Bolt	46-132	Fac Adj.	79	88-9416	0.30 / -
Mercury Sable Wagon	1986 - 1990	X		- Tower Plate	Fac Adj. 41-4603	Fac Adj. 41-4603	- 55	88-9416	- / - 0.50 / 0.50	Cam Bolt	46-136	Fac Adj. 46-133	68	88-1300 88-9416	0.80 / - 0.50
Mercury Sable Sedan	1991 - 1995	X		- Tower Plate	Fac Adj. 41-4605	Fac Adj. 41-4605	- 55	88-1302 88-9200 88-9416	- / - 0.50 / 0.50	Cam Bolt	46-132	Fac Adj.	79	88-9416	0.30 / -

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MERCURY															
Mercury Sable Wagon	1991 - 1995	X		- Tower Plate	Fac Adj. 41-4605	Fac Adj. 41-4605	- 55	88-9416	- / - 0.50 / 0.50	Cam Bolt	46-136	Fac Adj. 46-133	68	88-1300 88-9416	0.80 / - 0.50
Mercury Sable Sedan	1996 - 2005	X		- Tower Plate	Fac Adj. 41-4607	Fac Adj.	- 55	88-7870C 88-9416	- / - 0.90	Cam Bolt	46-134	Fac Adj. 46-134	79	88-9200 88-9416	0.50 / - 0.40
Mercury Sable Wagon	1996 - 2005	X		- Tower Plate	Fac Adj. 41-4607	Fac Adj.	- 55	88-9416	- / - 0.90	Cam Bolt	46-136	Fac Adj.	68	88-9066 88-9416	0.80 / -
Mercury Sable Sedan	2008 - 2009	X		-	Fac Adj.	Fac Adj.	-		- / -	Camber Bushing	46-138	Fac Adj.	-		- / -
Mercury Topaz	1984 - 1994	X		- Tower Plate	Fac Adj. 41-4601	Fac Adj. 41-4601	- 55	88-4602	- / - 0.50 / 0.50	Wedge Bushing	46-201 46-120	Fac Adj.	80 78	88-1303 88-9200	0.40 / - 0.50
Mercury Tracer	1987 - 1996	X		- Magna Cam Wedge Performance Kit	Fac Adj. 41-147[2] 41-300 41-1460	Fac Adj.	- 49 51 54		- / - 0.30 0.30 -	Magna Cam Wedge Performance Kit	41-147[2] 41-300 41-1470	Fac Adj. 46-205	49 51 54		0.30 / - 0.30 / 0.30 -
Mercury Tracer	1997 - 1998	X		-	Fac Adj.	Fac Adj.	-		- / -	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Mercury Villager	1993 - 2002	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
MINI															
Mini Cooper Cooper S	2002 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
MITSUBISHI															
Mitsubishi 3000GT	1991 - 1998	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Mitsubishi 3000GT/3000AWD	1991 - 1999	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Mitsubishi Cordia	1983 - 1988		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Diamante Sedan	1992 - 1996	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Mitsubishi Diamante Wagon	1993 - 1996		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Diamante	1997 - 2004	X		Magna Cam 12mm Axis Cam Performance Kit	41-147[2] 41-212 41-1470	Non Adj.	49 50 54		0.30 / - 0.30 -	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Mitsubishi Eclipse AWD	1990 - 1994	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Mitsubishi Eclipse FWD	1990 - 1994		X	Magna Cam Wedge	41-147[2] 41-212	Non Adj.	49 50	88-7800A	0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30
Mitsubishi Eclipse AWD	1995 - 1999	X		Ball Joint Ball Joint	41-550 41-553	Non Adj.	53 54		0.90 / - 0.90	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Mitsubishi Eclipse FWD	1995 - 1999	X		Ball Joint	41-550	41-550	53	88-7800A	0.90 / 0.90	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Mitsubishi Eclipse/Eclipse Spyder	2000 - 2011	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-159[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Mitsubishi Expo/Expo LRV (All)	1992 - 1995	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Mitsubishi Galant FWD	1985 - 1993		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Galant AWD	1989 - 1993	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Mitsubishi Galant FWD	1994 - 1998	X		Ball Joint -	41-550 41-553	41-550	53 54	88-7800A	0.90 / 0.90 -	-	Fac Adj.	Fac Adj.	-		- / -

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
MITSUBISHI															
Mitsubishi Galant	1999 - 2011	X		Magna Cam 16mm Axis Cam	41-159[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Camber Shim	46-2170	Fac Adj.	85		0.30 / -
Mitsubishi Lancer	2002 - 2011	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	-	Fac Adj.	Fac Adj.	-		- / -
Mitsubishi Mirage	1985 - 1992		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Mirage	1993 - 2002	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Mitsubishi Montero/Montero Sport 4WD	1983 - 2001		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Pickup 2WD/4WD	1985 - 1996		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Montero 2WD	1997 - 2001		X	- Shim	Fac Adj. CC	Non Adj.	- -		- / - -	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Montero 4WD	2002 - 2008	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Mitsubishi Outlander	2003 - 2011	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	-	Non Adj.	Fac Adj.	-		- / -
Mitsubishi Precis	1988 - 1993		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Sigma	1989 - 1990		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Tredia	1983 - 1988		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Mitsubishi Van/Wagon	1987 - 1990		X	-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
NISSAN															
Nissan 200SX	1995 - 1998		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan 240SX	1989 - 1998	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Nissan 300ZX	1990 - 1996	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Nissan 350Z	2003 - 2009	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Nissan Altima	1993 - 2001	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Nissan Altima	2002 - 2011	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Nissan Armada 2WD/4WD	2005 - 2011		X	Front Cam Kit	44-820	44-820	68		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Frontier 2WD/4WD	1998 - 2004		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Nissan Frontier 2WD/4WD	2005 - 2011		X	Front Cam Kit	44-820	44-820	68		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Leaf	2011	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	Shim Series	46-1120 SERIES	46-1120 SERIES	81		0.60 / 0.60
Nissan Maxima Sedan/Wagon	1985 - 1994	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Nissan Maxima	1995 - 2011		X	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Muano	2003 - 2011	X		14mm Axis Cam Camber Kit	41-214 41-157[1]	Non Adj.	50 49		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Nissan NX Coupe	1991 - 1993	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
NISSAN															
Nissan Pathfinder 2WD/4WD	1987 - 1995		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Nissan Pathfinder 2WD/4WD	1996 - 2004		X	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Pathfinder 4WD	2005 - 2011		X	Front Cam Kit	44-820	44-820	68		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Pickup 2WD/4WD	1995 - 2000		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Nissan Pulsar	1983		X	Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Pulsar NX	1987 - 1990	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Nissan Quest	1993 - 2002	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Nissan Quest	2004 - 2009	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Nissan Sentra	1982 - 1986		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Sentra	1987 - 1994	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Nissan Sentra	1995 - 2006		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Sentra	2007 - 2011	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1120	46-1120	81		0.60 / 0.60
Nissan Stanza	1982 - 1992	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Nissan Stanza Wagon AWD	1986 - 1988	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Wedge	41-305	Fac Adj.	51		0.30 / -
Nissan Titan 2WD/4WD	2004 - 2011		X	Front Cam Kit	44-820	44-820	68		0.30 / 0.30	-	Non Adj.	Non Adj.	-		- / -
Nissan Van/XE/GXE	1987 - 1988		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Nissan Versa	2007 - 2011	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300	82 84		0.60 / 0.60 -
Nissan Xterra 2WD	2000 - 2005		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
OLDSMOBILE															
Oldsmobile Achieva	1992 - 1995	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Achieva	1996 - 1998	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Alero	1999 - 2004	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-144 41-212	Fac Adj.	49 50		0.30 / - 0.30
Oldsmobile Aurora	1995 - 1999	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Oldsmobile Aurora	2001 - 2003	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1900	Fac Adj.	72		0.80 / -
Oldsmobile Bravada AWD	1991 - 2001		X	- Cam Bolt	Fac Adj. 41-8246	Fac Adj. 41-8246	- 56		- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Oldsmobile Bravada 2WD/4WD	2002 - 2004		X	Cam-Cas Tool	88-8929	88-8929	103		- / -	-	Non Adj.	Non Adj.	-		- / -

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OLDSMOBILE															
Oldsmobile Calais	1985 - 1987	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile All RWD	1975 - 1992		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Oldsmobile Cutlass	1997 - 1999	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-144 41-212	Fac Adj.	49 50		0.30 / - 0.30
Oldsmobile Cutlass Ciera/Cruiser	1986 - 1996	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.60 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Cutlass Supreme	1988 - 1997	X		- Shim Series	Fac Adj. 45-7010[3]	Non Adj.	- 78	88-060	- / - 0.50	Magna Cam 16mm Axis Cam	41-160[1] 41-216	Fac Adj.	49 50	88-8923	0.30 / - 0.30
Oldsmobile Delta 88 Royale FWD	1986 - 1991	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam Shim Series Universal Shim	41-160[1] 46-1300 46-2400	Fac Adj. 46-1300 46-2400	49 82 84	88-050 88-1110 88-343	0.30 / - 0.60 / 0.60 0.60 / 0.60
Oldsmobile Firenza	1982 - 1983	X		Cam Bolt	41-8245	Non Adj.	56		0.40 / -	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Firenza	1984 - 1988	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Intrigue	1998 - 2002	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30
Oldsmobile Eighty-Eight/LSS	1996 - 1999	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam Shim Series Universal Shim	41-160[1] 46-1300 46-2400	Fac Adj.	49 82 84	88-050 88-1110 88-343	0.30 / - 0.60 0.60
Oldsmobile Omega	1980 - 1984	X		Cam Bolt	41-8245	Non Adj.	56		0.30 / -	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Regency	1997 - 1998	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam Shim Series Universal Shim	Fac Adj. 41-160[1] 46-1300 46-2400	Fac Adj. 46-1300 46-2400	- 49 82 84	88-050 88-1110 88-343	- / - 0.30 / 0.60 0.60 / - 0.60
Oldsmobile Silhouette	1990 - 1996	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Silhouette	1997 - 2004	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Silhouette AWD	2002 - 2004	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Oldsmobile Toronado	1966 - 1978		X	- Cam Bolt	Fac Adj. 41-8247	Fac Adj. 41-8247	- 56		- / - 1.00 / 1.00	-	Non Adj.	Non Adj.	-		- / -
Oldsmobile Toronado	1979 - 1985	X		- Cam Bolt	Fac Adj. 41-8247	Fac Adj. 41-8247	- 56		- / - 1.00 / 1.00	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Oldsmobile Toronado/Trofeo	1986 - 1992	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Fac Adj.	49 50		0.30 / - 0.30	Camber Shim	46-1600	Fac Adj.	72		0.60 / -
PLYMOUTH															
Plymouth Acclaim	1989 - 1995	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60

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PLYMOUTH															
Plymouth Breeze	1996 - 2000	X		Ball Joint	41-230	41-230	51		0.90 / 0.90	-	Fac Adj.	Fac Adj.	-		- / -
Plymouth Caravelle	1985 - 1988	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Plymouth Champ	1979 - 1982		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Plymouth Colt	1984 - 1991	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Plymouth Colt	1992 - 1994	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Plymouth Horizon/TC3	1978 - 1990	X		- Cam Bolt	Fac Adj. 41-8248	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Plymouth Laser 2WD	1990 - 1994		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Plymouth Laser AWD	1992 - 1994	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Plymouth Neon	1995 - 2001	X		Magna Cam 14mm Axis Cam	41-157[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	- Wedge	Fac Adj. 41-300	Fac Adj.	- 51		- / - 0.30
Plymouth Prowler	1997 - 2001	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Plymouth Reliant	1981 - 1983	X		- Cam Bolt	Fac Adj. 41-8248	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Plymouth Reliant	1984 - 1989	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Plymouth Scamp	1983	X		- Cam Bolt	Fac Adj. 41-8248	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Plymouth Sundance	1987 - 1994	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Plymouth Traildluster 2WD	1977 - 1981		X	- Cam Bolt	Fac Adj. 41-8243	Fac Adj. 41-8243	- 56		- / - 0.60 / 0.60	-	Non Adj.	Non Adj.	-		- / -
Plymouth Traildluster 4WD	1977 - 1981		X	Bushing Series	44-2460	44-2460	69	88-7090	0.80 / 0.80	-	Non Adj.	Non Adj.	-		- / -
Plymouth Turismo	1983 - 1985	X		- Cam Bolt	Fac Adj. 41-8248	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Plymouth Voyager FWD	1984 - 1995	X		- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1100 46-2200	46-1100 46-2200	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Plymouth Voyager AWD	1991 - 1995		X	- Cam Bolt	Fac Adj. 41-8249	Non Adj.	- 56		- / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Plymouth Voyager AWD	1996 - 2000		X	- Magna Cam 14mm Axis Cam	Fac Adj. 41-157[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Plymouth Voyager FWD	1996 - 2000	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-157[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1120	46-1120	81	88-343 88-4519	0.60 / 0.60
PONTIAC															
Pontiac 6000	1982 - 1991	X		- Cam Bolt	Fac Adj. 41-8245	Non Adj.	- 56		- / - 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Pontiac 6000 STE AWD	1986 - 1991	X		- Cam Bolt	Fac Adj. 41-8245	Non Adj.	- 56		- / - 0.30	- Cam Bolt	Fac Adj. 41-8245	Fac Adj.	- 56		- / - 0.30
Pontiac Astre	1975 - 1977		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Pontiac Aztek	2001 - 2005	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-343	0.60 / 0.60 0.60 / 0.60
Pontiac Aztek AWD	2001 - 2005	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
PONTIAC															
Pontiac Bonneville	1987 - 1999	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam Shim Series	41-160[1] 46-1300	Fac Adj. 46-1300 46-2400	49 82	88-050 88-1110 88-343	0.30 / - 0.60 / 0.60 0.60
Pontiac Bonneville	2000 - 2005	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Fac Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1900	Fac Adj.	72		0.80 / -
Pontiac Fiero	1984 - 1988	X		-	Fac Adj.	Fac Adj.	-		- / -	Cam Bolt	41-8245	Fac Adj.	56		0.30 / -
Pontiac Firebird	1967 - 1981		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Pontiac Firebird	1982 - 1992		X	-	Fac Adj.	Fac Adj.	-	88-8922	- / -	-	Non Adj.	Non Adj.	-		- / -
Pontiac Firebird	1993 - 2002		X	-	Fac Adj.	Fac Adj.	-	88-8925	- / -	-	Non Adj.	Non Adj.	-		- / -
Pontiac Firefly (Canada)	1989 - 2000	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Pontiac G5	2007 - 2010	X		12mm Axis Cam Magna Cam	41-212 41-147[2]	Non Adj.	50 49		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Pontiac G6	2005 - 2010	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Pontiac G8	2008 - 2009	X		14mm Axis Cam Magna Cam	41-214 41-158[1]	Fac Adj.	50 49		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Pontiac Grand Am	1985 - 1995	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Pontiac Grand Am	1996 - 1998	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Pontiac Grand Am	1999 - 2003	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 12mm Axis Cam	Fac Adj. 41-144 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30
Pontiac Grand Am	2004 - 2005	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		0.30 / - - 0.30	- Magna Cam 12mm Axis Cam	Fac Adj. 41-144 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30
Pontiac Grand Prix	1988 - 1996	X		- Shim Series	Fac Adj. 45-7010[3]	Non Adj.	- 78	88-060	- / - 0.50	Magna Cam 16mm Axis Cam	41-160[1] 41-216	Fac Adj.	49 50	88-8923	0.30 / - 0.30
Pontiac Grand Prix	1997 - 2008	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30
Pontiac GTO	2004 - 2006	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Pontiac Sunbird/J2000	1982 - 1994	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Pontiac LeMans	1988 - 1993		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Pontiac Montana AWD	2002 - 2009	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Pontiac Phoenix	1980 - 1984	X		Cam Bolt	41-8245	Non Adj.	56		0.30 / -	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Pontiac Sunburst	1985 - 1988	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60

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PONTIAC															
Pontiac Sunfire	1995 - 2005	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Pontiac Tempest (Canada)	1988 - 1991	X		Magna Cam 16mm Axis Cam	41-160[1] 41-216	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1200 46-2300	46-1200 46-2300	82 84	88-343	0.60 / 0.60 0.60 / 0.60
Pontiac Torrent	2006 - 2009	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	44-775	44-775	67		0.30 / 0.30
Pontiac Trans Am	1990 - 1992		X	-	Fac Adj.	Fac Adj.	-	88-8922	- / -	-	Non Adj.	Non Adj.	-		- / -
Pontiac Trans Sport	1990 - 1996	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Pontiac Trans Am	1993 - 1999		X	-	Fac Adj.	Fac Adj.	-	88-8925	- / -	-	Non Adj.	Non Adj.	-		- / -
Pontiac Trans Sport/Montana SV6	1997 - 1999	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84	88-050 88-1110 88-343	0.60 / 0.60 0.60 / 0.60
Pontiac Vibe	2003 - 2010	X		- Magna Cam 17mm Axis Cam	Fac Adj. 41-151 41-217	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1500	46-1500	71		0.60 / -
PORSCHE															
Porsche 911	1965 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Porsche 924	1977 - 1988	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Porsche 928	1978 - 1995	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Porsche 944	1983 - 1991	X		Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Porsche 968	1992 - 1995	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Porsche Boxster	1997 - 2011	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
RENAULT															
AMC Alliance	1983 - 1986		X	- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Renault Alliance	1983 - 1987		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Renault Encore	1984 - 1986		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
SAAB															
Saab 9-2X	2005 - 2006	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	14mm Axis Cam	41-214	Fac Adj.	50		0.30 / -
Saab 9-3	1999 - 2011		X	12mm Axis Cam	41-212	Non Adj.	50		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Saab 9-5 Sedan/Wagon	1999 - 2009		X	12mm Axis Cam	41-212	Non Adj.	50		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Saab 9-7x	2005 - 2009		X	Cam-Cas Tool	88-8929	88-8929	103		- / -	-	Non Adj.	Non Adj.	-		- / -
Saab 900	1979 - 1993		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Saab 900	1994 - 1998		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Saab 900 Convertible	1994		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -

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SAAB															
Saab 9000	1986 - 1998		X	Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
SATURN															
Saturn Astra	2008 - 2009	X		12mm Axis Cam Magna Cam	41-212 41-147[2]	Non Adj.	50 49		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Saturn Aura	2007 - 2009	X		12mm Axis Cam	41-212	Non Adj.	50		0.30 / -	-	Fac Adj.	Fac Adj.	-		- / -
Saturn Ion	2004 - 2007	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1520	46-1520	71		0.06 / 0.06
Saturn L Series	2000 - 2005	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-2300	Fac Adj.	82 84		0.60 / - 0.60
Saturn GM EV-1	1997 - 2001		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Saturn Outlook	2007 - 2010	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Saturn Relay AWD	2005 - 2007	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Saturn Relay FWD	2005 - 2007	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series Universal Shim	46-1300 46-2400	46-1300 46-2400	82 84		0.60 / 0.60 0.60 / 0.60
Saturn All Models	1991 - 1998	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj.	49 50		0.30 / - 0.30	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj. 46-406	49 50		0.30 / - 0.30 / 0.60
Saturn S Series	1991 - 2002	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Fac Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	46-406	- 49 50		- / - 0.30 0.30
Saturn Vue	2007 - 2009	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-157[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	44-775	44-775	67		0.30 / 0.30
SCION															
Scion tC	2005 - 2011	X		Magna Cam 17mm Axis Cam	41-151 41-217	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Scion xA	2004 - 2006	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1500	46-1500	71		0.60 / -
Scion xB	2004 - 2011	X		Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1500	46-1500	71		0.60 / -
SCION xD	2008 - 2011	X		15mm Axis Cam Magna Cam	41-215 41-149	Non Adj.	50 49		0.30 / - 0.30	Shim Series	46-1500A	46-1500A	-		0.60 / 0.60
STERLING															
Sterling All Models	1987 - 1991	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
SUBARU															
Subaru Baja	2003 - 2006	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Subaru Forester	1998 - 2011	X		- -	Fac Adj. 41-214	Non Adj.	- 50		- / - -	-	Non Adj.	Fac Adj.	-		- / -
Subaru Impreza FWD/AWD	1993 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj.	49 50		0.30 / - 0.30
Subaru WRX	2002 - 2011	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj.	49 50		0.30 / - 0.30
Subaru Justy	1987 - 1994	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -

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SUBARU															
Subaru Legacy 2WD/4WD	1990 - 2002	X		-	Fac Adj.	Non Adj.	-		- / -	Magna Cam Wedge	41-158[1] 41-305	Fac Adj.	49 51		0.30 / - 0.30
Subaru Legacy Outback	1996 - 2008		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Subaru Loyale FWD/AWD	1990 - 1994	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Subaru Outback	2000 - 2011	X		-	Fac Adj.	Non Adj.	-		- / -	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj.	49 50		0.30 / - 0.30
Subaru SVX	1992 - 1997	X		-	Fac Adj.	Non Adj.	-		- / -	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Fac Adj.	49 50		0.30 / - 0.30
Subaru XT	1985 - 1991	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
SUZUKI															
Suzuki Aerio	2002 - 2007	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Suzuki Equator	2009 - 2011		X	Front Cam Kit	44-820	44-820	68		0.30 / -	-	Non Adj.	Non Adj.	-		- / -
Suzuki Esteem	1995 - 2002	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Suzuki Grand Vitara 2WD	1999 - 2011		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Suzuki Samurai 2WD	1985 - 1995		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Suzuki Sidekick 2WD	1989 - 1998		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Suzuki Swift	1989 - 2001	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Suzuki Verona	2004 - 2006	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Suzuki Vitara 2WD	1999 - 2004		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Suzuki X-90 2WD	1996 - 1998		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Suzuki XL-7	2002 - 2006	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Suzuki XL-7	2007 - 2009	X		14mm Axis Cam	41-214	Non Adj.	50		0.30 / -	- -	Fac Adj. 44-775	Fac Adj. 44-775	- 67		- / - 0.30 / 0.30
TOYOTA															
Toyota 4 Runner 2WD/4WD	1984 - 1989		X	- Shim	Fac Adj. CC	Fac Adj.	- -		- / - -	-	Non Adj.	Non Adj.	-		- / -
Toyota 4 Runner 2WD/4WD	1990 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Toyota Avalon	1995 - 2011	X		Magna Cam 17mm Axis Cam	41-151 41-217	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 15mm Axis Cam Shim Series Universal Shim	41-149 41-215 46-1300 46-2400	Fac Adj. 46-1300 46-2400	49 50 82 84	88-343	0.30 / - 0.30 / 0.60 0.60 / 0.60 0.60
Toyota Camry	1983 - 1987	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	45-6001	49 50		0.30 / 0.20 0.30	Magna Cam Wedge	41-147[2] 41-300	Fac Adj.	49 51		0.30 / - 0.30
Toyota Camry	1987 - 1991	X		Magna Cam Wedge	41-151 41-305	45-6001	49 51		0.30 / 0.20 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30
Toyota Camry Alltrac	1988 - 1991	X		Magna Cam 17mm Axis Cam	41-151 41-217	Fac Adj.	49 50		0.30 / - 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30
Toyota Camry/Solara	1992 - 2011	X		- Magna Cam 17mm Axis Cam	Fac Adj. 41-151 41-217	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30

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TOYOTA

		FRONT WHEEL ALIGNMENT								REAR WHEEL ALIGNMENT					
MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
TOYOTA															
Toyota Celica FWD	1986 - 1989	X		Magna Cam Wedge	41-149 41-301	Non Adj.	49 51		0.30 / - 0.30	Magna Cam Wedge	41-149 41-301	Fac Adj.	49 51		0.30 / - 0.30
Toyota Celica Alltrac	1988 - 1989	X		Magna Cam 15mm Axis Cam	41-149 41-215	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Toyota Celica	1990 - 1993	X		- Magna Cam Wedge	Fac Adj. 41-149 41-305	Non Adj.	- 49 51		- / - 0.30 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30
Toyota Celica Alltrac	1990 - 1993		X	-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Toyota Celica/ST/GT/GT-S	1994 - 2005	X		Magna Cam 15mm Axis Cam	41-149 41-215	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30
Toyota Celica GT/GT-S	2000 - 2005	X		- Magna Cam 15mm Axis Cam	Fac Adj. 41-149 41-215	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Toyota Corolla FWD	1984 - 1987	X		Magna Cam Wedge	41-147[2] 41-300	Non Adj.	49 51		0.30 / - 0.30	Magna Cam Wedge Shim Series Universal Shim	41-147[2] 41-300 46-1300 46-2400	Fac Adj. 46-1300 46-2400	49 51 82 84	88-343	0.30 / - 0.30 / 0.60 0.60 / 0.60 0.60
Toyota Corolla FX-16	1987 - 1988	X		- Magna Cam Wedge	Fac Adj. 41-147[2] 41-300	Non Adj.	- 49 51		- / - 0.30 0.30	Magna Cam Wedge Shim Series Universal Shim	41-147[2] 41-300 46-1300 46-2400	46-1300 46-2400	49 51 82 84	88-343	0.30 / 0.60 0.30 / 0.60 0.60 0.60
Toyota Corolla Alltrac	1988 - 1992		X	Magna Cam Wedge	41-149 41-305	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Toyota Corolla FWD	1988 - 1991	X		Magna Cam Wedge	41-149 41-305	Non Adj.	49 51		0.30 / - 0.30	Magna Cam Wedge Shim Series Universal Shim	41-147[2] 41-300 46-1300 46-2400	Fac Adj.	49 51 82 84	88-343	0.30 / - 0.30 0.60 0.60
Toyota Corolla	1991 - 1992	X		-	Non Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Toyota Corolla	1993 - 2002	X		- Magna Cam 15mm Axis Cam	Fac Adj. 41-149 41-215	Non Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30
Toyota Corolla	2003 - 2011	X		- Magna Cam 17mm Axis Cam	Fac Adj. 41-151 41-217	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1500	46-1500	71		0.60 / -
Toyota Cressida	1989 - 1992	X		-	Non Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Toyota Echo	2000 - 2005		X	- Magna Cam 15mm Axis Cam	Fac Adj. 41-149 41-215	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Non Adj.	-		- / -
Toyota Highlander 2WD/4WD	2001 - 2011	X		- Magna Cam 17mm Axis Cam	Fac Adj. 41-149 41-217	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam 17mm Axis Cam	41-151 41-217	Fac Adj.	49 50		0.30 / - 0.30
Toyota Land Cruiser	1979 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Toyota Matrix AWD	2003 - 2011		X	- Magna Cam 17mm Axis Cam	Fac Adj. 41-151 41-217	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Toyota Matrix FWD	2003 - 2011	X		- Magna Cam 17mm Axis Cam	Fac Adj. 41-151 41-217	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1500	46-1500	71		0.60 / -
Toyota MR-2	1985 - 1995	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30
Toyota MR-2	1991 - 1995	X		Magna Cam Wedge	41-149 41-305	Fac Adj.	49 51		0.30 / - 0.30	Wedge	41-305	Fac Adj.	51		0.30 / -
Toyota MR2 Spyder	2000 - 2006	X		Magna Cam 15mm Axis Cam	41-149 41-215	Non Adj.	49 50		0.30 / - 0.30	Magna Cam 15mm Axis Cam	41-149 41-215	Fac Adj.	49 50		0.30 / - 0.30
Toyota Paseo	1992 - 1998		X	Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -

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MODEL	YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL
TOYOTA															
Toyota Pickup 4WD	1969 - 1995		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Toyota Pickup/cab and chassis 2WD	1973 - 1995		X	- Shim	Fac Adj. CC	Fac Adj.	- -		- / - -	-	Non Adj.	Non Adj.	-		- / -
Toyota Previa 2WD/4WD	1991 - 1997		X	Magna Cam Wedge	41-151 41-305	Non Adj.	49 51		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Toyota Prius	2005 - 2009	X		- Magna Cam 15mm Axis Cam	Fac Adj. 41-149 41-215	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series	46-1500	46-1500	71		0.60 / -
Toyota Prius	2010 - 2011	X		17mm Axis Cam Magna Cam	41-217 41-151	Non Adj.	50 49		0.30 / - 0.30	Shim Series	46-1500 SERIES	46-1500 SERIES	71		0.60 / 0.60
Toyota RAV-4 2WD/4WD	1996 - 2011	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Toyota Sequoia 2WD/4WD	2001 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Toyota Sienna 2WD/4WD	1998 - 2011	X		Magna Cam 17mm Axis Cam	41-151 41-217	Non Adj.	49 50		0.30 / - 0.30	Shim Series	46-1120	46-1120	81		0.60 / -
Toyota Supra	1987 - 1998	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Toyota T100 2WD	1993 - 1998		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Toyota T100 4WD	1993 - 1998		X	- Shim	Fac Adj. CC	Fac Adj. CC	- -		- / - - / -	-	Non Adj.	Non Adj.	-		- / -
Toyota Tacoma 2WD/4WD	1995 - 2010		X	Shim	CC	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Toyota Tercel (Except S/W)	1983 - 1999	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Fac Adj.	- 49 50		- / - 0.30 0.30	Magna Cam Shim Series Universal Shim Wedge	41-147[2] 46-1200 46-2300 41-300	Fac Adj. 46-1200 46-2300	49 82 84 51	88-343	0.30 / - 0.60 / 0.60 0.60 / 0.60 0.30
Toyota Tercel (Except S/W)	1987 - 1998		X	Magna Cam 15mm Axis Cam	41-149 41-215	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Toyota Tundra 2WD/4WD	2000 - 2011		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Toyota Van 2WD/4WD	1984 - 1989		X	-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Toyota Yaris	2007 - 2011	X		15mm Axis Cam Magna Cam	41-215 41-149	Non Adj.	50 49		0.30 / - 0.30	Shim Series	46-1500	46-1500	71		0.60 / -
VOLKSWAGEN															
Volkswagen Beetle	1998 - 2010	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Volkswagen Cabriolet	1985 - 1993	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Corrado	1990 - 1995	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Dasher	1974 - 1981	X		-	Fac Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Eurovan	1992 - 2009	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Volkswagen Fox	1987 - 1993	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Golf & GTI	1985 - 2011	X		- Magna Cam 12mm Axis Cam Performance Kit	Fac Adj. 41-147[2] 41-212 41-1450	Non Adj.	- 49 50 54		- / - 0.30 0.30 -	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Golf A4	1999 - 2010	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -

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VOLKSWAGEN															
Volkswagen Jetta	1980 - 1999	X		- Magna Cam 12mm Axis Cam Performance Kit	Fac Adj. 41-147[2] 41-212 41-1450	Non Adj.	- 49 50 54		- / - 0.30 0.30 -	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Jetta A4	1999 - 2010	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Volkswagen Passat	1990 - 2010	X		- Magna Cam 12mm Axis Cam Performance Kit	Fac Adj. 41-147[2] 41-212 41-1450	Non Adj.	- 49 50 54		- / - 0.30 0.30 -	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Passat A4	1998 - 2010	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Volkswagen Passat 4-Motion AWD	2000 - 2010	X		-	Fac Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Volkswagen Quantum	1982 - 1988	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Rabbit	1975 - 2009	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Rabbit Pickup	1980 - 1983	X		-	Fac Adj.	Non Adj.	-		- / -	Shim Series Universal Shim	46-1000 46-2100	46-1000 46-2100	81 84	88-343	0.60 / 0.60 0.60 / 0.60
Volkswagen Scirocco	1975 - 1988	X		- Magna Cam Wedge	Fac Adj. 41-147[2] 41-300	Non Adj.	- 49 51		- / - 0.30 0.30	Shim Series	46-1000	46-1000 46-2100	81	88-343	0.60 / 0.60 0.60
Volkswagen 4WD Touareg	2004 - 2011	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Volkswagen Eurovan/Vanagon	1980 - 1991	X		-	Fac Adj.	Fac Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
VOLVO															
Volvo 850 FWD/AWD	1993 - 2010	X		- Magna Cam 12mm Axis Cam	Fac Adj. 41-147[2] 41-212	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Volvo 940/960 w/Rear Multilink	1991 - 1994	X		-	Non Adj.	Non Adj.	-		- / -	-	Fac Adj.	Fac Adj.	-		- / -
Volvo 940/960 w/o Multilink	1991 - 1995		X	-	Non Adj.	Fac Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Volvo 940/960 W/Mink Susp	1995	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -
Volvo C30	2008 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	Rear Arm	46-2188	Fac Adj.	86		0.50 / -
Volvo C70/S70/V70	1998 - 2010	X		- Magna Cam 14mm Axis Cam	Fac Adj. 41-158[1] 41-214	Non Adj.	- 49 50		- / - 0.30 0.30	-	Non Adj.	Fac Adj.	-		- / -
Volvo S40/V40	2000 - 2004	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Non Adj.	49 50		0.30 / - 0.30	-	Fac Adj.	Fac Adj.	-		- / -
Volvo S40	2005 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	Rear Arm	46-2188	Fac Adj.	86		0.50 / -
Volvo S60/AWD	2001 - 2009	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Non Adj.	-		- / -
Volvo S80	1999 - 2010		X	Magna Cam 14mm Axis Cam	41-158[1] 41-214	Non Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Non Adj.	-		- / -
Volvo S90/V90	1998	X		Magna Cam 12mm Axis Cam	41-147[2] 41-212	Fac Adj.	49 50		0.30 / - 0.30	-	Non Adj.	Fac Adj.	-		- / -
Volvo V50	2005 - 2011	X		-	Non Adj.	Non Adj.	-		- / -	Rear Arm	46-2188	Fac Adj.	86		0.50 / -
Volvo XC90	2003 - 2011	X		-	Fac Adj.	Non Adj.	-		- / -	-	Non Adj.	Fac Adj.	-		- / -

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CAMBER ADJUSTING "MAGNA CAM" BOLT KITS

The fast and easy alternative to adjust camber on vehicles utilizing standard 2-bolt (upper and lower) strut-to-knuckle mounting bolt design. This unique design incorporates an offset internal sleeve working in conjunction with a full-size, high-strength OE-diameter bolt (with matching internal offset), which allows camber to be increased or decreased by a simple turn of the bolt. Magna Cam allows the technician to accurately adjust camber with weight of vehicle on front wheels.

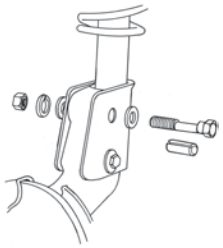
Adjustment Range		±1.75°	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Front Wheel/Rear Wheel**	

12mm 12.9 High-Strength Bolts

41-144 *Aveo, Alero, Cutlass, Grand Am*

41-146 *Ford, Hyundai, Mazda*

41-147 *Chevrolet, Dodge, Ford, Hyundai, Isuzu, Mazda, Mercury, Mitsubishi, Nissan, Plymouth, Pontiac, Porsche, Saab, Subaru, Toyota, Volkswagen w/12mm strut mount bolts*



15mm 10.9 High-Strength Bolts

41-149 *Lexus, Toyota w/15mm strut mount bolts*

17mm 10.9 High-Strength Bolts

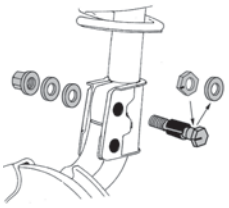
41-151 *Lexus, Toyota w/17mm strut mount bolts*

14mm 12.9 High-Strength Bolts

41-157

Chrysler, Dodge, Plymouth vans and mid-size vehicles

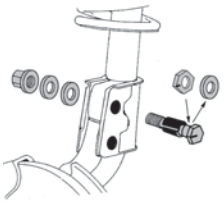
41-158 *Buick, Chevrolet, Infiniti, Oldsmobile, Pontiac, Saturn, Subaru, Volvo w/14mm strut mount bolts*



16mm 10.9 High-Strength Bolts

41-159

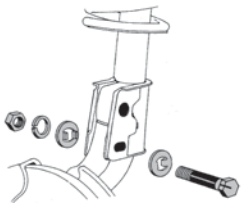
Chrysler, Mitsubishi, Honda, Acura w/16mm strut mount bolts



16mm 10.9 High-Strength Bolts

41-160

Buick, Cadillac, Chevrolet, Chrysler, Dodge, Oldsmobile, Pontiac w/16mm strut mount bolts



41-140A
MAGNA CAM ASSORTMENT

Part	Qty	Part	Qty	Part	Qty	Part	Qty
41-147	2	41-149	2	41-151	2	41-157	2
41-158	2	41-160	2	Box	1		

41-180
HONDA CIVIC CAMBER ADJUSTING CRANK BOLT

This crank bolt is designed for Civics with non-slotted struts. Allows for future camber adjustments.

2002 Acura RSX
2005-2011 Ford Mustang,
2001-2002 Honda Civic

Adjustment Range		±1.75°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

AXIS CAM
Camber Adjusting Bolt System

- Makes non-adjustable vehicles fully adjustable for camber
- Unique design allows fast and easy "on-vehicle" adjustments
- Works with OE bolt system. No cutting, drilling or modifications of any kind
- Makes vehicle permanently adjustable for camber
- Bolt head marked + and - for easy orientation
- All sizes made from grade 12.9 high-strength steel

*Just 5 part numbers fit all vehicles with strut-to-knuckle mounting bolts

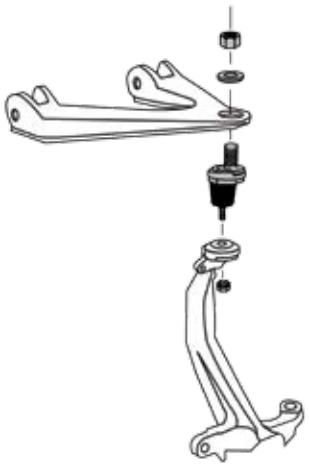
Size	Make/Model	Part Number
12mm	*Chevrolet, Ford, Saab, Toyota, Nissan, Volvo, Cadillac, Hyundai, Isuzu*	**41-212**
14mm	*Acura, Dodge, Honda, Saturn, Toyota, Infinty, Plymouth, Mitsubishi, Chrysler 200*	**41-214**
15mm	*Geo, Lexus, Toyota*	**41-215**
16mm	*Acura, Buick, Chevrolet, Honda, Lincoln, Mercury, Ford, Dodge, Pontiac*	**41-216**
17mm	*Lexus, Toyota*	**41-217**

Adjustment Range		±1.75	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

41-210A
AXIS CAM ASSORTMENT

Part	Qty	Part	Qty	Part	Qty	Part	Qty
41-212	4	41-215	2	41-217	2	41-214	4
41-216	2	Box	1				

See Application Guide, pages 10-48, for specific models and years



CAMBER/CASTER ADJUSTABLE BALL JOINT

These ball joints provide a fast, easy and adjustable solution to the problem of non-adjustable front suspensions found on many of today's most popular vehicles.

- Unique design allows fast and easy "on-vehicle" replacement
- Future adjustments are easily made
- Adjustable offset design means fewer part numbers per application.

See page 91 for adjusting wrench #88-1304

Part Number	Make/Model	Range
41-229 upper	*Chrysler Cirrus & Sebring convertible 1995-2010* *Dodge Stratus 1995-2006* *Plymouth Breeze 1996-2000*	**± .5°**
41-230 upper		**± 1.0°**
41-232 lower	*Dodge Magnum 2005-2008* *Dodge Charger 2006-2011* *Dodge Challenger 4x2 2005-2011* *Chrysler 300C 4x2 2005-2011*	**± .75°**
41-236 upper	*Ford Fusion 2006 & Newer Mazda 6 Sedan 2003 & Newer Lincoln Zephyr/MKZ 2006* *Mercury Milan 2006-2010*	**± 1.0°**

41-300
DOMESTIC/IMPORT CAR CAMBER WEDGE KIT

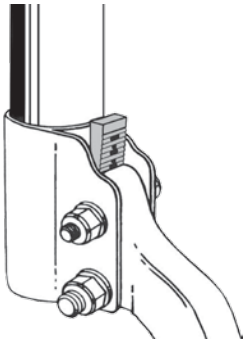
These kits are a real time-saver when additional camber is needed on vehicles with two bolt strut flange mounting.

Adjustment Range		**+ 2°**	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Front Wheel**	

41-301
Vehicles with 14mm strut-to-knuckle mounting bolts

41-305
Vehicles with 16mm strut-to-knuckle mounting bolts

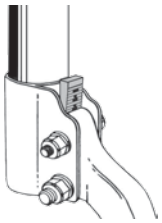
41-312
Vehicles with 12mm strut-to-knuckle mounting bolts



Adjustment Range		**+ 2°**	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Front Wheel**	

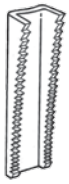
41-307
1979-2004 FORD MUSTANG WEDGE KIT

There are many instances where the factory camber adjustment does not give enough positive camber change. This kit can be used by itself or with the factory adjustment.

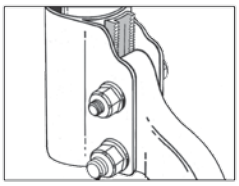


Adjustment Range		+ 1.5°	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Front Wheel**	

41-308
FORD ESCAPE FRONT CAMBER ADJUSTING WEDGE KIT



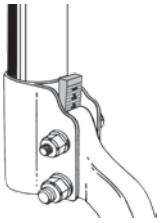
2001-2011 Ford Escape
2001-2011 Mazda Tribute



Adjustment Range		+ 1.5°	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Front Wheel**	

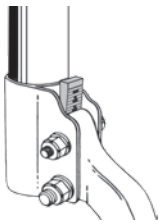
41-310
FORD/LINCOLN CAMBER ADJUSTING WEDGE KIT

1978-1981 Ford Fairmont
1981-1982 Ford Granada
1980-1988 Ford Thunderbird
1982-1987 Lincoln Continental
1984-1992 Lincoln Mark VII



Adjustment Range		+ 2°	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Front Wheel**	

41-314
2005-2011 FORD MUSTANG CAMBER ADJUSTING WEDGE KIT



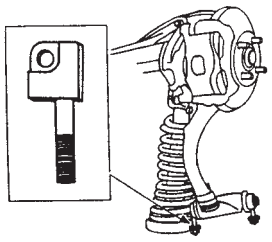
Adjustment Range		+ 1.5°	
Quantity	**Kit**	Sides Adjusted	**2**
Product Type		**Front Wheel**	

See Application Guide, pages 10-48, for specific models and years

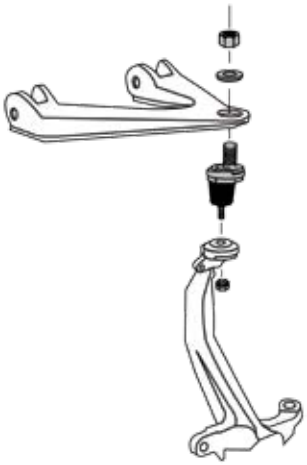
41-520 SERIES

1986-89 HONDA ACCORD CAMBER ADJUSTING CAM STUDS

Replaces OE forward upper control arm mounting stud. Will fit either side of vehicle. Easy to install, predictable results!



41-521	**.25°**	**41-522**	**.50°**	**41-523**	**.75°**	**41-524**	**1.0°**	**41-525**	**1.25°**	**41-526**	**1.5°**
41-520A	**.25° - 1.5°** Assortment - 1 each size stud w/locking nuts										



CAMBER/CASTER ADJUSTABLE UPPER BALL JOINT

These ball joints provide a fast, easy and adjustable solution to the problem of non-adjustable front suspensions found on many of today's most popular vehicles.

- Unique design allows fast and easy "on-vehicle" replacement
- Future adjustments are easily made
- Adjustable offset design means fewer part numbers per application.

See page 91 for adjusting wrench #88-1304

Part Number	Make/Model	Range
41-529 **41-531**	*Honda/Acura Many models, see application guide, Pages 10-48 for specific vehicle*	± .5°
41-530 **41-532**	*Honda/Acura Many models, see application guide, Pages 10-48 for specific vehicle*	± 1.0°
41-550	*Mitsubishi Eclipse (FWD, AWD), Galant, Chrysler Sebring Coupe, Dodge Avenger (FWD, AWD) Eagle Talon (FWD, AWD) Hyundai Sonata*	± 1.0°

XTRARANGE

FULLY ADJUSTABLE BALL JOINT ASSEMBLIES FOR CAMBER AND CASTER

The perfect solution for lowered vehicles with extreme camber/caster correction needs.

41-553
Mitsubishi, Chrysler, Dodge

41-560, 41-561
Honda, Acura

Adjustment Range		+1° to +3°	
Quantity	Each	Sides Adjusted	1
Product Type		Performance	

MAGNA CAM DOUBLE ECCENTRIC BOLT MCPHEARSON STRUT SUSPENSION

The perfect solution for lowered vehicles with extreme camber correction needs.

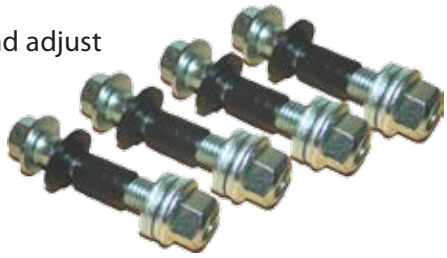
Fast Simply replace both strut mounting bolts with Magna Cam and adjust

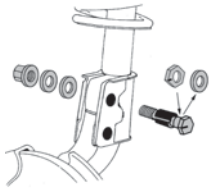
Easy No cutting, drilling or modifications of any kind

Economical Easy installtion saves time and money

Accurate Camber can be adjusted to exact specifications (while weight is on front wheels) with the turn of a wrench

Versatile Fits either right or left side, front or rear of vehicles





41-1450	12mm	**41-1510**	17mm
41-1460	12mm	**41-1570**	14mm
41-1470	12mm	**41-1580**	14mm
41-1490	15mm	**41-1590**	16mm

XTRARANGE

Adjustment Range		±2.5°	
Quantity	4	Sides Adjusted	1
Product Type		Performance	

41-2001
1998-2004 DODGE/CHRYSLER "LH" MODEL REPLACEMENT SLEEVE

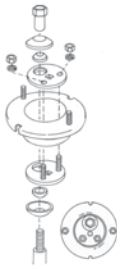
This adjustable sleeve is designed to replace the knurled adjusting sleeve, and can be adjusted with a hex wrench. The sleeve is recommended when the existing sleeve has been damaged or if the tie rod end is being replaced, so adjustments can be made more easily.

Quantity	Each	Sides Adjusted	1
Product Type		Front Wheel	

See Application Guide, pages 10-48, for specific models and years

41-4601
ESCORT/TEMPO ADJUSTABLE CAMBER/CASTER CORRECTION KIT FOR 4WD VEHICLES

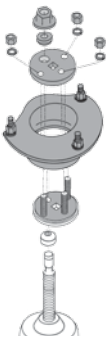
This kit features fully rotatable discs that are housed in a specially designed upper mounted strut plate. Rotation of these discs allows controlled adjustment of a wide range of caster, camber or combination.



1986- 1990 Ford Escort
1986-1988 Ford EXP
1984-1994 Ford Tempo
1987-1992 Ford Tempo AWD
1986-1987 Mercury Lynx
1984-1994 Mercury Topaz

Adjustment Range		+2.5°	
Quantity	Kit	Sides Adjusted	2
Product Type		Front Wheel	

TAURUS/ SABLE FRONT CAMBER PLATES



41-4603
Taurus/Sable up to 1990

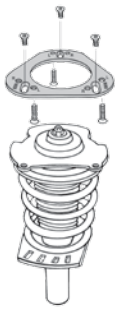
41-4605
Taurus/Sable 1991 to 1995

US Patent # 4,946,188

Adjustment Range		+1.25°	
Quantity	Kit	Sides Adjusted	2
Product Type		Front Wheel	

TAURUS SABLE WINDSTAR FRONT CAMBER PLATES

This kit allows accurate adjustments in .25° increments, installs in just minutes, is adjustable for future alignments, helps restore original ride height, and can be used on either side of vehicle.



41-4607
1996-2005 Taurus/Sable

41-4609
1995-2003 Ford Windstar
2004-2007 Ford Freestar
2004-2007 Mercury Mountaineer

US Patent # 6,257,601

Adjustment Range		± 1.0°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

41-4611
FORD FOCUS & TRANSIT FRONT CAMBER PLATE

- Accurate adjustment in .25° increments — no guesswork
- Installs in minutes
- Adjustable for future alignments

2000-2013 Ford Focus
2010-2011 Ford Transit Connect

US Patent # 6,257,601

Adjustment Range		± 1.0°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

41-8243

CHRYSLER/FORD CAMBER ADJUSTING CAM BOLT

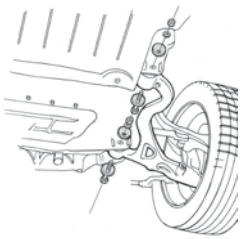
1963-1982 Chevrolet Corvette
1979-1983 Dodge B100/200/300/350
1965-1976 Dodge Dart
1977-1993 Dodge Ramcharger
1975-1980 Ford Granada
1977-1980 Lincoln Versailles
1977-1981 Plymouth Trailduster

Adjustment Range		± 2.25°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

41-8244

LINCOLN/JAGUAR FRONT CAMBER/CASTER CAM BOLT

2002-2005 Ford Thunderbird
2000-2008 Jaguar S
2000-2006 Lincoln LS



Adjustment Range		± 1.5° camber ± 2° caster	
Quantity	4	Sides Adjusted	2
Product Type		Front Wheel	

GM CAMBER ADJUSTING CAM BOLT KIT

41-8245

Mid-size Buick, Chevrolet, Oldsmobile, Pontiac

41-8246

GM S-10 & S-15 Pickup, Jimmy & Blazer

41-8247

Riviera, Toronado, Eldorado & Seville

Adjustment Range		± 2.25°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

CHRYSLER CAMBER ADJUSTING CAM BOLT KIT

41-8248

1978-1990 Dodge Omni
1982-1984 Dodge Rampage
1978-1990 Plymouth Horizon
1981-1983 Plymouth Reliant
1983 Plymouth Scamp
1983-1985 Plymouth Turismo

41-8249

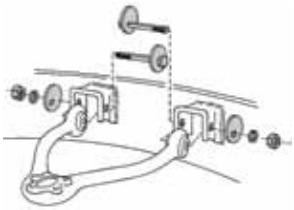
1984 & Newer FWD (except 1978-90 Omni & Horizon)

Adjustment Range		± 2.25°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

See Application Guide, pages 10-48, for specific models and years

41-8250
CHEVROLET & GMC TRUCK CAM BOLT
Adjust camber, caster, or both.

1988-2000 Chevrolet & GMC 1/2-, 3/4-, and 1-ton 4WD &2WD Pick-Ups
1992-2000 Suburban



Adjustment Range		± 2.25°	
Quantity	4	Sides Adjusted	2
Product Type		Front Wheel	

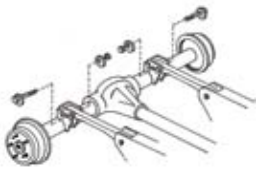
41-8251
GM LIGHT TRUCK REPLACEMENT CAM BOLT WITH QUICK CAMS

Northstar GM replacement bolt kit with Quick Cams is a direct replacement and will restore the factory adjustment. On many models this kit will greatly improve accessibility for easy adjustment.

2000-2011 Chevrolet Tahoe
2003-2011 Chevrolet Express Van
1999-2011 Chevrolet Silverado
2000-2011 Chevrolet Suburban 1500
2003-2009 GMC Envoy
1999-2011 GMC Sierra
2000-2011 Yukon XL 2WD
2003-2009 Hummer H2

Adjustment Range		± 1.5°	
Quantity	4	Sides Adjusted	2
Product Type		Front Wheel	

41-8255
JEEP WRANGLER TJ REAR DIFFERENTIAL CAM BOLT



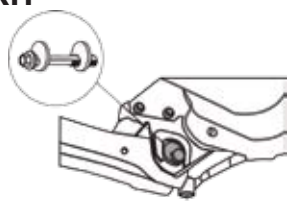
- Accurately adjusts and maintains proper drive line angle
- Required for vehicles where lift kits have been installed

1997-2006 Jeep Wrangler TJ

Adjustment Range		± 2°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

41-8256
JEEP WRANGLER CASTER/ PINION CAM BOLT KIT

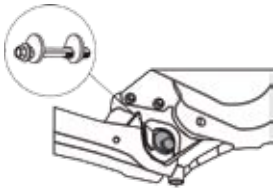
Makes vehicle fully adjustable for caster and pinion angle.



1997-2006 Wrangler TJs
1993-1998 Grand Cherokee
1994-1998 Ram Trucks (36mm cams)

Adjustment Range		± 3°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

41-8257
2007 & NEWER JEEP WRANGLER JK REAR PINION & FRONT CASTER AND PINION ANGLE ADJUSTER



Adjustment Range		± 3°	
Quantity	Pair	Sides Adjusted	2
Product Type		Front Wheel	

41-8259
CHRYSLER 300C/MAGNUM CAMBER/CASTER BOLT

Replaces original "straight" inner bolt on lower control arm.

2004-2011 Chrysler 300C
2008-2011 Dodge Challenger
2006-2011 Dodge Charger 2WD
2005-2008 Dodge Magnum 4WD

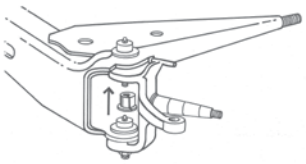
Also available: **41-8259-2**
Set of 2, adjusts both sides

Adjustment Range		±0.3°	
Quantity	Each	Sides Adjusted	1
Product Type		Front Wheel	

2WD FORD CAMBER ADJUSTMENT BUSHING

Adjust camber either positive or negative, with easy-to-adjust "Hex-Head" camber bushing.

1984-1988 Bronco II
1982-1986 F100/F150
1981-1986 F250/F350
1983-1988 Ranger

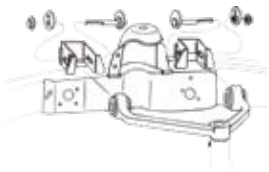


42-101 .25°	**42-102** .50°	**42-103** .75°
42-104 1.0°	**42-105** 1.25°	**42-106** 1.5°
42-107 1.75°	**42-108** 2.0°	
42-100A Assortment - 2 each size		

Quantity	Each	Sides Adjusted	1
Product Type		Light Truck	

42-777
FORD LIGHT TRUCK QUICK-CAMS

Quick-Cams allow adjustment of CAMBER/CASTER in just minutes. Works with OE bolts, cutting installation time by 75% when compared to cam bolt kits! Quick adjustment feature allows fast, easy and exact settings



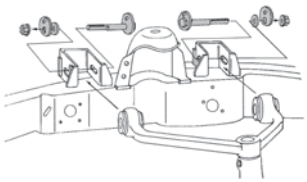
1997-2003 Ford F150 Supercrew 4WD
1997-2002 Expedition & Lincoln Navigator
1997-2003 Ford F150/F250 2WD/4WD
2002-2003 Lincoln Blackwood 2WD/4WD

Adjustment Range		± 2.5°	
Quantity	Pair	Sides Adjusted	1
Product Type		Light Truck	

See Application Guide, pages 10-48, for specific models and years

42-778
FORD LIGHT TRUCK CAM BOLT KIT

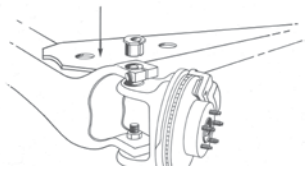
Replaces factory non-adjustable system.



1997-2003 Ford F150 Supercrew 4WD
1997-2002 Expedition & Lincoln Navigator
1997-2003 Ford F150/F250 2WD/4WD
2002-2003 Lincoln Blackwood 2WD/4WD

Also available: **41-8259-2** Set of 4, adjusts both sides

Adjustment Range		± 2.5°	
Quantity	Pair	Sides Adjusted	1
Product Type		Light Truck	



42-950
CAMBER/CASTERADJUSTMENTBUSHING

Adjust Camber/Caster or a combination of both with these easy-to-adjust "Hex-Head" bushings.

NOTE: Not intended for use on E250/350 models with modified chassis/suspension.

Part	2WD	4WD	Part	2WD	4WD
42-949	0°	0°	42-951	.25°	.25°
42-952	.5°	3/8°	42-953	.75°	.5°
42-954	1.0°	.75°	42-955	1.25°	7/8°
42-956	1.5°	1.0°	42-957	1.75°	1.25°
42-958	2.0°	1.5°	42-959	2.25°	1.75°
42-960	2.5°	2.0°	*1 per package*		
XTRARANGE For positive change only on 2WD applications. On 4WD applications, be sure to check for clearance when installed in negative position					
42-961	2.75°	2.25°	42-962	3.0°	2.5°
42-963	3.25°	2.75°	42-964	3.5°	3.0°

1989-1990 Ford Bronco II 2WD
1990 Ford Bronco II 4WD
1992-2011 Ford E150/E250/E350/E450 2WD
2000-2005 Ford Excursion 2WD
1991-1994 Ford Explorer 2WD/4WD
1987-1996 Ford F150 2WD
1992-1998 Ford F250/F350 2WD
1997-2011 Ford F250/F350/F450/F550 Super Duty (TIB) 2WD
1989-1991 Ford Ranger 2WD
1992-1997 Ford Ranger 2WD/4WD
1987-1991 Ford Truck F250/F350 2WD
1994-1997 Mazda B Series P/U 2WD/4WD
1991-1994 Mazda Navajo 2WD/4WD

42-950A
CAMBER/CASTER ADJUSTMENT BUSHING ASSORTMENT

Contains 2 each size bushing 42-949 through 42-960

42-970

PART #s/DEGREES:

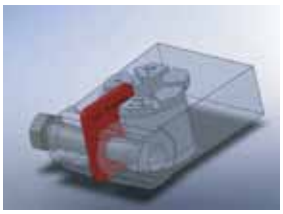
42-970	**(0°)**	**42-978**	**(2°)**
42-972	**(1/2°)**	**42-980**	**(2.5°)**
42-974	**(1°)**	**42-982**	**(3°)**
42-976	**(1.5°)**		

Patent Pending

"SUPERLOK" ALIGNMENT BUSHING RETENTION SYSTEM

New alignment bushing with indexing slots and locking plate to prevent movement or loss of unsecured "pinchbolt" alignment bushing on **modified commercial chassis & recreational/ commercial applications**

1992-2011 Ford E150/E250/E350/E450 2WD

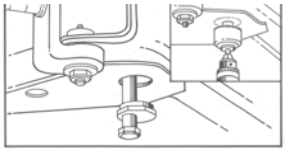


42-4434

FORD CASTER ADJUSTING CAMS

42-4391	*1992-97 Ranger, F-150*
42-4392	*1992-97 E-150, E-250, F-250, F-350*
42-4411	*1980-91 F-150*
42-4412	*1980-91 E-250 w/o sway bar, E-350, 1981-1986 F250/F350*
42-4413	*1980-91 E-150 w/sway bar*

88-2228 1-1/4" drill bit is necessary for installation

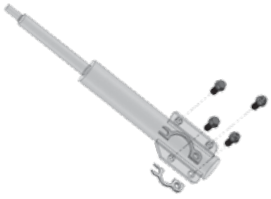


Adjustment Range		± 4°	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Light Truck**	

42-4431
42-4434
SPRINTER SHIM KIT

Makes non-adjustable vehicles fully adjustable for camber.

2002-2006 Dodge Sprinter
2002-2006 Freightliner Sprinter
2004-2008 Mercedes-Benz Sprinter



Adjustment Range		**42-4431 +1°, 42-4434 +2°**	
Quantity	**Pair**	Sides Adjusted	**1**
Product Type		**Light Truck**	

See Application Guide, pages 10-48, for specific models and years

43-320A
HEAVY-DUTY TRUCK ALIGNMENT SHIM ASSORTMENT

Freightliner, IHC, Kenworth, Peterbilt, Volvo White & Hendrickson Walking Beam

Assortment includes

6 each size of all H.D. Tandem shim
2 each size Kenworth spacers
Heavy-duty metal storage case

HEAVY-DUTY TRUCK TANDEM ALIGNMENT SHIMS

Wilson Tandem shim for Hutchins suspension

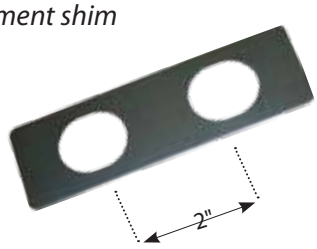
43-408 1/32"
43-409 1/16"
43-410 1/8"

12 pieces per package

HEAVY-DUTY TRUCK TANDEM ALIGNMENT SHIMS

Peterbilt air leaf adjustment shim

43-411 1/32"
43-412 1/16"
43-413 1/8"

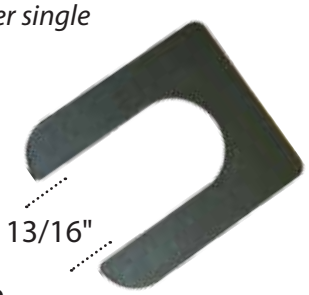


12 pieces per package

HEAVY-DUTY TRUCK TANDEM ALIGNMENT SHIMS

1990 & newer Freightliner single slot adjustment shim

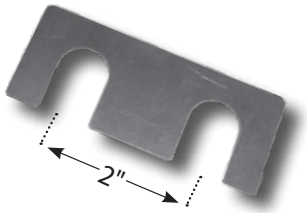
43-415 1/32"
43-416 1/16"
43-417 1/8"



12 pieces per package

FREIGHTLINER DOUBLE SLOT ADJUSTMENT SHIMS

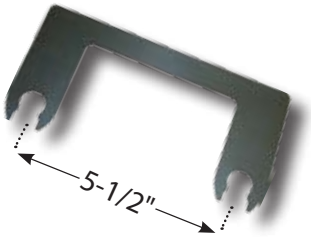
43-421 1/32"
43-422 1/16"
43-423 1/8"



12 pieces per package

FREIGHTLINER AIR GLIDE ADJUSTMENT SHIMS

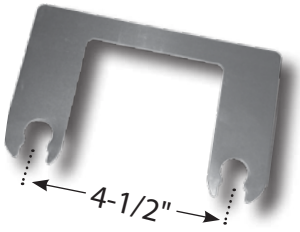
43-425 1/32"
43-426 1/16"
43-427 1/8"



12 pieces per package

VOLVO/WHITE ADJUSTMENT SHIMS

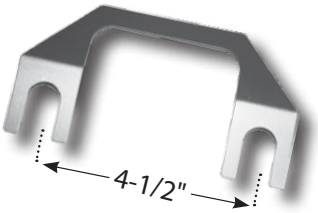
43-431 1/32"
43-432 1/16"
43-433 1/8"



12 pieces per package

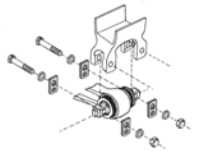
IHC TORQUE ARM ADJUSTMENT SHIM

43-441	1/32"
43-442	1/16"
43-443	1/8"



12 pieces per package

43-447 HENDRICKSON ADJUSTABLE WALKING BEAM SHIM KIT



Includes 2 5-Piece kits. Each kit contains 2 of 1/8", 1 of 1/16", 2 of 1/32"

HEAVY-DUTY TRUCK TANDEM ALIGNMENT SHIMS

Kenworth air glide 8-Bagger adjustment spacers

43-548	1/32"	43-549	1/16"	43-550	1/8"
43-551	1/4"	43-552	1/2"	43-553	3/4"
43-554	1"	6 shims per package			

FREIGHTLINER TORQUE ARM SHIMS

43-621	1/32"
43-622	1/16"
43-623	1/8"

12 pieces per package

PETERBILT/KENWORTH TANDEM AXLE SHIMS

43-641	1/32"
43-642	1/16"
43-643	1/8"

12 pieces per package

PETERBILT/KENWORTH LOW AIR SHIMS

43-645	1/32"
43-646	1/16"
43-647	1/8"

12 pieces per package

INTERNATIONAL TORQUE ARM SHIMS

43-651	1/32"
43-652	1/16"
43-653	1/8"

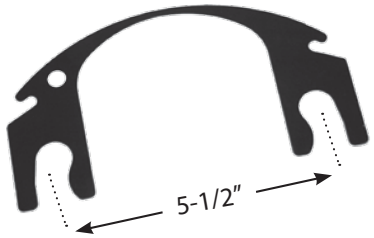
12 pieces per package

HENDRICKSON (HTB) TORQUE ARM SHIM

For 2007-Up International & Spartan HTB-400 Suspension

43-661	1/32"
43-662	1/16"
43-663	1/8"

12 pieces per package



See Application Guide, pages 10-48, for specific models and years

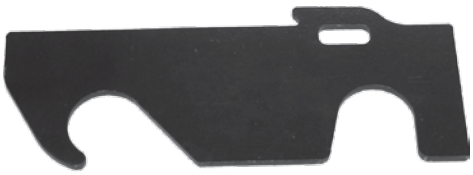
HENDRICKSON (HTB) TRACK BOX SHIM KIT

43-674

For 2007-Up International & Spartan HTB-400 Suspension.

Package of 5 shims, Including

Thickness	Qty
1/32"	2
1/16"	1
1/8"	2



HENDRICKSON (HTB) TRACK BOX SHIM STARTER KIT

43-680A

For 2007-Up International & Spartan HTB-400 Suspension.

Kit services 6 or more axles, 3 or more trucks.

Includes all of the following shims (shown above):

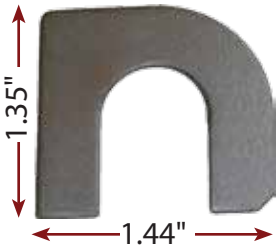
	Thickness	Qty
43-661	1/32"	12 pieces
43-662	1/16"	12 pieces
43-663	1/8"	12 pieces
43-674	n/a	6 kits

VANHOOL SHIM LOWER CONTROL ARM & BOGEY AXLE

Slot length: .95" **Slot width: .63"**

43-701	**1/32"**
43-702	**1/16"**
43-703	**1/8"**

12 pieces per package

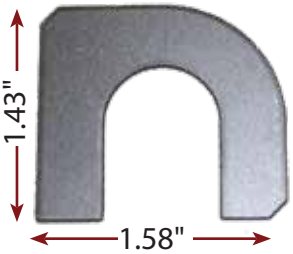


VANHOOL SHIM UPPER CONTROL ARM & BOGEY AXLE

Slot length: 1.0" **Slot width: .75"**

43-707	**1/32"**
43-708	**1/16"**
43-709	**1/8"**

12 pieces per package

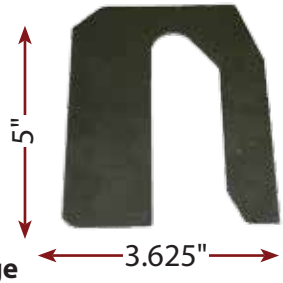


PREVOST CASTER SHIMS

Slot length: 4.125" **Slot width: 1.25"**

43-711	**1/32"**
43-712	**1/16"**
43-713	**1/8"**

12 pieces per package

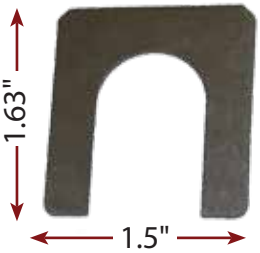


PREVOST H & XL SERIES STEER AXLES CASTER SHIMS

Slot length: 1.25" **Slot width: .823"**

43-715	**1/32"**
43-716	**1/16"**
43-717	**1/8"**

12 pieces per package

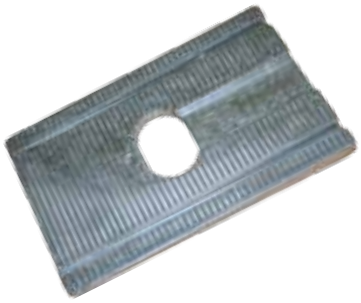


PREVOST H & XL SERIES DRIVE AXLE THRUST LINE SHIM & BOGEY AXLE SCRUB ANGLE SHIM

Slot length: 4.5" **Slot width: 1.06"**

43-721	**1/32"**
43-722	**1/16"**
43-723	**1/8"**

12 pieces per package



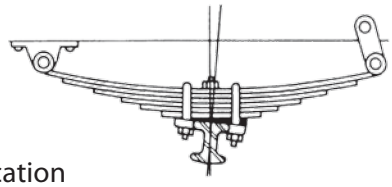
43-950 SERIES "UNI-WEDGE" 3-IN-1 HEAVY-DUTY ZINC ALLOY CASTER WEDGE

Unique "Break-off" feature allows shim to cover spring width of 4", 3 1/2" and 3"

43-951	.5°	**43-952**	1.0°	**43-953**	1.5°
43-954	2.0°	**43-955**	2.5°	**43-956**	3.0°
43-957	3.5°	**43-958**	4.0°		

Length 5 3/4" **6 per package**

43-1040 THROUGH 43-1077 HEAVY-DUTY MANGANESE BRONZE TRUCK CASTER WEDGES



- 6 per package
- Will not break or compress
- Extremely accurate
- Clearly stamped for easy identification
- End-to-end fully 1/16" thicker than competitive products

Width 2 1/2" Length 5"							
43-1040	.5°	**43-1041**	1.0°	**43-1042**	1.5°	**43-1043**	2.0°
43-1044	2.5°	**43-1045**	3.0°	**43-1046**	3.5°	**43-1047**	4.0°

Width 3" Length 6"							
43-1050	.5°	**43-1051**	1.0°	**43-1052**	1.5°	**43-1053**	2.0°
43-1054	2.5°	**43-1055**	3.0°	**43-1056**	3.5°	**43-1057**	4.0°

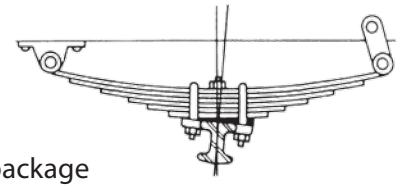
Width 3 1/2" Length 6 1/4"							
43-1060	.5°	**43-1061**	1.0°	**43-1062**	1.5°	**43-1063**	2.0°
43-1064	2.5°	**43-1065**	3.0°	**43-1066**	3.5°	**43-1067**	4.0°

Width 4" Length 6 1/2"							
43-1070	.5°	**43-1071**	1.0°	**43-1072**	1.5°	**43-1073**	2.0°
43-1074	2.5°	**43-1075**	3.0°	**43-1076**	3.5°	**43-1077**	4.0°

See Application Guide, pages 10-48, for specific models and years

43-2050 THROUGH 43-2077

HEAVY-DUTY ZINC DIE CAST TRUCK CASTER WEDGE



Accurate & Economical 6 per package

Width 3" Length 6"							
43-2050	.5°	**43-2051**	1.0°	**43-2052**	1.5°	**43-2053**	2.0°
43-2054	2.5°	**43-2055**	3.0°	**43-2056**	3.5°	**43-2057**	4.0°

Width 3 1/2" Length 6 1/4"							
43-2060	.5°	**43-2061**	1.0°	**43-2062**	1.5°	**43-2063**	2.0°
43-2064	2.5°	**43-2065**	3.0°	**43-2066**	3.5°	**43-2067**	4.0°

Width 4" Length 6 1/2"							
43-2070	.5°	**43-2071**	1.0°	**43-2072**	1.5°	**43-2073**	2.0°
43-2074	2.5°	**43-2075**	3.0°	**43-2076**	3.5°	**43-2077**	4.0°

44-240 SERIES

JEEP CASTER SHIMS

Provides positive caster changes on early model downsize Jeeps. Installed between lower control arm and frame bracket.

44-240 **1/32"**
44-241 **1/16"**
44-242 **1/8"**

1984-1999 Jeep Cherokee
1986-1994 Jeep Comanchee

Adjustment Range		see above	
Quantity	**6**	Sides Adjusted	**1**
Product Type		**Light Truck**	

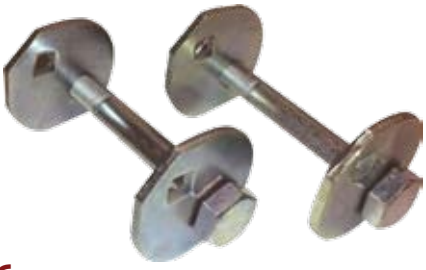
44-600

SERIES CAMBER/CASTER ADJUSTMENT BUSHING

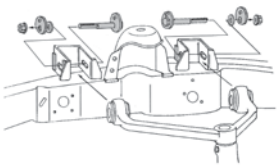
44-599 0°	**44-601** .25°	**44-602** .50°
44-603 .75°	**44-604** 1°	**44-605** 1.25°
44-606 1.5°	**44-607** 1.75°	**44-608** 2°
44-600A Assortment - 2 each size		

4WD Ford Ranger & Bronco II (through 1989)

Adjustment Range		see above	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Light Truck**	



44-766
FORD CAMBER/ CASTER BOLT KIT



For certain models where the 44-768 cam diameter is too large (varies by manufacturing facility).

2001-2005 Ford Explorer Sport Trac 4WD
1998-2011 Ford Ranger 2WD/4WD

Adjustment Range		**2.5°**	
Quantity	**Pair**	Sides Adjusted	**1**
Product Type		**Light Truck**	

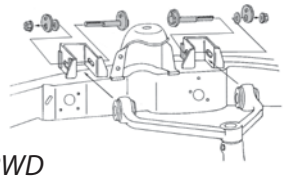
44-767
FORD LIGHT TRUCK CAM KIT

Allows adjustment of camber/caster in just minutes. Works with OE bolts — cutting installation time by 75% when compared to cam bolt kits! Quick adjustment feature allows fast, easy and exact settings.

1995-2001 Ford Explorer 2WD
2001-2005 Ford Explorer Sport Trac 4WD
1995-2001 Ford Explorer/Explorer Sport 4WD
1998-2011 Ford Ranger 2WD/4WD
1998-2009 Mazda B Series P/U 2WD/4WD
1997-2001 Mercury Mountaineer 2WD/4WD

Adjustment Range		**2.5°**	
Quantity	**Pair**	Sides Adjusted	**1**
Product Type		**Light Truck**	

44-768
FORD CAMBER/ CASTER CAM BOLT KIT



2001-2005 Ford Explorer Sport Trac 4WD
1995-2001 Ford Explorer/ Explorer Sport 4WD
1995-2001 Ford Explorer 2WD
1998-2011 Ford Ranger 2WD/4WD
1998-2009 Mazda B Series P/U 2WD/4WD
1997-2001 Mercury Mountaineer 2WD/4WD
1998-2009 Mazda B Series P/U 2WD/4WD

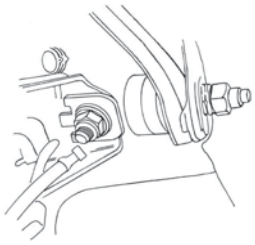
Also available: **44-768-4**
Set of 4, adjusts both sides

Adjustment Range		**±3.25°**	
Quantity	**Pair**	Sides Adjusted	**1**
Product Type		**Light Truck**	

44-769
FORD CAMBER CASTER ALIGNMENT WASHERS

This heavy-duty washer is designed to replace the factory locking plate to allow easy camber/caster adjustments.

2002-2005 Ford Explorer 2WD/4WD
2003-2005 Lincoln Aviator
2002-2005 Mercury Mountaineer 2WD/4WD



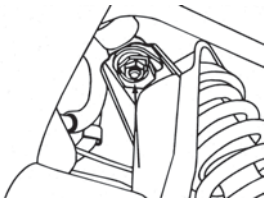
Also available:
44-769-24 Set of 24

Adjustment Range		**Front Camber ±.75°, Front Caster ±1.25°, Rear Camber ±.5°**	
Quantity	**4**	Sides Adjusted	
Product Type		**Light Truck**	

See Application Guide, pages 10-48, for specific models and years

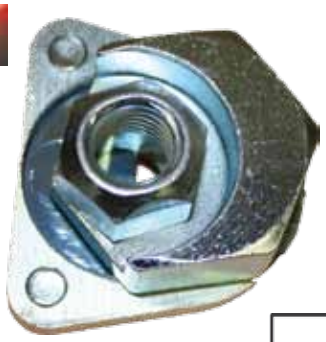
44-771
FORD EXPLORER FRONT CAMBER/ CASTER KIT

This product replaces the OE upper control arm alignment washers and will allow full adjustment of camber & caster.



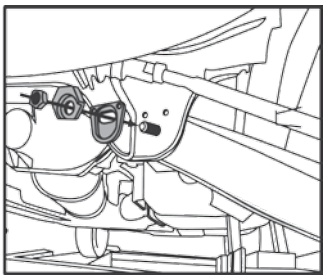
2002-2005 Ford Explorer 2WD/4WD
2003-2005 Lincoln Aviator
2002-2005 Mercury Mountaineer 2WD/4WD

Adjustment Range		**Camber ±.75°, Caster ±1.25°**	
Quantity	**Kit**	Sides Adjusted	**2**
Product Type		**Light Truck**	



44-773
FORD EXPLORER REAR CAMBER ADJUSTMENT CAM KIT

This kit replaces the OE washers on the lower control arm and allows full adjustment of camber.



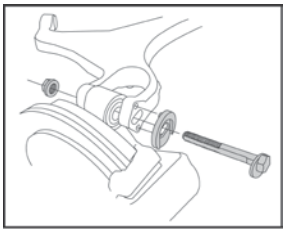
2002-2005 Ford Explorer 2WD/4WD
2003-2005 Lincoln Aviator
2002-2005 Mercury Mountaineer 2WD/4WD

Adjustment Range		**± .5°**	
Quantity	**Set**	Sides Adjusted	**2**
Product Type		**Light Truck**	

44-775
GM REAR CAMBER/TOE NUT

2005-2011 Chevrolet Equinox
2006-2009 Pontiac Torrent
2007-2009 Saturn Vue
2007-2009 Suzuki XL7

Adjustment Range		**±1°**	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Light Truck**	



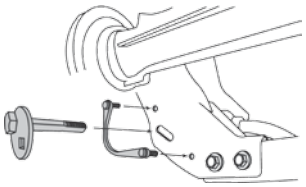
44-784
FORD EXPEDITION/LINCOLN NAVIGATOR REAR CAMBER CAM BOLT KIT

2003-2006 Ford Expedition 2WD/4WD
2003-2006 Lincoln Navigator 2WD/4WD

Adjustment Range		**±2.75°**	
Quantity	**Pair**	Sides Adjusted	**2**
Product Type		**Light Truck**	

44-786
FORD EXPEDITION/LINCOLN NAVIGATOR FRONT CAMBER/CASTER CAM BOLT KIT

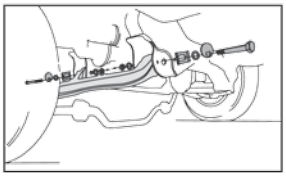
This kit provides both large & small guides with a cam bolt assembly to make accurate and easy adjustment of camber and caster.



2003-2006 Ford Expedition 2WD/4WD
2003-2006 Lincoln Navigator 2WD/4WD

Adjustment Range		Camber ±2.0° Caster ±1.5°	
Quantity	Set	Sides Adjusted	2
Product Type		Light Truck	

44-789
FORD F-150 FRONT CAMBER/CASTER CAM BOLT KIT



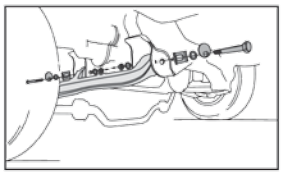
This kit provides steel guides with cam bolt assemblies to make accurate and easy change of camber and caster. Allows for future adjustments.

2004-2008 Ford F150 2WD/4WD
2006-2008 Lincoln Mark LT 2WD/4WD

Adjustment Range		Camber ±2.0° Caster ±1.5°	
Quantity	Kit	Sides Adjusted	2
Product Type		Light Truck	

44-790
FORD EXPEDITION/LINCOLN NAVIGATOR FRONT CAMBER/CASTER CAM BOLT KIT

Make accurate and easy adjustment to camber and caster. Allows for future adjustments.



2007-2011 Ford Expedition 2WD/4WD
2009-2011 Ford F150 2WD/4WD
2006-2011 Lincoln Navigator 2WD/4WD

Adjustment Range		Camber ±2.0° Caster ±1.5°	
Quantity	Kit	Sides Adjusted	2
Product Type		Light Truck	

44-791
FORD FRONT CAMBER/CASTER ADJUSTMENT KIT

This kit provides a steel guide with cam assemblies to make 1° camber or caster adjustment.

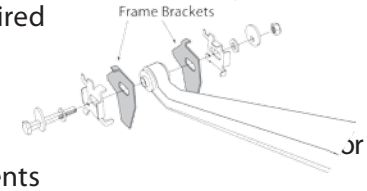
2007-2011 Ford Expedition 2WD/4WD
2004-2011 Ford F150 2WD/4WD
2007-2011 Lincoln Navigator 2WD/4WD
2006-2008 Lincoln Mark LT

Adjustment Range		Camber ±1.0° Caster ±1.5°	
Quantity	Kit	Sides Adjusted	2
Product Type		Light Truck	

See Application Guide, pages 10-48, for specific models and years

44-792
DODGE RAM 1500 FRONT CAMBER/ CASTER CAM BOLT & PLATE KIT

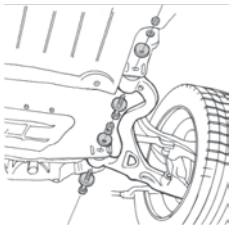
- Fast bolt-on installation - no drilling or modifying required
- Precise, easily-controlled adjustments
- Allows future adjustments



2002-2005 Dodge Ram 1500 2WD/4WD

Adjustment Range		Camber ±1.0° Caster ±1.5°	
Quantity	Kit	Sides Adjusted	2
Product Type		Light Truck	

44-820
NISSAN CAMBER/CASTER CAM BOLT KIT



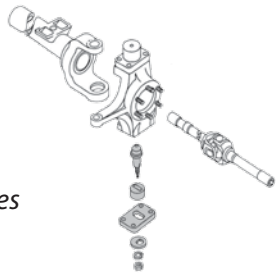
Makes vehicle fully adjustable for camber and caster. Works with OE cam guide.

2005-2011 Nissan Armada 2WD/4WD
2005-2011 Nissan Frontier 2WD/4WD
2005-2011 Nissan Pathfinder 4WD
2004-2011 Nissan Titan 2WD/4WD
2009-2011 Suzuki Equator

Adjustment Range		Camber/Caster ± 2.0°	
Quantity	4	Sides Adjusted	2
Product Type		Light Truck	

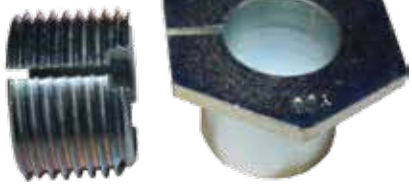
44-910
CAMBER ADJUSTING ECCENTRIC

Easily adjusts 1 ton 4x4s with Dana model 60 closed king pin axles



1961-1990 Chevrolet K Series
1975-1991 Ford F350

Adjustment Range		±3.0°	
Quantity	Each	Sides Adjusted	
Product Type		Light Truck	

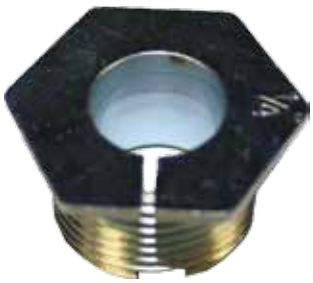


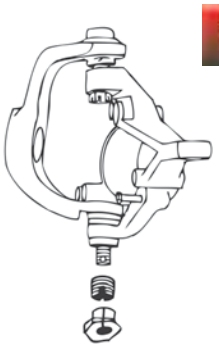
44-2460
GM, DODGE, JEEP
(Through 1993)
& FORD
(Through 1979)
CAMBER/CASTER ADJUSTMENT BUSHING

44-2461	.25°	44-2462	.50°
44-2463	.75°	44-2464	1°
44-2465	1.25°	44-2466	1.5°
44-2469-6* (6 pieces) Low Profile Castle Nut			

*** Necessary in some higher degree applications for proper clearance**

Adjustment Range		see above	
Quantity	Each	Sides Adjusted	1
Product Type		Light Truck	





44-2480

1984-1989 JEEP CAMBER ADJUSTING BUSHING

The positive locking feature on this improved design allows safe, trouble-free installation.

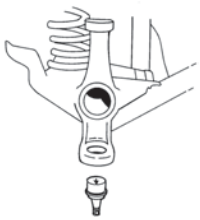
44-2481	.25°	**44-2482**	.50°
44-2483	.75°	**44-2484**	1°
44-2485	1.25°	**44-2486**	1.5°

Adjustment Range		**see above**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Light Truck**	

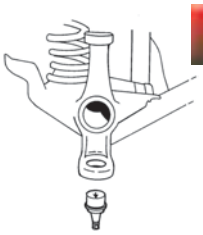
JEEP CAMBER/ CASTER ADJUSTABLE LOWER BALL JOINT

44-2490

1984-2001 Jeep Cherokee/Wagoneer (downsize)
1986-1992 Jeep Comanche
1993-1998 Jeep Grand Cherokee
1987-1995 Jeep Wrangler
1996-2006 Jeep Wrangler TJ
2007-2011 Jeep Wrangler JK



Adjustment Range		**± 1.75°**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Light Truck**	



44-2491

JEEP CAMBER/CASTER ADJUSTABLE LOWER BALL JOINT

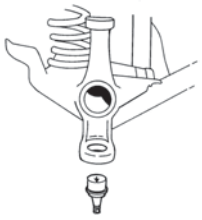
1999-2004 Jeep Grand Cherokee

Adjustment Range		**± 1.75°**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Light Truck**	

44-2492

CAMBER/CASTER ADJUSTABLE LOWER BALL JOINT

1987-91 Chevrolet & GMC 1/2 & 3/4 Ton 4WD Pickup, Blazer, Jimmy & Suburban
1994-99 Dodge 1/2, 3/4 & 1 Ton 4WD Pickup & Ram Charger
Through 1979 Ford 1/2, 3/4 & 1 Ton 4WD Pickup & Bronco
Through 1983 Jeep Trucks



Adjustment Range		**± 1.75°**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Light Truck**	

See Application Guide, pages 10-48, for specific models and years

44-2493
JEEP UPPER CAMBER/CASTER ADJUSTABLE BALL JOINT

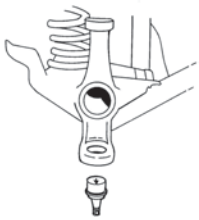
2006-2010 Jeep Commander
2005-2010 Jeep Grand Cherokee

Adjustment Range		± 1.0°	
Quantity	Each	Sides Adjusted	1
Product Type		Light Truck	

44-2494
DODGE FRONT CAMBER/CASTER ADJUSTABLE LOWER BALL JOINT

This adjustable lower ball joint allows easy adjustment of camber/caster with a simple turn of the ball stud.

2000-2001 Dodge Ram 1500



Adjustment Range		± 1.0°	
Quantity	Each	Sides Adjusted	1
Product Type		Light Truck	

44-2495
JEEP UPPER ADJUSTABLE BALL JOINT

Designed to fit into factory upper control arm — no need to replace entire O/E control arm assembly.

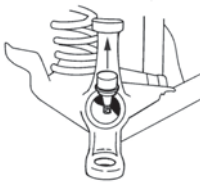
2011 Jeep Grand Cherokee
2011 Dodge Durango

Adjustment Range		± 1.0°	
Quantity	Each	Sides Adjusted	1
Product Type		Light Truck	

44-2496
DODGE TRUCK FRONT CAMBER ADJUSTABLE UPPER BALL JOINT

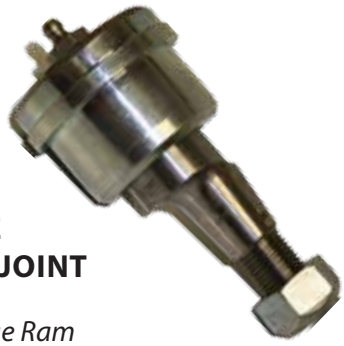
Change camber with a simple turn of the ball stud!

2000-2002 Dodge Ram 2500/3500 4WD
2003-2005 Dodge Ram 2500/3500 4WD
(old body style)



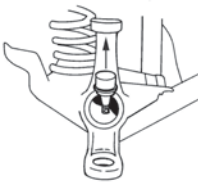
Adjustment Range		± 1.0°	
Quantity	Each	Sides Adjusted	1
Product Type		Light Truck	

44-2497



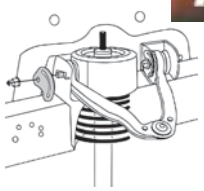
44-2497
DODGE TRUCK FRONT CAMBER ADJUSTABLE UPPER BALL JOINT

2003-2011 Dodge Ram 2500/3500 4WD



Adjustment Range		± 1.0°	
Quantity	Each	Sides Adjusted	1
Product Type		Light Truck	

44-2508



44-2506 GM FULL-SIZE VAN FRONT CAMBER/CASTER QUICK CAM

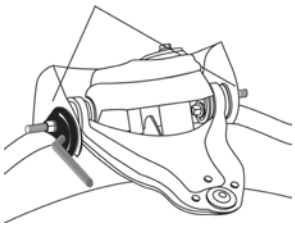
Replace OE non-adjustable cam with Quick Cam, featuring easy-to-access allen wrench slot.

2000-2011 Chevrolet Suburban 2WD/4WD
2000-2011 Chevrolet Tahoe 2WD/4WD
2000-2011 Chevrolet Yukon 2WD/4WD
2000-2011 Chevrolet Express Van 2WD
2003-2011 Chevrolet Express Van 4WD
2003-2011 Chevrolet Silverado HD 1500/2500/3500 2WD/4WD
2001-2011 GMC 2WD Savana Van

Adjustment Range		± 1.5°	
Quantity	Pair	Sides Adjusted	2
Product Type		Light Truck	

44-2507
GM MID-SIZE PICKUP/ SUV FRONT CAMBER/ CASTER QUICK CAM

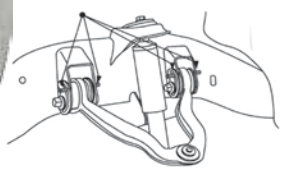
Great for adjustments where space is limited



2004-2011 Chevrolet Colorado 4WD
2004-2011 GMC Canyon 4WD
2006-2010 Hummer H3
2006 Isuzu I35/I28 4WD

Adjustment Range		± 1.5°	
Quantity	4	Sides Adjusted	2
Product Type		Light Truck	

44-2508
GM ALIGNMENT CAM GUIDE PIN



Fast and easy replacement of damaged or broken OE guide pins.

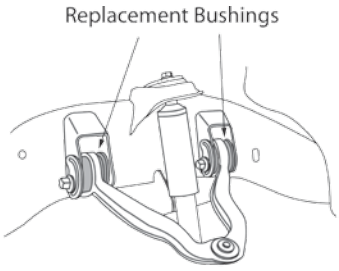
2000-2011 Chevrolet Suburban 2WD/4WD
2000-2011 Chevrolet Tahoe 2WD/4WD
2000-2011 Chevrolet Yukon 2WD/4WD
2000-2011 Chevrolet Express Van 2WD
2003-2011 Chevrolet Express Van 4WD
1999-2011 Chevrolet Silverado 1500/2500/3500 2WD/4WD
2001-2011 GMC 2WD Savana Van

Adjustment Range		NA	
Quantity	12	Sides Adjusted	2
Product Type		Light Truck	

See Application Guide, pages 10-48, for specific models and years

CHEVROLET & GMC TRUCK OFFSET CAMBER BUSHINGS

- OE style design — does not affect ride or handling
- Simple installation with use of special bushing adapter set 88-7950A
- Only effective means of reclaiming lost camber



44-2509

1/2 Ton Models - Forged Arm

2002-2011 Cadillac Escalade/EXT 4WD
2000-2011 Chevrolet Tahoe 2WD/4WD
2002-2006 Chevrolet Avalanche 1500 2WD/4WD
2003-2011 Chevrolet Express Van 2WD
2003-2011 Chevrolet Express Van 4WD
1999-2011 Chevrolet Silverado 1500 2WD/4WD
2000-2011 Chevrolet Suburban 1500 2WD/4WD
2003-2011 GMC 2WD Savana Van
1999-2011 GMC Sierra 1500 2WD/4WD
2000-2011 GMC Yukon XL 1500 2WD
2000-2011 GMC Yukon/Denali 2WD/4WD

44-2510

3/4 and I Ton Models - Stamped Arm

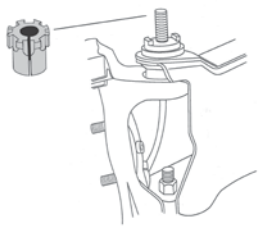
2007-2011 Chevrolet Avalanche 2500 HD
2001-2011 Chevrolet Silverado HD
1999 Chevrolet Silverado HD 2500
2000-2011 Chevrolet Suburban 2500 HD 2WD/4WD
2007-2009 GMC Sierra HD
2000-2011 GMC Yukon XL 2500 HD 2WD/4WD
2003-2009 Hummer H2

Adjustment Range		**±1.0°**	
Quantity	**4**	Sides Adjusted	**2**
Product Type		**Light Truck**	

44-5000 SERIES
CAMBER/CASTER ADJUSTMENT BUSHINGS

Adjust Camber/Caster or a combination of both from 0° to 2.75° either positive or negative with these easy-to-adjust "Multi-Slot" bushings.

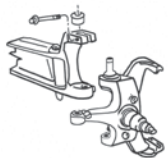
Part		Part			
44-4099	**0°**	**44-5001**	**.25°**	**44-5002**	**.5°**
44-5003	**.75°**	**44-5004**	**1.0°**	**44-5005**	**1.25°**
44-5006	**1.5°**	**44-5007**	**1.75°**	**44-5008**	**2.0°**
1 per package					
44-5000A	Assortment - 2 each size 44-4099 through 44-5008				
XTRARANGE		**44-5009**	**2.25°**		
44-5010	**2.5°**	**44-5011**	**2.75°**		



Ford
1980-96 F150 & F250 4x4
1992-02 F350 4x4
1998-04 Super Duty
2000-04 Excursion 4WD
Dodge
1994-99 Ram 2500 & 3500 2WD
1994-02 Ram 2500 & 3500 4WD

ADJUSTABLE LIGHT TRUCK CAMBER/CASTER BUSHINGS

New DUAL AXIS design for up to 25% Greater Range of Adjustment.
Bushing can be set to True Zero.



44-5032

FORD
F150 4x4 (1980 - 1996)
F250 4x4 (1980 - 1997)
F350,F450,F550 Super Duty 4x4 (1992-2004)
DODGE
Ram 2500, 3500 4x4 (1994-1999)
Ram 2500, 3500 4x2 (1994-2002)

Adjustment Range
± 3.2°

1 per package

44-5035

FORD Ranger & Bronco II
4x4 (1983-1989)

Adjustment Range
± 3.25°

1 per package

44-5036

FORD F250 & F350
4x4 (2005-2011)

Adjustment Range
± 2.5°

1 per package

44-5037

FORD F450 & F550
4x2 & 4x4 (2005-2011)
Chevrolet Kodiak (2005-2009)
GMC TopKick (2005-2009)

Adjustment Range
± 2.5°

1 per package

44-5094

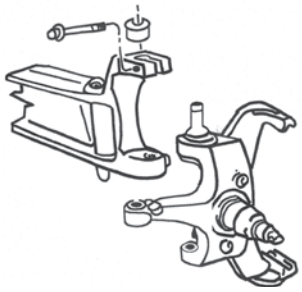
FORD
Explorer 4x4 & 4x2 (1990-1994)
Ranger 4x4 & 4x2 (1990-1997)
F150,F250,F350 4x2 (1987-1996)
Econoline Van (1992-2011)
Excursion 4x2 (2000-2005)
F250,F350, Super Duty 4x2 (1997-2011)
MAZDA
Navajo 4x4 & 4x2 (1991-94)
Pickup 4x4 & 4x2 (1994-99)

Adjustment Range
± 4°

1 per package

(Not intended for use on E250/350 models with modified chassis/ suspension)

See Application Guide, pages 10-48, for specific models and years



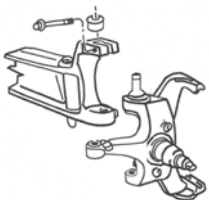
44-6000 SERIES

2005-2011 FORD F250 & F350 4X4
CAMBER/CASTER ADJUSTMENT BUSHINGS

Part		Part	
44-6001	**0°**	**44-6002**	**.25°**
44-6003	**.5°**	**44-6004**	**.75°**
44-6005	**1.0°**	**44-6006**	**1.25°**
44-6007	**1.5°**	**44-6008**	**1.75°**
44-6009	**2.0°**	**44-6010**	**2.25°**
44-6011	**2.5°**		
44-6000A	Assortment - 2 each size 44-6001 through 44-6011		

- Adjust Camber/Caster or a combination of both from ±.25° to ±2.0°
- Adjust Camber from + 2.25° to +2.5°
- Allows for adjustment where there is no OE adjustment available

1 per package



44-6020 SERIES

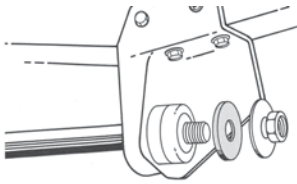
2005-2011 FORD F450 & F550 4X4 & 4X2
2005-2009 CHEVROLET/GMC KODIAK/TOPKICK, C4500 & C5500
CAMBER/CASTER ADJUSTMENT BUSHINGS

- Adjust Camber/Caster or a combination of both from .25° to 2.0°
- Allows for adjustment where there is no OE adjustment available

Part		Part	
44-6021	**0°**	**44-6022**	**.25°**
44-6023	**.5°**	**44-6024**	**.75°**
44-6025	**1.0°**	**44-6026**	**1.25°**
44-6027	**1.5°**	**44-6028**	**1.75°**
44-6029	**2.0°**	*1 per package*	
44-6020A	Assortment - 2 each size 44-6021 through 44-6029		

Ford
2005-11 F450 & F550 4x4 & 4x2
Chevrolet
2005-09 Kodiak 4x4
GMC
2005-09 Top Kick 4x4

44-9410
RADIUS ARM BUSHING STABILIZER
Eliminates vehicle wandering by firming up stock rubber radius arm or strut rod bushing.



Adjustment Range		n/a	
Quantity	Pair	Sides Adjusted	2
Product Type		Light Truck	

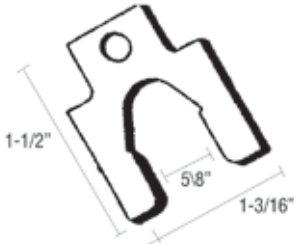
FORD/MAZDA CASTER ADJUSTMENT BUSHINGS

Eliminates vehicle wandering by firming up stock rubber radius arm or strut rod bushing. Allows caster adjustment at rear of radius arm.

44-9412
FORD *1983-1990 2WD Bronco II*
1983-1997 Ranger
1981-1996 F100, F150
1980-1996 Bronco, F250
1984-1990 Bronco II
1991-1994 Explorer
MAZDA 1991-1994 2WD & 4WD Navajo

44-9413
FORD *1987-Newer 2WD & 4WD Ranger/Explorer through 1997 with Twin I-Beam suspensions*

Adjustment Range		n/a	
Quantity	Set	Sides Adjusted	2
Product Type		Light Truck	

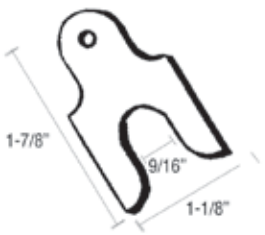


45-100
US SERIES CAMBER/ CASTER SHIM

45-101 1/64"
45-102 1/32"
45-103 1/16"
45-104 1/8"

Universal shim covers a range of bolt sizes up to 5/8" diameter

100 pieces per package



45-200
US SERIES CAMBER/ CASTER SHIM

45-201 1/64"
45-202 1/32"
45-203 1/16"
45-204 1/8"

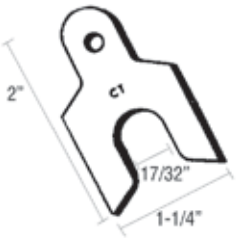
Buick, Cadillac, Oldsmobile

100 pieces per package

See Application Guide, pages 10-48, for specific models and years

45-300
X SERIES CAMBER/ CASTER SHIM

45-301	1/64"
45-302	1/32"
45-303	1/16"
45-304	1/8"



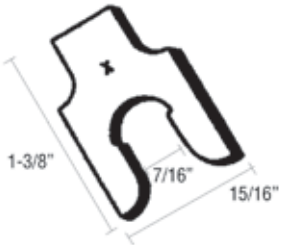
Chevrolet & GMC 1/2 ton truck, Ford passenger cars

100 pieces per package

45-350
350 PIECE CAMBER/CASTER PASSENGER & LIGHT TRUCK SHIM ASSORTMENT

45-400
X SERIES CAMBER/ CASTER SHIM

45-401	1/64"
45-402	1/32"
45-403	1/16"
45-404	1/8"

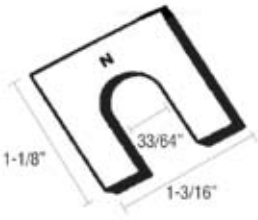


Chevrolet & GMC Mid-size early models & FWD

100 pieces per package

45-500
N SERIES CAMBER/ CASTER SHIM

45-501	1/64"
45-502	1/32"
45-503	1/16"
45-504	1/8"

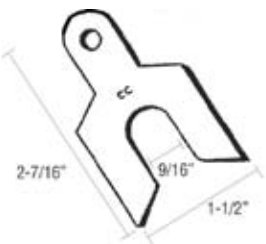


Late model RWD General Motors

100 pieces per package

45-600
CC SERIES CAMBER/ CASTER SHIM

45-601	1/64"
45-602	1/32"
45-603	1/16"
45-604	1/8"



3/4 and 1 ton GMC/ Chevrolet

100 pieces per package

CASTER ADJUSTMENT SPACERS

For Toyota models with stabilizer bushings at lower control arm

45-6001
1/16"

45-6002
1/8"
12 per box

CASTER ADJUSTMENT SPACERS

45-6005
1/16"

45-6006
1/8"

Acura CL & TL series
1992-2007 Vigor
1990-2007 Honda Accord and Odyssey
1996-99 Isuzu Oasis

Adjustment Range	see above		
Quantity	12		
Product Type	Light Truck		

45-7010 FRONT CAMBER SHIM SERIES

For W body vehicles with 10.5" rotors with or without ABS brake systems.

45-7013 1/64"
45-7015 1/32"
45-7017 1/16"
45-7019 1/8"

Contains 1 shim and mounting hardware.
45-7013 requires no hardware

1988-1996 Buick Regal
1990-2001 Chevrolet Lumina
1995-1999 Chevrolet Monte Carlo
1988-1996 Pontiac Grand Prix
1988-1997 Oldsmobile Cutalss Supreme

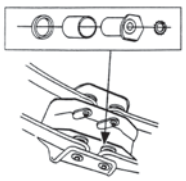
45-7010A ASSORTMENT (2 each size)

Adjustment Range	see above		
Quantity	Each	Sides Adjusted	1
Product Type	Light Truck		

46-120 FORD/MERCURY REAR CAMBER/TOE BUSHING

These adjustable eccentric bushings replace stock bushings located on rear control arms.

Tool No 88-1303 is required for proper positioning of bushing.

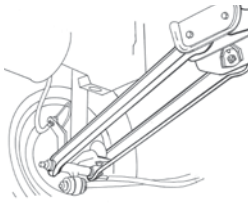


1984-1994 Ford Tempo
1984-1995 Mercury Topaz

Adjustment Range	2.0° camber/2.0° (1") toe		
Quantity	Pair	Sides Adjusted	2
Product Type	Rear Wheel		

46-131 TAURUS/SABLE REAR CAMBER/TOE BUSHING

Tool No 88-1302 is required for proper positioning of bushing.



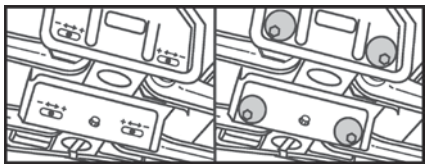
1986-2004 Ford Taurus Sedan
1988-1994 Lincoln Continental
1986-2005 Mercury Sable Sedan

Adjustment Range	2.0° camber/1.5° (3/4") toe		
Quantity	Pair	Sides Adjusted	2
Product Type	Rear Wheel		

See Application Guide, pages 10-48, for specific models and years

46-132
FORD/LINCOLN/MERCURY SEDAN REAR CAMBER CAM BOLT

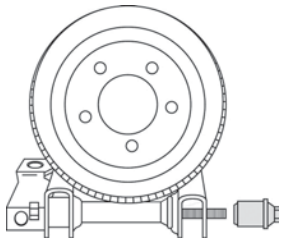
1988-1994 Lincoln Continental
1986-1995 Ford Taurus Sedan
1986-1995 Mercury Sable Sedan



Adjustment Range		2.25°	
Quantity	Pair	Sides Adjusted	2
Product Type		Rear Wheel	

46-133
REAR TOE ADJUSTING KIT

Adjustable rear toe bushing kit with eccentric adjusting cam replaces the "frozen" factory toe units on Taurus and Sable station wagons. This kit is easy to install and does not require "frozen" spindle bolt to be removed.

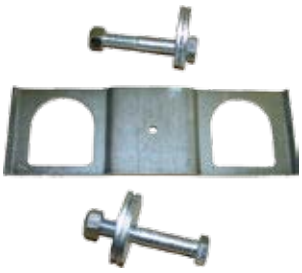


Tool No 88-1303 is required for easy installation of new urethane bushing

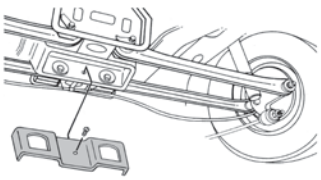
1986-1995 Ford Taurus Wagon
1986-1995 Mercury Sable Wagon

Adjustment Range		1.5° (3/4") Toe	
Quantity	Kit	Sides Adjusted	2
Product Type		Rear Wheel	

46-134
ADJUSTABLE REAR CAMBER/ TOE ASSEMBLY



- Easy adjustment of rear camber on factory non-adjustable vehicles
- Provides rear toe adjustment when factory adjusters are frozen
- Retains original ride and handling characteristics



1996-2004 Ford Taurus Sedan
1996-2005 Mercury Sable Sedan

Adjustment Range		2° (3/4") Camber/Toe	
Quantity	Kit	Sides Adjusted	2
Product Type		Rear Wheel	

46-135
FORD TAURUS REAR CAMBER KIT

Allows accurate camber adjustment to correct rear tire wear problems.

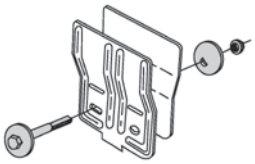
2005-2008 Ford Freestyle 4x2
2009-2010 Taurus X
2009-2010 Taurus 4x2
2005-2008 Ford Five Hundred 4x2

Adjustment Range		2.5°	
Quantity	Pair	Sides Adjusted	2
Product Type		Rear Wheel	

46-136
REAR CAMBER ADJUSTING CAM BOLT

Allows accurate camber adjustment to correct rear tire wear problems.

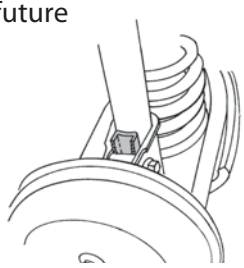
1986-2004 Ford Taurus Wagon
1986-2005 Mercury Sable Wagon



Adjustment Range	**see above**		
Quantity	**12**		
Product Type	**Light Truck**		

46-201
ESCORT/LYNX & TEMPO/TOPAZ WEDGE KIT

Also allows adjustment on future alignments.



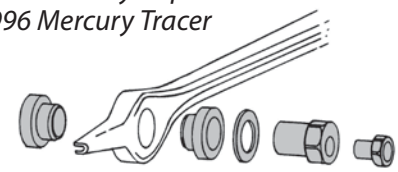
1981-1996 Ford Escort
1982-1988 Ford EXP
1984-1994 Ford Tempo
1987-1992 Ford Tempo AWD
1982-1983 Mercury LN7
1981-1994 Mercury Lynx

Adjustment Range	**2.5°**		
Quantity	**Kit**	Sides Adjusted	**2**
Product Type	**Rear Wheel**		

46-205
ESCORT REAR TOE BUSHING KIT

Designed to replace factory non-adjustable bushing on left rear stabilizer arm. Factory provides toe adjustment on right rear only.

1991-2002 Ford Escort
1991-1994 Mercury Capri
1987-1996 Mercury Tracer

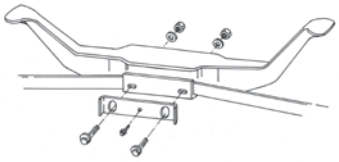


Adjustment Range	**2.0° (1")**		
Quantity	**Kit**	Sides Adjusted	**1**
Product Type	**Rear Wheel**		

46-406
REAR SATURN TOE PLATE

Unique external cam plate design easily attaches to vehicle, allowing a full range of positive or negative rear toe adjustment.

1991-1998 Saturn All Models
1991-2002 Saturn S Series



Adjustment Range	**2.0° (1")**		
Quantity	**Each**	Sides Adjusted	**1**
Product Type	**Rear Wheel**		

See Application Guide, pages 10-48, for specific models and years

46-400A
REAR CAMBER/ TOE HALF SHIM ASSORTMENT

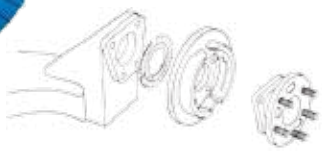
Contains:
12 each
46-2000 Series,
46-3000 Series,
46-4000 Series, and
46-5000 Series, for a total of 192 Shims
2 sets 46-201 Ford Wedge Kit
1 88-050 1-3/8" drive GM Torx bit

46-916
GM REAR SPINDLE (HUB AND BEARING) REPLACEMENT SOCKET HEAD CAP SCREWS

These high-strength socket head cap screws are 5 mm longer than the torx bolt they replace. Ideal for rear shim installation.

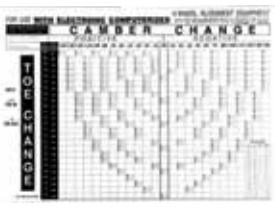
Adjustment Range	**n/a**
Quantity	**16**
Product Type	**Rear Wheel**

46-1000 SERIES
REAR FULL CONTACT CAMBER/TOE SHIM (BLUE)



US Patent # 4,872,699

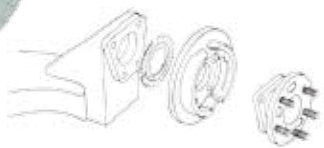
46-1001	**.25°**	**46-1002**	**.50°**
46-1003	**.75°**	**46-1004**	**1.0°**
46-1005	**1.25°**	**46-1006**	**1.5°**
46-1000A	Assortment - 2 each size		



46-1030
COATED INDEXING WALL CHART
For proper indexing of rear shim to achieve exact positioning

46-1035
PAINT STICK
For marking shim tabs to be removed for proper mounting

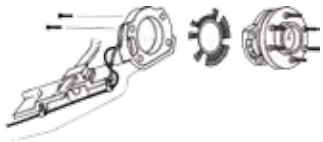
46-1100 SERIES
REAR FULL CONTACT CAMBER/TOE SHIM (WHITE)



US Patent # 4,872,699

46-1101	**.25°**	**46-1102**	**.50°**
46-1103	**.75°**	**46-1104**	**1.0°**
46-1105	**1.25°**	**46-1106**	**1.5°**
46-1100A	Assortment - 2 each size		

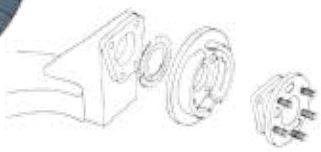
46-1120 SERIES
REAR FULL CONTACT CAMBER/TOE SHIM (GREEN)



US Patent # 4,872,699

46-1121	**.25°**	**46-1122**	**.50°**
46-1123	**.75°**	**46-1124**	**1.0°**
46-1120A	Assortment - 2 each size		

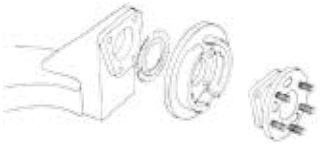
46-1200 SERIES
REAR FULL CONTACT CAMBER/TOE SHIM (GRAY)



US Patent # 4,872,699

46-1201	.25°	46-1202	.50°
46-1203	.75°	46-1204	1.0°
46-1205	1.25°	46-1206	1.5°
46-1200A	Assortment - 2 each size		

46-1300 SERIES
REAR FULL CONTACT CAMBER/TOE SHIM (BURGANDY)



US Patent # 4,872,699

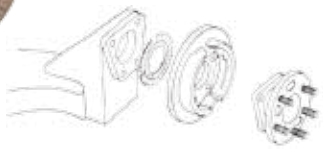
46-1301	.25°	46-1302	.50°
46-1303	.75°	46-1304	1.0°
46-1305	1.25°	46-1306	1.50°
46-1300A	Assortment - 2 each size		

46-1500 SERIES
REAR FULL CONTACT CAMBER/TOE SHIM (BLACK)

US Patent # 4,872,699

46-1501	.25°	46-1502	.50°
46-1503	.75°	46-1504	1.0°
46-1500A	Assortment - 2 each size		

46-1520 SERIES
REAR FULL CONTACT CAMBER/TOE SHIM (BROWN)

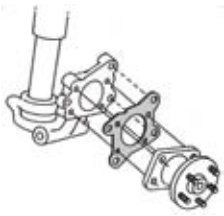


US Patent # 4,872,699

46-1521	.25°	46-1522	.50°
46-1523	.75°	46-1524	1.0°
46-1520A	Assortment - 2 each size		

46-1600 SERIES
GM E & K BODY REAR CAMBER SHIM

Patented design allows for either positive or negative camber adjustment while keeping the caliper in exact alignment with the rotor.



46-1601	.25°	46-1602	.50°
46-1603	.75°	46-1604	1.0°

US Patent # 5,074,578

1985-1993 Buick Riviera/Peatta
1987-1992 Cadillac Allante
1986-1992 Cadillac Eldorado
1986-1992 Cadillac Seville
1986-1992 Oldsmobile Toronado/Trofeo

Adjustment Range		**see above**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Rear Wheel**	

See Application Guide, pages 10-48, for specific models and years

46-1700
2000-2013 FORD FOCUS REAR CAMBER SHIM KIT

- Easy installation
- Changes camber ±1/2 or 1, depending on shim selected
- Suitable for ABS-equipped vehicles
- Full support of rear hub/wheel
- Works in conjunction with factory toe adjuster to accurately set rear angles to desired readings

46-1702 .5° **46-1704** 1.0°

Kit contains 2 of each size and necessary hardware for installation

46-1705
FORD FOCUS AXIS CAM CAMBER ADJUSTING BOLT SYSTEM

This kit replaces the outer bolt of the upper rear control arm and provides ±1° of camber adjustment. Perfect for lowered vehicles or standard alignments.

2000-2013 Ford Focus

Adjustment Range		**Rear Camber ± 1°**	
Quantity	**2**	Sides Adjusted	**2**
Product Type		**Rear Wheel**	

46-1900
GM CAMBER REAR FULL CONTACTSHIM

- Allows for camber adjustment where no OE adjustment is available
- Will not interfere with ABS brake system

US Patent # 5,074,578

46-1901	**.25°**	**46-1902**	**.50°**
46-1903	**.75°**	**46-1904**	**1.0°**
46-1900A	Assortment - 2 each size		

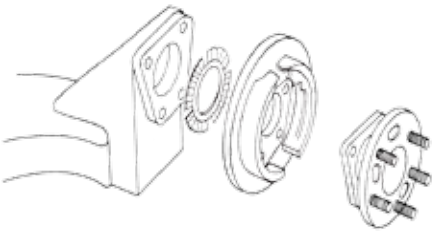
2000-2005 Buick LeSabre
1997-2005 Buick Park Avenue
2000-2005 Cadillac DeVille
1998-2010 Cadillac Seville/STS
2001-2003 Oldsmobile Aurora
2000-2005 Pontiac Bonneville

46-2002A
SYSTEM 2000 MASTER UNIVERSAL REAR SHIM ASSORTMENT

QTY	PART	DESC
6	**46-2100**	Blue Shim
6	**46-2200**	White Shim
6	**46-2300**	Gray Shim
6	**46-2400**	Burgandy Shim
1	**88-343**	Tab Cutting Tool
1	**46-1035**	Paint Stick
46-2002AB ASSORTMENT ABOVE, PLUS WALL BOARD		

SYSTEM 2000 *UNIVERSAL* REAR FULL CONTACT/TOE SHIM

EXACT FIT System 2000's four part numbers provide a precision fit for all application. No modification of outer perimeter is required, as is the case with other shim designs. A perfect alignment with full spindle support.



SIMPLICITY Just set the System 2000 shim on the template, dial in the predetermined numbers from the chart, and create the exact shim angle needed to precisely align the vehicle. Break out tabs as shown and install.

US Patent # 4,872,699

Adjustment Range	**0° to 1.5°**		
Quantity	**Each**	Sides Adjusted	**1**
Product Type	**Rear Wheel**		

46-2100 (Blue)

Audi, Chrusler, Dodge, Eagle, Geo, Isuzu, Plymouth, Pontiac, Volkswagen

46-2200 (White)

Audi, Plymouth, Chrysler, Dodge, Honda, Mercury

46-2300 (Gray)

Acura, Buick, Cadillac, Chevrolet, Geo, Oldsmobile, Pontiac, Toyota

46-2400 (Burgandy)

Buick, Cadillac, Chevrolet, Oldsmobile, Pontiac, Toyota

46-1050
SYSTEM 2000 INDEXING SLIDE CHART

Use this plastic slide chart to display shim indexing numbers by simply pulling slide until desired changes show in toe and camber windows.

SYSTEM 2000 PLASTIC SHIM INDEXING TEMPLATES

Part	Color	for use with	Part	Color	for use with
46-2110A	**Blue**	46-2100 series	**46-2114E**	**Blue**	46-2100 series
46-2211B	**White**	46-2200 series	**46-2215F**	**White**	46-2200 series
46-2312C	**Gray**	46-2300 series	**46-2316G**	**Gray**	46-2200 series
46-2413D	**Burg**	46-2400 series	**46-2117H**	**Blue**	46-2100 series
46-2500A **ASSORTMENT - 2 EACH SIZE, TEMPLATE & WALL CHART**					

See Application Guide, pages 10-48, for specific models and years

46-2160
XTRA RANGE HONDA/ACURA REAR CAMBER SHIM KIT

2 each 1/16" shim = .20° possible change
2 each 1/8" shim = .40° possible change
2 each Extended Bolt

Adjustment Range		**Up to 1.25°**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Rear Wheel**	

46-2170
XTRA RANGE CHRYSLER/ MITSUBISHI REAR CAMBER SHIM KIT

4 each 1/16" shim = .20° possible change
4 each 1/8" shim = .40° possible change
4 each Extended Bolt

Adjustment Range		**Up to 1.25°**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Rear Wheel**	

46-2180
HONDA /ACURA ADJUSTABLE REAR CAMBER LINK

- Ideal for lowered vehicles!
- Includes OEM-style rubber bushings for a quiet ride
- Replaces non-adjustable OEM suspension arms

2002-2006 Acura RSX
2001-2005 Honda Civic
2002-2005 Honda Civic SI

Adjustment Range		**-2 to +3° camber**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Rear Wheel**	

46-2185
HONDA CRV/ELEMENT REAR CAMBER LINK

Allows for rear positive or negative camber adjustments where no OE adjustments are available.

2001-2006 Honda CRV
2003-2011 Honda Element

Adjustment Range		**-2 to +3° camber**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Rear Wheel**	

46-2186
HONDA REAR CAMBER LINK

Allows for rear positive or negative camber adjustments where no OE adjustments are available.

2007-2011 Honda CRV

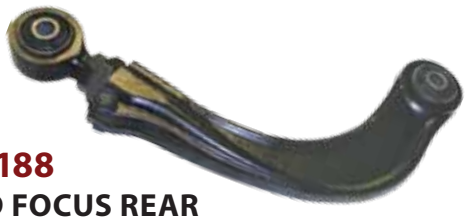
Adjustment Range		**-2 to +3° camber**	
Quantity	**Each**	Sides Adjusted	**1**
Product Type		**Rear Wheel**	

46-2187
HONDA CIVIC REAR ADJUSTABLE CAMBER ARM

Allows for rear positive or negative camber adjustments where no OE adjustments are available.

2006-2011 Honda Civic /Civic Hybrid

Adjustment Range		-4° to +2° camber	
Quantity	Each	Sides Adjusted	1
Product Type		Rear Wheel	



46-2188
FORD FOCUS REAR ADJUSTABLE CAMBER ARM

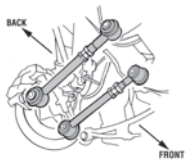
This kit allows for rear camber adjustment with fast and easy on-vehicle replacement.

2000-2013 Ford Focus
2004-2011 Mazda 3
2006-2012 Mazda 5
2008-2011 Volvo C30
2005-2011 Volvo S40
2005-2011 Volvo V50

Adjustment Range		-1.5 to +3° camber	
Quantity	Each	Sides Adjusted	1
Product Type		Rear Wheel	

46-2190 HONDA /ACURA ADJUSTABLE REAR CAMBER LINK

- Ideal for lowered or performance vehicles!
- With OEM-style rubber bushings for a quiet ride
- Replaces non-adjustable OEM suspension arms



1998-2002 Honda Accord, 1999-2003 Acura 3.2 TL

Adjustment Range		-1.5° to +3° camber	
Quantity	Pair	Sides Adjusted	1
Product Type		Rear Wheel	

46-2192
HONDA/ ACURA ADJUSTABLE REAR CAMBER ARM

This arm allows for positive or negative rear camber adjustment

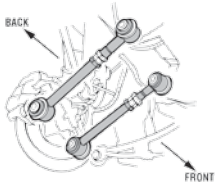
2003-2007 Honda Accord
1999-2004 Honda Odyssey
2003-2008 Honda Pilot
2001-2006 Acura MDX
2004-2008 Acura TSX

Adjustment Range		-2° to +4° camber	
Quantity	Each	Sides Adjusted	1
Product Type		Rear Wheel	

46-2195
HONDA/ACURA ADJUSTABLE REAR CAMBER LINK

- Allows fast and easy “on vehicle” adjustment
- Works with factory toe adjustment

2003-2007 Honda Accord
2004-2008 Acura 3.2 TL
1996-2008 Acura 3.5 TL
2004-2008 Acura TSX
2003-2004 Acura 3.5 RL



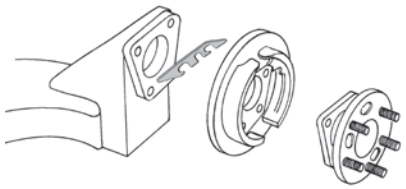
Adjustment Range		-1.5° to +3° camber	
Quantity	Pair	Sides Adjusted	1
Product Type		Rear Wheel	

See Application Guide, pages 10-48, for specific models and years

REAR CAMBER/TOE HALF SHIM

These close-tolerance half shims are the ideal low cost alternative to full contact dual angle rear shims when only one angle needs correction.

- Most economical to use
- Accurately adjusts camber or toe
- Stackable
- Available in four thicknesses: .010", .015", .020", .030"
- 12 per package



46-2000

Part	Camber	Toe
46-2010	1/4°	1/16"
46-2015	3/8°	3/32"
46-2020	1/2°	1/8"
46-2030	3/4°	3/16"

46-3000

Part	Camber	Toe
46-3010	1/4°	1/16"
46-3015	3/8°	3/32"
46-3030	1/2°	1/8"
46-3030	3/4°	3/16"

46-4000

Part	Camber	Toe
46-4010	1/4°	1/16"
46-4015	3/8°	3/32"
46-4020	1/2°	1/8"
46-4030	3/4°	3/16"

46-5000

Part	Camber	Toe
46-5010	1/4°	1/16"
46-5015	3/8°	3/32"
46-5020	1/2°	1/8"
46-5030	3/4°	3/16"

CORVETTE REAR SUSPENSION SHIM

1963-1982 Corvette

46-6020 1/32"
46-6030 1/16"
46-6040 1/8"

CHEVY CRUZE REAR CAMBER/TOE SHIM PACK

	Thickness	Qty
46-7110	.010"	12
46-7115	.015"	12
46-7120	.020"	12
46-7130	.030"	12

46-7100A
CHEVY CRUZE SHIM PACK ASSORTMENT

Assortment contains 12 of each size

3/8" DRIVE TORX BIT FOR GM VEHICLES

These tools are designed to line up holes in engine cradle with locating holes in frame. Set contains two of each size.

88-050	3/8" drive torx bit is necessary for removal of rear hub and bearing assemblies on most 1980 and newer GM vehicles
88-060	1/2" drive torx bit is necessary for removal of front caliper mounting bolts on 1988 and newer GM W body cars

CV JOINT REMOVING TOOLS

For easy removal of CV joints that are retained by circlips

88-110	1" opening	**88-120**	1 1/4" opening
88-125	Handle		
88-130	set contains 88-110 and 88-120 (for use with air hammer)		
88-140	set contains 88-110, 88-120 and 88-130 (for manual use)		

88-150 BEARING DRIVER SET

Easily takes off even the hardest to remove bearings, CV joints, etc.

88-108	1/2" bearing driver
88-109	3/4" bearing driver
88-110	1" CV joint removing tool
88-120	1 1/4" CV joint removing tool
88-125	bearing driver handle

88-343

MICRO SHEAR REAR SHIM TAB CUTTER

This cutting tool is designed to easily remove the tabs from our rear-wheel full contact/dual angle shims. Removes only those you need removed. Works equally well on both the original design or the System 2000 universal design.

88-441

DELUXE "BAND-IT" CV BOOT CLAMP INSTALLER

Designed to work with the low profile Band-It clamps used to hold CV boots on all FWD vehicles.

88-501 UNIVERSAL FORD LIGHT TRUCK BUSHING REMOVAL TOOL

Easily removes both OE and aftermarket bushings without damage to locking ears. Fits all full-size Ford 4x4 & 4x2 through 2004 F series, as well as 1983-1997 Ranger & Bronco II 4x4 models & Econoline vans.

88-501A	puller body
88-501I	concave puller stem

See Application Guide, pages 10-48, for specific models and years

88-569

FRONT WHEEL DRIVE AXLE REMOVINGTOOL

- Universal design allows axle removal on FWD vehicles
- Offset leg design clears hub housing
- Multi-fit base plate will fit either four- or five-lug design

88-572

FORD FRONT WHEEL AXLE INSTALLATION TOOL

This tool easily pulls FWD axles through tapered splines of hub on Tempo/Topaz, Escort/Lynx and EXP vehicles.

88-856

OETIKER CLAMP PINCERS

Designed for easy installation and removal of the popular Oetiker CV clamps found on most of today's FWD vehicles.

88-882

WHEEL WEIGHT HAMMER

This passenger car wheel weight installation tool is the industry standard. Plastic-coated handles provide a better grip.

88-890

WHEEL PROTECTOR WHEEL WEIGHT PLIERS

"Soft-Head" design allows installation and removal of coated weights without damage to wheel or wheel weight coating.

Replacement head: **88-890-1**

88-928

PEDAL DEPRESSOR

This unit produces contant pressure on the pedal. The adjustable steel plate extends the length of the bar.

88-938

STEERING WHEEL HOLDER

This unit securely centers the steering wheel during alignments. The covered hooks and base prevent damage to the steering wheel or seat cover.

88-1101
LUG NUT COVER TOOL

Removes and installs chrome lug nut covers from both heavy-duty and medium-duty truck wheels.

- Non-mar coating will not scratch chrome
- Fits both round and hex covers
- Made In USA

88-1102

TRUCK WHEEL WEIGHT PLIERS

Here's a tool hefty enough to easily remove and install all styles of heavy-duty wheel weights. Even the largest truck weights are no match for this tool!

88-1103
WHEEL WEIGHT HAMMER

Used for the installation of coated passenger car wheel weights. This hammer features a unique "soft-head" acetate hammer face. The casted steel head has an enamel finish, and the rear-mounted hardened steel "Clip Claw" horn quickly removes old weights. The horns are replaceable. An essential tool for coated wheel weights.

88-1103-1	replacement soft head
88-1103-2	replacement hook

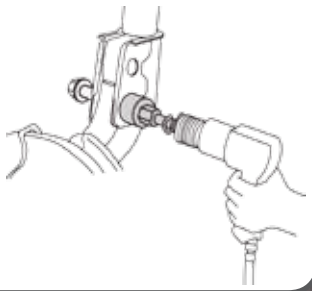
BOLT/NUT REMOVING TOOL

Removes even the most stubborn bolts with ease. This tool is designed to work in conjunction with a zip gun (to provide vibration) while being turned with an open-end or box wrench.

	Size	Works especially well on
88-1110	3/8"	GM hub & bearing assembly T50 torx mounting bolts
88-1112	1/2"	GM brake caliper T60 torx mounting bolts

88-1114
STRUT BOLT REMOVER DRIVER SET

Ideal for removing rusty strut bolts!



See Application Guide, pages 10-48, for specific models and years

88-1300
BUSHING DRIVER FOR 46-133 TOE KIT

This specially designed tool is necessary for the installation of rear toe adjustment bushing (46-133) on Taurus and Sable station wagons.

88-1302
TAURUS/SABLE SEDAN REAR TOE/CAMBER ADJUSTING TOOL

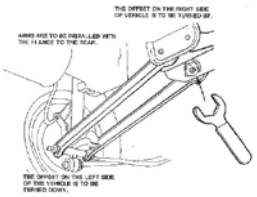
This specially-designed tool easily adjusts aftermarket offset bushing for accurate adjustment of camber/toe.

1986-2002 Ford Taurus, Mercury Sable sedan

88-1303
TEMPO/ TOPAZ CAMBER/TOE ADJUSTING TOOL

This specially-designed tool easily adjusts aftermarket offset bushing for accurate adjustment of camber/toe.

1984-1994 Ford Tempo
1984-1994 Mercury Topaz



88-1304
HONDA/ACURA/MITSUBISHI ADJUSTABLE BALL JOINT ADJUSTING WRENCH

This 1 5/8¨ open-end wrench makes adjusting the import ball joints a snap!

Works with 41-229 through 41-550 ball joints

88-1637
VALVE STEM INSTALLATION TOOL

- Made of rugged non-marring polymer
- Handles any length valve in any size rim

88-2400
LUG NUT REMOVER SET

A simple, effective method for removing wheel lug nuts when the key is not available. Also removes damaged lug nuts. Tapered left-hand threads grip tapered or straight lug nuts. Two sizes fit most nuts. Also works on hex nuts. Use with 1/2" drive impact tool.
Set contains one each of:

88-2401	Lug nut remover - small
88-2402	Lug nut remover - large

88-2500
WHEEL & HUBCAP LOCK REMOVING KIT

Easily removes and replaces most GM, Chrysler or Ford hub cap locks. Also works on most import and aftermarket designs.

Set contains one each of:

88-2502	28408	GM hubcap locks
88-2503	28409	GM spline hubcap locks
88-2504	28401	Ford & Chrysler hubcap locks
88-2505	28405	Standard wheel locks, large GM wheel locks
88-2506	28406	Corvette, GM N and F body wheel locks
88-2507	28406	Lug nut remover punch
88-2508	28402	Stripped 18mm lug nuts, GM wheel cover locks
88-2509	28404	Oversize wheel locks
88-2510	28407	Large diameter Chrysler locks

88-4014-10
BRAKE LATHE PREMIUM CARBIDE CUTTING INSERTS

AMMCO 3000, 4000, 4100, 6900, 7000, 7700 MODEL LATHES

- 10 cutting tips and mounting screws per package
- 6 cutting surfaces per tip

88-4036
DRUM SILENCER BAND

This silencer is made of natural rubber and is secured by a buckle so it will fit all sizes of passenger car drums.

88-4030
UNIVERSAL SILENCER FOR VENTED ROTOR

This silencer band is made of natural rubber with lead weight inserts attached to daden vibration and chatter. Fits ay size vertical rotor.

88-4039
SILENCER BAND - SMALL

88-4040
SILENCER BAND - LARGE

88-4041
BRAKE ROTOR CHATTER SILENCER

This silencer snaps on in seconds. The two metal "antennas" are positioned behind the cutters to hold the tool where chatter starts.

GRINDING PADS FOR PRO-FINISHER NON-DIRECTIONAL ROTOR FINISHING TOOL

25 pieces per package

88-4080	80 grit
88-4120	120 grit
88-4150	150 grit

See Application Guide, pages 10-48, for specific models and years

88-4087-10
BRAKE LATHE PREMIUM CARBIDE CUTTING INSERTS

ALL FMC LATHES
- 10 cutting tips and mounting screws per package
- 6 cutting surfaces per tip

88-4096-10
BRAKE LATHE PREMIUM CARBIDE CUTTING INSERTS

ALL ACCUTURN DISC/DRUM
- 10 cutting tips and mounting screws per package
- 6 cutting surfaces per tip

ROTARY FILE

These high-quality rotary files are great time-savers when elongating lower strut mount holes to install alignment kits. May be used with 1/4¨ or 3/8¨ electric or air drill. Dozens of other uses.

88-4510 1/4"	88-4511 3/8"
88-4512 5/8"	88-4513 set

TAURUS/SABLE SPOT WELD CUTTERS WITH ARBOR

For use with air tool in cutting spot welds holding OE alignment plates on top of strut towers found on Ford Taurus/Mercury Sable vehicles.

Size	Cutter w/arbor	Cutter only
1/2"	88-4519	88-4521
3/8"	88-4520	88-4522

88-4602
2 1/4" MODIFIED HOLE SAW & INSERT GUIDE

This hole saw is used for installation of the 41-4601 Upper Camber/Caster Strut Plates.

88-6084
PITMAN ARM ADJUSTING TOOL

- Fits 1 7/16" diameter adjusting sleeves
- Permits 360° rotation of pitman arm even where space is limited
- 1/2" square drive for ratchet or breaker bar
- For use on 3/4- and 1-ton trucks, including Ford Super Duty

88-6100
ENGINE CRADLE ALIGNMENT SET

These tools are designed to line up holes in engine cradle with locating holes in frame.

Set contains two of each size

88-6101	3/8" small pin
88-6102	5/8" medium pin
88-6103	3/4" large pin

88-6274
TIE ROD ADJUSTING TOOL

- Fits 1 13/16" diameter adjusting sleeves
- Permits 360° rotation of pitman arm even where space is limited
- 1/2" square drive for ratchet or breaker bar
- For use on 3/4- and 1-ton trucks, including Ford Super Duty

88-6275
TIE ROD ADJUSTING TOOLS SET

Allows use of 1/2" drive ratchet or breaker bar for maximum leverage.

88-6084	1 7/16"	88-6274	1 13/16"
88-7095	3/4"	88-7096	1"
88-7097	1 1/8"		

88-6290
4WD FRONT HUB PULLER

Needed to remove front hub assembly when wheel bearing or brake rotor service is required.

1988-05 GM trucks, Tahoe, Suburban and Yukon
1994-05 Dodge Ram trucks
1997-05 Ford 1/2-ton trucks and Expedition
1998-05 Ford 3/4- and 1-ton trucks and Excursion
1985-05 Jeep Cherokee

88-6496
PITMAN ARM PULLER

- Labor intensive removal of steering sector not necessary
- Compact design allows easy access to the Pitman arm
- Works on most domestic SUVs and pickups

88-7023
TIE ROD TOOL

Unique four-position feature lets you locate tool to grip sleeve properly even when access is limited. Permits 360° rotation of tie rod sleeve. Universal design fits most passenger car models, as well as light trucks.

See Application Guide, pages 10-48, for specific models and years

88-7034
DISC BRAKE SPREADER

This tool fits between the two new pads being installed, then expands to retract the piston. This leaves both hands free to start the caliper over the rotor. After it's started, the spreader is removed and you slide the caliper over the rotor the rest of the way. Same as Ford #D79L-2196-A.

Cuts installation time dramatically!

Works on all standard and four-piston caliper disc brakes

88-7085
ECONOMY CV BOOT BANDING TOOL

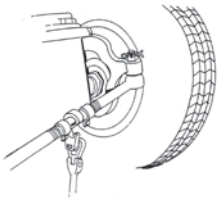
This tool works on all FWD vehicles. Designed to work with the low-profile boot bands.

88-7090
1/2" DRIVE BALL JOINT SPANNER WRENCH

- Designed for removal and installation of ball joint adjusting sleeves on 1/2-, 3/4- and 1-ton Dana open yoke front axles used on Ford, GM, Chrysler, IHC and Jeep 4WD vehicles
- Permits easy torquing with 1" socket for proper upper ball joint preload

Also for use with the **44-2460** and **44-2480** series bushings.

TIE ROD ADJUSTING TOOL SET



Unique design allows use of 1/2" drive ratchet or breaker bar for maximum leverage.

88-7095	3/4" for compact vehicles
88-7096	1" for standard vehicles
88-7097	1 1/8" for light trucks

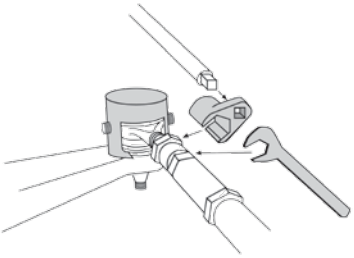
88-7098
FORD SUPER DUTY TIE ROD TOOL

- Accurately machined to fit the large toe-adjusting sleeve and steer-ahead sleeve
- Wide jaw fits into split in sleeve for positive grip without slippage or tearing
- Long lever arm helps break loose stubborn, rusted sleeves
- Full 360° rotation

88-7099
TIE ROD ADJUSTING TOOL

Features 360° sleeve rotation without removing tool from tie rod, and has an eight-position feature for proper tool location.

88-7100A
1994-1997 CHRYSLER LH MODEL TOE ADJUSTING TOOL SET



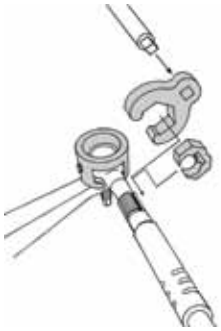
This set contains:

88-7101 TIE ROD SOCKET
Special offset socket allows easy access to sleeve nuts and breaks loose even the most stubborn tie rod sleeve jam nuts.

88-7102 TIE ROD END STABILIZER
This holding tool prevents the tie rod end from "cocking" during adjustment, ensuring correct toe setting.

88-7103 TIE ROD END SLEEVE ADJUSTING WRENCH
This specially designed adjusting tool has the proper angle and length to easily reach and turn tie rod sleeves for adjustment.

88-7200A
1998 TO 2005 CHRYSLER LH MODEL TOE ADJUSTING TOOL SET

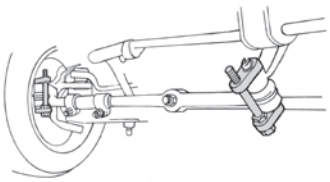


This set contains:

88-7201 TIE ROD END SLEEVE ADJUSTING TOOL
This specially designed tool has a hardened tab to fit into the slot of the tie rod sleeve and an inside diameter machined to match the sleeve.

88-7102 TIE ROD END STABILIZER
This holding tool prevents the tie rod end from "cocking" during adjustment, ensuring correct toe setting.

88-7203 TIE ROD SLEEVE OUTER WRENCH
This special wrench is designed to fit over the adjusting tool to loosen and turn the tie rod sleeve to the proper toe setting.



88-7205
TIE ROD STABILIZER SET

This tool set is designed to center tie rod ends in their sockets when setting toe. This will help in obtaining a straight steering wheel, insuring proper steering performance and maximum tire life.

See Application Guide, pages 10-48, for specific models and years

88-7249
BALL JOINT TOOL SET

The tools is this set will press in or out most sizes of press-fit ball joints. The C-frame press can also be used alone to remove and replace universal joints.

88-7301
POSITIVE LOCK UNIVERSAL INNER TIE ROD SOCKET

Allows fast and easy replacement of inner tie rod end without removing the rack and pinion.

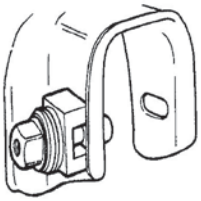
Fits domestic and foreign vehicles with inner tie rods up to 42mm outer diameter.

Adjusts to fit all styles of inner tie rods (round, square, flat or hex) *without slipping!*

88-7425
GM & FORD MINI VAN ALIGNMENT WRENCH SET

88-7414	13/16"	*1995 & Newer ford Aeorostar vans*
88-7534	22mm	*1990 & newer 2WD GM Astro/Safari vans and newer AWD*
88-7536	3/4"	*1973-1987 GM 2WD pickups and 1985 & newer Canadian-built Astro*
88-7537	18 mm	*1985 & newer US-built Astro vans*

88-7491 GM UPPER CONTROL ARM KNOCK OUT TOOL



- Required to remove factory frame knock-outs
- Won't damage alignment bracket, as can happen when you use a pry bar to remove the knock-out plug

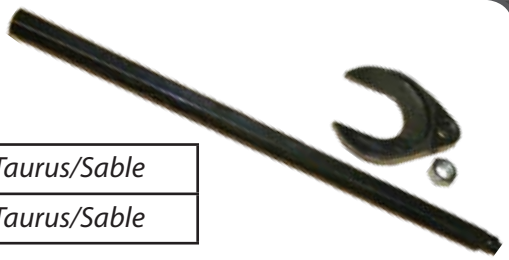
1988-2000 Chevrolet & GMC trucks, and Chevrolet Astro and GMC Safari vans

88-7504
INNER TIE ROD CRIMPING TOOL

This handy tool works on all GM & Chrysler vehicles with Saginaw steering gears. It allows the technician to crimp the new tie rod housing onto the rack to keep it from coming loose.

CV JOINT FORK & EXTENSION

This tool pulls CV joints on 1986-1990 Taurus/Sable
Will also pull joints with hidden retaining rings



88-7507	CV Joint Fork	*1986 & newer Ford Taurus/Sable*
88-7508	Slide Hammer Extension	*1986 & newer Ford Taurus/Sable*

88-7704
ADAPTERS FOR FOUR WHEEL DRIVE

This kit is used to remove and install upper and lower ball joints on 1967 to 1992 1/2- and 3/4-ton vehicles fitted with Dana 44 front axles (found on Ford, Dodge, GM, International and Jeep vehicles).

88-7800A
1998-2011 HONDA/1995-2000 CHRYSLER SEBRING UPPER BALL JOINT ADAPTER SET

Set contains one each of:

88-7801	Honda ball joint installation cup
88-7802	Honda ball joint installation ram
88-7803	Chrysler ball joint installation cup
88-7804	Chrysler ball joint installation ram

Also works with **88-7850A**

88-7813
IMPORT VEHICLE TWO-IN-ONE TIE ROD ADJUSTING WRENCH

This special open-ended wrench has extended length for easy access.

21mm opening on one end and 22mm opening on the other.

88-7815
DODGE DAKOTA/DURANGO CAMBER/CASTER TOOL

For camber/caster adjustment. Fits 7/8" adjustment bolts.

1997-2005 Dodge Dakota 2WD
1998-2005 Dodge Durango 2WD

GM TORSION BAR UNLOADING TOOL
88-7822

This rugged tool is built for GM's K-3500 series trucks with heavy-duty chassis and a larger torsion bar. It features a larger C-frame opening to accommodate beefier torsion bars. The tool safely holds the torsion bar while you make adjustments.

88-7822-1
DODGE/FORD TRUCK TORSION BAR TOOL ADAPTER

This unique bracket is used on the vehicle crossmember to provide a safe, secure anchor point while using the 88-7822 GM Torsion Bar Tool (sold separately). This bracket works on all full size Ford & Dodge light duty trucks with torsion bar suspension — a "must have" tool for any shop replacing torsion bar keys.

See Application Guide, pages 10-48, for specific models and years

88-7829
FORD TRUCK CAMBER/CASTER WRENCH

Specially designed wrench makes camber/caster adjustment on Ford's new adjusting cams much easier. Wrench is bent for specific fit on the adjusting bold and nut. 21mm, 12-point design and 1/2" square drive.

1995-2002 Ford Explorer 4x4, 1997 and 2003 F150 4x4 and 4x2, 1997 and 2002 Expedition and Lincoln Navigator 4x4 and 4x2, 1997 and up GMC Savana, 1997 and up GM Express

88-7850A
UNIVERSAL BALL JOINT/ U-JOINT PRESS SET

- Fits most press-fit ball joint applications (passenger cars as well as 2WD and 4WD light trucks)
- Powerful screw-type press, together with the special adapters, will easily remove and install even the most difficult ball joints
- By itself, the C frame press is designed to easily remove and install universal joints

This tool set is a must for every alignment shop!

Set contains one of each part.

88-7901		Removal tube
88-7902		Installation tube
88-7903		Removal plug
88-7904		Universal installation adapter
88-7905		Snap-on adapter stem
88-7906		OTC tool adapter stem
88-7907		Installing adapter
88-7908		Removing adapter
88-7909		Receiving tube (3" OD x 2 3/4" ID)
88-7910		Receiving tube (2 1/2" OD x 2 1/4" ID)
88-7911		Receiving tube (2" OD x 1 3/4" ID)
88-7912		Forcing screw
88-7913		5/8" steel ball
88-7914		O ring
88-7915		Plug
88-7916		C Frame

88-7860A

HONDA REAR ADAPTER SET

Designed for easy removal of OE bushings and installation of offset camber bushings. Works with all types of ball joint presses.

Set contains one each of:

88-7861	88-7862
88-7863	88-7864

88-7870C

1996-2005 TAURUS/SABLE BALL JOINT ADAPTER SET (UPDATED 4-PIECE SET)

Unique design easily removes and installs even the most stubborn ball joints.

Set contains one each of:

88-7871	88-7872
88-7873	88-7874

88-7880A

LATE MODEL CHRYSLER/ DODGE BALL JOINT ADAPTER SET

Fits most popular "C" clamp style ball joint service tools.

Set contains one each of:

88-7881	88-7882
88-7883	88-7884

Works with **41-232** Chrysler 300 & Dodge Charger/Challenger ball joint through 2011

88-7890A

HONDA ACCORD BALL JOINT ADAPTER SET

Set contains one each of:

88-7891	88-7892	88-7902

2004-2011 Acura TSX
2003-2011 Honda Accord
Coupe Sedan

See Application Guide, pages 10-48, for specific models and years

88-7900A
LIGHT TRUCK BALL JOINT PRESS ADAPTER SET

Works with all popular screw type ball joint presses and makes easy work of ball joint removal and installation on all late model 2WD and 4WD using Dana 44 front axles.

1987-1991 GMC & Chevrolet
Ford through 1979
1994-1999 Dodge
Jeep through 1983

88-7901	88-7902	88-7903
88-7904	88-7905	88-7906

This set is included in the 88-7850A

88-7950A
GM TRUCK BUSHING INSTALLATION/REMOVAL ADAPTER SET

This adapter set is designed to easily remove OE control arm bushings and install offset camber bushings.

Set contains one each of:

88-7951	88-7952
88-7953	88-7954

1999-2011 GMC & Chevrolet 1/2- & 3/4-ton 4WD/2WD & Hummer H2

88-7959A

INNER TIE ROD REMOVAL SET

88-7572	**Socket**	*Older Ford & Chrysler vehicles*
88-7593	**1 3/16" adapter**	*with socket for Ford FWD w/rack & pionion power steering with new-style tie rods*
43-7594	**1 5/16" adapter**	*with socket for Ford RWD and most Chrysler vehicles with rack & pinion & new-style tie rods*

88-8350
GM "J" BODY TOE ADJUSTMENT WRENCH

This specially designed 19mm toe wrench allows easy access and adjustment on all 1982 & newer GM J body cars.

88-8922
CAMARO/FIREBIRD CAMBER ADJUSTING TOOL

For vehicles with adjustable upper strut tower.

1982-1992 Camaro/Firebird

88-8923
GM "W" BODY REAR TOE ADJUSTING TOOL

Allows easy adjustment of factory rear toe system.

1990 - 2002 Buick Regal, Chevrolet Lumina, Oldsmobile Cutlass Supreme, Pontiac Grand Prix

88-8924
GM W BODY REAR AUXILIARY SPRING CLAMP

A must for the removal and installation of struts on the rear of GM W body vehicles.

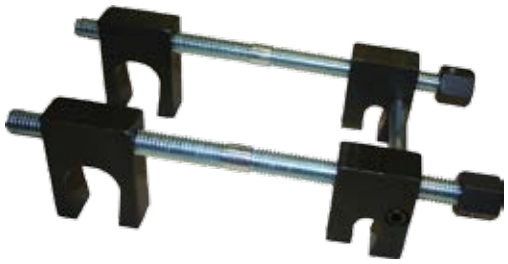
- Hold auxiliary spring compressed while suspension is unloaded
- Also a must for installation of aftermarket offset cam bolts for adjusting rear camber

1988-1996 Buick Regal, Oldsmobile Cutlass Supreme, Pontiac Grand Prix
1988-2001 Chevrolet Lumina sedan
1995-1999 Chevrolet Monte Carlo

88-8925
1993-2002 CAMARO/FIREBIRD TOOL

Heavy-duty design allows both camber and caster adjustment with weight on vehicle. Designed for accurate, one-time adjustment.

See Application Guide, pages 10-48, for specific models and years



88-8926
FORD EXPLORER CAMBER/CASTER ADJUSTING TOOL

For 2002-2005 models with new design suspension

This tool allows you to slide the upper control arm in a positive or negative direction when adjusting camber/caster while maintaining live alignment reading.

88-8927
FORD LIGHT TRUCK CAMBER/CASTER ADJUSTING TOOL

- Makes difficult-to-adjust vehicles fully adjustable for camber/caster
- Unique design allows fast and easy "on-vehicle" adjustments
- Works with OE bolt system, eliminating the need for expensive aftermarket cam bolts

2004-2011 Ford F150 2WD/4WD
2007-2011 Expedition/Navigator

88-8928
DODGE RAM CAMBER/CASTER ADJUSTING TOOL

This innovative tool allows for live adjustment of camber/caster on 4 x 4 and 4 x 2 vehicles. It offers fast, easy hook up, and the jaws allow for smooth, controlled adjustments.

2002-2005 Dodge Ram 1500

Camber ± 1°, Caster ± 1.5°

88-8929
GM TRAILBLAZER/ENVOY CAMBER/ CASTER ADJUSTING TOOL SET

- Makes difficult-to-adjust vehicles fully adjustable for camber and caster
- Design allows fast and easy, smooth and accurate one-time adjustment
- Allows adjustment of camber and caster with no need of pry bar

2002-2009 Chevrolet Trailblazer
2003-2009 GMC Envoy

88-9065
TAURUS/SABLE WAGON REAR TOE ADJUSTER

Use with 1/2" drive extension for OE rear toe adjusters on all 1986-1995 Ford Taurus and Mercury Sable sation wagons.

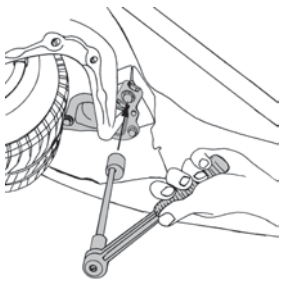
88-9066
FORD REAR TOE ADJUSTING TOOL

This special tool is designed to fit the larger 2 1/2" star-shaped toe adjusting cam found on the rear of late-model Ford products. It provides the leverage needed to easily make accurate rear toe adjustments.

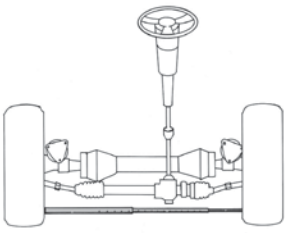
1996-2004 Ford Taurus and Mercury Sable station wagon
1995-2002 Lincoln Continental

88-9180
BMW REAR TOE ADJUSTING TOOL

2001-2006 BMW 3 Series
1992 & newer Series E36
1995 & newer all models with sport suspension except 318Ti and Z3



88-9188
WHEEL SPREADER



Accurately spreads and holds the vehicle's front wheels.

A must for Mercedes.

Easy and effective.

The spreader saves time and assures a more accurate reading.

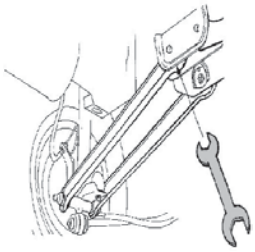
Extension 42" minimum, 72" maximum

See Application Guide, pages 10-48, for specific models and years

88-9200
FORD/MERCURY REAR TOE ADJUSTER

For adjustment of rear toe bushings

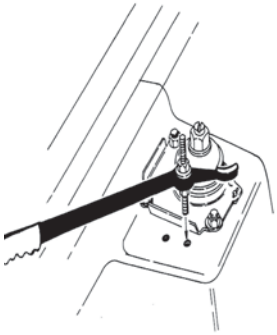
1996-2007 Taurus/Sable and Tempo/Topaz sedans

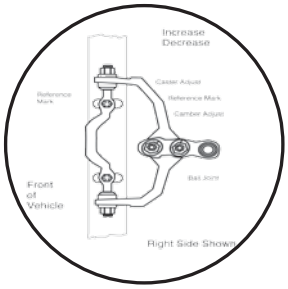


88-9414
LATE MODEL MUSTANG CAMBER TOOL

Allows for controlled adjustment of camber. Reversible to fit either side of vehicle

1994 - 2003 Mustang





88-9412
CAMBER/CASTER ADJUSTING TOOL FOR LATE MODEL FORD RWD

This unique tool allows 360° rotation of the OE caster & camber adjusters without interference. The outer tube holds the settings in place while the lock nuts are loosened/tightened through the center, using a ratchet and extension.

1991-2002 Ford Crown Victoria, Mercury Marquis, Lincoln Town Car

88-9416

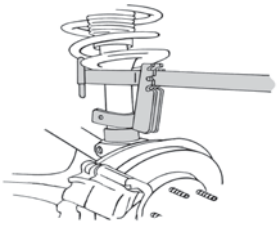
STRUT REMOVAL TOOL FOR FORD FWD VEHICLES

This innovative new strut removal tool features a lever and fulcrum design for fast and easy remvoal of even the most stubborn struts. The design of this strut removal tool incorporates a long lever arm working against the strut's lower spring plate with a fulcrum pushing the knuckle down, creating maximum leverage to free the bottom of the strut from the knuckle.

Cuts strut removal time by 60% or more!*

Comes complete with instructions and instructional videotape showing tool in use, as well as time-saving tips for strut re-assembly.

88-9416-1 Lever arm	**88-9416-2 Fulcrum**
88-9416-3 Short collar	**88-9416-4 Slotted collar**
88-9416-5 Holding pin	U.S. Patent No. 6,131,883



1986-2007 Taurus, Sable (F & R)
1995-2000 Contour/Mystique (F & R) & Windstar van (F)
1999-2002 Cougar (F & R)

***Based on acutal test results at our test facility, when compared to factory flat rate times**

88-9480
MAGNETIC CAMBER CHANGE GAUGE

This portable, accurate magnetic gauge attaches firmly to spindles or rotors and is the perfect tool to measure camber change when doing strut work or when truck alignment bushings or other camber kits are installed.

88-25044
UNIVERSAL TIE ROD PULLER

This tool features a 2 1/4" reach and 2 1/2" spread for easy removal of even the most stubborn tie rod ends. The tool also works well for removal and installation of various aftermarket bushings.

AUTOMOTIVE SEPARATORS

For loosening and removal of tie rod ends, ball joints and Pitman arms. All tools 11 7/8" overall length.

Part	*Application*	Specifications
88-25050	*Fits most tie rod ends*	1 1/8" opening
88-25030	*Fits most ball joints*	15/16" opening
88-25010	*Fits most Pitman arms*	21/32" opening

See Application Guide, pages 10-48, for specific models and years

88-35824
2" COARSE-TYPE "R" SURFACE PREP PAD

Our high-performance surface prep products are manufactured from a tight non-woven fiber web with a woven backing, and are impregnated with a specially processed mineral grain. They are ideal for deburring, blending coarse abrasive scratches; and removing rust, corrosion, oxides, paint, adhesives and gaskets.
2" Gold Type R Coarse Grit - 50 per package

88-58122
22MM CONTROL ARM ALIGNMENT WRENCH

Older FM & Chrysler RWD passenger cars

UNI-FIT®

UNIVERSAL CONSTANT VELOCITY BOOT KIT

The Uni-Fit Universal CV Boot allows you to be a full-line supplier of outer & inner CV boots. Just two sizes (four part numbers) cover all domestic and import applications. The Uni-Fit CV Boot meets of exceeds OEM quality requirements.

UF2001	Uni-Fit CV Boot	Fits joints ranging from 2.5" to 3.6" diameter. Will cover more that 90% of all CV applications
UF2002	Uni-Fit High-Temp CV Boot	Same dimensions as UF-2001 but designed to run in high temperature environments found on inner inner joints near catalytic converter and other parts of the exhaust system
UF2003	Uni-Fit plus CV Boot	Combines with the original Uni-Fit to provide 100% coverage of domestic & foreign apps
UF2004	Uni-Fit plus High-Temp CV Boot	Designed for large inner CV joints that run in high-temp environments found near exhaust

TORQUE SOCKETS

These impact driven sockets assure proper torquing of lug nuts ***They Also:***

- Stops tightening when proper torque is achieved
- Eliminate broken and stripped studs
- Eliminate warped or distorted rotors, wheels and brake parts
- Eliminate customer complaints concerning improperly torqued lug nuts
- Are manufactured of the finest spring steel using an exclusive Swedish process

88-6040 10 PIECE TORQUE SOCKET SET

Covers over 90% of most popular passenger car and light truck applications!

Contains one each of the following				
88-6010	88-6011	88-6012	88-6013	88-6014
88-6016	88-6017	88-6018	88-6019	88-6025

88-6005 5 PIECE TORQUE STICK EXTENSION KIT

1/2" drive torque stick extension kit for foreign and domestic cars and light trucks — used with ½" impact wrench and thin wall socket.

- Eliminates wheel damage when torquing wheel nuts with tight tolerances
- Prevents over-torquing wheel nuts
- Prevents brake pulsation
- Prevents distortion of wheels, drums and rotor

Contains one each of the following	
88-6027	88-6028
88-6029	88-6030
88-6031	

INDIVIDUAL SOCKETS AND STICKS AVAILABLE

88-6010	17mm	Green	55 ft/lbs
88-6011	17mm	Red	80 ft/lbs
88-6012	19mm - 3/4"	Yellow	65 ft/lbs
88-6013	19mm - 3/4"	Blue	80 ft/lbs
88-6014	19mm - 3/4"	Gray	100 ft/lbs
88-6015	21mm	Black	60 ft/lbs
88-6016	21mm	Lt. Brown	80 ft/lbs
88-6017	13/16"	Brown	100 ft/lbs
88-6018	22mm - 7/8"	White	120 ft/lbs
88-6019	22mm - 7/8"	Turquoise	140 ft/lbs
88-6020	Discontinued		170 ft/lbs

88-6021	1"	Purple	140 ft/lbs
88-6022	Discontinued		170 ft/lbs
88-6023	1-1/16"	Tan	140 ft/lbs
88-6024	22mm - 7/8"	Lt. Blue	100 ft/lbs
88-6025	24mm - 15/16"	Light Green	140 ft/lbs
88-6026	21mm	Charcoal	150 ft/lbs
88-6027	½" Drive	Yellow	65 ft/lbs
88-6028	½" Drive	Blue	80 ft/lbs
88-6029	½" Drive	Gray	100 ft/lbs
88-6030	½" Drive	White	120 ft/lbs
88-6031	½" Drive	Aqua	140 ft/lbs

THIN WALL DESIGN 1/2" DRIVE FLIP IMPACT SOCKETS

88-1510	Extra thin wall SAE 3/4" x 13/16"	6 pt deep length
88-1511	Extra thin wall 19mm x 21mm	6 pt deep length
88-1512	Regular thin wall SAE 3/4" x 13/16"	6 pt deep length
88-1513	Regular thin wall 19mm x 21mm	6 pt deep length

See Application Guide, pages 10-48, for specific models and years

88-1312 SET

13 PIECE 1/2" DRIVE SOCKET SET
STANDARD LENGTH - SAE SIZES

88-2014R	7/16"	88-2016R	1/2"	88-2018R	9/16"	88-2020R	5/8"
88-2022R	11/16"	88-2024R	3/4"	88-2026R	13/16"	88-2028R	7/8"
88-2030R	15/16"	88-2032R	1"	88-2034R	1 1/16"	88-2036R	1 1/8"
88-2040R	1 1/4"	88-206TR	metal tray				

88-1412M SET

14 PIECE 1/2" DRIVE METRIC SOCKET
SET STANDARD LENGTH - METRIC SIZES

88-2010M	10mm	88-2011M	11mm	88-2012M	12mm	88-2013M	13mm
88-2014M	14mm	88-2015M	15mm	88-2016M	16mm	88-2017M	17mm
88-2018M	18mm	88-2019M	19mm	88-2021M	21mm	88-2022M	22mm
88-2026M	26mm	88-2027M	27mm	88-207TR	metal tray		

88-1312D SET

13 PIECE 1/2" DRIVE SOCKET SET
DEEP LENGTH - SAE SIZES

88-2014D	7/16"	88-2016D	1/2"	88-2018D	9/16"	88-2020D	5/8"
88-2022D	11/16"	88-2024D	3/4"	88-2026D	13/16"	88-2028D	7/8"
88-2030D	15/16"	88-2032D	1"	88-2034D	1 1/16"	88-2036D	1 1/8"
88-2040D	1 1/4"	88-325CS	metal tray				

88-1412MD SET

14 PIECE 1/2" DRIVE METRIC SOCKET
SET DEEP LENGTH - METRIC SIZES

88-2010MD	10mm	88-2011MD	11mm	88-2012MD	12mm	88-2013MD	13mm
88-2014MD	14mm	88-2015MD	15mm	88-2016MD	16mm	88-2017MD	17mm
88-2018MD	18mm	88-2019MD	19mm	88-2021MD	21mm	88-2022MD	22mm
88-2026MD	26mm	88-2027MD	27mm	88-325CS	Metal tray		

88-1500DW SET

12 PIECE 1/2" DRIVE EXTRA-THIN WALL DEEP IMPACT SOCKET SET FOR WHEEL NUTS

- The extra-thin wall design allows easy acess to recessed wheel nuts where space is limited
- Due to the extra-thin wall design, they should only be used on wheel nuts where limited torque is applied
- For use only with 1/2" drive tools
- DO NOT USE with reducing adapters

88-2024DT	3/4"	88-2026DT	13/16"
88-2028DT	7/8"	88-2032DT	1"
88-2034DT	1 1/16"	88-2146DT	3/4" & 13/16"
88-2017MDT	17mm	88-2019MDT	19mm
88-2021MDT	21mm	88-2022MDT	22mm
88-2023MDT	23mm	88-2192DT	19mm & 21mm
88-2192DW-C	molded case		

88-2000M SET 4 PIECE 1/2" DRIVE EXTRA-THIN WALL DEEP WHEEL NUT IMPACT SOCKETS

- Should be used only on passenger and light-truck wheel nuts
- For use only with 1/2" drive tools
- DO NOT USE with reducing adapters

88-2017MDT	17mm	88-2019MDT	19mm
88-2021MDT	21mm	88-2022MDT	22mm

1/2" DRIVE EXTRA-DEEP SPINDLE NUT SOCKET

These sockets are designed to remove the spindle axle nuts on FWD vehicles that require extra torque — 3.5" deep

88-2732MD	32mm	88-2734MD	34mm

See Application Guide, pages 10-48, for specific models and years

Bring order to your workbench and work faster and better. Trays come in SAE and Metric sizes for 1/2", 3/8"and 1/4" drives. Best selling 3/8" drive SAE and Metric trays hold sockets from 1/4" to 1" or from 6mm to 20mm. Trays are molded of rugged ABS plastic to shrug off gas, oil, bumps and hard knocks.Three SAE sizes in red and three Metric sizes in gray. Butterfly-type slot on bottom for pegboard display.

RED SOCKETS TRAYS ARE STANDARD SIZE

88-2080 1/2" Drive, Regular and Deep Well 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8 & 1-1/4"

88-2081 3/8" Drive, Regular and Deep Well 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16 & 1"

88-2082 1/4" Drive, Regular and Deep Well 1/8, 5/32, 3/16, 7/32, 1/4, 9/32, 5/16, 11/32, 3/8, 7/16, 1/2, 9/16, & 5/8"

GRAY SOCKETS TRAYS ARE METRIC SIZE

88-2083 1/2" Drive, Regular and Deep Well 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 & 27mm

88-2084 3/8" Drive, Regular and Deep Well 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, & 20mm

88-2085 1/4" Drive, Regular and Deep Well 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, 14 & 15mm

- Post bases are beefed-up to hold sockets more securely
- Post height on 1/2" drive trays reduced to fit most tool chests
- Sizes are marked on posts for instant identification
- Tough ABS plastic resists gas, oil and abuse
- Edge tangs for easy handling
- 3/8" drive SAE tray features 15/16" posts for regular and deepwell sockets

88-2090 **Fractional Size Wrench Rack**

Orange ABS plastic rack holds these fractional sizes: 1, 15/16, 7/8,13/16, 3/4, 11/16, 5/8, 9/16, 1/2, 7/16,3/8, 5/16 and 1/4"

88-2091 **Metric SizeWrench Rack**

Black ABS plastic rack holds these metric sizes: 7, 8, 9, 10, 11,12, 13, 14, 15, 16, 17, 18 and 19mm

Use our wrench racks to keep box- and open-end wrenches ready for instant access, arranged by size with easy-to-read, white grease-resistant ink. The fractional and metric sizes feature a triangular, side-by-side shape to take up minimum drawer space. Racks also have a molded carry handle, pegboard slots and are oil, grease and solvent resistant.

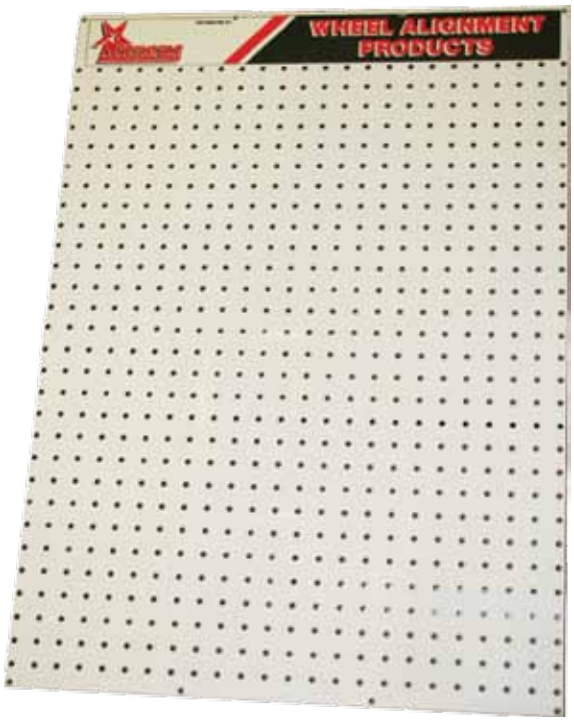
88-2093

HEX/TORX TRAY

New Hex/Torx Tray helps automotive technicians instantly find the socket or bit they need. Tray holds SAE hex socket sizes 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16,and 3/8", Metric sizes 4, 5, 6, 7, 8, 9 and 10mm; and Torx bit sizes 27, 30, 40,45, 47, 50, 55 and 60

Tray is molded of tough ABS plastic to resist oil, grease and solvents. Sizes for each of the SAE, Metric and Torx sockets are pad printed in an oil and grease resistant black ink. Special end tangs on the 9-3/16" x 3-1/4" tray provide a finger hold for picking up tray in tight tool boxes.

Build a Custom Wheel Alignment Assortment



Using a product mix that is applicable to your alignment sales needs, you can now build a board assortment by choosing your most popular part numbers with custom quantities of each. This allows for a more accurate inventory and prevents over- or under-stocking part numbers.

The board is 24" x 28" and comes with 20 peg hooks
(more hooks available upon request)

Call Northstar Today!

Call **1-800-828-0255** today to speak to a sales representative, who will help you craft an assortment that meets your needs.

MODE D'EMPLOI SPECIAL

« MAGNA-CAM »
Instructions d'installation

Lisez toutes les instructions avant de commencer l'installation du «Magna-Cam».

1. Inspectez le véhicule pour voir si des pièces sont endommagées ou usées et réparez-les au besoin. Prenez des mesures de carrossage afin de déterminer le côté du véhicule qui nécessite le plus de correction et commencer par ce côté.
2. Soulevez le véhicule par les feuillures et laissez pendre librement la suspension.
3. Déposez la roue.
4. Enlevez le boulon supérieur de la jambe de suspension et débarrassez-vous en.
5. Avant d'installer le « Magna-Cam », alignez la fente du manchon en nylon par rapport à la ligne de référence sur la tête du boulon (voyez la figure n° 1). IMPORTANT : N'INSTALLEZ PAS le « Magna-Cam » sur les véhicules ayant des trous allongés dans la bride de la jambe de suspension (voyez la figure n° 2).

REMARQUE : La fente du manchon en nylon (et la ligne de référence sur la tête du boulon lui correspondant) devrait être orientée vers l'extérieur pour accroître le carrossage et vers l'intérieur pour le diminuer (voyez la figure n° 3).

A). Il est très important que la fente du manchon en nylon soit aussi près que possible de la position de 3 h 00 précise (pour diminuer) ou de 9 h 00 précise (pour accroître) de façon à obtenir la marge maximale de réglage, 1-1/4°

6. Tout en tenant le manchon en nylon pour l'empêcher de tourner, installez le « Magna-Cam » à la place du boulon jeté et serrez-le seulement à la main.
7. Desserrez le boulon inférieur de la jambe de suspension.
8. Remontez la roue et les têtes de géométrie. Abaissez le véhicule sur des plaques tournantes et faites rebondir la suspension. IMPORTANT : Sur quelques véhicules (spécialement ceux à profil de pneu bas), il peut être nécessaire de soulever le véhicule (ou utilisez la particularité de « relever et maintenir » si votre équipement en est équipé) de façon à obtenir le meilleur réglage.
9. Réglez le carrossage en tournant le « Magna-Cam » dans l'un des sens.
10. Après avoir obtenu le carrossage désiré, serrer le boulon aux spécifications industrielles et serrer le boulon « Magna-Cam » de la manière suivante: Boulon 12mm - 60ft.lbs. (81.3 N.M.) 14mm à 17mm - 100ft.lbs. (135.6 N.M.) autres peuvent être requises en tant que pièces d'espacement pour empêcher l'écrou autobloquant de n'arriver en butée contre la fin du filetage du boulon.
11. Continuez avec le reste de la géométrie et testez le véhicule sur la route.

REMARQUE : Dû aux différences d'emplacement du trou de la jambe de suspension à l'articulation, sur quelques véhicules un changement plus grand du carrossage peut être obtenu en plaçant le « Magna-Cam » dans le trou inférieur. Si ceci est fait, le positionnement du manchon décentré est inversé (voyez la figure n° 3).

INSTRUCCIONES EXPECIALES

"MAGNA-CAM"
Instrucciones de Instalación

Lea todas las instrucciones antes de comenzar la instalación del "Magna-Cam"

1. Inspeccione el vehículo para ver si tiene daños o piezas desgastadas y repare tal como sea necesario. Tome las lecturas de camber para determinar que lado del vehículo necesita la mayor corrección y proceda con ese lado primero.
2. Levante el vehículo por los dobleces y deje que la suspensión cuelgue libremente.
3. Remueva la rueda.
4. Remueva el perno superior del tirante y deshágase del mismo.
5. Antes de instalar el "Magna-Cam", ponga en línea la manga de nilón con la línea de referencia de la cabeza del perno. (Vea la figura No. 1). IMPORTANTE: NO INSTALE el "Magna-Cam" en vehículos que tengan agujeros ensanchados en la brida del tirante. (Vea la figura No. 2).

NOTA: La ranura de la manga de nilón (y la línea de referencia correspondiente en la cabeza del perno), deberán quedar hacia afuera para aumentar el camber y hacia adentro para disminuir el camber. (Vea la figura No. 3).

A) Es my importante que la ranura de la manga de nilón quede tan cerca como sea posible a la posición de las 3 en punto (disminución) o en la posición de las 9 en punto (aumento) con el fin de obtener el máximo de 1-1/4° de amplitud de ajuste.

6. Sujetando la manga de nilón para evitar su rotación, instale el "Magna-Cam" a cambio del perno que fue botado y apriételo con los dedos únicamente.
7. Afloje el tornillo inferior del tirante.
8. Re-instale la rueda y las cabezas de alineamiento. Baje el vehículo sobre las placas giratorias y sacuda la suspensión. IMPORTANTE: En algunos vehículos (especialmente aquellos con llantas de bajo perfil), pueda que sea necesario levantar el vehículo (o usar el dispositivo de "levante y suspenda" si su equipo lo tiene) con el fin de alcanzar el máximo ajuste.
9. Ajuste el camber girando el "Magna-Cam" hacia cualquier lado.
10. Después de obtener el camber deseado, aplique un torque al perno O.E. según las especificaciones de fábrica y al perno "Magna-Cam" de la siguiente manera: Pernos de 12mm - 60 libras pie (81.3 N.M.) 14mm a 17mm - 100 libras pie (135.6 N.M.) arandelas pueda que se necesiten como espaciadores para evitar que la tuerca auto-trabante llegue al tope de los hilos de rosca del perno.
11. Proceda con el resto del alineamiento y pruebe el vehículo en la carretera.

NOTA: A causa de la variación en la ubicación de los agujeros del codillo al tirante, en algunos vehículos se podrá alcanzar un cambio de camber mayor, colocando el "Magna-Cam" en el agujero inferior. Si se hace esto, la posición de la manga descentrada es invertida. (Vea la figura No. 3).

SPECIAL INSTRUCTIONS

"MAGNA-CAM"

Read all instructions before beginning: "Magna-Cam" Installation

1. Inspect vehicle for damaged or worn parts and repair as necessary. Take camber readings to determine which side of vehicle needs the most correction and proceed with that side first.
2. Raise vehicle by the pinch welds and allow the suspension to hang free.
3. Remove wheel assembly.
4. Remove upper strut bolt and discard.
5. Before installing "Magna-Cam," line up slot on nylon sleeve with reference line on bolt head (see figure No. 1). **IMPORTANT**: DO NOT install "Magna-Cam" on vehicles with elongated holes in strut flange (see figure No.2). **NOTE:** The slot on the nylon sleeve (and corresponding reference line on bolt head) should face outward to increase camber and inward to decrease camber (see figure No. 3). A. It is very important that the slot on the nylon sleeve is as close as possible to the 3:00 o'clock position (decrease) or 9:00 o'clock position (increase) in order to get maximum 1-1/4˚ adjustment range.
6. Holding nylon sleeve to prevent rotation, install "Magna-Cam" in place of the discarded bolt and hand tighten only.
7. Loosen lower strut bolt.
8. Re-install wheel assembly and alignment heads. Lower vehicle on to turn plates and jounce the suspension. **IMPORTANT:** On some vehicles (especially those with low profile tires) it may be necessary to raise the vehicle (or use "raise and hold" feature if your equipment has it) in order to achieve maximum adjustment.
9. Adjust camber by turning "Magna-Cam" in either direction.
10. After desired camber is obtained, torque O.E. bolt to factory specifacations and torque "Magna-Cam" bolt as follows: 12mm bolts - 60ft.lbs. (81.3 N.M.) 14mm thru 17mm - 100ft.lbs. (135.6 N.M.) washers may be needed as spacers to keep self locking nut from bottoming out against bolt threads.
11. Proceed with balance of alignment and road test vehicle. **NOTE:** Because of variance in strut-to-knuckle hole locations on some vehicles, a greater camber change may be achieved by placing "Magna-Cam" in the lower hole. If this is done, the positioning of the offset sleeve is reversed (see figure No. 3).

Fig. 1

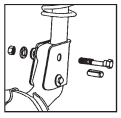
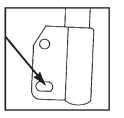


Fig. 2

Fig. 3



"MAGNA-CAM" Torque Specifacations

12mm 60ft.lbs. (81.3 N.M.)
14mm Thru 17mm 100ft.lbs (135.6 N.M.)

Form # 95-135-0204 T

MODE D'EMPLOI SPECIAL

"MAGNA-CAM"

Instuctions d'installation spéciales de la « GM »
Véhicules aven carrosseries « GM » « N », « U » et « W » 1997 et ultérieures Chevrolet Malibu, van Chevrolet Venture, Oldsmobile Cutlass, Oldsmobile Intrique, van Oldsmobile Silhouette, Pontiac Grand Prix, van Pontiac Transport

Instructions d'installaion « Magna Cam »

Remarque : Lisez toutes les instructions avant de commencer l'installation de « Magna-Cam ».

1.) Inspectez le véhicule afin de voie s'il est endommagé, etc.
2.) Surélevez le véhicule en observant les mesures de sécuité et lais sez la suspension pendre librement.
3.) Démontez les roues (facultatif).
4.) Dévissez le boulon supérieur de fixation du renfort et jetez-le. NOTE : Sur carrossages derniers models (1997 et plus récents) GM «N», «U» & «W», une rondelle spéciale «enclenchée» est nécessaire contre la tête du boulon «Magna Cam». Cette rondelle «enclenchée» est utilisée pour compenser les trous surdimensionnés dans le sup port du montant. (voir la figure n° 5).
5.) Avant d'installer le « Magna-Cam », alignez la ligne de référence de la tête du boulon et de la rondelle « à plusieurs épaisseurs » avec la fente du manchon en nylon (voir la figure n° 4). Il est important que les trois (3) pièces soient alegnées pour effectuer une installation réussie. REMARQUE : La fente sur le manchon en nylon (et les lignes de réféférences correspondantes de la tête du boulon et de la ron delle « à plusieurs épaisseurs » doivent faire face à l'extérieur pour augmenter l'inclinaison et à l'intérieur pour la diminuer (voir le fig ure 3). Il est important que la fente sur le manchon en nylon soit aussi rapprochée que possible de la position trois heures (3 h.) (diminution) ou neuf heures (9 h.) (augmentation) de façon à obtenir la plage maximale d'ajustement de 1_°.
6.) Tout en maintenant les divers éléments alignés pour éviter toute rotation, installez le « Magna-Cam » à la place du boulon supérieur de fixation du renfort jeté précédemment.
7.) Installez deux (2) rondelles plates et un écrou autobloquant. Serrez à la main seulement. (Des rondelles peuvent être nécessaires comme pièces d'écartement pout empêcher l'écrou autobloquant d'entrer en contact aven les têtes de boulons.º
8.) Desserrez le boulon inférieur du renfort et sortez-le jusqu'à ce qu'il y ait un écart de 12,7 mm (_pouce) entre la tête de boulon et le renfort.
9.) Réinstallez les roues et let têtes d'alignement. Abaissez le véhicule sur des plaques extensibles (les roues peuvent être maintenant ajustées aux réglages d'inclinaison appropriés aven le poids du véhicule).
10.) Ajustez l'inclinaison en tournant le « Magna-Cam » dans un sens ou dans l'autre.
11.) Lorsque le réglage d'incinaison désiré est obtenu, serrer le boulon aux spécifications industrielles et serrer le boulon « Magna-Cam » de la manière suivante: Boulon 12mm - 60ft.lbs. (81.3 N.M.) 14mm à 17mm - 100ft.lbs. (135.6 N.M.).
12.) Continuez avec l'équilibrage et l'alignement et procédez à un essai du véhicule sur route.

INSTRUCCIONES EXPECIALES

"MAGNA-CAM"

Instrucciones especiales de instalación para "GM"
Vehículos con carrocerías "GM", "N", "U" y "W" de 1997 y más nuevos Chevrolet Malibu; Oldsmobile Intrigue; Oldsmobile Silhouette Van; Pontiac Grand Prix; Pontiac Transport Van

Instrucciones para la instalación de "Magna-Cam"

Nota: Lea todas las instrucciones antes de comenzar la instalación de "Magna-Cam".

1) Inspeccione el vehículo para ver si tiene daños, ets.
2) Levante el vehículo de una manera segura y permita que las suspen sión cuelgue libremente.
3) Retire el conjunto de la rueda (opcional).
4) Retire el tornillo de montaje del puntal superior y bótelo. NOTA: En el último modelo (1997 y más recientes) de vehículos con carrocería "GM", "N", "U" y "W", necesitará una arandela "escalonada" especial contra la cabeza del tornillo "Magna-Cam". Esta arandela "escalonada" se utiliza para compensar los orificios demasiado grandes en la brida de montaje del puntal. (Vea la Figura #5).
5) Antes de instalar el tornillo "Magna-Cam", coloque en alineamiento la línea de referencia en la cabeza del tornillo y en la arandela "escalon ada" con la ranura en la camisa de nilón. (Vea la Figura #4) Es importante que todas las tres (3) piezas estén en alineamiento para lograr una instalación correcta. NOTA: La ranura en la camisa de nilón(y las líneas de referencia correspondientes en la cabeza del tornillo y en la arandela "escalonada") deben quedar hacia fuera para aumentar la inclinación y hacia dentro para reducir la inclinación. (Vea la Figura 3). Es importante que la ranura en la camisa de nilón esté tan cerca como sea posible de la posición de las tres del reloj (3:00) (desminuir) o de las nueve del rojo (9:00) (aumentar) con el fin de obtener la máxima gama de ajuste de 1_°.
6) Mientras mantiene los componentes en línea para evitar la rotación, instale el tornillo "Magna-Cam" en lugar del tornillo de montaje del puntal superior que acaba de botar.
7) Instale dos (2) arandelas planas y una tuerca de presión. Apriéte la tuerca con la mano solamente. (Podrá ser necesario usar arandelas como esparciadores para evitar que la tuerca de presión choque contra el fin de la rosca del tornillo.)
8) Afloje el tornillo del puntal inferior y saque el tornillo hacia fuera, hasta que quede un espacio de aproximademente 12,7 mm (_") entre la cabeza del tornillo y el puntal.
9) Vuelva a instalar el conjunto de la rueda y las cabezas de alineamiento. Baje el vehículo sobre las placas movibles (las ruedas se pueden ajustar ahora a la inclinación correcta con peso sobre el vehículo).
10) Ajuste la inclinación girando el "Magna-Cam" en cualquier sentido.
11) Una vez que haya obtenido el ajuste correcto de la inclinación, apriete Después de obtener el camber deseado, aplique un torque al perno O.E. según las especificaciones de fábrica y al perno "Magna-Cam" de la siguiente manera: Pernos de 12mm - 60 libras pie (81.3 N.M.) 14mm a 17mm - 100 libras pie (135.6 N.M.)
12) Proceda con el resto del alineamiento y pruebe el vehículo en la carretera.

SPECIAL INSTRUCTIONS

"MAGNA-CAM"

Special "GM" Installation Instructions
1997 & Newer "GM", "N", "U"and "W" Body Vehicles
Chevrolet Malibu; Oldsmobile Intrigue; Oldsmobile Silhouette Van; Pontiac Grand Prix; Pontiac Transport Van

"Magna-Cam" Installation Instructions

Note: Read all instructions before beginning "Magna-Cam" installation

1. Inspect vehicle for damage, etc.
2. Raise vehicle in a safe manner and allow suspension to hang free.
3. Remove wheel assemble (optional).
4. Remove upper strut mounting bolt and discard. NOTE: On late model (1997 & newer) GM, "N", "U" & "W" body vehicles a special "stepped" washer is needed against the bolt head of the "Magna-Cam" bolt. This "stepped" washer is used to compensate for oversized holes in strut mounting flange. (see figure #5)
5. Before installing "Magna-Cam", line up the reference line on the bolt head and "stepped" washer with the slot on nylon sleeve. (see figure #4). It is important that all three (3) pieces line up for a successful installation. NOTE: The slot on the nylon sleeve and corresponding reference lines on the bolt head and "stepped" washer should face outward to increase camber and inward to decrease camber. (See Figure 3. It is important that the nylon sleeve is as close as possible to the three o'clock (3:00) position (decrease) or nine o'clock (9:00) position (increase) in order to get maximum 1 1/4° adjustment range.)
6. While holding components in line to prevent rotation, install "Magna-Cam" in place of discarded upper strut mounting bolt.
7. Install two (2) flat washers and self-locking nut. Hand tighten only. (Washers may be needed as spacers to prevent self locking nut from bottoming out against bolt threads.
8. Loosen lower strut bolt and drive bolt out until there is approximately a 1/2" gap between bolt head and strut.
9. Re-install wheel assembly and alignment heads. Lower vehicle onto slip plates (wheels can now be adjusted to proper camber settings with weight on vehicle.)
10. Adjust camber by turning "Magna-Cam" in either direction.
11. Once desired camber setting is obtained torque O.E. bolt to factory specifacations and torque "Magna-Cam" bolt as follows: 12mm bolts - 60ft.lbs. (81.3 N.M.) 14mm thru 17mm - 100ft.lbs. (135.6 N.M.)
12. Proceed with balance of alignment and road test vehicle.

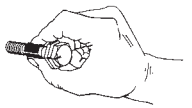


Fig. 4

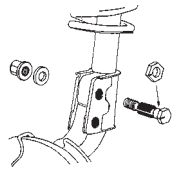


Fig. 5

Crank Bolt Camber Adjuster
Installation Instructions

1. Take initial reading to determine camber change needed.

2. Raise vehicle until suspension hangs freely and remove alignment head and wheel (or remove wheel and mount a bubble gauge on the hub).

3. Remove lower strut/ spindle bolt and discard. Line up small tab with pin on crank bolt (Figure 1), and install bolt with handle pointed away from wheel to increase camber (+), or pointed toward wheel to decrease camber (-).

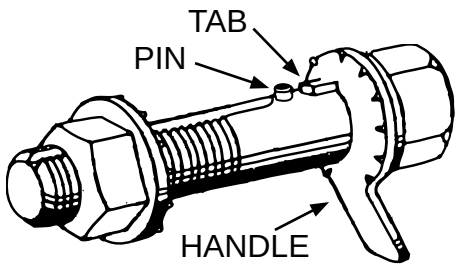


FIGURE 1

4. Install tooth washer and nut. Snug nut - do not tighten. Loosen upper bolt.

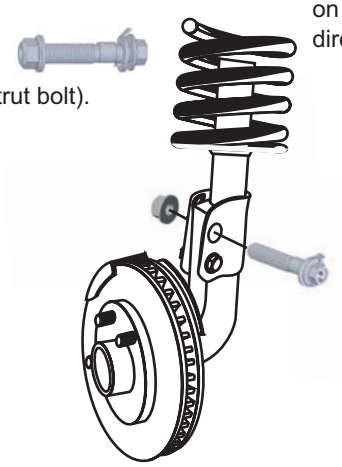
5. Reinstall wheel and alignment head. Adjust bolt to obtain desired camber change. Torque to 58 ft.lbs. and torque upper bolt to manufacturer's specifications (if using bubble gauge, adjust bolt to obtain desired camber change, torque bolts, and reinstall wheel).

6. Lower vehicle and check readings.

Applications:
Most vehicles using 12mm spindle bolts without slotted camber adjustment holes in strut flange.

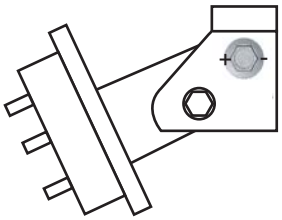
Axis Cam Bolt System

1. Inspect vehicle for damaged or worn parts and repair as necessary. Take camber reading to determine the amount of adjustment needed.
2. Raise vehicle and allow the suspension to hang free.
3. Remove wheel assembly (optional).
4. Remove the upper strut bolt (do not at this time loosen lower strut bolt).
5. Insert adjusting cam with washer through the strut/spindle assembly in the same direction the OE bolt came out (snug but do not tighten at this time).
6. Loosen lower strut bolt. On models with splined spindle bolt, drive bolt out until the splines are free from the flange.
7. Reinstall tire/wheel assembly and alignment equipment or simply use camber gauge.
8. Adjust the cam bolt until the desired camber is achieved.
9. **Tighten all bolts and torque to, but DO NOT EXCEED, TORQUE SPECIFICATIONS.**

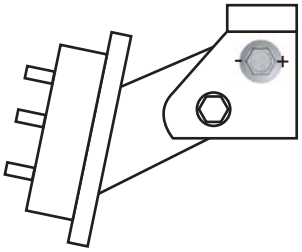


Install adjusting cam, with the washer already on bolt, into the strut housing in the same direction the OE bolt came out.

Part Size	Torque Specifications
12mm	60ft. lbs.
14mm	100 ft. lbs
15mm	100 ft. lbs
16mm	150 ft. lbs
17mm	150 ft. lbs



Point the **+ (Plus)** located on the flange of the cam towards the outside of the vehicle to increase **positive camber**



Point the **- (Minus)** located on the flange of the cam towards the outside of the vehicle to increase **negative camber**

95-247-1006

INSTRUCTIONS FOR

Cirrus/Stratus

Adjustable Upper Ball Joint Installation Instructions

1. Inspect vehicle for loose or worn parts and odd tire wear patterns. Check tire pressure. Determine amount of camber/caster change needed.
2. Raise and support vehicle securely under lower control arms.
3. Remove wheel assembly. Remove cotter pin and nut from upper ball joint stud.
4. Remove upper ball joint from steering knuckle, using a ball joint separator **(see fig.1)**.
   Important-Do not allow knuckle to pull out of axle shaft (inner CV joint). Disassembly may occur.
5. Using a ball joint press (with optional extractor stem and receiver tube), press the upper ball joint in an upward direction out of control arm. Make sure all components stay in proper alignment during this procedure.
6. Install adjustable ball joint in upper control arm and only snug assembly nut at this time.
7. Install ball joint stud into steering knuckle, install nut and torque to 121 ft lbs 164 Nm.
8. Reinstall wheel assembly, recompensate alignment equipment. Recheck caster/camber read-ins.
9. Turn ball joint with 1" inch open end wrench to desired caster/camber settings
10. Raise vehicle using a suitable body lifting point to allow the control arms to drop down. Hold ball joint with 3/8" L-wrench to prevent rotating and torque assembly cap **(fig. 2)**.
11. Lower vehicle and verify proper caster/camber readings. Proceed with rest of alignment and road test vehicle.

Figure No. 1

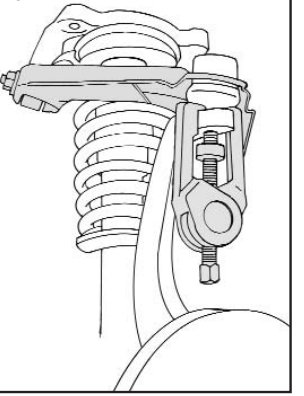
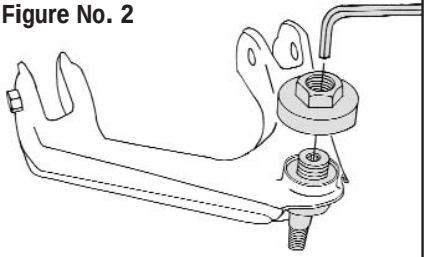


Figure No. 2



Adjustable Upper Ball Joint Installation Instructions

1. Inspect vehicle for loose or worn parts and odd tire wear patterns. Check tire pressure. Determine amount of camber/caster change needed.
2. Raise and support vehicle securely under lower control arms.
3. Remove wheel assembly. Remove cotter pin and nut from upper ball joint stud.
4. Remove upper ball joint from steering knuckle, using a ball joint separator (see fig.1). Important-Do not allow knuckle to pull out of axle shaft (inner CV joint). Disassembly may occur.
5. Using a ball joint press (with optional extractor stem and receiver tube), press the upper ball joint in an upward direction out of control arm. Make sure all components stay in proper alignment during this procedure.
6. Install adjustable ball joint in upper control arm and only snug assembly nut at this time.
7. Install ball joint stud into steering knuckle, install nut and torque to 121 ft lbs 164 Nm.
8. Reinstall wheel assembly, recompensate alignment equipment. Recheck caster/camber read-ins.
9. Turn ball joint by hand with open end wrench to desired caster/camber settings
10. Raise vehicle using a suitable body lifting point to allow the control arms to drop down Hold ball joint with 3/8" L-wrench to prevent rotating and torque assembly cap (fig. 2).
11. Lower vehicle and verify proper caster/camber readings. Proceed with rest of alignment and road test vehicle.

Figure No. 1

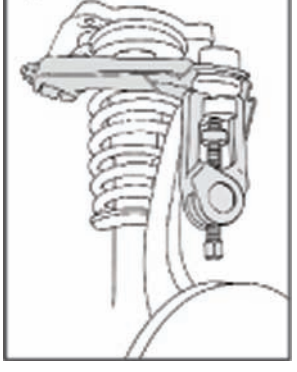
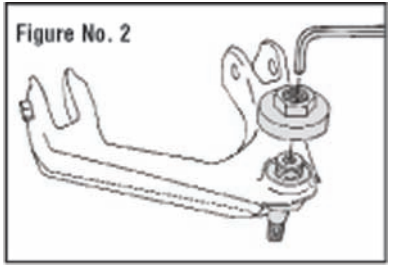


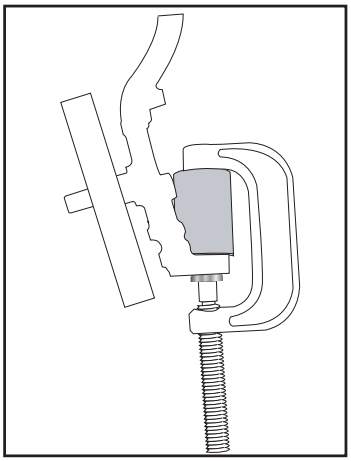
Figure No. 2



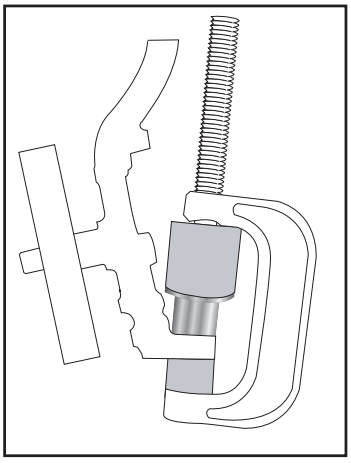
95-197-1107

Chrysler/Dodge
Adjustable Lower Ball joint Installation Instructions

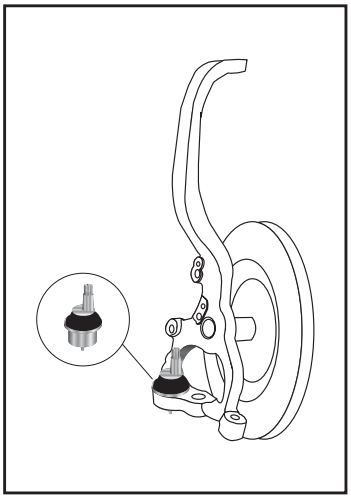
CAUTION: Check for clearance with the front control arm when adjusting ball joint in the positive caster position.



1. Inspect vehicle for loose or worn parts and uneven tire wear patterns. Check tire pressure.
2. Determine amount of camber/Caster change needed.
3. Raise and support vehicle allowing the lower control arms to hang free.
4. Remove wheel assemble.
5. Remove the brake caliper and secure out of the way.
6. Remove the front control arm ball joint from steering knuckle, using al ball joint separator.
7. Remove the main control arm ball joint from lower control arm knuckle, using al ball joint separator.



8. Use a 88-7880A ball joint adapter to remove the old lower ball joint from steering knuckle.
9. Use a 88-7880A ball joint adapter to install the new adjustable ball joint.
10. Reinstall main lower control arm on new ball joint (Do not Seat ball joint tapper at this time.
11. Reinstall front control arm and torque to manufacture specification.
12. Reinstall brake caliper and torque to manufacture specification.
13. Reinstall wheel assemble.



14. lower vehicle and determine amount of camber/caster needed. (Use Jack Up And hold) If available. and jack the front of the car up (***By the Lower Control arms***) and adjust ball joint to desired camber/caster specification.
15. Lower vehicle and torque ball joint nut to manufacture specification.
16. Set toe to specifications and road test vehicle.

95-234-0705

Adjustable Upper Ball Joint Installation Instructions

1. Inspect vehicle for loose or worn parts and odd tire wear patterns. Check tire pressure. Determine amount of camber/caster change needed.
2. Raise and support vehicle securely under lower control arms.
3. Remove wheel assembly. Remove cotter pin and nut from upper ball joint stud.
4. Remove upper ball joint from steering knuckle, using a ball joint separator (see fig.1). Important-Do not allow knuckle to pull out of axle shaft (inner CV joint). Disassembly may occur.
5. Using a ball joint press (with optional extractor stem and receiver tube), press the upper ball joint in an upward direction out of control arm. Make sure all components stay in proper alignment during this procedure.
6. Install adjustable ball joint in upper control arm and only snug assembly nut at this time.
7. Install ball joint stud into steering knuckle, install nut and torque to 121 ft lbs 164 Nm.
8. Reinstall wheel assembly, recompensate alignment equipment. Recheck caster/camber read-ins.
9. Turn ball joint by hand with open end wrench to desired caster/camber settings
10. Raise vehicle using a suitable body lifting point to allow the control arms to drop down Hold ball joint with 3/8" L-wrench to prevent rotating and torque assembly cap (fig. 2).
11. Lower vehicle and verify proper caster/camber readings. Proceed with rest of alignment and road test vehicle.

Figure No. 1

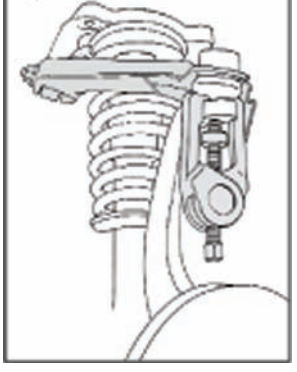
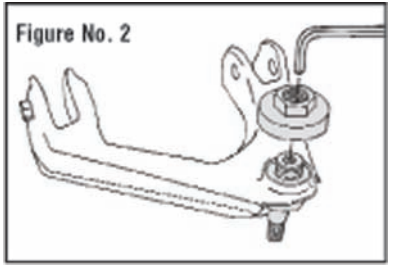


Figure No. 2



95-197-1107

MODE D'EMPLOI SPECIAL

CALE DE CARROSSAGE POUR VOITURE D'IMPORTATION INSTRUCTIONS

Permet de régler le carrossage sur de nombreuses voitures d'importation à suspensions à jambe de force

1. Vérifiez toutes les pièces de la direction et des suspensions pour voir si elles doivent être remplacées. Réalisez les réparations nécessaires. Vérifiez aussi la garde au sol et la pression des pneus.
2. Prenez les mesures de géométrie et relevez-les.
3. Soulevez le véhicule par les joints de pincement. Enlevez la roue pour avoir accès à l'articulation et à la jambe de force.
4. Enlevez le boulon supérieur de la jambe de force à l'articulation et desserrez l'écrou et le boulon inférieurs de la jambe de force à l'articulation.
5. Utilisez un pistolet pneumatique pour enlever la saleté et les particules abrasives entre l'articulation et la jambe de force.
6. Installez la cale de carrossage entre l'articulation et la jambe de force avec les dents orientées vers l'articulation.
7. Tapotez la cale vers le bas légèrement et vérifiez si le boulon d'origine peut toujours être installé. Sinon, utilisez le boulon fourni dans le nécessaire de la cale.
8. Tapotez la cale vers le bas jusqu'à ce le carrossage correct soit obtenu.
9. Si vous utilisez le boulon de l'équipement d'origine, serrez-le au couple spécifié par le fabricant.
10. Quand vous employez les nouveaux boulon et écrou fournis avec le nécessaire, suivez le tableau des spécifications ci-dessous.

Diamètre du boulon	Lb/pi	Nm

11. Réglez le parallélisme selon les spécifications du fabricant et testez le véhicule sur la route.

Tête marquée 8
Tête marquée 10.9

INSTRUCCIONES EXPECIALES

INSTRUCCIONES PARA LA CUÑA DE CAMBER PARA AUTOMÓVILES IMPORTADOS

Permite el ajuste de camber en muchos automóviles importados con suspensiones de tipo tirante

1. Verifique si todas las piezas de la dirección están en buenas condiciones de servicio. Repare tal como sea necesario. También verifique la altura de rodaje de vehículo y la presión de las ruedas.
2. Obtenga las lecturas de alineamiento y anótelas.
3. Levante el vehículo por los dobleces. Remueva las ruedas para obtener acceso al conjunto de codillo/tirante.
4. Remueva el perno superior que asegura el tirante al codillo y afloje el perno y la tuerca inferiores que aseguran el tirante al codillo.
5. Use una pistola de aire para limpiar la mugre y el polvillo de entre el codillo y el tirante.
6. Instale la cuña de camber entre el codillo y el tirante con los dientes de cara hacia el codillo.
7. Golpee ligeramente la cuña hacia abajo y verifique si el perno original puede ser instalado. De lo contrario, use el perno suministrado con el conjunto de cuña.
8. Golpee la cuña hacia abajo hasta obtener el camber correcto.
9. Si está usando el perno de equipo original, apriételo a la torsión especificada por el fabricante.
10. Cuando use el perno/tuerca suministrado con el conjunto, use el cuadro de especificaciones que se encuentra abajo.

Marca en la cabeza 8
Marca en la cabeza 10.9

Diámetro del Perno	Lbs. pie	Nm
10 mm	45-50	61-68
12 mm	60-70	81-95
14 mm	85-100	115-136

11. Ajuste la convergencia de acuerdo con las especificaciones del fabricante y pruebe el vehículo en la carretera.

SPECIAL INSTRUCTIONS

IMPORT CAR CAMBER WEDGE INSTRUCTIONS

Allows camber to be adjusted on many import cars with strut type suspensions

1. Check all steering and suspension parts for serviceability. Repair as necessary. Also check vehicle ride height and tire air pressure.
2. Obtain alignment readings and record these readings.
3. Raise the vehicle by the pinch welds. Remove the tire/wheel assembly to allow access to the strut/knuckle.
4. Remove the top strut to knuckle bolt and loosen the lower strut to knuckle bolt and nut.
5. Use a blow gun to clean the dirt and grit from between the knuckle and strut.
6. Install the camber wedge between the knuckle and strut with the teeth facing toward the knuckle.
7. Tap the wedge downward slightly and check to see if the original bolt can still be installed. If not, use the bolt supplied with the wedge kit.
8. Tap the wedge downward until the correct camber is obtained.
9. If using the O.E. bolt, torque to manufacturers specification.
10. When using new bolt/nut supplied with kit, use specification chart below.

Bolt Diameter	Ft. Lbs.	Nm.
10 MM	45-50	61-68
12 MM	60-70	81-95
14 MM	85-100	115-136

11. Adjust toe to manufacturer's specification and road test vehicle.

MODE D'EMPLOI SPECIAL

CALE DE CARROSSAGE POUR VOITURE D'IMPORTATION INSTRUCTIONS

Permet de régler le carrossage sur de nombreuses voitures d'importation à suspensions à jambe de force

1. Vérifiez toutes les pièces de la direction et des suspensions pour voir si elles doivent être remplacées. Réalisez les réparations nécessaires. Vérifiez aussi la garde au sol et la pression des pneus.
2. Prenez les mesures de géométrie et relevez-les.
3. Soulevez le véhicule par les joints de pincement. Enlevez la roue pour avoir accès à l'articulation et à la jambe de force.
4. Enlevez le boulon supérieur de la jambe de force à l'articulation et desserrez l'écrou et le boulon inférieurs de la jambe de force à l'articulation.
5. Utilisez un pistolet pneumatique pour enlever la saleté et les particules abrasives entre l'articulation et la jambe de force.
6. Installez la cale de carrossage entre l'articulation et la jambe de force avec les dents orientées vers l'articulation.
7. Tapotez la cale vers le bas légèrement et vérifiez si le boulon d'origine peut toujours être installé. Sinon, utilisez le boulon fourni dans le nécessaire de la cale.
8. Tapotez la cale vers le bas jusqu'à ce le carrossage correct soit obtenu.
9. Si vous utilisez le boulon de l'équipement d'origine, serrez-le au couple spécifié par le fabricant.
10. Quand vous employez les nouveaux boulon et écrou fournis avec le nécessaire, suivez le tableau des spécifications ci-dessous.

Diamètre du boulon	Lb/pi	Nm

11. Réglez le parallélisme selon les spécifications du fabricant et testez le véhicule sur la route.

Tête marquée 8
Tête marquée 10.9

INSTRUCCIONES EXPECIALES

INSTRUCCIONES PARA LA CUÑA DE CAMBER PARA AUTOMÓVILES IMPORTADOS

Permite el ajuste de camber en muchos automóviles importados con suspensiones de tipo tirante

1. Verifique si todas las piezas de la dirección están en buenas condiciones de servicio. Repare tal como sea necesario. También verifique la altura de rodaje de vehículo y la presión de las ruedas.
2. Obtenga las lecturas de alineamiento y anótelas.
3. Levante el vehículo por los dobleces. Remueva las ruedas para obtener acceso al conjunto de codillo/tirante.
4. Remueva el perno superior que asegura el tirante al codillo y afloje el perno y la tuerca inferiores que aseguran el tirante al codillo.
5. Use una pistola de aire para limpiar la mugre y el polvillo de entre el codillo y el tirante.
6. Instale la cuña de camber entre el codillo y el tirante con los dientes de cara hacia el codillo.
7. Golpee ligeramente la cuña hacia abajo y verifique si el perno original puede ser instalado. De lo contrario, use el perno suministrado con el conjunto de cuña.
8. Golpee la cuña hacia abajo hasta obtener el camber correcto.
9. Si está usando el perno de equipo original, apriételo a la torsión especificada por el fabricante.
10. Cuando use el perno/tuerca suministrado con el conjunto, use el cuadro de especificaciones que se encuentra abajo.

Marca en la cabeza 8
Marca en la cabeza 10.9

Diámetro del Perno	Lbs. pie	Nm
10 mm	45-50	61-68
12 mm	60-70	81-95
14 mm	85-100	115-136

11. Ajuste la convergencia de acuerdo con las especificaciones del fabricante y pruebe el vehículo en la carretera.

SPECIAL INSTRUCTIONS

IMPORT CAR CAMBER WEDGE INSTRUCTIONS

Allows camber to be adjusted on many import cars with strut type suspensions

1. Check all steering and suspension parts for serviceability. Repair as necessary. Also check vehicle ride height and tire air pressure.
2. Obtain alignment readings and record these readings.
3. Raise the vehicle by the pinch welds. Remove the tire/wheel assembly to allow access to the strut/knuckle.
4. Remove the top strut to knuckle bolt and loosen the lower strut to knuckle bolt and nut.
5. Use a blow gun to clean the dirt and grit from between the knuckle and strut.
6. Install the camber wedge between the knuckle and strut with the teeth facing toward the knuckle.
7. Tap the wedge downward slightly and check to see if the original bolt can still be installed. If not, use the bolt supplied with the wedge kit.
8. Tap the wedge downward until the correct camber is obtained.
9. If using the O.E. bolt, torque to manufacturers specification.
10. When using new bolt/nut supplied with kit, use specification chart below.

Bolt Diameter	Ft. Lbs.	Nm.
10 MM	45-50	61-68
12 MM	60-70	81-95
14 MM	85-100	115-136

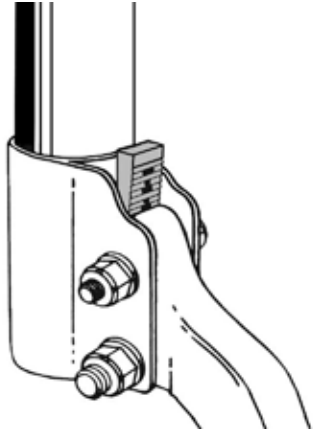
11. Adjust toe to manufacturer's specification and road test vehicle.

ASSEMBLY INSTRUCTIONS

CAMBER WEDGE FOR FORD MUSTANG 1994-current

There are many instances where the factory camber adjustment does not give enough positive camber change. This kit is designed to achieve up to 1-1/2 degrees of positive camber change on these vehicles. This kit can be used by itself or in conjunction with the factory adjustment.

1) Check vehicle for bent, worn or loose components and repair as necessary.
2) Check alignment and determine camber changes required.
3) Lilt vehicle so suspension hangs freely, and support safely.
4) If desired, an adjustable magnetic camber gauge can be installed on the disc brake rotor at this time to insure accurate installation.
5) Remove and discard upper strut bolt. Loosen lower strut bolt.
6) Clean area between strut and steering knuckle.
7) Install 14mm. high strength bolt supplied with kit in upper hole of strut flange.
8) Insert wedge between strut and steering knuckle as illustrated. Tap wedge downward until camber is at desired reading.
9) Torque top bolt to 90 It. lb. (122 N. m)
10) Torque bottom bolt to factory specification.
11)Repeat procedures on other side of vehicle as necessary.
12) Complete alignment and road test vehicle



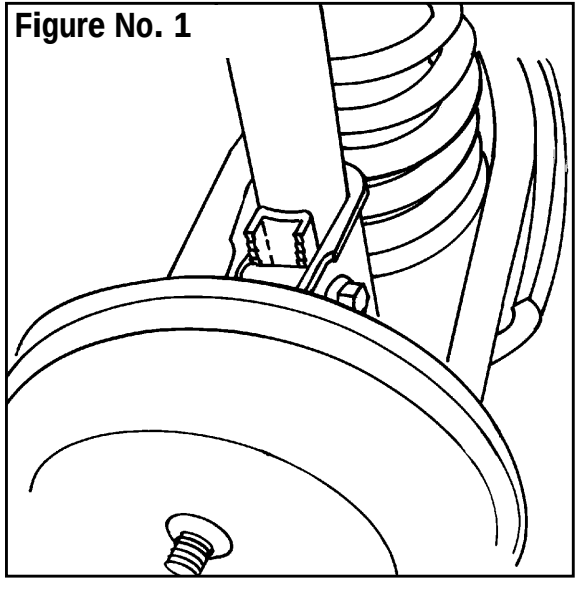
95-184-0401

INSTRUCTIONS FOR
CAMBER WEDGE FOR FORD ESCAPE

There are many instances where the factory camber adjustment does not give enough positive camber change. This kit is designed to achieve up to 1-1/2 degrees of positive camber change on these vehicles. This kit can be used by itself or in conjunction with the factory adjustment.

1) Check vehicle for bent, worn or loose components and repair as necessary.
2) Check alignment determine camber changes required.
3) Lift vehicle so suspension hangs freely and support safely.
4) If desired, an adjustable magnetic camber gauge can be installed on the disc brake rotor at this time to insure accurate installation.
5) Remove and discard upper strut bolt. Loosen lower strut bolt.
6) Clean area between strut and steering knuckle.
7) Install high strength bolt supplied with kit in upper hole of strut flange.
8) Insert wedge between strut and steering knuckle as illustrated. Tap wedge downward until camber is at desired reading.
9) Torque top bolt to 53 ft. lb. (72 N. m)
10) Torque bottom bolt to factory specification.
11) Repeat procedures on other side of vehicle as necessary.
12) Complete alignment and road test vehicle.

Figure No. 1



MODE D'EMPLOI SPECIAL

NÉCESSAIRE DE CARROSSAGE AVANT POUR FORD/MERCURY INSTRUCTIONS D'INSTALLATION

Pour dernier modèle Ford et Mercury
à traction arrière avec jambe de force.

1980-87	T-Birds, Cougar, Lincoln Continental
1980-82	Fairmont, Granada, Zephyr berline
1983	Fairmont, LTD, Toutes les Zephyr
1980-86	Capri
1980-87	Mustang

INSTALLATION :

1.) Soutenez le véhicule par le bras de contrôle inférieur.
2.) Enlevez le boulon de montage supérieur comme illustré et allongez le trou supérieur vers l'extérieur d'environ 3/32 po comme montré.
3.) Installez la pièce 41-310 avec les nervures de la cale orientées vers l'intérieur.
4.) À l'aide d'un marteau, enfoncez fermement la cale.
5.) Resserrez le boulon supérieur à un couple de 203 à 244 Nm (150 à 180 lb/pi).

INSTRUCCIONES EXPECIALES

JUEGO DE CAMBER DELANTERO PARA FORD/MERCURY INSTRUCCIONES DE INSTALACIÓN

Para modelos recientes Ford/Mercury
Tracción Trasera con Tirantes de Tipo McPherson

1980 - 87	T-Birds, Cougar, Lincoln Continental
1980 - 82	Fairmont, Granada, Zephyr Sedan
1983	Fairmont, LTD, Todos los Zephyr
1980 - 86	Capri
1980 - 87	Mustang

INSTALACIÓN

1.) Soporte el vehículo debajo del brazo de control inferior
2.) Remueva el perno de montaje superior, tal como se ilustra y ensanche el agujero superior hacia afuera aproximadamente 3/32", tal como se ilustra.
3.) Instale la pieza 41-310 con las costillas de la cuña de cara hacia adentro.
4.) Usando un martillo, golpee la cuña firmemente hacia adentro.
5.) Reapriete el tornillo superior de 203 a 244 Nm (150 a 180 lbs. pie).

SPECIAL INSTRUCTIONS

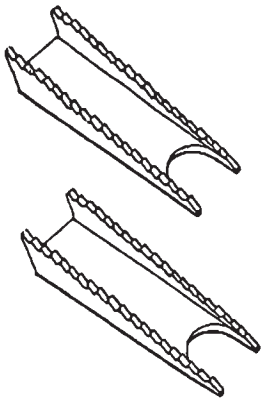
FORD/MERCURY FRONT CAMBER KIT INSTALLATION INSTRUCTIONS

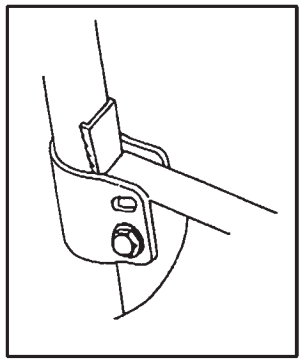
For late Model Ford & Mercury
Rear wheel drive with McPherson struts.

1980-87	T-Birds, Cougar, Lincoln Continental
1980-82	Fairmont, Granada, Zephyr Sedan
1983	Fairmont, LTD, Zephyr All
1980-86	Capri
1980-87	Mustang

INSTALLATION:

1) Support vehicle under lower control arm
2) Remove upper mounting bolt as illustrated and elongate upper hole outward approximately 3/32" as illustrated.
3) Install 41-310 with the ribs of the wedge facing inward.
4) Using a hammer, tap the wedge in firmly.
5) Retighten upper bolt 150 - 180 ft. lbs. or 203 - 244 Nm.





Form # 95-003-789 T

Domestic and Import Vehicle
Adjustable Upper Ball Joint Installation Instructions

CAUTION: A very limited number of Honda Civic/CRX vehicles from 1988-1990 were produced with the upper ball joint welded to the control arm. The adjustable ball joint cannot be used on these vehicles.

Note: For camber and/or caster changes of 1/2° or less, use 1/2° adjustable ball joint. For changes greater than 1/2°, use 1° ball joint.

WARNING: Honda and Acura ball joints appear similar, but they must not be substituted for each other. They are dimensionally different and will not fit or perform properly. Installing wrong application could cause possible failure.

1. Inspect vehicle for loose or worn parts and odd tire wear patterns. Check tire pressure. Determine amount of camber/caster change needed.
2. Raise and support vehicle securely under lower control arms.
3. Remove wheel assembly. Remove cover, cotter pin and nut from upper ball joint stud.
4. Remove upper ball joint from steering knuckle, using a ball joint separator. **(See Fig. 1)** IMPORTANT- do not allow knuckles to pull out on axle shaft - inner CV joint disassembly may occur.
5. Remove circlip and boot from upper ball joint.
6. Using a ball joint press (with optional extractor stem and receiver tube), press the upper ball joint in an upward direction out of control arm. **(See Fig. 2)** Make sure all components stay in proper alignment during this procedure.
7. Install adjustable ball joint in upper control arm. Install support washer with flat side up. Install lock nut. Snug nut to point where ball joint can just turn in control arm. **(See Fig. 3)**

WARNING: When installing in the maximum negative camber or caster, check for proper clearance.

8. Install ball joint stud into steering knuckle. Install nut and torque to 30-35 ft lbs. (40-48 NM). Install new cotter pin and reinstall cover.
9. Reinstall tire and wheel assembly. Recompensate alignment equipment. Recheck camber and caster readings. Proceed to step 10 - be sure to use alignment equipment manufacturer's recommended procedures.
10. Turn ball joint with 1-5/8" open end wrench to desired camber/caster settings. **(See Fig. 4)**
11. Raise vehicle using a suitable body lifting point to allow the control arms to drop. Hold ball joint with 1-5/8" wrench to prevent rotating and torque upper nut to 140-160 ft lbs. (190-217 NM).
12. Lower vehicle and verify proper camber and caster readings. Set toe to specifications and road test vehicle.

Figure #4 — **Front of Vehicle**

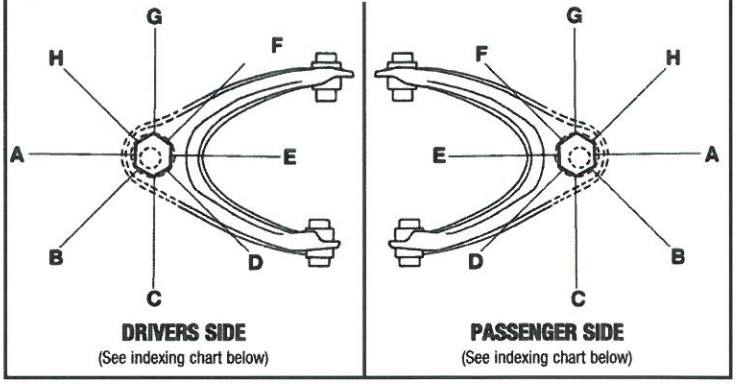


Figure #1

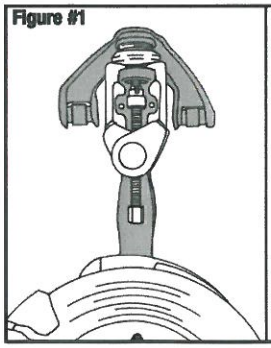


Figure #2

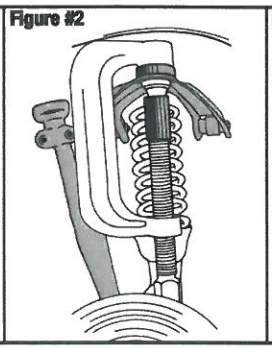
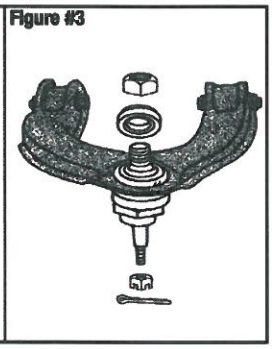


Figure #3



INDEXING CHART
Referenced from position of offset stud

Position	Camber Change	Caster Change
A	+	0
B	+	+
C	0	+
D	-	+
E	-	0
F	-	-
G	0	-
H	+	-

FORM# 95-162-0411

HONDA, ACURA, MITSUBISHI, DODGE, CHRYSLER
"EXTRA-RANGE" UPPER BALL JOINT/ ADAPTER PLATE

1. Do prealignment checks. Inspect car for damaged, bent or worn parts and repair as necessary. Install alignment equipment and determine camber/ caster change required. Raise vehicle with jack contacting midpoint of lower control arms so suspension expands, but not to the limit of its travel, and support safely.
2. Remove cover for upper ball joint nut (if equipped), cotter pin (if equipped) and nut. Using a suitable tool, separate ball joint stud from knuckle. See figure No. 1. Secure knuckle with a tarp strap so it does not swing out and dislodge the inner CV joint.
3. Using chalk or other suitable method, mark the outer most point of the upper control arm. This mark will be used to align the ball joint plate and washer. See figure No. 2.
4. Using a ball joint press and adapter set (available from your distributor) press factory ball joint from upper control arm. See figure No. 3. Note: some ball joints have a snap ring on the bottom side of the control arm that must be removed first. See figure No.4.
5. Loosen pivot bolts and/ or nuts at inner end of upper control arm.
6. Insert adapter plate into ball joint hole in control arm from the bottom with beveled side up. See figure No. 5.
7. Install upper washer on top of control arm with index mark aligned with chalk mark. Thread large allen bolt through washer into adapter plate. Align center of plate with chalk mark. Using crescent wrench or channel locks to keep adapter plate from turning, torque bolt to 100 ft. lbs. (136 N.m). See figure No. 6.
8. Insert ball joint housing stud through the bottom of the adapter plate. Insert the holding pin into either hole to keep the ball joint from falling out. Do NOT install the allen bolts at this time. Install boot onto ball joint.
9. Insert tapered ball joint stud into knuckle. Install and torque nut to 40 ft. lbs.(55 N.m). Install cotter pin (if equipped), advancing the nut to align the hole. Reinstall cover (if equipped).
10. Lower vehicle to alignment rack, checking for clearance between ball joint and fender. The plastic fender liner and fender lip may need to be modified.
11. Install alignment equipment and determine caster/ camber changes required. Raise vehicle as before, and use the alignment equipment manufacturer's recommended procedure to rotate ball joint to obtain desired readings. See figure No. 7.
12. Lower vehicle, recheck caster to verify proper readings. Torque pivot bolts (and nuts) at inner end of control arm to 22 ft. lbs (30 N.m).
13. Raise vehicle as before, start allen bolt into open hole in adapter plate. When effort increases, remove holding pin. Torque bolt to150 in. lb. (17 N.m). Install second bolt and torque to same figure.
14. Lower vehicle, complete alignment and road test.

WARNING: HONDA AND ACURA BALL JOINTS APPEAR SIMILAR HOWEVER THEY MUST NOT BE SUBSTITUTED FOR EACH OTHER. THEY ARE DIMENSIONALLY DIFFERENT AND WILL NOT FIT OR PERFORM PROPERLY. INSTALLING WRONG APPLICATION COULD CAUSE POSSIBLE FAILURE.

Fig. 1

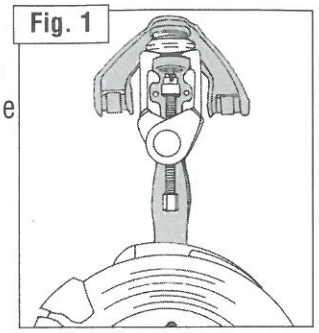


Fig. 2

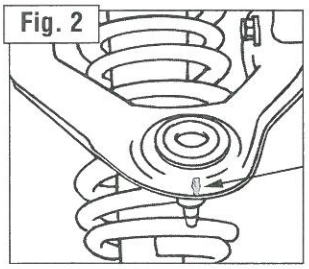


Fig. 3

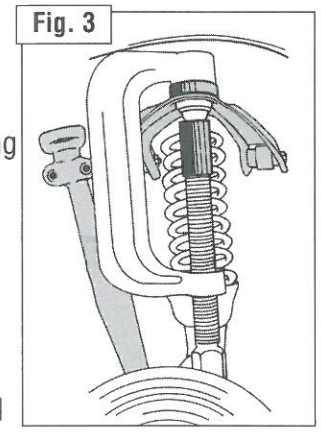


Fig. 4

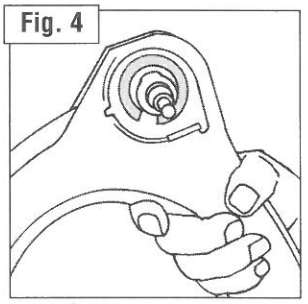


Fig. 5

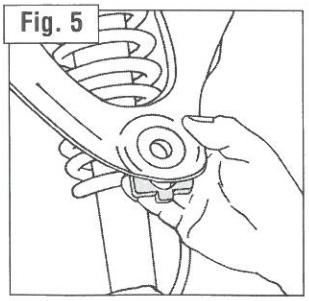


Fig. 7

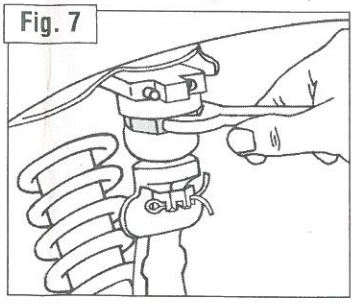
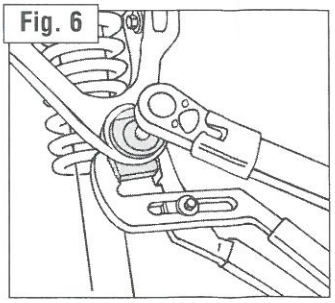


Fig. 6



95-182-1200
Northstar Instruction Sheet

PATENT PENDING

MODE D'EMPLOI SPECIAL

Nécessaire de réglage du carrossage/chasse avant pour Ford/Mercury
INSTRUCTIONS D'INSTALLATION

pour les modèles Tempo & Topaz de 1984 et plus récents
Escort, Exp., Lynx & LN-7 de 1986 à 1990

Contrôles au préalable :

1.) Effectuez des contrôles avant la géométrie d'une manière normale.
2.) Prenez des mesures de géométrie.
3.) Déterminez quel côté, droit ou gauche, requiert le plus de correction et commencez l'installation par ce côté.

Instructions d'installation

1.) Soulevez le véhicule et laissez pendre la suspension librement. Enlevez la roue.
2.) Ouvrez le capot et exposez l'ouverture pour l'écrou du piston au haut du tablier d'aile.
3.) À l'aide d'une scie cloche essentielle de 2-1/4 po modifiée, placez-la sur le goujon de montage de l'amortisseur pour la guider et élargissez l'ouverture dans l'aile interne de la tour de jambe de suspension. (Ceci permet le serrage au couple final de l'écrou du piston.) Voyez la figure n° 1.

Dépose de la suspension du véhicule

1.) Enlevez le boulon de bridage de la jambe de suspension et la conduite de frein du socle de l'ensemble de suspension.
2.) Retirez le boulon de montage de l'étrier de la conduite de frein se trouvant sur la paroi de l'aile interne (ceci fournira plus de mou à la conduite de frein lors de la dépose et du remontage de l'ensemble de suspension). Voyez la figure n° 2.
3.) Séparez la jambe de suspension et l'articulation. Remarque : Écarter légèrement le joint de pincement de l'articulation à la jambe de suspension avec un tournevis et utiliser un pied-de-biche, un compresseur de ressort sur la voiture ou un cric de suspension optionnel spécial accélérera et facilitera la dépose de la suspension.
4.) Enlevez les écrous de l'ensemble de montage supérieur et débarrassez-vous en. (Les rondelles et écrous de sûreté neufs contenus dans le nécessaire seront employés lors du remontage.)
5.) Déposez l'ensemble de suspension du véhicule.

Désassemblage de la suspension

1.) À l'aide d'un compresseur de ressort adéquat, comprimez le ressort jusqu'à ce que la plaque de montage supérieure ne soit plus sous l'influence de la tension du ressort.
2.) Enlevez l'écrou de la tige du piston et jetez-le.
3.) Retirez la plaque de montage supérieure et débarrassez-vous en. Remarque : Si vous installez une jambe de suspension neuve à ce point, vous devez aussi déposer l'ensemble de coupelle et coussinet supérieur, la butée, la botte antipoussière et le ressort comprimé.

Assemblage de la suspension

1.) Examinez toutes les pièces devant être réutilisées (remplacez-les au besoin).
2.) Étirez la tige du piston et installez la botte antipoussière et la butée. Installez le ressort comprimé et la coupelle.
3.) Installez la rondelle bombée (ayant le plus petit trou central) sur l'axe de la jambe de suspension, puis continuez l'installation du nécessaire de chasse/carrossage tel qu'illustré dans la figure n° 2.
4.) À l'aide du bon écrou « auto-ajustable » de tige de piston (fourni), serrez juste assez le nécessaire pour le maintenir en place. Ne le serrez pas à son couple à ce point. Remarque : Des écrous de deux filetages différents sont fournis ; filetage à pas gros pour les jambes de suspension de l'équipement d'origine et filetage à pas fin pour les autres jambes de suspension.
5.) Retirez le compresseur de ressort. Assurez-vous que toutes les pièces soient installées dans l'ordre correct (référez-vous à l'étape n° 2 de cette section). (Tournez S.V.P.)

Figure n° 1
Figure n° 2
Figure n° 3

Remontage de la suspension

Suite a Verso

INSTRUCCIONES EXPECIALES

Conjunto de Ajuste de Camber/Caster Delantero para Ford/Mercury
INSTRUCCIONES DE INSTALACIÓN

para Tempo y Topaz de 1984 y más recientes
Escort, Exp., Lynx & LN-7 de 1986 a 1990

Pruebas Previas:

1.) Lleva a cabo las pruebas de pre-alineamiento de la manera normal.
2.) Tome las lecturas de alineamiento.
3.) Determine que lado, derecho o izquierdo, necesita la mayor corrección y proceda a instalar en ese lado primero.

Instrucciones de Instalación

1.) Levante el vehículo y deje que la suspensión cuelgue libremente. Remueva la rueda.
2.) Abra el capot y descubra la abertura de la tuerca del pistón situada en el tablero superior del guardabarro.
3.) Usando la sierra circular esencial modificada de 2-1/4", colocada como guía sobre el perno de montaje del amortiguador, ensanche la abertura en el gradabarro interior de la torre del tirante. Esto se hace con el fin de poder apretar la tuerca del pistón a su debida torsión final). Vea la figura # 1.

Remoción del Tirante del Vehículo

1.) Remueva el perno de aprisionamiento del tirante y el conducto de los frenos de la base del ensamble del tirante.
2.) Remueva el perno de montaje del soporte del conducto de frenos situado en la pared interior del guardabarro. (Esto proporcionará holgura adicional en el conducto de frenos durante la remoción y el reemplazo del conjunto de tirante). Vea la figura # 2.
3.) Separe el tirante del codillo. Nota: La separación leve de la junta de aprisionamiento entre el codillo y el tirante con un destornillador y el uso de una palanca en el compresor del resorte del automóvil o la herramienta especial opcional para levantar el tirante, hará fácil y rápida la remoción del tirante.
4.) Remueva las tuercas del conjunto de montante superior y desháguese de ellas. (Las tuercas y arandelas de seguridad nuevas suministradas con el conjunto serán usadas en el reensamble).
5.) Remueva el conjunto de tirante del vehículo.

Desarme del Tirante

1.) Utilizando el compresor de resortes apropiado, comprima el resorte hasta que la placa de montaje superior quede libre de tensión.
2.) Remueva la tuerca de la varilla del pistón y desháguese de ella.
3.) Remueva la placa de montaje superior y desháguese de ella. Nota: Si está instalando un tirante nuevo en este momento, usted también tendrá que remover el conjunto de asiento y rodamiento superior del resorte, el tope, la bota guardapolvo y el resorte comprimido.

Ensamble del Tirante

1.) Inspeccione todas las piezas que serán usadas de nuevo (reemplácelas si es necesario).
2.) Extienda la varilla del pistón e instale la bota guardapolvo y el tope del resorte. Instale el resorte comprimido y el asiento del resorte.
3.) Instale la arandela de cúpula (con el agujero central más pequeño) sobre el eje del tirante, luego continúe la instalación del conjunto de camber/caster, tal como se muestra en la figura # 2.
4.) Use la tuerca de la varilla del pistón que se "auto-asienta" (suministrada), apretada lo suficiente como para sujetar el conjunto en posición. No le aplique torsión en este momento. Nota: Se suministran tuercas con dos diseños de rosca diferentes; de rosca ordinaria para tirantes de fábrica y de rosca fina para tirantes de mercado posterior.
5.) Remueva el compresor de resortes. Cerciórese de que todas las piezas fueron instaladas en el orden correcto (refiérase al paso # 2 de esta sección). (Vea al respaldo)

Figura No. 1
Figura No. 2
Figura No. 3

Re-instalación del Tirante

1.) Refiérase a la sección de instrucciones sobre la "Remoción del Tirante" y siga los pasos en el orden inverso. (Recuerde de asegurar el conducto de frenos en la base del conjunto de tirante, como también de montar nuevamente el soporte del con-

Contin'ua al doso

SPECIAL INSTRUCTIONS

Ford/Mercury Front Caster/Camber Adjustment Kit
INSTALLATION INSTRUCTIONS

for 1984 & Newer Tempo & Topaz
1986 - 1990 Escort, Exp., Lynx & LN-7

Pre-Checks:

1.) Perform pre-alignment checks in a normal manner.
2.) Take alignment readings.
3.) Determine which side, right or left, needs the most correction and proceed to install that side first.

Installation Instructions

1.) Raise vehicle and allow suspension to hang free. Remove wheel assembly.
2.) Open hood and expose piston nut opening on top fender apron.
3.) Using essential modified 2-1/4" hole saw, place over shock mounting stud as a guide and enlarge opening in strut tower inner fender. (This is to allow for final torquing of the piston nut.) **See Figure #1**

Strut Removal from Vehicle

1.) Remove strut pinch bolt and brake hose line from base of strut assembly.
2.) Remove mounting bolt from brake line bracket located on inner fender wall. (This will provide additional brake line clearance during removal and replacement of strut assembly). **See Figure #2**
3.) Separate strut from knuckle. **Note:** Slightly spreading knuckle-to-strut pinch joint with screwdriver and use of pry bar, on-the-car spring compressor or special optional strut jacking tool, will make removal of strut fast and easy.
4.) Remove nuts from upper mount assembly and discard. (New nuts and lock washers supplied with kit will be used for re-installation).
5.) Remove strut assembly from the vehicle.

Strut Disassembly

1.) Using a suitable spring compressor, compress spring until upper mounting plate is free of tension.
2.) Remove piston rod nut & discard.
3.) Remove upper mounting plate and discard. Note: if installing new strut at this time, you must also remove upper spring seat and bearing assembly, bumper, dust boot and compressed spring.

Strut Assembly

1.) Inspect all parts to be reused (replace if necessary).
2.) Extend piston rod and install dust boot and bumper.
Install compressed spring and spring seat.
3.) Install domed washer (with the smaller center hole) over the strut shaft, then continue installation of caster/camber kit as shown on **figure #2.**
4.) Using the correct "self seating" piston rod nut (supplied), tighten just enough to secure kit in place. **Do not torque at this time.**
Note: Nuts with two different thread designs are furnished; course thread for OE struts and fine threads for aftermarket struts.
5.) Remove spring compressor. Check to be sure all parts are installed in correct order (refer to step #2 of this section).

Strut Re-installation

1.) Refer to "Strut Removal" section of instructions and follow steps in reverse order. (Remember to secure the brake line to the base of the strut assembly as well as remounting the brake line bracket to inner fender wel.l) Torque all fasteners to OEM specifications. **Note:** Do not torque piston rod nut or 5/16" kit assembly nuts at this time.
2.) Repeat above instructions for opposite side of vehicle.

Alignment Procedure

1.) Re-install wheel assembly and alignment heads.
2.) Loosen piston rod nut and 5/16" kit assembly nuts slightly.
3.) Using a 3/8" drive rachet with extension, turn assembly in either direction to achieve desired caster/camber setting. When desired caster/camber is achieved, torque both 5/16" kit assembly nuts to specifications. (See below for specs.)
4.) Using a small amount of "Locktite" on threads, re-install piston rod nuts and torque to specifications (35-50 ft lbs - 48-068 N.M.).
Note: *Final check for proper torquing of piston rod shaft nut:* check to be sure shaft nut does not rotate when steering wheel is being turned.

Form # 95-081-1195 T

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MODE D'EMPLOI SPECIAL

(Suite)

1.) Référez-vous aux instructions de la section « Dépose de la suspension » et suivez les étapes dans l'ordre inverse (souvenez-vous de fixer la conduite de frein au socle de l'ensemble de suspension, aussi bien que de remonter l'étrier de la conduite de frein à la paroi de l'aile interne). Serrez toutes les fixations selon les spécifications du fabricant de l'équipement d'origine. Remarque : Ne serrez pas l'écrou de la tige du piston ni les écrous de 5/16 po de l'ensemble du nécessaire à leur couple à ce point.
2.) Répétez les instructions ci-dessus pour l'autre côté du véhicule.

Procédure pour régler la géométrie

1.) Remontez la roue et les têtes de géométrie.
2.) Desserrez légèrement l'écrou de la tige du piston et les écrous de 5/16 po de l'ensemble du nécessaire.
3.) À l'aide d'une clé à cliquet à cadran de 3/8 po et d'un rallonge, tournez l'ensemble dans l'un des sens pour obtenir le réglage de carrossage/chasse désiré. Quand le carrossage/chasse désiré est obtenu, serrez les deux écrous de 5/16 po de l'ensemble du nécessaire selon les spécifications. (Voyez les spécifications ci-dessous.)
4.) En enduisant les filets d'une légère quantité de produit « Loctite », remontez les écrous de tige de piston et serrez-les selon les spécifications (48 à 68 Nm ; 35 à 50 lb/pi).

Remarque : Contrôle final du serrage au bon couple de l'écrou de tige de piston : assurez-vous que l'écrou de tige ne tourne pas quand le volant de direction tourne.

5.) Répétez les instructions ci-dessus pour le côté opposé du véhicule.
6.) Réglez le parallélisme selon les spécifications de l'équipement d'origine.
7.) Déposez les têtes de géométrie et testez le véhicule sur la route.

Remarque : Lors du réglage du carrossage/chasse à l'aide de l'équipement électronique de géométrie pour véhicule à 4 roues assisté par ordinateur, voyez le tableau (figure n° 4).

En vous servant d'un équipement informatique de géométrie, les mesures de carrossage indiquent la mesure exacte de la roue. Les mesures de chasse sont calculées par la quantité exacte du changement de carrossage (ou rotation de carrossage) à un angle de direction donné.

Durant le réglage de l'ensemble chasse/carrossage, toute rotation de l'écrou de la tige du piston au-delà des points de repère A ou B requiert une nouvelle vérification de la chasse pour éliminer une erreur de mesure (figure n° 4).

Figure n° 4
Écrou de la tige de piston
Point de repère A de vérification de la chasse
Point de repère B de vérification de la chasse
Figure n° 5
Écrou d'axe de jambe de suspension
Rondelle bombée
Bague en uréthanne supérieure
Écrou de 5/16 po
Écrou de 5/16 po
Rondelle Grower
Rondelle Grower
Plaque de réglage de chasse/carrossage
Bague en uréthanne inférieure
Plaque de montage supérieure
Rondelle bombée
Ensemble de plaque inférieure de réglage de chasse/carrossage

Spécifications de couple de serrage :

- Boulons de bridage de l'articulation à la jambe de suspension : 75 à 110 Nm (55 à 81 lb/pi)
- Écrous de la tour d'amortisseur : 27 à 34 Nm (20 à 25 lb/pi)
- Biellette de direction externe à l'articulation de direction : 38 à 43 Nm (28 à 32 lb/pi)
- Écrou de la tige de piston : 48 à 68 Nm (35 à 50 lb/pi)
- Écrous de 5/16 po de l'ensemble du nécessaire : 27 à 36 Nm (20 à 26 lb/pi)

INSTRUCCIONES EXPECIALES

(Contin'ua)

ducto de frenos en el interior del gardabarro. Apriete todos los sujetadores a la torsión de fábrica. Nota: No apriete la tuerca de la varilla del pistón o las tuercas del conjunto de 5/16" en este momento.
2.) Repita las instrucciones anteriores para el otro lado del vehículo.

Procedimiento de Alineación

1.) Reinstale la rueda y las cabezas de alineamiento.
2.) Afloje ligeramente la tuerca de la varilla del pistón y las tuercas del conjunto de 5/16".
3.) Usando una catraca (ratchet) con cuadrante de 3/8" y una extensión, gire el conjunto en cualquier dirección hasta alcanzar el ajuste de camber/caster deseado. Cuando alcance el ajuste de camber/caster deseado, apriete a la torsión especificada ambas tuercas del conjunto de 5/16". (Vea abajo las especificaciones).
4.) Usando una pequeña cantidad de "Loctite" en los hilos de rosca, reinstale las tuercas de la varilla del pistón y apriételas a una torsión de 40 a 69 Nm (35 a 50 lbs. pie). Nota: Comprobación final de la torsión apropiada de la tuerca de la varilla del pistón: Cerciórese de que la tuerca del eje no se gire cuando el volante de dirección está siendo girado.
5.) Repita las instrucciones anteriores para el lado opuesto del vehículo.
6.) Ajuste la convergencia de acuerdo con las especificaciones.
7.) Remueva las cabezas de alineamiento y efectúe la prueba en la carretera.

Nota: Cuando esté ajustando el camber/caster con un equipo de alineamiento de 4 ruedas electrónico computarizado, vea el cuadro (figura # 4).

Cuando se usa un equipo de alineamiento computarizado, las lecturas de camber indican las medidas exactas de la rueda. Las lecturas de caster son computadas por la cantidad exacta de cambio de camber (o giro de camber) a un ángulo de dirección determinado.

Durante el ajuste del ensamble de camber/caster, cualquier rotación de la tuerca de la varilla del pistón del tirante pasada de los puntos de referencia A ó B requiere una barrida de caster nueva para eliminar errores de medida. (figura # 4).

[legend on fig 4]

Tuerca del eje de la varilla del tirante
Punto de referencia de barrida de caster A
Punto de referencia de barrida de caster B
Figura No. 4

[legend on fig 5]

[left]
Tuerca del eje del tirante
Buje superior de uretano
Tuerca de 5/16"
Arandela de seguridad
Buje inferior de uretano
Arandela de cúpula

[right]
Arandela de cúpula
Tuerca de 5/16"
Arandela de seguridad
Placa de ajuste de Camber/Caster
Placa de montaje superior
Conjunto de placa inferior de ajuste de camber/caster
Figura No. 5

Especificaciones de torsión:

Pernos de aprisionamiento del codillo al tirante	75 a 110 Nm (55 a 81 lbs. pie).
Tuercas de la torre del amortiguador	27 a 34 Nm (20 a 25 lbs. pie)
Varilla de unión exterior al codillo de dirección	38 a 43 Nm (28 a 32 lbs. pie)
Tuerca del eje de la varilla del pistón	48 a 68 Nm (35 a 50 lbs. pie)
Tuercas del conjunto de 5/16"	27 a 36 Nm (20 a 26 lbs. pie)

SPECIAL INSTRUCTIONS

(Continued)

5.) Repeat above instructions for opposite side of vehicle.
6.) Adjust toe to OE specifications.
7.) Remove alignment heads and road test.

Note: When adjusting caster/camber with electronic computerized 4-wheel alignment equipment, see chart. **(figure #4**)
Using computerized alignment equipment, camber readings indicate the exact measurement of the wheel. Caster readings are computed by the exact amount of camber change (or camber roll) at a given steering angle.
During adjustment of the caster/camber assembly, any rotation of the piston strut rod nut passed reference points A or B requires a new caster sweep to eliminate measurement error. **(figure #4)**

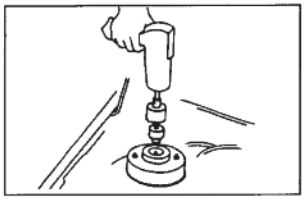


Figure No. 1

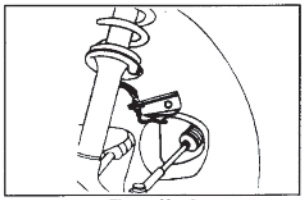


Figure No. 2

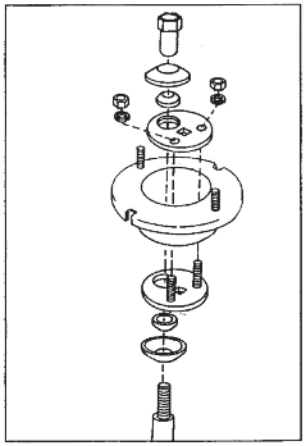


Figure No. 3

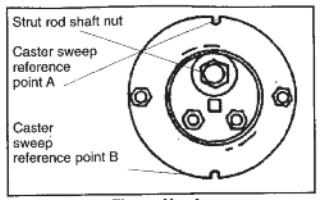


Figure No. 4

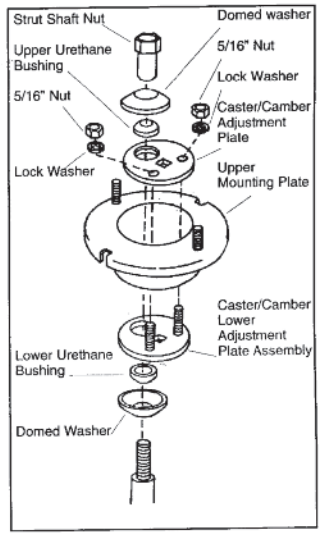


Figure No. 5

MODE D'EMPLOI SPECIAL

IMPORTANT : Pour les Ford Taurus et Mercury Sable de 1992 et plus récentes, les jambes de suspension de rechange de l'équipement d'origine Ford peuvent avoir une longueur filetée plus courte sur la tige du piston que n'avaient les jambes de suspension d'origine. Une entretoise de 3/8 po (fournie dans le nécessaire) peut être requise afin d'installer proprement le nécessaire de réglage de carrossage.

INSTRUCTIONS D'INSTALLATION DU NÉCESSAIRE DE RÉGLAGE DE CHASSE/CARROSSAGE AVANT APPLICATIONS : Voitures de tourisme & breaks Taurus et Sable de 1986 à 1990

CONTRÔLES PRÉALABLES :
Effectuez des contrôles avant la géométrie d'une manière normale.
Prenez des mesures de géométrie.
Déterminez quel côté, droit ou gauche, nécessite le plus de correction et commencez l'installation par ce côté.

INSTRUCTIONS :
1. Soulevez et soutenez le véhicule par les feuillures laissant ainsi pendre librement la suspension. Enlevez la roue.
2. À l'aide d'une clé polygonale de 8 mm et d'une clé plate de 18 mm, retirez les écrous fixant la timonerie au stabilisateur et à la suspension.

DÉPOSE DE LA SUSPENSION DU VÉHICULE
1. Enlevez le boulon de bridage de la jambe de suspension. REMARQUE : POUR LIBÉRER PLUS FACILEMENT LE BAS DE LA SUSPENSION, ÉCARTEZ LÉGÈREMENT LE JOINT DE PINCEMENT DE L'« ARTICULATION À LA JAMBE DE SUSPENSION » AVEC UN TOURNEVIS.
2. Ouvrez le capot. Desserrez les trois (3) écrous au haut de l'ensemble de montage supérieur de la jambe de suspension. Ne les enlevez pas à ce point.
3. Séparez la jambe de suspension de l'articulation. (Utilisez un pied-de-biche, un compresseur de ressort sur la voiture ou un cric de suspension optionnel pour faciliter et accélérer la dépose de la suspension.)
4. Ensuite, enlevez les trois (3) écrous au haut de l'ensemble de montage supérieur de la jambe de suspension et jetez-les. (Les nouveaux écrous autobloquants compris dans le nécessaire seront utilisés lors du remontage.) Déposez la suspension du véhicule.

DÉSASSEMBLAGE DE LA SUSPENSION
1. À l'aide d'un compresseur de ressort adéquat, comprimez le ressort jusqu'à ce que la plaque de montage supérieure ne soit plus sous l'influence de la tension du ressort.
2. Enlevez l'écrou de la tige du piston et jetez-le.
3. Retirez la plaque de montage supérieure et débarrassez-vous en. Remarque : Si vous installez une jambe de suspension neuve à ce point, vous devez aussi déposer l'ensemble de coupelle et coussinet supérieur, la butée, la botte antipoussière et le ressort comprimé.

ASSEMBLAGE DE LA SUSPENSION
1. Examinez toutes les pièces devant être réutilisées (remplacez-les au besoin).
2. Étirez la tige du piston et installez la botte antipoussière et la butée. Installez le ressort comprimé et la coupelle. Ensuite, placez le nouveau nécessaire de réglage de chasse/carrossage tel qu'illustré dans la figure n° 1 sur la partie filetée de la tige du piston. REMARQUE : N'installez pas la bague en uréthanne supérieure à ce point.
3. À l'aide du nouvel écrou autobloquant de tige de piston fourni dans ce nécessaire (cet écrou remplace l'écrou utilisé sur les jambes de suspension de l'équipement d'origine), serrez juste assez le nécessaire pour le maintenir en place. (Ne le serrez pas à son couple à ce point.) Remarque : Si vous installez d'autres jambes de suspension, ou si le véhicules est équipés de jambes de suspension autres que d'origine, il se peut que vous deviez vous procurer des écrous autobloquants neufs leur étant propres car le type de filetage peut différer.
4. Retirez le compresseur de ressort. Assurez-vous que toutes les pièces soient installées dans l'ordre correct (référez-vous à l'étape n° 2 de cette section).

REMONTAGE DE LA SUSPENSION
1. Référez-vous aux instructions de la section « Dépose de la suspension » et suivez les étapes dans l'ordre inverse. Serrez toutes les fixations selon les spécifications du fabricant de l'équipement d'origine. EXCEPTIONS : Ne serrez pas l'écrou de la tige du piston ni les écrous de 5/16 po de l'ensemble du nécessaire à leur couple à ce point.
2. Répétez les instructions ci-dessus pour l'autre côté du véhicule.

Suite a Verso

INSTRUCCIONES EXPECIALES

IMPORTANTE: Para vehículos Ford Taurus y Mercury Sable de 1992 y más recientes, los tirantes de Equipo Original de repuesto de la Ford pueda que tengan una longitud de rosca más corta en el eje de la varilla del pistón que el tirante original de fábrica. Un espaciador de 3/8" (suministrado con el conjunto), podrá ser necesario para instalar apropiadamente el conjunto de ajuste de camber.

INSTRUCCIONES DE INSTALACIÓN DEL CONJUNTO DE AJUSTE DE CAMBER/CASTER DELANTERO

USOS:
Automóviles de pasajeros y Camionetas Taurus y Sable de 1986 a 1990

REVISIONES PREVIAS:
Efectúe las verificaciones antes del alineamiento de la manera normal.
Tome las lecturas de alineamiento.
Determine que lado, derecho o izquierdo, necesita la máxima corrección y proceda a instalar en ese lado primero.

INSTRUCCIONES:
1. Levante y soporte el vehículo por el doblez dejando que la suspensión cuelgue libremente. Remueva la rueda.
2. Con una llave de estrella de 8 mm y una llave fija de 18 mm, remueva las tuercas que sujetan el ensamble de articulaciones a la barra estabilizadora y al tirante.

REMOCIÓN DEL TIRANTE DEL VEHÍCULO
1. Remueva el perno de aprisionamiento del tirante. NOTA: PARA AYUDAR A LIBERAR LA PARTE INFERIOR DEL ENSAMBLE DEL TIRANTE, ABRA LIGERAMENTE LA CONTRA JUNTA DEL "CODILLO AL TIRANTE" CON UN DESTORNILLADOR.
2. Abra el capot. Afloje las tres (3) tuercas superiores del ensamble de montaje del tirante superior. No las remueva en este momento.
3. Separe el tirante del codillo. (El uso de una barra de palanca en el compresor del resorte del automóvil o una herramienta opcional para levantar el tirante hará la remoción del tirante más rápida y fácil).
4. A continuación, remueva las tres (3) tuercas del conjunto de montaje del tirante superior y desháguse de ellas. (Tuercas nuevas auto-trabantes suministradas con el conjunto serán usadas en la re-instalación). Remueva el tirante del vehículo.

DESARME DEL TIRANTE
1. Usando un compresor de resortes apropiado, comprima el resorte hasta que la placa de montaje superior quede libre de tensión.
2. Remueva la tuerca de la varilla del pistón y desháguse de ella.
3. Remueva la placa de montaje superior y desháguse de ella. NOTA: Si usted está instalando un tirante nuevo en este momento, usted también tendrá que remover el conjunto de asiento superior del resorte y el rodamiento, tope, bota guardapolvo y el resorte comprimido.

ENSAMBLE DEL TIRANTE
1. Inspeccione todas las piezas a ser usadas de nuevo (reemplácelas si es necesario).
2. Extienda la varilla del pistón e instale la bota guardapolvo y el tope. Instale el resorte comprimido y el asiento del resorte. A continuación, coloque el conjunto de camber/caster tal como se muestra en la Figura 1 sobre la porción roscada de la varilla del pistón. NOTA: No instale el buje superior de uretano en este momento.
3. Usando una tuerca auto-trabante nueva suministrada con el conjunto (esta tuerca reemplaza la tuerca usada en los tirantes Ford de Equipo Original), apretada lo suficiente como para asegurar el conjunto en posición. (No le aplique torsión en este momento). NOTA: Si está instalando tirantes de mercado secundario, o si el vehículo tiene tirantes de mercado secundario, pueda que usted necesite conseguir sus propias tuercas nuevas para el pistón ya que el diseño de los hilos de rosca varía.
4. Remueva el compresor del resorte. Cerciórese de que todas las piezas fueron instaladas en el orden correcto. (Refiérase al paso # 2 de esta sección).

RE-INSTALACIÓN DEL TIRANTE
1. Refiérase a la sección de "Remoción del Tirante" de estas instrucciones y siga los pasos en el orden inverso. Apriete todos los sujetadores de acuerdo con las especificaciones del Fabricante del Equipo Original. Excepciones: No apriete la tuerca de la varilla del pistón o las tuercas del conjunto de 5/16" en este momento.
2. Repita las instrucciones mencionadas arriba para el otro lado del vehículo.

PROCEDIMIENTO DE ALINEACIÓN
1. Re-instale las ruedas y las cabezas de alineamiento.
2. Afloje ligeramente la tuerca de la varilla del pistón y las tuercas del conjunto de 5/16". NOTA: Pueda que usted tenga que remover la tuerca de la varilla del pistón para obtener holgura para meter la extensión de 3/8" dentro del agujero de ajuste cuadrado.
3. Usando una catraca (ratchet) con cuadrante de 3/8" con extensión, gire el ensamble en cualquier dirección hasta alcanzar el ajuste de camber/caster deseado. Cuando el

Contin'ua al doso

SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTIONS
FRONT CASTER/CAMBER ADJUSTMENT KIT

APPLICATIONS:
*1986-90 Taurus and Sable
Passenger Car & S/W

PRE-CHECKS:
Perform pre-alignment checks in a normal manner.
Take alignment readings.
Determine which side, right or left, needs the most correction and proceed to install that side first.

INSTRUCTIONS:
1. Raise and support vehicle by the pinch welds allowing the suspension to hang free. Remove wheel assembly.
2. With 8MM box wrench and 18MM open end wrench, remove nuts attaching link assembly to stabilizer bar and strut.

STRUT REMOVAL FROM VEHICLE
1. Remove strut pinch bolt. **NOTE:** TO HELP FREE BOTTOM OF STRUT ASSEMBLY, SLIGHTLY SPREAD "KNUCKLE-TO-STRUT" PINCH JOINT WITH SCREWDRIVER.
2. Open Hood. Loosen the three (3) top nuts from upper strut mounting assembly. **Do not remove at this time.**
3. Separate strut from knuckle. (Use of a pry bar, on-the car spring compressor or optional strut Jacking-tool will make removal of strut fast and easy.)
4. Next, remove the three (3) top nuts from upper strut mounting assembly and discard. (New self locking nuts supplied with kit will be used for re-installation.) Remove strut from vehicle.

STRUT DISASSEMBLY
1. Using a suitable spring compressor, compress spring until upper mounting plate is free of tension.
2. Remove piston rod nut and discard.
3. Remove upper mounting plate and discard. **NOTE:** If installing new strut at this time, you must also remove upper spring seat and bearing assembly, bumper, dust boot and compressed spring.

STRUT ASSEMBLY
1. Inspect all parts to be reused (replace if necessary).
2. Extend piston rod and install dust boot and bumper. Install compressed spring and spring seat. Next, place the new adjustable caster/camber kit as shown in **Figure 1** over the threaded portion of the piston rod. **NOTE:** Do not install **Upper** urethane bushing at this time.
3. *Using the new* piston rod locking nut supplied with kit (this nut replaces the nut used on Ford O.E. struts), tighten just enough to secure kit *in place.* **(Do not torque at this time.) NOTE:** If installing aftermarket struts, or if vehicle has aftermarket struts on it, you may need to supply your own new locking piston nut as thread designs vary.
4. Remove spring compressor. Check to be sure all parts are installed in correct order. (Refer to step #2 of this section.)

STRUT RE-INSTALLATION
1. Refer to "Strut Removal" section of instructions and follow steps in reverse order. Torque all fasteners to O.E.M. specifications. **EXCEPTIONS:** Do **not** torque piston rod nut or 5/16" kit assembly nuts at this time.
2. Repeat above instructions for opposite side of vehicle.

ALIGNMENT PROCEDURE
1. Re-install wheel assembly and alignment heads.
2. Loosen piston rod nut and 5/16" kit assembly nuts slightly. **NOTE:** You may have to **remove** the piston rod nut to allow clearance for 3/8" extension into square adjustment slot.
3. Using a 3/8" drive ratchet with extension, turn assembly in either direction to achieve desired caster/camber setting. When desired caster/camber is achieved, torque all three 5/16" kit assembly nuts to specifications. ***(See reverse side for specifications.)***

Form # 95-091-392 T

Continued on other side

MODE D'EMPLOI SPECIAL

(Suite)

PROCÉDURE POUR RÉGLER LA GÉOMÉTRIE

1. Remontez la roue et les têtes de géométrie.
2. Desserrez légèrement l'écrou de la tige du piston et les écrous de 5/16 po de l'ensemble du nécessaire. REMARQUE : Il se peut que vous deviez retirer l'écrou de la tige du piston pour permettre le passage de la rallonge d'une clé à cliquet à cadrant de 3/8 po dans l'encoche carrée de réglage.
3. À l'aide d'une clé à cliquet à cadran de 3/8 po et d'une rallonge, tournez l'ensemble dans l'un des sens pour obtenir le réglage de carrossage/chasse désiré. Quand le carrossage/chasse désiré est obtenu, serrez les trois écrous de 5/16 po de l'ensemble du nécessaire selon les spécifications. (Voyez les spécifications au dos.)
4. Enlevez l'écrou de la tige du piston et installez la bague en uréthanne. Remontez l'écrou de la tige du piston et serrez-le selon les spécifications. (Pour faciliter le serrage au couple de l'écrou de la tige du piston, utilisez une douille profonde à fentes pour écrou de jambe de suspension/amortisseur de 21 mm tout en maintenant la tige avec une douille profonde de 10 mm pour cadran de 1/4 po.) (Voyez les spécifications de couple de serrage au dos.) REMARQUE : Si vous n'arrivez pas à serrer l'écrou de la tige du piston à un couple de 47 à 68 Nm (35 à 50 lb/pi), vous pouvez assurer une bonne installation en mesurant du haut de l'écrou de la tige du piston au bout de la tige du piston et en ayant au moins une longueur de 1-7/16 à 1-1/2 po ou 11 filets exposés pour les jambes de suspension du fabricant de l'équipement d'origine. (Voyez la figure n° 2.) REMARQUE : Contrôle final du serrage au bon couple de l'écrou de tige de piston : assurez-vous que l'écrou de la tige ne tourne pas quand le volant de direction tourne.
5. Répétez la procédure pour le côté opposé du véhicule.
6. Réglez le parallélisme selon les spécifications de l'équipement d'origine.
7. Déposez les têtes de géométrie et testez le véhicule sur la route.

Figure n° 1

Figure n° 2 1-7/16 à 1-1/2 po ou 11 filets exposés pour les jambes de suspension du fabricant de l'équipement d'origine

VOYEZ AU DOS POUR L'INFORMATION CONCERNANT LA GÉOMÉTRIE INFORMATISÉE ET LES SPÉCIFICATIONS DE COUPLE DE SERRAGE DE L'ÉQUIPEMENT D'ORIGINE.

REMARQUE : LORS DU RÉGLAGE DE CHASSE/CARROSSAGE À L'AIDE DE L'ÉQUIPEMENT ÉLECTRONIQUE DE GÉOMÉTRIE DE VÉHICULE À QUATRE ROUES ASSISTÉ PAR ORDINATEUR, VOYEZ LE TABLEAU (FIGURE N° 3).

En vous servant d'un équipement informatique de géométrie, les mesures de carrossage indiquent la mesure exacte de la roue. Les mesures de chasse sont calculées par la quantité exacte du changement de carrossage pour une rotation de carrossage à un angle de direction donné.

Durant le réglage de l'ensemble chasse/carrossage, toute rotation de l'écrou de la tige du piston au-delà des points de repère A ou B requiert une nouvelle vérification de la chasse pour éliminer une erreur de mesure (voyez la figure n° 4).

SPÉCIFICATIONS DE COUPLE DE SERRAGE :

- Écrou de timonerie à la jambe de suspension : 75 à 102 Nm (55 à 75 lb/pi)
- *Boulons de bridage de l'articulation* à la jambe de suspension : 95 à 129 Nm (70 à 95 lb/pi)
- Écrous de montage supérieur à la tour de la jambe de suspension : 30 à 43 Nm (22 à 32 lb/pi)
- Écrou de la tige de piston : 47 à 68 Nm (35 à 50 lb/pi)
- Écrous de 5/16 po de l'ensemble du nécessaire : 27 à 36 Nm (20 à 26 lb/pi)

Figure n° 3

Écrou de la tige de piston
Point de repère A de vérification de la chasse
Point de repère B de vérification de la chasse

Figure n° 4

Bague en uréthanne supérieure
Écrou de la tige de piston
Écrou de 5/16 po
Écrou de 5/16 po
Rondelle Grower
Rondelle Grower
Écrou de 5/16 po
Rondelle Grower
Plaque supérieure de réglage de Chasse/carrossage
Plaque de montage supérieure
Plaque inférieure de réglage de chasse/carrossage
Bague en uréthanne inférieure

INSTRUCCIONES EXPECIALES

(Contin'ua)

ajuste de camber/caster deseado ha sido obtenido, apriete las tres tuercas del conjunto de 5/16" a la torsión especificada. (Vea al dorso para obtener las especificaciones).

4. Remueva la tuerca de la varilla del pistón e instale el buje de uretano. Reinstale la tuerca de la varilla del pistón y apriétela a la torsión especificada. (Para facilitar la torsión de la tuerca del eje del tirante, use un dado profundo de 21 mm "Ranurado" para tuerca de tirante/amortiguador mientras sostiene el eje con un dado profundo de 10 mm con cuadrante de 1/4") (Vea al dorso para obtener las especificaciones de torsión). NOTA: Si usted no puede obtener una torsión de 47 a 68 Nm (35 a 50 lbs. pie) en la tuerca de la varilla del pistón, usted se puede asegurar de que la instalación es apropiada midiendo desde la parte superior de la tuerca de la varilla del pistón a la punta de la varilla del pistón y obtener por lo menos de 1-7/16" a 1-1/2" de longitud o 11 hilos de rosca expuestos para los tirantes de Fabricante del Equipo Original. (Vea la Figura No. 2) NOTA: La comprobación final de la torsión apropiada de la tuerca de la varilla del pistón - cerciórese de que no se gira cuando el volante de dirección está siendo girado.
5. Repita el procedimiento para el otro lado del vehículo.
6. Ajuste la convergencia a las especificaciones del Fabricante del Equipo Original.
7. Remueva las cabezas de alineamiento y pruebe el vehículo en la carretera.

VEA EL DORSO PARA OBTENER INFORMACIÓN PARA ALINEAMIENTO COMPUTARIZADO Y LAS ESPECIFICACIONES DE TORSIÓN DEL FABRICANTE DEL EQUIPO ORIGINAL.

Figura 1
Figura 2

[inside figure 2]
1-7/16" a 1-1/2" ó 11 hilos de rosca expuestos en los tirantes de Fabricante del Equipo Original

NOTA: CUANDO ESTÉ AJUSTANDO EL CAMBER/CASTER CON EQUIPO DE ALINEAMIENTO ELECTRÓNICO COMPUTARIZADO PARA CUATRO RUEDAS, VEA EL CUADRO (FIGURA # 3)

Cuando se usa un equipo de alineamiento computarizado, las lecturas de camber indican las medidas exactas de la rueda. Las lecturas de caster son computadas por la cantidad exacta de cambio de camber o giro de camber a un ángulo de dirección determinado.

Durante el ajuste del ensamble de camber/caster, cualquier rotación de la tuerca del pistón del tirante pasada de los puntos de referencia A ó B requiere una barrida de caster nueva para eliminar errores de medida. (Vea la figura # 4).

ESPECIFICACIONES DE TORSIÓN:

Tuerca del tirante al ensamble de articulación	75 a 102 Nm (55 a 75 lbs. pie)
Perno de aprisionamiento del tirante al codillo	95 a 129 Nm (70 a 95 lbs. pie)
Tuercas de la torre del tirante al montante superior	30 a 43 Nm (22 a 32 lbs. pie)
Tuerca de la varilla del pistón	47 a 68 Nm (35 a 50 lbs. pie)
Tuercas del conjunto de 5/16"	27 a 36 Nm (20 a 26 lbs. pie)

Figura No. 3

[inside figure 3]
Tuerca de la varilla del tirante
Punto de referencia de barrida de caster A
Punto de referencia de barrida de caster B

Figura No. 4

[inside figure 4]
[left]
Buje de uretano superior
Tuerca de 5/16"
Arandela de seguridad
[right]
Tuerca del eje del tirante
Tuerca de 5/16"
Arandela de seguridad
Tuerca de 5/16"
Arandela de seguridad
Placa de ajuste superior de camber/caster
Placa de montaje superior
Placa de ajuste inferior de camber/caster
Buje de uretano inferior

SPECIAL INSTRUCTIONS

(Continued)

4. Remove piston rod nut and **install urethane bushing**. Re-install piston rod nut and torque to specifications. (To facilitate torquing of strut shaft nut, use a 21MM deepwell "See Through" strut/shock nut socket while holding the shaft with a 10MM deepwell 1/4" drive socket.) ***(See reverse side for torque specs.)*** **NOTE:** If you are unable to achieve 35-50 ft. lbs. (47-68 N.M.) of torque on piston rod nut, you can insure proper installation by measuring from top of piston rod nut to tip of piston rod, and having at least 1-7/16" to 1-1/2" inches in length or 11 threads exposed for OEM struts. (See Figure No. 2.) **NOTE:** Final check for proper torquing of piston rod shaft nut - check to be sure shaft nut does not rotate when steering wheel is being turned.
5. Repeat procedure for opposite side of vehicle.
6. Adjust toe to O.E. specifications.
7. Remove alignment heads and road test.

SEE OTHER SIDE FOR COMPUTERIZED ALIGNMENT INFORMATION AND O.E. TORQUE SPECIFICATIONS

NOTE: WHEN ADJUSTING CASTER/CAMBER WITH ELECTRONIC COMPUTERIZED 4-WHEEL ALIGNMENT EQUIPMENT, SEE CHART (FIGURE #3)

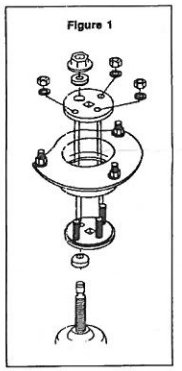
Using computerized alignment equipment, camber readings indicate the exact measurement of the wheel. Caster readings are computed by the amount of camber change for camber roll at a given steering angle.

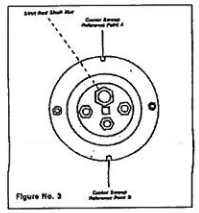
During adjustment of the Caster/Camber assembly, any rotation of the piston strut rod nut passed reference points A or B requires a new caster sweep to eliminate measurement error. **(See Figure #4)**

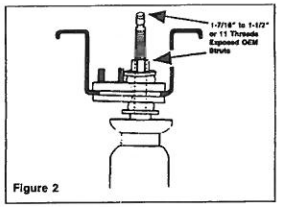
TORQUE SPECIFICATIONS:

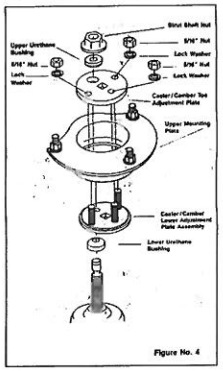
- Link assembly to strut nut 55-75 ft. lbs. (75-102 N.M.)
- Knuckle to strut pinch bolt 70-95 ft. lbs. (95-129 N.M.)
- Strut top mount - to - strut tower nuts 22-32 ft. lbs. (30-43 N.M.)
- Piston rod shaft nut 35-50 ft. lbs. (47-68 N.M.)
- 5/16" kit assembly nuts 20-26 ft. lbs. (27-36 N.M.)

IMPORTANT: For 1992 and newer Ford Taurus and Mercury Sable vehicles, the OE Ford replacement struts may have shorter thread length on the piston rod shaft than the original strut had. A 3/8" spacer (provided with kit) may be required to properly install camber adjusting kit.









Installation Instructions
TAURUS/SABLE
FRONT CAMBER PLATES

NOTE

- Because this product affects ride height, it is necessary to install plates on both sides of vehicle.
- This product is designed to operate in a limited-space environment. Any looseness in the bearing plate or deformation of the top strut plate should be corrected prior to installation or new camber plate.
  * As noted in Step 1 below, the vehicle should be inspected for damaged, bent or worn parts.
  * If the strut and bearing are in good condition, no interference will occur.

1. Do pre-alignment checks. Inspect car for damaged, bent or worn parts and repair as necessary. Install alignment equipment and determine amount of camber/caster changes required. Raise front of vehicle so suspension hangs freely. Support safely.

2. Remove pinch bolt holding strut into knuckle. Remove bracket holding ABS wire to strut. Remove upper end of sway bar link from strut – being careful to keep threaded shaft from spinning. Use of an 8mm socket and 18mm box wrench is recommended. Remove the brake hose brackets from the strut and the frame rail. Remove the tire rod end from the steering arm. Using a special strut-removing tool or other means, push the knuckle downward off the bottom of the strut (see figure 1).

3. Remove three nuts holding upper end of the strut assembly to inner fender. Remove strut from vehicle and install in vise using suitable holder.

4. Using tie rod removal tool or other suitable tool, press mounting studs out of top strut plate. It will be necessary to pry the plate up to remove the studs (see Figure 2).

5. Set the camber plate on top of the factory strut plate with the lettering UP and the elongated holes matching the holes in the top strut plate. From the underside of the camber plate, install the LONG Allen bolts through the three holes marked Left or Right, depending on which side of the vehicle you are adjusting (see Figure 3).

6. The elongated holes have five possible camber positions, ranging from ¼ to 1-1/4 degrees positive camber. As shown in Figure 4, install three SHORT Allen bolts through the camber plate in the position needed for the desired camber change. Set the camber plate down on top of the strut plate with the short bolts through the strut plate. Install nuts on bottom of short bolts and tighten (see Figure 5).

7. Take strut from vise to vehicle, install into fender using nuts and washers provided. Rotate strut about 30 degrees toward the “toe out” direction. Now roll the knuckle into the base of the strut. Insert a round pry bar in the pinch-bolt hole in the knuckle. Align the knuckle so it will slide up onto the bottom of the strut (see Figure 6). Check the alignment of the tab on the strut to the split in the knuckle. If necessary, insert the round pry bar into the sway bar hole on the strut and rotate the strut to align the tab (see Figure 7). Use a small bottle jack or screw-type stand to push the knuckle onto the strut far enough to install the pinch bolt. Apply Loctite to the threads and tighten the nut to 85 ft. lbs. (115 N.m). Reinstall all parts removed in Step 2.

8. Repeat procedures on other side of vehicle

9. Recheck camber and caster to verify changes. Finish alignment and road test vehicle.

Turn over for installation illustrations

Figure 1

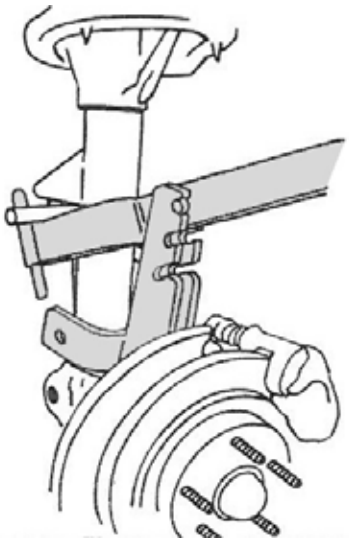


Figure 2

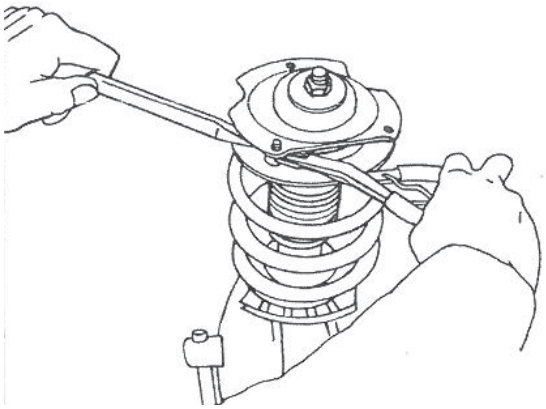


Figure 3

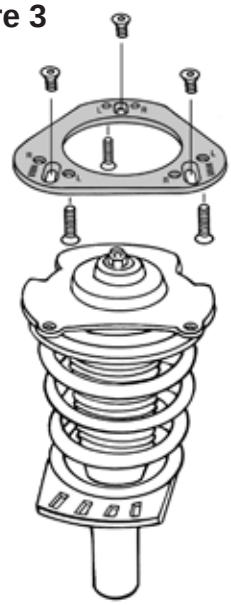


Figure 4

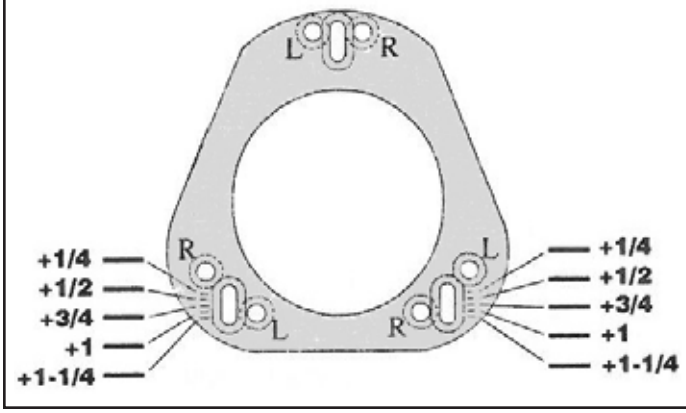


Figure 5

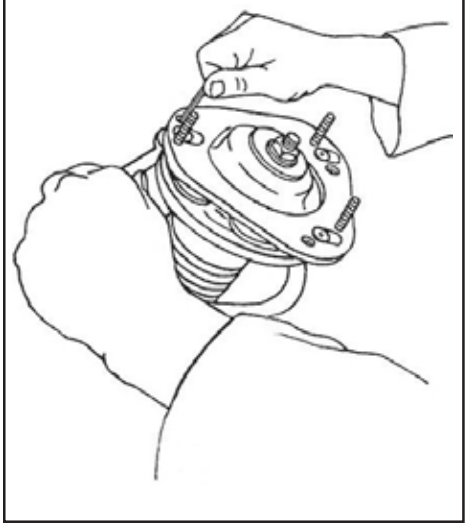


Figure 6

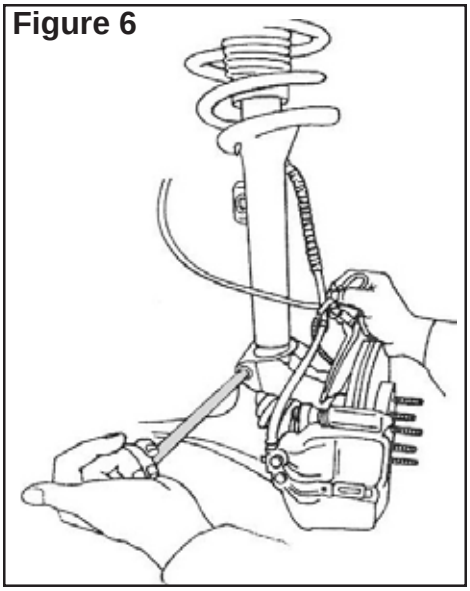
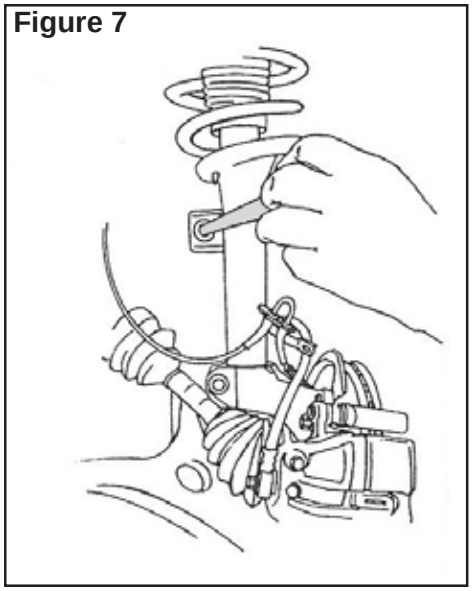


Figure 7



WINDSTAR *Installation Instructions*

NOTE: With this product, it is necessary to install plates on both sides because this product affects ride height.

1. Do pre-alignment checks. Inspect car for damaged, bent or worn parts and repair as necessary. Install alignment equipment and determine amount of camber/ caster change required. Raise front of vehicle so suspension hangs freely, and support safely. It is not necessary to remove wiper assembly to install this kit.
2. Remove pinch bolt holding strut into knuckle. Remove bracket holding ABS wire to strut. Remove upper end of sway bar link from strut, being careful to keep threaded shaft from spinning. Use of an 8mm socket and 18mm box wrench is recommended. Remove the brake hose brackets from the strut and frame rail. Remove the tie rod end from the steering arm. Using a special strut removal tool or other means, push the knuckle downward off the bottom of the strut (see figure No. 1)
3. Using a 13mm serpentine belt wrench, and straight ratcheting box end wrench, remove the three mounting bracket nuts holding upper strut assembly to fender tower. **Note:** It is helpful on drivers side of vehicle to first remove air filter for easier access to mounting bracket.
4. Remove strut from vehicle and install in vise using suitable holder.
5. Remove the three OE strut mounting studs by driving the studs loose from the strut mount, then cut studs flush with top of mount using a magnet to retrieve bottom of studs from top strut plate.
6. Set adjustable camber plate on top of factory strut plate having lettered side facing up and the elongated holes matching the holes of the OE strut plate. From the underside of the camber plate, install the long allen head bolts through the three holes marked left or right. depending on which side of vehicle you are working on. (see figure No. 2)
7. The elongated holes correspond to five camber positions. ranging from 1/4 to 1-1/4 degrees positive camber. (see figure No. 3)
8. A fast procedure to bolt the adjustable camber plate and OE strut plate together, is place the self locking nut into a 1/2" box end wrench. Drop the wrench through the opening between the strut plate and upper spring seat. Slide the wrench as far forward as possible then rotate the wrench 90 degrees to the strut assembly. Use a pin punch to bring everything into alignment. While exerting pressure on end of wrench, install short allen bolt through camber plate in position needed for desired camber change. Hand tighten only. (see figure No. 4) Repeat this procedure for all three bolts then torque bolts to 26-30 ft. lbs. (35-40 N.m)
9. Install strut into fender tower using nuts and washers provided. rotate strut about 30 degrees toward the toe-out direction. Now "roll" the knuckle onto the base of the strut. Insert a round prybar in the pinch bolt hole in the knuckle, align the knuckle so it will slide up on the bottom of the strut (figure No. 5). Check the alignment of the tab at base of strut to the split in the knuckle. If necessary, insert the round prybar into the sway bar hole on the strut and rotate the strut to align the tab (see figure 6). Use a small bottle jack screw-type stand to slide the knuckle far enough to install the pinchbolt. Apply loctite to the threads and torque the nut to 85 ft. lbs. (115 N.m) Reinstall all parts removed in step No. 2
10. Repeat procedure on other side of vehicle.
11. Re-check camber and caster to verify changes. Finish alignment and road test the vehicle.

Figure No. 1

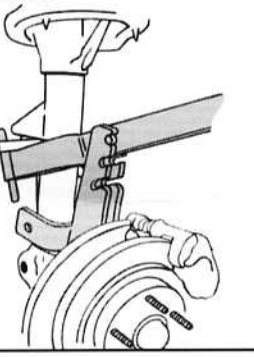


Figure No. 2

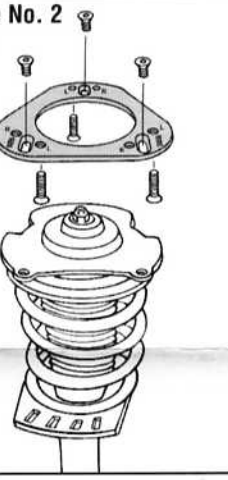


Figure No. 3

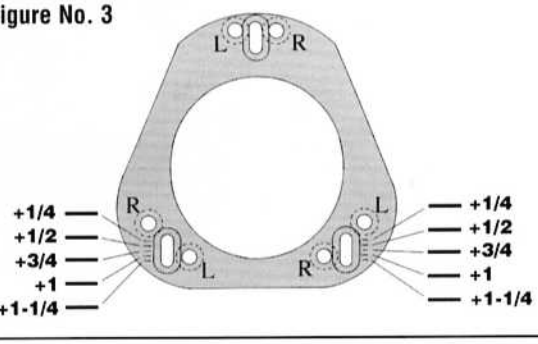


Figure No. 4

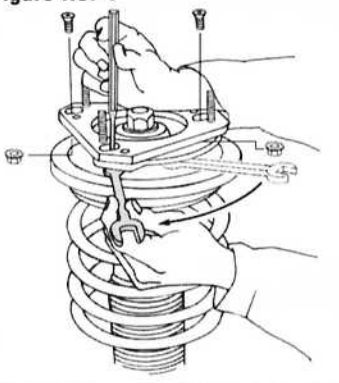


Figure No. 5

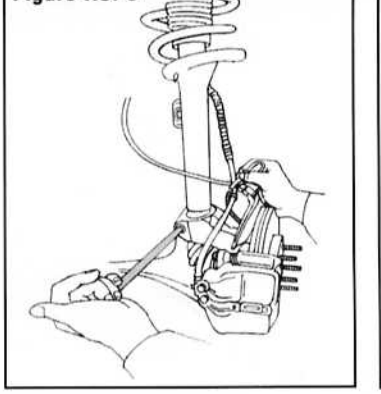
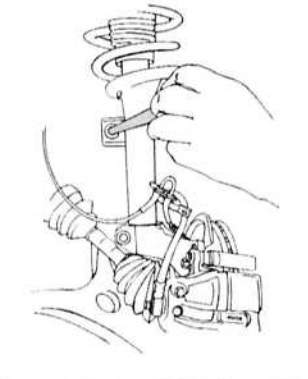


Figure No. 6



Form # 95-166-1099

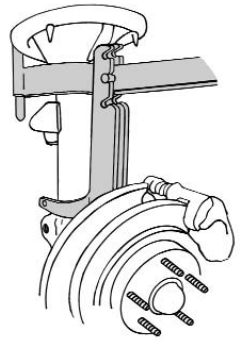
INSTALLATION INSTRUCTIONS
FORD FOCUS FRONT CAMBER PLATES

These plates are designed for positive camber adjustment up to one degree in 1/4 degree increments.

NOTE: To insure accurate camber change, plates must be installed on BOTH sides of the vehicle. Plates are marked with "L" or "R", corresponding to side of car they fit.

1) Check vehicle for bent, worn or lose components and repair as necessary.
2) Check alignment and determine front camber changes required.
3) Lift vehicle so suspension hangs freely. Support safely.
4) Remove wheel assembly.
5) Remove ABS sensor from steering knuckle. Remove screw for bracket at bottom of strut. Remove ABS wire from clips to strut. Remove brake hose from clip on side of strut.
6) Unbolt sway bar link from strut. Use an allen wrench in ball stud to prevent it from spinning.
7) Spray penetrant at base of strut. Remove pinch bolt from steering knuckle.
8) Remove steering knuckle from bottom of strut. A strut and knuckle separator tool is available that makes this quick and easy **(See Figure No. 1)**.
9) Unbolt strut from inner fender assembly. Mount in a strut vise with bottom tab away from you. **(See Figure No. 2)**.

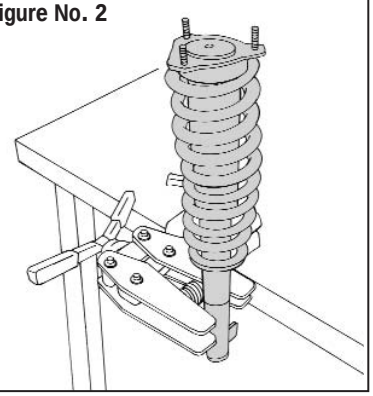
Figure No. 1



FOR POSITIVE 1/4 DEGREE CHANGE ONLY

10) Locate camber plate corresponding to side of the vehicle being worked on.
11) Placing letter, "L" or "R" toward you, place plate over factory studs in top pivot plate. Verify that letter is directly opposite tab on bottom of strut.
12) Reinstall strut in vehicle, with "L" or "R" positioned OUTWARD, toward the tire.
13) Apply Loctite to threads of thin METRIC nuts. Use washers and nuts to reinstall strut assembly into fender. Torque to 25 ft. lb. (34 N.m.)
14) Proceed to step 23.

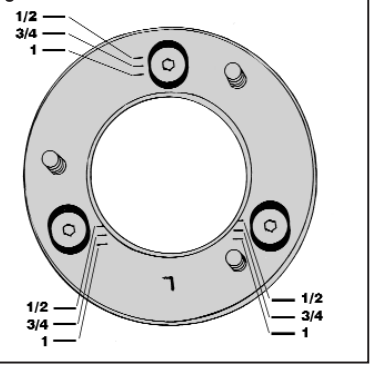
Figure No. 2



FOR POSITIVE 1/2, 3/4, AND 1 DEGREE CHANGE

15) Locate camber plate corresponding to side of the vehicle being worked on.
16) On factory top pivot plate, remove studs. Recommended procedure is to cut studs flush with top of pivot plate using a cutoff wheel or hacksaw. Then centerpunch the remaining parts of the studs and drill out from the plate.
17) Place proper camber plate over top of factory pivot plate, making sure letter is toward you. Install three LONGER bolts upward through round holes in camber plate. Rotate factory pivot plate to align three slotted holes in camber plate with holes in pivot plate. Install three SHORTER bolts downward through slotted holes. Start nuts on these bolts on bottom side of pivot plate.
18) Make sure letter on top of camber plate is directly opposite tab on bottom of strut.
19) Slide camber plate so bolt heads are referenced to the position for desired camber change, 1/2, 3/4, or 1 degree. **(Refer to Figure No. 3).**
20) Torque bolts to 25 ft. lb. (34 N. m.)
21) Reinstall strut in vehicle, with "L" or "R" on camber plate positioned OUTWARD, toward the tire.
22) Use thicker STANDARD nuts and washers to reinstall strut assembly into fender. Torque to 25 ft. lb. (34 N. m.)

Figure No. 3



COMPLETING INSTALLATION

23) Align tab on rear of strut with slot in steering knuckle. Push knuckle up onto base of strut assembly to proper height to install pinch bolt. Use small jack if necessary.
24) Coat pinch bolt with Loctite. Install through steering knuckle. Torque to manufacturer's specification.
25) Reinstall sway bar link, using allen wrench in ball stud to prevent it from spinning. Torque to manufacturer's specification.
26) Reinstall wire bracket, wire and brake hose, as required. Reinstall ABS wire into knuckle as required.
27) Repeat procedures on other side of vehicle.
28) Reinstall wheels and alignment sensors. Recompensate sensors. Verify camber change.
29) Complete alignment and road test vehicle.

MODE D'EMPLOI SPECIAL

INSTRUCTIONS D'INSTALLATION NÉCESSAIRE DE RÉGLAGE DE CAME

USAGES: PRODUITS CHRYSLER 1971-81
PRODUITS FORD 1971-76
À L'ARRIÈRE DES CHEVROLET CORVETTE 1971-81

VÉRIFIEZ LA GÉOMÉTRIE ET DÉTERMINEZ LES CORRECTIONS À FAIRE.

1. SOULEVEZ LE VÊHICULE — Suspension Chrysler (typique)
   A. PRODUITS CHRYSLER
      SOUS LE BRAS DE CONTRÔLE INFÉRIEUR
      (Voyez l'illustration.)
      (Voyez l'illustration.)

   B. PRODUITS FORD — Suspension Ford (typique)
      SOUTENEZ LE BRAS DE CONTRÔLE SUPÉRIEUR POUR DÉTENDRE LE RESSORT.
      Bras supérieur
      Bras inférieur
      Fusée
      Soutenez ici

   C. À L'ARRIÈRE DES CHEVROLET CORVETTE -
      SOULEVEZ LE VÉHICULE SOUS LE BRAS DE CONTRÔLE DU COUPLE ARRIÈRE.
      Support de la tige de la jambe de suspension de l'essieu arrière (Corvette)
      (Voyez l'illustration.)

2. ENLEVEZ LA ROUE.
   REMARQUE : REMPLACEZ UN ASSEMBLAGE DE CAME À LA FOIS : LA CAME OPPOSÉE DEVRAIT ÊTRE LAISSÉE SERRÉE.

3. REMPLACEZ LA CAME ET LE BOULON COMME SUIVANT :
   A. MARQUE LA POSITION DE LA CAME.
   B. ENLEVEZ L'ÉCROU, LA RONDELLE ET LE BOULON DE CAME.
   C. INSTALLEZ UN NOUVEAU BOULON DE CAME, EN PRENANT SOIN DE GARDER LA CAME DANS LA MÊME POSITION QUE CELLE DE LA VIEILLE.
   D. INSTALLEZ LA RONDELLE GROWER ET L'ÉCROU, PUIS SERREZ-LE.

4. RÉPÉTEZ L'ÉTAPE 4 (A. À C.) POUR LE REMPLACEMENT DE L'AUTRE ASSEMBLAGE DE CAME.

5. REPLACEZ LA ROUE ET CONTINUEZ LE RÉGLAGE DE LA GÉOMÉTRIE.

6. VÉRIFIEZ ET RÉGLEZ LE PARALLÉLISME, ESSAYEZ LE

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN CONJUNTO DE AJUSTE DE CAMBER

USOS: PRODUCTOS CHRYSLER 1971-81
PRODUCTOS FORD 1971-76
CHEVROLET CORVETTE ATRÁS 1971-81

VERIFIQUE EL ALINEAMIENTO Y DETERMINE LAS CORRECCIONES A SER EFECTUADAS

1. LEVANTE EL VEHÍCULO — Suspensión Chrysler (Típica)
   A. PRODUCTOS CHRYSLER
      DEBAJO DEL BRAZO DE CONTROL INFERIOR.
      (Vea la ilustración)
      (Vea la ilustración)

   B. PRODUCTOS FORD — Suspensión Ford (Típica)
      SOPORTE EL BRAZO DE CONTROL SUPERIOR PARA SOLTAR LA PRESIÓN DEL RESORTE
      Brazo Superior
      Brazo Inferior
      Husillo
      Soporte Aquí

   C. CHEVROLET CORVETTE — ATRÁS
      LEVANTE EL VEHÍCULO DEBAJO DEL BRAZO DE CONTROL DE TORSIÓN TRASERO
      Soporte de la barra del tirante del eje trasero (Corvette)
      (Vea la ilustración)

2. REMUEVA LA RUEDA
   NOTA: REEMPLACE UN ENSAMBLE DE EXCÉNTRICA A LA VEZ: LA EXCÉNTRICA OPUESTA DEBERÁ SER DEJADA APRETADA.

3. REEMPLACE LA EXCÉNTRICA Y EL PERNO DE LA FORMA SIGUIENTE:
   A. MARQUE LA POSICIÓN DE LA EXCÉNTRICA
   B. REMUEVA LA TUERCA, LA ARANDELA Y EL PERNO EXCÉNTRICO.
   C. INSTALE EL PERNO EXCÉNTRICO NUEVO, TENIENDO CUIDADO DE MANTENER LA EXCÉNTRICA EN LA MISMA POSICIÓN QUE LA EXCÉNTRICA VIEJA
   D. INSTALE LA ARANDELA DE SEGURIDAD Y LA TUERCA Y LUEGO APRIÉTELA.

4. REPITA EL PASO 4 (DE LA A. A LA C.) PARA REEMPLAZAR EL ENSAMBLE DE EXCÉNTRICA DEL OTRO LADO.

5. REINSTALE LA RUEDA Y PROSIGA CON EL ALINEAMIENTO.

6. COMPRUEBE Y AJUSTE LA CONVERGENCIA, PRUEBE EL VEHÍCULO EN LA CARRETERA.

Contin'ua al doso

SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTIONS CAM ADJUSTMENT KIT

APPLICATIONS: CHRYSLER PRODUCTS 1971-81
FORD PRODUCTS 1971-76
CHEVROLET CORVETTE REAR 1971-81

CHECK ALIGNMENT AND DETERMINE CORRECTIONS TO BE MADE.

1. **RAISE VEHICLE**
   A. **CHRYSLER PRODUCTS —**
      UNDERNEATH LOWER CONTROL ARM.

   B. **FORD PRODUCTS —**
      SUPPORT UPPER CONTROL ARM TO RELEASE SPRING TENSION.

   C. **CHEVROLET CORVETTE REAR —**
      RAISE VEHICLE UNDER REAR TORQUE CONTROL ARM.

2. **REMOVE WHEEL**
   NOTE: REPLACE ONE CAM ASSEMBLY AT A TIME: THE OPPOSITE CAM SHOULD BE LEFT TIGHT.

3. **REPLACE CAM AND BOLT AS FOLLOWS:**
   A. MARK POSITION OF CAM.
   B. REMOVE NUT, WASHER AND CAM BOLT.
   C. INSTALL NEW CAM BOLT, TAKING CARE TO KEEP CAM IN SAME POSITION AS OLD CAM.
   D. INSTALL LOCK WASHER AND NUT THEN TIGHTEN.

4. **REPEAT STEP 4. (A. THROUGH C.) FOR REPLACEMENT OF OTHER CAM ASSEMBLY.**

5. **REPLACE WHEEL AND CONTINUE WITH ALIGNMENT.**

6. ***CHECK AND ADJUST TOE, ROAD TEST VEHICLE.***

Continued on other side

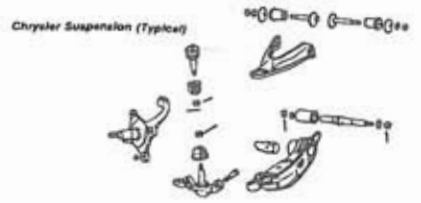
MODE D'EMPLOI SPECIAL

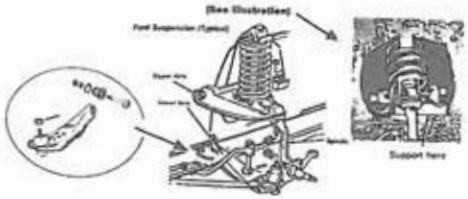
(Suite)

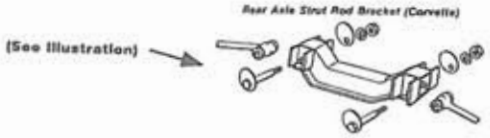
VÉHICULE SUR LA ROUTE.

INSTRUCCIONES EXPECIALES

(Contin'ua)







SPECIAL INSTRUCTIONS

(Continued)

CAMBER/CASTER BOLT KIT INSTALLATION INSTRUCTIONS for
LINCOLN LS 2000-current
JAGUAR S-TYPE 2000-current
NEW DESIGN FORD THUNDERBIRD

THIS KIT REPLACES THE PLAIN FACTORY BOLTS WITH CAMBOLTS TO ALLOW ACCURATE ADJUSTMENT OF CAMBER AND CASTER ON THESE VEHICLES.

1) Check vehicle for bent, worn or loose components and repair as necessary.
2) Check alignment and determine front camber and caster changes required. Determine whether both left and right wheels need adjustment, or one side will be sufficient.
3) Lift front of vehicle so suspension hangs freely and bolts holding rack and pinion assembly can be accessed. Support safely.
4) Remove lower covers to allow access to lower control arm pivot bolts and rack and pinion mounting bolts.
5) Remove lower electrical connector from rack and pinion.
6) Remove three mounting bolts and nuts from rack and pinion assembly.
7) Remove pivot bolts and nuts from one or both lower control arms. When removing bolt for rear of left control arm, the rack and pinion assembly will need to be pried backward to obtain adequate clearance. Use care in this procedure. **(See Figure 1)**

NOTE: Some of these vehicles have identical length bolts at the front and rear of the control arms, and some have longer bolts at the front. Our cambolt fits both designs.

8) Place one cam next to head of replacement bolt. Install this assembly through subframe and inner pivot of lower control arm. Place another cam on the bolt, followed by a lockwasher and a nut. Place both cams in a neutral position with the large part of the cam facing up. Snug nut. All bolts will be installed with the nuts toward the front of the vehicle. **(See Figure 2)**
9) Repeat step 8 in one or three bolt positions, depending on whether one or both front wheels need to be realigned.
10) Reinstall rack and pinion to crossmember. Torque fasteners to factory specification.
11) Reinstall electrical connector removed in step 5.
12) Lower vehicle to alignment rack. Reinstall and recompensate alignment sensors as required. Determine camber and caster changes required.
13) Using alignment equipment manufacturer's recommended procedure, adjust camber and caster.
14) Remeasure caster to verify proper readings.
15) Torque nuts on cambolts to 150 ft. lb. (200 N. m.)
16) Replace covers removed in step 4.
17) Complete alignment and road test vehicle.

Figure No. 1

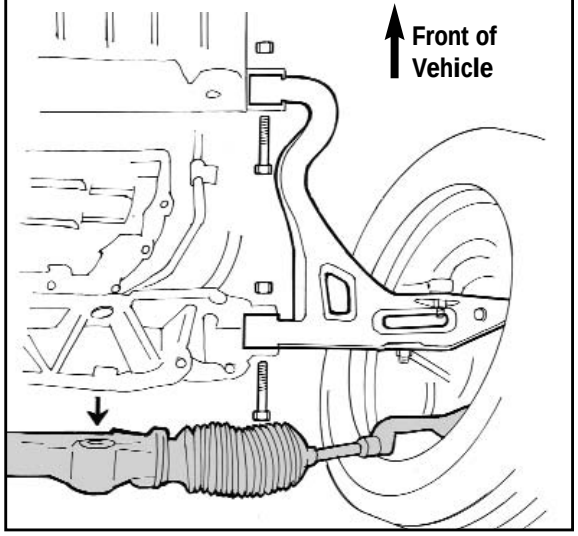
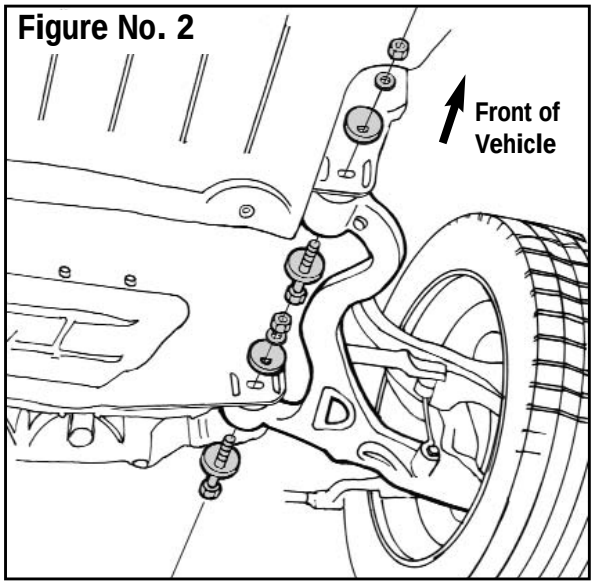


Figure No. 2



MODE D'EMPLOI SPECIAL

INSTRUCTIONS D'INSTALLATION DU NÉCESSAIRE DE RÉGLAGE DES CAMES POUR GM

A. Enlevez l'écrou inférieur, la rondelle et le boulon de la jambe de suspension.
B. Installez le nouveau boulon de came avec la partie large de la came avant vers le haut.
C. Installez la came arrière (partie large vers le haut), la rondelle Grower et l'écrou. Serrez-le légèrement.
D. Desserrez légèrement l'écrou supérieur de la jambe de suspension.
E. Tournez le boulon de carrossage jusqu'à la position désirée pour le carrossage.
F. Serrez l'écrou sur le boulon de carrossage. Tenez fermement la tête du boulon.
G. Serrez l'écrou sur le boulon supérieur de la jambe de suspension. Tenez fermement la tête du boulon.
H. Réglez le parallélisme.

*Quelques modifications du support de montage de la jambe de suspension seront nécessaires pour son utilisation avec les voitures à carrosserie de type J & N.

AVANT APRÈS

ATTENTION

Lors de l'installation de boulons de came sur des carrosserie du type J et N, il peut être nécessaire de limer afin d'obtenir la marge de réglage appropriée. Ne limez qu'autant que nécessaire pour permettre au boulon de came de tourner sur 360 degrés.

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DEL CONJUNTO DE AJUSTE EXCÉNTRICO PARA GM

A. Remueva la tuerca inferior, la arandela y el perno del tirante.
B. Instale el perno excéntrico nuevo con la parte más grande de la excéntrica hacia arriba.
C. Instale la excéntrica trasera (la parte grande hacia arriba), la arandela de seguridad y la tuerca. Apriete ligeramente.
D. Afloje ligeramente la tuerca superior del tirante.
E. Gire el perno de camber a la posición de camber deseada.
F. Apriete la tuerca del perno de camber. Mantenga firme la cabeza del perno.
G. Apriete la tuerca del perno superior del tirante. Mantenga firme la cabeza del perno.
H. Ajuste la convergencia.

*Será necesaria una modificación del soporte de montaje del tirante para ser usado en las carrocerías J & N.

ANTES DESPUÉS

PRECAUCIÓN

Cuando se instalen los pernos excéntricos en las carrocerías J & N, pueda que sea necesario limar para poder alcanzar la amplitud de ajuste necesaria. Solo lime tanto como sea necesario para permitir que el perno excéntrico gire completamente los 360°.

SPECIAL INSTRUCTIONS

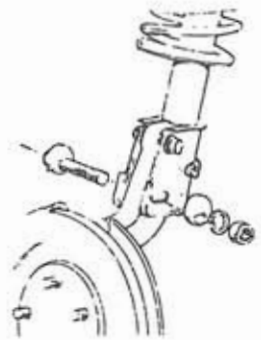
INSTALLATION INSTRUCTIONS GM CAM ADJUSTMENT KIT

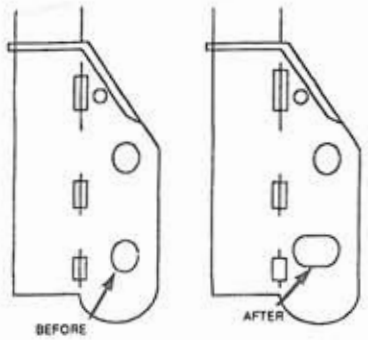
A. Remove the lower nut, washer and bolt from strut.
B. Install new cam bolt with large part of front cam toward top.
C. Install rear cam (large part toward top), lock washer and nut. Tighten slightly.
D. Loosen upper strut nut slightly.
E. Turn camber bolt to the desired camber setting.
F. Tighten nut on camber bolt. Hold bolt head firmly.
G. Tighten nut on upper strut bolt. Hold bolt head firmly.
H. Adjust toe setting.

*Some modification to strut mounting bracket will be necessary for use on J & N cars.

CAUTION

When installing cam bolts on J-body and N-body filing may be necessary to achieve the proper adjustment range. Only file as much as necessary to allow cam bolt to rotate a full 360 degrees.





MODE D'EMPLOI SPECIAL

INSTRUCTIONS D'INSTALLATION DU NÉCESSAIRE DE RÉGLAGE DE CAME POUR GM Riviera, Eldorado, Seville & Toronado de 1979 et plus récentes

Vérifiez la géométrie et déterminez les corrections à faire.

A. Soulevez le véhicule sous le bras de contrôle inférieur.
B. Enlevez la roue.
C. Retirez le boulon supérieur de montage du montant d'amortisseur et abaissez l'amortisseur pour faire de la place.

Remarque: Remplacez un assemblage de came à la fois. La came opposée devrait être laissée serrée.

D. Remplacez la came et le boulon comme suivant :
   (1) Marquez la position de la came.
   (2) Enlevez l'écrou, la rondelle et le boulon de came.
   (3) Installez le nouveau boulon de came, en prenant soin de mettre la came dans la position de la vieille.
   (4) Installez la rondelle Grower et l'écrou, puis serrez-le.
E. Répétez l'étape D (1 à 4) pour le remplacement de l'autre assemblage de came.
F. Remontez le boulon supérieur du montant d'amortisseur et serrez-le.
G. Replacez la roue et continuez le réglage de la géométrie.

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DEL CONJUNTO DE AJUSTE EXCÉNTRICO PARA GM Riviera, Eldorado, Seville & Toronado de 1979 y más recientes

Verifique el alineamiento y determine las correciones necesarias a ser efectuadas.

A. Levante el vehículo por debajo del brazo de control inferior.
B. Remueva la rueda.
C. Remueva el perno de montaje del montante superior del amortiguador y baje el amortiguador para obtener espacio libre.

Nota: Reemplace un ensamble de excéntrica a la vez. La excéntrica opuesta deberá ser dejada apretada.

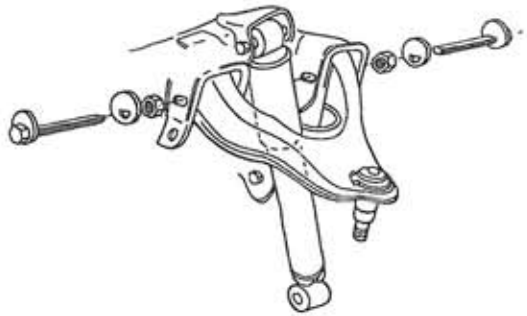
D. Reemplace la excéntrica y el perno de la forma siguiente:
   (1) Marque la posición de la excéntrica.
   (2) Remueva la tuerca, la arandela y el perno excéntrico.
   (3) Instale el perno excéntrico nuevo, teniendo cuidado de mantener la excéntrica en la misma posición que la excéntrica vieja.
   (4) Instale la arandela de seguridad, la tuerca y apriétela.
E. Repita el paso D (1 al 4) para reemplazar el otro ensamble de excéntrica.
F. Reinstale el perno superior del montante del amortiguador y apriételo.
G. Reinstale la rueda y siga con el alineamiento.

SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTIONS GM CAM ADJUSTMENT KIT 1979 & Newer Riviera, Eldorado, Seville & Toronado

Check alignment and determine corrections to be made.

A. Raise vehicle underneath lower control arm.
B. Remove wheel.
C. Remove mounting bolt from upper shock mount & lower the shock for clearance. **NOTE:** Replace one cam assembly at a time. The opposite cam should be left tight.
D. Replace cam & bolt as follows.
   (1) Mark position of cam.
   (2) Remove nut, washer and cam bolt.
   (3) Install new cam bolt, taking care to keep cam in same position as old cam.
   (4) Install lock washer & nut and tighten.
E. Repeat step D (1 thru 4) for replacement of other cam assembly.
F. Reinstall upper shock mount bolt and tighten.
G. Replace wheel and continue with alignment.



MODE D'EMPLOI SPECIAL

INSTRUCTIONS D'INSTALLATION DU NÉCESSAIRE DE RÉGLAGE DU CARROSSAGE POUR PRODUITS CHRYSLER

Chrysler, Aries & Reliant de 1985 et plus récentes

A. Vérifiez la géométrie et déterminez les corrections à faire.
B. Retirez le boulon de came supérieur de l'assemblage de la jambe de suspension.
C. Installez de nouveaux boulon de carrossage, came, rondelle Grower et écrou. Ne le serrez qu'à la main à ce point. Remarque : Quelques boulons de l'équipement d'origine utilisent une seule came. Le boulon de rechange a une came des deux côtés de la jambe de suspension.
D. Desserrez légèrement le boulon inférieur de la jambe de suspension.
E. Réglez le carrossage selon les spécifications en tournant le boulon de carrossage.
F. Serrez l'écrou supérieur de réglage de carrossage tout en tenant le boulon en place.

Remarque : Vérifiez les cames pour vous assurer qu'elles soient assises à plat contre la bride de la jambe suspension.

G. Serrez le boulon inférieur de la jambe de suspension.
H. Répétez la procédure de l'autre côté.
I. Réglez le parallélisme selon les spécifications.

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DEL CONJUNTO DE AJUSTE DE CAMBER PARA PRODUCTOS CHRYSLER

Chrysler, Aries & Reliant de 1985 y más recientes

A. Verifique el alineamiento y determine las correcciones a ser efectuadas.
B. Remueva el perno excéntrico superior del ensamble del tirante.
C. Instale el perno de camber nuevo, la excéntrica, la arandela de seguridad y la tuerca. Apriétela con la mano únicamente en este momento. Nota: Algunos pernos de Equipo Original usan únicamente una sola excéntrica. El perno de repuesto tiene una excéntrica en ambos lados del tirante.
D. Afloje ligeramente el perno inferior del tirante.
E. Ajuste el camber de acuerdo con las especificaciones girando el perno de camber.
F. Apriete la tuerca de ajuste de camber mientras mantiene el perno.

Nota: Revise las excéntricas para cerciorarse de que ellas están asentadas planamente contra la brida del tirante.

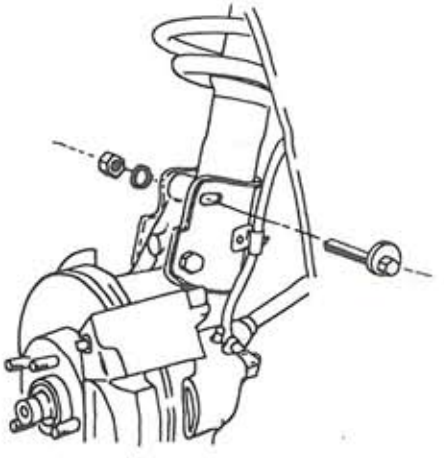
G. Apriete el perno inferior del tirante.
H. Repita el procedimiento en el otro lado.
I. Ajuste la convergencia de acuerdo con las especificaciones.

SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTIONS CHRYSLER PRODUCT CAMBER ADJUSTING KIT

1985 & Newer Chrysler, Aries & Reliant

A. Check alignment and determine corrections to be made.
B. Remove upper cam bolt from strut assembly.
C. Install new camber bolt, cam, lock washer and nut. Hand tighten only at this time. **NOTE:** Some OE bolts use only one cam. The replacement bolt has a cam on both sides of the strut.
D. Loosen lower strut bolt slightly.
E. Adjust camber to specifications by turning camber bolt.
F. Tighten upper camber adjuster nut while holding the bolt steady. **NOTE:** Check cams to be sure they are seated flat against the strut flanges.
G. Tighten lower strut bolt.
H. Repeat procedure on opposite side.
I. Adjust toe setting to specifications.



MODE D'EMPLOI SPECIAL

INSTRUCTIONS D'INSTALLATION POUR LES CAMES DE GÉOMÉTRIE DES CAMIONS GM DE TAILLE COMPLÈTE DE 1988

Ces instructions couvrent les camions à deux et à quatre roues motrices. Les différences de la procédure d'installation sont notées là où elles existent.

1. Effectuez des contrôles avant la géométrie d'une manière normale.
2. Accrochez des jauges de géométrie, relevez les mesures.
3. Soutenez le camions par les bras de contrôle inférieurs. Camions 4x4 - L'ensemble pneu/roue doit être déposé pour installer les cames.
4. Enlevez les assemblages d'écrou et de boulon (d'usine) non réglables retenant le bras de contrôle supérieur aux supports de montage sur le châssis.
5. Trouvez les soudures de languette sur les rondelles recouvrant les fentes de réglage.

(REMARQUE : Sur les camions 4 x 4 et 4 x 2, modèles de fin 1989 et plus récents, vous trouverez des tampons cassables au lieu de soudures de languette - Cassez-le simplement à l'aide d'un burin ou d'un pistolet à impact.)

6. Burinez ou limez la soudure supérieure, puis tordez la rondelle d'un côté à l'autre pour casser la soudure inférieure.
7. Éliminez tout produit d'étanchéité ou toute rugosité de soudure de la zone de contact de la came. La came doit travailler sur une surface lisse.
8. Installez le nécessaire de came de géométrie et réglez la géométrie selon les réglages requis.
9. Serrez les écrous de came à une couple de 110 à 140 Nm (80 à 100 lb/pi).

REMARQUE : Sur les camions 4 x 4, il y a habituellement une grande quantité de produit d'étanchéité à l'avant du support de montage arrière. Il est important que ce matériau soit éliminé de la surface que la came touchera.

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DE LAS EXCÉNTRICAS DE ALINEAMIENTO PARA CAMIONES GM DE TAMAÑO COMPLETO DE 1988

Estas instrucciones cubren los camiones de 4x2 y de 4x4. Donde exista una diferencia en el procedimiento de instalación, ella será anotada.

1. Lleve a cabo las pruebas antes del alineamiento de la manera acostumbrada.
2. Conecte los indicadores de alineamiento y anote las lecturas.
3. Soporte el camión por los brazos de control inferiores. Camiones de 4x4 - La rueda tendrá que ser removida para instalar las excéntricas.
4. Remueva los pernos y las tuerca no ajustables (de fábrica), que sostienen el brazo de control superior en los soportes de montaje del chasis.
5. Ubique los puntos de soldadura en las arandelas que cubren las ranuras de ajuste.

(NOTA: En los modelos de camiones de producción final de 1989 y más recientes de 4x4 y de 4x2, usted encontrará tapones de registro a cambio de puntos de soldadura - simplemente túmbelos usando una pistola de golpe y un cincel).

6. Tumbe con un cincel o con un esmeril la soldadura superior, luego doble la arandela hacia adelante y hacia atrás para romper el extremo inferior.
7. Limpie el área en que la excéntrica hace contacto con cualquier sellador de chasis o aspereza de soldadura. La excéntrica deberá operar sobre una superficie lisa.
8. Instale el conjunto de alineamiento y ajuste al alineamiento requerido.
9. Apriete las tuercas de la excéntrica a una torsión de 110 a 140 Nm (80 a 100 lbs. pie)

NOTA: En los camiones de 4x4 hay usualmente una gran cantidad de sellador de chasis en la parte delantera del soporte de montaje trasero. Es muy importante que este material sea limpiado de la superficie de contacto de la excéntrica.

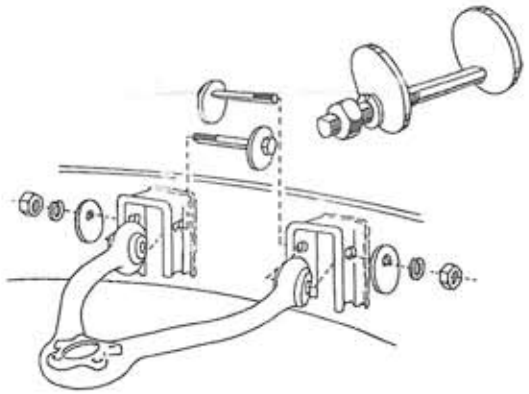
SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTIONS FOR: ALIGNMENT CAMS FOR 1988 GM FULL SIZE TRUCKS

These Instructions cover both the 4x2 and 4x4 trucks. Where there is a difference in installation procedure it is noted.

1. Perform pre-alignment checks in a normal manner.
2. Hook-up alignment gauges, record readings.
3. Support the truck by the lower control arms.
   4x4 trucks—The tire/wheel assembly must be removed to install the cams.
4. Remove the non-adjustable (factory) nut and bolt assemblies holding the upper control arm to the frame mounting supports.
5. Locate the tag welds on the washers covering the adjustment slots.
   (**NOTE**: On late model 1989 & newer 4x4 and 4x2 trucks you will find knock out slugs as opposed to tag welds—simply knock out with zip gun & chisel.)
6. Chisel or grind the top weld, then bend the washer back and forth to break |
7. Clean the area the cam contacts, of any body sealant or weld roughness. The cam must operate on a smooth surface.
8. Install the alignment cam kit and adjust alignment to the required settings.
9. Torque the cam nuts to 80-100 ft. lbs. (110-140 N.m).

NOTE: On the 4x4 trucks there is usually a large quantity of body sealer on the front side of the rear mounting support. It is important that this material be cleaned from the surface that the cam contacts.



GM TRUCK CAM/CASTER KIT

1. Raise vehicle by lower control arm, remove and replace one upper control arm bolt at a time.

2. Install cam bolts by placing one cam at the head of each bolt. Make sure cam is oriented properly matching the OE. Install this assembly, making sure pin on frame bracket is in the cam slot, then install another cam and nut and tighten lightly.

CAUTION: USE CARE NOT TO DAMAGE BRAKE LINES, FUEL LINES OR WIRING.

3. Reinstall tire and wheel assembly and recompensate alignment equipment.

4. Adjust cams to desired caster/camber settings and torque nuts to manufacturer's specifications while holding the head of the bolt.

5. Adjust toe and road test the vehicle.

CAUTION: ALWAYS USE APPROPRIATE SAFETY DEVICES TO SUPPORT THE WEIGHT OF THE VEHICLE WHILE SERVICING ANY SUSPENSION COMPONENT. ALWAYS CHECK FOR PROPER CLEARANCE BETWEEN SUSPENSION COMPONENTS AND OTHER COMPONENETS OF THE VEHICLE.

DRIVELINE ANGLE CAM BOLT

Installing any aftermarket lift kit will drastically change driveline angle.

On a 1998 or newer Jeep Wrangler the upper control arm bracket on the rear axle has embossed templates, designed to be cut out to allow installation of cam bolts for driveline angle adjustment. See Fiure 1.

To properly measure and adjust driveline angle, consult the manufacturer's service manual. See Figure 2

NOTE: When re-installing the upper suspension arm, the bracket for the parking brake cable must face inboard. See Figure 1.

CAUTION: All control arm bushings and fasteners must be tightened at curb height. Failure to do so will result in a harsh ride and reduced bushing life.

Torque Specifications: 75NM or 55 ft. lbs.

FIGURE 1

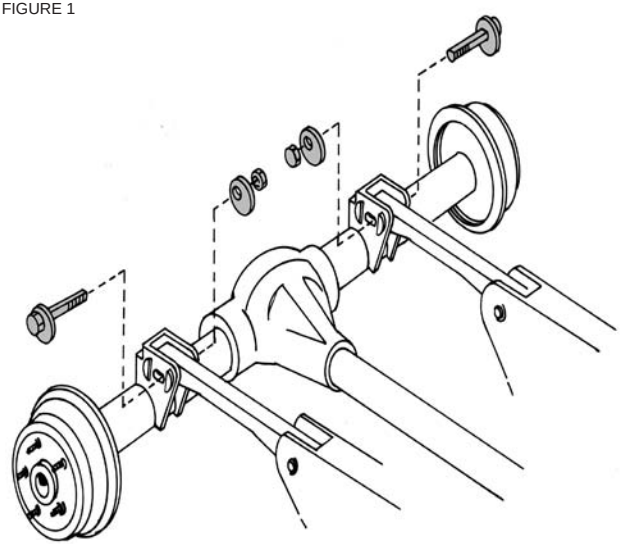
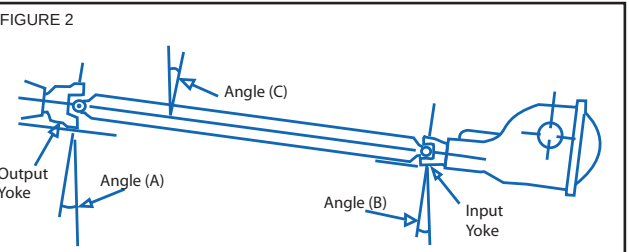


FIGURE 2



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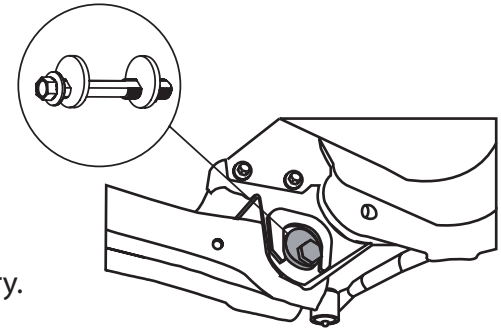
JEEP CASTER/PINION ANGLE ADJUSTER



Instructions: Jeep Front Caster/Pinion Angle Kit Installation Instructions.

Year Model 97-06 Wrangler TJs 93-98 Grand Cherokee 94-98
Ram Trucks (36mm cams)

1. Check vehicle for bent, worn or loose components and repair as necessary.
2. Check alignment and determine front caster changes required.
3. Lift front of vehicle so suspension hangs freely and bolts can be accessed. Support safely.
4. Remove the front lower control arm axle bolts one at time.
5. Install the cam bolts by placing one cam at the head of each bolt, slide the bolt through the axle bracket and control arm, then place another cam washer on the bolt and then the locknut.
6. Repeat for other side making sure cam washer sets in recess on axle bracket.
7. To adjust loosen lock nut and rotate cam bolt. Both cam bolts must be in the same relative position.

Note: Cross caster cannot be set on this type of axle. Having the bolts in different positions on each side will load the bushings and possibly cause setback problems.

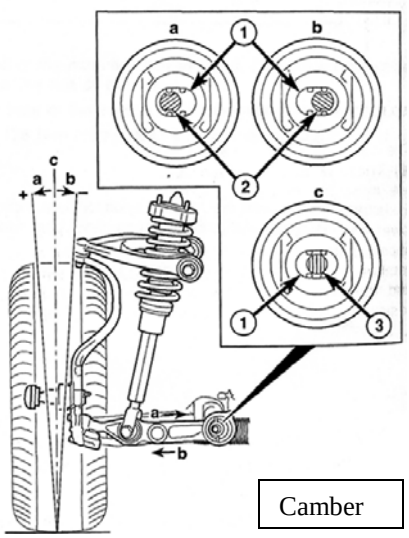
8. While holding bolt head or cam to prevent rotation Tighten locknut to 115 Nm (85 lb-ft)
9. Check alignment and/or pinion angle readings and road test vehicle.

Note: Always check for proper clearance between suspension components and other components of the vehicle.

Chrysler/ Dodge
Camber/Caster Bolt

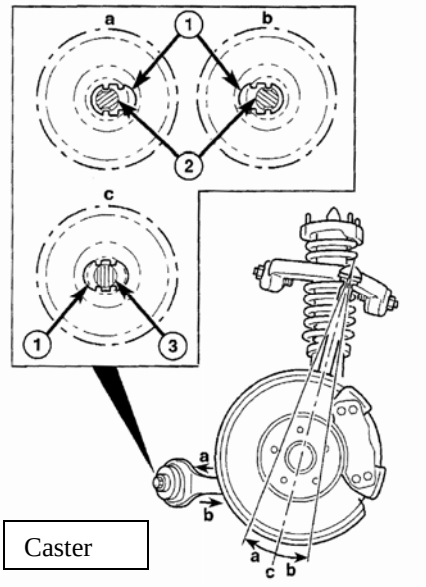
1. Determine the amount of change needed.
2. Raise the vehicle by the frame.
3. Remove Belly pan as necessary
4. Remove heat shield covering the stabilizer bar.
5. Remove stabilizer bar bushing retainer to the cradle.
6. Swing the stabilizer bar rearward and down and out of the way.
7. Remove the bolt from the inboard control arm and tension strut arm and discard.

   Note: The grooves on the adjustment bolts are off-center, forcing the bolt to be installed in one of two ways depending on whether more positive or negative camber or caster necessary. The bolts must be rotated 180 degrees to achieve either more positive or negative camber or caster. DO NOT force the adjustment bolt.



Camber

8. **Camber adjustment** – the adjustment bolts are designed to work in conjunction with "bat wing" holes that are formed in to the inner metal of **lower control arm** bushing (1) allowing for **lower control arm** movement approximately 0.3 in either direction.
9. To achieve more positive camber, refer to fig (a). Move the control arm **or** tension strut in the desired direction, then insert the adjustment bolt (2) with washer installed through the round hole in the engine cradle and "bat wing" hole (1) in the bushing inner metal.
10. To achieve more negative camber refer to fig (b) in the figure. Move the control arm **or** tension strut in the desired direction, then insert the adjustment bolt (2) with washer installed through the round hole in the engine cradle and "bat wing" hole (1) in the bushing inner metal.
11. **Caster adjustment** – the adjustment bolts are designed to work in conjunction with "bat wing" holes that are formed in to the inner metal of the **tension strut** bushing (1) allowing for **tension strut** movement approximately 0.3 in either direction.
12. To achieve more positive caster, refer to fig (a) in the figure. Move the **tension strut** in the desired direction, then insert the adjustment bolt (2) with washer installed through the round hole in the engine cradle and "bat wing" hole (1) in the bushing inner metal.
13. To achieve more negative camber refer to fig (b) in the figure. Move the **tension strut** in the desired direction, then insert the adjustment bolt (2) with washer installed through the round hole in the engine cradle and "bat wing" hole (1) in the bushing inner metal.
14. Start a New Nut on the end of the mounting bolt by hand, then while holding the head of the bolt stationary, install the nut. **Do not tighten the nut at this time**
15. Lower the vehicle to curb position, Jounce the rear then the front of the vehicle an equal amount of times.
16. Using a crowfoot wrench, tighten the adjustment bolt to manufacture torque spec while holding the bolt stationary.
17. Reinstall the stabilizer bar and heat shields and belly pan.
18. Recheck alignment and road test



Caster

MODE D'EMPLOI SPECIAL

Instructions d'installation de la came de géométrie pour camions légers Ford

F150 et camions légers F250 de 1997 et plus récents
Ford Expedition de 1998
Lincoln Navigator de 1998

Instructions d'installation

Remarque : *Avant de vérifier les mesures de géométrie, la garde au sol doit être vérifiée et rétablie si nécessaire. Référez-vous au manuel d'entretien du garage pour obtenir la procédure correcte.*

1.) Effectuez un contrôle avant la géométrie pour voir si des pièces sont usées ou endommagées. Vérifiez la pression des pneus et égalisez-la au besoin.
2.) Installez l'équipement de réglage de la géométrie et prenez les mesures initiales afin de déterminer la quantité de changement nécessaire.
3.) Soulevez le véhicule d'une manière sûre. Remarque : Le véhicule doit être soutenu sous les bras de commande inférieurs à l'aide du dispositif de sécurité approprié.
4.) Enlevez la roue.
5.) Si cela s'applique, déposez le bouclier garde-boue interne noir pour faciliter l'accès aux supports du bras de commande supérieur.
6.) Retirez l'ensemble de boulon et d'écrou non réglables (d'usine) retenant le bras de commande supérieur aux support de montage sur le châssis.
7.) Nettoyez la zone de contact de la came de tout résidu de produit d'étanchéité. La came doit fonctionner sur une surface lisse.
8.) Installez les nécessaires de came de géométrie, mais ne les serrer pas à ce point (voyez la figure n° 1).
9.) Installez la roue et réglez à nouveau l'équipement de réglage de la géométrie.
10.) Insérez une poignée à cliquet ou articulée à carré de 3/8 po dans l'encoche carrée au haut de la came excentrique externe (extrémité filetée du boulon).
11.) Tournez les deux nécessaires de came de la même quantité pour régler le carrossage. Tenez le nécessaire de came avant en place tout en tournant le nécessaire de came arrière pour obtenir la chasse requise.
12.) Serrez chaque nécessaire de came à un couple de 113 à 153 Nm (84 à 112 lb pi) (voyez la figure n° 2).

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DE LA EXCÉNTRICA DE ALINEAMIENTO PARA CAMIONES LIVIANOS FORD

F150, F250 de trabajo liviano de 1997 y más recientes
Ford Expedition de 1998
Lincoln Navigator de 1998

Instrucciones de Instalación

Nota: *Antes de comprobar las lecturas de alineamiento, la altura de rodaje deberá ser revisada y reposicionada, si es necesario. Refiérase al manual de servicio de taller para obtener el procedimiento apropiado.*

1) Lleve a cabo la revisión de pre-alineamiento para ver si hay piezas desgastadas o dañadas. Compruebe la presión de las ruedas y ajústela como sea necesario.
2) Instale el equipo de alineamiento y tome las lecturas iniciales para determinar la cantidad de cambio necesario.
3) Levante el vehículo de forma segura. Nota: El vehículo tendrá que ser soportado debajo de los brazos de control inferiores con los dispositivos de seguridad apropiados.
4) Remueva la rueda.
5) Donde aplique, remueva el protector de salpicamiento interno del guardabarros para facilitar el acceso a los soportes de los brazos de control superiores.
6) Remueva el ensamble de perno y tuerca que no son ajustables (de fábrica), que sujetan el brazo de control superior a los soportes de montaje del chasis.
7) Limpie todo el sellador en el área donde la excéntrica hace contacto. La excéntrica deberá operar sobre una superficie lisa.
8) Instale flojamente los ensambles de excéntrica, pero no los apriete en este momento. (vea la figura No. 1.
9) Instale la rueda y recalibre el equipo de alineamiento.
10) Inserte una catraca (ratchet) o una barra con cuadrante de 3/8 en el agujero cuadrado situado en la parte superior de la excéntrica de afuera. (extremo roscado del perno).
11) Para ajustar el camber, gire la misma cantidad ambos ensambles de excéntrica. Sostenga en su lugar el ensamble de excéntrica delantero, mientras que gira el ensamble de excéntrica trasero hasta obtener el caster necesario.
12) Apriete cada ensamble de excéntrica a una torsión de 113 a 153 Nm (84 a 112 Lbs. Pie). (vea la figura No. 2.)

Contin'ua al doso

SPECIAL INSTRUCTIONS

FORD LIGHT TRUCK ALIGNMENT CAM INSTALLATION INSTRUCTIONS

1997 & Newer F150, Light Duty F250
1998 Ford Expedition
1998 Lincoln Navigator

Installation Instructions

Note: *Prior to checking alignment readings, ride height must be checked and reset if necessary. Refer to shop service manual for proper procedure.*

1.) Perform pre alignment check for worn or damaged parts. Check tire pressure and adjust as needed.
2.) Install alignment equipment and take initial readings to determine amount of change needed.
3.) Raise vehicle in a safe manner. **Note:** *Vehicle must be supported under the lower control arms with appropriate safety devices.*
4.) Remove tire & wheel assembly.
5.) Where applicable remove black inner fender splash shield for easy access to upper control arm brackets.
6.) Remove the non-adjustable (factory) nut and bolt assembly holding the upper control arm to the frame mounting supports.
7.) Clean the area the cam contacts of any body sealant. The cam must operate on a smooth surface.
8.) Loosely install alignment cam kits, but do not tighten at this time (see figure No. 1).
9.) Install tire and wheel assembly and recompensate alignment equipment.
10.) Insert a 3/8 drive ratchet or breaker bar in square slot at top of outboard eccentric cam (threaded end of bolt).
11.) Rotate both cam kits equally to adjust camber. Hold front cam kit in place while rotating back cam kit to achieve caster.
12.) Torque each cam kit to 113-153 Nm (84-112 Lb/Ft.) (see figure No. 2).

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MODE D'EMPLOI SPECIAL

(Suite)

INSTRUCCIONES EXPECIALES

(Contin'ua)

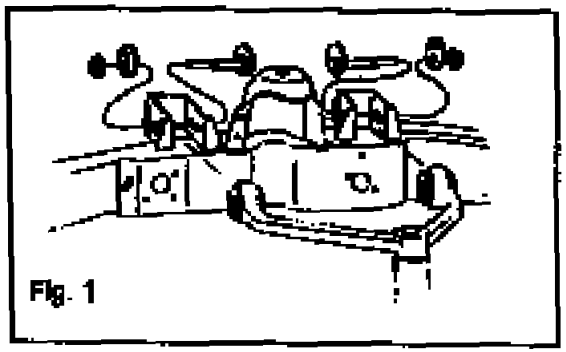


Fig. 1

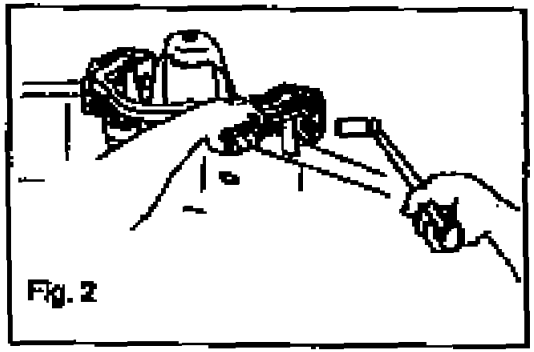


Fig. 2

SPECIAL INSTRUCTIONS

(Continued)

MODE D'EMPLOI SPECIAL

INSTRUCTIONS POUR LE RÉGLAGE DU CARROSSAGE DES VÉHICULES FORD À DEUX ROUES MOTRICES DE 1982 À 1986 F-100, F150 & RANGER 2WD

1. Retirez le goupille fendue et l'écrou de la rotule supérieure. Enlevez le manchon de 0° de la rotule supérieure à l'aide de l'outil de dépose de grosse rotule ou en le tapotant pour l'extraire en vous servant d'un ciseau à froid commun.

REMARQUE : Vaporisez un solvant sur les boulons de rotule qui n'utilisent pas de clavettes fendues avant de retirer l'écrou. (Ceci ramollira le matériau de blocage, facilitant ainsi la dépose.)

REMPLACEZ TOUJOURS LE VIEIL ÉCROU AUTOBLOQUANT PAR UN NEUF.

2. Choisissez la bague appropriée.

3. Utilisez le schéma servant d'exemple pour déterminer la bonne position et installez-la dans la rotule supérieure.

4. Serrez l'écrou de la rotule supérieure selon les spécifications du fabricant et installez la goupille fendue. Ne desserrez pas l'écrou pour insérer la goupille-serrez-le plus si nécessaire.

5. Vérifiez et réglez la géométrie, car les changements de carrossage affecteront les mesures de géométrie.

REMARQUE : Des boulons de rotule tordus, des ressorts s'affaiblissant ou des pièces usées peuvent entraîner des mesures légèrement différentes de celles attendues. Inspectez et corrigez au besoin.

6. Vérifiez les mesures finales et essayez le véhicule sur la route.

(Inside the illustration)

OUTIL DE DÉPOSE DE ROTULE

MANCHON DE RÉGLAGE DU CARROSSAGE

ALIGNEZ LA FENTE AFIN DE PRODUIRE LE CHANGEMENT DE CAR-

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE AJUSTE DE CAMBER VEHÍCULOS FORD DE TRACCIÓN EN DOS RUEDAS DE 1982 A 1986 F-100, F150, & RANGER 2WD

1. Remueva la chaveta y la tuerca de la rótula superior. Remueva la manga de 0° de la rótula superior con la herramienta grande para remover la rótula o dándole golpecitos para sacarla usando un cincel común.
NOTA: En los pernos de las rótulas que no usan una llave de chaveta, atomice disolvente en el perno de rótula antes de remover la tuerca. (Esto aflojará el material de traba para facilitar el desmontaje).

SIEMPRE REEMPLACE LA TUERCA VIEJA AUTOTRABANTE POR UNA TUERCA NUEVA DE TIPO TRABA.

2. Seleccione el buje apropiado.
3. Use el cuadro de ejemplos para determinar el posicionamiento apropiado e instálelo en la rótula superior.
4. Apriete la tuerca de la rótula superior de acuerdo con las especificaciones del fabricante e instale la chaveta. No retroceda la tuerca para insertar la chaveta, apriétela si fuera necesario.
5. Compruebe y ajuste la convergencia, puesto que los cambios de camber afectarán las lecturas de convergencia.
NOTA: Pernos de rótula doblados, resortes destemplados o piezas desgastadas podrán dar como resultado lecturas ligeramente diferentes a las esperadas. Inspeccione y corrija tal como sea necesario.
6. Verifique las lecturas finales y pruebe el vehículo en la carretera.

(Inside the illustration)

HERRAMIENTA PARA REMOVER LA RÓTULA
MANGA PARA AJUSTAR EL CAMBER
PONGA EN LÍNEA LA RANURA PARA PRODUCIR EL CAMBIO DE CAMBER DESEADO

FLECHA HACIA AFUERA — FLECHA HACIA ADENTRO
CAMBER POSITIVO — CAMBER NEGATIVO

Características del Buje:

Contin'ua al doso

SPECIAL INSTRUCTIONS

CAMBER ADJUSTMENT INSTRUCTIONS FORD TWO WHEEL DRIVE VEHICLES 1982-86 F-100, F150 & RANGER 2WD

1.) Remove cotter pin and upper ball joint nut. Remove the 0° sleeve from the upper ball joint with the large ball joint removing tool or by tapping it out with a common cold chisel.
NOTE: On ball joint studs not using cotter keys, spray a solvent on ball joint stud before removing nut. (This will soften the locktight material for easier removal

ALWAYS REPLACE OLD SELF LOCKING NUT WITH A NEW LOCK TYPE NUT.

2.) Select the appropriate bushing.
3.) Use sample chart to determine proper positioning and install in upper ball joint.
4. Tighten upper ball joint nut to manufacturer's specifications and install cotter pin. Do not back up nut to insert cotter pin - tighten if necessary.
5.) Check and adjust toe, as changes in camber will affect toe readings.
NOTE: Bent ball joint studs, sagging springs, or worn parts may result in slightly different readings than expected. Inspect and correct as necessary.
6.) Check final readings and road test vehicle.

BUSHING FEATURES:
1.) Provides a fast way to correct camber on Ford full xize 2 wheel drive trucks.
2.) Eight different bushings to give changes from 1/4 to 2 degrees.
3.) Easily installed with common hand tools.
4.) Assures accurate and predictable changes.
5.) Applications for F-100, F-150, F-250 and F-350 2 wheel drive trucks. (1982-86)

Continued on other side

Form # 23081

MODE D'EMPLOI SPECIAL

(Suite)

ROSSAGE DÉSIRÉ

Flèche vers l'extérieur	Flèche vers l'intérieur
Carrossage positif	Carrossage négatif

Particularités de la bague :

1. Fournit un moyen rapide de corriger le carrossage sur les Ford à 2 roues motrices.

2. *Huit différentes* bagues pour donner des changements de 1/4 à 2 degrés.

3. Facilement installée à l'aide d'outils communs.

4. Assure des changements précis et prévisibles.

5. Applications pour les F-100, F-150, F-250 et F-350 à 2 roues motrices (1982 à 1986).

INSTRUCCIONES EXPECIALES

(Contin'ua)

1. Proporciona una forma rápida para corregir el Camber en los camiones Ford de tamaño completo de tracción en dos ruedas.
2. Ocho bujes diferentes para dar cambios desde 1/4 a 2°.
3. Es fácilmente instalado usando herramientas comunes.
4. Garantiza cambios precisos y predecibles.
5. Usos en modelos F-100, F-150 y F-350 de tracción en dos ruedas (1982 a 1986).

SPECIAL INSTRUCTIONS

(Continued)

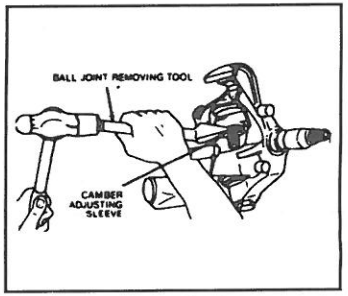


Figure No. 1

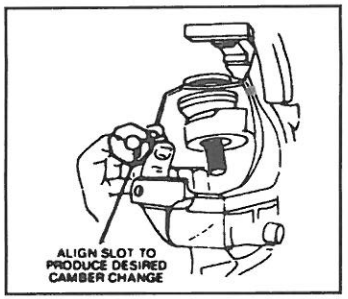


Figure No. 2

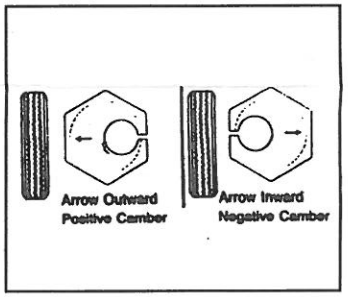


Figure No. 3

MODE D'EMPLOI SPECIAL

Instructions d'installation de la came de géométrie pour camions légers Ford

Pick-ups Ford 4x2 de 1997 et plus récents

Information générale

En commençant par les modèles de l'année 1995, de nombreux camions légers et véhicules utilitaires sportifs fabriqués par Ford Motor Compagny sont équipés d'une suspension de nouvelle conception.

La suspension avant consiste d'un bras long et court (SLA) avec des barres de torsion remplaçant les ressorts hélicoïdaux conventionnels.

Les bras de commande supérieurs sont bloqués dans les supports du châssis par quatre plaques « carrées » (2 de chaque côté) montées en usine (voyez la figure n° 1). Ces plaques doivent être remplacées par des cames de réglage pour permettre le mouvement nécessaire aux réglages du carrossage et de la chasse (voyez la figure n° 2).

Instructions d'installation de la came « Quick Cam »

Remarque : *Avant de vérifier les mesures de géométrie, la garde au sol doit être vérifiée et rétablie si nécessaire. Référez-vous au manuel d'entretien du garage pour obtenir la procédure correcte.*

1.) Effectuez un contrôle avant la géométrie pour voir si des pièces sont usées ou endommagées. Vérifiez la pression des pneus et égalisez-la au besoin.
2.) Installez l'équipement de réglage de la géométrie et prenez les mesures initiales afin de déterminer la quantité de changement nécessaire.
3.) Soulevez le véhicule d'une manière sûre. Remarque : Le véhicule doit être soutenu sous les bras de commande inférieurs à l'aide du dispositif de sécurité approprié.
4.) Enlevez la roue.
5.) Si cela s'applique, déposez le bouclier garde-boue interne noir pour faciliter l'accès aux supports du bras de commande supérieur.
6.) Retirez les deux plaques « carrées » de géométrie pré-établie en usine (une sur chaque ensemble de boulon - deux par côté).
7.) Installez la came « Quick Cam » sur le boulon d'usine à la place de la plaque « carrée » avec une rondelle (entretoise) contre le support du bras de commande supérieur. (voyez la figure n° 2).
8.) Installez l'écrou de sûreté sans le serrer.
9.) Installez la roue et réglez à nouveau l'équipement de réglage de la géométrie.

Information générale

1. Insérez une poignée articulée à carré de 3/8 po dans l'encoche carrée au haut de la came « Quick Cam », tournez les cames au besoin pour obtenir le carrossage et la chasse en accord avec les spécifications du véhicule (voyez la figure n° 3).
2. Après avoir obtenu les spécifications de géométrie pour le véhicule, les cames doivent être maintenues en place à mesure que les écrous des boulons des cames sont serrés à un couple de 113 à 153 Nm (83 à 113 lb pi).
3. Continuez avec le reste du réglage de la géométrie, réglez le parallélisme et essayez le véhicule sur la route.

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DE LA EXCÉNTRICA DE ALINEAMIENTO PARA CAMIONES LIVIANOS FORD

Pickups Ford 4x2 de 1997 y más recientes

Información General

Comenzando con el modelo de 1995 muchos camiones livianos y vehículos utilitarios deportivos fabricados por la Ford Motor Company tienen un diseño de suspensión nuevo.

El diseño de suspensión delantera consiste de una suspensión de brazo corto/largo (SLA) con barras de torsión que reemplazan los resortes helicoidales convencionales.

Los brazos de control superiores están trancados dentro del soporte del chasis por medio de cuatro placas "cuadradas" instaladas en la fábrica (2 por cada lado) (vea la figura No. 1). Estas placas deberán ser reemplazadas por excéntricas ajustables, con el fin de permitir el movimiento para ajustar el camber y el caster (vea la figura No. 2).

Instrucciones de Instalación del "Quick Cam"

Nota: *Antes de comprobar las lecturas de alineamiento, la altura de rodaje deberá ser revisada y reposicionada, si es necesario. Refiérase al manual de servicio de taller para obtener el procedimiento apropiado.*

1. Lleve a cabo la revisión de pre-alineamiento para ver si hay piezas desgastadas o dañadas. Compruebe la presión de las ruedas y ajústela como sea necesario.
2. Instale el equipo de alineamiento y tome las lecturas iniciales para determinar la cantidad de cambio necesario.
3. Levante el vehículo de forma segura. Nota: El vehículo tendrá que ser soportado debajo de los brazos de control inferiores con los dispositivos de seguridad apropiados.
4. Remueva la rueda.
5. Donde aplique, remueva el protector de salpicamiento interno del guardabarros para facilitar el acceso a los soportes de los brazos de control superiores.
6. Remueva las dos placas "cuadradas" de alineamiento pre-calibrado en la fábrica (una en cada conjunto de pernos - 2 por cada lado).
7. Instale el "Quick Cam" en el perno de fábrica a cambio de las placas "cuadradas" con la arandela (espaciador) contra el soporte del brazo de control superior. (vea la figura No. 2).
8. Instale flojamente la tuerca de seguridad pero no la apriete en este momento.
9. Instale la rueda y recalibre el equipo de alineamiento.

Información General

1. Inserte una palanca con cuadrante de 3/8" en el agujero cuadrado situado en la parte superior del "Quick Cam", gire las excéntricas tanto como sea necesario hasta alcanzar los ajustes de camber y caster de acuerdo con las especificaciones. (vea la figura No. 3).
2. Una vez que se obtengan las especificaciones de alineamiento, las excéntricas tendrá que ser mantenida en posición hasta que las tuercas de los pernos hayan sido apretadas a la torsión especificada de 113 a 153 Nm (83 a 113 lbs. pie).
3. Prosiga con el resto del alineamiento, ajuste la convergencia y pruebe el

Contin'ua al doso

SPECIAL INSTRUCTIONS

FORD LIGHT TRUCK ALIGNMENT CAM INSTALLATION INSTRUCTIONS

General Information

Beginning with the 1995 model year many new light trucks and sport utility vehicles manufactured by Ford Motor Company have a new suspension design.

The front suspension design consists of a short/long arm suspension (SLA) with torsion bars replacing conventional coil springs.

The upper control arms are locked within the frame bracket by four factory installed "square" plates (2 per side) (see figure No. 1). These plates must be replaced with adjusting cams to allow movement for the adjustment of camber and caster (see figure No. 2).

"Quick Cam" Installation Instructions

Note: *Prior to checking alignment readings, ride height must be checked and reset if necessary. Refer to shop service manual for proper procedure.*

1.) Perform pre alignment check for worn or damaged parts. Check tire pressure and adjust as needed.
2.) Install alignment equipment and take initial readings to determine amount of change needed.
3.) Raise vehicle in a safe manner. **Note:** *Vehicle must be supported under the lower control arms with appropriate safety devices.*
4.) Remove tire & wheel assembly.
5.) Where applicable remove black inner fender splash shield for easy access to upper control arm brackets.
6.) Remove both "square" factory preset alignment plates (one on each bolt assembly - 2 per side).
7.) Install "Quick Cam" onto factory bolt in place of "square" plate. (see figure No. 2)
8.) Loosely install locking nut but do not tighten at this time.
9.) Install tire and wheel assembly and recompensate alignment equipment.

General Information

1.) Insert a 3/8" drive breaker in square slot at top of "Quick Cam", rotate cams as needed to achieve caster & camber per vehicle specifications (see figure No. 3).
2.) Once alignment specifications have been attained, cam must be held in place as cam bolt nuts are tightened to specification (83-113 ft lbs/113-153N).
3.) Proceed with the rest of the alignment, set toe and road test vehicle.

Continued on other side

95-130-0596T

MODE D'EMPLOI SPECIAL

(Suite)

Figure n° 1
Figure n° 2
Figure n° 3

REMARQUE : *La bague (12648HD) devrait être installée de façon à ce que les « nervures en caoutchouc » et les encoches sur le flasque soient HORIZONTALES (voyez la figure n° 1).*

INSTRUCCIONES EXPECIALES

(Contin'ua)

vehículo en la carretera.

Figura 1
Figura 2
Figura 3

NOTICIA: *El buje (12648HD) deberá ser instalado de modo que las "puntas de caucho" y las ranuras situadas en el borde queden en la posición HORIZONTAL. (vea la figura 1).*

SPECIAL INSTRUCTIONS

(Continued)

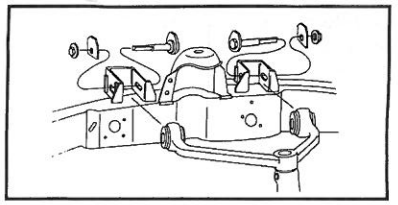


Figure No. 1

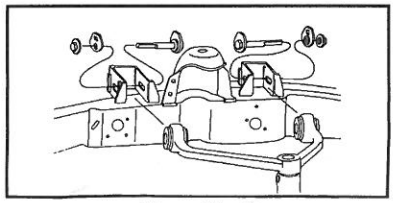


Figure No. 2

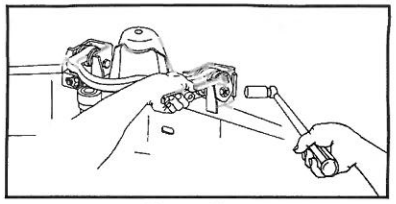


Figure No.3

MODE D'EMPLOI SPECIAL

Instructions d'installation de la came de géométrie pour camions légers Ford

F150 et camions légers F250 de 1997 et plus récents
Ford Expedition de 1998
Lincoln Navigator de 1998

Instructions d'installation

Remarque : *Avant de vérifier les mesures de géométrie, la garde au sol doit être vérifiée et rétablie si nécessaire. Référez-vous au manuel d'entretien du garage pour obtenir la procédure correcte.*

1.) Effectuez un contrôle avant la géométrie pour voir si des pièces sont usées ou endommagées. Vérifiez la pression des pneus et égalisez-la au besoin.
2.) Installez l'équipement de réglage de la géométrie et prenez les mesures initiales afin de déterminer la quantité de changement nécessaire.
3.) Soulevez le véhicule d'une manière sûre. Remarque : Le véhicule doit être soutenu sous les bras de commande inférieurs à l'aide du dispositif de sécurité approprié.
4.) Enlevez la roue.
5.) Si cela s'applique, déposez le bouclier garde-boue interne noir pour faciliter l'accès aux supports du bras de commande supérieur.
6.) Retirez l'ensemble de boulon et d'écrou non réglables (d'usine) retenant le bras de commande supérieur aux support de montage sur le châssis.
7.) Nettoyez la zone de contact de la came de tout résidu de produit d'étanchéité. La came doit fonctionner sur une surface lisse.
8.) Installez les nécessaires de came de géométrie, mais ne les serrer pas à ce point (voyez la figure n° 1).
9.) Installez la roue et réglez à nouveau l'équipement de réglage de la géométrie.
10.) Insérez une poignée à cliquet ou articulée à carré de 3/8 po dans l'encoche carrée au haut de la came excentrique externe (extrémité filetée du boulon).
11.) Tournez les deux nécessaires de came de la même quantité pour régler le carrossage. Tenez le nécessaire de came avant en place tout en tournant le nécessaire de came arrière pour obtenir la chasse requise.
12.) Serrez chaque nécessaire de came à un couple de 113 à 153 Nm (84 à 112 lb pi) (voyez la figure n° 2).

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DE LA EXCÉNTRICA DE ALINEAMIENTO PARA CAMIONES LIVIANOS FORD

F150, F250 de trabajo liviano de 1997 y más recientes
Ford Expedition de 1998
Lincoln Navigator de 1998

Instrucciones de Instalación

Nota: *Antes de comprobar las lecturas de alineamiento, la altura de rodaje deberá ser revisada y reposicionada, si es necesario. Refiérase al manual de servicio de taller para obtener el procedimiento apropiado.*

1) Lleve a cabo la revisión de pre-alineamiento para ver si hay piezas desgastadas o dañadas. Compruebe la presión de las ruedas y ajústela como sea necesario.
2) Instale el equipo de alineamiento y tome las lecturas iniciales para determinar la cantidad de cambio necesario.
3) Levante el vehículo de forma segura. Nota: El vehículo tendrá que ser soportado debajo de los brazos de control inferiores con los dispositivos de seguridad apropiados.
4) Remueva la rueda.
5) Donde aplique, remueva el protector de salpicamiento interno del guardabarros para facilitar el acceso a los soportes de los brazos de control superiores.
6) Remueva el ensamble de perno y tuerca que no son ajustables (de fábrica), que sujetan el brazo de control superior a los soportes de montaje del chasis.
7) Limpie todo el sellador en el área donde la excéntrica hace contacto. La excéntrica deberá operar sobre una superficie lisa.
8) Instale flojamente los ensambles de excéntrica, pero no los apriete en este momento. (vea la figura No. 1.
9) Instale la rueda y recalibre el equipo de alineamiento.
10) Inserte una catraca (ratchet) o una barra con cuadrante de 3/8 en el agujero cuadrado situado en la parte superior de la excéntrica de afuera. (extremo roscado del perno).
11) Para ajustar el camber, gire la misma cantidad ambos ensambles de excéntrica. Sostenga en su lugar el ensamble de excéntrica delantero, mientras que gira el ensamble de excéntrica trasero hasta obtener el caster necesario.
12) Apriete cada ensamble de excéntrica a una torsión de 113 a 153 Nm (84 a 112 Lbs. Pie). (vea la figura No. 2.)

Contin'ua al doso

SPECIAL INSTRUCTIONS

FORD LIGHT TRUCK ALIGNMENT CAM INSTALLATION INSTRUCTIONS

1997 & Newer F150, Light Duty F250
1998 Ford Expedition
1998 Lincoln Navigator

Installation Instructions

Note: *Prior to checking alignment readings, ride height must be checked and reset if necessary. Refer to shop service manual for proper procedure.*

1.) Perform pre alignment check for worn or damaged parts. Check tire pressure and adjust as needed.
2.) Install alignment equipment and take initial readings to determine amount of change needed.
3.) Raise vehicle in a safe manner. **Note:** *Vehicle must be supported under the lower control arms with appropriate safety devices.*
4.) Remove tire & wheel assembly.
5.) Where applicable remove black inner fender splash shield for easy access to upper control arm brackets.
6.) Remove the non-adjustable (factory) nut and bolt assembly holding the upper control arm to the frame mounting supports.
7.) Clean the area the cam contacts of any body sealant. The cam must operate on a smooth surface.
8.) Loosely install alignment cam kits, but do not tighten at this time (see figure No. 1).
9.) Install tire and wheel assembly and recompensate alignment equipment.
10.) Insert a 3/8 drive ratchet or breaker bar in square slot at top of outboard eccentric cam (threaded end of bolt).
11.) Rotate both cam kits equally to adjust camber. Hold front cam kit in place while rotating back cam kit to achieve caster.
12.) Torque each cam kit to 113-153 Nm (84-112 Lb/Ft.) (see figure No. 2).

Continued on other side

MODE D'EMPLOI SPECIAL

INSTRUCTIONS POUR LA BAGUE DE GÉOMÉTRIE

1. Préparez les appareils de réglage de la géométrie, prenez et relevez les mesures.
2. Déterminez quelle bague est nécessaire pour obtenir les angles désirés. REMARQUE :
Lorsque vous utilisez la bague pour effectuer des changements combinés, la quantité de changement est inférieure à celle estampée sur la bague.
Quand elle est installée sur des véhicules à 4 roues motrices, la quantité du réglage est inférieure à celle obtenue sur des véhicules à 2 roues motrices. Ceci est dû à l'espace plus large entre les rotules supérieure et inférieure afin d'accommoder l'arbre de transmission dans les essieux des véhicules à 4 roues motrices.
SUR LES BAGUES D'UN DEGRÉ PLUS ÉLEVÉ, IL PEUT ÊTRE NÉCESSAIRE D'ÉCARTER LÉGÈREMENT L'ESPACE DE L'ENSEMBLE DE BOULON DE PINCEMENT POUR FACILITER L'INSTALLATION.
3. Soulevez le véhicule à l'aide d'un cric pneumatique ou de tout autre appareil de levage adéquat de façon à supporter la moitié du poids reposant sur l'ensemble de pneus/roues.
4. Retirez l'anneau élastique pour arbre du boulon de la rotule supérieure (où cela applique).
5. À l'aide d'une douille de 12 mm, desserrez le boulon de pincement de la rotule supérieure et enlevez la bague montée en usine en faisant levier sous son épaulement vers le haut.
6. Installez la nouvelle bague, la fente orientée dans la direction désirée. Référez-vous au tableau au dos de cette feuille afin de déterminer la bonne direction de la fente pour obtenir les changements d'angle désirés.
7. Tapotez vers le bas sur la bague pour l'asseoir. Ajustez l'écrou du boulon de pincement. Remontez l'anneau élastique pour arbre.
8. Abaissez le véhicule et faites rebondir énergiquement la suspension. Prenez des mesures de géométrie et tournez la bague pour obtenir les résultats finaux désirés.
9. IMPORTANT ! Installer le nouveau boulon de pincement et le couple de serrage selon les spécifications du fabricant en fonction de l'année, de la marque et du modèle.
10. Après avoir changé le carrossage et la chasse des deux côtés, réglez la géométrie selon les spécifications.
11. Essayez le véhicule sur la route.

NE PAS UTILISER avec des modèles E 250/350 ayant des châssis et suspension modifiés.

suite verso

INSTRUCCIONES ESPECIALES

INSTRUCCIONES PARA EL BUJE DE ALINEAMIENTO

1. Coloque los indicadores de alineamiento, tome y escriba las lecturas.
2. Determine el buje necesario para ajustar las lecturas a los ángulos deseados. NOTA: Cuando use los bujes para cambios combinados, la cantidad del cambio es menos que el grado de cambio estampado en el buje.
Cuando son instalados en vehículos de tracción en las cuatro ruedas "4WD", la cantidad del ajuste es menos que cuando son instalados en vehículos de tracción en dos ruedas "2WD". Esto se debe al espaciamiento más ancho de las rótulas superior e inferior para acomodar el cardán en el eje del 4WD.
EN LOS BUJES DE MAYOR GRADO, PUEDA QUE SEA NECESARIO ENSANCHAR LIGERAMENTE LA HOLGURA DEL ENSEAMBLE DEL PERNO DE CONSTRUCCIÓN PARA FACILITAR LA INSTALACIÓN.
3. Levante el vehículo con un gato de aire u otro levantador apropiado de modo que aproximadamente la mitad del peso del vehículo sea retirado del ensamble de llanta/rueda.
4. Remueva el anillo de retención del perno de rótula superior (donde se aplique).
5. Usando un dado de 12 mm afloje el perno de construcción de la rótula superior y remueva el buje de fábrica, palanqueando hacia arriba, por debajo del hombro del buje.
6. Instale el buje nuevo con la ranura de cara hacia la dirección deseada. Refiérase al cuadro situado en la parte trasera de esta página para obtener la dirección apropiada de la ranura, de acuerdo con el cambio de ángulo deseado.
7. Déle un golpecito al buje hacia abajo para asentarlo. Apriete ligeramente la tuerca del perno de constricción. Reinstale el anillo de retención.
8. Baje el vehículo y sacuda la suspensión. Tome las medidas de alineamiento y gire el buje hasta obtener los resultados finales deseados.
9. ¡IMPORTANTE! Instale ahora el perno de agarre (PINCH BOLT) y aplique la torsión especificada por el fabricante, de acuerdo al año/marca/modelo.
10. Después del ajuste de camber y caster a ambos lados, ajuste la convergencia de acuerdo con las especificaciones.
11. Pruebe el vehículo en la carretera.

NO TIENE EL PROPOSITO DE SER USADO en los modelos E250/350 con suspensiones/chasis modificiados

continúa al dorso

SPECIAL INSTRUCTIONS

INSTRUCTIONS FOR ALIGNMENT BUSHING

1.) Set up aligment gauges, take and record readings.
2.) Determine the bushing needed to adjust reading to desired angles. NOTE: When using the bushing the combination changes the amount of change is less than the degree of change stamped on the bushing. When installed in the 4WD vehicles, the amount of adjustment is less than when installed in 2WD vehicles. This is due to the wider upper/lower ball joint spacing to accommodate the driveshaft in the 4WD axle.
ON HIGHER DEGREE BUSHINGS IT MAY BE NECESSARY TO WIDEN THE GAP OF THE PINCH BOLT ASSEMBLY SLIGHTLY FOR EASE OF INSTALLATION
3.) Raise the vehicle with an air jack or other suitable lift so that approximately half of the vehicle weight is off the tire/wheel assembly.
4.) Remove upper ball joint stud snap ring (where applicable)
5.) Using a 12 mm socket loosen the upper ball joint pinch bolt and remove the factory bushing by prying upward under the bushing shoulder.
6.) Install the new bushing with the slot facing in the desired direction. Refer to the chart on the backside of this page for proper slot direction for desired angle changes.
7.) Tap downward on the bushing to seat it. Snug down the pinch bolt nut. Reinstall snap ring.
8.) Lower the vehicle and jounce the suspension. Take alignment reading and turn the bushing to obtain desired final results.
9.) IMPORTANT! Install new PINCH BOLT and torque to manufacturer's specifications according to year/make/model.
10.) After adjustment of camber and caster on both sides adjust toe to spefications
11.) Road test vehicle.

NOT intended for use on E250/350 models with modified chassis/suspensions.

continued on other side

MODE D'EMPLOI SPECIAL

(suite)

A	Changement :	Décroissement de la chasse uniquement
	Chasse :	Décroissement de 2 degrés
	Carrossage :	Changement de 0 degré
B	Changement :	Décroissement de la chasse
	Changement :	Décroissement du carrossage
	Chasse :	Décroissement de 1 3/8 degrés
	Carrossage :	Décroissement de 1 3/8 degrés
C	Changement :	Décroissement du carrossage uniquement
	Chasse :	Changement de 0 degré
	Carrossage :	Décroissement de 2 degrés
D	Changement :	Accroissement de la chasse
	Changement :	Décroissement du carrossage
	Chasse :	Accroissement de 1 3/8 degrés
	Carrossage :	Décroissement de 1 3/8 degrés
E	Changement :	Accroissement de la chasse uniquement
	Chasse :	Accroissement de 2 degrés
	Carrossage :	Changement de 0 degré
F	Changement :	Accroissement de la chasse
	Changement :	Accroissement du carrossage
	Chasse :	Accroissement de 1 3/8 degrés
	Carrossage :	Accroissement de 1 3/8 degrés
G	Changement :	Accroissement du carrossage uniquement
	Chasse :	Changement de 0 degré
	Carrossage :	Accroissement de 2 degrés
H	Changement :	Décroissement de la chasse
	Changement :	Accroissement du carrossage
	Chasse :	Décroissement de 1 3/8 degrés
	Carrossage :	Accroissement de 1 3/8 degrés

(centre du schéma à droite)

Tableau des positions de la bague pour les CHANGEMENTS DE CARROSSAGE/CHASSE AVANT DU VÉHICULE

L'EXEMPLE ILLUSTRÉ EST celui d'une bague de 2° utilisée du côté conducteur. Les mesures de carrossage (+ ou -) sont inversées pour le côté passager.

EXEMPLE : L'exemple illustré est celui d'une bague de 2° utilisée sur une application à 2 roues motrices. Placées dans le véhicule avec la fente orientée vers l'avant (comme illustrée), seule la CHASSE changera (2° négatif dans l'exemple montré). Si la bague était tournée jusqu'au point « B », la CHASSE et le CARROSSAGE diminueront chacun de 1 3/8°. Ceci est indiqué par le signe négatif (-) dans le cercle des CHANGEMENTS DE LA CHASSE, aussi bien que dans le cercle des CHANGEMENTS DU CARROSSAGE à l'intersection de la ligne allant à la lettre « B ».

* Ne pas dépasser un changement de 2° négatif sur des modèles à 2 roues motrices. Vérifiez également le jeu sur des modèles à 4 roues motrices lorsque des changements à degrés élevés sont effectués.

INSTRUCCIONES ESPECIALES

(Continúa)

A. Cambio: Disminución de Caster Únicamente
Caster: Disminución de 2 grados
Camber: Cambio de 0 grados

B. Cambio: Disminución de Caster
Cambio: Disminución de Camber
Caster: Disminución de 1 3/8 grados
Camber: Disminución de 1 3/8 grados

C. Cambio: Disminución de Caster Únicamente
Caster: Cambio de 0 grados
Camber: Disminución de 2 grados

D. Cambio: Aumento de Caster
Cambio: Disminución de Camber
Caster: Aumento de 1 3/8 grados
Camber: Disminución de 1 3/8 grados

E. Cambio: Aumento de Caster Únicamente
Caster: Aumento de 2 grados
Camber: Cambio de 0 grados

F. Cambio: Aumento de Caster
Cambio: Aumento de Camber
Caster: Aumento de 1 3/8 grados
Camber: Aumento de 1 3/8 grados

G. Cambio: Aumento de Camber Únicamente
Caster: Cambio de 0 grados
Camber: Cambio de 2 grados

H. Cambio: Disminución de Caster
Cambio: Aumento de Camber
Caster: Disminución de 1 3/8 grados
Camber: Aumento de 1 3/8 grados

(centro del diagrama a la derecha)

Cuadro de Posición del Buje para CAMBIO DE CAMBER/CASTER Frente del Vehículo

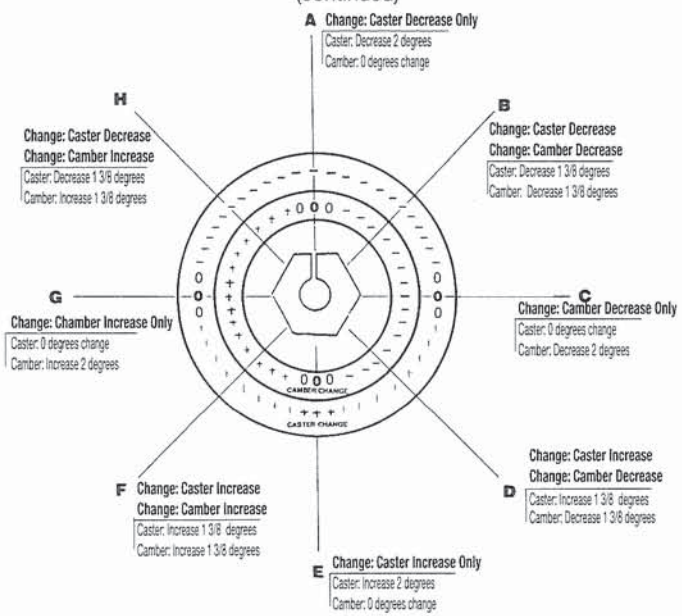
EL EJEMPLO MOSTRADO es con un buje de 2° instalado en el lado del chofer. Las lecturas de camber (+ ó -) son invertidas para el lado del pasajero.

EJEMPLO: El ejemplo mostrado es con un buje de 2° usado en un vehículo de 2WD. Colocado en el vehículo con la ranura hacia el frente (tal como se muestra), solamente el CASTER cambiará. (2° negativos son mostrados en el ejemplo). Si el buge fuera girado a la posición "B", tanto el CAMBER como el CASTER disminuirán 1 3/8°. Esto es ilustrado por las marca (-) tanto en el círculo de CAMBIO DE CASTER como en el círculo de CAMBIO DE CAMBER intersectando la línea a la letra "B".

* Nota: No exceda 2° Cambio negativo en los modelos 2W/D. Además, verifique el espacio en los modelos 4W/D cuando se realicen cambios de alto grado.

SPECIAL INSTRUCTIONS

(continued)



Bushing Position Chart for CAMBER/CASTER CHANGE FRONT OF VEHICLE

EXAMPLE SHOWN IS for a 2° Bushing installed on the Drivers side. Camber readings (+ or -) are reversed for the passenger side.

EXAMPLE: The example shown is a 2° Bushing used on a 2 W/D application. Placed in the vehicle with the slot toward the front (as shown) CASTER only would change. (2° Negative in the sample shown.) If the bushing were rotated to the "B" position CASTER & camber would each decrease 1-3/8°. This is illustrated by the (-) marks in both the CASTER CHANGE Circle and CAMBER CHANGE. Circle intersecting the line to the letter "B".

		+ or − Degrees de Adjustment			
		2WD		4WD	
	Bushing I.D. Number	Max. Camber or Caster	Combined Camber & Caster	Max Camber or Caster Combined	Camber & Caster
	HR-1/4	.25 (1/4)	.2 (3/16)	.2 (3/16)	.1 (1/8)
	HR-1/2	.50 (1/2)	.3 (5/16)	.4 (3/8)	.2 (1/4)
	HR-3/4	.75 (3/4)	.5 (1/2)	.6 (5/8)	.4 (3/8)
	HR-1	1.00 (1)	.7 (11/16)	.7 (3/4)	.5 (1/2)
	HR-1-1/4	1.25 (1 1/4)	.9 (7/8)	.9 (7/8)	.6 (5/8)
	HR-1-1/2	1.50 (1 1/2)	1.1 (1-1/16)	1.0 (1)	.7 (3/4)
	HR-1-3/4	1.75 (1 3/4)	1.2 (1-3/16)	1.2 (1-3/16)	.9 (7/8)
	HR-2	2.00 (2)	1.4(1-3/8)	1.4 (1-3/8)	1.0 (1)
	EX- 1-3/4	2.25 (2 1/4)	1.6 (1-3/4)	1.75 (1 3/4)	1.1 (1-1/8)
*	EX-2	2.50 (2 1/2)	1.7 (1-15/16)	2.00 (2)	1.3 (1-1/4)
*	EX-2-1/4	2.75 (2 3/4)	1.9 (2)	2.25(2 1/4)	1.5 (1-1/2)
*	EX-2-1/2	3.00 (3)	2.1 (2-1/4)	2.50 (2 1/2)	1.6 (1-3/4)
*	EX-2-3/4	3.25 (3 1/4)	2.3 (2-3/8)	2.75 (2 3/4)	1.7 (1-7/8)
*	EX-3	3.50 (3 1/2)	2.4 (2-1/2)	3.00(3)	1.8 (2)

* Note: Do not exceed 2° Negative change on 2W/D models. Also, check for clearance on 4W/D models when high degree changes are made.

Form # 23080-0210

MODE D'EMPLOI SPECIAL

(Suite)

INSTRUCCIONES EXPECIALES

(Contin'ua)

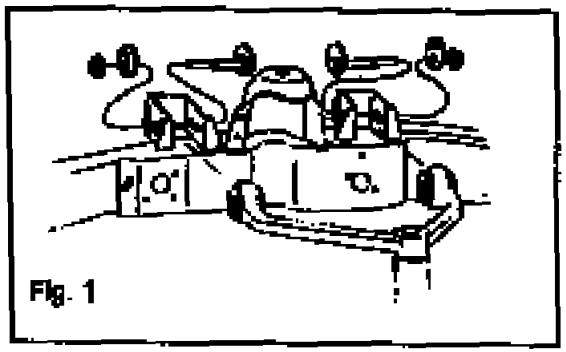


Fig. 1

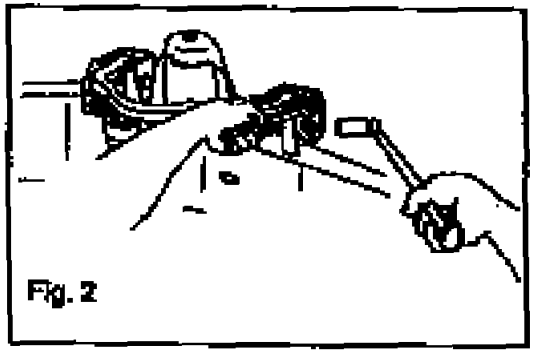


Fig. 2

SPECIAL INSTRUCTIONS

(Continued)

SPECIAL INSTRUCTIONS

INSTRUCTIONS FOR LOCKING ALIGNMENT BUSHING

Patent Pending

1.) Set up alignment gauges, take and record readings.

2.) Determine the bushing needed to adjust readings to desired angles. NOTE: When using the bushing for combination changes the amount of change is less than the degree of change stamped on the bushing.

When installed in 4WD vehicles, the amount of adjustment is less than when installed in 2WD vehicles. This is due to the wider upper/lower ball joint spacing to accommodate the driveshaft in the 4WD axle.

ON HIGHER DEGREE BUSHINGS IT MAY BE NECESSARY TO WIDEN THE GAP OF THE PINCH BOLT ASSEMBLY SLIGHTLY FOR EASE OF INSTALLATION.

3.) Raise the vehicle with an air jack or other suitable lift so that approximately half of the vehicle weight is off the tire/wheel assembly.

4.) Remove upper ball joint stud snap ring (where applicable).

5.) Using an appropriate socket, loosen, then remove the upper ball joint pinch bolt and remove the factory bushing by prying upward under the bushing shoulder.

6.) Install the new bushing with the slot facing in the desired direction. Make sure one of the six slots on the top of the bushing lines up with the gap in the knuckle. Refer to the chart on the backside of this page for proper slot direction for desired angle changes.

7.) Tap downward on the bushing to seat it. Reinstall snap ring(where applicable).

8.) Lower the vehicle and jounce the suspension. Take alignment reading and make any necessary final adjustments to the bushing to obtain desired final results.

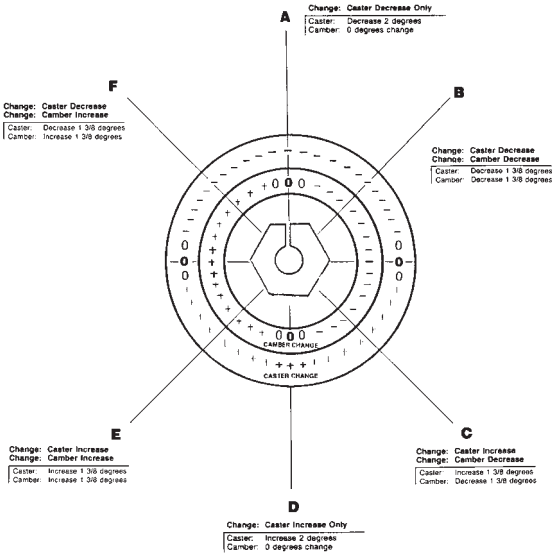
9.) Install special locking key so it properly engages chosen top bushing slot (Image #1).

10.) IMPORTANT! Install NEW PINCH BOLT and torque to manufacturer's specifications according to year/make/model, making sure that if has properly engaged the special locking key.

11.) After adjustment of camber and caster on both sides adjust toe to specifications.

12.) Road test vehicle.

Image #1



Bushing Position Chart for CAMBER/CASTER CHANGE

EXAMPLE SHOWN IS for a 2° Bushing installed on the Drivers side. Camber readings (+ or –) are reversed for the passenger side.
EXAMPLE: The example shown is a 2° Bushing used on a 2 W/D application. Placed in the vehicle with the slot toward the front (as shown) CASTER only would change. (2° Negative in the sample shown.) If the bushing were rotated to the "B" position CASTER & CAMBER would each decrease 1-3/8°. This is illustrated by the (–) marks in both the CASTER CHANGE Circle and CAMBER CHANGE Circle intersecting the line to the letter "B".

Bushing I.D. Number	+ or – Degrees of Adjustment			
	2WD		4WD	
	Max. Camber or Caster	Combined Camber & Caster	Max. Camber or Caster	Combined Camber & Caster
SL-0	Ø	Ø	Ø	Ø
SL-1/2	.50 (1/2)	.3 (5/16)	.4 (3/8)	.2 (1/4)
SL-1	1.00 (1)	.7 (11/16)	.7 (3/4)	.5 (1/2)
SL-1½	1.50 (1½)	1.1 (1-1/16)	1.0 (1)	.7 (3/4)
SL-2*	2.00 (2)	1.4 (1-3/8)	1.4 (1-3/8)	1.0 (1)
SL-2½*	2.50 (2 1/2)	1.7 (1-15/16)	2.00 (2)	1.3 (1-1/4)
SL-3*	3.00 (3)	2.1 (2-1/4)	2.50 (2 1/2)	1.6 (1-3/4)

*Note: Do not exceed 2° Negative change on 2W/D models.
Also, check for clearance on 4W/D models when high degree changes are made.

Caster Adjusting Kit

Fits all Ford trucks
Equipped with standard radius rod only
Will allow approximately 4 degrees caster change

1. Jack up vehicle, remove coil spring.

2. Remove long ¾" bolt (double nut) from I-beam.

3. Using a 1 ¼" hole saw with guide, cut a 1 ¼" hole in lower portion of radius arm only.

4. Install cam and replace long bolt in “I” beam.

5. Install & tighten (slightly) nut onto ¾" bolt next to I beam. Leave loose enough for cam movement. Reinstall coil spring & assembly.

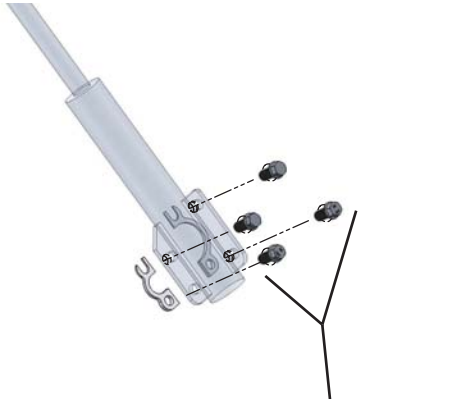
6. Lower vehicle to normal height and adjust caster (turning cam) to desired change.

7. Torque nut to long bolt.

8. Proceed with other alignment adjustments and road test vehicle.

Installation Instructions

1. Loosen strut bolts, but do not remove.
2. On front lower side of strut remove OE strut bolt and discard.
3. Install shim with thick side to the bottom
   (to decrease Camber) (See Illustration).
4. Install new 30mm bolt provided with kit-
   to the thick end of the shim (Note: add Loctite on new bolts)
5. Snug bolts at this time but do not tighten.
6. Repeat steps on rear side of strut.
7. Torque all strut bolts to manufacturing specification.
8. Finish alignment and road test.



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MODE D'EMPLOI SPECIAL

INSTRUCTIONS DE RÉGLAGE DU CARROSSAGE/CHASSE POUR FORD 4 X 4 DE TAILLES RÈDUITE INSTRUCTIONS D'INSTALLATION

Degrés estampés sur la bague — Quantité du changement combiné

(Changement de carrossage ou de chasse uniquement)

DÉPOSE DU MANCHON DE RÉGLAGE

1. Retirez la roue pour faciliter l'accès et réduire le poids supporté par le boulon de la rotule supérieure.

2. Enlevez la clavette fendue et l'écrou du boulon de la rotule supérieure.

3. Attachez un arrache-manchon et déposez le manchon de réglage. Soutenez le moyeu de l'essieu pour faciliter la dépose et le remplacement du manchon.

INSTALLATION DU MANCHON DE RÉGLAGE

1. Choisissez le manchon désiré. Remarque : Assurez-vous d'examiner le manchon dans le véhicule à ce point avant de calculer les changements et de déterminer la bonne position pour le changement désiré.

2. Insérez le manchon sur le boulon à tête sphérique et dans le collier de soutien. Les découpes dans le manchon doivent engager les ergots du collier de soutien.

3. Assemblez l'écrou du boulon de la rotule et serrez-le au couple spécifié par le fabricant. Si besoin est, serrez un peu plus l'écrou afin d'aligner le trou pour la clavette fendue dans le boulon à tête sphérique par rapport au créneau de la fente de l'écrou. Ne desserrez pas l'écrou ! Installez une nouvelle clavette fendue.

4. Remontez la roue.

5. Réglez à nouveau la géométrie pour compenser les changements de carrossage.

6. Essayez le véhicule sur la route.

QUAND LA FENTE EST PLACÉE DANS LES POSITIONS 1, 3, 5

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE AJUSTE DE CASTER/CAMBER FORD 4 X 4 TAMAÑO REDUCIDO INSTRUCCIONES DE INSTALACIÓN

REMOCIÓN DE LA MANGA DE AJUSTE

1. Remueva la rueda para facilitar el acceso y para reducir el peso soportado por el perno de rótula superior.

2. Remueva la llave de chaveta del perno de rótula superior y remueva tuerca.

3. Sujete un extractor y remueva la manga de ajuste. Soporte el núcleo del eje para facilitar la remoción y el reemplazo de la manga.

INSTALACIÓN DE LA MANGA DE AJUSTE

1. Seleccione la manga deseada. Nota: Asegúrese de comprobar la manga que se encuentra ahora en el vehículo antes de calcular el cambio y la posición apropiadas para el cambio deseado.

2. Inserte la manga sobre el perno de rótula y dentro del collar de soporte. Los cortes en la manga deberán encajar en las orejas del collar de soporte.

3. Ensamble la tuerca del perno de rótula y apriétela a las especificaciones del fabricante, si es necesario, gire la tuerca para permitir que el agujero de la chaveta situado en el perno de rótula quede en línea con el entalle de la ranura de la tuerca, gírela en la dirección de apriete. ¡No afloje la tuerca! Instale una chaveta nueva.

4. Reinstale la rueda.

5. Ajuste la convergencia para corregir cualquier cambio como resultado del ajuste de camber.

6. Pruebe el vehículo en la carretera.

CUANDO LA RANURA ES COLOCADA EN LAS POSICIONES 1, 3, 5, Ó 7, LA CANTIDAD DE CAMBIO ES EL GRADO DE CAMBIO ESTAMPADO EN EL BUJE.

Números de Posición de la Ranura

FRENTE DEL VEHÍCULO

Números de Posición de la Ranura

Continúa al dorso

SPECIAL INSTRUCTIONS

CASTER/CAMBER ADJUSTMENT INSTRUCTIONS DOWNSIZE FORD 4X4 INSTALLATION INSTRUCTIONS

ADJUSTMENT SLEEVE REMOVAL

1. Remove wheel and tire for easy access and to reduce the weight being supported by the upper ball joint stud.
2. Remove the cotter key from the upper ball joint stud, and remove the nut.
3. Attach a puller and remove the adjustment sleeve. Support the axle hub to ease removal and replacement of the sleeve.

ADJUSTMENT SLEEVE INSTALLATION

1. Select desired sleeve. **Note: Be sure to check sleeve now in the vehicle before figuring change, and the proper position for the desired change.**
2. Insert the sleeve over the ball stud and into the support collar. The cutouts in the sleeve must engage the lugs on the support collar.
3. Assemble upper ball stud nut and torque to manufacturer's specification, if necessary, rotate the nut to allow the cotter key hole in the ball stud to line up with the castellation of slot of the nut, turn it in the direction of tightening. **Do not loosen the nut!** Install a new cotter key.
4. Replace the wheel and tire assembly.
5. Readjust the toe to correct for changes which result from changes in the camber setting.
6. Road test the vehicle.

SLOT POSITION INFORMATION

THE MULTI-SLOT ALIGNMENT BUSHING MAY BE USED TO ADJUST CAMBER ONLY (+ OR -) OR CASTER ONLY (+ OR -). THEY ALSO MAY BE POSITIONED TO OBTAIN COMBINATION CAMBER/CASTER CHANGES.

THE ILLUSTRATIONS ON BACK SIDE SHOW HOW TO POSITION THE **SLOT** OF THE BUSHING TO OBTAIN ONLY CAMBER OR CASTER CHANGES AND ALSO HOW TO OBTAIN COMBINATION CHANGES. BOTH LEFT FRONT AND RIGHT FRONT ILLUSTRATIONS RE SHOWN.

NOTE: WHEN USING THE BUSHING FOR COMBINATION CHANGES THE AMOUNT OF CAMBER & CASTER CHANGE IS **LESS** THAN THE DEGREE OF CHANGE STAMPED ON THE BUSHING. THE AMOUNT OF CHANGE WHEN LOCATING THE SLOT AT POSITIONS 2, 4, 6 & 8 FOR THE VARIOUS BUSHINGS IS: **(See chart at top.)**

Continued on other side

MODE D'EMPLOI SPECIAL

(Suite)

OU 7, LA QUANTITÉ DU CHANGEMENT EST LE NOMBRE DE DEGRÉS ESTAMPÉ SUR LA BAGUE.

Numéros de position de la fente
Numéros de position de la fente

+ Carrossage
- Carrossage

AVANT DU VÉHICULE

(Position numbers should be: n° 1, n° 2, n° 3, n° 4, n° 5, n° 6, n° 7 and n° 8 instead of #)

CARROSSAGE = Camber
CHASSE + Caster

AVANT GAUCHE - MONTRANT LA FENTE POSITIONNÉE POUR UN CHANGEMENT POSITIF DU CARROSSAGE

AVANT DROITE - MONTRANT LA FENTE POSITIONNÉE POUR UN CHANGEMENT POSITIF DU CARROSSAGE

INFORMATION SUR LA POSITION DE LA FENTE

LES BAGUES DE GÉOMÉTRIE À ENCOCHES MULTIPLES PEUVENT ÊTRE UTILISÉES POUR RÉGLER UNIQUEMENT LE CARROSSAGE (+ OU -) OU LA CHASSE (+ OU -). ELLES PEUVENT AUSSI ÊTRE POSITIONNÉES AFIN D'OBTENIR DES CHANGEMENTS COMBINÉS DE CARROSSAGE/CHASSE.

LES ILLUSTRATIONS CI-DESSUS MONTRENT COMMENT POSITIONNER LA FENTE DE LA BAGUE POUR OBTENIR DES CHANGEMENTS DE CARROSSAGE OU DE CHASSE SEULS, AUSSI BIEN QUE COMBINÉS. LES DEUX ILLUSTRATIONS AVANT GAUCHE ET AVANT DROITE SONT PRÉSENTÉES.

REMARQUE : LORSQUE VOUS UTILISEZ LA BAGUE POUR DES CHANGEMENTS COMBINÉS, LA QUANTITÉ DE CHANGEMENT DU CARROSSAGE ET DE LA CHASSE EST INFÉRIEURE À CELLE ESTAMPÉE SUR LA BAGUE. LA QUANTITÉ DU CHANGEMENT LORSQUE LA FENTE EST PLACÉE DANS LES POSITIONS 2, 4, 6 & 8 POUR LES DIVERSES BAGUES EST DE : (Voyez le tableau ci-dessus).

INSTRUCCIONES EXPECIALES

(Contin'ua)

+ Camber - Camber

+ Caster - Caster

DELANTERA IZQUIERDA - MUESTRA LA RANURA COLOCADA PARA UN CAMBIO DE CAMBER POSITIVO

DELANTERA DERECHA - MUESTRA LA RANURA COLOCADA PARA UN CAMBIO DE CAMBER POSITIVO

INFORMACIÓN SOBRE LA POSICIÓN DE LA RANURA

EL BUJE DE ALINEAMIENTO DE RANURAS MÚLTIPLES PUEDE SER USADO PARA AJUSTAR ÚNICAMENTE CAMBER (+ ó -) O ÚNICAMENTE CASTER (+ ó -). ELLOS PUEDEN SER COLOCADOS TAMBIÉN PARA OBTENER CAMBIOS COMBINADOS DE CAMBER/CASTER.

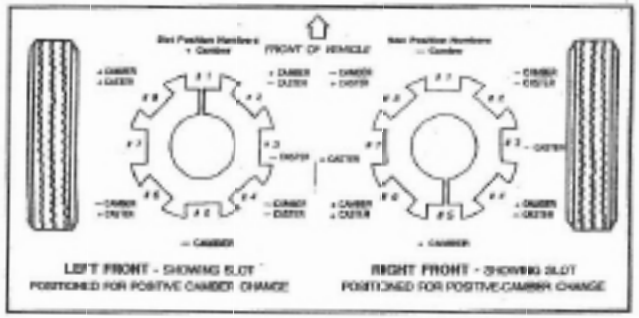
LAS ILUSTRACIONES MOSTRADAS ARRIBA INDICAN COMO COLOCAR LA RANURA DEL BUJE PARA OBTENER CAMBIOS ÚNICAMENTE DE CAMBER O DE CASTER Y TAMBIÉN COMO OBTENER CAMBIOS COMBINADOS. SE MUESTRAN ILUSTRACIONES PARA LA DELANTERA IZQUIERDA Y PARA LA DELANTERA DERECHA.

NOTA: CUANDO USE EL BUJE PARA CAMBIOS COMBINADOS, LA CANTIDAD DE CAMBIO DE CAMBER & CASTER ES MENOR QUE EL GRADO DE CAMBIO ESTAMPADO EN EL BUJE. LA CANTIDAD DE CAMBIO AL COLOCAR LA RANURA EN LAS POSICIONES 2, 4, 6, & 8 PARA LOS DIFERENTES BUJES ES DE: (Vea el cuadro en la parte superior).

SPECIAL INSTRUCTIONS

(Continued)

WHEN THE SLOT IS PLACED AT POSITION NUMBER 1,3, 5 or 7, THE AMOUNT OF CHANGE IS THE DEGREE OF CHANGE STAMPED ON THE BUSHING.



Degree Stamped on Bushing (Camber or Caster Change only)	Amount of Combination Change
2	1-13/32
1-3/4	1-7/32
1-1/2	1-1/16
1-1/4	7/8
1	15/16
3/4	17/32
1/2	15/32
1/4	3/16

ASSEMBLY INSTRUCTIONS

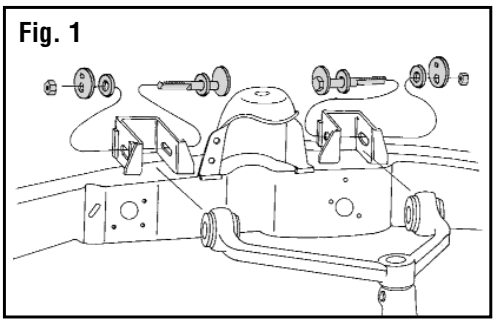
CAM BOLT KIT FOR:

FORD EXPLORER 1995-2001
MERCURY MOUNTAINEER 1997-2001
FORD RANGER 1998-CURRENT
FORD EXPLORER SPORT TRAC 2001

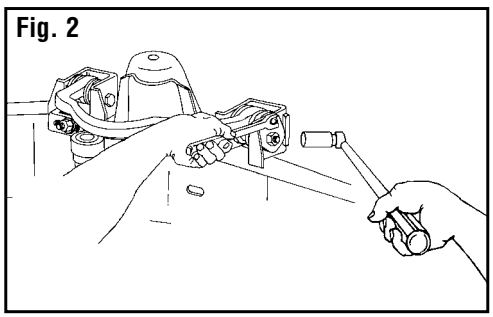
This kit is designed to replace the factory non-adjustable components, and achieve up to 3 degrees of camber adjustment range.

1) Inspect vehicle for bent, worn or loose components and repair as necessary.
2) Check ride height and adjust to factory specification.
3) Check alignment and determine changes needed.
4) Raise vehicle under lower control arms and support safely.
5) Remove wheel assembly.

NOTE: There are tight clearances, especially on the left side. Use care in disassembly and reassembly



6) Remove rubber splash shield to gain access by carefully prying out mounting studs.
7) Remove factory bolt assemblies and discard.
8) Clean area for cam as required.
9) Using new bolt from kit, install one cam and one flat washer.
10) Install this assembly in vehicle in same direction as prior factory bolt (**See Figure No. 1**).
11) Install flat washer, cam and nut. Snug nut.



12) Repeat steps 9, 10, and 11 with second bolt.
13) If only one side of the vehicle needs a kit, proceed with alignment. To adjust, use a 3/8" rachet or breaker bar in square hole in cam next to nut (**See Figure No. 2**).
14) If kits are needed on both sides of the vehicle, repeat steps 6 through 13 on other side of vehicle.
15) While holding bolt head or cam to prevent rotation, torque nuts to 100 ft. lb. (136 N. m).
16) Remeasure caster to verify proper readings.
17) Reinstall rubber splash shields.
18) Proceed with rest of alignment and road test vehicle.

MODE D'EMPLOI SPECIAL

Instructions d'installation de la came de géométrie sur les camionnettes Ford

Ford Explorer et pick-up à partir de 1995
Mercury Mountainer à partir de 1996

Information générale

En commençant par l'année de modèle 1995, de nombreuses nouvelles camionnettes et de nombreux nouveaux véhicules utilitaires sportifs fabriqués par la Ford Motor Company sont équipés d'une suspension nouvellement conçue.

La conception de la suspension avant comporte un bras court/long de suspension (SLA), avec des barres de torsion remplaçant les ressorts hélicoïdaux conventionnels.

Les bras de commande supérieurs sont bloqués dans le support du châssis à l'aide de quatre plaques « carrées » (deux par côté) installées en usine (voyez la figure nº 1). Ces plaques doivent être remplacées par des cames de réglage à conception en « larme » afin de permettre le mouvement requis pour le réglage du carrossage et de la chasse (voyez la figure nº 2).

Si le véhicule a un problème de « conduite » ou s'il « tire » après avoir réglé la géométrie à l'aide des cames, (disparité de chasse) un réglage séparé de la chasse est fourni seulement sur le bras supérieur de la suspension avant droite (voyez la
figure nº 3).

Instructions d'installation de la came « Quick Cam »

Remarque : Avant de vérifier les mesures de géométrie, la hauteur de réglage doit être vérifiée et rétablie si nécessaire. Référez-vous au manuel d'entretien du garage pour obtenir la procédure correcte.

1.) Effectuez un contrôle avant la géométrie pour voir si des pièces sont usées ou endommagées. Vérifiez la pression des pneus et égalisez-la au besoin.

2.) Installez l'équipement de réglage de la géométrie et prenez les mesures initiales afin de déterminer la quantité de changement nécessaire.

3.) Soulevez le véhicule d'une manière sûre. Remarque : Le véhicule doit être soutenu sous les bras de commande inférieurs à l'aide du dispositif de sécurité approprié.

4.) Enlevez la roue.

Suite a Verso

INSTRUCCIONES EXPECIALES

Camión Liviano Ford
Instrucciones de Instalación de la Leva de Alineamiento

Ford Explorer & PickUps de 1995 & más recientes
Mercury Mountaineer de 1996 & más recientes

Información General

Comenzando con los modelos del año 1995, muchos camiones livianos y vehículos deportivos de uso general fabricados por la Ford Motor Company tienen un diseño de suspensión nuevo.

El diseño de la suspensión delantera consiste de un brazo de suspensión corto/largo (SLA) con barras de torsión que reemplazan los resortes de espiral convencionales.

Los brazos de control superiores son trabados dentro del soporte del chasis por medio de cuatro placas "cuadradas" (2 por cada lado) instaladas en la fábrica (vea la figura No. 1). Estas placas tendrán que ser reemplazadas por levas de ajuste de diseño de "lágrima" con el fin de permitir el movimiento para ajustar el camber y el caster (vea la figura No. 2).

Si el vehículo tiene un problema de "avance" o de "tiro" después de haber efectuado los ajustes de alineamiento con levas, (disparidad de caster), un ajuste de caster separado es proporcionado en el brazo superior derecho de la suspensión delantera únicamente (vea la figura No. 3).

Instrucciones de Instalación de la leva "Quick Cam"

Nota: Antes de comprobar las lecturas de alineamiento, la altura de trayecto deberá ser revisada y puesta en posición si es necesario. Refiérase al manual de servicio de taller para obtener el procedimiento apropiado.

1.) Efectúe una revisión antes del alineamiento para ver si hay piezas desgastadas o dañadas. Verifique la presión de las llantas y ajústelas como sea necesario.

2.) Instale el equipo de alineamiento y tome las lecturas iniciales para determinar la cantidad de cambio necesario.

3.) Levante el vehículo de forma segura. Nota: El vehículo deberá ser soportado debajo de los brazo de control inferiores con dispositivos de seguridad apropiados.

4.) Remueva las ruedas.

5.) Remueva el protector contra salpicaduras interior negro para facilitar el acceso a los soportes del brazo de control superior.

6.) Remueva las dos placas "cuadradas" de prealineamiento de

Contin'ua al doso

SPECIAL INSTRUCTIONS

Ford Light Truck
Alignment Cam Installation Instructions

1995 & Newer Ford Explorer & Pickups
1996 & Newer Mercury Mountaineer

GENERAL INFORMATION

Beginning with the 1995 model year many new light trucks and sport utility vehicles manufactured by Ford Motor Company have a new suspension design. The front suspension design consists of a short/long arm suspension (SLA) with torsion bars replacing conventional coil springs. The upper contral arms are locked within the frame bracket by four factory installed "square" plates (2 per side) (see figure No.1). These plates must be replaced with "tear drop" designed adjusting cams to allow movement for the adjustment of camber and caster see figure No. 2). If the vehicle has a "lead" or "pull" problem after alignment adjustments have been made with cams, (caster disparity) a separate caster adjustment is provided on the right upper front suspension arm only (see figure No.3).

"Quick Cam" Installation Instructions

NOTE: Prior to checking alignment readings, ride height must be checked and reset if necessary. Refer to shop service manual for proper procedure.

1.) Perform pre-alignment check for worn or damaged parts. Check tire pressure and adjust as needed.

2.) Install alignment equipment and take initial readings to determine amount of change needed.

3.) Raise vehicle in a safe manner. Note: Vehicle must be supported under the lower control arms with appropriate safety devices.

4.) Remove tire & wheel assembly.

5.) Remove black inner fender splash shiel for easy access to upper control arem brackets.

6.) Remove both "square" factory preset alignment plates (one on each bolt assembly - 2 per side).

7.) Install "Quick Cam" onto factory bolt in place of "square" plate with washer (spacer) against upper control arm bracket. This spacer provides clearance so cam does not bind against inside corners of bracket (see figure No. 2).

8.) Loosely install locking nut but do not tighten at this time.

9.) Install tire and wheel assembly and recompensate alignment equipment.

Setting Alignment

Continued on other side

Form # 95-125-1195T

MODE D'EMPLOI SPECIAL

(Continued)

5.) Déposez le bouclier garde-boue interne noir pour faciliter l'accès aux supports du bras de commande supérieur.

6.) Retirez les deux plaques « carrées » de géométrie pré-établie en usine (une sur chaque ensemble de boulon - deux par côté).

7.) Installez la came « Quick Cam » sur le boulon d'usine à la place de la plaque « carrée » avec une rondelle (entretoise) contre le support du bras de commande supérieur. Cette entretoise fournit un jeu de façon à ce que la came ne coince pas contre les coins internes du support (voyez la figure nº 2).

8.) Installez l'écrou de sûreté sans le serrer.

9.) Installez la roue et réglez à nouveau l'équipement de réglage de la géométrie.

Réglage de la géométrie

1. Insérez une poignée articulée à carré de 3/8 po dans l'encoche carrée au haut de la came « Quick Cam », tournez les cames au besoin pour obtenir le carrossage et la chasse en accord avec les spécifications du véhicule.

2. Après avoir obtenu les spécifications de géométrie pour le véhicule, les cames doivent être maintenues en place à mesure que les écrous des boulons des cames sont serrés à un couple de 113 à 153 Nm (83 à 113 lb/pi).

3. Continuez avec le reste du réglage de la géométrie, réglez la convergence ou le pincement et essayez le véhicule sur la route.

INSTRUCCIONES EXPECIALES

(Continued)

fábrica (una en cada ensamble de pernos - 2 por cada lado).
7.) Instale la leva "Quick Cam" en el perno de fábrica a cambio de las placas "cuadradas" con la arandela (espaciador) contra el soporte del brazo de control superior. Este espaciador suministra holgura de modo que la leva no se roce contra las esquinas interiores del soporte (vea la figura No. 2).
8.) Instale la tuerca de traba, pero no la apriete en este momento.
9.) Instale la rueda y recompense el equipo de alineamiento.
Ajuste de Alineamiento
1. Inserte una palanca con cuadrante de 3/8" en la ranura cuadrada situada en la parte superior de la leva "Quick Cam", gire las levas, tal como sea necesario, hasta alcanzar el ajuste de camber y de caster de acuerdo con las especificaciones del vehículo.
2. Una vez que las especificaciones de alineamiento del vehículo fueron obtenidas, las levas tendrán que ser mantenidas en posición a medida que las tuercas de los pernos de las levas sean apretadas de acuerdo con las especificaciones (113 a 153 Nm 83 a 113 lbs. pie).
3. Proceda con el resto del alineamiento, ajuste la convergencia y pruebe el vehículo en la carretera.

SPECIAL INSTRUCTIONS

(Continued)

1.) Insert a 3/8" drive breaker bar in square slot at top of "Quick Cam", rotate cams as needed to achieve caster & camber per vehicle
specifications.
2.) Once alignment specifications have been attained, cam must be held in place as cam bolt nuts are tightened to specification (83-113ft lbs/113-153N).
3.) Proceed with the rest of the alignment, set toe and road test vehicle.

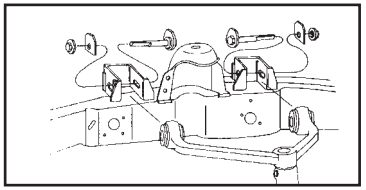


Figure No. 1

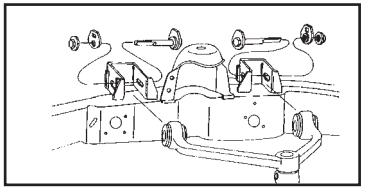


Figure No. 2

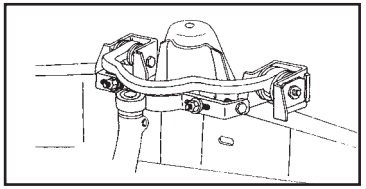


Figure No. 3

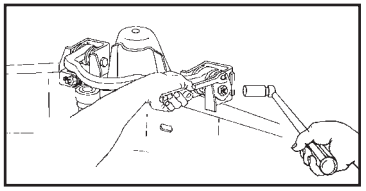


Figure No. 4

ASSEMBLY INSTRUCTIONS

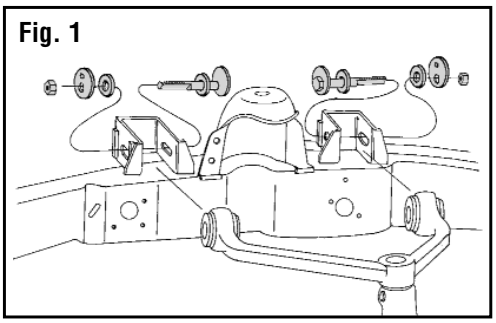
CAM BOLT KIT FOR:

FORD EXPLORER 1995-2001
MERCURY MOUNTAINEER 1997-2001
FORD RANGER 1998-CURRENT
FORD EXPLORER SPORT TRAC 2001

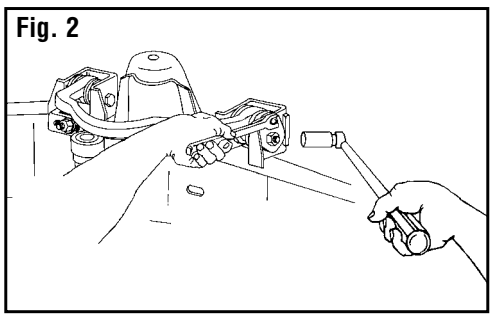
This kit is designed to replace the factory non-adjustable components, and achieve up to 3 degrees of camber adjustment range.

1) Inspect vehicle for bent, worn or loose components and repair as necessary.
2) Check ride height and adjust to factory specification.
3) Check alignment and determine changes needed.
4) Raise vehicle under lower control arms and support safely.
5) Remove wheel assembly.

NOTE: There are tight clearances, especially on the left side. Use care in disassembly and reassembly



6) Remove rubber splash shield to gain access by carefully prying out mounting studs.
7) Remove factory bolt assemblies and discard.
8) Clean area for cam as required.
9) Using new bolt from kit, install one cam and one flat washer.
10) Install this assembly in vehicle in same direction as prior factory bolt (**See Figure No. 1**).
11) Install flat washer, cam and nut. Snug nut.



12) Repeat steps 9, 10, and 11 with second bolt.
13) If only one side of the vehicle needs a kit, proceed with alignment. To adjust, use a 3/8" rachet or breaker bar in square hole in cam next to nut (**See Figure No. 2**).
14) If kits are needed on both sides of the vehicle, repeat steps 6 through 13 on other side of vehicle.
15) While holding bolt head or cam to prevent rotation, torque nuts to 100 ft. lb. (136 N. m).
16) Remeasure caster to verify proper readings.
17) Reinstall rubber splash shields.
18) Proceed with rest of alignment and road test vehicle.

General Information for
FORD EXPLORER/MERCURY MOUNTAINEER VEHICLES

Important: Prior to checking alignment readings, ride height must be checked and reset if necessary. Refer to shop service manual for proper procedure.

Front Camber/Caster:

1. Remove both square factory fixed plates (on each shaft assembly 2-per side) **(See Figure No. 1).**
2. Install washers and locking nuts.

Note: There is a camber/caster alignment tool available from your alignment products supplier which allows you to push, pull, or hold the control arm in the frame slots to attain alignment specifications quickly (See Figure No. 2).

Rear Camber:

Rear camber is adjusted by moving the lower control arm most rearward mounting bolt. From the factory this mounting bolt is held in place by a pre-set alignment plate (one per side **See Figure No. 3**). These plates must be removed and replaced with washers to allow for adjustment of the arm in the frame slot. A pry bar may be used between the lower arm and the frame slot.

Caster/split:

If the vehicle has a lead or pull problem after alignment adjustments have been made, a seperate caster adjustment is provided on the right front lower control arm rearward frame mounting **(See Figure No. 4)**. Simply loosen the lower control arm mounting nuts and turn the adjusting bolt clockwise to decrease or counter clockwise to increase the right hand caster.

Figure No. 1

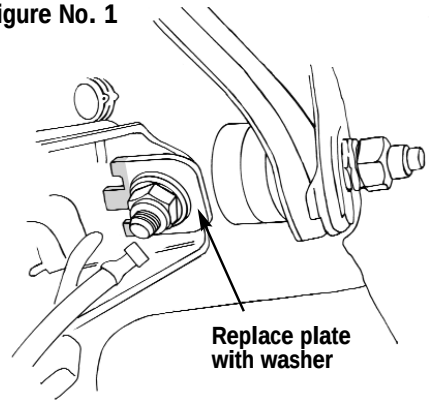


Figure No. 2

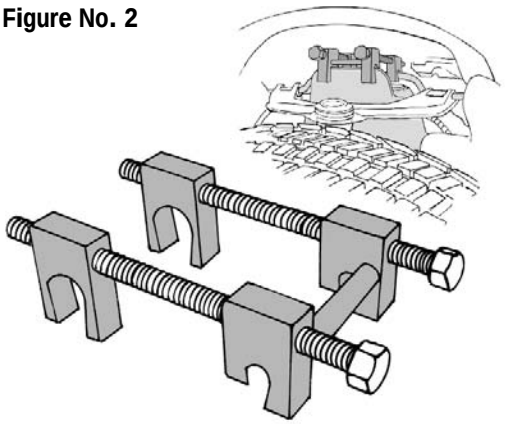


Figure No. 3

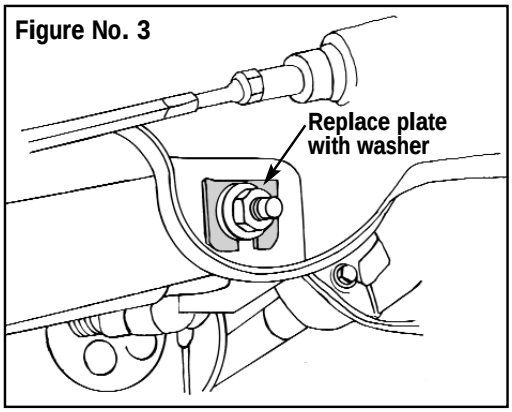
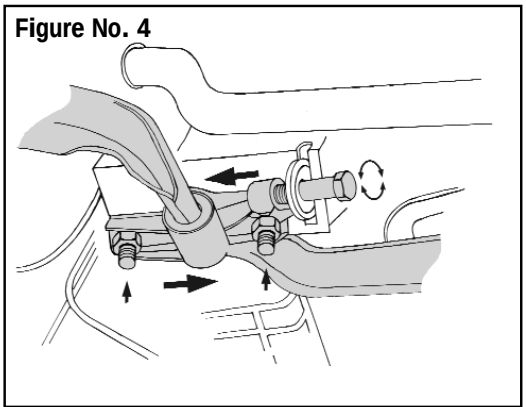


Figure No. 4



Utility Caster/Camber Tool
95-195-1101

2002 & Newer
Ford Explorer / Mercury Mountaineer / Lincoln Aviator
Front Caster / Camber Kit
Rear Camber kit

Installation Instruction:

1. Perform pre-alignment check in normal manner.
2. Install alignment equipment and record reading and determine amount of change needed.
3. Raise vehicle under frame and support in a safe manner.
4. Remove both square factory fixed plates (on each shaft assembly 2-per side) **(See Fig. 1&2)**
5. Install the new plates on both studs so that locator pins fit in the holes that retained the stock alignment washer. Install the cam so it fits in the plate recess with the offset hole towards the locator pins and install the supplied nuts snug so that the cam can be rotated. **(See Fig. 3&4)**
6. Watching your alignment reading, adjust by rotating the cam using a socket or wrench to manufacturer's specification.

   Note: Do not turn the cam over 90 degrees either way from the center position. Damage to the plate or cam may result.
7. Tighten supplied locknut to manufacture's specification. Be careful not to move adjusting cam.
8. Proceed with alignment and road test vehicle.

FIG.1 (Front Removal)

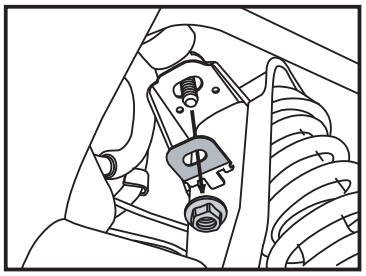


FIG.2 (Rear Removal)

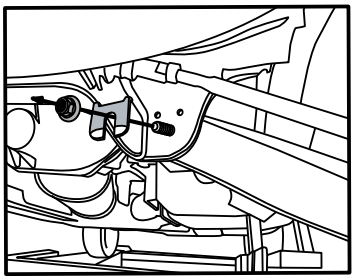


FIG.3 (Front Installation)

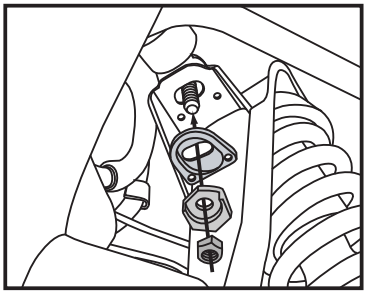
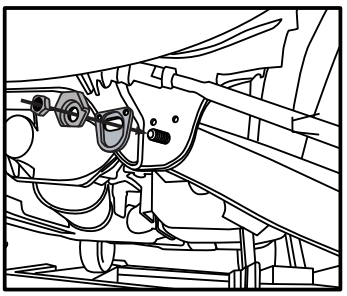


FIG.4 (Rear Installation)



Form # 95-222-1003
44-771 / 773

GM rear adjustable cam nut

1. Remove existing nut from the inboard side of the most forward rear lower control arm.

2. Install the new cam nut making sure it is recessed between the shoulder on the frame bracket.

3. With the bolt slightly loose, adjust toe using the cam nut.

Note: Camber may also need to be adjusted.

4. Tighten bolt to manufacture specification.

5. Recheck alignment readings.

95-261-1008

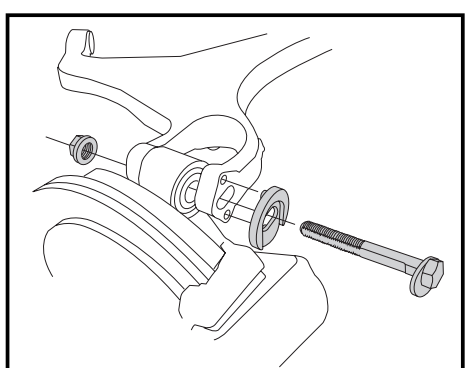
INSTALLATION INSTRUCTIONS FOR

Rear Camber Kit

Ford Expedition/Navigator 2003 and Newer

NOTE: Vehicles equipped with an air suspension system must be at trim ride height prior to measuring or adjusting the rear camber or toe. Be sure the air suspension is working properly.

1. Perform pre-alignment checks in a normal manner.
2. Install alignment equipment, record readings.
3. Safely support truck by the lower control arms and remove wheel assembly.
4. Before removing existing (factory) nut and bolt assembly, attach a magnetic camber gauge at the top edge of the rotor and center the bubble on the gauge. Leave the gauge in place,remove bolt and discard.
5. Install cam plate (from kit) making sure the guide pins on the plate match the holes on the rearward side of the upper control arm **(See Illustration)**
6. Slide cam bolt through cam plate and control arm bushing. Install self-locking nut. Adjust eccentric cam until bubble on camber gauge is center.
7. From that position rotate cam bolt to adjust rear camber to required adjustment
8. While holding the cam-bolt, torque nut to 50 N m 111 lb-ft.
9. Remove bubble gauge from rotor and install wheel assembly.
10. Re-install alignment equipment and lower vehicle onto alignment rack.
11. Re-check camber adjustment.
12. Adjust rear toe.
13. Proceed with the rest of the alignment.
14. Road test vehicle.



Form# 95-203-0303
44-784

Ford Expedition and Lincoln Navigator 2003 and Newer
2X4 & 4X4
Front Cam Bolt Kit With Guides

General Information: The front suspension is an independent SLA suspension. The lower control arm attachment brackets are elongated from the factory and hold the lower control arm in place using standard production bolts.

Installation Instructions.

This kit is to be installed on the lower control arm frame brackets.

1. Perform pre-alignment checks in normal manner.
2. Install alignment equipment and record readings.
3. Raise the front of the vehicle under the frame rails to ease movement of the lower control arm in its frame slots and support. **(See Figure 3)**

   Note: Raise vehicle enough to take the tension off the lower control arm
   (Control arms neutral position.) Wheels will not be completely raised but will have approximately two tread widths contacting Turn Plates.
4. Install Cam Guides from kit using factory provided holes in the frame rail where the lower control arm bolts to the frame. **(See Fig.1 & Fig.2)**

   Note: This kit is packaged with two different size Cam Guides. The small guide is designed for the front of the lower control arm frame rail and the large guide for the rear of the lower control arm frame rail. (These provide surface for cam to turn against) Before installing the plates, remove any excess welding slag from frame to allow smooth adjustments.
5. When installing the front small guide, arrows on guides reference top as well as left and right. The arrows should face up and outward when bolted in place with the flat edge of the guide facing inward, as bolts are placed through holes on frame. Secure Cam Guides with bolts & nuts provided **(See Fig. 1)**
6. When installing the rear large guide, align the holes in the guide with the holes in the frame next to the rear control arm pivot bolt. Secure Cam Guides with bolts & nuts provided. **(See Fig. 2)**
7. With vehicle raised so that control arms are in a neutral position remove the factory lower control arm bolts and nuts one at a time.
8. Install Cam & Bolt Assembly and nut, but do not tighten at this time.

NOTE: Cam bolts in kit are two different lengths. The longer bolt replaces the OE pivot bolt in the front of the control arm and the shorter bolt replaces the OE pivot bolt in the rear of the control arm.

9. Watching your alignment readings, adjust Camber/Caster to manufacturer's specification by turning cam until needed adjustment is achieved.
10. Torque both control arm pivot bolts to **270N.m. (199 ft.lb.)**
11. Proceed with alignment and road test vehicle.

NOTE: A defective air ride system may cause a change in ride height, which will effect Caster/Camber readings. Be sure the air ride system is working properly.

Figure 1

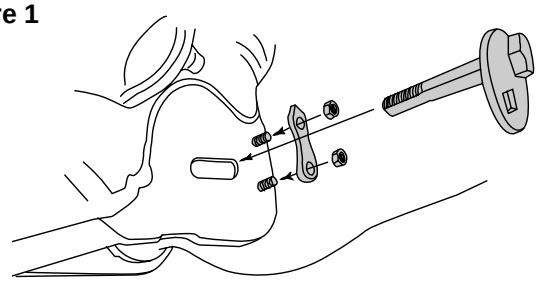


Figure 2

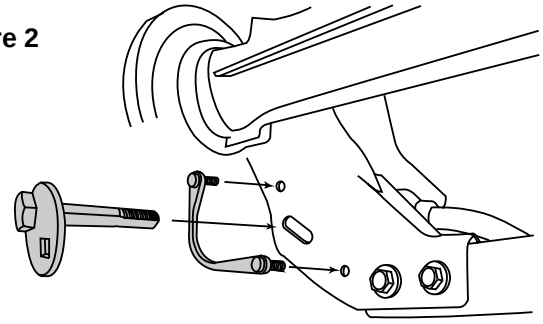
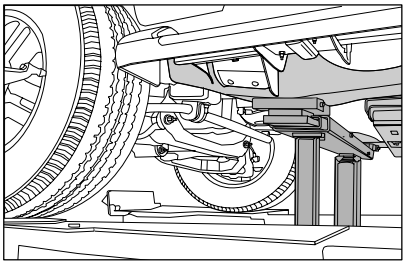


Figure 3



Note: Illustrations are shown from the passenger side of vehicle

Ford F150 2004 and Newer 4x2 & 4x4 Front Cam Bolt Kit

General Information: The front suspension is an independent SLA suspension. The lower control arm attachment brackets are elongated from the factory and hold the lower control arm in place using standard production bolts.

Installation Instructions:

1. Perform pre-alignment check in normal manner.
2. Install alignment equipment and record readings.
3. Raise the front of the vehicle under the frame rails for ease of movement of the lower control arm in its frame slots and support. **(See Fig. 1)**

> **Warning: Raise vehicle enough to take the tension off the lower control arm. (Control arms neutral position.) Wheels will not be completely raised but will have approximately two tread widths contacting turn plates.** *Attempting to adjust cams with weight on vehicle may result in damage to plate or cam.*

4. Loosen the LH and RH stabilizer bar-to-frame bracket and support out of the way. **(See Fig.2)**
5. With vehicle raised so that control arm are in the neutral position remove the factories lower control arm bolts and nut one at a time and discard.
6. Install cam bolt kit and nut, snug the nut but do not tighten at this time.

Note: Cam bolts are installed in reverse direction from OE bolts. (See Fig.3)

7. Repeat this process to install the rest of the kit.
8. Watching your alignment readings, adjust Camber /Caster to manufacturer's specification by turning cam until needed adjustment is achieved.

> **Warning: Adjustment cam is not designed to turn 360 degree. Damage to the plate or cam may result.**

9. Torque both control arm pivot bolts to 300 N.M (222 lb-ft.)
10. Proceed with alignment and road test vehicle.

FIG.1

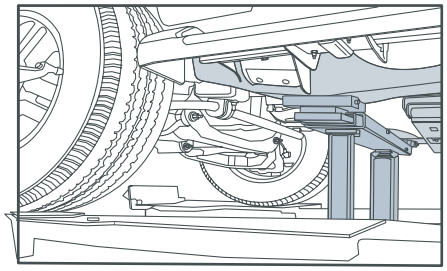


FIG.2

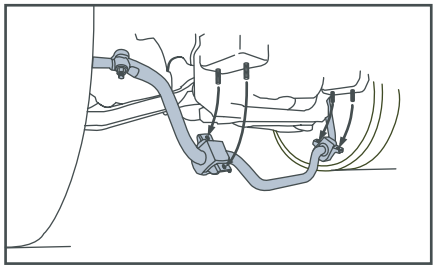
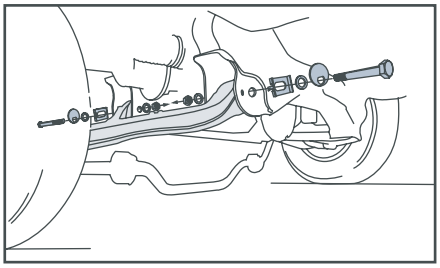
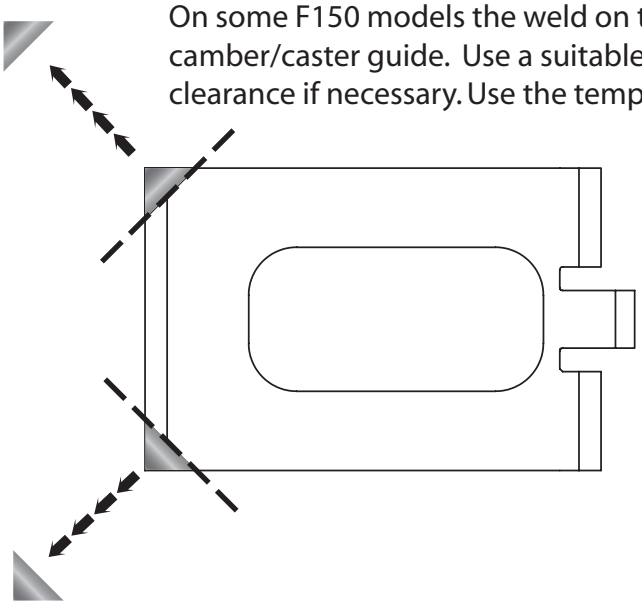
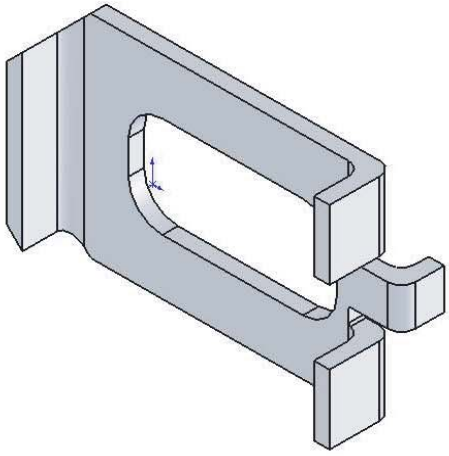


FIG .3



On some F150 models the weld on the frame of the truck could get in the way of the camber/caster guide. Use a suitable device to remove a corner of the guide to make clearance if necessary. Use the template below for a reference.





Ford 2004 and Newer 4x2 & 4x4 Front Cam Bolt Kit

General Information: The front suspension is an independent SLA suspension. The lower control arm attachment brackets are elongated from the factory and hold the lower control arm in place using standard production bolts.

Installation Instructions:

1. Perform pre-alignment check in normal manner.
2. Install alignment equipment and record readings.
3. Raise the front of the vehicle under the frame rails for ease of movement of the lower control arm in its frame slots and support. **(See Fig. 1)**

> **Warning: Raise vehicle enough to take the tension off the lower control arm. (Control arms neutral position.) Wheels will not be completely raised but will have approximately two tread widths contacting turn plates.** *Attempting to adjust cams with weight on vehicle may result in damage to plate or cam.*

4. Loosen the LH and RH stabilizer bar-to-frame bracket and support out of the way. **(See Fig.2)**
5. With vehicle raised so that control arm are in the neutral position remove the factories lower control arm bolts and nut one at a time and discard.
6. Install cam bolt kit and nut, snug the nut but do not tighten at this time.

Note: Cam bolts are installed in reverse direction from OE bolts and the longer bolt goes to the front of the vehicle (See Fig.3)

7. Repeat this process to install the rest of the kit.
8. Watching your alignment readings, adjust Camber /Caster to manufacturer's specification by turning cam until needed adjustment is achieved.

> **Warning: Adjustment cam is not designed to turn 360 degree. Damage to the plate or cam may result.**

9. Torque both control arm pivot bolts to 300 N.M (222 lb-ft.)
10. Proceed with alignment and road test vehicle.

FIG.1

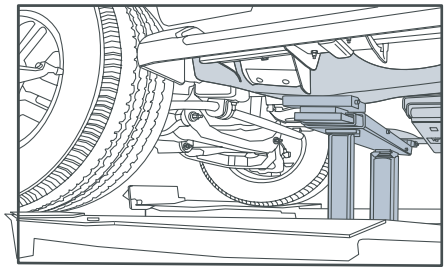


FIG.2

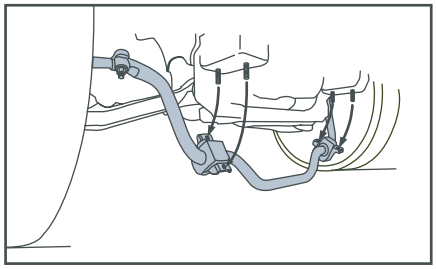
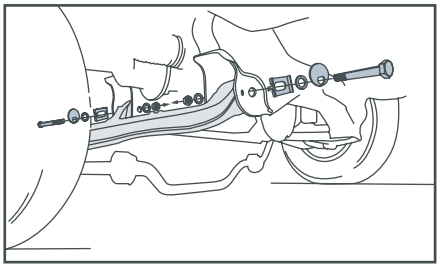
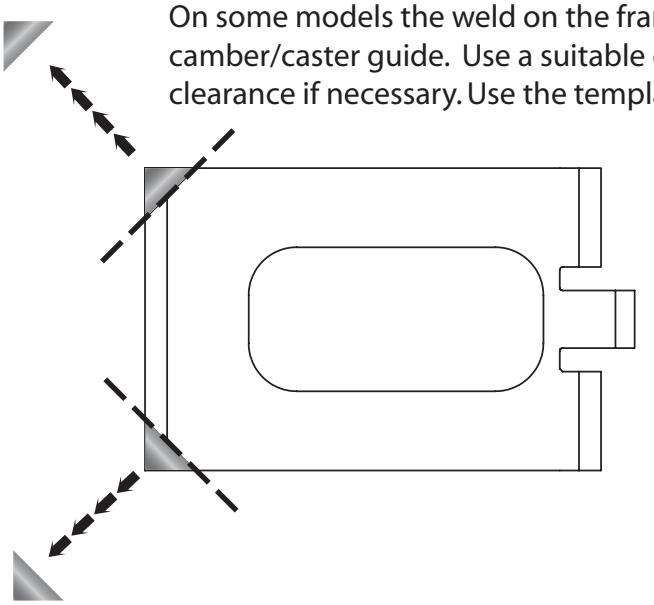
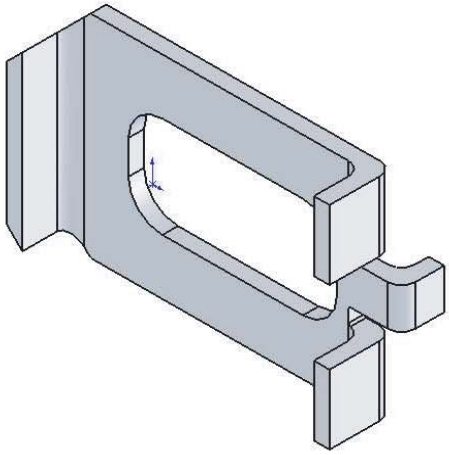


FIG .3



On some models the weld on the frame of the truck could get in the way of the camber/caster guide. Use a suitable device to remove a corner of the guide to make clearance if necessary. Use the template below for a reference.





Instructions for Ford F-150/Expedition Front Caster/Camber Kit

1. Before beginning any alignment always check for loose or worn parts, tire pressure, and odd tire wear patterns.

2. Raise and support the front of the vehicle by lifting on the frame rail to unload the front suspension.

3. Remove nut from lower control arm bolt. (Do not remove bolt.)

4. Mount cam shoulder plate pin in existing small hole in frame and over bolt end then install eccentric cam nut by threading bolt into nut.

5. Install each kit so the eccentric cam nut threaded hole is toward the center of the vehicle. (Most positive camber position of the wheel) and tighten slightly.

6. Repeat steps 3, 4 & 5 for each lower control arm bolt.

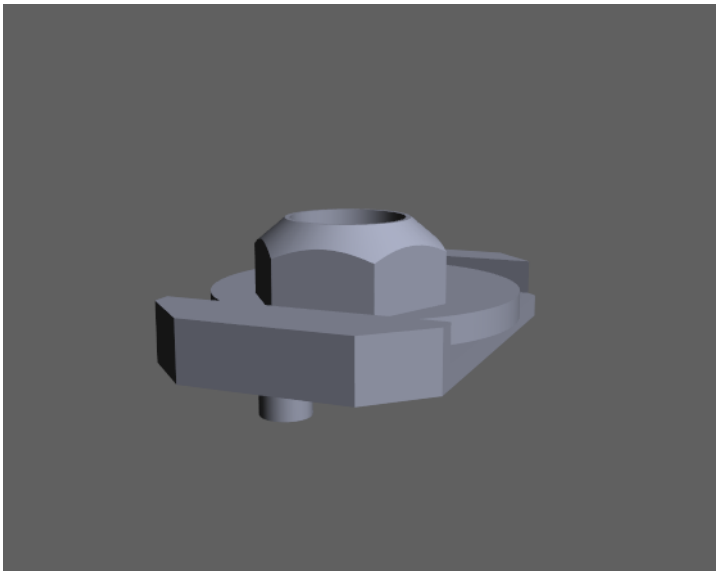
7. Lower vehicle and adjust camber and caster by rotating hex on cam nut.

Note: If cam bolt and washer start to bind while rotating, it may be necessary to raise vehicle by the frame to unload the suspension and start with the cam bolt positioned for the most positive camber.

8. Torque cam bolt nut to 240-260 lb/ft. Make sure suspension is loaded before tightening.

9. Adjust toe, recheck alignment and road-test vehicle.

Always check for proper clearance between suspension components and other components of the vehicle.



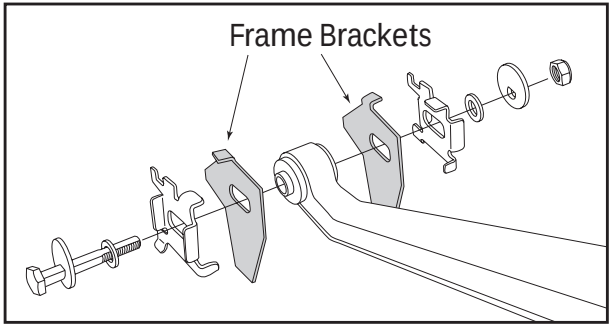
INSTALLATION INSTRUCTIONS FOR

FRONT CAMBER/CASTER KIT

2002 AND UP DODGE 1500 4WD AND 2WD

This kit is designed to be installed on the front upper control arm frame brackets.

1. Perform pre-alignment checks in a normal manner.
2. Hook-up alignment equipment, record readings.
3. Support truck by the lower control arms.
4. Work on one control arm frame bracket at a time. Remove existing control arm pivot bolt and discard.
5. Mount kit brackets on either side of control arm frame bracket with the tabs locking into place and flush along the frame rail. Each bracket has either an L or R stamp on it to designate which side the Kit bracket is to be mounted.



6. Install supplied bolt by having one eccentric cam on the head of the bolt and one small washer towards the bolt thread. Slide bolt through frame bracket and control arm bushing then install a second small washer, eccentric cam and nut. **(See Illustration)**
7. Set cams in neutral position and tighten nut. Also make sure both Kit brackets are flush against frame brackets.
8. Repeat procedure for remaining upper OE control arm frame brackets on both sides of vehicle.
9. Install alignment equipment loosen and rotate bolt, adjust alignment to required settings.
10. Always check for proper clearances between all components on the vehicle.
11. Torque nut to 85ft. lbs. Set toe and road test vehicle.

Form# 95-204-0303
44-792

CAMBER/CASTER BOLT KIT INSTALLATION INSTRUCTIONS

THIS KIT REPLACES THE PLAIN FACTORY BOLTS WITH CAMBOLTS TO ALLOW ACCURATE ADJUSTMENT OF CAMBER AND CASTER ON THESE VEHICLES.

1) Check vehicle for bent, worn or loose components and repair as necessary.
2) Check alignment and determine front camber and caster changes required. Determine whether both left and right wheels need adjustment, or one side will be sufficient.
3) Lift front of vehicle so suspension hangs freely and bolts holding rack and pinion assembly can be accessed. Support safely.
4) Remove lower covers to allow access to lower control arm pivot bolts and rack and pinion mounting bolts.
5) Remove lower electrical connector from rack and pinion.
6) Remove three mounting bolts and nuts from rack and pinion assembly.
7) Remove pivot bolts and nuts from one or both lower control arms. When removing bolt for rear of left control arm, the rack and pinion assembly will need to be pried backward to obtain adequate clearance. Use care in this procedure. **(See Figure 1)**

NOTE: Some of these vehicles have identical length bolts at the front and rear of the control arms, and some have longer bolts at the front. Our cambolt fits both designs.

8) Place one cam next to head of replacement bolt. Install this assembly through subframe and inner pivot of lower control arm. Place another cam on the bolt, followed by a lockwasher and a nut. Place both cams in a neutral position with the large part of the cam facing up. Snug nut. All bolts will be installed with the nuts toward the front of the vehicle. **(See Figure 2)**
9) Repeat step 8 in one or three bolt positions, depending on whether one or both front wheels need to be realigned.
10) Reinstall rack and pinion to crossmember. Torque fasteners to factory specification.
11) Reinstall electrical connector removed in step 5.
12) Lower vehicle to alignment rack. Reinstall and recompensate alignment sensors as required. Determine camber and caster changes required.
13) Using alignment equipment manufacturer's recommended procedure, adjust camber and caster.
14) Remeasure caster to verify proper readings.
15) Torque nuts on cambolts to 150 ft. lb. (200 N. m.)
16) Replace covers removed in step 4.
17) Complete alignment and road test vehicle.

Figure No. 1

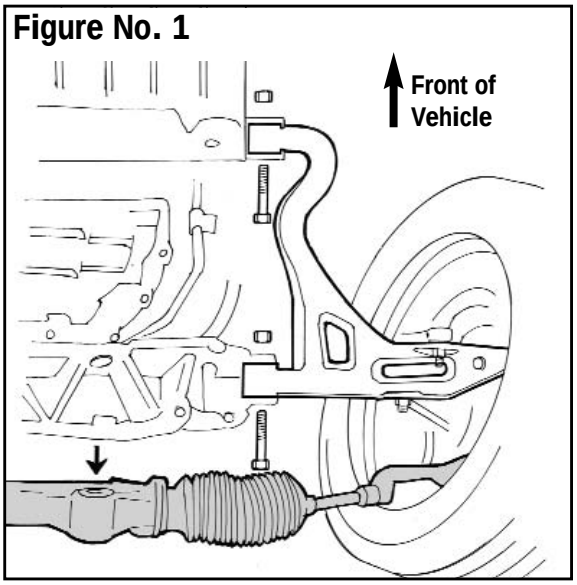
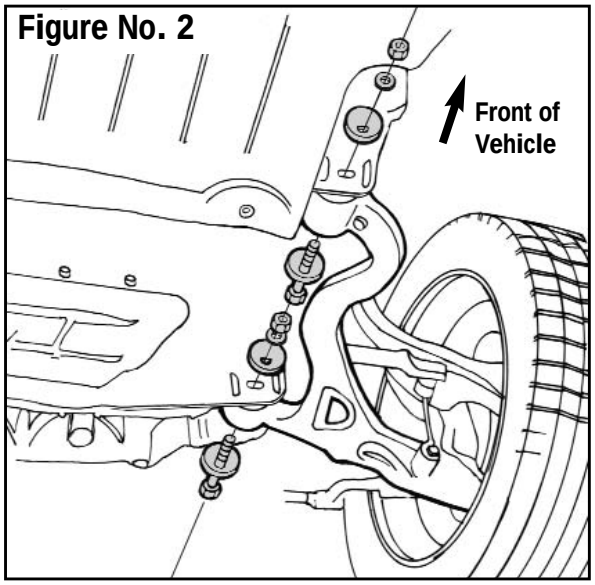


Figure No. 2



MODE D'EMPLOI SPECIAL

- INSTRUCTIONS D'INSTALLATION -

Nécessaire de réglage du carrossage pour les modèles à essieux « monobeam » 60 4 x 4 Dana

1. Soulevez les roues avant du véhicule d'une façon sûre et enlevez-les.

2. Retirez et jetez l'ensemble pivot/plaque d'appui inférieur monté en usine en faisant levier et en tapotant d'un côté à l'autre avec un maillet (voyez l'illustration nº 1).
3. Installez le nouvel ensemble de pivot (1A) dans l'articulation (voyez l'illustration nº 2).

4. Placez l'appui-tube (2A) sur l'ensemble de pivot, l'élongation ovale parallèle au tube de l'essieu.

5. Glissez la plaque d'appui (3A) sur l'ensemble de pivot (le renfoncement pour la came orienté vers le bas et la flèche pointant vers le pneu) et appuyez-les contre le bas de l'articulation de direction. Engagez les quatre boulons de la plaque d'appui, puis placez la rondelle de came (4A) sur la plaque d'appui, installez la rondelle grower (5A) et le gros écrou de 5/8 po (6A) et serrez-le à la main - la rondelle de came sur la plaque d'appui.

6. Serrez les quatre boulons de la plaque d'appui à un couple de 95 à 122 Nm (70 à 90 lb/pi).

7. En vous servant d'une clé polygonale de 1/2 po, réglez le boulon du pivot au carrossage désiré. REMARQUE : Le réglage devrait être effectué avec le véhicule soulevé.

8. Tout en maintenant le boulon du pivot en place à l'aide de la clé de 1/2 po, serrez le gros écrou de 5/8 po à un couple de 108 à 136 Nm (80 à 100 lb/pi).

9. Installez le graisseur et graissez l'unité.

10. Abaissez le véhicule.

11. Essayez le véhicule sur la route.

ILLUSTRATION Nº 1 - Couvercle inférieur du pivot de direction

ILLUSTRATION Nº 2

Boulon du pivot (1A)

Suite a Verso

INSTRUCCIONES EXPECIALES

-INSTRUCCIONES DE INSTALACIÓN-

Conjunto de ajuste de camber para el Modelo Dana 60 4 x 4 de ejes Monobeam

1. Eleve las ruedas delanteras del vehículo de manera segura y remueva las ruedas.
2. Remueva y deshágase del ensamble de pivote de dirección/placa de base inferior de fábrica palanqueándolo y golpeándolo de lado a lado con un martillo liviano (vea la ilustración # 1).
3. Instale el ensamble de pivote de dirección nuevo (1A) en el codillo. (vea la ilustración # 2).
4. Coloque el soporte del tubo (2A) sobre el ensamble de pivote de dirección con el alargamiento ovalado paralelo al tubo del eje.
5. Deslice la placa de base (3A) sobre el ensamble de pivote de dirección (con el rebajo de leva de cara hacia abajo y la flecha apuntando hacia la llanta) y contra el codillo de dirección. Inicie los cuatro tornillos de la placa de base y luego coloque la arandela de leva (4A) sobre la placa de base, instale la arandela de seguridad (5A) y la tuerca grande de 5/8" (6A) y apriétela con los dedos - arandela de leva sobre la placa de base.
6. Apriete los cuatro tornillos de la placa de base a una torsión de 95 a 122 Nm (70 a 90 lbs. pie).
7. Usando una llave de vaso de 1/2", ajuste el perno del pivote de dirección al ajuste de camber deseado. NOTA: El ajuste deberá ser efectuado con el vehículo levantado.
8. Manteniendo el perno del pivote de dirección en su lugar con una llave de 1/2", apriete la tuerca grande de 5/8" a una torsión de 108 a 136 Nm (80 a 100 lbs. pie).
9. Instale la grasera y engrase la unidad.
10. Baje el vehículo.
11. Pruébelo en la carretera.

Perno del pivote de dirección (1A)
Soporte del tubo (2A)
Placa de base (3A)
Arandela de leva (4A)
Arandela de Seguridad (5A)
Tuerca de 5/8" (6A)
La flecha apunta hacia la rueda

Contin'ua al doso

SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTION

Camber adjusting kit for Dana model 60 4 x 4 Monobeam axles

1.) Suspend vehicle front wheels in a safe manner and remove the tire/wheel assembly.
2.) Remove and discard factory lower base plate/king pin assembly by prying and tapping side to side with light hammer (see illustration #1).
3.) Install new king pin assembly (1A) into knuckle. (see illustration #2).
4.) Place tube support (2A) over king pin assembly with the oval elongation parallel to axle tube.
5.) Slide base plate (3A) onto king pin assembly (with cam recess facing down and arrow pointing towards tire) and butt up against bottom of steering knuckle. Start all four base plate bolts, then place cam washer (4A) on to base plate - install lock washer (5A) and large 5/8" nut (6A) and finger tighten - cam washer onto base plate.
6.) Torque all four base plate bolts to specifications (70-90 ft lbs 95 - 122 MM).
7.) Using a 1/2" box end wrench, adjust king pin stud to desired camber setting. NOTE: Adjustment should be made with vehicle in the raised position.
8.) Holding king pin sturd in place with a 1/2" wrench, torque 5/8" large nut to specifications
(80-100 ft lbs. 108-136 MM).
9.) Install grease fitting and grease unit.
10.) Lower vehicle.
11.) Road test.

Continued on other side

Form # 23083

(Suite)

Appui-tube (2A)

Plaque d'appui (3A)

Rondelle de came (4A)

Rondelle grower (5A)

Écrou de 5/8 po (6A)

La flèche pointe vers la roue.

(Contin'ua)

(Continued)

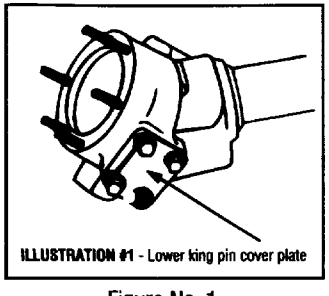


ILLUSTRATION #1 - Lower king pin cover plate

Figure No. 1

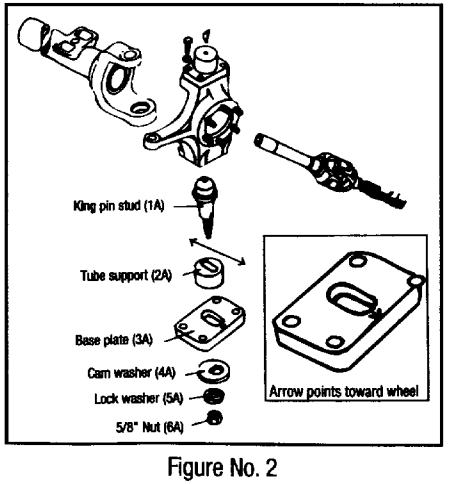


Figure No. 2

MODE D'EMPLOI SPECIAL

Instructions
Bagues pour l'essieu de 4 x 4 Dana de taille complète

1. Effectuez un contrôle avant la géométrie pour découvrir si des pièces sont usées ou endommagées et réparez-les au besoin. Important : Si la géométrie du véhicule a été réglée auparavant à l'aide d'une bague décentrée, une bague de zéro degré du type de l'équipement d'origine doit être installée avant de prendre des mesures de géométrie.

2. Choisissez la bague de la taille nécessaire à partir du tableau afin de réaliser la correction requise.
3. Enlevez la bague taraudée de l'équipement d'origine en retirant tout d'abord la clavette fendue et en desserrant l'écrou de la rotule supérieure jusqu'à la fin du filetage. Desserrez aussi l'écrou de la rotule inférieure jusqu'à l'extrémité du filetage. Puis frappez l'articulation d'un coup sec pour séparer le cône du boulon de rotule de la bague taraudée et la rotule inférieure de l'articulation.

4. Retirez l'écrou de la rotule supérieure, séparez le cône du boulon de rotule de la bague de l'équipement d'origine et servez-vous d'une douille à quatre ergots pour déposer la bague taraudée de l'équipement d'origine de l'articulation.

5. Installez un nouveau manchon taraudé dans l'articulation JUSQU'À CE QU'IL SOIT À RAS (NE LE VISSEZ PAS PLUS DE 1/4 DE TOUR APRÈS QU'IL SOIT À RAS). Insérez alors le collier interne décentré à tête hexagonale dans le manchon taraudé. Positionnez l'encoche en accord avec l'information contenue dans le tableau pour obtenir les changements choisis.

6. Serrez la rotule inférieure à un couple d'environ 40 lb/pi. Installez l'écrou de la rotule supérieure et serrez-le au couple spécifié. Serrez l'écrou inférieur au couple complet spécifié. REMARQUE : Frappez l'articulation d'un coup sec à l'aide d'un marteau et serrez-la à nouveau au couple. Répétez ceci une deuxième fois. (Ceci est effectué afin d'asseoir proprement le boulon à tête sphérique dans la bague et de garantir qu'il ne se produira aucun coincement.) Installez une nouvelle clavette fendue dans l'écrou de la rotule supérieure.

7. Répétez le processus sur l'autre roue avant, si besoin est. Ajustez la convergence ou le pincement selon les spécifications du fabricant et testez le véhicule sur la route.

Numéro de bague — Changement total de degrés

Suite a Verso

INSTRUCCIONES EXPECIALES

Instrucciones
Bujes para el Dana 4 x 4 de Tamaño Completo

1. a cabo una comprobación de prealineamiento para ver si hay piezas desgastadas o dañadas y efectúe las reparaciones necesarias. Importante: Si el vehículo fue alineado previamente usando un buje descentrado, se deberá instalar un buje del estilo de Equipo Original de cero grados, antes de tomar las lecturas de alineamiento.

2. Seleccione del cuadro el buje del tamaño apropiado para efectuar la corrección necesaria.

3. Remueva el buje con rosca de Equipo Original removiendo primero la llave de chaveta y aflojando la tuerca de la rótula superior hasta el final de los hilos de rosca. También afloje la tuerca de la rótula inferior hasta el final de los hilos de rosca. Luego golpee vigorosamente el ensamble del codillo para separar las conicidades entre la rótula y el buje roscado y entre la rótula inferior y el codillo.

4. Remueva la tuerca de la rótula superior, separe la conicidad entre el perno de rótula y el buje de Equipo Original y use un dado de cuatro puntas para remover del codillo el buje roscado de Equipo Original.

5. Instale la manga roscada nueva dentro del codillo HASTA QUE QUEDE A RAS. (NO LO ENROSQUE MÁS DE 1/4 DE VUELTA DESPUÉS DE QUE ESTÉ A RAS). A continuación, inserte el collarín interior descentrado de cabeza hexagonal dentro de la manga roscada. Coloque la ranura en posición de acuerdo con el cuadro para obtener los cambios seleccionados.

6. Apriete la rótula inferior a una torsión de 40 lbs. pie. Instale la tuerca de la rótula superior y apriétela de acuerdo a las especificaciones. Apriete la tuerca inferior a la torsión completa indicada en las especificaciones. NOTA: Golpee vigorosamente el ensamble de codillo con un martillo y volver a apretarlo a la torsión de acuerdo con las especificaciones. Repita una segunda vez. (Esto se hace con el fin de asentar apropiadamente el perno de rótula dentro del buje y para asegurarse de que no ocurrirá ningún rozamiento). Instale una llave de chaveta nueva en la tuerca de la rótula superior.

7. Repita el proceso en la otra rueda delantera, si es necesario. Ajuste la convergencia de acuerdo con las especificaciones del fabricante y pruebe el vehículo en la carretera.

Número de Buje — Cambio Total en Grados

Delantera Izquierda — Delantera Derecha

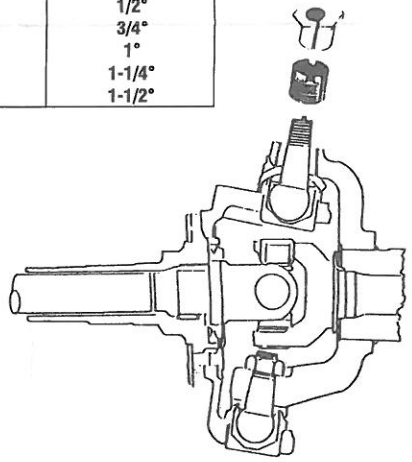
Contin'ua al doso

SPECIAL INSTRUCTIONS

Instructions
Full-Size Dana Axle 4x4 Bushings

1. Perform a pre-alignment check for worn or damaged parts and repairs as needed. **Important:** If the vehicle has been previously aligned using an offset bushing, an O.E. style zero degree bushing must be installed prior to recording alignment readings.
2. Select the proper bushing size from the chart to make the correction needed.
3. Remove the O.E. threaded busing by first removing the cotter key and loosening the upper ball joint nut to the end of the threads. Also loose the lower ball joint nut to the end of the threads. Then strike the knuckle assembly sharply to separate the taper of the ball joint to the threaded bushing and the lower ball joint to the knuckle.
4. Remove the upper ball joint nut, *separate the taper of the ball* joint stud to the O.E. bushing, and use a four-pronged spanner socket to remove the O.E. Threaded bushing from the knuckle.
5. Install the new threaded sleeve into the knuckle **UNTIL FLUSH (DO TO THREAD MORE THAN 1/4 TURN BEYOND FLUSH).** Next insert the hex head off-set inner collar into the threaded sleeve. Position the slot according to the chart to obtain the selected changes.
6. Torque the lower ball joint to approximately 40 ft. lbs. Install the upper ball joint nut and torque to specifications. Torque the lower nut to full torque specifications. **NOTE:** Strike knuckle assembly sharply with hammer and retorque. Repeat a second time. (This is done to properly seat ball stud into bushing and to insure no binding will occur.) Install new cotter key in upper ball joint nut.
7. Repeat the process on the other front wheel if necessary. Adjust toe to manufacturer's specifications and road test the vehicle.

Bushing Number	Total Degree Change
A	1/4°
B	1/2°
C	3/4°
D	1°
E	1-1/4°
F	1-1/2°



Continued on other side

Form # 23079

(Suite)

(Contin'ua)

(NOTA: LOS EJEMPLOS DE ARRIBA INDICAN LA RANURA EN LA POSICIÓN No. 3)

POSICIÓN DE LA RANURA DEL BUJE

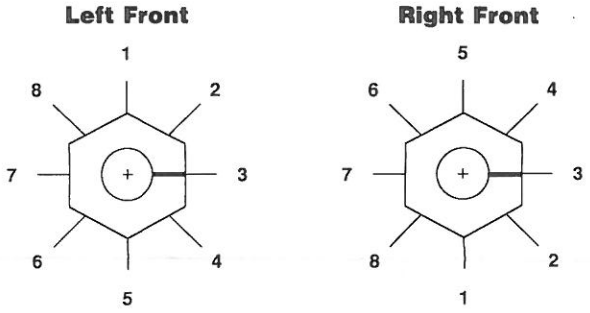
Tamaño del Buje Posición del Buje

(Vertical) TAMAÑO DEL BUJE

Camber Caster

NOTA: Los bujes pueden ser ajustados a precisión colocándolos en la posición más cercana mostrada en el cuadro y girándolos en cualquier dirección hasta alcanzar el ajuste exacto.

(Continued)



(NOTE: ABOVE EXAMPLES SHOW SLOT POSITION AT NO. 3)

(NOTE: ABOVE EXAMPLES SHOW SLOT POSITION AT NO. 3)

BUSHING SLOT POSITION

BUSHING SIZE	Bushing Size	Bushing Position 1	2	3	4	5	6	7	8
	1/4°	+1/4° Camber 0° Caster	+3/16° Camber −3/16° Caster	0° Camber −1/4° Caster	−3/16° Camber −3/16° Caster	−1/4° Camber 0° Caster	−3/116° Camber +3/16° Caster	0° Camber +1/4° Caster	+5/16° Camber +3/16° Caster
	1/2°	+1/2° Camber 0° Caster	+3/8° Camber −3/8° Caster	0° Camber −1/2° Caster	−3/8° Camber −3/8° Caster	−1/2° Camber 0° Caster	−3/8° Camber +3/8° Caster	0° Camber +1/2° Caster	+3/8° Camber +3/8° Caster
	3/4°	+3/4° Camber 0° Caster	+1/2° Camber −1/2° Caster	0° Camber −3/4° Caster	−1/2° Camber −1/2° Caster	−3/4° Camber 0° Caster	−1/2° Camber +1/2° Caster	0° Camber +3/4° Caster	+1/2° Camber +1/2° Caster
	1°	+1° Camber 0° Caster	+11/16° Camber −11/16° Caster	0° Camber -1° Caster	−11/16° Camber −11/16° Caster	-1° Camber 0° Caster	−11/16° Camber +11/16° Caster	0° Camber +1° Caster	+11/16° Camber +1/16° Caster
	1-1/4°	+1-1/4° Camber 0° Caster	+7/8° Camber −7/8° Caster	0° Camber 1-1/4° Caster	−7/8° Camber −7/8° Caster	−1-1/4° Camber 0° Caster	−7/8° Camber +7/8° Caster	0° Camber +1-1/4° Caster	+7/8° Camber +7/8° Caster
	1-1/2°	+1-1/2° Camber 0° Caster	+1-1/8° Camber −1-1/8° Caster	0° Camber −1-1/2° Caster	−1-1/8° Camber −1-1/8° Caster	−1-1/2 Camber 0° Caster	−1-1/8° Camber +1-1/8° Caster	0° Camber +1-1/2° Caster	+1-1/8° Camber +1-1/8° Caster

NOTE: Bushings can be fine tuned by placing bushing in closest position shown on chart and than rotating in either direction to achieve exact setting.

WARNING

JEEPS USE A UNIQUE STYLE UPPER BALL JOINT ON THEIR DOWN SIZED MODELS. THE UPPER BALL JOINT HAS APPROXIMATELY .300" OF ALLOWABLE FREE PLAY. THE FOLLOWING INSTRUCTIONS MUST BE FOLLOWED IN EXACTLY THE ORDER SHOWN SO PROPER SEATING OF THE NEW BUSHING ASSEMBLY TAKES PLACE. FAILURE TO PROPERLY SEAT THE NEW BUSHING ASSEMBLY WILL RESULT IN LOOSENESS AND EXCESSIVE TIRE WEAR!

1. Perform a pre-alignment check for worn or damaged parts and repair as needed. **IMPORTANT: IF THE VEHICLE HAS BEEN PREVIOUSLY ALIGNED USING AN OFFSET BUSHING, IT IS ADVISABLE AN OE STYLE ZERO DEGREE BUSHING BE INSTALLED PRIOR TO RECORDING ALIGNMENT READINGS.**

2. Select the proper bushing size to make the correction needed.

3. Remove the OE threaded bushing by first removing the cotter key and removing the lower ball joint nut. Strike the knuckle assembly sharply to separate the taper of the lower ball joint to the threaded bushing.

4. Use a four-pronged spanner socket to remove the OE threaded bushing from the lower portion of the knuckle and discard. **NOTE: JEEP USES A UNIQUE STYLE UPPER BALL JOINT ON THEIR DOWN SIZED MODELS. THE BALL JOINT HAS ALLOWABLE UPWARD AND DOWNWARD MOVEMENT.**

5. Drive spindle assembly downward to extend maximum upper ball joint travel. **(See figure 1)**

6. **INSTALL THE NEW THREADED SLEEVE UNTIL FLUSH, (Do not thread more than 1/8 turn beyond flush)** and insert the hex head offset collar into the threaded sleeve. **(See figure 2.) For bushing position, to achieve positive or negative camber change, refer to Figure 3. NOTE:** OUR NEW BUSHING ASSEMBLY HAS A POSITIVE LOCKING FEATURE WHICH ALLOWS THE SMOOTH TAPERED BUSHING TO **SNAP** INTO THE THREADED SLEEVE WHEN PROPERLY INSTALLED — THIS LOCKS THE 2 PIECES TOGETHER AND PREVENTS ANY UP AND DOWN MOVEMENT FROM TAKING PLACE.

7. Tap upward on collar to fully seat it into sleeve. Install lower ball stud nut hand tight only.

8. Either remove grease fitting from upper ball joint or protect fitting by placement of a large nut or socket over it, and position a six inch C-clamp between the top of the upper ball joint and the ball joint stud nut **(See Figure 4.)** Tighten the C-clamp until knuckle assembly is flush with axle yoke **(See Figure 4) NOTE: THE ABOVE PROCEDURE TO CORRECTLY POSITION THE UPPER BALL JOINT IS CRITICAL. BY FOLLOWING THIS PROCEDURE YOU WILL ELIMINATE THE POTENTIAL SHIFTING OF THE ALIGNMENT BUSHING AFTER ALIGNMENT IS COMPLETED.**

9. Again, tap upward on collar of offset bushing to be sure it is fully seated into the threaded sleeve. There could be a slight gap between the lower knuckle and the head of the offset bushing collar (1/32" - .03125 or less) after collar is in locked position. If the clearance is excessive, tighten the C-clamp you installed in step 8, and again tap the bushing upward to correctly seat it.

10. When installing the ball joint stud nut, it is recommended that the top of the nut be sprayed with a light lubricant.

11. Torque the lower ball joint stud nut to 75-80 ft. lbs., and remove C-clamp. Adjust toe to manufacturers specifications and road test vehicle.

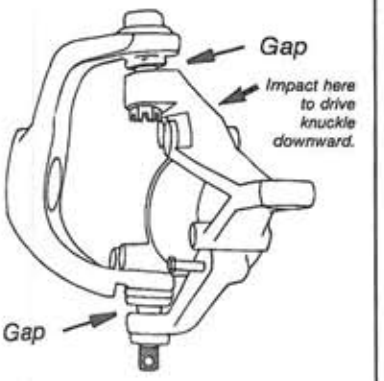


Figure 1

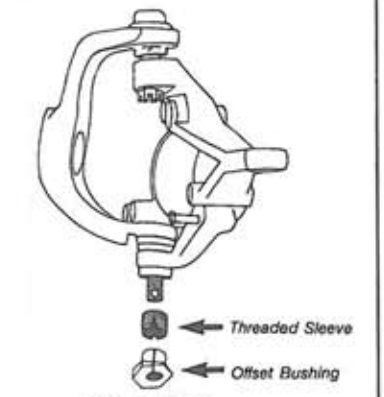


Figure 2

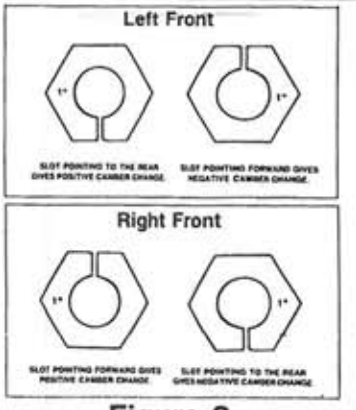


Figure 3

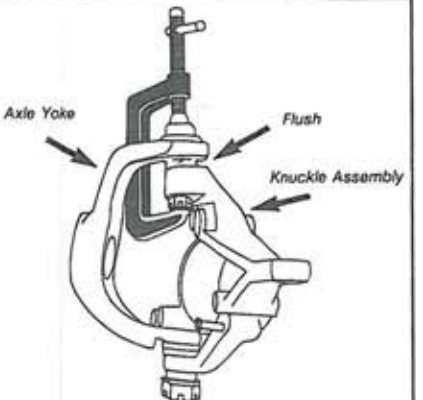


Figure 4

JEEP ADJUSTABLE BALL JOINT

*Instructions for **combination caster/camber** adjustment*

1)..... Check for worn or damaged parts, determine amount of camber and/or caster change needed.
2)..... Raise and support vehicle by frame rails, just behind lower suspension arms.
3)..... Remove wheel, brake caliper and rotor. Support caliper.
4)..... Using 13mm, 12 point socket, remove three hub and bearing bolts from back side of knuckle.
5)..... Use slide hammer to loosen hub.
Remove hub/bearing/axle assembly as a unit **(Fig. 2)** using care not to damage inner axle seal.
6)..... Break tapers at ball joints and remove knuckle. Support knuckle and ABS wiring, if so equipped.
7)..... Press out lower ball joint using press and **optional adapter set** or equivalent. **(Fig. 3)**
8)..... Before installing new adjustable ball joint;
Align the strikemarks on the bottom of the ball stud 180 degrees from the strikemark an the ball joint housing. *Be sure these marks stay in this position during installation.*
9)..... To make a combination change, first determine if **camber** is to be **increased** or **decreased** and find proper chart **(Figs. 4A & 4B)**. Next, choose amount of **caster** change desired from appropriate chart and locate proper column (driver's side or passenger's side) and determine setting number from chart. This setting number will correspond to numbers on the template furnished with ball joint.
Example:....(Passenger Side)
Camber correction is to be positive (+)
-3/4° caster adjustment is needed
=Adjustment No. 6
10)..... Place paper template on axle yoke with arrows pointed directly outward toward wheel.
Place the offeset ball joint in the correct position by aligning the stamped "V" notch mark on the ball joint housing with the chosen adjustment number on the template. **(Fig. 5)**
11)..... Press ball joint part way in and recheck position of "V" notch mark,
press in ball joint until fully seated and install boot
12)..... Reposition knuckle onto ball joints and install & tighten upper nut (75 ft/lbs). *Do not install lower nut at this time*
13)..... Reinstall hub/bearing/axle assembly using care not to damage inner axle seal.
14)..... Reinstall hub bolts (75 ft/lbs), rotor, caliper and wheel.
15)..... Install and compensate alignment equipment then gently lower vehicle.
16)..... To adjust camber, insert "cotter key puller" or "scratch awl" into cotter key hole and rotate ball stud according to illustration below.
17)..... Jounce vehicle to initially seat ball stud into steering knuckle, install lower nut and torque to 80 ft/lbs.
18)..... Recheck caster/camber readings, adjust toe and road test.

Fig. 2

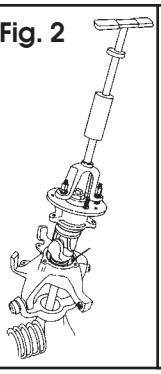


Fig. 3

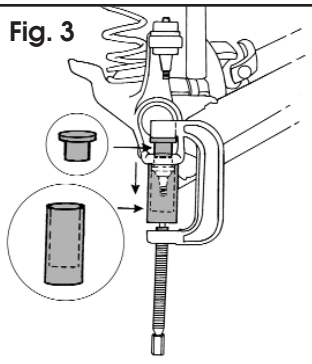


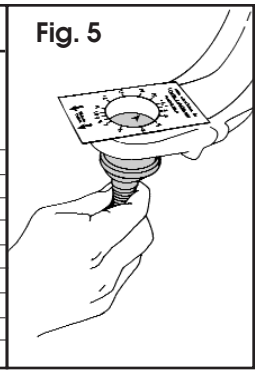
Fig. 4A Caster Adjustment chart for camber increase (+)

Driver,s side caster Adj. needed	Setting	Pass. side caster Adj. needed
+1°	5	-1°
+3/4°	6	-3/4°
+1/2°	7	-1/2°
+1/4°	8	-1/4°
0°	9	0°
-1/4°	10	+1/4°
-1/2°	11	+1/2°
-3/4°	12	+3/4°
-1°	13	+1°

Fig. 4B Caster Adjustment chart for camber decrease (-)

Driver's side caster Adj. needed	Setting	Pass. side caster Adj. needed
+1°	5	-1°
+3/4°	6	-3/4°
+1/2°	7	-1/2°
+1/4°	8	-1/4°
0°	9	0°
-1/4°	10	+1/4°
-1/2°	11	+1/2°
-3/4°	12	+3/4°
-1°	13	+1°

Fig. 5



Caution!

On some models, using this adjustable balljoint to adjust camber over 1.5 degrees **positive,** may cause interference between the knuckle and the lower ball joint yoke.

REV. 1-95-155-0499

JEEP ADJUSTABLE BALL JOINT

*Instructions for **camber only** adjustment*

1)..... Check for worn or damaged parts, determine amount of camber and/or caster needed.
2)..... Raise and support vehicle by frame rails, just behind lower suspension arms.
3)..... Remove wheel, remove and support brake caliper, remove rotor.
4)..... Using 13mm, 12 point socket, remove three hub and bearing bolts from back side of knuckle.
5)..... Use slide hammer to loosen hub.
Remove hub/bearing/axle assembly as a unit **(Fig. 1)** using care not to damage inner axle seal.
6)..... Break tapers at ball joints and remove knuckle. Support knuckle and ABS wiring, if so equipped.
7)..... Press out lower ball joint using press and **optional adapter set** or equivilant. **(Fig. 2)**
8)..... Press in offset ball joint with stamped "V" notch on ball joint base pointing towards the wheel for positive (+) camber - or toward the engine for negative (-) camber
9)..... Reposition knuckle onto ball joints and install & tighten upper nut. (75 ft/lbs)
-Do not install lower nut at this time-
10)..... Reinstall hub/bearing/axle assembly using care not to damage inner axle seal.
11)..... Reinstall hub bolts (75 ft/lbs), rotor, caliper and wheel.
12)..... Install and compensate alignment equipment then gently lower vehicle.
13)..... Insert "cotter key puller" or "scratch awl" into cotter key hole.
Rotate ball stud to adjust camber as needed.
14)..... Jounce vehicle to initially seat ball stud into steering knuckle, install lower nut and torque to 80 ft/lbs.
15)..... Recheck camber readings, adjust toe and road test.

Fig. 1

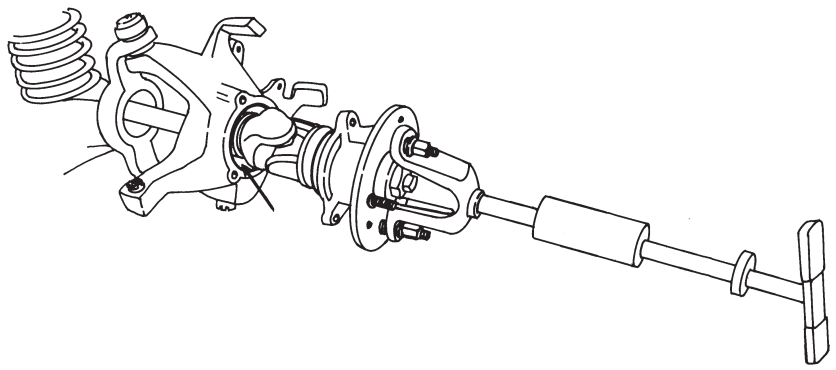
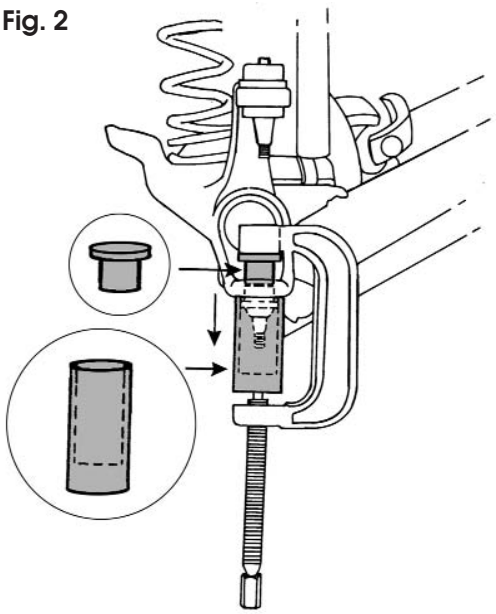


Fig. 2



Caution!

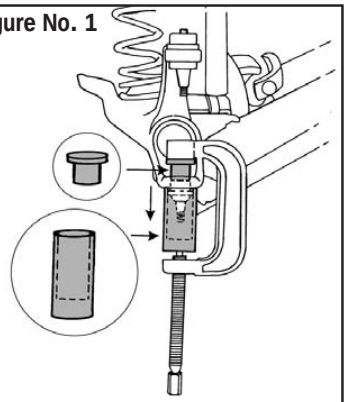
On some models, using this adjustable balljoint to adjust camber over 1.5 degrees **positive,** may cause interference between the knuckle and the lower ball joint yoke.

DODGE RAM 4 X 4 ADJUSTABLE BALL JOINT
Instructions for combination CAMBER/CASTER adjustment

1) Check vehicle for bent, worn or loose components and repair as necessary.
2) Check alignment and determine camber and caster changes required.
3) Lift vehicle so suspension hangs freely. Support safely

NOTE: Lift vehicle high enough to allow ball joint press to function on lower ball joint. **(See Figure No. 1).**

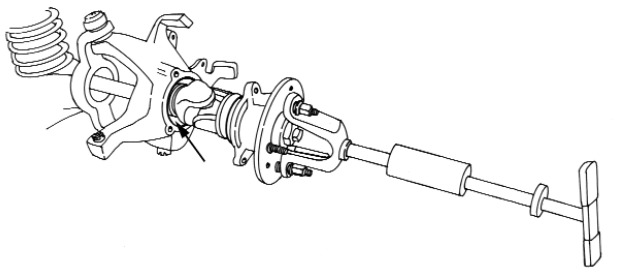
Figure No. 1



BALL JOINT REMOVAL

4) Remove wheel assembly and brake caliper. Support caliper. Place chalk marks on the hub and rotor to insure proper reassembly. Remove rotor.
5) Remove nut for steering arm. Using an appropriate tool, break the taper and remove the tie rod end from the arm.
6) Using the proper 12 point socket, remove the three bearing hub bolts from the back side of the steering knuckle. Remove the ABS sensor as required.
7) Place puller adapter flange on lug studs. Use washers under lug nuts to prevent damage, tighten lug nuts. Use a heavy duty slide hammer to loosen the hub assembly.
8) Place chalk marks on bearing hub, backing plate, and steering knuckle to insure proper reassembly.
9) Remove hub and bearing and axle as a unit **(See Figure No. 2),** using care not to damage inner seal.
10) Loosen ball joint nuts until they are within 2 or 3 threads from removal. Break tapers of ball joints.
11) Remove nuts and steering knuckle.
12) Press out lower ball joint using ball joint press and optional adapter set **(See Figure No. 1).**

Figure No. 2

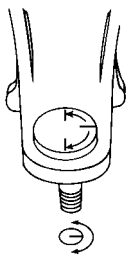


SETUP OF REPLACEMENT BALL JOINT

13) Before installing new adjustable ball joint, align mark on ball stud with mark on housing, as in **Figure No. 3A and 3B.**
14) To insure proper combination camber/caster change: **For POSITIVE camber change, use Figure 3A. For NEGATIVE camber change, use Figure 3B**
15) Next, determine direction and amount of caster change required. Using the proper figure (4A or 4B), find the proper setting number for the mark on the ball joint housing. This mark will be referenced to the setting number on the provided template.

EXAMPLE RIGHT SIDE (passenger)
Positive camber change
-3/4 degree caster adjustment
Setting #6

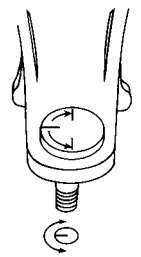
Figure No. 3A



IF BALL JOINT HOUSING IS INSTALLED WITH REFERENCE MARK WITHIN THIS ARC...

...ROTATE REFERENCE MARK ON BOTTOM OF BALL STUD IN THIS ARC TO ADJUST CAMBER

Figure No. 3B



IF BALL JOINT HOUSING IS INSTALLED WITH REFERENCE MARK WITHIN THIS ARC...

...ROTATE REFERENCE MARK ON BOTTOM OF BALL STUD IN THIS ARC TO ADJUST CAMBER

16) Place paper template on lower axle yoke with arrows pointed outward toward tire. **(See Figure No. 5 on other side).**
17) Align mark on ball joint housing with setting number. **(See Figure No. 5).**
18) Push ball joint up into yoke. Verify proper alignment with setting number.
19) Use ball joint press and proper adapters from set to press in and properly seat ball joint. Install boot, fitting it properly into the groove of the housing and around the ball joint stud.

COMPLETING INSTALLATION

20) Install steering knuckle onto ball joints. Install and tighten upper nut to 75 ft. lb. (102 N. m.). Thread lower nut on by hand only at this time.
21) Place a film of grease on inner axle spline to keep from dam-

Fig. 4A Caster Adjustment chart for camber increase (+)

Left side caster Adj. needed	Setting	Right side caster Adj. needed
+1°	5	-1°
+3/4°	6	-3/4°
+1/2°	7	-1/2°
+1/4°	8	-1/4°
0°	9	0°
-1/4°	10	+1/4°
-1/2°	11	+1/2°
-3/4°	12	+3/4°
-1°	13	+1°

Fig. 4B Caster Adjustment chart for camber decrease (-)

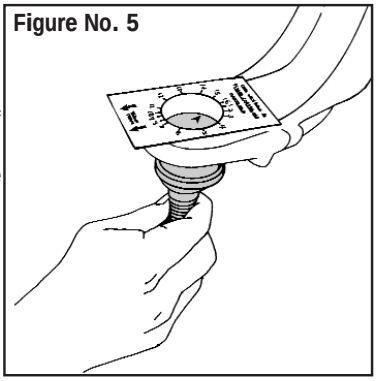
Left side caster Adj. needed	Setting	Right side caster Adj. needed
+1°	5	-1°
+3/4°	4	-3/4°
+1/2°	3	-1/2°
+1/4°	2	-1/4°
0°	1	0°
-1/4°	16	+1/4°
-1/2°	15	+1/2°
-3/4°	14	+3/4°
-1°	13	+1°

Continued on other side:

aging the seal. Place a film of anti-seize on mating surfaces of hub and steering knuckle. Install axle assembly, aligning parts with chalkmarks.

22) Put anti-seize on hub bolt threads. Reinstall hub bolts, torque to factory specification.
23) Replace tie rod into steering knuckle. Reinstall rotor, caliper and wheel assembly, torquing all fasteners to factory specification.
24) Install and compensate alignment sensor.
25) Gently lower vehicle. Adjust camber to desired reading by using a 1/4" allen wrench in the end of the ball stud.
26) While holding the ball stud with an allen wrench to prevent it from turning, tighten and torque the locknut to 80 ft. lb. (110 N. m.).
27) Verify proper camber and caster readings.
28) Complete alignment and road test.

Figure No. 5



WARNING: It is possible that using this ball joint to adjust camber over 1.5 degrees positive may cause interference between the steering knuckle and the axle flange. This is a dangerous and unacceptable condition.

DODGE RAM 4 X 4 ADJUSTABLE BALL JOINT
Instructions for CAMBER only adjustment

1-12) Proceed with steps 1 through 12 from other side of this sheet.

SETUP OF REPLACEMENT BALL JOINT

13) Before installing new adjustable ball joint, align mark on ball stud with mark on housing, as in **Figure No. 3A and 3B.**

14) Using ball joint press and optional adapter set, press in ball joint with Index mark on ball joint housing toward WHEEL for POSITIVE camber change **(Figure No. 6),** or Index mark on ball joint housing toward ENGINE for NEGATIVE camber change **(Figure No. 7).** Install boot, seating it properly into the groove of the ball joint housing and around the ball joint stud.

COMPLETING INSTALLATION

15) Proceed with steps 20 through 28 from other side of this sheet.

WARNING: It is possible that using this ball joint to adjust camber over 1.5 degrees positive may cause interference between the steering knuckle and the axle flange. This is a dangerous and unacceptable condition.

Figure No. 2

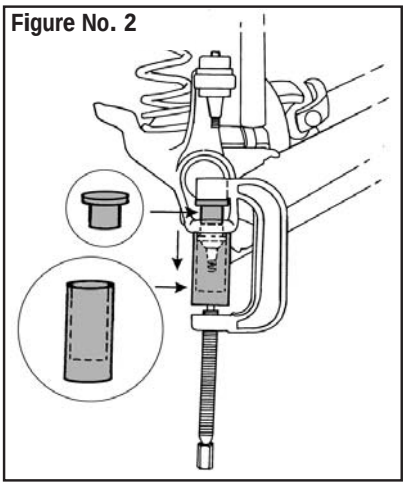


Figure No. 6

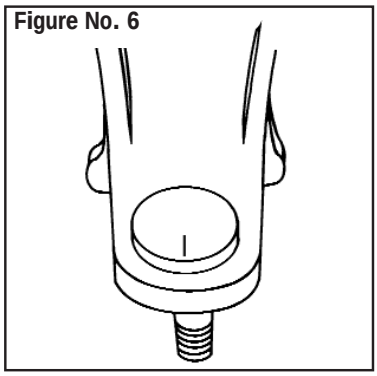
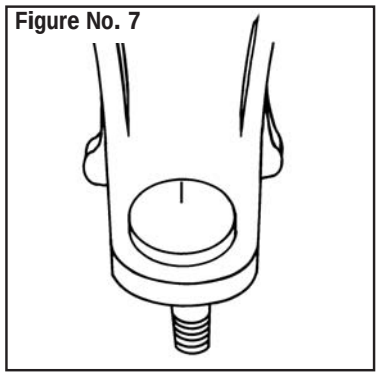


Figure No. 7



Domestic and Import Vehicle
Adjustable Upper Ball Joint Installation Instructions

CAUTION: A very limited number of Honda Civic/CRX vehicles from 1988-1990 were produced with the upper ball joint welded to the control arm. The adjustable ball joint cannot be used on these vehicles.

Note: For camber and/or caster changes of 1/2° or less, use 1/2° adjustable ball joint. For changes greater than 1/2°, use 1° ball joint.

WARNING: Honda and Acura ball joints appear similar, but they must not be substituted for each other. They are dimensionally different and will not fit or perform properly. Installing wrong application could cause possible failure.

1. Inspect vehicle for loose or worn parts and odd tire wear patterns. Check tire pressure. Determine amount of camber/caster change needed.
2. Raise and support vehicle securely under lower control arms.
3. Remove wheel assembly. Remove cover, cotter pin and nut from upper ball joint stud.
4. Remove upper ball joint from steering knuckle, using a ball joint separator. **(See Fig. 1)** IMPORTANT- do not allow knuckles to pull out on axle shaft - inner CV joint disassembly may occur.
5. Remove circlip and boot from upper ball joint.
6. Using a ball joint press (with optional extractor stem and receiver tube), press the upper ball joint in an upward direction out of control arm. **(See Fig. 2)** Make sure all components stay in proper alignment during this procedure.
7. Install adjustable ball joint in upper control arm. Install support washer with flat side up. Install lock nut. Snug nut to point where ball joint can just turn in control arm. **(See Fig. 3)**

WARNING: When installing in the maximum negative camber or caster, check for proper clearance.

8. Install ball joint stud into steering knuckle. Install nut and torque to 30-35 ft lbs. (40-48 NM). Install new cotter pin and reinstall cover.
9. Reinstall tire and wheel assembly. Recompensate alignment equipment. Recheck camber and caster readings. Proceed to step 10 - be sure to use alignment equipment manufacturer's recommended procedures.
10. Turn ball joint with 1-5/8" open end wrench to desired camber/caster settings. **(See Fig. 4)**
11. Raise vehicle using a suitable body lifting point to allow the control arms to drop. Hold ball joint with 1-5/8" wrench to prevent rotating and torque upper nut to 140-160 ft lbs. (190-217 NM).
12. Lower vehicle and verify proper camber and caster readings. Set toe to specifications and road test vehicle.

Figure #4 — **Front of Vehicle**

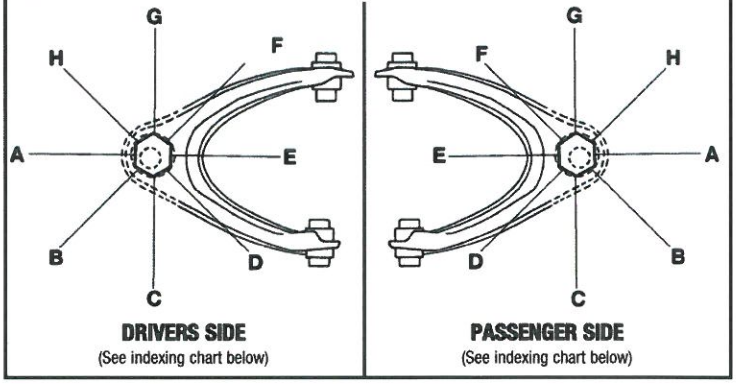


Figure #1

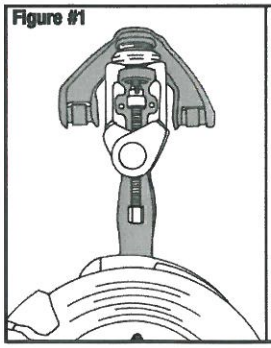


Figure #2

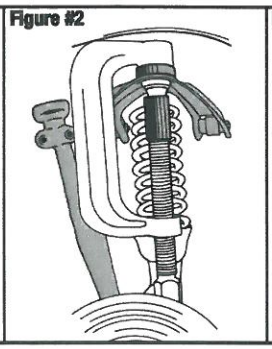
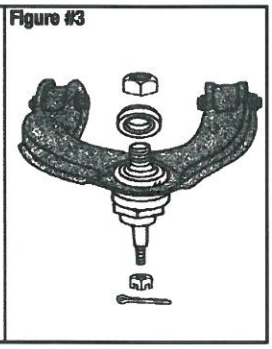


Figure #3



INDEXING CHART
Referenced from position of offset stud

Position	Camber Change	Caster Change
A	+	0
B	+	+
C	0	+
D	-	+
E	-	0
F	-	-
G	0	-
H	+	-

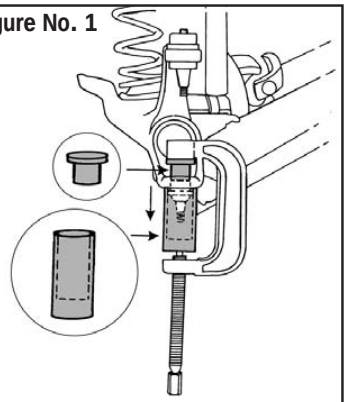
FORM# 95-162-0411

DODGE RAM 4 X 4 ADJUSTABLE BALL JOINT
Instructions for combination CAMBER/CASTER adjustment

1) Check vehicle for bent, worn or loose components and repair as necessary.
2) Check alignment and determine camber and caster changes required.
3) Lift vehicle so suspension hangs freely. Support safely

NOTE: Lift vehicle high enough to allow ball joint press to function on lower ball joint. **(See Figure No. 1).**

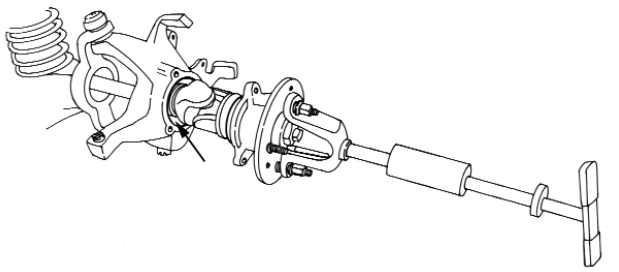
Figure No. 1



BALL JOINT REMOVAL

4) Remove wheel assembly and brake caliper. Support caliper. Place chalk marks on the hub and rotor to insure proper reassembly. Remove rotor.
5) Remove nut for steering arm. Using an appropriate tool, break the taper and remove the tie rod end from the arm.
6) Using the proper 12 point socket, remove the three bearing hub bolts from the back side of the steering knuckle. Remove the ABS sensor as required.
7) Place puller adapter flange on lug studs. Use washers under lug nuts to prevent damage, tighten lug nuts. Use a heavy duty slide hammer to loosen the hub assembly.
8) Place chalk marks on bearing hub, backing plate, and steering knuckle to insure proper reassembly.
9) Remove hub and bearing and axle as a unit **(See Figure No. 2),** using care not to damage inner seal.
10) Loosen ball joint nuts until they are within 2 or 3 threads from removal. Break tapers of ball joints.
11) Remove nuts and steering knuckle.
12) Press out lower ball joint using ball joint press and optional adapter set **(See Figure No. 1).**

Figure No. 2

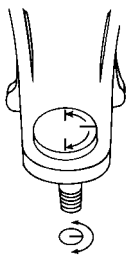


SETUP OF REPLACEMENT BALL JOINT

13) Before installing new adjustable ball joint, align mark on ball stud with mark on housing, as in **Figure No. 3A and 3B.**
14) To insure proper combination camber/caster change: **For POSITIVE camber change, use Figure 3A. For NEGATIVE camber change, use Figure 3B**
15) Next, determine direction and amount of caster change required. Using the proper figure (4A or 4B), find the proper setting number for the mark on the ball joint housing. This mark will be referenced to the setting number on the provided template.

EXAMPLE RIGHT SIDE (passenger)
Positive camber change
-3/4 degree caster adjustment
Setting #6

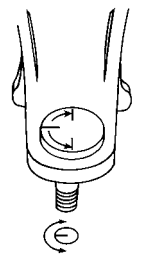
Figure No. 3A



IF BALL JOINT HOUSING IS INSTALLED WITH REFERENCE MARK WITHIN THIS ARC...

...ROTATE REFERENCE MARK ON BOTTOM OF BALL STUD IN THIS ARC TO ADJUST CAMBER

Figure No. 3B



IF BALL JOINT HOUSING IS INSTALLED WITH REFERENCE MARK WITHIN THIS ARC...

...ROTATE REFERENCE MARK ON BOTTOM OF BALL STUD IN THIS ARC TO ADJUST CAMBER

16) Place paper template on lower axle yoke with arrows pointed outward toward tire. **(See Figure No. 5 on other side).**
17) Align mark on ball joint housing with setting number. **(See Figure No. 5).**
18) Push ball joint up into yoke. Verify proper alignment with setting number.
19) Use ball joint press and proper adapters from set to press in and properly seat ball joint. Install boot, fitting it properly into the groove of the housing and around the ball joint stud.

COMPLETING INSTALLATION

20) Install steering knuckle onto ball joints. Install and tighten upper nut to 75 ft. lb. (102 N. m.). Thread lower nut on by hand only at this time.
21) Place a film of grease on inner axle spline to keep from dam-

Fig. 4A Caster Adjustment chart for camber increase (+)

Left side caster Adj. needed	Setting	Right side caster Adj. needed
+1°	5	-1°
+3/4°	6	-3/4°
+1/2°	7	-1/2°
+1/4°	8	-1/4°
0°	9	0°
-1/4°	10	+1/4°
-1/2°	11	+1/2°
-3/4°	12	+3/4°
-1°	13	+1°

Fig. 4B Caster Adjustment chart for camber decrease (-)

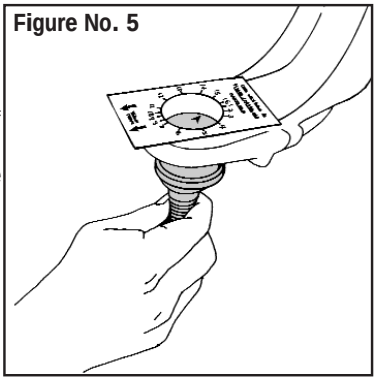
Left side caster Adj. needed	Setting	Right side caster Adj. needed
+1°	5	-1°
+3/4°	4	-3/4°
+1/2°	3	-1/2°
+1/4°	2	-1/4°
0°	1	0°
-1/4°	16	+1/4°
-1/2°	15	+1/2°
-3/4°	14	+3/4°
-1°	13	+1°

Continued on other side:

aging the seal. Place a film of anti-seize on mating surfaces of hub and steering knuckle. Install axle assembly, aligning parts with chalkmarks.

22) Put anti-seize on hub bolt threads. Reinstall hub bolts, torque to factory specification.
23) Replace tie rod into steering knuckle. Reinstall rotor, caliper and wheel assembly, torquing all fasteners to factory specification.
24) Install and compensate alignment sensor.
25) Gently lower vehicle. Adjust camber to desired reading by using a 1/4" allen wrench in the end of the ball stud.
26) While holding the ball stud with an allen wrench to prevent it from turning, tighten and torque the locknut to 80 ft. lb. (110 N. m.).
27) Verify proper camber and caster readings.
28) Complete alignment and road test.

Figure No. 5



WARNING: It is possible that using this ball joint to adjust camber over 1.5 degrees positive may cause interference between the steering knuckle and the axle flange. This is a dangerous and unacceptable condition.

DODGE RAM 4 X 4 ADJUSTABLE BALL JOINT
Instructions for CAMBER only adjustment

1-12) Proceed with steps 1 through 12 from other side of this sheet.

SETUP OF REPLACEMENT BALL JOINT

13) Before installing new adjustable ball joint, align mark on ball stud with mark on housing, as in **Figure No. 3A and 3B.**

14) Using ball joint press and optional adapter set, press in ball joint with Index mark on ball joint housing toward WHEEL for POSITIVE camber change **(Figure No. 6),** or Index mark on ball joint housing toward ENGINE for NEGATIVE camber change **(Figure No. 7).** Install boot, seating it properly into the groove of the ball joint housing and around the ball joint stud.

COMPLETING INSTALLATION

15) Proceed with steps 20 through 28 from other side of this sheet.

WARNING: It is possible that using this ball joint to adjust camber over 1.5 degrees positive may cause interference between the steering knuckle and the axle flange. This is a dangerous and unacceptable condition.

Figure No. 2

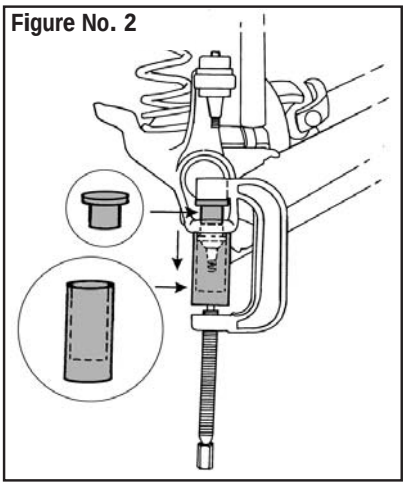


Figure No. 6

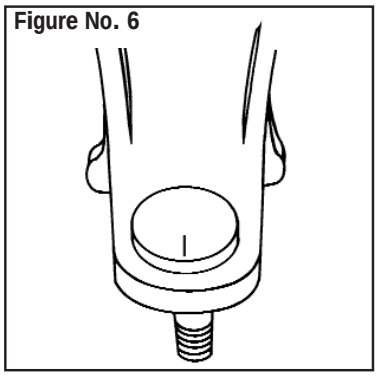
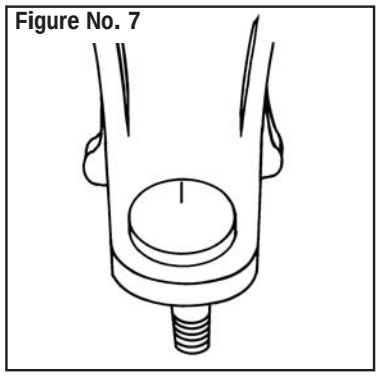


Figure No. 7



Dodge Ram ¾ and 1 ton 4x4 Adjustable Ball Joint

FIG 1

1) Check vehicle for bent, worn or loose components and repair as necessary.
2) Check alignment and determine camber change required.
3) Lift vehicle under front axle. Support safely.

NOTE: This adjustable ball joint replaces the O.E. upper ball joint only.

FIG 2

4) Remove wheel assembly and brake caliper and support. Place chalk marks on the hub and rotor to insure proper reassembly. Remove rotor.
5) Remove nut from steering arm. Using an appropriate tool, break the taper and remove the tie rod end from the arm.
6) Place chalk marks on bearing hub, backing plate, and steering knuckle to insure proper reassembly.
7) Using the proper 12-point socket, remove the four bearing hub bolts from the backside of the steering knuckle. Remove the ABS sensor as required.
8) Place puller adapter flange on lug studs. Use washers under lug nuts to prevent damage, tighten lug nuts. Use slide hammer to loosen assembly.
9) Remove bearing hub and axle as a unit, using care not to damage inner seal.
10) Loosen ball joint nuts until they are within 2 or 3 threads from removal. Break tapers of ball joints. Remove steering knuckle. Support knuckle and ABS wiring, if so equipped. (Fig1)
10) Press out upper ball joint using a press and proper adapters.

FIG 3

NOTE: The adjustable ball joint is pre-lubricated during assembly. After installation and adjustment has been completed, install grease fitting and fill ball joint with multi-purpose water resistant 3% molybdenum grease or equivalent. The adjustable ball joint contains an internal seal to keep water and contaminates out. A dust boot is not required.

1) Remove grease fitting from adjustable ball joint. Use ball joint press and proper adapters, properly seat ball joint into axle yoke. (Fig 2)
2) Reposition steering knuckle onto ball joints, install and tighten lower nut to factory specifications. Thread upper self lock nut on by hand at this time.
3) Place a film of grease on inner axle splines to keep from damaging internal seal. Place a film of anti-seize on mating surfaces of hub and steering knuckle. Install backing plate and axle assembly, aligning parts with chalk marks. Reinstall ABS wiring if required.
4) Put Anti-seize on hub bolt threads. Reinstall hub bolts, torque to factory specifications.
5) Place tie rod into steering knuckle and torque to factory specifications. Reinstall rotor, caliper, and wheel assembly, torque all fasteners to factory specifications.
6) Install and compensate alignment sensor.
7) Lower vehicle onto turntables.
8) Before installing grease fitting, insert a 5/16” Allen wrench through the grease- fitting opening and into top of ball joint stud. Rotate ball stud to achieve camber adjustment. (fig 3)

FIG 4

NOTE: Do not adjust past one degree of negative Camber. Check for any clearance issues. (Fig 4)

FIG 5

9) While holding the ball stud with a 5/16” Allen wrench to prevent it from turning, tighten and torque lock nut to factory specifications.
10) Verify alignment readings. Install grease fitting and grease ball joint as previously stated. (fig 5)
11) Complete alignment and road test vehicle.

INSTALLATION INSTRUCTION

FRONT CAMBER/CASTER "QUICK CAM"

1. Perform pre-alignment checks in a normal manner.

2. Hook-up alignment equipment and record readings.

3. Support truck by the lower control arms.

4. Work on one control arm frame bracket at a time
.

5. Remove existing control arm cam guide and discard. (Fig. 1)

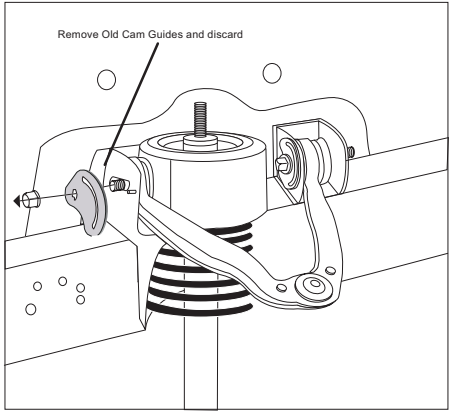
6. Install new "Quick Cam". (Fig. 2)

7. Use a 5/16 allen wrench to adjust alignment readings.

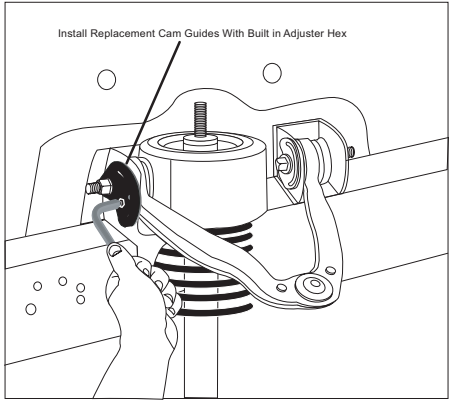
8. Torque cam guide nut to manufacture specification.

9. Set toe and road test vehicle.

(Fig. 1)



(Fig. 2)



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INSTALLATION INSTRUCTION

FRONT CAMBER/CASTER "QUICK CAM"

1. Perform pre-alignment checks in a normal manner.

2. Hook-up alignment equipment and record readings.

3. Support truck by the lower control arms.

4. Work on one control arm frame bracket at a time
.

5. Remove existing control arm cam guide and discard. (Fig. 1)

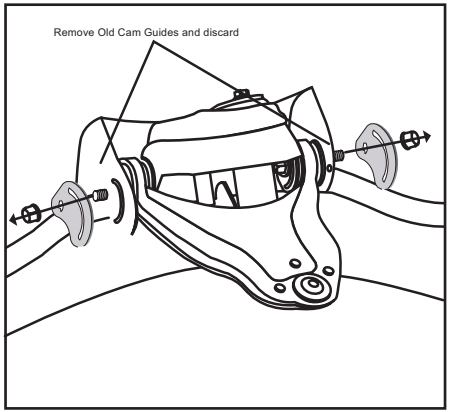
6. Install new "Quick Cam". (Fig. 2)

7. Use a 5/16 allen wrench to adjust alignment readings.

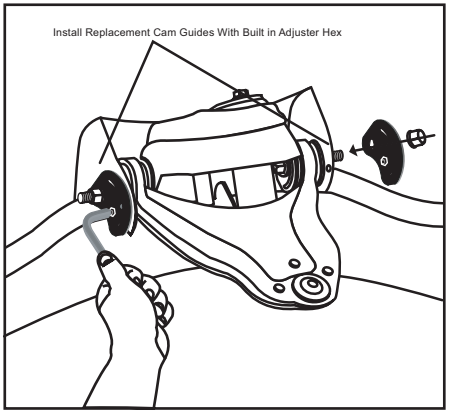
8. Torque cam guide nut to manufacture specification.

9. Set toe and road test vehicle.

(Fig. 1)



(Fig. 2)



Installation Instructions

1. To remove old guide pin use hammer and Punch from outside in. (See Fig 1)

2 To Install new guide pin using Locking Pliers with a Spacer (Nut) to press in to place from inside out. (See Fig 2)

Fig 1

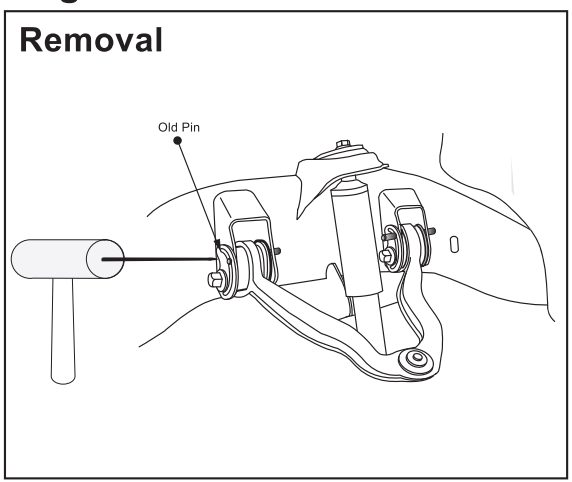
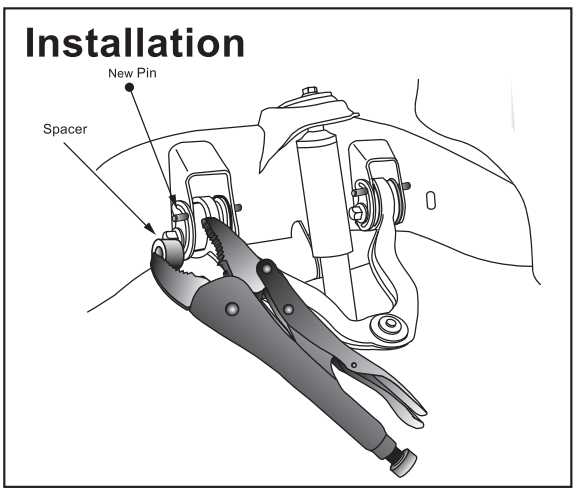


Fig 2



Chevrolet & GMC Truck Offset Camber Bushings Installation Instructions

4x2 & 4x4
1999 & Newer Chevrolet Silverado and GMC Sierra 1500 and 2500,
2001 & Newer 1500HD, 2500HD and 3500HD
2000 and Newer Tahoe and Yukon without Auto Ride
2000 & Newer Suburban and Yukon XL 1500 & 2500 without Auto Ride
2002 and Newer Chevrolet Avalanche 1500 & 2500
2002 and Newer Cadillac Escalade
2002 and Newer Hummer H2

NOTE: Offset Camber Bushings must be installed in pairs to supplement OE adjustment range, when alignment specifications cannot be achieved.

Pre Checks:
Perform pre alignment checks in a normal manner.
Take alignment readings to determine if the right or left side needs the most correction. Proceed to install product on that side first.

General Instructions (All Models)

1. Raise vehicle in a safe manner.
   Note: Vehicle must be supported under the lower control arms with an appropriate safety device.
2. Remove wheel assembly.
3. Remove brake line brackets from upper control arm.
4. Uncouple plastic fastener and remover ABS line from control arm.
5. Remove and discard both pinned plastic inserts, holding factory-adjusting cams from rotating.
6. Remove upper control arm flange bolts and spin arm 180 degrees to gain access to the control arm bushings.

Removal Instructions: * (Using Optional "C-Clamp" Adapter Kit)

7. Install receiver tube over large end of bushing and install extractor plug on small end of bushing. **(See Fig. 1 & 2)**
8. Install open eyelet of ball joint press over the extractor plug. Holding the ball joint press in a level position, snug screw assembly.
9. Check Alignment of all components, then using steady pressure from an impact gun to remove bushing.
10. Check and clean control arm eyelets of any burs or rust as needed.

Note: (1/2, 3 / 4 & 1Ton, HD Models, Hummer H2 Models) The Control arm has a double eyelet at each end, a spacer is needed which is placed between these eyelets to (To Prevent bending)when removing and installing control arm bushings. **(See Fig. 2)**

11. Repeat process for other control arm bushings.

See Other side for Installation instructions →

FIG. 1 (1/2 Ton, Except HD)

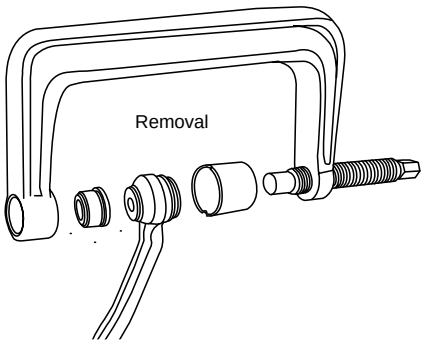
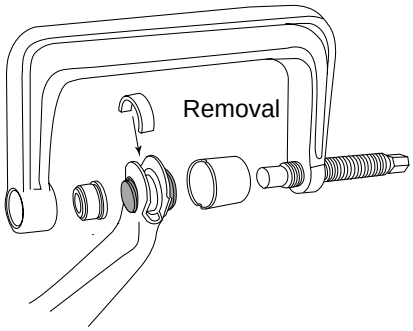


FIG. 2 (1/2, 3 / 4, & 1 Ton HD Series)



*****Contact your parts supplier for optional Adapter Kit

Installation Instruction:

Installation Note: On the large end cap of each replacement bushing is stamped a reference arrow. Replacement bushings need to be installed in pairs having each reference arrow pointing in the same direction with the bolt holes in line with each other. This is to insure that the control arm swings up and down in an ark and the pivot points are level to each other. **(See Fig. 5 & 6)**

Having indicating arrows on the offset bushings horizontally pointing towards control arm ball joint results in a **negative (-) Camber change**. **(See Fig. 5)**

Having indicating arrows horizontal pointing away from ball joint results in a **positive (+) Camber change. (See Fig. 6)**

Bushing Installation:

12. Install Receiver tube over small end of bushing, and install installation plug on large end of bushing.
13. Install open eyelet of ball joint press over the receiver tube.
14. Holding ball joint press in a level position push plugs over large end of control arm bushing and snug screw assembly.
15. Check Alignment of all components, then using steady pressure from an impact gun Install the bushing.
16. Repeat process for other control arm bushings.
17. Reinstall the ABS line to the upper control arm.
18. Reinstall the brake line brackets to the upper control arm.
19. Reinstall the wheel assembly.
20. Proceed with alignment and road test vehicle.

FIG. 3 (1/2 Ton. Except HD)

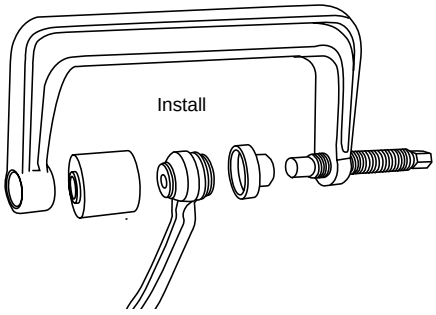


FIG. 5

FIG. 4 (1/2. 3 / 4. & 1 Ton HD Series)

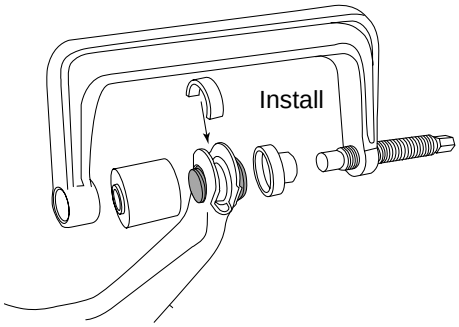
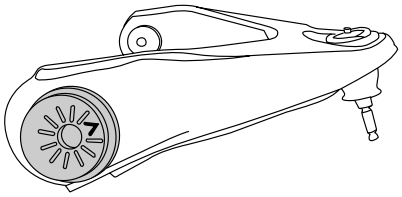
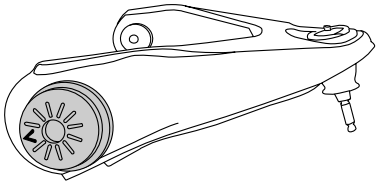


FIG.6

Negative



Positive



CASTER/CAMBER ADJUSTMENT INSTRUCTIONS
FULL SIZE FORD 4X4 INSTALLATION INSTRUCTIONS

ADJUSTMENT SLEEVE REMOVAL

Degree Stamped on Bushing (Camber or Caster Change only)	Amount of Combination Change
2-3/4	1-15/16
2-1/2	1-3/4
2-1/4	1-37/64
2	1-13/32
1-3/4	1-7/32
1-1/2	1-1/16
1-1/4	7/8
1	11/16
3/4	17/32
1/2	11/32
1/4	3/16
0	0

1. Remove wheel and tire for easy access and to reduce the weight being supported by the upper ball joint stud.
2. Remove the cotter key from the upper ball joint stud, and remove the nut.
3. Attach a puller and remove the adjustment sleeve. Support the axle hub to ease removal and replacement of the sleeve.

ADJUSTMENT SLEEVE INSTALLATION

1. Select desired sleeve. **Note: Be sure to check sleeve now in the vehicle before figuring change, and the proper position for the desired change.**
2. Insert the sleeve over the ball stud and into the support collar. The cutouts in the sleeve must engage the lugs on the support collar, or fit against the flat.
3. Using a suitable tool, drive bushing down until seated.
4. Assemble upper ball stud nut and torque to manufacturer's specification, if necessary, rotate the nut to allow the cotter key hole in the ball stud to line up with the castellation of slot of the nut, turn it in the direction of tightening. **Do not loosen the nut!** Install a new cotter key.
5. Replace the wheel and tire assembly.
6. Recheck camber and caster to verify proper changes.
7. Readjust the toe to correct for changes which result from changes in the camber setting.
8. Road test the vehicle.

Continued on other side

INSTRUCCIONES DE AJUSTE DEL AVANCE DEL PIVOTE E INCLINACIÓN DE LAS RUEDAS
INSTRUCCIONES DE INSTALACIÓN DEL FORD 4X4 DE TAMAÑO GRANDE

EXTRACCIÓN DE LA MANGA DE AJUSTE

Grado estampado sobre el buje (solamente cambio de avance del pivote e inclinación de las ruedas)	Cantidad de cambio de combinación
2-3/4	1-15/16
2-1/2	1-3/4
2-1/4	1-37/64
2	1-13/32
1-3/4	1-7/32
1-1/2	1-1/16
1-1/4	7/8
1	11/16
3/4	17/32
1/2	11/32
1/4	3/16
0	0

1. Quite la rueda y cubierta para el fácil acceso y para reducir el paso que soporta el perno de la junta rótula superior.
2. Quite la llave del pasador del perno de la junta de rótula superior y extraiga la tuerca.
3. Acople un extractor y quite la manga de ajuste. Soporte el centro del eje para facilitar la extracción y el reemplazo de la manga.

INSTALACIÓN DE LA MANGA DE AJUSTE

1. Elija la manga deseada. Nota: Asegúrese de revisar la manga que está en el vehículo actualmente, antes de planear el cambio, además de la posición adecuada para el cambio deseado.
2. Inserte la manga por encima del perno de rótula y en el collar de soporte. Los cortes en la manga deben acoplar las orejetas en el collar de soporte o encajar contra la cara plana.
3. Con una herramienta adecuada, dirija el buje hacia abajo, hasta que encaje en su lugar.
4. Monte el perno de junta de rótula superior y la torsión según la especificación del fabricante; de ser necesario, haga girar la tuerca para permitir que el orificio de la llave del pasador en el perno de rótula quede alineado con el encastillado de la ranura de la tuerca, hágala girar en la dirección de ajuste. ¡No afloje la tuerca! Instale una nueva llave de pasador.
5. Reemplace el montaje de la rueda y cubierta.
6. Vuelva a comprobar el avance del pivote e inclinación de las ruedas para asegurarse que los cambios hayan sido los adecuados.
7. Vuelva a ajustar la convergencia de las ruedas para corregir los cambios que resultarán de los cambios en el ajuste de la inclinación de las ruedas.
8. Realice una prueba de manejo del vehículo en la carretera.

Contin'ua al doso

RÉGLAGE DE LA CHASSE ET DU CARROSSAGE
INSTRUCTIONS D'INSTALLATION SUR FORD 4X4 GRANDE TAILLE

DÉPOSE DU MANCHON DE RÉGLAGE

Nombre estampé sur la douille (changement de chasse ou de carrossage uniquement)	Modification combinée produite
2-3/4	1-15/16
2-1/2	1-3/4
2-1/4	1-37/64
2	1-13/32
1-3/4	1-7/32
1-1/2	1-1/16
1-1/4	7/8
1	11/16
3/4	17/32
1/2	11/32
1/4	3/16
0	0

1. Déposer la jante et le pneu pour faciliter l'accès et réduire le poids supporté par le goujon du joint sphérique supérieur.
2. Déposer la goupille fendue du goujon du joint sphérique supérieur et retirer l'écrou.
3. Attacher un extracteur et retirer le machon de réglage. Soutenir le moyeu d'essieu pour faciliter la dépose et le remplacement du manchon.

INSTALLATION DU MANCHON DE RÉGLAGE

1. Choisir le manchon voulu. Remarque : vérifier au préalable le manchon installé sur le véhicule avant de déterminer la modification à effectuer et la position correcte pour obtenir cette modification.
2. Glisser le manchon sur le goujon du joint sphérique et dans le collier de support. Les découpes du manchon doivent s'engager dans les saillies du collier de support ou coïncider avec ses parties plates.
3. Avec un outil adéquat, pousser sur le manchon jusqu'à ce qu'il soit engagé à fond.
4. Installer l'écrou du goujon du joint sphérique supérieur et le serrer au couple spécifié par le fabricant. Au besoin, tourner l'écrou pour aligner ses créneaux sur le trou du joint sphérique destiné à la goupille fendue. Tourner l'écrou dans le sens du serrage. Ne pas le desserrer ! Installer une nouvelle goupille fendue.
5. Réinstaller l'ensemble jante et pneu.
6. Vérifier la chasse et le carrossage pour s'assurer que les modifications sont correctes.
7. Régler le pincement de manière à corriger tout changement lié aux modifications du carrossage.
8. Faire un essai de conduite du véhicule.

TriFSD 11/09

Suite a Verso

(Continued)

ARROW POSITION INFORMATION

THE MULTI-SLOT ALIGNMENT BUSHING MAY BE USED TO ADJUST CAMBER ONLY (+OR-) OR CASTER ONLY (+OR-). THEY ALSO MAY BE POSITIONED TO OBTAIN COMBINATION CAMBER/CASTER CHANGES.

THE ILLUSTRATIONS ABOVE SHOW HOW TO POSITION THE **ARROW** OF THE BUSHING TO OBTAIN ONLY CAMBER OR CASTER CHANGES AND ALSO HOW TO OBTAIN CONBINATION CHANGES. BOTH LEFT AND FRONT AND RIGHT FRONT ILLUSTRATIONS ARE SHOWN.

NOTE: WHEN USING THE BUSHING FOR COMBINATION CHANGES THE AMOUNT OF CAMBER & CASTER CHANGE IS **LESS** THAN THE DEGREE OF CHANGE STAMPED ON THE BUSHING. THE AMOUNT OF CHANGE WHEN LOCATING THE ARROW AT POSITIONS 2,4,6 & 8 FOR THE VARIOUS BUSHINGS IS: **(See chart at right.)**

(Contin'ua)

INFORMACIÓN SOBRE POSICIÓN DE LA FLECHA

EL BUJE DE ALINEACIÓN DE RANURAS MÚLTIPLES SE PUEDE USAR PARA AJUSTAR LA INCLINACIÓN DE LAS RUEDAS SOLAMENTE (+O-) O EL AVANCE DEL PIVOTE DE LAS RUEDAS SOLAMENTE (+O-). TAMBIÉN SE PUEDEN POSICIONAR PARA LOGRAR CAMBIOS DE COMBINACIÓN DE INCLINACIÓN Y AVANCE DEL PIVOTE DE LAS RUEDAS.

LAS ILUSTRACIONES ANTERIORES MUESTRAN CÓMO POSICIONAR **LA FLECHA** DEL BUJE PARA SOLAMENTE OBTENER CAMBIOS DE INCLINACIÓN O AVANCE DEL PIVOTE DE LAS RUEDAS Y TAMBIÉN MUESTRAN CÓMO OBTENER CAMBIOS DE COMBINACIÓN. SE MUESTRAN TANTO LAS ILUSTRACIONES DE FRENTE IZQUIERDO COMO DE FRENTE DERECHO.

NOTA: CUANDO USA EL BUJE PARA CAMBIOS DE COMBINACIÓN LA CANTIDAD DE CAMBIO DE INCLINACIÓN Y AVANCE DE PIVOTE DE LAS RUEDAS ES **MENOR** QUE EL GRADO DE CAMBIO ESTAMPADO SOBRE EL BUJE. LA CANTIDAD DE CAMBIO AL COLOCAR LA FLECHA EN LAS POSICIONES 2, 4, 6 y 8 PARA LOS DISTINTOS BUJES ES: **(Véase gráfica en la parte superior.)**

(Suite)

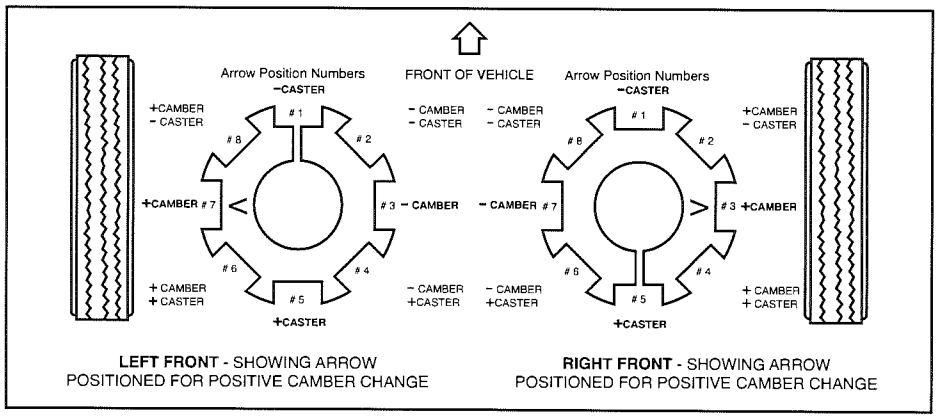
INFORMATION CONCERNANT LA POSITION DE LA FLÈCHE

LA DOUILLE D'ALIGNEMENT À FENTES MULTIPLES PEUT SERVIR AU RÉGLAGE DU CARROSSAGE SEUL (+ OU -) OU DE LA CHASSE SEULE (+ OU -). ELLE PEUT ÉGALEMENT ÊTRE POSITIONNÉE DE MANIÈRE À MODIFIER SIMULTANÉMENT LA CHASSE ET LE CARROSSAGE.

L'ILLUSTRATION À DROITE INDIQUE COMMENT POSITIONNER **LA FLÈCHE** DE LA DOUILLE POUR OBTENIR UN SIMPLE CHANGEMENT DE CHASSE OU DE CARROSSAGE OU POUR OBTENIR DES CHANGEMENTS COMBINÉS. LES SCHÉMAS POUR LES ROUES AVANT GAUCHE ET AVANT DROITE SONT REPRÉSENTÉS.

REMARQUE: LORSQU'ON UTILISE LA DOUILLE POUR EFFECTUER DES CHANGEMENTS COMBINÉS, LA MODIFICATION RÉSULTANTE DE CHASSE ET DE CARROSSAGE EST **INFÉRIEURE** À LA VALEUR ESTAMPÉE SUR LA DOUILLE. L'AMPLITUDE DE LA MODIFICATION PRODUITE PAR LES DIVERSES DOUILLES LORSQUE LA FLÈCHE EST EN POSITION 2, 4, 6 OU 8 EST LA SUIVANTE **(voir le tableau à droite de page)**

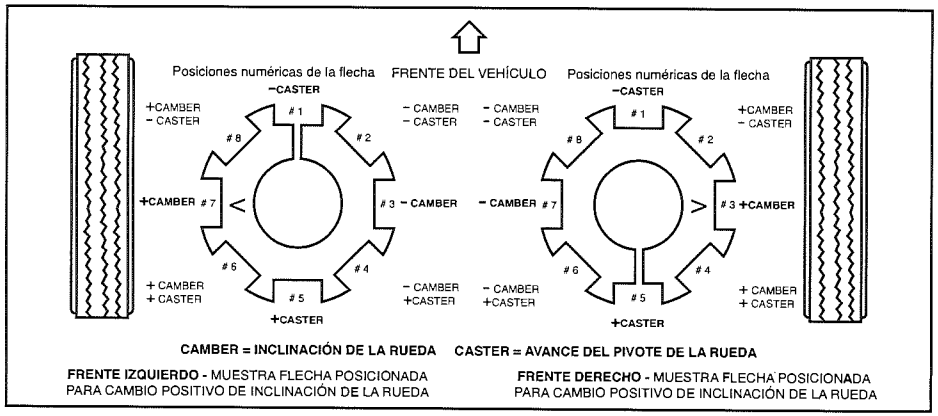
WHEN THE ARROW IS PLACED AT POSITION NUMBER 1,3,5 OR 7 THE AMOUNT OF CHANGE IS THE DEGREE OF CHANGE STAMPED ON THE BUSHING.



LEFT FRONT - SHOWING ARROW POSITIONED FOR POSITIVE CAMBER CHANGE

RIGHT FRONT - SHOWING ARROW POSITIONED FOR POSITIVE CAMBER CHANGE

CUANDO LA FLECHA SE COLOCA EN LA POSICIÓN NUMÉRICA 1, 3, 5 ó 7, LA CANTIDAD DE CAMBIO ES EL GRADO DE CAMBIO ESTAMPADO SOBRE EL BUJE.

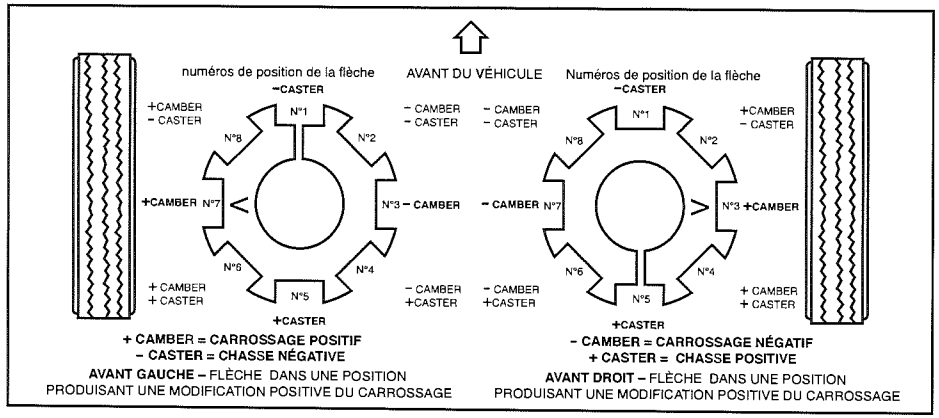


CAMBER = INCLINACIÓN DE LA RUEDA **CASTER = AVANCE DEL PIVOTE DE LA RUEDA**

FRENTE IZQUIERDO - MUESTRA FLECHA POSICIONADA PARA CAMBIO POSITIVO DE INCLINACIÓN DE LA RUEDA

FRENTE DERECHO - MUESTRA FLECHA POSICIONADA PARA CAMBIO POSITIVO DE INCLINACIÓN DE LA RUEDA

LORSQUE LA FLÈCHE EST DANS LES POSITIONS 1, 3, 5 OU 7, LA MODIFICATION APPORTÉE EST ÉGALE À LA VALEUR ESTAMPÉE SUR LA DOUILLE.



+ CAMBER = CARROSSAGE POSITIF
− CASTER = CHASSE NÉGATIVE

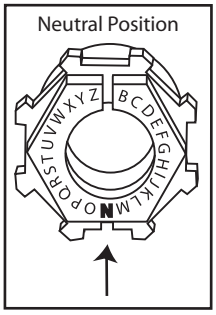
AVANT GAUCHE – FLÈCHE DANS UNE POSITION PRODUISANT UNE MODIFICATION POSITIVE DU CARROSSAGE

− CAMBER = CARROSSAGE NÉGATIF
+ CASTER = CHASSE POSITIVE

AVANT DROIT – FLÈCHE DANS UNE POSITION PRODUISANT UNE MODIFICATION POSITIVE DU CARROSSAGE

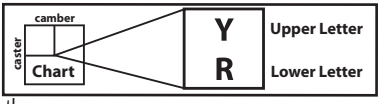
INSTALLATION INSTRUCTIONS
Dual-Axis Adjustable Bushings

Illustration #1



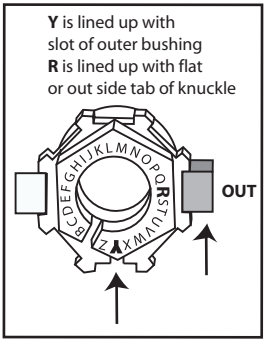
1. Take initial alignment reading to determine that the vehicle is out of OEM specification.
2. Remove tire/wheel assembly and the currently installed bushing from the upper ball joint.
3. Install the DUAL -AXIS ADJUSTABLE BUSHING in the Neutral or 0 Degree position by dialing the "N" of the INNER BUSHING to the SLOT of the OUTER BUSHING (See Illustration #1). It does not matter at this point in what position the Dual-Axis bushing is installed.
4. Take a new alignment reading to determine the amount of positive (+) or negative (-) Camber & Caster changes necessary.
5. Refer to the proper chart for the vehicle make you are servicing.
6. Follow both measurements (camber & caster changes required) to their intersection on the chart. In this box, you will find two letters. The UPPER letter represents the code for positioning the INNER adjuster . The LOWER letter is the reference for positioning the OUTER adjuster (See Illustration #2).

Illustration #2



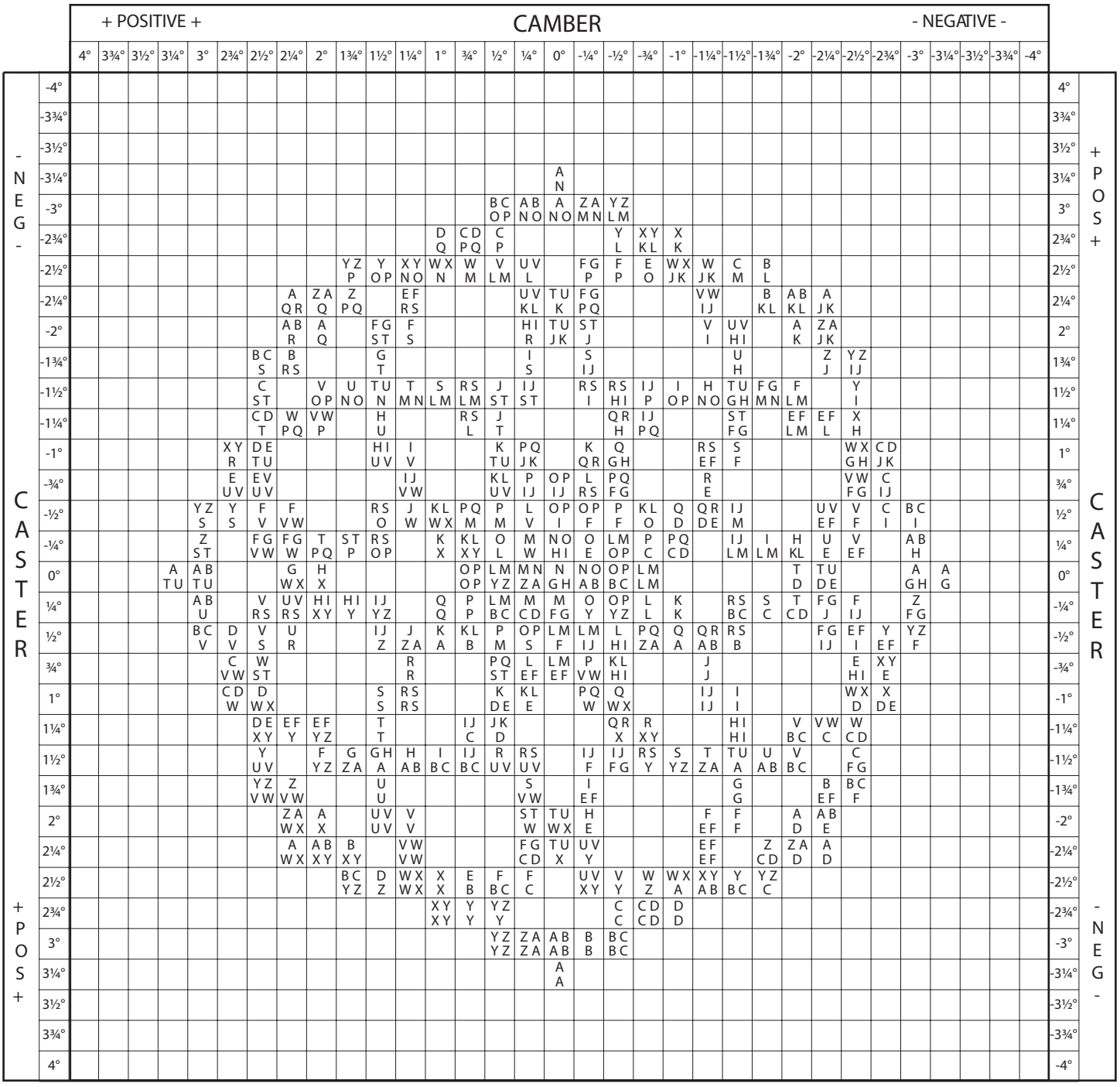
7. It is not necessary to remove the DUAL-AXIS bushing to index to the proper position! Using a thin wall socket or channel type pliers will make adjustments easy.
8. Simply adjust the INNER bushing so the UPPER letter recorded earlier lines up with the SLOT of the OUTER bushing. Dial the OUTER bushing so that the slot lines up in the appropriate location of the knuckle according the LOWER number of the chart (See Illustration #3).

Illustration #3



9. Install the pinch bolt or ball joint castle nut and torque to manufacturer's specifications. (Install new castle nut included with bushing , where provided, to allow for proper cotter pin installation.)
10. Install snap ring or cotter pin as required.
11. Proceed with alignment and road test the vehicle.

1980-95 F150 & F250 Ford Trucks 4x4
1992 & newer F250 Super-duty Ford Trucks 4x4
1998 & newer F350, F450 & F550 Ford Trucks 4x4
1994-99 Dodge Ram 2500, 3500 4x4 & 4x2



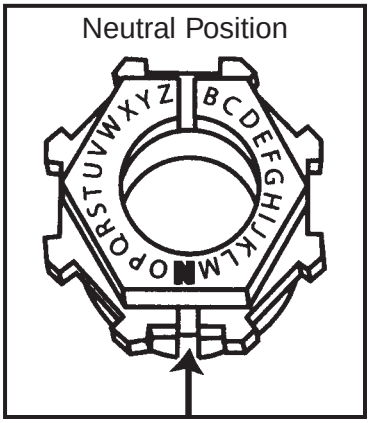
95-226-0604

1. Take initial alignment reading to determine the vehicle is out of OEM specification.

2. Remove tire/wheel assembly and the currently installed bushing from the upper ball joint.

3. Install the DUAL-AXIS ADJUSTABLE BUSHING in the Neutral or 0 Degree position by dialing the “N” of the INNER BUSHING to the SLOT of the OUTER BUSHING (See illustration #1). It does not matter at this point in what position the Dual-Axis bushing is installed in the knuckle.

Illustration #1

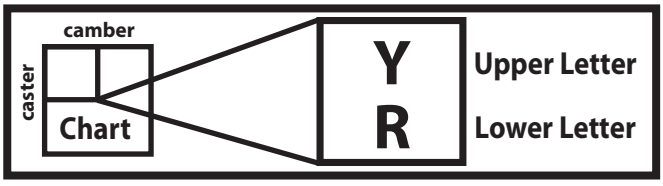


4. Take a new alignment reading to determine the amount of positive (+) or negative (-) Camber & Caster changes necessary.

5. Refer to the proper chart for the vehicle model you are servicing on back of this page.

6. Follow both measurements (camber & caster changes required) to their intersection on the chart. In this box you will find letters. The UPPER letters represents the code for positioning the INNER adjuster. The LOWER letters is the reference for positioning the OUTER adjuster (See illustration #2).
Note: (If there are two upper letters or lower letters in a box, position the bushing between the two letters.)

Illustration #2



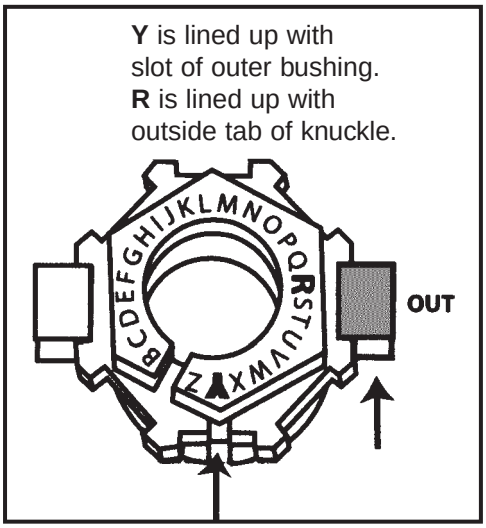
INSTALLATION INSTRUCTIONS
Dual - Axis Adjustable Bushings
Application

Ford	Ranger Bronco II 4x4	1983-89

7. It is not necessary to remove the DUAL-AXIS bushing to index to the proper position.

8. Simply adjust the INNER bushing so the UPPER letter recorded earlier lines up with the slot of the OUTER bushing. Dial the OUTER bushing so that the Slot lines up in the appropriate location of the knuckle according to the LOWER number of the chart (See illustration #3).
Note: (Using a thin wall socket or channel type pliers will make adjustments easy.

Illustration #3



9. Install the ball joint castle nut and torque to manufacturer’s specifications.

10. Install cotter pin as required.

11. Proceed with alignment and road test the vehicle.

FORD RANGER & BRONCO II 4X4 1983-89

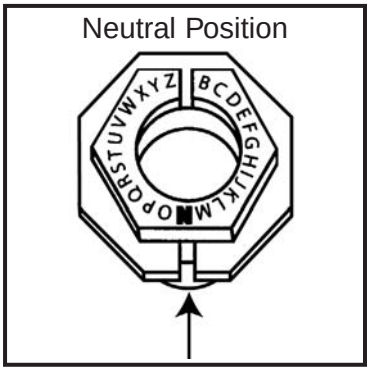
CAMBER — + POSITIVE + / - NEGATIVE -

CASTER — - NEG - (DRIVER SIDE) / + POS + (PASSENGER SIDE)

CASTER	4°	3¾°	3½°	3¼°	3°	2¾°	2½°	2¼°	2°	1¾°	1½°	1¼°	1°	¾°	½°	¼°	0°	-¼°	-½°	-¾°	-1°	-1¼°	-1½°	-1¾°	-2°	-2¼°	-2½°	-2¾°	-3°	-3¼°	-3½°	-3¾°	-4°	CASTER
-4°									A PQ	B Q	C Q	D QR	DE Q	E Q	EF Q	EF PQ	F PQ	VW KL	VW K	W K	WX K	X K	Y K	ZA KL	A KL									4°
-3¾°									BC QR	D R	DE R	EF R	F R	F QR	FG QR	FG Q	G Q	UV K	UV JK	UV J	V J	VW J	WX J	XY J	Z JK	A K									3¾°
-3½°								A Q	D RS	E RS	EF RS	FG S	G RS	G R	GH R	GH QR	GH Q	TU JK	TU J	U IJ	U I	UV I	V I	WX J	XY J	YZ J	A JK								3½°
-3¼°							A QR	BC R	E ST	F ST	FG ST	GH ST	GH S	H S	HI RS	HI R	HI QR	ST IJ	T IJ	T I	TU I	U HI	TU HI	V HI	W HI	X I	Z J								3¼°
-3°							BC RS	D S	F ST	G T	GH T	H T	HI T	HI ST	I S	I RS	I R	S IJ	S I	S H	ST H	T H	TU H	U H	V I	W H	X HI	A J								3°
-2¾°						A R	CD S	E T	FG TU	GH TU	H TU	HI TU	I TU	IJ T	IJ ST	J ST	J RS	R I	R H	RS H	S GH	ST GH	T G	TU G	UV GH	V GH	WX H	Y HI							2¾°
-2½°					A RS	C ST	D ET	F TU	FG U	H UV	HI UV	I UV	IJ U	J TU	JK TU	JK ST	JK S	QR HI	QR GH	R G	RS G	S FG	ST FG	T FG	U FG	UV G	VW G	X GH							2½°
-2¼°					AB S	D T	EF U	FG U	G U	H UV	HI UV	I UV	IJ U	J TU	JK TU	JK ST	JK S	QR HI	QR GH	R G	RS G	S FG	ST FG	T FG	U FG	UV G	VW G	X GH							2¼°
-2°					C T	DE U	F UV	G UV	GH V	HI V	I V	IJ V	J V	JK VU	K U	KL TU	KL ST	PQ GH	Q G	QR FG	QR F	RS F	S F	ST F	TU F	UV FG	V FG	WX G							2°
-1¾°				AB T	C TU	E UV	FG V	G V	H VW	HI VW	IJ W	J VW	JK VW	K V	KL V	L UV	L ST	P G	PQ FG	PQ EF	QR EF	R E	RS E	S E	T EF	U F	UV F	W FG							1¾°
-1½°				A T	CD U	EF V	FG VW	GH W	H W	I WX	J WX	JK WX	K WX	KL WX	L VW	LM UV	LM T	OP F	P E	PQ DE	Q DE	QR DE	R DE	S DE	ST E	TU E	UV EF	VW F							1½°
-1¼°				ZA T	D UV	EF VW	FG W	GH WX	HI WX	I X	J XY	JK XY	KL XY	L XY	LM XY	M W	MN U	O E	OP CD	P CD	PQ CD	QR CD	R CD	RS D	ST DE	TU DE	UV E	W F							1¼°
-1°				A TU	DE V	EF W	FG WX	GH X	HI XY	IJ Y	J Y	JK YZ	KL Z	L Z	LM ZA	MN A	N TU	NO AB	OP AB	P B	PQ BC	QR BC	R C	RS C	ST CD	TU D	UV DE	W EF							1°
-¾°				ZA TU	WX S	VW RS	UV R	TU QR	ST QR	RS Q	R PQ	QR PQ	PQ PQ	P PQ	OP PQ	O QR	NO TU	M JK	LM K	L KL	KL KL	JK KL	J K	I K	HI JK	GH JK	FG J	EF IJ							¾°
-½°				A U	X T	VW S	UV RS	TU R	ST R	S QR	R QR	QR QR	Q QR	PQ QR	P RA	OP ST	OP U	LM I	L J	KL JK	K JK	JK JK	IJ JK	I JK	H J	GH IJ	FG IJ	EF I							½°
-¼°				ZA U	X T	W ST	UV S	U RS	T RS	S R	RS R	R R	Q R	PQ RS	PQ ST	P T	P UV	L H	KL I	K IJ	JK IJ	J IJ	IJ J	HI IJ	H IJ	G I	FG I	EF HI							¼°
0°					Y U	W T	V ST	U S	T S	ST S	S S	R RS	QR S	QR ST	Q T	PQ TU	PQ UV	K G	K H	JK HI	J I	IJ I	I I	HI I	GH HI	G HI	F HI	E GH							0°
-¼°					Z UV	X TU	VW T	UV T	TU ST	T ST	ST ST	S ST	RS T	R TU	QR UV	QR TV	QR V	JK FG	JK GH	J GH	IJ H	I H	HI GH	H HI	G H	FG H	EF GH	D G							-¼°
-½°					Z V	Y UV	WX U	V TU	UV TU	TU TU	T T	ST TU	S TU	RS TU	RS UV	R V	R VW	J FG	IJ FG	IJ G	I GH	HI GH	H GH	GH GH	FG GH	F GH	DE G	C FG							-½°
-¾°						A W	X UV	W U	V U	U U	TU U	T U	ST U	S U	S V	S VW	RS VW	I EF	I FG	HI FG	HI G	H G	G G	G GH	F G	E FG	CD F	A E							-¾°
-1°							YZ VW	X V	VW UV	V UV	UV UV	U UV	TU UV	T V	ST V	ST VW	ST W	HI EF	H EF	H F	GH F	G FG	FG FG	F FG	E F	D F	BC EF							-1°
-1¼°							A WX	YZ W	S VW	W VW	V V	UV V	U V	U VW	ST W	TU WX	TU X	GH DE	GH E	G EF	FG EF	FG F	EF EF	E EF	D EF	BC E	A DE							-1¼°
-1½°								A X	YZ WX	X W	WX W	VW W	V W	V WX	UV WX	UV X	U X	FG D	FG DE	F DE	E E	EF E	DE E	CD DE	BC DE	A D							-1½°
-1¾°									A XY	ZA XY	Y X	X WX	WX X	W X	VW X	VW XY	V XY	EF CD	EF D	E D	DE D	CD D	C D	B D	A CD								-1¾°
-2°											A Y	Z Y	Y XY	XY XY	X Y	WX Y	X YZ	D C	CD C	C C	C CD	B C	ZA BC										-2°
-2¼°														A Z	A ZA	ZA ZA	A A	A AB	AB B	A B													-2¼°
-2½°																																	-2½°
-2¾°																																	-2¾°
-3°																																	-3°
-3¼°																																	-3¼°
-3½°																																	-3½°
-3¾°																																	-3¾°
-4°																																	-4°

1. Take initial alignment reading to determine the vehicle is out of OEM specification.
2. Remove tire and wheel assembly for easy access. This also reduces the weight being supported by the upper ball joint stud.
3. If clearance allows for proper retorquing, loosen the LOWER ball joint stud nut.
4. Remove cotter key from the upper ball joint stud and remove nut.
5. Using a hammer, strike the knuckle assembly sharply a few times to break the interference taper between the ball joint and bushing. (Supporting the axle hub will aid greatly in the removal and installation of bushings. Take care not to damage brake or vacuum lines.)
6. Remove currently installed bushing from the upper ball joint.
7. Install the DUAL-AXIS ADJUSTABLE BUSHING in the Neutral or 0 Degree position by dialing the "N" of the INNER BUSHING to the SLOT of the OUTER BUSHING (See illustration #1). It does not matter at this point in what position the Dual-Axis bushing is installed in the knuckle.

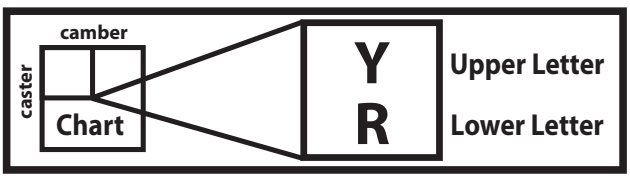
Illustration #1



8. Take a new alignment reading to determine the amount of positive (+) or negative (-) Camber & Caster changes necessary.
9. Refer to the chart on the other side of this page.
10. Follow both measurements (camber & caster changes required) to their intersection on the chart. In this box you will find letters. The UPPER letters represents the code for positioning the INNER adjuster. The LOWER letters is the reference for positioning the OUTER adjuster (See illustration #2).

Note: (If there are two upper letters or lower letters in a box, position the bushing between the two letters.)

Illustration #2



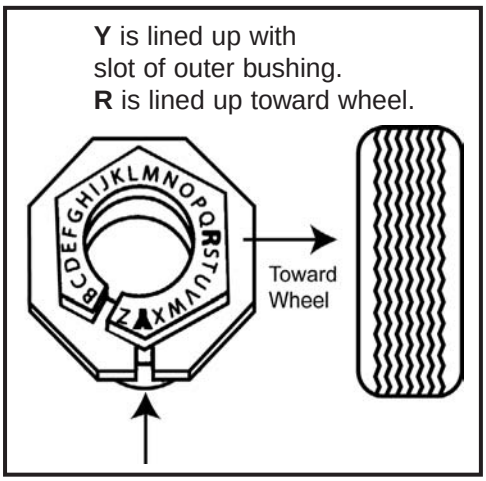
INSTALLATION INSTRUCTIONS
Dual - Axis Adjustable Bushings
Application

Ford	F250/350 Super Duty 4x4	2005–up

11. It is not necessary to remove the DUAL-AXIS bushing to index to the proper position.
12. Simply adjust the INNER bushing so the UPPER letter recorded earlier lines up with the slot of the OUTER bushing. Dial the OUTER bushing so that the Slot lines up in the appropriate location of the knuckle according to the LOWER number of the chart (See illustration #3).

Note: (Using a thin wall socket or channel type pliers will make adjustments easy.

Illustration #3



13. If clearance allows, referencing step #3, tighten lower ball joint nut to interim torque 44 ft lbs. (59nm).
14. Install upper ball stud nut and torque to manufacturer's specifications. Advance nut to next castellation and install cotter pin.
15. If clearance allows, referencing step #3, tighten lower ball joint nut to final torque of 150 ft lbs. (204nm).
16. Proceed with alignment and road test the vehicle.

Form # 95-232-0505

FORD F250/350 Superduty 4X4 2005-up

CAMBER — + POSITIVE + / - NEGATIVE -

CASTER — - NEG - / + POS +

DRIVER SIDE / PASSENGER SIDE

CASTER	4°	3¾°	3½°	3¼°	3°	2¾°	2½°	2¼°	2°	1¾°	1½°	1¼°	1°	¾°	½°	¼°	0°	-¼°	-½°	-¾°	-1°	-1¼°	-1½°	-1¾°	-2°	-2¼°	-2½°	-2¾°	-3°	-3¼°	-3½°	-3¾°	-4°	CASTER
-4°														A OP	A O	A NO	A N	A MN	A M	A LM														4°
-3¾°												A P	Z O	XY N	X MN	X M	WX LM	DE O	D NO	CD N	B LM	A L												3¾°
-3½°											AB Q	XY O	W N	VW M	V LM	V L	V KL	F P	F OP	E NO	DE N	CD M	A KL											3½°
-3¼°										A QR	X OP	VW NO	V MN	U LM	U L	TU KL	TU JK	GH PQ	G P	FG O	F NO	E MN	D ML	A KL										3¼°
-3°									A R	X P	VW O	UV N	TU M	T LM	ST KL	ST K	ST J	HI Q	H P	H OP	GH NO	FG N	EF M	D L	A J									3°
-2¾°								A RS	X Q	VW OP	UV O	TU N	T M	ST LM	RS KL	RS JK	RS IJ	IJ QR	I PQ	I P	H O	GH N	FG M	E L	CD K	A IJ								2¾°
-2½°								Z R	WX PQ	V OP	TU O	ST N	S M	RS LM	R KL	QR JK	QR I	JK QR	J PQ	IJ OP	I NO	H MN	G M	F L	DE KL	B IJ								2½°
-2¼°							A S	XY R	VW Q	U OP	T O	S NO	RS MN	QR LM	Q KL	PQ J	PQ HI	KL DE	K CD	JK OP	IJ NO	I MN	H M	FG L	EF KL	CD J	A I							2¼°
-2°							ZA ST	WX R	V Q	TU P	ST OP	RS NO	R N	Q M	PQ L	P JK	OP H	L QR	LM P	K O	J N	I M	H LM	GK KL	F K	D J	A HI							2°
-1¾°							A T	WX RS	UV Q	TU PQ	ST P	RS OP	QR NO	PQ N	P M	O K	O GH	M Q	L O	KL NO	JK MN	IJ LM	HI L	GH KL	F JK	DE IJ	A H							1¾°
-1½°							A TU	X S	V R	TU Q	ST PQ	RS PQ	QR OP	PQ O	OP NO	O NO	N N	M MN	LM MN	KL LM	JK LM	IJ L	HI KL	GH K	F J	DE I	A GH							1½°
-1¼°							B UV	DE VW	F WX	GH XY	HI Y	IJ YZ	JK ZA	KL A	L B	LM CD	M G	OP XY	P Z	PQ A	QR B	RS BC	ST C	TU CD	V DE	WX EF	A G							1¼°
-1°							A UV	D W	F X	G XY	HI YZ	IJ ZA	J A	K B	LM C	L DE	LM G	P WX	PQ Y	Q Z	R A	S B	T BC	U CD	V D	X E	AB G							1°
-¾°							A V	CD W	EF XY	G Y	H Z	I A	IJ AB	JK BC	K CD	KL E	KL FG	PQ J	Q XY	QR YZ	RS ZA	S AB	T B	U C	VW D	XY E	A FG							¾°
-½°								B VW	E XY	F Y	GH ZA	H ZA	I B	IJ BC	J CD	JK DE	JK EF	QR WX	R XY	RS YZ	S Z	T A	U B	V C	WX D	ZA EF								½°
-¼°								A VW	CD X	EF YZ	FG ZA	GH A	H B	I C	I CD	IJ DE	IJ EF	RS WX	S XY	S Y	T ZA	TU A	UV B	W C	XY D	A EF								¼°
0°									A W	D Y	EF Z	FG A	GH B	H BC	HI CD	HI D	HI E	ST X	T Y	T YZ	U ZA	UV A	VW B	X C	A E								0°
¼°										A WX	D YZ	E ZA	F AB	G BC	GH C	GH CD	GH DE	TU XY	U Y	UV Z	V ZA	W AB	X BC	A D									¼°
½°											A XY	X WX	W W	VW WX	V WX	V X	V XY	V Y	V YZ	VW Z	WX A	XY B	A CD										½°
¾°												A Y	B Z	CD A	D AB	DE BC	E C	WX YZ	X ZA	XY A	Z BC	A C											¾°
1°														A YZ	A Z	A ZA	A A	A AB	A B	A BC													1°
1¼°																																	1¼°
1½°																																	1½°
1¾°																																	1¾°
2°																																	2°
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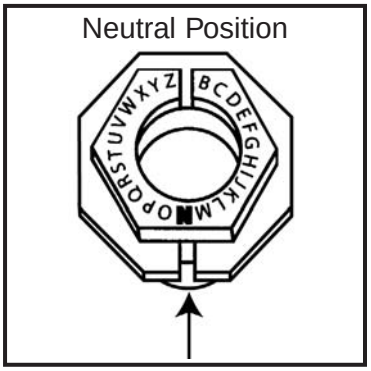
2¾°																																	2¾°
3°																																	3°
3¼°																																	3¼°
3½°																																	3½°
3¾°																																	3¾°
4°																																	4°

1. Take initial alignment reading to determine the vehicle is out of OEM specification.
2. Remove tire and wheel assembly for easy access. This also reduces the weight being supported by the upper ball joint stud.
3. If clearance allows for proper retorquing, loosen the LOWER ball joint stud nut.
4. Remove cotter key from the upper ball joint stud and remove nut.
5. Using a hammer, strike the knuckle assembly sharply a few times to break the interference taper between the ball joint and bushing. (Supporting the axle hub will aid greatly in the removal and installation of bushings. Take care not to damage brake or vacuum lines.)
6. Remove currently installed bushing from the upper ball joint.
7. Install the DUAL-AXIS ADJUSTABLE BUSHING in the Neutral or 0 Degree position by dialing the "N" of the INNER BUSHING to the SLOT of the OUTER BUSHING (See illustration #1). It does not matter at this point in what position the Dual-Axis bushing is installed in the knuckle.

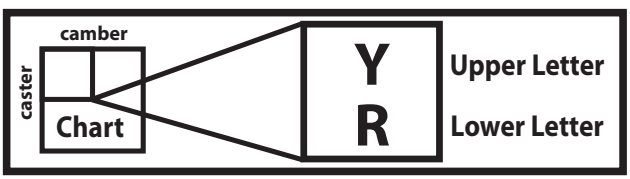
Illustration #1



8. Take a new alignment reading to determine the amount of positive (+) or negative (-) Camber & Caster changes necessary.
9. Refer to the chart on the other side of this page.
10. Follow both measurements (camber & caster changes required) to their intersection on the chart. In this box you will find letters. The UPPER letters represents the code for positioning the INNER adjuster. The LOWER letters is the reference for positioning the OUTER adjuster (See illustration #2).

Note: (If there are two upper letters or lower letters in a box, position the bushing between the two letters.)

Illustration #2



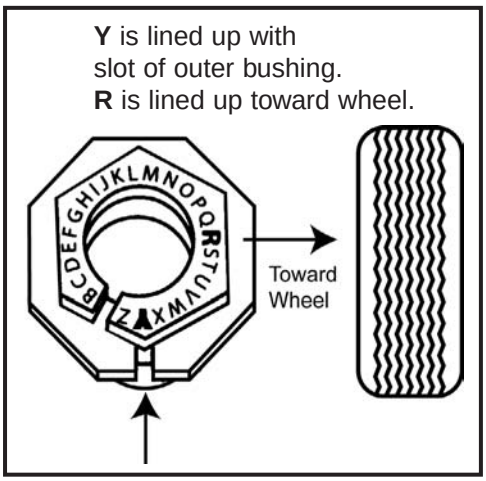
INSTALLATION INSTRUCTIONS
Dual - Axis Adjustable Bushings
Application

Ford	F450/550 Super Duty 4x4/4x2	2005–up

11. It is not necessary to remove the DUAL-AXIS bushing to index to the proper position.
12. Simply adjust the INNER bushing so the UPPER letter recorded earlier lines up with the slot of the OUTER bushing. Dial the OUTER bushing so that the Slot lines up in the appropriate location of the knuckle according to the LOWER number of the chart (See illustration #3).

Note: (Using a thin wall socket or channel type pliers will make adjustments easy.

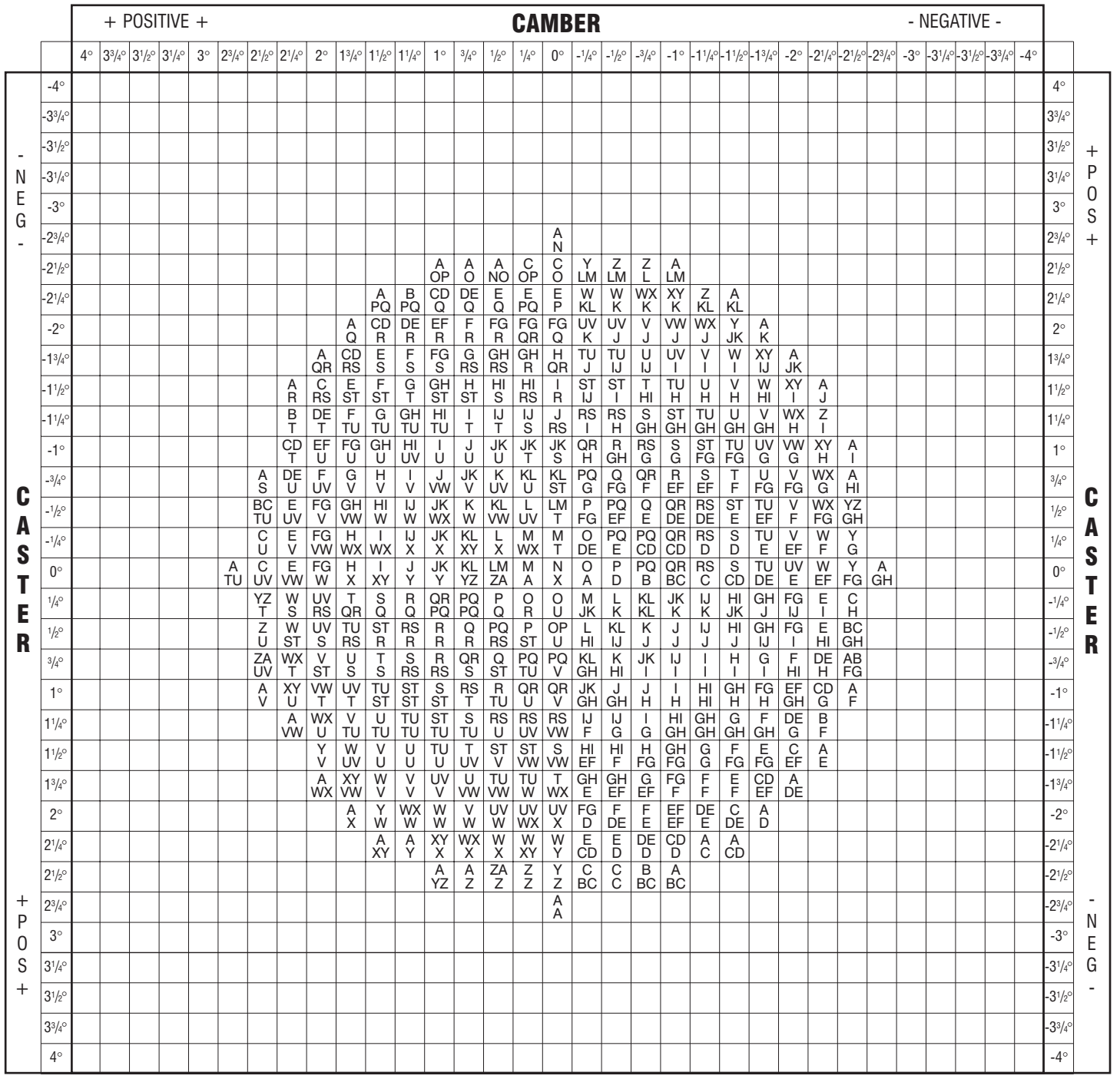
Illustration #3



13. If clearance allows, referencing step #3, tighten lower ball joint nut to interim torque 44 ft lbs. (59nm).
14. Install upper ball stud nut included with bushing and torque to manufacturer's specifications. Advance nut to next castellation and install cotter pin.
15. If clearance allows, referencing step #3, tighten lower ball joint nut to final torque of 150 ft lbs. (204nm).
16. Proceed with alignment and road test the vehicle.

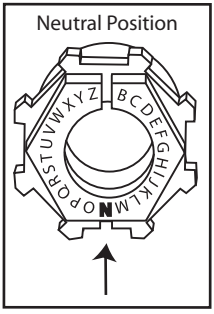
Form # 95-233-0505

FORD F450/550 Superduty 4x4/4x2 2005-up



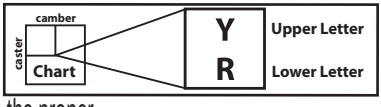
INSTALLATION INSTRUCTIONS
Dual-Axis Adjustable Bushings

Illustration #1



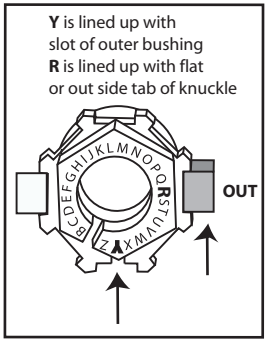
1. Take initial alignment reading to determine that the vehicle is out of OEM specification.
2. Remove tire/wheel assembly and the currently installed bushing from the upper ball joint.
3. Install the DUAL -AXIS ADJUSTABLE BUSHING in the Neutral or 0 Degree position by dialing the "N" of the INNER BUSHING to the SLOT of the OUTER BUSHING (See Illustration #1). It does not matter at this point in what position the Dual-Axis bushing is installed.
4. Take a new alignment reading to determine the amount of positive (+) or negative (-) Camber & Caster changes necessary.
5. Refer to the proper chart for the vehicle make you are servicing.
6. Follow both measurements (camber & caster changes required) to their intersection on the chart. In this box, you will find two letters. The UPPER letter represents the code for positioning the INNER adjuster . The LOWER letter is the reference for positioning the OUTER adjuster (See Illustration #2).

Illustration #2



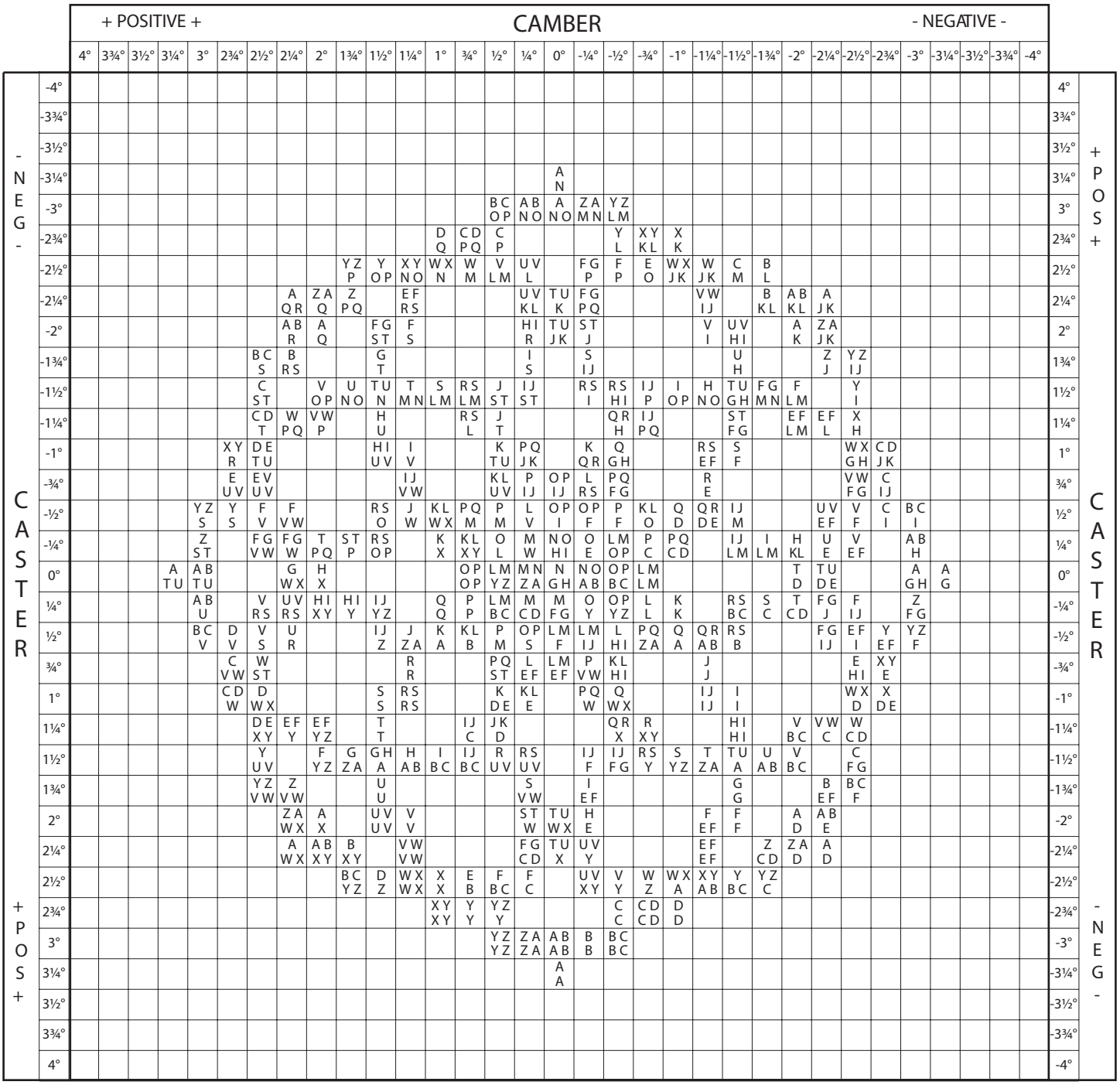
7. It is not necessary to remove the DUAL-AXIS bushing to index to the proper position! Using a thin wall socket or channel type pliers will make adjustments easy.
8. Simply adjust the INNER bushing so the UPPER letter recorded earlier lines up with the SLOT of the OUTER bushing. Dial the OUTER bushing so that the slot lines up in the appropriate location of the knuckle according the LOWER number of the chart (See Illustration #3).

Illustration #3



9. Install the pinch bolt or ball joint castle nut and torque to manufacturer's specifications. (Install new castle nut included with bushing , where provided, to allow for proper cotter pin installation.)
10. Install snap ring or cotter pin as required.
11. Proceed with alignment and road test the vehicle.

1980-95 F150 & F250 F ord Trucks 4x4
1992 & newer F250 Super-duty F ord Trucks 4x4
1998 & newer F350, F450 & F550 F ord Trucks 4x4
1994-99 Dodge Ram 2500, 3500 4x4 & 4x2



95-226-0604

MODE D'EMPLOI SPECIAL

INSTRUCTIONS D'INSTALLATION DE BAGUE DE RÉGLAGE DE CARROSSAGE/CHASSE POUR LE F-350 À 4 ROUES MOTRICES

REMARQUE: LES BAGUES D'USINE DU FORD F-350 SONT CONÇUES POUR RÉGLER SEULEMENT LA CHASSE. LA BAGUE DE RECHANGE CI-JOINTE EST DESTINÉE À RÉGLER LA CHASSE, LE CARROSSAGE OU UNE COMBINAISON DES DEUX. PAR CONSÉQUENT, IL EST UTILE D'EMPLOYER UNE BAGUE DE « 0 » DEGRÉ LORSQUE VOUS PRENEZ LES MESURES INITIALES ET CALCULER LES CHANGEMENTS NÉCESSAIRES. (LES VÉHICULES VIENNENT TRÈS SOUVENT DE L'USINE ÉQUIPÉS D'UNE BAGUE « DÉCENTRÉE » EN PLACE ET ELLE DEVRAIT PAR CONSÉQUENT ÊTRE REMPLACÉE PAR UNE BAGUE DE « 0 » DEGRÉ POUR OBTENIR DES MESURES INITIALES EXACTES.)

1. Effectuez un contrôle avant la géométrie pour détecter toute pièce endommagée ou usée. Vérifiez et réglez la pression des pneus.
2. Prenez des mesures initiales, déterminez la quantité nécessaire du changement et choisissez les bagues appropriées. (Si le véhicule est équipé d'une bague « décentrée », remplacez-la par une bague de « 0 » degré et reprenez les mesures ou référez-vous aux informations contenues dans les exemples 1 et 2.)
3. Retirez la roue pour faciliter l'accès. Ceci réduit aussi le poids que le boulon de la rotule supérieure doit soutenir.
4. Retirez la goupille fendue du boulon de la rotule supérieure et enlevez l'écrou.
5. À l'aide d'un marteau, frappez sèchement sur l'articulation quelques fois pour séparer les cônes de la rotule et de la bague. (Soutenir le moyeu de l'essieu aidera beaucoup à la dépose et l'installation des bagues.)
6. À l'aide de l'information contenue dans l'illustration n° 1, positionnez la bague choisie pour obtenir le changement nécessaire de chasse, carrossage ou combinaison des deux.
7. Lubrifiez légèrement la bague et insérez-la sur le boulon de la rotule de façon à ce que les côtés plats de la bague soient parallèles à la butée usinée sur la fourche de l'essieu.
8. Installez l'écrou du boulon de la rotule supérieure et serrez-le à un couple de 95 Nm (70 lb/pi). Avancez l'écrou jusqu'au créneau suivant et installez la goupille fendue.
9. Remontez la roue.
10. Alignez le parallélisme selon les spécifications du fabricant et testez le véhicule sur la route.

REMARQUE: Lorsque vous employez la bague pour des changements combinés, la quantité du changement de carrossage et de chasse est inférieure au degré de changement estampé sur la bague. La quantité de changement en plaçant la fente aux positions 2, 4, 6 et 8 pour les diverses bagues est de :

DEGRÉS ESTAMPÉS SUR LA BAGUE
(CHANGEMENT DE CARROSSAGE

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DEL BUJE DE AJUSTE DE CAMBER/CASTER PARA EL F-350 DE TRACCIÓN EN LAS 4 RUEDAS

NOTA: LOS BUJES DE FÁBRICA DEL FORD F-350 FUERON DISEÑADOS PARA AJUSTAR ÚNICAMENTE EL CASTER. EL BUJE DE REPUESTO INCLUIDO FUE DISEÑADO PARA AJUSTAR EL CAMBER O EL CASTER O UNA COMBINACIÓN DE LO DOS. POR CONSIGUIENTE, ES DE MUCHA AYUDA USAR UN BUJE DE "0" GRADOS AL TOMAR LAS LECTURAS INICIALES Y CALCULAR LOS CAMBIOS NECESARIOS. (FRECUENTEMENTE LOS VEHÍCULOS VIENEN DE FÁBRICA CON UN BUJE "DESCENTRADO" INSTALADO, POR CONSIGUIENTE, DICHO BUJE DEBERÁ SER REEMPLAZADO POR UN BUJE DE "0" GRADOS PARA PODER OBTENER CON PRECISIÓN LAS LECTURAS INICIALES).

1. Lleve a cabo la comprobación de pre-alineamiento para ver si hay piezas desgastadas o dañadas. Revise y ajuste la presión de las llantas.
2. Tome las lecturas iniciales, determine la cantidad de cambio necesario y seleccione los bujes apropiados. (Si el vehículo tiene un buje "descentrado", reemplácelo por un buje de "0" grados y tome nuevamente las medidas o refiérase a la información contenida en los ejemplos 1 y 2).
3. Remueva la rueda para facilitar el acceso. Esta acción también reduce el peso soportado por el perno de rótula superior.
4. Remueva la chaveta del perno de rótula superior y remueva la tuerca.
5. Usando un martillo, golpee vigorosamente algunas veces el conjunto de codillo para despegar la conicidad de interferencia entre la rótula y el buje. (El soportar el núcleo del eje proporcionará una gran ayuda en la remoción e instalación del buje).
6. Usando la información de la ilustración No. 1, coloque el buje seleccionado para el cambio de camber o caster o combinación de los dos.
7. Lubrique ligeramente el buje e insértelo por sobre la rótula de modo que las partes planas del buje queden paralelas con el tope maquinado en la horquilla del eje.
8. Instale la tuerca del perno de rótula superior y apriétela a una torsión de 95 Nm (70 lbs. pie). Avance la tuerca al próximo entallamiento e instale la chaveta.
9. Reinstale la rueda.
10. Ajuste la convergencia de acuerdo con las especificaciones y pruebe el vehículo en la carretera.

NOTA: Cuando use el buje para cambios combinados, la cantidad de cambio de camber & caster es menor que el grado de cambio estampado en el buje. La cantidad de cambio al colocar la ranura en las posiciones 2, 4, 6, & 8 para los diferentes bujes es de:

GRADOS ESTAMPADOS EN EL BUJE
(CAMBIO DE CAMBER O CASTER ÚNICAMENTE)

CANTIDAD DE CAMBIO COMBINADO
(PARA CAMBIO COMBINADO DE CAMBER/CASTER)

Contin'ua al doso

SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTIONS CASTER/CAMBER ADJUSTMENT BUSHING F-250/350 FORD SUPERDUTY 4X4

NOTE: THE ENCLOSED REPLACEMENT BUSHING IS DESIGNED TO ADJUST EITHER CASTER OR CAMBER OR A COMBINATION OF THE TWO. IT IS THEREFORE HELPFUL TO USE A "O" DEGREE BUSHING WHEN TAKING INITIAL READINGS AND CALCULATING NEEDED CHANGES. (VEHICLES VERY OFTEN COME FROM THE FACTORY WITH AN "OFFSET" BUSHING IN PLACE AND THEREFORE SHOULD BE REPLACED WITH A "O" DEGREE BUSHING FOR ACCURATE INITIAL READINGS.)

1. Perform pre-alignment check for worn or damaged parts. Check and adjust tire pressure.
2. Take initial readings and determine the amount of change needed and select proper bushings. (If vehicle has an "offset" bushing in it, either replace with "O" degree bushing and retake readings or refer to information in examples 1 and 2.)
3. Remove tire and wheel assembly for easy access. This also reduces the weight being supported by the upper ball joint stud.
4. If clearance allows for proper retorquing, loosen the LOWER ball joint stud nut.
5. Remove cotter key from the upper ball joint stud and remove nut.
6. Using a hammer, strike the knuckle assembly sharply a few times to break the interference taper between the ball joint and bushing. (Supporting the axle hub will aid greatly in the removal and installation of bushings. Take care not to damage brake or vacuum lines.)
7. Using the information in illustration No.1, position selected bushing for desired camber, caster or combination change needed.
8. Lightly lubricate bushing and insert over ball stud so flats on bushing run parallel to machined stop on axle yoke.
9. If clearance allows, referencing step #4, tighten lower ball joint nut to interim torque 44 ft lbs. (59nm).
10. Install upper ball stud nut and torque manufacturer's specifications. Advance nut to next castellation and install cotter pin.
11. If clearance allows, referencing step #4, tighten lower ball joint nut to final torque of 150 ft lbs. (204 nm).
12. Replace tire and wheel assembly.
13. Set toe to specifications and road test vehicle.

EXAMPLE 1 and 2:
1.) Determine whether offset bushing is in
a.) Positive caster. b.) Negative caster
Note position before removing
2.) Determine what degree bushing is presently in vehicle.
Note: Bushing degree markings are on top of bushing.
3.) Once degree is obtained from removed bushing, subtract the degree to get true base reading. See Example.

Example 1

Initial base reading is:	positive 2˚ caster
Bushing removed was a 1˚ and	MINUS
was in positive caster position:	positive 1˚position

True base reading is: positive 1º caster
NOTE: Camber is unaffected when bushing is in a caster mode.

Continued on other side

Form # 95-102-1204T

MODE D'EMPLOI SPECIAL

(Suite)

SEUL OU DE CHASSE SEUL
QUANTITÉ DU CHANGEMENT COMBINÉ
(POUR CHANGEMENT DE CARROSSAGE/) CHASSE COMBINÉ)

Quand la fente est placée dans la position 1, 3, 5 ou 7, la quantité du changement est le degré de changement estampé sur la bague.
AVANT DU VÉHICULE
Numéros de position de la fente Numéros de position de la fente

CASTER = CHASSE
CAMBER = CARROSSAGE

AVANT GAUCHE - MONTRANT LA FENTE
POSITIONNÉE POUR UN CHANGEMENT POSITIF DU CARROSSAGE
AVANT DROITE - MONTRANT LA FENTE
POSITIONNÉE POUR UN CHANGEMENT POSITIF DU CARROSSAGE

(ILLUSTRATION N° 1) CETTE ILLUSTRATION MONTRE COMMENT POSITIONNER LA FENTE DE LA BAGUE POUR OBTENIR LE CARROSSAGE, LA CHASSE OU UNE COMBINAISON DES DEUX.

EXEMPLES 1 ET 2 :

1.) Déterminez si la bague décentrée est en position de :
a.) Chasse positif
b.) Chasse négative: Relevez la position avant de la déposer.
2.) Déterminez de quel degré est la bague existant actuellement sur le véhicule.
REMARQUE: Les inscriptions de degré se trouvent au haut de la bague.
3.) Après avoir obtenu les degrés en déposant la bague, soustrayez cette quantité pour obtenir la mesure de base réelle. Voyez l'exemple.

EXEMPLE 1

La mesure de base initiale est : chasse de 2° positif
la bague déposée était de 1° et MOINS
était en position de chasse positive : position de 1° positif
La mesure de base réelle est : chasse de 1° positif

REMARQUE : Le carrossage n'est pas affecté quand la bague est en mode de chasse.

EXEMPLE 2

La mesure de base initiale est : chasse de 2° positif
la bague déposée était de 1° et MOINS
était en position de chasse négative : position de 1° négatif
La mesure de base réelle est : chasse de 3° positif

REMARQUE : Le carrossage n'est pas affecté quand la bague est en mode de chasse.

4.) Une fois que la mesure de base réelle a été déterminée, employez le diagramme de l'illustration n° 1.

REMARQUE : Le carrossage N'EST PAS réglable avec la bague d'origine, donc la bague décentrée d'usine sera toujours en position de chasse soit positive soit négative.

INSTRUCCIONES EXPECIALES

(Contin'ua)

(insert chart numbers here)

Cuando la ranura es colocada en la posición 1, 3, 5 ó 7, la cantidad de cambio es el grado de cambio estampado en el buje.
FRENTE DEL VEHÍCULO
Números de Posición de la Ranura Números de Posición de la Ranura
+ Camber - Camber
+ Caster - Caster

DELANTERA IZQUIERDA - MUESTRA LA RANURA
COLOCADA PARA UN CAMBIO DE CAMBER POSITIVO

DELANTERA DERECHA - MUESTRA LA RANURA
COLOCADA PARA UN CAMBIO DE CAMBER POSITIVO

(ILUSTRACIÓN No 1) LA ILUSTRACIÓN MUESTRA COMO COLOCAR LA RANURA PARA OBTENER CAMBER, CASTER O UNA COMBINACIÓN DE LOS DOS.

EJEMPLO 1 y 2:

1.) Determine si el buje descentrado está en:
a.) Caster positivo
b.) Caster negativo
Note la posición antes de removerlo
2.) Determine los grados del buje que está instalado en el vehículo.
Nota: Las marcas de los grados del buje se encuentran encima del buje.
3.) Una vez que se obtengan los grados del buje removido, reste los grados para obtener una lectura base real. Vea el ejemplo.

EJEMPLO 1

La lectura de base inicial es: 2° de caster positivo
El buje removido fue de 1° y MENOS
estaba el la posición de caster positivo: posición de 1° positivo
La lectura base real es de: 1° de caster positivo

NOTA: El camber no es afectado cuando el buje está en la modalidad de caster.

EJEMPLO 2

La lectura de base inicial es: 2° de caster positivo
El buje removido fue de 1° y MENOS
estaba el la posición de caster negativo: posición de 1° negativo
La lectura base real es de: 3° de caster positivo

NOTA: El camber no es afectado cuando el buje está en la modalidad de caster.

4.) Una vez que la lectura base real ha sido determinada, use el cuadro de la ilustración No. 1.

NOTA: El camber NO ES AJUSTABLE con el buje de fábrica, de modo que el buje descentrado de fábrica siempre estará en una posición de caster negativa o positiva.

SPECIAL INSTRUCTIONS

(Continued)

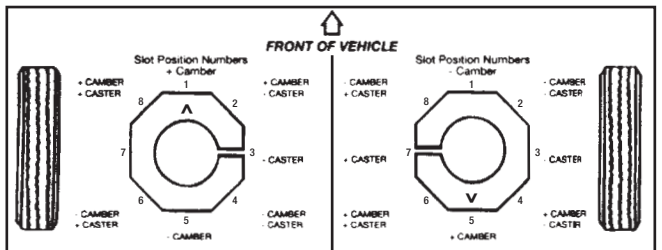
Example 2

Initial base reading is positive 2˚
bushing removed was a 1˚ MINUS
and was in negative caster position: negative 1˚ position
True base reading is: positive 3˚ caster
NOTE: Camber is unaffected when bushing is in a caster mode.
4.) Once true base reading is determined use chart in illustration No. 1.

NOTE: When using the bushing for combination changes the amount of camber & caster change is less than the degree of change stamped on the bushing. The amount of change when locating the index mark (^) at positions 2, 4, 6, & 8 for the various bushings is:

Degree stamped on bushing (camber only or caster only change	Amount of combination change for combination camber/caster change
2-1/2	1-3/4
2-1/4	1-37/64
2	1-13/32
1-3/4	1-7/32
1-1/2	1-1/16
1-1/4	7/8
1	11/16
3/4	17/32
1/2	11/32
1/4	3/16
0	0

When the index mark (^) is placed at position number 1,3,5 or 7 the amount of change is the degree of change stamped on the bushing.



LEFT FRONT-SHOWING INDEX MARK (^) POSITIONED FOR POSITIVE CAMBER CHANGE

RIGHT FRONT-SHOWING INDEX MARK (^) POSITIONED FOR POSITIVE CAMBER CHANGE

(ILLUSTRATION NO.1) THIS ILLUSTRATION SHOWS HOW TO POSITION THE INDEX MARK (^) OF BUSHING TO OBTAIN CAMBER, CASTER OR A COMBINATION OF BOTH.

INSTRUCTIONS D'INSTALLATION DE BAGUE DE RÉGLAGE DE CARROSSAGE/CHASSE POUR LE F-450/550 FORD SUPERDUTY 4x4/4x2

REMARQUE: LES BAGUES D'USINE DU FORD F-350 SONT CONÇUES POUR RÉGLER SEULEMENT LA CHASSE. LA BAGUE DE RECHANGE CI-JOINTE EST DESTINÉE À RÉGLER LA CHASSE, LE CARROSSAGE OU UNE COMBINAISON DES DEUX. PAR CONSÉQUENT, IL EST UTILE D'EMPLOYER UNE BAGUE DE « 0 » DEGRÉ LORSQUE VOUS PRENEZ LES MESURES INITIALES ET CALCULER LES CHANGEMENTS NÉCESSAIRES. (LES VÉHICULES VIENNENT TRÈS SOUVENT DE L'USINE ÉQUIPÉS D'UNE BAGUE « DÉCENTRÉE » EN PLACE ET ELLE DEVRAIT PAR CONSÉQUENT ÊTRE REMPLACÉE PAR UNE BAGUE DE « 0 » DEGRÉ POUR OBTENIR DES MESURES INITIALES EXACTES.)

1. Effectuez un contrôle avant la géométrie pour détecter toute pièce endommagée ou usée. Vérifiez et réglez la pression des pneus.
2. Prenez des mesures initiales, déterminez la quantité nécessaire du changement et choisissez les bagues appropriées. (Si le véhicule est équipé d'une bague « décentrée », remplacez-la par une bague de « 0 » degré et reprenez les mesures ou référez-vous aux informations contenues dans les exemples 1 et 2.)
3. Retirez la roue pour faciliter l'accès. Ceci réduit aussi le poids que le boulon de la rotule supérieure doit soutenir.
4. Retirez la goupille fendue du boulon de la rotule supérieure et enlevez l'écrou.
5. À l'aide d'un marteau, frappez sèchement sur l'articulation quelques fois pour séparer les cônes de la rotule et de la bague. (Soutenir le moyeu de l'essieu aidera beaucoup à la dépose et l'installation des bagues.)
6. À l'aide de l'information contenue dans l'illustration n° 1, positionnez la bague choisie pour obtenir le changement nécessaire de chasse, carrossage ou combinaison des deux.
7. Lubrifiez légèrement la bague et insérez-la sur le boulon de la rotule de façon à ce que les côtés plats de la bague soient parallèles à la butée usinée sur la fourche de l'essieu.
8. Installez l'écrou du boulon de la rotule supérieure et serrez-le à un couple de 95 Nm (70 lb/pi). Avancez l'écrou jusqu'au créneau suivant et installez la goupille fendue.
9. Remontez la roue.
10. Alignez le parallélisme selon les spécifications du fabricant et testez le véhicule sur la route.

REMARQUE: Lorsque vous employez la bague pour des changements combinés, la quantité du changement de carrossage et de chasse est inférieure au degré de changement estampé sur la bague. La quantité de changement en plaçant la fente aux positions 2, 4, 6 et 8 pour les diverses bagues est de :

DEGRÉS ESTAMPÉS SUR LA BAGUE
(CHANGEMENT DE CARROSSAGE

Suite a Verso

INSTRUCCIONES DE INSTALACIÓN DEL BUJE DE AJUSTE DE CAMBER/CASTER PARA EL F-450/550 FORD SUPERDUTY 4x4/4x2

NOTA: LOS BUJES DE FÁBRICA DEL FORD F-350 FUERON DISEÑADOS PARA AJUSTAR ÚNICAMENTE EL CASTER. EL BUJE DE REPUESTO INCLUIDO FUE DISEÑADO PARA AJUSTAR EL CAMBER O EL CASTER O UNA COMBINACIÓN DE LO DOS. POR CONSIGUIENTE, ES DE MUCHA AYUDA USAR UN BUJE DE "0" GRADOS AL TOMAR LAS LECTURAS INICIALES Y CALCULAR LOS CAMBIOS NECESARIOS. (FRECUENTEMENTE LOS VEHÍCULOS VIENEN DE FÁBRICA CON UN BUJE "DESCENTRADO" INSTALADO, POR CONSIGUIENTE, DICHO BUJE DEBERÁ SER REEMPLAZADO POR UN BUJE DE "0" GRADOS PARA PODER OBTENER CON PRECISIÓN LAS LECTURAS INICIALES).

1. Lleve a cabo la comprobación de pre-alineamiento para ver si hay piezas desgastadas o dañadas. Revise y ajuste la presión de las llantas.
2. Tome las lecturas iniciales, determine la cantidad de cambio necesario y seleccione los bujes apropiados. (Si el vehículo tiene un buje "descentrado", reemplácelo por un buje de "0" grados y tome nuevamente las medidas o refiérase a la información contenida en los ejemplos 1 y 2).
3. Remueva la rueda para facilitar el acceso. Esta acción también reduce el peso soportado por el perno de rótula superior.
4. Remueva la chaveta del perno de rótula superior y remueva la tuerca.
5. Usando un martillo, golpee vigorosamente algunas veces el conjunto de codillo para despegar la conicidad de interferencia entre la rótula y el buje. (El soportar el núcleo del eje proporcionará una gran ayuda en la remoción e instalación del buje).
6. Usando la información de la ilustración No. 1, coloque el buje seleccionado para el cambio de camber o caster o combinación de los dos.
7. Lubrique ligeramente el buje e insértelo por sobre la rótula de modo que las partes planas del buje queden paralelas con el tope maquinado en la horquilla del eje.
8. Instale la tuerca del perno de rótula superior y apriétela a una torsión de 95 Nm (70 lbs. pie). Avance la tuerca al próximo entallamiento e instale la chaveta.
9. Reinstale la rueda.
10. Ajuste la convergencia de acuerdo con las especificaciones y pruebe el vehículo en la carretera.

NOTA: Cuando use el buje para cambios combinados, la cantidad de cambio de camber & caster es menor que el grado de cambio estampado en el buje. La cantidad de cambio al colocar la ranura en las posiciones 2, 4, 6, & 8 para los diferentes bujes es de:

GRADOS ESTAMPADOS EN EL BUJE
(CAMBIO DE CAMBER O CASTER ÚNICAMENTE)

CANTIDAD DE CAMBIO COMBINADO
(PARA CAMBIO COMBINADO DE CAMBER/CASTER)

Contin'ua al doso

INSTALLATION INSTRUCTIONS CASTER/CAMBER ADJUSTMENT BUSHING F-450/550 FORD SUPERDUTY 4X4/4x2

NOTE: THE ENCLOSED REPLACEMENT BUSHING IS DESIGNED TO ADJUST EITHER CASTER OR CAMBER OR A COMBINATION OF THE TWO. IT IS THEREFORE HELPFUL TO USE A "O" DEGREE BUSHING WHEN TAKING INITIAL READINGS AND CALCULATING NEEDED CHANGES. (VEHICLES VERY OFTEN COME FROM THE FACTORY WITH AN "OFFSET" BUSHING IN PLACE AND THEREFORE SHOULD BE REPLACED WITH A "O" DEGREE BUSHING FOR ACCURATE INITIAL READINGS.)

1. Perform pre-alignment check for worn or damaged parts. Check and adjust tire pressure.
2. Take initial readings and determine the amount of change needed and select proper bushings. (If vehicle has an "offset" bushing in it, either replace with "O" degree bushing and retake readings or refer to information in examples 1 and 2.)
3. Remove tire and wheel assembly for easy access. This also reduces the weight being supported by the upper ball joint stud.
4. If clearance allows for proper retorquing, loosen the LOWER ball joint stud nut.
5. Remove cotter key from the upper ball joint stud and remove nut.
6. Using a hammer, strike the knuckle assembly sharply a few times to break the interference taper between the ball joint and bushing. (Supporting the axle hub will aid greatly in the removal and installation of bushings. Take care not to damage brake or vacuum lines.)
7. Using the information in illustration No.1, position selected bushing for desired camber, caster or combination change needed.
8. Lightly lubricate bushing and insert over ball stud so flats on bushing run parallel to machined stop on axle yoke.
9. If clearance allows, referencing step #4, tighten lower ball joint nut to interim torque 44 ft lbs. (59nm).
10. Install upper ball stud nut and torque manufacturer's specifications. Advance nut to next castellation and install cotter pin.
11. If clearance allows, referencing step #4, tighten lower ball joint nut to final torque of 150 ft lbs. (204 nm).
12. Replace tire and wheel assembly.
13. Set toe to specifications and road test vehicle.

EXAMPLE 1 and 2:
1.) Determine whether offset bushing is in
a.) Positive caster. b.) Negative caster
Note position before removing
2.) Determine what degree bushing is presently in vehicle.
Note: Bushing degree markings are on top of bushing.
3.) Once degree is obtained from removed bushing, subtract the degree to get true base reading. See Example.

Example 1

Initial base reading is:	positive 2˚ caster
Bushing removed was a 1˚ and	MINUS
was in positive caster position:	positive 1˚position

True base reading is: positive 1º caster
NOTE: Camber is unaffected when bushing is in a caster mode.

Continued on other side

Form # 95-102-105T

MODE D'EMPLOI SPECIAL

(Suite)

SEUL OU DE CHASSE SEUL
QUANTITÉ DU CHANGEMENT COMBINÉ
(POUR CHANGEMENT DE CARROSSAGE/) CHASSE COMBINÉ)

Quand la fente est placée dans la position 1, 3, 5 ou 7, la quantité du changement est le degré de changement estampé sur la bague.
AVANT DU VÉHICULE
Numéros de position de la fente Numéros de position de la fente

CASTER = CHASSE
CAMBER = CARROSSAGE

AVANT GAUCHE - MONTRANT LA FENTE
POSITIONNÉE POUR UN CHANGEMENT POSITIF DU CARROSSAGE
AVANT DROITE - MONTRANT LA FENTE
POSITIONNÉE POUR UN CHANGEMENT POSITIF DU CARROSSAGE

(ILLUSTRATION N° 1) CETTE ILLUSTRATION MONTRE COMMENT POSITIONNER LA FENTE DE LA BAGUE POUR OBTENIR LE CARROSSAGE, LA CHASSE OU UNE COMBINAISON DES DEUX.

EXEMPLES 1 ET 2 :

1.) Déterminez si la bague décentrée est en position de :
a.) Chasse positif
b.) Chasse négative: Relevez la position avant de la déposer.
2.) Déterminez de quel degré est la bague existant actuellement sur le véhicule.
REMARQUE: Les inscriptions de degré se trouvent au haut de la bague.
3.) Après avoir obtenu les degrés en déposant la bague, soustrayez cette quantité pour obtenir la mesure de base réelle. Voyez l'exemple.

EXEMPLE 1

La mesure de base initiale est : chasse de 2° positif
la bague déposée était de 1° et MOINS
était en position de chasse positive : position de 1° positif
La mesure de base réelle est : chasse de 1° positif

REMARQUE : Le carrossage n'est pas affecté quand la bague est en mode de chasse.

EXEMPLE 2

La mesure de base initiale est : chasse de 2° positif
la bague déposée était de 1° et MOINS
était en position de chasse négative : position de 1° négatif
La mesure de base réelle est : chasse de 3° positif

REMARQUE : Le carrossage n'est pas affecté quand la bague est en mode de chasse.
4.) Une fois que la mesure de base réelle a été déterminée, employez le diagramme de l'illustration n° 1.

REMARQUE : Le carrossage N'EST PAS réglable avec la bague d'origine, donc la bague décentrée d'usine sera toujours en position de chasse soit positive soit négative.

INSTRUCCIONES EXPECIALES

(Contin'ua)

(insert chart numbers here)

Cuando la ranura es colocada en la posición 1, 3, 5 ó 7, la cantidad de cambio es el grado de cambio estampado en el buje.
FRENTE DEL VEHÍCULO
Números de Posición de la Ranura Números de Posición de la Ranura
+ Camber - Camber
+ Caster - Caster

DELANTERA IZQUIERDA - MUESTRA LA RANURA
COLOCADA PARA UN CAMBIO DE CAMBER POSITIVO

DELANTERA DERECHA - MUESTRA LA RANURA
COLOCADA PARA UN CAMBIO DE CAMBER POSITIVO

(ILUSTRACIÓN No 1) LA ILUSTRACIÓN MUESTRA COMO COLOCAR LA RANURA PARA OBTENER CAMBER, CASTER O UNA COMBINACIÓN DE LOS DOS.

EJEMPLO 1 y 2:

1.) Determine si el buje descentrado está en:
a.) Caster positivo
b.) Caster negativo
Note la posición antes de removerlo
2.) Determine los grados del buje que está instalado en el vehículo.
Nota: Las marcas de los grados del buje se encuentran encima del buje.
3.) Una vez que se obtengan los grados del buje removido, reste los grados para obtener una lectura base real. Vea el ejemplo.

EJEMPLO 1

La lectura de base inicial es: 2° de caster positivo
El buje removido fue de 1° y MENOS
estaba el la posición de caster positivo: posición de 1° positivo
La lectura base real es de: 1° de caster positivo

NOTA: El camber no es afectado cuando el buje está en la modalidad de caster.

EJEMPLO 2

La lectura de base inicial es: 2° de caster positivo
El buje removido fue de 1° y MENOS
estaba el la posición de caster negativo: posición de 1° negativo
La lectura base real es de: 3° de caster positivo

NOTA: El camber no es afectado cuando el buje está en la modalidad de caster.
4.) Una vez que la lectura base real ha sido determinada, use el cuadro de la ilustración No. 1.

NOTA: El camber NO ES AJUSTABLE con el buje de fábrica, de modo que el buje descentrado de fábrica siempre estará en una posición de caster negativa o positiva.

SPECIAL INSTRUCTIONS

(Continued)

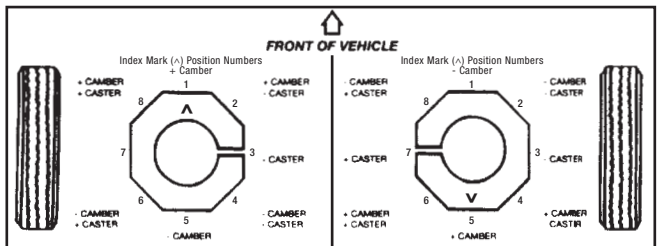
Example 2

Initial base reading is positive 2°
bushing removed was a 1° MINUS
and was in negative caster position: negative 1° position
True base reading is: positive 3° caster
NOTE: Camber is unaffected when bushing is in a caster mode.
4.) Once true base reading is determined use chart in illustration No. 1.

NOTE: When using the bushing for combination changes the amount of camber & caster change is less than the degree of change stamped on the bushing. The amount of change when locating the index mark (^) at positions 2, 4, 6, & 8 for the various bushings is:

Degree stamped on bushing (camber only or caster only change	Amount of combination change for combination camber/caster change
2	1-13/32
1-3/4	1-7/32
1-1/2	1-1/16
1-1/4	7/8
1	11/16
3/4	17/32
1/2	11/32
1/4	3/16
0	0

When the index mark (^) is placed at position number 1,3,5 or 7 the amount of change is the degree of change stamped on the bushing.



(ILLUSTRATION NO.1) THIS ILLUSTRATION SHOWS HOW TO POSITION THE INDEX MARK (^) OF BUSHING TO OBTAIN CAMBER, CASTER OR A COMBINATION OF BOTH.

INSTALLATION INSTRUCTIONS #410 RADIUS ARM RESILIENT WASHER

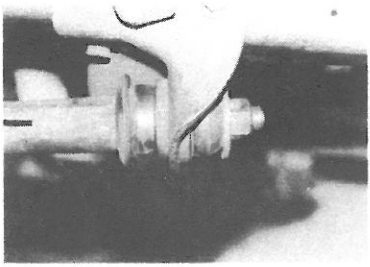


Fig. 1: Check bushing to make sure there is no excessive cracking or weather checking.

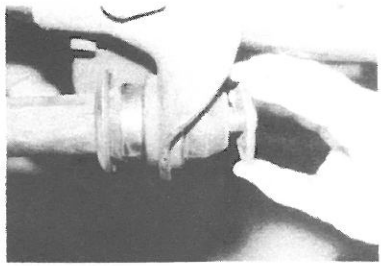


Fig. 2: Remove retaining nut and retaining washer.

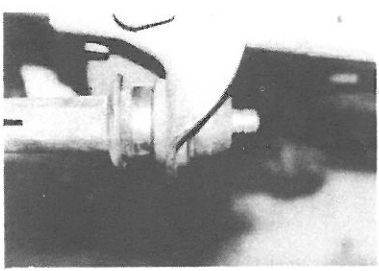


Fig. 3: Check bushings again for proper positioning in mounting bracket.

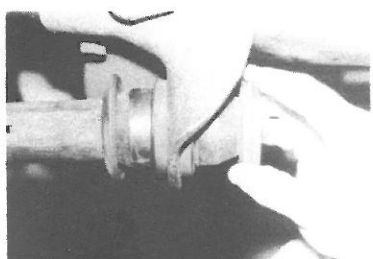


Fig. 4: Install Resilient washer and retaining washer. Be sure to keep the Resilient washer centered with the retaining washer.

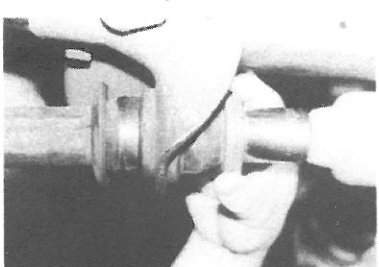


Fig. 5: Replace nut on radius arm shaft, tighten.

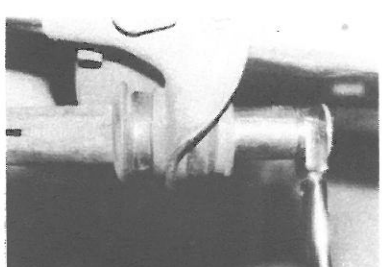


Fig. 6: Torque to manufacturer's specifications. (Notice difference in Bushing compression compared to Fig. 1.)

Installation Instructions

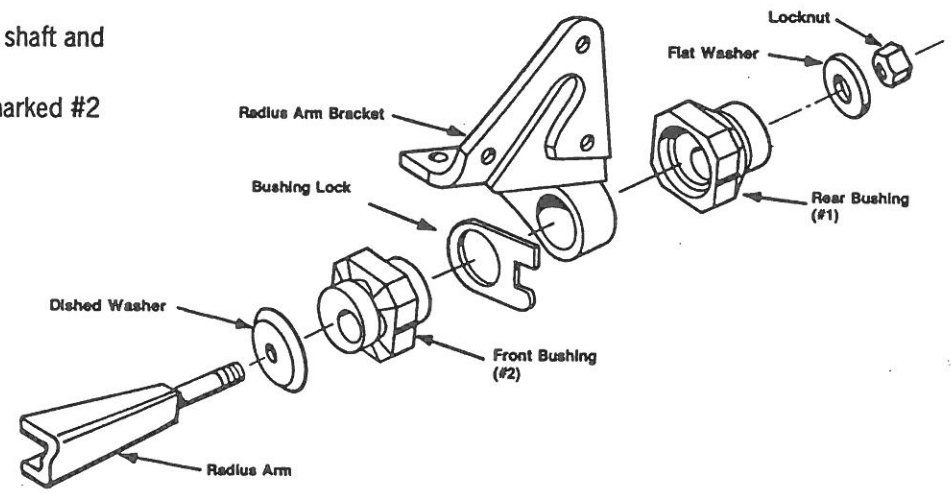
2WD Ford Light Truck Eccentric Caster Bushing

REMOVAL:

1) Raise the front of vehicle and support adequately on frame with jack stands **(DO NOT SUPPORT ON AXLE)**
2) Loosen axle pivot bushing nut **(DO NOT REMOVE NUT — Not illustrated)**
3) Remove shock absorber lower mounting bolt and compress shock absorber
4) Remove radius arm rear lockout at radius arm bracket, remove flat washer, rubber bushing and synthetic spacer (discard synthetic spacer)
5) Move the axle and radius arm forward out of the radius arm bracket to obtain proper clearance. Remove large front rubber bushing from radius arm.

INSTALLATION:

1) Clean all rust from radius arm shaft and frame mounting hole
2) Install the eccentric bushing marked #2 on the radius arm with the "2" toward the front of the vehicle
3) Rotate the bushing so the alignment tab is at the bottom of the radius arm bracket for additional positive caster or at the top of the bracket for less caster
4) Install bushing lock as illustrated



5) Insert radius arm shaft through radius arm bracket
6) Install the eccentric bushing marked #1 with the "1" toward the rear of the vehicle. Position the alignment tab to match that of the front bushing
7) Install flat washer and locknut
8) Tighten axle pivot bolt and nut to 120-150 ft. lbs. (163-203 N.m.)
9) Tighten radius arm lockout to 81-120 ft. lbs. (109-163 N.m.)
10) Bend tabs of bushing lock (short tab on bushing, long tab on bracket)
11) Install lower shock absorber mounting bolt and torque nut to 40-60 ft. lbs. (55-81 N.m.)
12) Remove jack stand and lower vehicle
13) Check front-end alignment to be sure proper changes have been obtained
14) Test drive vehicle

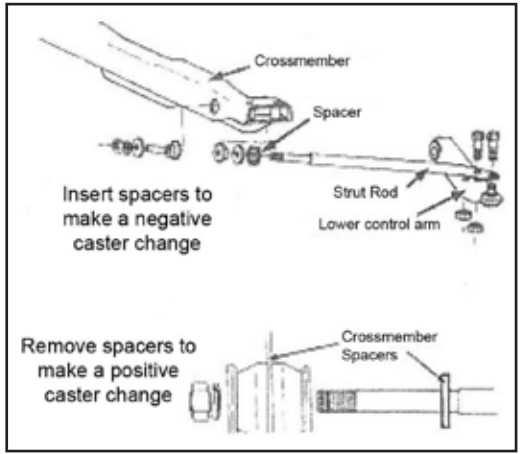
NOTE: The approximate caster change that can be obtained is 1¼°

Fine adjustments may be made by loosening the radius arm locknut until enough space is obtained to rotate the bushings. Make sure alignment tabs on both the front and rear bushings are in the same position. Retorque locknut to 81-120 ft. lbs. (109-163 N.m.)

Honda Caster Spacers

1/8° approx. change 1/4° approx. change

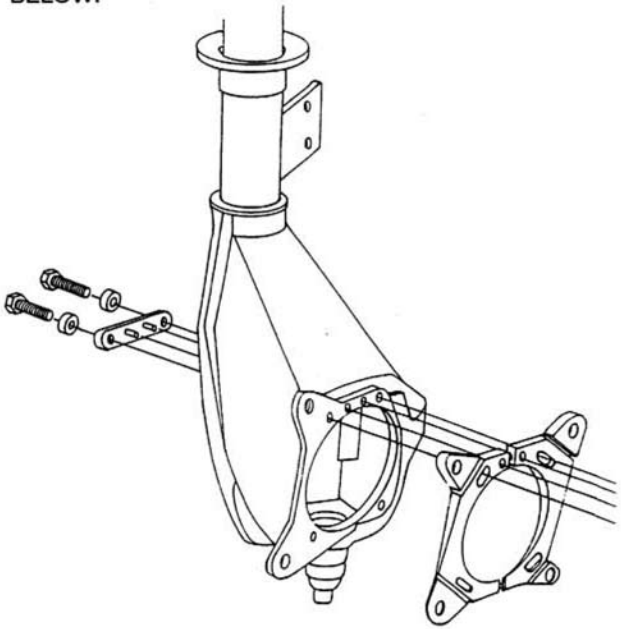
1. Before beginning any alignment, always check for loose or worn parts, tire pressure, and odd tire wear patterns. Determine change needed.
2. Remove the nut at the front of the strut rod.
3. Remove two bolts and nuts attaching strut rod to lower control arm.
4. Slide the strut rod back out of the bushing assembly. Remove the large washer from the strut rod and install correct spacers for the amount of negative caster change needed. Remove spacers to make a positive caster change (see illustrations).
5. Re-install the strut rod. Torque nuts and bolts to manufacturer's specifications.
6. Re-sweep caster and check readings. Complete alignment and road test vehicle.



IMPORTANT

FOR VEHICLES WITH ABS BRAKES

FOR **POSITIVE** ADJUSTMENT WHEN INSTALLING A 1/2˚, 3/4˚ OR 1˚ SHIM ON "W" BODY VEHICLES EQUIPPED WITH ABS BRAKES, REPLACE BOTH TOP ORIGINAL EQUIPMENT HUB BOLTS WITH SUPPLIED BOLT/SPACER KIT. SEE ILLUSTRATION BELOW.



95-120-395

INSTRUCTIONS

STEP

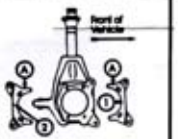
Illustration No. 1

1. Inspect vehicle for damaged, bent or worn parts and repair as necessary. Take camber reading to determine the amount of camber change required and select proper shim.
2. Raise vehicle at pinch welds behind front wheel wells in a safe manner and remove wheel assembly and brake caliper. (Be sure brake caliper is supported so the weight of the caliper is not being held by the brake line—**(NOTE:** Hanging caliper over the lip of the lower spring mount, using a shop rag for protection, works well.) **(See Illustration No. 1)** Remove Rotor.

SELECT THE PROPER PROCEDURE FROM THE FOLLOWING:

3. **PASSENGER SIDE - CAMBER DECREASE**

Illustration No. 2 Passenger Side Camber *Decrease*



Remove all four (4) hub bolts. Separate shim into front and rear sections by breaking at snap tabs top and bottom. (Remove any remaining tab material with side cutters). Position **side "A1"** of the selected shim behind **front** half of hub with the letter **"A"** to the top. **(See Illustration No. 2)** Re-install front hub bolts halfway. Next, position **side "A2"** of the shim behind the **rear** half of the hub with the letter **"A"** to the top. **(See Illustration No. 2)** Re-install the two (2) rear hub bolts, but do not tighten at this time.

Check to be sure caliper bolt holes and forward protruding shim tab holes are lined up. Next, using the large caliper mounting bolts as a guide, center shim tabs with caliper mounting holes and torque all four (4) hub bolts, in sequence, to specs. (60 ft. lbs. / 80 N.M.) **NOTE:** The rearward facing caliper shim tabs may be cut off and discarded as they are only needed when shim is mounted in the reverse position for camber increase) Next, re-install rotor and remount caliper making sure shim tabs are between caliper and mounting surface. (This puts caliper in exact alignment with rotor) Torque brake caliper mounting bolts to specs. (80 ft. lbs. / 107 N.M.)

3A. **ALTERNATE STEP: PASSENGER SIDE - CAMBER INCREASE**

Illustration No. 3 Passenger Side Camber *Increase*

Remove all four (4) hub bolts. Separate shim into front and rear sections by breaking at snap tabs top and bottom. (Remove any remaining tab material with side cutters) Position **Side "B2"** of the selected shim behind **front** half of hub with the letter **"B"** to the top. **(See Illustration No. 3)** Re-install front hub bolts halfway. Next, position side **"B1"** of the shim behind the rear half of the hub with the letter **"B"** to the top. **(See Illustration No. 3)** Re-install the two (2) rear hub bolts, but do not tighten at this time.

Check to be sure caliper bolt holes and forward protruding shim tab holes are lined up. Next, using the large caliper mounting bolts as a guide, center shim tabs with caliper mounting holes and torque all four (4) hub bolts, in sequence, to specs. (60 ft. lbs. / 80 N.M.) **(NOTE:** The rearward facing caliper shim tabs may be cut off and discarded as they are only needed when shim is mounted in the reverse position for camber decrease) Next, re-install rotor and remount caliper making sure shim tabs are between caliper and mounting surface. (This puts caliper in exact alignment with rotor) Torque brake caliper mounting bolts to specs. (80 ft. lbs. / 107 N.M.)

STEP

4. **DRIVERS SIDE - CAMBER DECREASE**

Illustration No. 4 Driver Side Camber *Decrease*

Remove all four (4) hub bolts. Separate shim into front and rear sections by breaking at snap tabs top and bottom. (Remove any remaining tab material with side cutters) Position **side "C3"** of the selected shim behind **front** half of hub with the letter **"C"** to the top **(See Illustration No. 4).** Re-install front hub bolts halfway. Next, position side **"C4"** of the shim behind the rear half of the hub with the letter **"C"** to the top **(See Illustration No. 4)** Re-install the two (2) rear hub bolts, but do not tighten at this time.

Check to be sure the caliper bolt holes and forward protruding shim tab holes are lined up. Next, using the large caliper mounting bolts as a guide, center shim tabs with caliper mounting holes and torque all four (4) hub bolts, in sequence, to specs. (60 ft. lbs. / 80 N.M.) **(NOTE:** The rearward facing caliper shim tabs may be cut off and discarded as they are only needed when shim is mounted ~~in the reverse position for camber increase) Next, re-install rotor~~ and remount caliper making sure shim tabs are between caliper and mounting surface. (This puts caliper in exact alignment with rotor) Torque brake caliper mounting bolts to specs. (80 ft. lbs. / 107 N.M.)

4A **ALTERNATE STEP: DRIVERS SIDE - CAMBER INCREASE**

Illustration No. 5 Driver Side Camber *Increase*

Remove all four (4) hub bolts. Separate shim into front and rear sections by breaking at snap tabs top and bottom. (Remove any remaining tab material with side cutters.) Position **side "D4"** of the selected shim behind **front** half of hub with the letter **"D"** to the top. **(See Illustration No. 5)** Re-install front hub bolts halfway. Next, position side **"D3"** of the shim behind the rear half of the hub with the letter **"D"** to the top. **(See Illustration No. 5)** Re-install the two (2) rear hub bolts, but do not tighten at this time.

Check to be sure the caliper bolt holes and forward protruding shim tab holes are lined up. Next, using the large caliper mounting bolts as a guide, center shim tabs with caliper mounting holes and torque all four (4) hub bolts, in sequence, to specs. (60 ft. lbs. / 80 N.M.) **(NOTE:** The rearward facing caliper shim tabs may be cut off and discarded as they are only needed when shim is mounted in the reverse position for camber decrease) Next, re-install rotor and remount caliper making sure shim tabs are between caliper and mounting surface. (This puts caliper in exact alignment with rotor) Torque brake caliper mounting bolts to specs. (80 ft. lbs. / 107 N.M.)

NOTE: *THE MOUNTING SURFACE ON THE STRUT IS NOT A MACHINED SURFACE, THEREFORE YOU MAY EXPERIENCE SLIGHT VARIATIONS IN CAMBER CHANGES FROM THOSE SHOWN ON THE SHIM.*

MODE D'EMPLOI SPECIAL

INSTRUCTIONSDU NÉCESSAIRE DE PARALLÉLISME ET CARROSSAGE ARRIÈRE POUR TEMPO/TOPAZ

1. Inspectez le véhicule pour voir si des pièces de la direction ou de la suspension sont endommagées, tordues ou usées et réparez-les au besoin. Accrochez votre appareil de réglage de la géométrie et déterminez la quantité du changement de parallélisme et de carrossage arrière requis.
2. A : Pour des véhicules sans régleur de parallélisme installé en usine, installez deux (2) bagues de chaque côté du véhicule.

B : Pour les véhicules avec régleurs de parallélisme installés en usine, une seule bague est utilisée de chaque côté. REMARQUE : Si une seule bague est utilisée de chaque côté, installez-la du côté interne du bras de contrôle avant. Si deux bagues sont utilisées, installez-les du côté interne des deux bras de contrôle avant et arrière. (N'essayez pas de mettre les bagues décentrées du côté externe du bras de contrôle, car il est d'un diamètre différent.)

3. Soulevez l'arrière du véhicule et laissez pendre la suspension. Enlevez le bras de contrôle en retirant l'écrou et le boulon internes, aussi bien que l'écrou externe. Enlevez le bras du véhicule. (Assurez-vous de marquer les bras gauche et droit et avant et arrière pour les remonter correctement.)
4. Placez le bras de contrôle dans un étau et à l'aide d'un extracteur de bielle pendante ou de tout autre extracteur adéquat, sortez la bague interne du bras de contrôle. (Voyez l'illustration n° 1.) (REMARQUE : L'emploi d'une rondelle plate de 1-1/2 po est pratique pour pousser contre la bague.)
5. Installez un nouvel assemblage de bague et manchon en le pressant dans le bras de contrôle jusqu'à ce qu'il soit ajusté contre l'« épaulement » du manchon. (Ceci est obtenu en installant le côté chanfreiné du manchon de la bague dans le côté biseauté du bras de contrôle.) (Voyez l'illustration n° 2.) (Remarque : Assurez-vous que le manchon métallique soit fermement assis dans le bras de contrôle - si besoin est, utilisez le produit « Loctite » ou un produit similaire pour asseoir le manchon. Aussi, assurez-vous que la bague tourne librement dans le manchon. Si tout coincement est ressenti, poncez la bague jusqu'à ce qu'elle tourne librement.
6. Placez la rondelle étoilée dans le renfoncement de la tête hexagonale de la bague et glissez l'entretoise en nylon sur l'extrémité opposée contre le manchon métallique. Il est important de desserrer le boulon de montage interne du côté opposé du support de traverse, si pas déjà fait. Ceci fournit l'espace pour soulever le bras de contrôle avec de nouvelles bague et rondelle étoilée dans la traverse. (Voyez l'illustration n° 3.) Remontez le bras de contrôle dans le véhicule. (REMARQUE : Ajustez seulement les boulons. NE LES SERREZ PAS À CE POINT.)
7. Répétez la procédure ci-dessus pour l'autre côté du véhicule, si des changements de parallélisme et de carrossage sont requis.
8. Abaissez le véhicule de façon à ce que tout le poids repose sur les pneus, faites rebondir le véhicule une ou deux fois, réglez le carrossage et/ou le parallélisme en tournant les bagues. Serrez les

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DEL CONJUNTO DE CAMBER/CONVERGENCIA TRASERO PARA EL TEMPO/TOPAZ

1. Inspeccione el vehículo para ver si las piezas de la suspensión o de la dirección están dobladas o desgastadas o dañadas y efectúe las reparaciones necesarias. Conecte su equipo de alineamiento y determine la cantidad de cambio de convergencia y de camber trasero necesario.
2. A: Para vehículos sin ajustadores de convergencia instalados en la fábrica, instale dos (2) bujes a cada lado del vehículo.

B: Para vehículos con ajustadores de convergencia instalados en la fábrica, únicamente un buje por lado es utilizado. NOTA: Si se está usando únicamente un buje por lado, instálelo en el lado de adentro del brazo de control delantero. Si se están usando dos bujes, instálelos en el lado de adentro del brazo de control delantero y trasero. (No intente colocar bujes descentrados nuevos en el lado de afuera del brazo de control, puesto que él es de diámetro diferente).

3. Levante la parte de atrás del vehículo y deje que la suspensión cuelgue. Remueva el brazo de control retirando la tuerca y el perno de adentro y la tuerca de afuera. Remueva el brazo del vehículo. (Asegúrese de marcar los brazos derecho e izquierdo y delantero y trasero para re-instalarlos correctamente).
4. Coloque el brazo de control en un tornillo de banco y usando un extractor de brazo Pitman u otro extractor apropiado, saque a presión el buje de adentro del brazo de control. (Vea la ilustración # 1). (NOTA: El uso de una arandela plana de 1-1/2" funciona bien para aplicar presión contra el buje).
5. Instale a presión el ensamble nuevo de buje y manga dentro del brazo de control hasta que asiente contra el hombro de la manga. (Esto es efectuado instalando el extremo biselado de la manga del buje en el lado biselado del brazo de control). (Vea la ilustración #2) Nota: Asegúrese de que la manga metálica quede asentada apretadamente en el brazo de control, si es necesario, use "Loctite" o un producto similar para asentar la manga. También, asegúrese de que le buje gire libremente dentro de la manga, si siente cualquier rozamiento, lije el buje hasta que gire libremente.
6. Coloque una arandela estrella en el área rebajada en la cabeza hexagonal del buje y deslice el espaciador de nilón por el lado opuesto del buje y contra la manga metálica. Es importante aflojar el perno de montaje de adentro en el lado opuesto del soporte del travesaño, si es que no ha sido ya aflojado. Esto le da espacio libre al brazo de control con buje y arandela estrella nuevos para ser levantados y colocados en el travesaño. (Vea la ilustración No. 3). Reinstale el brazo de control en el vehículo. (NOTA: Ajuste los tornillos únicamente, NO LOS APRIETE EN ESTE MOMENTO).
7. Repita el procedimiento descrito arriba en el otro lado del vehículo, si es necesario efectuar cambios de convergencia/camber.
8. Baje el vehículo de modo que el peso total esté sobre las ruedas, sacuda el vehículo una o dos veces, ajuste el camber y/o la conver-

Contin'ua al doso

SPECIAL INSTRUCTIONS

INSTRUCTIONS TEMPO/TOPAZ REAR CAMBER/TOE KIT

1. Inspect vehicle for damaged, bent or worn steering and suspension parts and repair as necessary. Hook up your alignment equipment and determine the amount of rear camber and toe change required.
2. A: For vehicles **without** factory installed toe adjusters, install **two** (2) bushings per side of vehicle.

   B: For vehicles **with** factory installed toe adjusters, only one bushing per side is used. **NOTE:** If only **one** bushing per side is being used, install in the inboard end of **forward** control arm. If **two** bushings are being used, install in **inboard** end of both the **forward and rearward** control arm. **(Do not attempt** to put new offset bushings in outboard end of control arm, as it is a different diameter.)
3. Raise **rear** of vehicle and allow suspension to hang. Remove control arm by removing inner nut and bolt and outer nut. Remove arm from vehicle. (Make sure you mark arms *left* and *right*, front and rear for correct re-installation.)
4. Place control arm in a vise and using a pitman arm puller or other suitable puller, press out inboard bushing from control arm. (See illustration #1.) **(NOTE**: Use of a 1-1/2" flat washer works well for pushing against bushing.)
5. Install new sleeve and bushing assembly by pressing it into the control arm until it seats against the "shoulder" of the sleeve. (This is done by installing the chamferred end of the bushing sleeve into the beveled side of the control arm.) (See illustration #2) **NOTE**: Be sure metal sleeve is tightly seated in control arm – if necessary use "Loctite" or similar product to seat sleeve. **Also**, be sure bushing turns freely in sleeve, if any bind is felt, sand bushing until it turns freely.
6. Place star washer in recessed area at hex head of bushing and slip nylon spacer over opposite end of bushing and against metal sleeve. It is important to loosen inner mounting bolt on opposite side of crossmember bracket, if not already done. This allows clearance for control arm with new bushing and star washer to be raised back into crossmember. (See illustration #3) Re-install control arm into vehicle. **(NOTE**: Snug bolts only, **DO NOT TIGHTEN AT THIS TIME.)**
7. Repeat above procedure on other side of vehicle, if camber/toe changes are required.
8. Lower vehicle so that full weight is on tires, jounce vehicle one or two times, adjust camber and/or toe by turning bushings. Torque **both** inboard and outboard nuts to 52-60 ft lbs.
9. Road test vehicle after completing alignment on the front wheels.

NOTE: 1985-86 TEMPO/TOPAZ do **not** come equipped with factory installed toe adjusters, therefore two bushings per side must be installed to adjust camber.

Continued on other side

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MODE D'EMPLOI SPECIAL

(Suite)

deux écrous interne et externe à un couple de 52 à 60 lb/pi.

9. Testez le véhicule sur la route après avoir terminé la géométrie des roues avant.

REMARQUE : Les TEMPO/TOPAZ de 1985-86 ne sont pas équipées en usine de régleurs de parallélisme. Par conséquent, deux bagues doivent être installées de chaque côté pour régler le carrossage.

SPÉCIFICATIONS RECOMMANDÉES PAR L'USINE :
Carrossage - 1/4 ± 3/4° / Parallélisme + 1/32 ± 1/32 po
SPÉCIFICATIONS RECOMMANDÉES D'UTILISATION GÉNÉRALE :
Carrossage - 1/4 ° / Parallélisme + 1/32 po
SPÉCIFICATIONS RECOMMANDÉES SOUS CHARGE :
Carrossage - 3/4° / Parallélisme + 1/32 po

(Figure 1)

SUPPORT DE TRAVERSE
Bras arrière
Bague interne
Bras avant
Bague externe

INSTRUCCIONES EXPECIALES

(Contin'ua)

gencia girando los bujes. Apriete las tuercas de adentro y de afuera a una torsión de 52 a 60 lbs. pie.

9. Pruebe el vehículo en la carretera después de completar el alineamiento de las ruedas delanteras.

NOTA: El TEMPO y el TOPAZ de 1985-86 no vienen equipados con ajustadores de convergencia de fábrica, por consiguiente, dos bujes por lado deberán ser instalados para poder ajustar el camber.

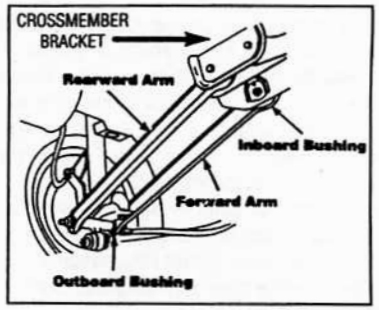
ESPECIFICACIONES RECOMENDADAS POR LA FÁBRICA:
Camber - 1/4° ± 3/4° / Convergencia + 1/32 ± 1/32"
ESPECIFICACIONES DE USO GENERAL RECOMENDADAS:
Camber - 1/4° / Convergencia + 1/32"
ESPECIFICACIONES BAJO CARGA RECOMENDADAS:
Camber - 3/4° / Convergencia + 1/32"

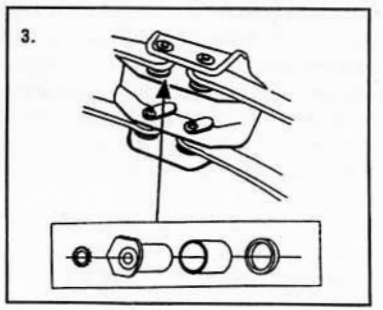
[inside figure 1]

SOPORTE DEL TRAVESAÑO
Brazo trasero
Buje de adentro
Brazo delantero
Buje de afuera

SPECIAL INSTRUCTIONS

(Continued)





MODE D'EMPLOI SPECIAL

INSTRUCTIONS DU NÉCESSAIRE DE CARROSSAGE ARRIÈRE POUR TAURUS/SABLE BERLINE

1. Inspectez le véhicule pour voir si des pièces sont endommagées, tordues ou usées et réparez-les au besoin. Accrochez votre appareil de réglage de la géométrie et déterminez la quantité du changement de parallélisme et de carrossage arrière requis.
2. A : Des changements de carrossage de 1/2° ou moins exigent l'emploi d'une bague de chaque côté, installée du côté interne du bras de contrôle avant. (Cette nouvelle bague fonctionnera en conjonction avec la bague de parallélisme installée en usine.)

   B : Les changements de carrossage de 1/2 à 1° requièrent l'emploi de deux bagues de chaque côté, l'une installée comme dans « A » ci-dessus et l'autre du côté externe ou de la roue du bras de contrôle arrière. (REMARQUE : Lorsque vous installez une bague du côté externe du bras de contrôle arrière, assurez-vous que la tête hexagonale de la bague soit positionnée de façon à ce que la rondelle étoilée morde dans l'articulation.)
3. Soulevez l'arrière du véhicule et laissez pendre la suspension. Enlevez le bras de contrôle en retirant les boulons de montage à l'une des extrémités de l'arbre. (REMARQUE : Assurez-vous de marquer les bras gauche et droit et avant et arrière pour les remonter correctement.)
4. Placez le bras de contrôle dans un étau et à l'aide d'un extracteur de biellette de direction ou de tout autre extracteur adéquat, sortez la bague d'usine non réglable. (Voyez l'illustration n° 1.) REMARQUE : L'emploi d'une rondelle plate de 1-1/2 po est pratique pour pousser contre la bague.)
5. Installez un nouvel assemblage de bague et manchon en le pressant dans le bras de contrôle jusqu'à ce qu'il soit ajusté contre l'« épaulement » du manchon externe en acier inoxydable. (Ceci est obtenu en installant le côté chanfreiné du manchon de la bague dans le côté biseauté du bras de contrôle.) (Voyez l'illustration n° 2.) (REMARQUE : Assurez-vous que le manchon métallique soit fermement assis dans le bras de contrôle - si besoin est, utilisez le produit « Loctite » ou un produit similaire pour asseoir le manchon. Aussi, assurez-vous que la bague tourne librement dans le manchon. Si tout coincement est ressenti, poncez la bague jusqu'à ce qu'elle tourne librement.
6. Placez la rondelle étoilée dans le renfoncement au niveau de la tête hexagonale de la bague et glissez la pièce d'espacement en nylon sur l'extrémité opposée de la bague, contre le manchon en métal. Il est important de desserrer le boulon de montage interne du côté opposé du support de traverse, si ce n'est pas déjà fait. Ceci fournit l'espace pour soulever et remonter le bras de contrôle avec de nouvelles bague et rondelle étoilée dans la traverse. (REMARQUE : Ajustez seulement les boulons. Ne les serrez pas à ce point.)

   Répétez la procédure ci-dessus pour l'autre côté du véhicule si des changements de parallélisme et de carrossage sont requis.
8. Abaissez le véhicule de façon à ce que tout le poids repose sur les pneus, faites rebondir le véhicule une ou deux fois, réglez le carrossage et/ou le parallélisme en tournant les bagues. (REMARQUE : Une clé spécialement conçue est disponible pour ceci.)

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES CONJUNTO DE CAMBER TRASERO PARA TAURUS/SABLE SEDAN

1. Inspeccione el vehículo para ver si tiene piezas dañadas, dobladas o desgastadas y repárelo tal como sea necesario. Conecte su equipo de alineamiento y determine la cantidad de cambio de convergencia y de camber trasero necesario.
2. A: Los cambios de camber de 1/2° o menos requiere el uso de un buje por lado, instalado en el lado de adentro del brazo de control delantero. (Este buje nuevo trabajará en conjunto con el buje de convergencia instalado en la fábrica).

   B: Los cambios de camber de 1/2° a 1° requiere el uso de dos bujes por lado. Uno instalado tal como se menciona en "A" (arriba) y el otro instalado en el lado de afuera o extremo de la rueda del brazo de control trasero. (NOTA: Cuando instale el buje en el lado de afuera del brazo de control trasero, asegúrese de que la cabeza hexagonal del buje quede colocada de modo que la arandela estrella muerda dentro del codillo).
3. Levante la parte de atrás del vehículo y deje que la suspensión cuelgue. Remueva el brazo de control retirando los pernos de montaje situados a cualquier extremo del brazo. (NOTA: Asegúrese de marcar los brazos derecho e izquierdo y delantero y trasero para reinstalarlos correctamente).
4. Coloque el brazo de control en un tornillo de banco y usando un extractor de varilla de unión u otro extractor apropiado, saque a presión el buje de fábrica no ajustable. (Vea la ilustración # 1). (NOTA: El uso de una arandela plana de 1-1/2" funciona bien para aplicar presión contra el buje).
5. Instale a presión el ensamble nuevo de buje y manga dentro del brazo de control hasta que asiente contra el "hombro" de la manga exterior de acero inoxidable. (Esto es efectuado instalando el extremo biselado de la manga del buje en el lado biselado del brazo de control). (Vea la ilustración #2) NOTA: Asegúrese de que la manga metálica quede asentada apretadamente en el brazo de control - si es necesario, use "Loctite" o un producto similar para asentar la manga. También, asegúrese de que el buje gire libremente dentro de la manga, si siente cualquier rozamiento, lije el buje hasta que gire libremente.
6. Coloque una arandela estrella en el área rebajada situada en la cabeza hexagonal del buje y deslice el espaciador de nilón por el extremo opuesto del buje y contra la manga metálica. Es importante aflojar el perno de montaje de adentro en el lado opuesto del soporte del travesaño, si es que no ha sido ya aflojado. Esto le da espacio libre al brazo de control con buje y arandela estrella nuevos para ser levantados y colocados en el travesaño. (NOTA: Ajuste los pernos únicamente. No los apriete en este momento).
7. Repita el procedimiento descrito arriba en el otro lado del vehículo, si es necesario efectuar cambios de convergencia/camber.
8. Baje el vehículo de modo que el peso total esté sobre las ruedas, sacuda el vehículo una o dos veces, ajuste el camber y/o la convergencia girando los bujes. (NOTA: Una herramienta especialmente diseñada para esto está disponible).
9. Apriete todas las tuercas de acuerdo con las especificaciones. La

Contin'ua al doso

SPECIAL INSTRUCTIONS

INSTRUCTIONS TAURUS/SABLE SEDAN REAR CAMBER KIT

1. Inspect vehicle for damaged, bent or worn parts and repair as necessary. Hook up alignment equipment and determine the amount of **rear** camber and toe change required.
2. A: Camber changes of **1/2° or less** require the use of one bushing per side, installed in the **inboard** end of the **forward** control arm. (This new bushing will work in conjunction with factory installed toe bushing.)

   B: Camber changes of **1/2° to 1°** require the use of **two** bushings per side. One installed as in "3" (above) and the other at the **outboard** or wheel end of the **rearward** control arm. (**NOTE**: When installing bushing in the outboard end of the rearward arm, be sure the hex head of the bushing is positioned so the star washer bites into the knuckle.)
3. Raise **rear** of vehicle and allow suspension to hang. Remove control arm by removing mounting bolts at either end of arm. (**NOTE**: Be sure to mark arms left and right, front and rear for correct re-installation)
4. Place control arm in a vise and using a tie rod puller or other suitable puller, press out non-adjustable factory bushing. (See illustration #1.) **NOTE**: Use of a 1-1/2" flat washer works well for pushing against bushing.)
5. Install new bushing and sleeve assembly by pressing it into the control arm until it seats against the "shoulder" of the stainless steel outer sleeve. (This is done by installing the chamferred end of the bushing sleeve into the beveled side of the control arm. (See illustration #2.) **NOTE**: Be sure metal sleeve is tightly seated in control arm – if necessary use "Loctite" or similar product to seat sleeve. Also, be sure bushing turns freely in sleeve, if any bind is felt, sand bushing until it turns freely.
6. Place star washer in recessed area at hex head of bushing and slip nylon spacer over opposite end of bushing and against metal sleeve. It is important to loosen inner mounting bolt on opposite side of crossmember bracket, if not already done. This allows clearance for control arm with new bushing and star washer to be raised back into crossmember. (See illustration #3) Re-install control arm into vehicle. (**NOTE**: Snug bolts only, **do not tighten at this time.)**
7. Repeat above procedure on other side of vehicle, if camber/toe changes are required.
8. Lower vehicle so that full weight is on tires, jounce vehicle one or two times, adjust camber and/or toe by turning bushings (**NOTE**: A specially designed wrench is available for this.)
9. Torque **all** nuts to specifications. **Inboard** arm-to-body nut should be tightened to 45-58 ft. lbs. – **Outboard** arm-to-spindle nut should be tightened to 42-57 ft. lbs.
10. Road test vehicle after completing adjustment on the front wheels.

NOTE: Taurus/Sable Sedans come equipped with factory installed toe adjusters on the **inboard** end of the **rearward** control arm. Use this adjustment in conjunction with the newly installed offset bushing to achieve camber or combined camber/toe adjustments.

Continued on other side

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MODE D'EMPLOI SPECIAL

(Suite)

9. Serrez tous les écrous selon les spécifications. L'écrou interne du bras au châssis devrait être serré à un couple de 45 à 58 lb/pi. L'écrou externe du bras au châssis devrait être serré à un couple de 42 à 57 lb/pi.
10. Testez le véhicule sur la route après avoir terminé la géométrie des roues avant.

REMARQUE : Les Taurus/Sable berlines sont équipées en usine de régleurs de parallélisme sur le côté interne du bras de contrôle arrière. Utilisez ce réglage en conjonction avec la bague décentrée nouvellement installée pour obtenir les réglages de carrossage ou de parallélisme et carrossage combinés.

SPÉCIFICATIONS RECOMMANDÉES PAR L'USINE :
Carrossage - 1/4 ± 3/4° / Parallélisme + 1/32 ± 1/32 po
SPÉCIFICATIONS RECOMMANDÉES D'UTILISATION GÉNÉRALE :
Carrossage - 1/4 ° / Parallélisme + 1/32 po
SPÉCIFICATIONS RECOMMANDÉES SOUS CHARGE :
Carrossage - 3/4° / Parallélisme + 1/32 po

(Figure)

SUPPORT DE TRAVERSE
Bras arrière
Bague interne
Bras avant
Bague externe

SPÉCIFICATIONS RECOMMANDÉES PAR L'USINE:
Carrossage - 1/4° ± 3/4° / Parallélisme + 1/32° ± 1/32 po

SPÉCIFICATIONS RECOMMANDÉES D'UTILASATION GÉNÉRALE:
Carrossage - 1/4° / Parallélisme + 1/32 po

SPÉCIFICATIONS RECOMMANDÉES SOUS CHARGE:
Carrossage - 3/4° / Parallélisme + 1/32 po

INSTRUCCIONES EXPECIALES

(Continúa)

tuerca de adentro del brazo al chasis deberá ser apretada a una torsión de 45 a 58 lbs. pie. La tuerca de afuera entre el brazo y el husillo deberá ser apretada a una torsion de 42 a 57 lbs. pie.
10. Pruebe el vehículo en la carretera después de completar el alineamiento de las ruedas delanteras

NOTA: El Taurus/Sable sedan vienen equipados con ajustadores de convergencia de fábrica en el extremo de adentro del brazo de control trasero. Use el ajuste en combinación con el buje descentrado que se acaba de instalar para alcanzar ajustes de camber o ajustes combinados de camber y convergencia.

ESPECIFICACIONES RECOMENDADAS POR LA FÁBRICA:
Camber - 1/4° ± 3/4° / Convergencia + 1/32 ± 1/32"
ESPECIFICACIONES DE USO GENERAL RECOMENDADAS:
Camber - 1/4° / Convergencia + 1/32"
ESPECIFICACIONES BAJO CARGA RECOMENDADAS:
Camber - 3/4° / Convergencia + 1/32"

[inside figure 1]

SOPORTE DEL TRAVESAÑO
Brazo trasero
Buje de adentro
Brazo delantero
Buje de afuera

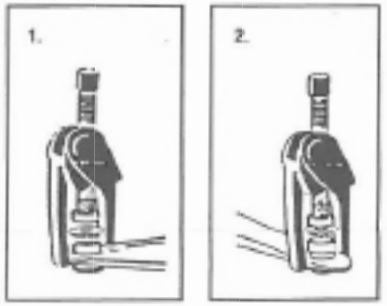
ESPECIFICACIONES RECOMENDADAS POR LA FABRICA:
Camber - 1/4° ± 3/4° / Convergencia + 1/32° ± 1/32"

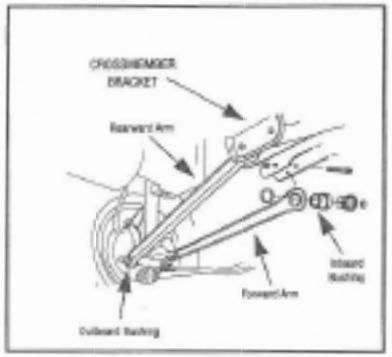
ESPECIFICACIONES DE USO GENERAL RECOMENDADAS:
Camber - 1/4° / Convergencia + 1/32"

ESPECIFICACIONES BAJO CARGA RECOMENDADAS:
Camber - 3/4° / Convergencia + 1/32"

SPECIAL INSTRUCTIONS

(Continued)





FACTORY RECOMMENDED SPECIFICATIONS:
Camber - 1/4° ± 3/4° / Toe + 1/32" ± 1/32"

RECOMMENDED GENERAL USE SPECIFICATIONS:
Camber - 1/4° / Toe + 1/32"

RECOMMENDED LOAD CARRYING SPECIFICATIONS:
Camber - 3/4° / Toe + 1/32"

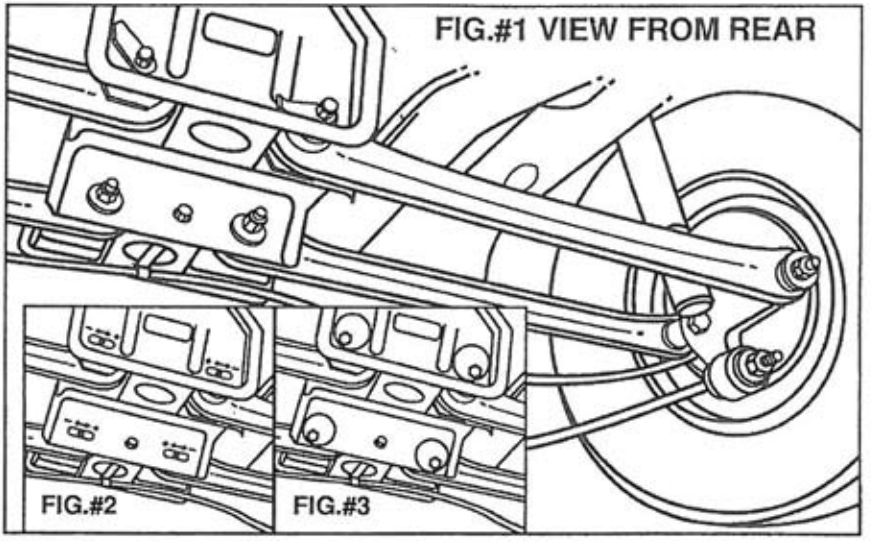
Installation Instructions

REAR CAMBER ADJUSTMENT FOR TAURUS/SABLE (SEDANS ONLY)

1) Raise rear of vehicle until suspension hangs freely.
2) Remove control arm mounting bolts at center bracket and discard.
3) Lower control arms out of bracket until bolt holes are exposed.
4) Using a 1/2" tapered rotary file, elongate both front and back sets of holes in the center bracket.

   Caution: Maximum hole elongation should not exceed 1/4" from edge of existing hole.

5) For positive (+) camber adjustment, elongate holes toward center of vehicle. For negative (-) camber adjustment, elongate holes toward wheel (see Fig. 2).
6) Install cam bolts as shown (see Fig. 3) do not tighten nuts.
7) Lower vehicle, jounce and rotate cambolts to desired camber adjustment.
8) Adjust toe. Torque nuts to factory specification.
9) If additional toe is needed, loosen cambolts and adjust as necessary..



MODE D'EMPLOI SPECIAL

INSTRUCTIONS D'INSTALLATION DU RÉGLEUR DE PARALLÉLISME ARRIÈRE POUR TAURUS/SABLE BREAK

APPLICATIONS : Taurus et Sable break de 1986 et plus récents

1. Effectuez des contrôles avant de régler la géométrie et inspectez la suspension arrière pour vois si des pièces sont endommagées ou usées.
2. Soulevez le véhicule par les bras de contrôle inférieurs et assurez-le.
3. Enlevez l'appareil de réglage de la géométrie.
4. Vaporisez de l'huile pénétrante autour de l'enveloppe de la bague du bras de contrôle inférieur arrière et éliminez la saleté et la corrosion.
5. Reculez l'écrou inférieur de la fusée jusqu'à l'extrémité du filetage. Installez un extracteur à deux mâchoires et ajustez-le fermement avec une clé. (Voyez la figure n° 1.)
6. Frappez sèchement l'extrémité de l'extracteur. Répétez ceci jusqu'à ce que la came de réglage de parallélisme se détache du boulon de fusée cannelé.
7. En vous servant d'un marteau pneumatique et d'un burin à lame large, mordez dans le côté de la bague. À l'aide de cette nouvelle encoche dans la paroi de la bague comme zone de contact, pivotez le burin à un angle d'environ 45° et extrayez la bague du bras de contrôle tout en continuant de maintenir la tension avec l'extracteur. (Voyez les figures n° 3 & 4.)

Remarque : Pour aider à maintenir l'action de traction de l'extracteur contre la bague et le régleur de parallélisme de l'usine, retirez l'extracteur et placez une entretoise (un boulon de 7/16 po ou plus petit fera l'affaire) entre l'extrémité du boulon de fusée et l'arbre de l'extracteur. (Voyez la figure n° 2.)

8. Éliminez toutes les bavures métalliques et la corrosion du boulon de fusée et des œillets de la bague.
9. À l'aide d'un marteau pneumatique, enfoncez le nouvel ensemble de bague/régleur de parallélisme aussi loin que vous pouvez dans le bras de contrôle. Puis, en vous servant du mandrin de bague spécialement conçu placé contre la bague, frappez-la sèchement avec le marteau jusqu'à ce qu'elle soit complètement assise (un serre-joint de 12 po fera aussi l'affaire pour l'ajustement final de la bague). (Voyez la figure n° 5.)

Remarque : À mesure que la bague est installée, les œillets métalliques entourant la bague peuvent tendre à se tordre vers l'avant au lieu de laisser passer la bague. Pour rectifier ceci, utilisez un marteau et un long poinçon pour redresser l'œillet et continuer à installer la nouvelle bague jusqu'à ce qu'elle soit assise.

10. Installez le nouvel écrou fourni dans le nécessaire, mais ne le serrez pas à ce point.
11. Installez la roue et les têtes de géométrie.

Suite a Verso

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN DEL AJUSTADOR DE CONVERGENCIA TRASERA PARA LAS CAMIONETAS TAURUS/SABLE

USOS: Camionetas Taurus y Sable de 1986 y más recientes

1. Lleve a cabo las pruebas antes del alineamiento e inspeccione la suspensión trasera para ver si tiene daños o piezas desgastadas.
2. Levante el vehículo por los brazos de control inferiores y asegúrelo.
3. Remueva el equipo de alineamiento.
4. Atomice aceite de penetración alrededor de la carcasa del buje del brazo de control trasero inferior y limpie la mugre y la corrosión.
5. Retroceda la tuerca del husillo inferior hasta el final de los hilos de rosca. Instale un extractor de dos mordazas y apriételo con una llave. (Vea la figura No. 1).
6. Déle un golpe seco al extremo del extractor. Repita hasta que la excéntrica de ajuste de convergencia se libere del perno estriado del husillo.
7. Usando un martillo de aire con un cortafríos de radio amplio, haga una ranura en el lado del buje. Usando la ranura que acaba de hacer en la pared del buje como área de contacto, pivotee el cortafríos a un ángulo de 45° y saque el buje del brazo de control, mientras continua manteniendo presión con el extractor. (Vea las figuras No. 3 y 4).

NOTA: Para ayudar a mantener la acción de extracción del extractor contra el ajustador y buje de fábrica; remueva el extractor y coloque un espaciador (un tornillo de 7/16 o más pequeño sirve), entre el extremo del perno del husillo y el eje del extractor. (Vea la figura No. 2).

8. Pula todas las rebabas metálicas y la corrosión del perno del husillo y del ojal del buje.
9. Usando un martillo de aire, inserte el ajustador de convergencia/buje, tanto como pueda, dentro del brazo de control. A continuación, usando un impulsor de buje especialmente diseñado, contra el buje, déle golpes secos con un martillo hasta que quede completamente asentado. (Una abrazadera de tipo "C" de 12" también trabaja bien para el asentamiento final del buje). (Vea la figura No. 5).

NOTA: A medida que el buje está siendo instalado, los ojales de metal alrededor del buje podrán tener la tendencia a doblarse hacia adelante en vez de permitir que el buje pase a través. Para corregir esta situación, use un martillo y un punzón largo para enderezar el ojal y continúe instalando el buje nuevo hasta que quede completamente asentado.

10. Instale la tuerca nueva suministrada con el conjunto, pero no la apriete en este momento.
11. Instale la rueda y las cabezas de alineamiento.

Contin'ua al doso

SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTIONS TAURUS/SABLE WAGON REAR TOE ADJUSTER

APPLICATION: 1986 and newer Taurus and Sable Station Wagons
Note: This *"Free Floating"* offset toe adjuster and bushing is designed to replace *"Seized"* factory toe adjusters and bushings.

1. Perform pre-alignment checks and inspect rear suspension for damaged or worn parts.
2. Raise vehicle by lower control arms and secure.
3. Remove alignment equipment.
4. Spray penetrating oil around casing of rear lower control arm bushing and clean away dirt and corrosion.
5. Back off lower spindle nut to the end of the threads. Install a two jaw puller and snug firmly with wrench. **(See figure No.1)**
6. Strike the end of the puller sharply. Repeat until toe adjuster cam breaks tree from the splined spindle bolt.
7. Using an air hammer with a wide radius chisel, bite into the side of bushing. Using the newly made Gash in bushing wall as a contact area, pivot chisel to an approximate 45° angle and drive bushing from control arm, while continuing to maintain tension with pulley **(See figures No. 3 & 4)**
   Note: To help maintain the pulling action of the puller against the factory toe adjuster and bushing; Remove puller and place a spacer (a 7/16" or smaller bolt works well) between end of spindle bolt and puller shaft **(See figure No. 2)**
8. Clean away all metal burrs and corrosion from spindle bolt and bushing eyelet.
9. Using an air hammer, drive the new bushing/toe adjuster assembly as far as you can into the control arm. Next, using the specially designed bushing driver against the bushing, strike sharply with hammer until fully seated. (a 12" "C" clamp will also work for final seating of bushing) **(See figure No. 5)**
   Note: As the bushing is being installed, the sheet metal eyelets surrounding the bushing may tend to bend forward instead of allowing the bushing to pass through. To correct this, use a hammer and long punch to straighten the eyelet and continue to install the new bushing until fully seated.
10. Install new nut provided with kit, but do not tighten at this time.
11. Install wheel assembly and alignment heads.
12. Lower the vehicle on to slip plates and jounce the suspension. Adjust toe to specifications and torque spindle bolt nut to 60-86 ft. lbs. (81-115 NM).
13. Continue with balance of alignment and road test.

Continued on other side

Form # 95-098-1292 T

MODE D'EMPLOI SPECIAL

(Suite)

12. Abaissez le véhicule sur des plaques glissantes et faites rebondir la suspension. Réglez le parallélisme selon les spécifications et serrez l'écrou du boulon de fusée à un couple de 81 à 115 Nm (60 à 86 lb/pi).
13. Continuez le réglage de la géométrie et testez le véhicule sur la route.

REMARQUE : Ces bague et régleur de parallélisme décentrés « à mouvement libre » sont conçus pour remplacer les bagues et régleurs de parallélisme d'usine « grippés ».

Figure n° 1
Figure n° 2
Figure n° 3
Figure n° 4
Figure n° 5

INSTRUCCIONES EXPECIALES

(Contin'ua)

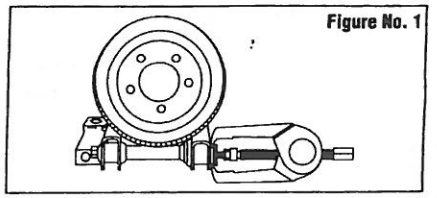
12. Baje el vehículo sobre las placas de resbalamiento y sacuda la suspensión. Ajuste la convergencia de acuerdo con las especificaciones y apriete el perno del husillo a una torsión de 81 a 115 Nm (60 a 86 lbs. pie).
13. Continúe con el resto del alineamiento y pruebe el vehículo en la carretera.

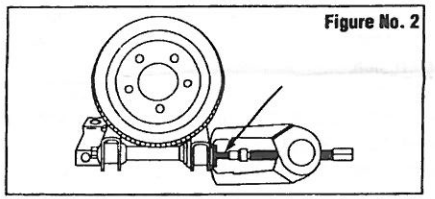
NOTA: Este ajustador y buje de convergencia descentrado de "Flotación Libre" fue diseñado para reemplazar los ajustadores y bujes de convergencia de fábrica "Agarrotados".

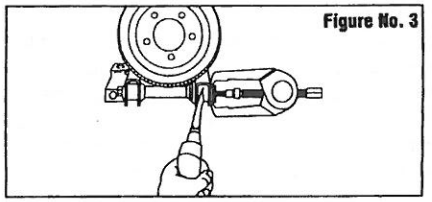
Figura No. 1
Figura No. 2
Figura No. 3
Figura No. 4
Figura No. 5

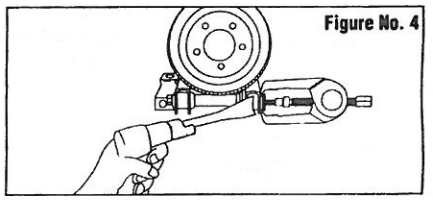
SPECIAL INSTRUCTIONS

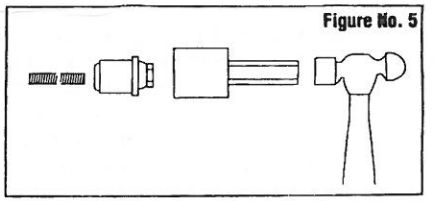
(Continued)











Installation Instructions
'96-UP TAURUS/SABLE REAR CAMBER/TOE KIT

Note: This kit can be used for both camber and toe adjustments. If mounted on rearward control arm (through frozen factory adjusters) toe can be adjusted. If a second kit is installed on forward control arm camber can be adjusted, when used in conjunction with toe adjuster.

1. Do pre-alignment checks. Inspect vehicle for damaged, bent or worn parts and repair as necessary. Install alignment equipment and determine amount of rear camber and toe change needed.
2. Raise rear of vehicle by the body so rear suspension hangs freely. Support safely.

FOR CAMBER CHANGE

3. Remove inner pivot bolts from front control arms and discard.
4. Install cam bolts (with a cam next to the bolt head) from the rear of vehicle. Be sure to put the "toothed" side of the cam toward the body. Install with the big side of the cam straight up. Install cam plate over the cam bolts with rounded side of cutouts up and the flat surface of the plate against the body (see figure No. 1). Mark body through small hole in center of cam plate. Remove the plate and drill 1/4" hole using angle drill.
5. Remove cam bolts. Lower front control arms out of bracket until bolt holes are exposed.
6. Using a 1/2" tapered rotary file in an angle drill, elongate existing hole. For positive camber change, elongate toward center of vehicle. For negative camber change, elongate toward tire. Use template on this instruction sheet to determine maximum hole elongation (see figure No. 3).
7. Reinstall cam bolts. Install cams and nuts on threaded ends of bolts, being sure the "toothed" side of the cam faces the body. Snug nuts and install cam plate over bolts with flat surface of the plate up against the body. Secure plate with bolt and nut. Lower and jounce vehicle.
8. Rotate factory toe adjusters for maximum toe-in. Rotate cam bolts for desired camber. Reset toe using factory adjusters. Should factory toe adjusters be frozen, remove bolts through them and adjust camber. *SEE "TOE CHANGE" SECTION IF PROPER TOE READINGS CANNOT BE OBTAINED*. Torque all fasteners, align front of vehicle and road test.

FOR TOE CHANGE

If proper toe readings cannot be achieved using the factory adjusters, or if factory toe adjusters are frozen, a second kit can be installed in the rear control arms through the factory toe adjusters.

1. Raise and support vehicle as previously stated. Remove the inner pivot bolts from the rear control arms and discard.
2. Install the cam bolts (with a cam next to the bolt head) into the rear control arms from the front of the vehicle. Be sure the "toothed" side of the cam is toward the body. Install with the big side of the cam straight up.
3. Install cam guide plate over the cam bolts with round side of cutouts up. Mark body through the small hole in the center of the cam plate. Remove the plate and drill a 1/4" hole using an angle drill (see figure No. 2).
4. Remove cam bolts. Lower the rear control arms out of the bracket until bolt holes are exposed.
5. Using a 1/2" tapered rotary file in an angle drill, elongate existing hole. If toe-in is required, elongate hole toward wheel. If toe-out is required, elongate toward center of vehicle. Use templates (see figure No. 3) on this instruction sheet to determine maximum hole elongation.
6. Reinstall cam bolts. Install cams and nuts on threaded ends of bolts, being sure the "toothed" side of the cam faces the body. Snug nuts. Install 6mm bolt through plate, install spacer washer over bolt, and install the cam guide plate over the cam bolts with spacer washer against the body (see figure No. 1). Install and torque 6mm nut. Lower and jounce vehicle.
7. Rotate cam bolts to achieve desired toe readings. Fine-tune camber and toe readings.
8. Torque all fasteners. Align front of vehicle and road test.

Figure No. 1

Note: notice where the FRONT and REAR are indicated.

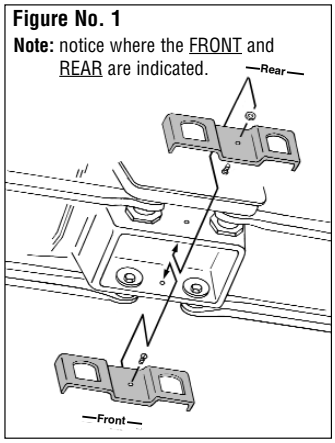


Figure No. 2

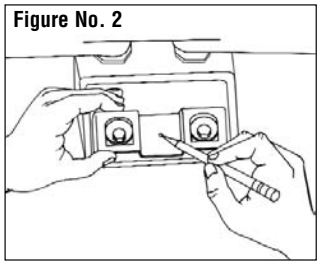
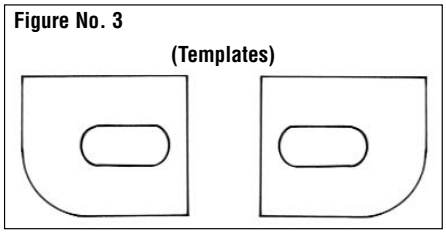


Figure No. 3

(Templates)



Ford Rear Camber Kit

Figure 1

Figure 2

Figure 3

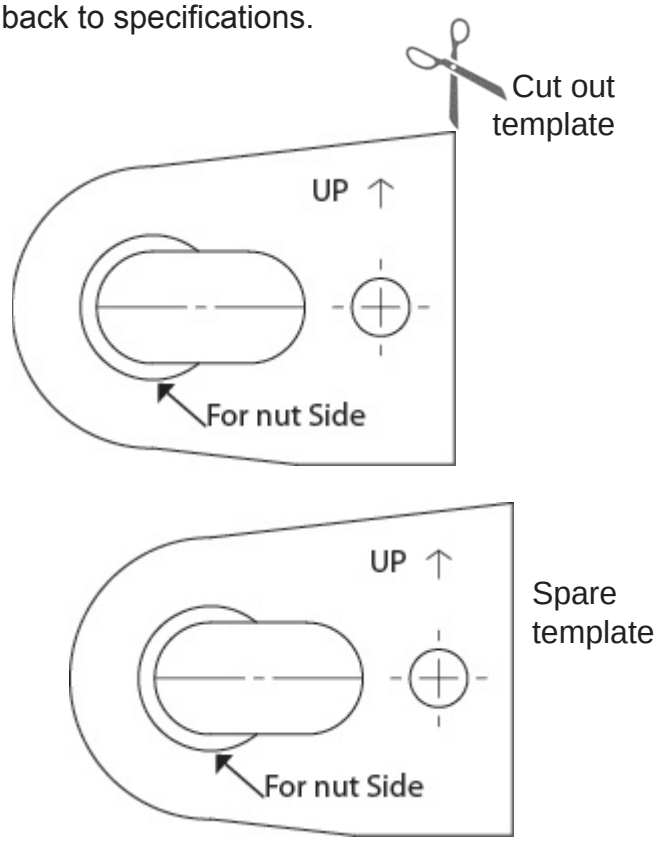
Figure 4

Figure 5

1. Check for loose or warn parts.
2. Jack up rear of car by the frame, leaving rear wheel hanging.
3. Remove inward lower control arm bolt. (Figure 1)
4. Let lower control arm hang down.
5. Use suitable cutting tool to remove welds to separate nut from arm. (Figure 2)
6. Use supplied template (Figure 6) to mark arm for the next steps. (Figure 3)
7. Using markings from step 6, elongate holes on both sides of lower control arm. (Figure 4)
8. Using markings from step 6, drill ¼ ” hole on both sides of lower control arm for cam guide nut and bolt. (Figure 5)
9. Install supplied ¼" bolts and nuts in arm.
10. Install new 14mm cam bolt system to reattach arm to frame.
11. Adjust rear camber with the car jacked up by the frame.

Note: Make sure everything is torqued back to manufacturer’s specifications.
Note: If camber is adjusted too far, toe may not able to get back to specifications.

Figure 6



Form # 95-273-1011

MODE D'EMPLOI SPECIAL

TAURUS/SABLE BREAK
NÉCESSAIRE DE CARROSSAGE ARRIÈRE

Avant d'accrocher l'appareil de réglage de la géométrie, inspectez la zone de montage de la suspension arrière pour voir si des pièces sont endommagées ou usées.

1. Prenez et relevez les mesures de géométrie arrière. Notez les changements de carrossage et de parallélisme désirés.
2. Soulevez le véhicule par un palan en contact avec le châssis ou un cric pneumatique. Placez les patins du palan à l'avant des tiges de la jambe de suspension du bras de contrôle inférieur. Soulevez le véhicule de façon à ce que la suspension pende librement. Fg. 1
3. REMARQUE DE SÉCURITÉ : La tension des ressorts hélicoïdaux est exercée sur les bras de contrôle inférieurs arrière. Soyez prudent lorsque vous abaissez le pivot interne hors de la cavité de la traverse.

Placez un autre cric à mi-chemin entre le pivot interne du bras de contrôle et le centre de la coupelle du ressort hélicoïdal sur le bras de contrôle. Fg. 2

4. Retirez l'écrou du boulon du pivot interne tout en soutenant le bras de contrôle ; quand la tension du boulon de pivot interne est relâchée, le boulon peut être tourné à la main. Retirez le boulon à ce point.
5. Abaissez doucement le cric soutenant le bras de contrôle. La bras de contrôle doit être guidé, avec un pied-de-biche, légèrement vers l'extérieur pour lui permettre de passer à côté de la cavité de traverse. Le bras doit être suffisamment baissé pour dégager complètement le trou de montage. Fg. 3
6. Allongez le trou du boulon de montage vers l'intérieur ou extérieur selon le sens dans lequel le carrossage doit être changé. Le trou peut être allongé vers l'intérieur jusqu'à ce que la rainure soit de 15/16 po de long (change le carrossage du côté positif) ou vers l'extérieur jusqu'à ce que la rainure soit de 5/8 po de long (change le carrossage du côté négatif). Une lime ronde fera l'affaire pour allonger le trou. Fg. 4
7. En plaçant le cric sous le bras de contrôle, soulevez-le de nouveau dans la cavité de la traverse. Alignez le bras de contrôle sur la rainure du boulon et installez la came et le boulon de came. Installez la rondelle et l'écrou de la came.
8. Répétez la procédure d'installation de la came pour l'autre côté.
9. Abaissez le véhicule sur les plaques glissantes et faites rebondir la suspension. Réglez le carrossage selon les spécifications désirées en tournant les cames. Réglez le parallélisme selon les spécifications en tournant les régleurs de parallélisme installés en usine. Serrez tous les boulons selon les spécifications. Testez le véhicule sur la route.

INSTRUCCIONES EXPECIALES

CAMIONETA TAURUS/SABLE
CONJUNTO DE CAMBER TRASERO

Antes de conectar el equipo de alineamiento, inspeccione el área de montaje de la suspensión trasera para ver si tiene daños o piezas desgastadas.

1. Tome y anote las lecturas de alineamiento. Anote los cambios deseados de camber y de convergencia.
2. Levante el vehículo por medio de un elevador de contacto en el chasis o gato de aire. Coloque las almohadillas de levante hacia adelante de las varillas del tirante del brazo de control inferior. Levate el vehículo de modo que la suspensión quede colgando. Fig. 1.
3. NOTA DE SEGURIDAD: Los brazos de control traseros inferiores tienen tensión de los resortes. Tenga precaución al bajar el pivote interior del compartimiento del travesaño.

Coloque un gato adicional centrado entre el pivote interior del brazo de control y el centro del asiento del resorte en el brazo de control. Fig. 2.

4. Remueva la tuerca del perno del pivote interior mientras está soportando el brazo de control; cuando la tensión del perno de pivote interior ha sido aliviada, el perno podrá ser girado con la mano. Remueva el perno en este momento.
5. Baje lentamente el gato que está soportando el brazo de control. El brazo de control deberá ser guiado, con una palanca, un poquito hacia afuera para permitirle que pase el compartimiento del travesaño. El brazo deberá ser bajado lo suficiente como para que salga del agujero de montaje. Fig 3.
6. Ensanche el agujero de montaje del perno de montaje hacia adentro o hacia afuera, dependiendo de la manera en que el camber será cambiado. El agujero podrá ser ensanchado hacia adentro hasta que la ranura sea de 15/16" de longitud (cambia el camber hacia el lado positivo), o hacia afuera hasta que la ranura sea de 5/8" de longitud (cambia el camber hacia el lado negativo). Una lima rotativa trabaja bien para ensanchar el agujero. Fig 4.
7. Usando un gato debajo del brazo de control, levante el brazo de control dentro del compartimiento del travesaño. Ponga en línea el brazo de control y la ranura del tornillo e instale la excéntrica y el perno de la excéntrica. Instale la arandela y la tuerca de la excéntrica.
8. Repita el procedimiento de instalación de la excéntrica en el otro lado.
9. Baje el vehículo sobre las placas de resbalamiento y sacuda la suspensión. Ajuste el camber de acuerdo con las especificaciones girando las excéntricas. Ajuste la convergencia a las especificaciones girando los ajustadores de convergencia de fábrica. Apriete todos los pernos de acuerdo con las especifica-

SPECIAL INSTRUCTIONS

TAURUS/SABLE STATION WAGON REAR CAMBER KIT

Prior to hooking up the alignment equipment inspect the rear suspension mounting area for any damage or worn parts.

1. Take and record rear alignment readings. Note the camber and toe changes desired.
2. Raise the vehicle by a frame contact hoist or air jack. Place the hoist pads forward of the lower control arm strut rods. Raise the vehicle so that the suspension is allowed to hang free. *Fig. 1*
3. **SAFETY NOTE: The rear lower control arms have coil spring tension on them. Use caution when lowering the inner pivot out of the crossmember pocket.**

Place an additional jack half way between the control arm inner pivot and the center of the coil spring seat on the control arm. *Fig. 2*

4. Remove the inner pivot bolt nut while supporting the control arm, when the inner pivot bolt tension is released the bolt may be turned by hand. Remove the bolt at this time.
5. Slowly lower the jack supporting the control arm. The control arm must be guided, with a pry bar, slightly outward to enable it to clear the crossmember pocket. The arm must be lowered enough to completely clear the mounting hole. *Fig. 3*
6. Elongate the mounting bolt hole inward or outward depending on which way camber must be changed. The hole may be elongated inward until the slot length is 15/16" long (changes camber toward positive) or outward until the slot length is 5/8" long (changes camber toward negative). A rotary file works well to elongate the hole. *Fig. 4*
7. Using the jack under the control arm raise the control arm back up into the crossmember pocket. Align the control arm and the bolt slot and install the cam and cam bolt. Install the cam washer and nut.
8. Repeat the cam installation procedure for the other side.
9. Lower the vehicle onto the slip plates and jounce the suspension. Adjust camber to desired specifications by turning the cams. Adjust toe to specifications by turning the factory installed toe adjusters. Torque all bolts to specifications. Road test the vehicle.

MODE D'EMPLOI SPECIAL

(Suite)

INSTRUCCIONES EXPECIALES

(Contin'ua)

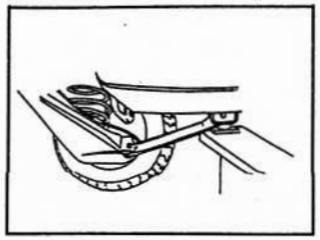


Figure 1

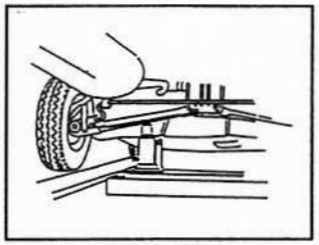


Figure 2

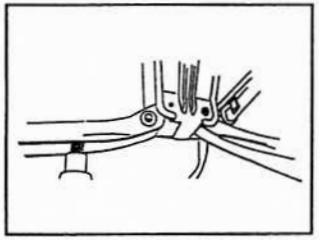


Figure 3

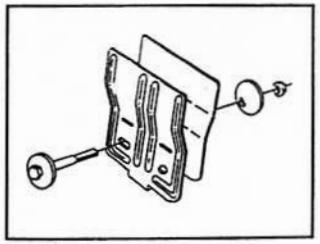


Figure 4

SPECIAL INSTRUCTIONS

(Continued)

MODE D'EMPLOI SPECIAL

NÉCESSAIRE POUR CARROSSAGE DE ROUE ARRIÈRE
FORD ESCORT & EXP/MERCURY LYNX & LN7-1981 ET PLUS RÉCENTES
FORD TEMPO/MERCURY TOPAZ-1983 ET PLUS RÉCENTES

INSTRUCTIONS D'INSTALLATION
ESCORT/LYNX

Réglages de carrossage recommandés : 1-1/4° négatif ± 3/4°, différence d'un côté à l'autre ne doit pas excéder 1°.

1. Le véhicule à vide et le réservoir d'essence rempli, vérifiez le carrossage arrière et relevez les mesures des deux roues arrière. (Assurez-vous que la pression soit égale dans les deux pneus arrière.)
2. Soulevez le véhicule et placez des tréteaux sous le bras de contrôle de la suspension arrière.
3. Enlevez la roue.
4. Enlevez le boulon du support du conduit de frein (situé entre les boulons de la jambe de force) et positionnez-la prudemment de côté. (Vous devriez faire attention de ne pas tordre le conduit de frein quand la fixation est retirée.) (Fg. 2)
5. Enlevez la plaque de retenue de l'écrou et jetez-la.
6. ENLEVEZ le boulon SUPÉRIEUR de la jambe de force et jetez-le.
7. Installez un nouvel écrou de blocage de 12 mm sur les boulons inférieurs de la jambe de force et vissez-les à la main-NE LE SERREZ PAS à ce point.
8. Placez la cale de carrossage entre le tube de la jambe de force et la fusée. (Les dents de la cale de carrossage orientées vers l'extérieur) (fg. 3)
9. Installez un nouveau boulon de 3/8 po dans le trou supérieur de la jambe de force (le plus court des 2 fournies dans le nécessaire) par derrière et vissez l'écrou à la main-NE LE SERREZ PAS à ce point.
10. a. SI UN CHANGEMENT MAXIMAL EST REQUIS, tirez vers l'extérieur le haut du tambour de frein et la fusée aussi loin que possible et tapotez légèrement la cale de carrossage vers le bas.
    b. Serrez l'écrou inférieur à un couple de 96 lb/pi. Serrez l'écrou supérieur à un couple de 60 à 65 lb/pi.
    c. Replacez le support du conduit de frein et serrez le boulon.
    d. Remontez la roue. Répétez la procédure de l'autre côté, si besoin est.

Fg. 1
Boulon supérieur de la jambe de force
Boulon du support du conduit de frein
Boulon inférieur de la jambe de force
Fg. 2

Suite a Verso

INSTRUCCIONES EXPECIALES

CONJUNTO DE CAMBER PARA RUEDAS TRASERAS
FORD ESCORT & EXP/MERCURY LYNX & LN7 DE 1981 Y MÁS RECIENTES
FORD TEMPO/MERCURY TOPAZ DE 1983 Y MÁS RECIENTES

INSTRUCCIONES DE INSTALACIÓN
ESCORT/LYNX

Ajustes de camber recomendados: negativo, 1-1/4 grados ± 3/4 de grado, la diferencia de lado a lado no deberá exceder 1 grado.

1. Con el vehículo al peso vacío y el tanque de combustible lleno, verifique el camber trasero y anote las lecturas de ambas ruedas traseras. (Asegúrese de revisar si la presión de aire de las ruedas traseras está igual).
2. Levante el vehículo y coloque soportes debajo del brazo de control de la suspensión trasera.
3. Remueva las ruedas.
4. Remueva el perno del soporte del conducto de frenos (situado entre los pernos del tirante) y colóquelo cuidadosamente a un lado. (Se deberá tener precaución para no doblar el conducto de los frenos al remover el perno). (Fig. 2).
5. Remueva y deseche la placa de retención de la tuerca.
6. Remueva y deseche el perno superior del tirante.
7. Instale la tuerca de seguridad nueva de 12 mm en los pernos inferiores del tirante e iníciela a mano - NO LA APRIETE en este momento.
8. Coloque la cuña de camber entre el tubo del tirante y el husillo. (Los dientes de la cuña deberán quedar hacia afuera). (Fig. 3).
9. Instale el perno nuevo de 3.8" en el agujero superior del tirante (el de tamaño más corto suministrado con el conjunto), por la parte trasera e inicie la tuerca - NO LA APRIETE en este momento.
10. a. SI SE NECESITA EL CAMBIO MÁXIMO, saque la parte superior del tambor de frenos y el husillo tanto como sea posible y golpee ligeramente hacia abajo la cuña de camber.
    b. Apriete la tuerca inferior a una torsión de 96 lbs pie. Apriete la tuerca superior a una torsión de 60 a 65 lbs. pie.
    c. Reinstale el soporte del conducto de frenos y apriete el perno.
    d. Reinstale la rueda. Si es necesario, repita el procedimeinto en el otro lado.

[legend]

Perno superior del tirante
Perno del conducto de frenos
Perno inferior del tirante

Fig. 1
Fig. 2

Contin'ua al doso

SPECIAL INSTRUCTIONS

REAR WHEEL CAMBER KIT
FORD ESCORT & EXP/MERCURY LYNX & LN7—1981 & NEWER
FORD TEMPO/MERCURY TOPAZ—1983 & NEWER

INSTALLATION INSTRUCTIONS
ESCORT/LYNX

Recommended camber settings: neg. 1-1/4 deg., ±3/4 deg., side to side difference not to exceed 1 degree.

1. With vehicle at curb weight and fuel tank full, check rear camber and record readings of both rear wheels. (Be sure to check rear tires for equal air pressure)
2. Raise vehicle and place jack stands under the rear suspension control arm.
3. Remove tire and wheel assembly.
4. Remove brake line bracket bolt (located between strut bolts) and carefully position it aside. (Caution should be used not to bend the brake line when fastener is removed.) (Fig. 2)
5. Remove the nut retainer plate and discard.
6. **REMOVE UPPER** strut bolt and discard.
7. Install new 12mm lock nut on lower strut bolts and hand start—**DO NOT** tighten at this time.
8. Place camber wedge between strut tube and spindle. (Teeth of camber wedge to face outward.) (Fig. 3)
9. Install new 3/8" bolt in upper strut bolt hole (shorter of 2 sizes provided in kit) from the rear and hand start nut—**DO NOT** tighten at this time.
10. a. **IF MAXIMUM CHANGE IS NEEDED,** pull out the top of the brake drum and spindle as far as possible and lightly tap down camber wedge.
    b. Torque lower nut to 96 ft. lbs. Torque upper nut to 60-65 ft. lbs.
    c. Replace brake line bracket and tighten bolt.
    d. Replace tire and wheel assembly. Repeat procedure on opposite side it necessary.

INSTALLATION INSTRUCTIONS

11. a. **IF LESS THAN MAXIMUM** (2-1/2 deg.) adjustment is needed—follow procedure numbers 1 thru 9.
    b. Replace brake line bracket and tighten bolt.
    c. Replace tire and wheel assembly, install alignment equipment.
    d. Lower vehicle on rack and take camber reading and record.
    e. While watching alignment equipment, tap down on camber wedge until desired camber reading is reached.
    f. Torque upper strut nut to 60-65 ft. lbs. Torque lower strut to 96 ft. lbs.

NOTE: Check and correct toe at this time, if necessary.

Continued on other side

Form # 95-028-1289 T

MODE D'EMPLOI SPECIAL

(Suite)

Fig. 1

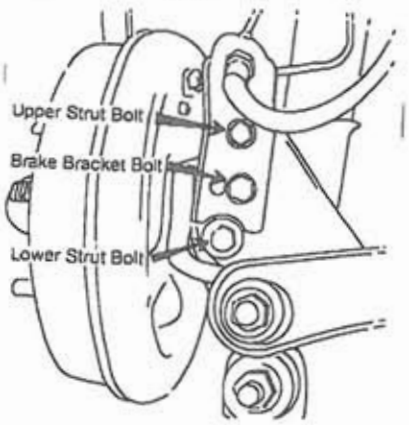
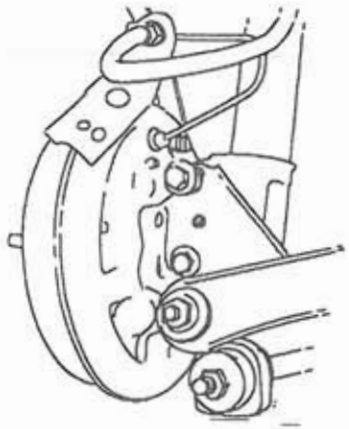


Fig. 2



INSTRUCCIONES EXPECIALES

(Contin'ua)

Fig. 3

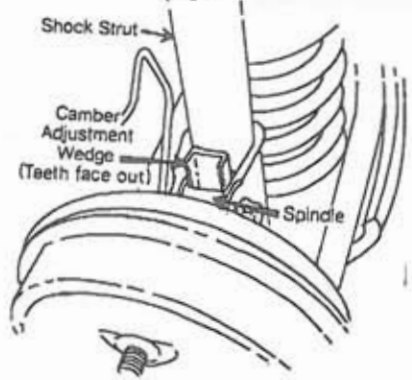
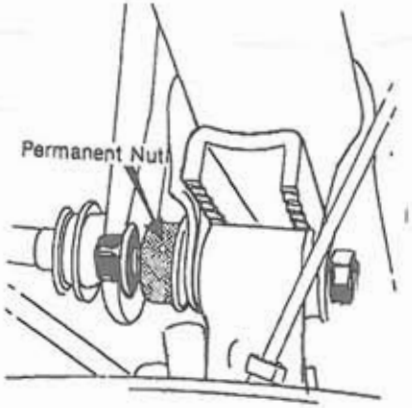


Fig. 4



SPECIAL INSTRUCTIONS

(Continued)

INSTALLATION INSTRUCTIONS:

TEMPO/TOPAZ

Recommended camber settings: neg. 3/4 deg., ± 3/4 deg., with side to side difference not to exceed 1 degree.

1. With vehicle at curb weight and fuel tank full, check rear camber and record readings of both rear wheels. (Be sure to check rear tires for equal air pressure.)
2. Raise vehicle and place jack stands under the rear suspension control arm.
3. Remove tire and wheel assembly.
4. Remove brake line bracket bolt (located between strut bolts) and carefully position it aside. (Caution should be used not to bend the brake line when fastener is removed.) (Fig. 2)
5. **REMOVE UPPER** strut bolt and discard.
6. **LOOSEN LOWER** strut bolt.
7. Install now 3/8" bolt in upper strut bolt hole (longer of 2 sizes provided in kit). **NOTE:** New longer bolt must pass thru existing permanent nut. (Fig. 4). Install new nut provided and hand start—**DO NOT** tighten at this time.
8. Place camber wedge between strut tube and spindle (teeth of camber wedge to face outward).
9. Balance of instructions —proceed as with Escort/Lynx (10a thru 10d) or (11a thru 11f).˙1

MODE D'EMPLOI SPECIAL

INSTRUCTIONS SPÉCIALES

ESCORT ANNÉES 1991 ET ANTÉRIEURES - JEU DE BAGUES DE RÉGLAGE DU PINCEMENT ARRIÈRE

Inspecter le véhicule pour voir si aucune pièce n'est endommagée ou usée et remplacer les pièces nécessaires.

Installer le matériel de contrôle du parallélisme pour déterminer l'angle de poussée et le pincement.

Installation du kit

1. Retirer le capuchon protecteur de l'avant de la vis pivot interne de la bielle latérale arrière gauche. Dévissez l'écrou de son boulon, puis tirez le boulon vers le réservoir de carburant aussi loin que possible.
2. Séparer l'extrémité interne de la bielle latérale arrière gauche de cette vis.
3. A l'aide d'une mèche de 5/32 po. (une mèche à tête ronde donne de bons résultats), percer de part en part la bague le long du bord du manchon interne en quatre endroits au moins.
4. A l'aide d'une presse à rotule équipée d'adaptateurs appropriés, y compris une douille à impact de 13/16 po., forcer la bague hors du bras en direction de l'arrière du véhicule.
5. Utiliser une lime ronde pour nettoyer ce qui reste de l'ancienne bague sur le bras au besoin.
6. Enduire les pièces neuves de produit anti grippage.
7. Presser les bagues en uréthane dans le bras. Presser la douille de réglage excentrique dans les bagues à partir de l'arrière du véhicule, en installant une rondelle plastique sur l'adaptateur comme le montre la figure 3.
8. Installer la bielle latérale sur la vis. Installer et visser l'écrou spécial comme le montre la figure 3. Ne pas serrer pour le moment.
9. Refaire la compensation du matériel de contrôle du parallélisme, abaisser et secouer le véhicule.
10. Avec un clé de 1 1/8 po., tourner la douille de réglage excentrique de façon à obtenir le pincement correct de la roue arrière gauche. Utiliser la douille de réglage droite pour régler le pincement arrière droit en desserrant les écrous de blocage et en tournant la douille de réglage. Resserrer les écrous au couple de 50-70 pieds livres.
11. Serrer la vis pivot interne (écrou spécial) au couple de 50-70 pieds livres (68-95 Nm).
12. Effectuer l'alignement du train avant et faire un essai sur route du véhicule.

INSTRUCCIONES EXPECIALES

INSTRUCCIONES ESPECIALES

JUEGO DE BUJE PARA MUÑON TRASERO DE ESCORT 1991 Y MODELOS MÁS RECIENTES

Inspeccione el vehículo para determinar si hay piezas dañadas, dobladas o desgastadas, y reemplace las que sea necesario reemplazar.

Instale el equipo de alineación para determinar el ángulo de empuje y las mediciones del muñón.

Instalación del juego

1. Quite la tapa protectora del frente del perno pivotante interno del acoplamiento lateral trasero izquierdo.Quite la tuerca de este perno y deslice el acoplamiento hacia adelante lo más posible, en dirección al tanque de gasolina.
2. Apalanque por el extremo interior del acoplamiento lateral trasero izquierdo para separarlo de este perno.
3. Usando una broca de 5/32" (las brocas bullet-point funcionan bien) perfore el buje por el borde de la camisa interior hasta penetrar completamente, por lo menos en cuatro lugares.
4. Usando una prensa para articulaciones de rótula con los adaptadores adecuados, incluyendo un dado de impacto de 13/16" o uno equivalente, haga presión sobre el buje hasta sacarlo del brazo hacia la parte trasera del vehículo.
5. Use una lima redonda para limpiar los residuos del buje viejo en el brazo, si se requiere.
6. Recubra las nuevas piezas con compuesto antiadherente (anti-seize) o uno equivalente.
7. Inserte a presión los bujes de uretano en el brazo. Haga presión sobre el ajustador excéntrico para meterlo en los bujes desde la parte trasera del vehículo, poniendo una arandela de plástico sobre el ajustador, como se muestra en la Figura 3.
8. Instale el acoplamiento lateral sobre el perno. Coloque y ajuste ligeramente la tuerca especial que se muestra en la Figura 3. No la apriete completamente todavía.
9. Vuelva a compensar el equipo de alineación, baje el vehículo y sacúdalo.
10. Usando una llave de 1-1/8", gire el ajustador excéntrico para lograr el ajuste adecuado del muñón en la rueda trasera izquierda. Use el ajustador derecho para el ajuste del muñón trasero derecho, aflojando las contratuercas y girando el ajustador original. Vuelva a apretar las contratuercas hasta un par de apriete de 50-70 lb-pie (68-95 Newton-m).
11. Apriete el perno pivotante interior (tuerca especial) hasta un par de apriete de 50-70 lb-pie (68-95 Newton-m).
12. Complete la alineación del frente y conduzca el vehículo para probarlo.

SPECIAL INSTRUCTIONS

1991 AND NEWER ESCORT REAR TOE BUSHING KIT

Inspect vehicle for damaged, bent or warn parts and replace as necessary.

Install alignment equipment to determine thrust angle and toe readings.

Kit Installation

1. Remove protective cap from front of left rear lateral link inner pivot bolt. Remove nut from this bolt and slide forward toward fuel tank as far as possible.
2. Pry inner end of left rear lateral link from this bolt.
3. Using a 5/32" drill bit (bullet-point works well) drill bushing along edge of inner sleeve all the war through in at least 4 locations.
4. Using a ball-joint press with suitable adapters including a 13/16" impact socket or equivalent, press bushing out of arm toward rear of vehicle.
5. Use a round file to clean residue of old bushing from arm if required.
6. Coat new parts with Anti-Seize or equivalent.
7. Press urethane bushings into arm. Press eccentric adjuster into bushings from rear of vehicle, fitting plastic washer over adjuster as shown in figure 3.
8. Install lateral link over bolt. Fit and snug special nut as in figure 3. Do not tighten at this time.
9. Recompensate alignment equipment, lower and jounce vehicle.
10. Using a 1-1/8" wrench, rotate eccentric adjuster to achieve proper toe setting on left rear wheel. Use right adjuster to set right rear toe by loosening jam nuts and rotating O.E. adjuster. Retorque jam nuts to 50-70 ft. lbs.
11. Tighten inner pivot bolt (special nut) to 50-70 ft. lbs. (68-95 NM).
12. Complete front alignment and road test vehicle.

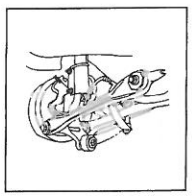


Fig. 1

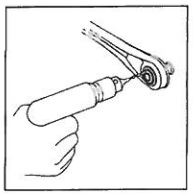


Fig. 2

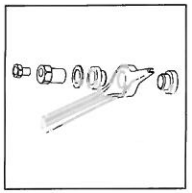


Fig. 3

MODE D'EMPLOI SPECIAL

Instructions d'installation du régleur de parallélisme arrière pour Saturn

1.) Vérifiez la pression d'air des pneus et réglez-la au besoin. Effectuez un contrôle avant la géométrie pour détecter toute pièce endommagée ou usée et réparez-les au besoin.

2.) Installez l'équipement de réglage de la géométrie et prenez les mesures initiales afin de déterminer la quantité de changement nécessaire pour le parallélisme arrière.

3.) Le véhicule de niveau (le poids sur les roues) et positionné d'aplomb sur la crémaillère, enlevez les deux (2) boulons de pivot interne des bras des tringles latérales arrière.

4.) Placez la « plaque de réglage excentrique » sur les trous de montage des boulons de pivot interne (voyez l'illustration n° 1).

5.) Pour garantir le bon positionnement lors de la pose de la « plaque de réglage excentrique » contre la bride de montage des boulons de pivot interne, assurez-vous que le « haut côté » de la bosse de la came/boulon soit orientée vers le bas. Ensuite, insérez les boulons de cames à travers la plaque de réglage excentrique et dans les trous de montage des boulons de pivot interne. Installez la rondelle plate, la rondelle Grower et l'écrou sur le boulon de came et serrez-le assez pour permettre la rotation des cames. (Voyez l'illustration n° 1.)

6.) Pour fixer correctement la plaque de réglage excentrique au véhicule, utilisez une mèche de 7/32 po et, à l'aide du petit trou central de la plaque de réglage excentrique en tant qu'avant-trou, percez au travers du bord de montage de la tringle latérale et installez la vis autotaraudeuse de 1/4 x 20 fournie (voyez l'illustration n° 1).

7.) Une fois le bon réglage du parallélisme effectué, serrez les écrous des boulons de came selon les spécifications (130 Nm ; 96 lb/pi). Faites rebondir le véhicule et vérifiez à nouveau le parallélisme.

8.) Continuez avec le reste de la géométrie du véhicule et testez-le sur la route.

Illustration n° 1
TROUS DE MONTAGE DES BOULONS DE PIVOT INTERNE POUR LA TRINGLE LATÉRALE
PLAQUE DE RÉGLAGE EXCENTRIQUE
TRINGLE LATÉRALE
BRIDE DE MONTAGE DE LA TRINGLE LATÉRALE
VIS AUTOTARAUDEUSE DE 1/4 X 20
CAMES DE RÉGLAGE AVEC BOSSES ORIENTÉES VERS LE BAS

INSTRUCCIONES EXPECIALES

Instrucciones de Instalación del Ajustador de la Convergencia Trasera para el Saturn

1.) Revise la presión de las llantas y ajústela si es necesario. Ejecute la revisión antes del alineamiento para ver si hay piezas dañadas o desgastadas y repare tal como sea necesario.

2.) Instale el equipo de alineamiento y tome las lecturas iniciales para determinar la cantidad de cambio necesario de convergencia trasero.

3.) Con el vehículo nivelado (con peso sobre las ruedas) y colocado a escuadra sobre el bastidor, remueva los dos (2) pernos de pivote interiores de los brazos de articulación laterales.

4.) Coloque la "placa de ajuste excéntrica" sobre los agujeros de montaje de los pernos de pivote interiores (vea la ilustración No. 1)

5.) Para asegurarse de colocar apropiadamente la "placa de ajuste excéntrica" contra la brida de montaje del perno de pivote, asegúrese de que el "lado alto" de la excéntrica del perno quede colocada hacia abajo. A continuación, inserte los pernos excéntricos a través de la placa de ajuste excéntrica y dentro de los agujeros de montaje del pivote interior. Instale la arandela plana, la arandela de seguridad y la tuerca en el perno excéntrico y apriete lo suficiente como para permitir la rotación de las excéntricas. (Vea la ilustración No. 1).

6.) Para sujetar correctamente la placa de ajuste excéntrica en el vehículo, use una broca de 7/32" y usando el agujero central de la placa de ajuste excéntrica como pivote, perfore a través de la brida de montaje lateral e instale el tornillo de 1/4 x 20 auto-roscante suministrado. (Vea la ilustración No. 1).

7.) Una vez que el ajuste de convergencia apropiado ha sido obtenido, apriete las tuercas de los pernos excéntricos a la torsión especificada 130 Nm (96 lbs. pie). Sacuda el vehículo y revise la convergencia.

8.) Proceda con el resto del alineamiento y pruebe el vehículo en la carretera.

[picture legend]

AGUJEROS DE MONTAJE DE LOS PERNOS DE PIVOTE INTERNOS PARA LA ARTICULACIÓN LATERAL
PLACA DE AJUSTE EXCÉNTRICA
ARTICULACIÓN LATERAL
BRIDA DE MONTAJE DE LA ARTICULACIÓN LATERAL
TORNILLO AUTO-ROSCANTE DE 1/4 X 20
EXCÉNTRICAS DE AJUSTE CON LOS LÓBULOS DE CARA HACIA ABAJO

Ilustración No. 1

SPECIAL INSTRUCTIONS

Saturn Rear Toe Adjuster Installation Instruction

1.) Check tire pressure and adjust as needed. Perform pre-alignment check for damaged or worn parts and repair as needed.
2.) Install alignment equipment and take initial alignment readings to determine the amount of rear toe change required.
3.) With vehicle level (weight on tires) and squarely positioned on rack, remove the two (2) inner pivot bolts from the rear lateral link arms.
4.) Place "cam adjusting plate" over inner pivot bolt mounting holes (see illustration No. 1).
5.) To insure proper positioning when mounting the "cam adjustment plate" against inner pivot bolt mounting flange, be sure the "high side" of cam bolt lobe is facing downward. Next, insert cam bolts through cam adjusting plate and into inner pivot bolt mounting holes. Install flat washer, lock washer and nut on to cam bolt and snug enough to allow rotation of cams. (see illustration No.1).
6.) To properly attach the cam adjusting plate to vehicle, use a 7/32" drill bit and using the small center hole in the cam adjusting plate as a pilot, drill through the lateral link mounting flange and install the 1/4 x 20 self tapping screw provided (see illustration No. 1).
7.) After proper toe adjustment has been made, tighten cam bolt nuts to specifications (96 ft. lbs/130 N.M.). Jounce vehicle and recheck toe.
8.) Proceed with balance of alignment and road test vehicle

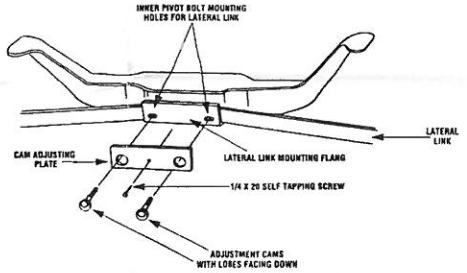
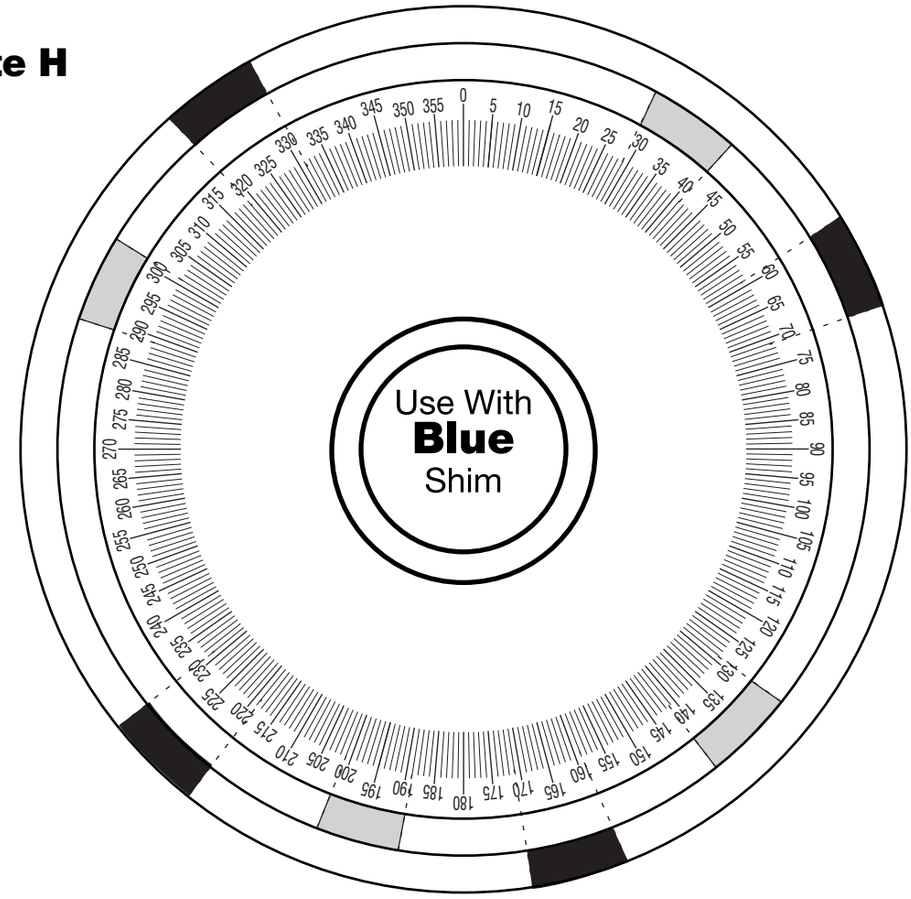


Illustration No. 1

Template H



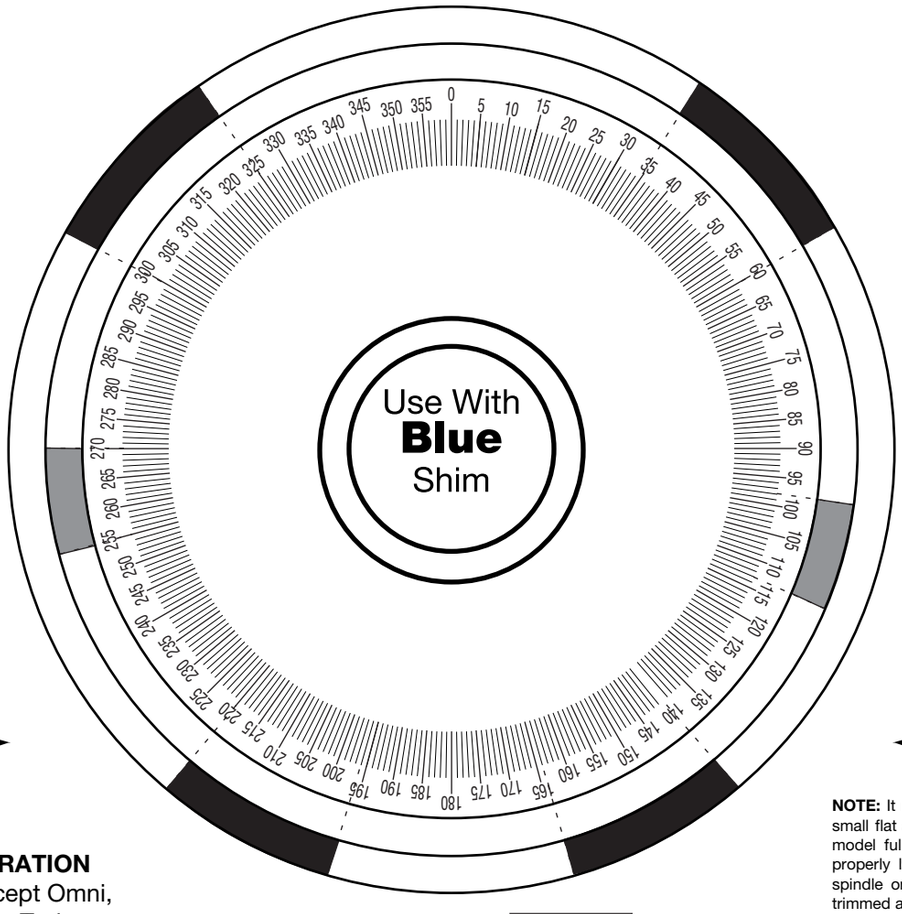
PASSENGER SIDE

DRIVERS SIDE

CHRYSLER CORP. ("L" BODY)
Dodge - Omni, 024 & Charger
Plymouth - Horizon, Turizmo, Rampage & Scamp

AUDI - 4000

Template A



Trim Line →

← **Trim Line**

CHRYSLER CORPORATION
All FWD Vehicles (Except Omni, 024, Charger, Horizon, Turizmo, Rampage, Scamp & Mini Vans,

AUDI - 80 (Except Quattro)
GT Coupe
Fox

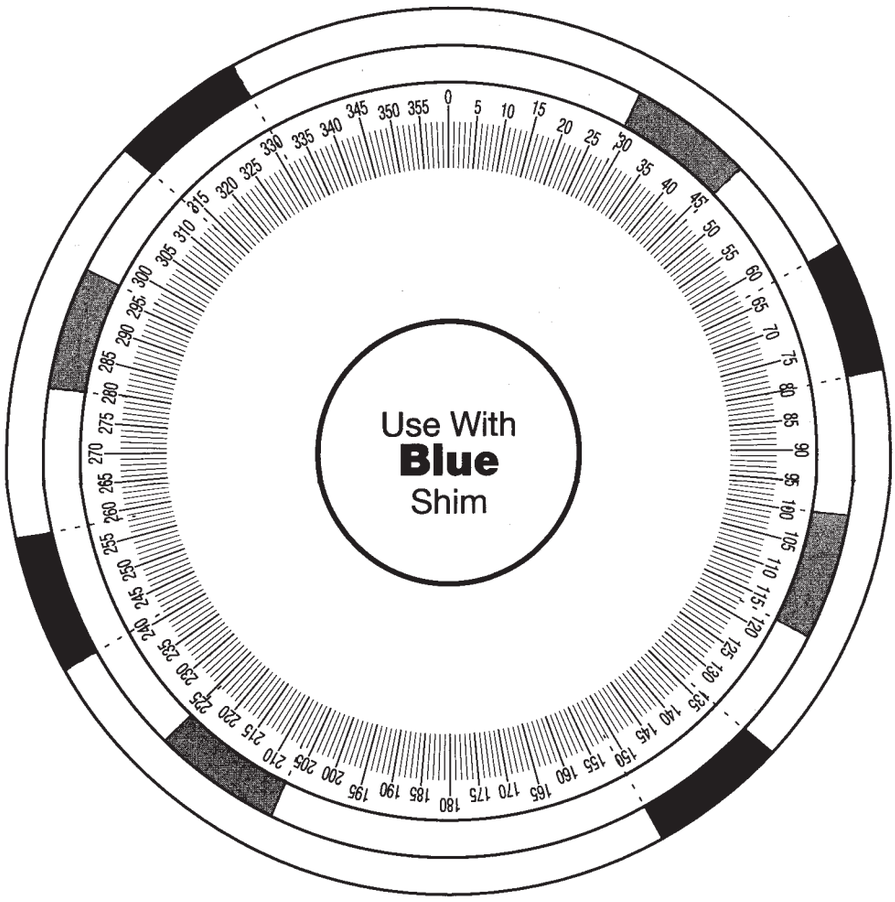
Volkswagen Cabriolet,
Dasher, Fox, Jetta, Quantum,
Rabbit, Scirocco

NOTE: It may be necessary to trim off a small flat area at bottom of shim on late model full size Chrysler Products. After properly locating shim on template, set spindle on shim & mark flat area to be trimmed and cut off with side cutter.

Remove these two tabs for 6 bolt pattern only.

Form No. 95-099-694

Template J

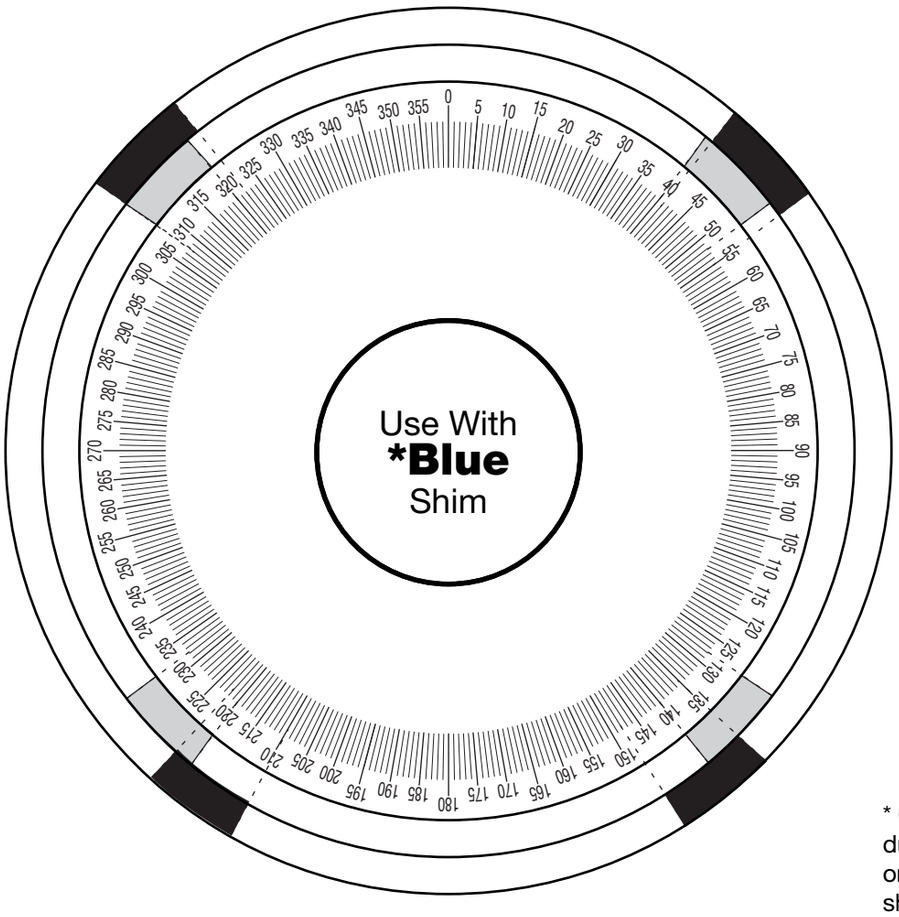


PASSENGER SIDE

DRIVERS SIDE

Template E

FORD - Festiva
Aspire



* Can be used with dual center blue or System 2000 shim system

DODGE - Monaco
EAGLE - Premier
Medallian

CHEVROLET - Spectrum
ISUZU - I-Mark

REAR SHIM APPLICATIONS
Application Chart
FULL CONTRACT/DUAL ANGLE REAR SHIM SYSTEM

American Passenger Cars & Vans

Vehicle	Year	Body Type	Shim Series (Color)	Template No.	Torque Ft. Lbs.	Metric (N.m)
Buick (Except Models w/Rear Disc Brakes)						
Century (FWD)	82-96	A	Burgundy	D	45	60
Electra	85-96	C	Burgundy	D	52	70
LaSabre	86-98	H	Burgundy	D	52	70
Park Avenue/Ultra	85-96	C	Burgundy	D	52	70
Rendezvous	2002	B	Burgundy	D1	45	60
Riviera (Includes Rear Disc Brakes)	79-92	E	Burgundy	D	52	70
Skyhawk	82-89	J	Gray	C	45	60
Skylark	80-89	X/N	Gray	C	45	60
Somerset	85-90	N	Gray	C	45	60
Cadillac (Except Models w/Rear Disc Brakes)						
Cimarron	82-88	J	Gray	C	45	60
Eldorado (Includes Rear Disc Brakes)	79-85	E	Burgundy	D	52	70
Seville (Includes Rear Disc Brakes)	80-85	K	Bugundy	D	52	70
Chevrolet (Except Models w/Rear Disc Brakes)						
Beretta/Corsica	87-97	L	Gray	C	37	51
Cavalier	82-02	J	Gray	C	45	60
Celebrity	82-90	A	Burgundy	D	45	60
Citation	80-85	X	Gray	C	45	60
Lumina APV	90-96	U	Burgundy	D	45	60
Nova FWD	85-89	S	Burgundy	D	59	80
Spectrum	85-89	R	Blue	E	41	56
Venture	97-02	U	Burgundy	D1	45	60
Venture Van	97-98	U	Burgundy	D1	63	86
Chrysler & Imperial						
Dynasty (Canada)	91-93	AC	Blue	A	45	60
E-class Exe. Sedan	83-87	E	Blue	A	45	60
Fifth Avenue	90-93	AY	Blue	A	45	60
Imperial	90-93	AY	Blue	A	45	60
Laser	84-86	AG	Blue	A	45	60
LeBaron/GTS	82-95	H	Blue	A	45	60
LeBaron TwnCity Wagon	82-85	AJ	Blue	A	45	60
New Yorker- Exc. Fifth Avenue	83-93	AC	Blue	A	45	60
TC by Maserati	90-91	AQ	Blue	A	45	60
Town & Country-Van	96-02	NS	Green	L & M	95	130
Town & Country-Van	90-95	White	B	80	109	
Dodge						
400	82-83	K	Blue	A	45	60
600	83-88	E	Blue	A	45	60
Aries	81-89	K	Blue	A	45	60
Caravan Van	96-02	NS	Green	L & M	95	130
Caravan Van	84-95	AS	White	B	80	109
Charger	83-87	L	Blue	H	45	61
Daytona	84-93	G	Blue	A	45	61
Dynasty	88-93	AC	Blue	A	80	108
Lancer	85-89	H	Blue	A	45	61
Monaco	90-92	B	Blue	E	47	64
Omni/024	78-90	L	Blue	H	45	61
Rampage	82-84	L	Blue	H	45	61
Shadow	87-94	P	Blue	A	45	61
Spirit	89-95	A	Blue	A	45	61
Eagle						
Premiere	88-92	BB	Blue	E	47	64
Medallion	88-89	BC	Blue	E	47	64
Ford						
Aspire	94-97		Blue	J	45	61
Festiva	88-93		Blue	J	45	61
Windstar	95-02		White	K	50-68	68-92
Geo (Except Models w/Rear Disc Brakes)						
Spectrum	89	R	Blue	E	59	79
Prism	89-97	S	Gray	G	59	79
Mercury						
Villager	93-02		White	I	52	71
NOTE: Hub & Bearing Assembly Nut 145/210 Ft. Lbs. - 196/284 (N.m.)						
Nissan						
Quest	93-02		White	I	52	71
NOTE: Hub & Bearing Assembly Nut 145/210 Ft. Lbs. - 196/284 (N.m.)						
Oldsmobile (Except Models w/Rear Disc Brakes)						
Achieva	92-98	N	Gray	C	43	58
Calais	85-91	N	Gray	C	43	58
Cutlass/Ciera & Cruiser	86-96	A	Burgundy	D	60	81
Delta 88 & Royale FWD	86-98	H	Burgundy	D	60	81
Firenza	82-88	J	Gray	C	39	53
98 Regency	85-96	C	Burgundy	D	52	70
Omega	80-84	X	Gray	C	43	58
Silhouette	97-98	U	Burgundy	D1	63	85
Silhouette	89-02	U	Burgundy	D	45	60
Toronado (Includes Rear Disc Brakes)	79-85	E	Burgundy	D	52	71
Plymouth						
Acclaim	89-95	A	Blue	A	45	61
Caravelle	85-88	E	Blue	A	45	61
Horizon/TC-3	78-90	L	Blue	H	45	61
Reliant	84-89	K	Blue	A	45	61
Reliant	81-83	K	Blue	A		
Scamp	82-83	L	Blue	H	45	61
Sundance	87-95	P	Blue	A	45	61
Turismo	83-87	L	Blue	H	45	61
Voyager Van	96-02	NS	Green	L & M	95	129
Voyager Van	84-95	A	white	B	80	109

American Passenger Cars & Vans (Continued)

Vehicle	Year	Body Type	Shim Series (Color)	Template No.	Torque Ft. Lbs.	Metric (N.m)
Pontiac (Except models w/Rear Disk Brakes)						
6000	82-91	A	Burgundy	D	45	60
Bonneville	87-98	H	Burgundy	D	52	70
Grand Am	85-98	N	Gray	C	43	58
Phoenix	80-84	X	Gray	C	43	58
SSE	87-97	H	Burgundy	D	52	70
Sunbird/J2000	82-94	J	Gray	C	39	53
Sunburst	85-88	R	Blue	E	43	58
Sunfire	95-98	J	Gray	C	44	60
Tempest (Canada)	88-95	L	Gray	C	39	53
Trans Sport/Mont.	97-02	U	Burgundy	D1	63	86
Trans Sport	89-98	U	Burgundy	D	45	60
Saturn						
L	2001-02	L	Grey	–	37	50

Import Car Vehicles

Vehicle	Year	Body Type	Shim Series (Color)	Template No.	Torque Ft. Lbs.	Metric (N.m)
Acura						
Integra	86-89		Gray	C	40	54
Audi (Except Models w/Rear Disc Brakes)						
80	88-92 (Exc. Quattro)		Blue	A	22	30
90	88-95 (Exc. Quattro)		Blue	A	22	30
100/200 (2 WD)	89-94 (Exc. Quattro)		White	B	22	30
4000 (2 WD)	80-87		Blue	H	44	58
5000 (2 WD)	78-88 (Exc. Quattro)		White	B	22	30
Fox	73-79		Blue	A	44	58
GT Cope	83-87		Blue	A	44	58
Honda						
CRX	84-87		Gray	C	40	54
Civic (Hatchback & Sedan)	80-87		Gray	C	40	54
Civic Wagon	84-87		Gray	C	40	54
Prelude	79-82		White	F	40	54
Isuzu						
I-Mark FWD	85-90		Blue	E	41	56
Toyota						
Camry	83-98		Burgundy	D	59	79
Corolla FWD	88-98		Burgundy	D	59	80
Corolla FWD	84-87		Burgundy	D	59	80
FX-16	87-88		Burgundy	D	59	80
Tercel (Exc/SW)	83-86		Gray	G	29-39	39-53
Volkswagen (Except Models w/Rear Disc Brakes)						
Cabrio	95-02		Blue	A	44	60
Cabriolet	85-93		Blue	A	44	60
Corrado	89-94		Blue	A	44	60
Dasher	74-81		Blue	A	44	60
Fox	87-94		Blue	A	44	60
Golf & GTI	85-98		Blue	A	44	60
Jetta	80-98		Blue	A	44	60
Passat	90-97		Blue	A	44	60
Quantum	82-88		Blue	A	44	60
Rabbit	75-84		Blue	A	44	60
Rabbit Pickup	80-83		Blue	A	44	60
Scirocco	74-91		Blue	A	44	60

NOTE: Because this shim system is so versatile, you will find many other applications can be covered. If no bolt pattern template exists, simply calculate your toe and camber changes as usual, determine proper position number from chart, select appropriate shim style and number. Place shim on any proper size template. Rotate shim to previously calculated number, mark the "0" on 12: position on shim and use spindle from vehicle to mark bolt pattern.

NOTE:
WHEN USING "DUAL CENTER' BLUE SHIM ON THE FOLLOWING APPLICATIONS:
CHEVROLET - SPECTRUM
DODGE - MONACO
EAGLE - PREMIER, MEDALLIAN
ISUZU - I-MARK

BREAK OUT SHIM CENTER AS ILLUSTRATED IN FIGURES 1 AND 2

Figure 1

Using a small side cutter of special "Micro - Shear", cut membrane (4 places).

Figure 2

Using a small plier, break out each section as shown.

INSTRUCTIONS

FULL CONTACT/DUAL ANGLE
REAR WHEEL ALIGNMENT SHIM SYSTEM

PRIOR TO HOOKING UP THE ALIGNMENT EQUIPMENT INSPECT THE REAR SPINDLE MOUNTING AREA FOR ANY EXISTING ALIGNMENT SHIMS. IF ANY SHIMS ARE PRESENT THEY MUST BE REMOVED TO ESTABLISH A BASE READING.

USE THE VEHICLE APPLICATION GUIDE SHOWN ON THE CHART TO SELECT WHICH SERIES/COLOR OF SHIM TO USE.

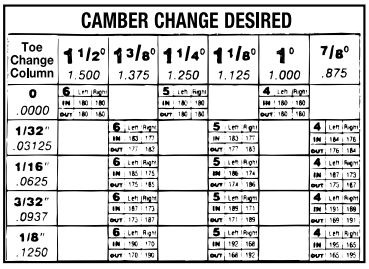


Figure 1

1. Take and record rear alignment readingts. Note the camber and toe changes desired.

2. Select the correct side of the shim **Application/Position Chart** (Included with shim). One side is for **computerized** four wheel alignment equipment and the other is for **(Non-Computerized)** equipment. **(Fig. 1)**

   The difference is that when using non computerized equipment you must measure the diameter of the tires and select toe change desired from proper tire diameter column. Tire diameter is not measured when using electronic 4 wheel computerized equipment.

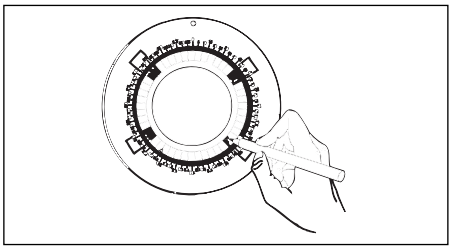


Figure 2

3. Select the amount of toe change desired (From appropriate chart) by reading down the toe change column on the left side of the chart.

4. Select the amount of camber change (Increase or decrease) from camber change listing across the top of the chart. Next read down the camber change column and across the toe change column to find the box where the two columns meet. **(Fig. 1)**

   Use the information shown in the box to obtain the correct shim number to use (Bold number in the upper left corner of the box). Determine if you are working on the right or left side and if you want to change toe inward or outward from the reading you now have. The number shown is the indexing number for the shim when locating it on the template. (See template furnished with shims).

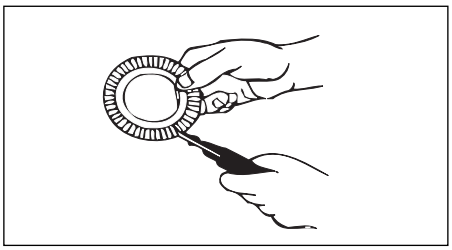


Figure 3

5. Select correct template and place shim over template with the notch indexed to the location number obtained from the chart. The serrated side of the shim faces up.

6. Select the mounting bolt pattern from the template (Included with shim) and mark the tabs on the shim which are to be removed to mount the shim **(Fig. 2)**

   Mark a line on the shim at the 0 degree position of the template. This is the top position of the shim when it is installed.

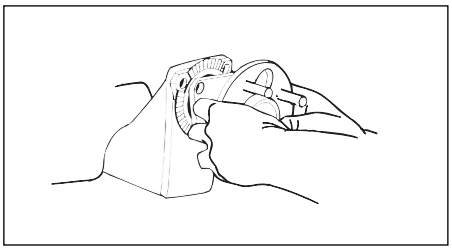


Figure 4

7. Remove the shim from template and using a side cutter, nip the very edge of the slots on either side of the tabs you wish to remove. (this will split the membrane) Next, grasp the tabs with the side cutter and bend **downward** to break tabs at the relief line causing them to neatly separate from shim body. **(Fig. 3)**

8. Remove the spindle or hub from the vehicle, clean all surfaces and install the shim with the top reference mark directly at 12:00 position and the serrations facing out (toward you) **{Figure 4}**

9. Torque hub mounting bolts to specifications, complete front alignment and road test vehicle.

NOTE: A FINE TIPPED PAINT PEN WORKS BEST FOR MARKING OF BOLT BREAK OUT PATTERNS AND "0" DEGREE TOP REFERENCES.

U.S. PATENT NO. 4,872,699

Full Contact/Dual Angle Rear Wheel Alignment Shim System for Late Model Chrysler Mini Vans

IInstallation Instructions:

1. Install alignment equipment and record readings. Note the camber and toe changes needed for correction.

2 Using the shim positioning chart furnished with shim, select the correct side of the chart (one side is for **computerized** four wheel alignment equipment and the other is for **non-computerized** equipment).

3. Select the amount of toe change desired by reading down the toe change column on the left side of the chart.

4. Select the amount of camber change (increase or decrease) from camber change listings across the top of the chart. Next, read down the camber change column and across the toe change column to find the box where the two columns meet.

5. The bold number shown in the upper left corner of the box indicates the correct shim number to use. The words "IN and "OUT" correspond to the direction the toe will change from the reading you now have. The words "LEFT and "RIGHT" determine which side of the vehicle you are working on. The number shown is the indexing number for the shim when locating it on the template (See template furnished with shim).

   If the box selected is empty, select a nearby box that offers the best possible adjus ment. NOTE: Toe adjusment is always more critical than camber.

6. Place shim over template with the notch indexed to the number obtained from the chart(the smooth side faces down). Using provided paint stick, or other suitable marker, mark the full length of each tab segment that corresponds to the mounting bolt pattern and wheel speed sensor hole as indicated on the template. Next, mark only the first half of each tab segment as indicated by the long gray line along top of template.

   Note: To maximize surface area and maintain integrity of shim, it is recommended a 1/2" hole cutter be used to bore holes (in place of full tab removal) for hub mounting bolts.

7. When using this method, place previously marked shim on block of wood and (with hole cutter installed in air drill) position centering pilot at first relief line (see figure No. 1). Using moderate pressure, drill 4 holes corresponding to hub mounting bolts. If you are not using a 1/2" hole cutter, simply remove the full tabs that correspond to the hub bolt pattern by using a shim cutter to break tab membrane its full length on either side of tabs to be removed. Grasp the tabs to be removed with the shim cutter and bend downwardbreaking off each tab at the inner relief line (see figure No. 2).

   In the same manner, remove the tabs corresponding to wheel-speed sensor.

   Next, as indicated by the long gray line on template, remove only the outer half of each tab segment that corresponds to this marking.

   NOTE: Nip only the very edge of the slots on either side of the outer tab segments to be removed. This will split the membrane to only the first relief line (see figure No. 3). Next, using a needle nose plier and holding the shim as shown in figure No. 4, grasp tabs andbend downward break away.

Installing the Shim

1. Raise and support vehicle in a safe manner. Remove alignment equipment and tire/wheel assembly from vehicle.

2. IMPORTANT: To prevent possible "kinking" of brake line during shim installation, first remove both brake line routing clips along axle. Next, from the back side of the axle, remove the rear wheel speed sensor. CAUTION! if the speed sensor has seized up, DO NOT use a pliers on sensor head in an attempt to remove it. Use a hammer and punch and tap edge of sensor, rocking it from side to side until free from hub and bearing assembly.

3 Remove hub & bearing assembly from vehicle - clean all surfaces and install shim with tabbed side facing out.

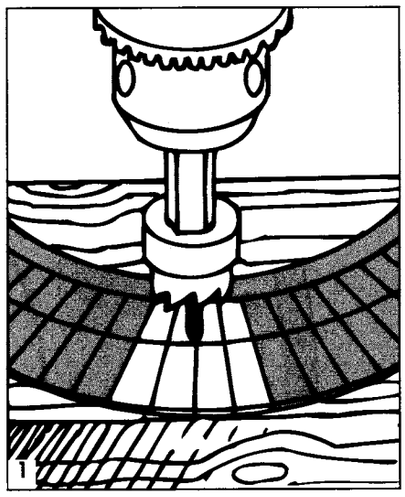
4. Replace hub and bearing mounting bolts and torque in a star pattern to 95 ft. lbs. (129 NM.).

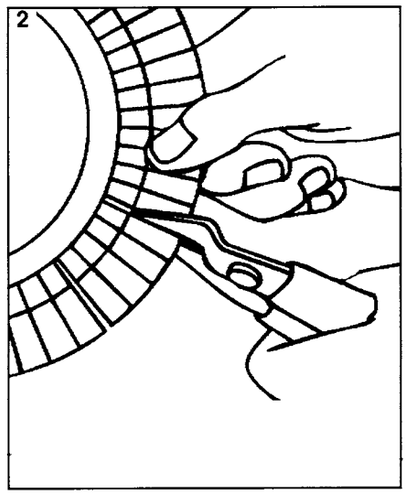
5. Install rear wheel speed sensor and torque speed sensor attaching bolt to 105 inch lbs. (12 NM.).

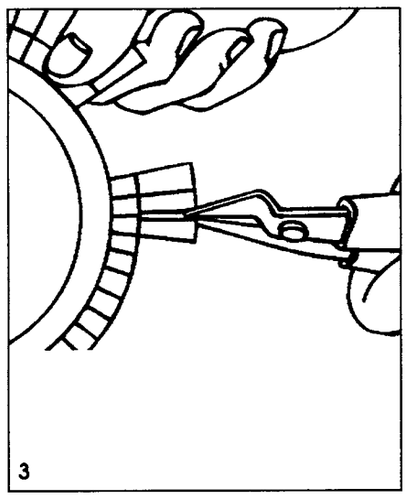
6. Install rear brake drum.

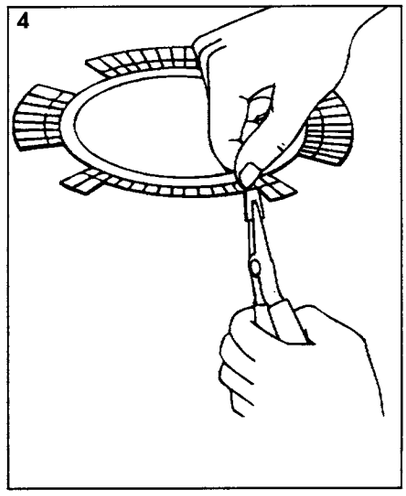
7. Install rear tire wheel assembly and tighten lug nuts to 95 ft. lbs. (129 NM.).

8. Proceed with balance of total 4 wheel alignment and road test vehicle.





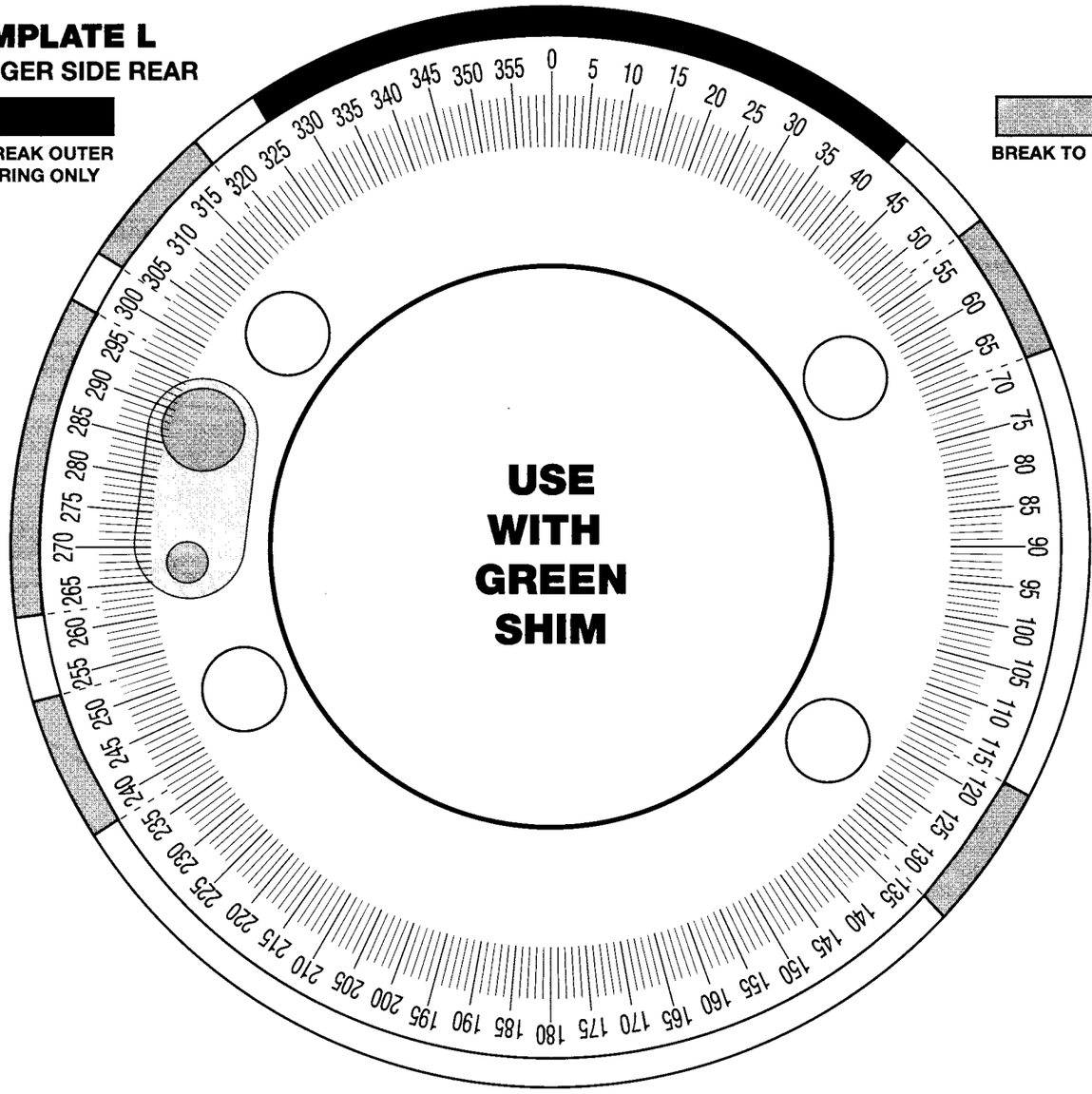




TEMPLATE L
PASSENGER SIDE REAR

BREAK OUTER RING ONLY

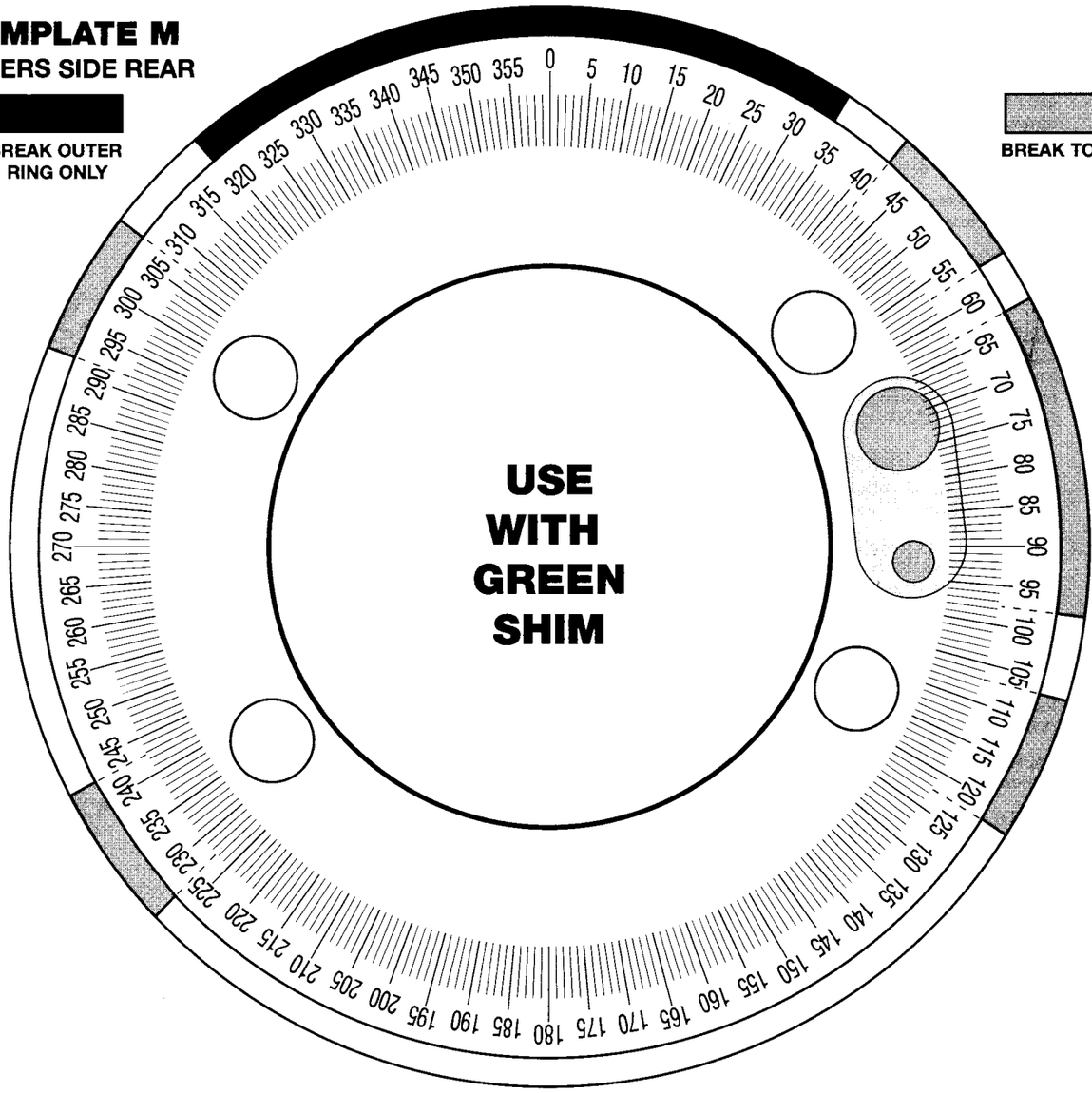
BREAK TO HUB



TEMPLATE M
DRIVERS SIDE REAR

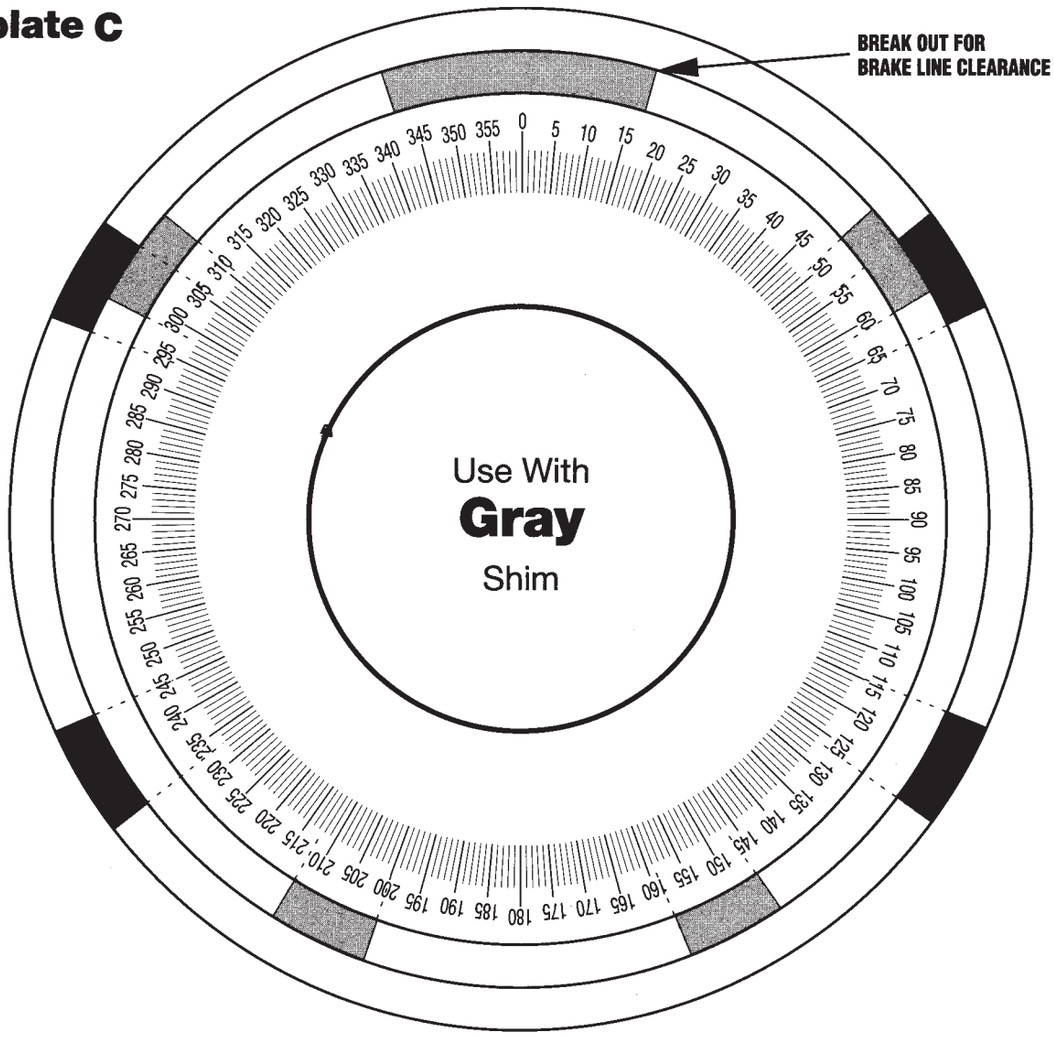
BREAK OUTER RING ONLY

BREAK TO HUB



1996 and up Dodge Caravan, Plymouth Voyager, Chrysler Town & Country

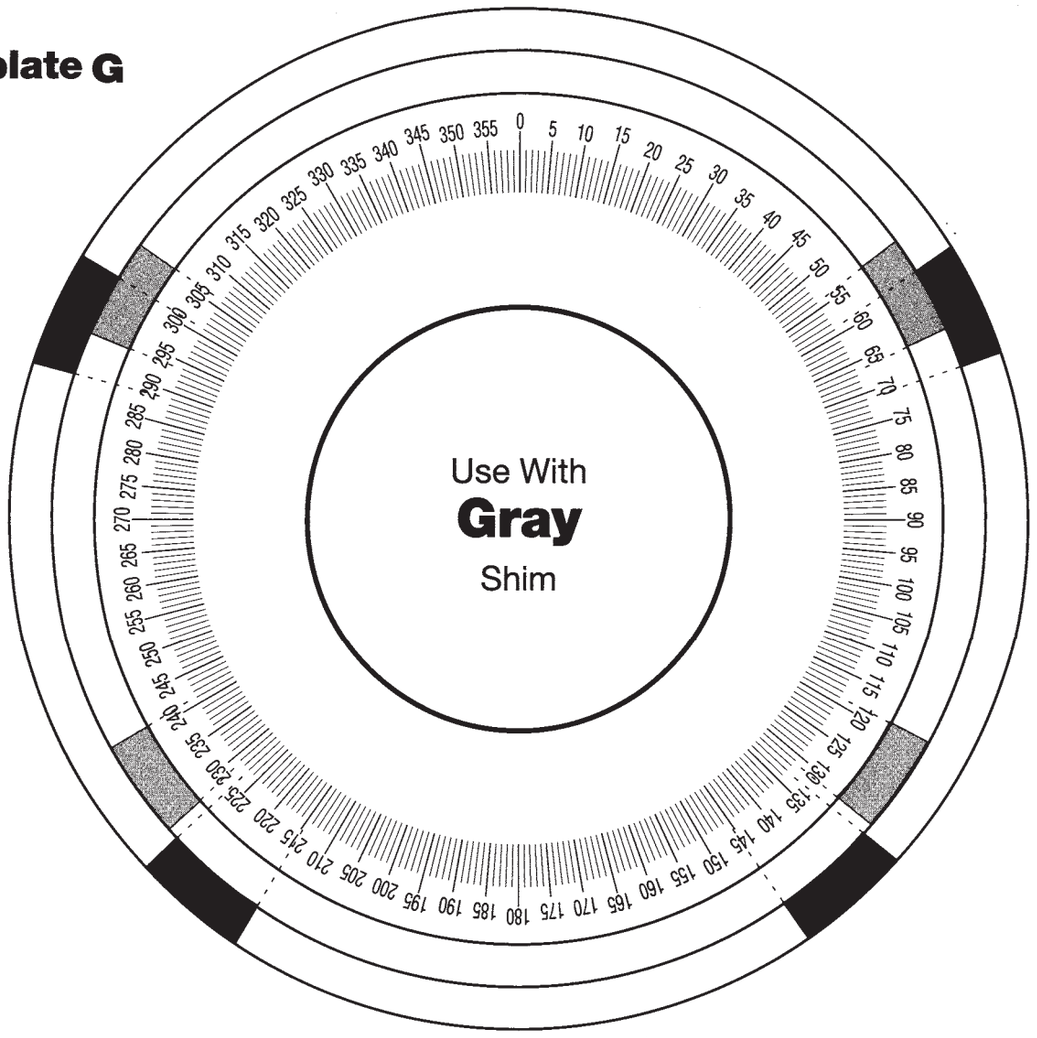
Template C



HONDA - Civic & CRX
Civic Wagon
ACURA - Integra

GM - X-J-N Cars
CHEVROLET - Corsica,
Beretta

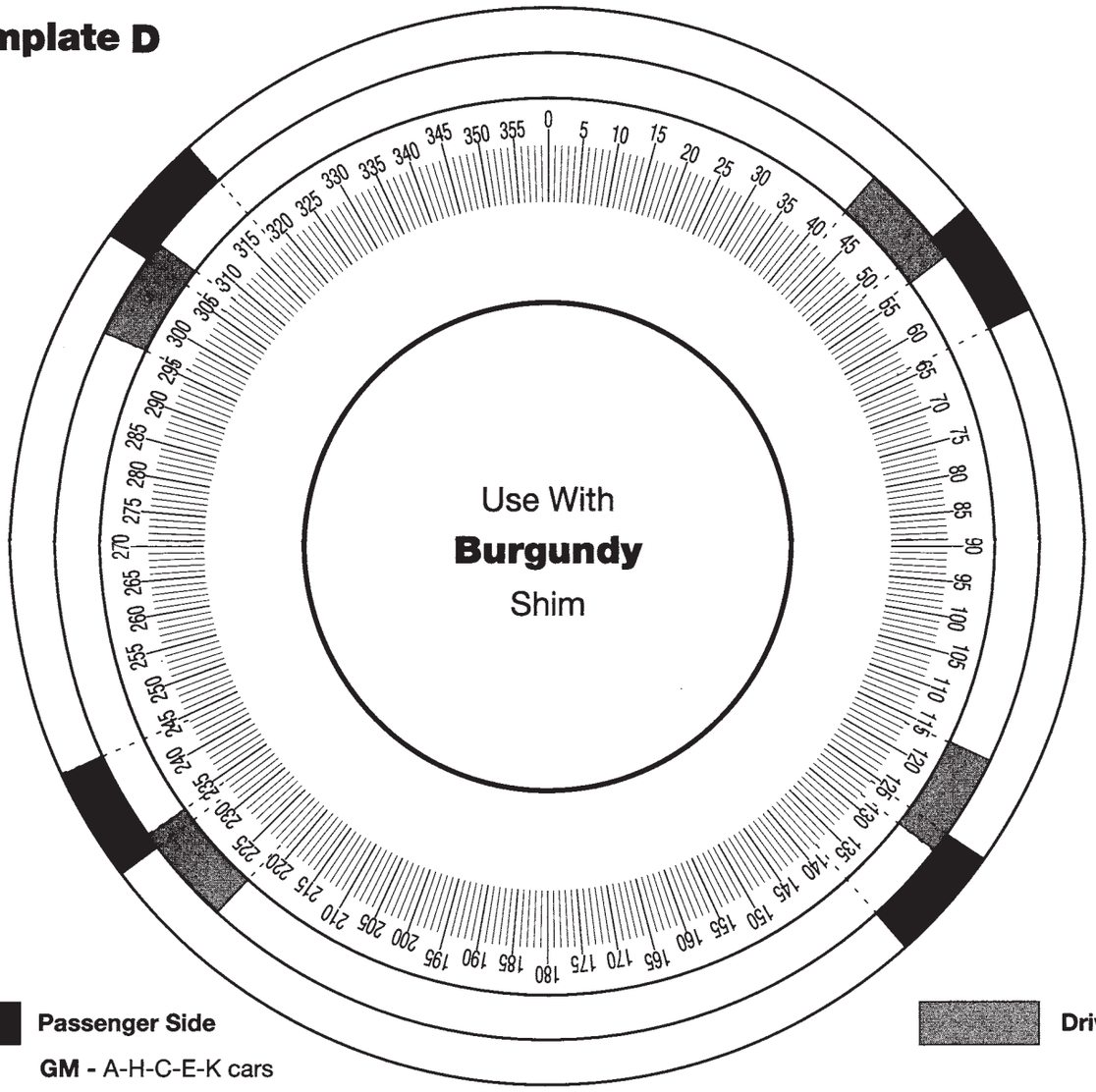
Template G



CHEVROLET - Geo Prism

TOYOTA - Tercell

Template D

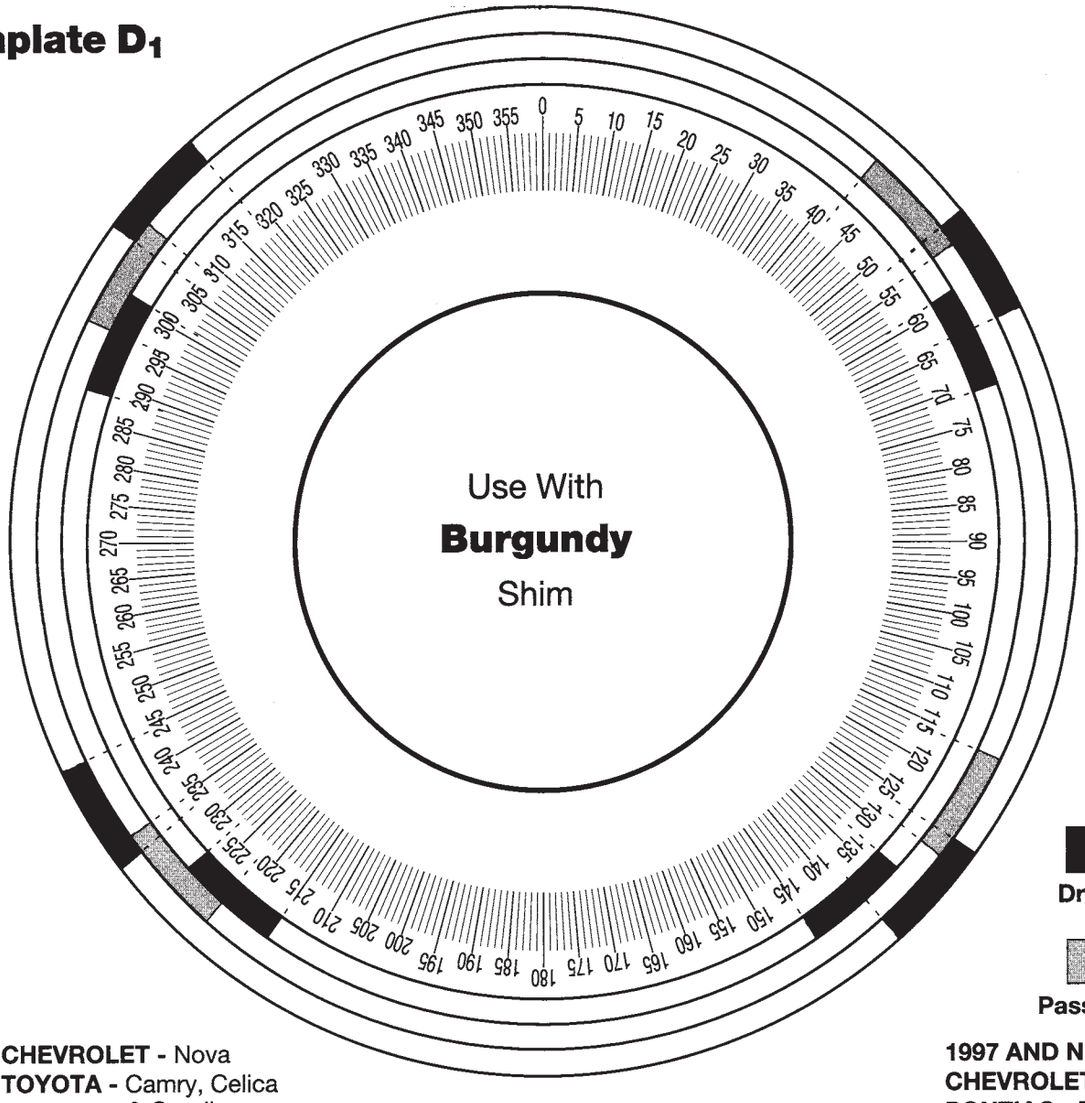


Passenger Side

GM - A-H-C-E-K cars

Drivers Side

Template D_1



Drivers Side

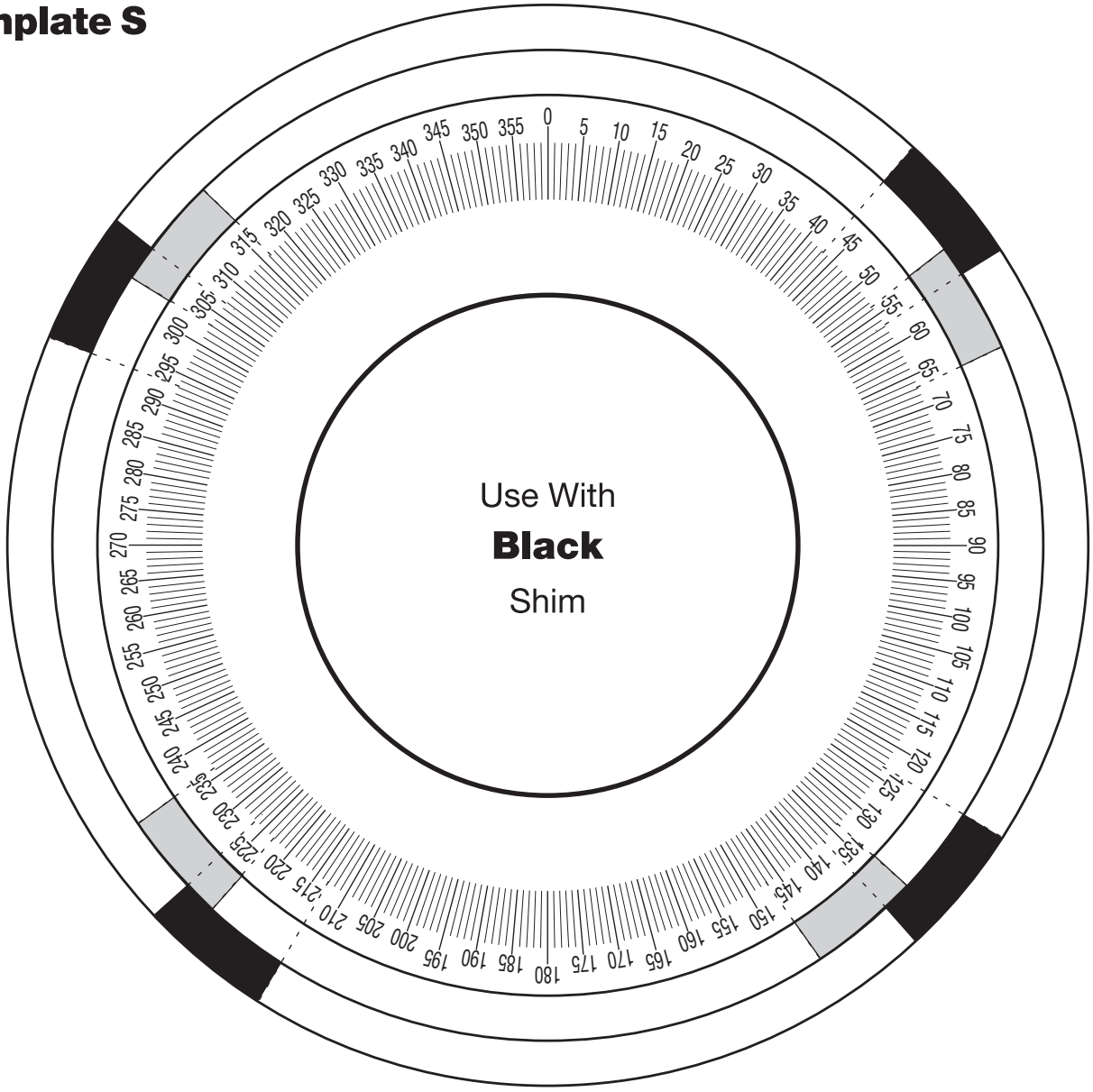
Passenger Side

CHEVROLET - Nova
TOYOTA - Camry, Celica & Corolla
GEO - Prizm

1997 AND NEWER
CHEVROLET - Venture
PONTIAC - Transport
OLDSMOBILE - Silhouette

Form No. 95-098-694

Template S



Passenger Side

Drivers Side

PONTIAC - Vibe

TOYOTA - Matrix & Corolla

INSTRUCTIONS

FULL CONTACT/DUAL ANGLE
REAR WHEEL ALIGNMENT SHIM SYSTEM

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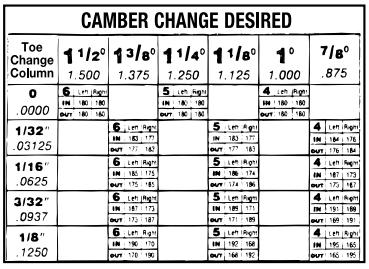

Figure 1

1. Take and record rear alignment readingts. Note the camber and toe changes desired.

2. Select the correct side of the shim **Application/Position Chart** (Included with shim). One side is for **computerized** four wheel alignment equipment and the other is for **(Non-Computerized)** equipment. **(Fig. 1)**

   The difference is that when using non computerized equipment you must measure the diameter of the tires and select toe change desired from proper tire diameter column. Tire diameter is not measured when using electronic 4 wheel computerized equipment.

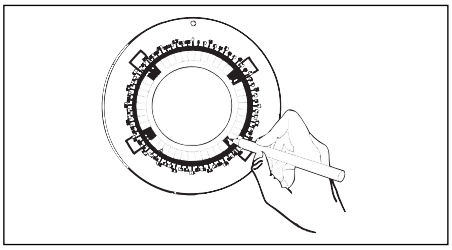

Figure 2

3. Select the amount of toe change desired (From appropriate chart) by reading down the toe change column on the left side of the chart.

4. Select the amount of camber change (Increase or decrease) from camber change listing across the top of the chart. Next read down the camber change column and across the toe change column to find the box where the two columns meet. **(Fig. 1)**

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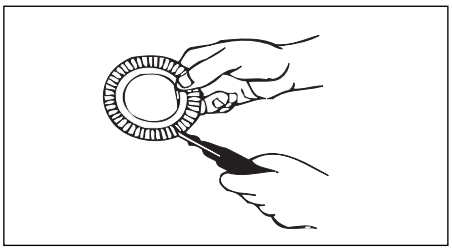


Figure 3

5. Select correct template and place shim over template with the notch indexed to the location number obtained from the chart. The serrated side of the shim faces up.

6. Select the mounting bolt pattern from the template (Included with shim) and mark the tabs on the shim which are to be removed to mount the shim **(Fig. 2)**

   Mark a line on the shim at the 0 degree position of the template. This is the top position of the shim when it is installed.

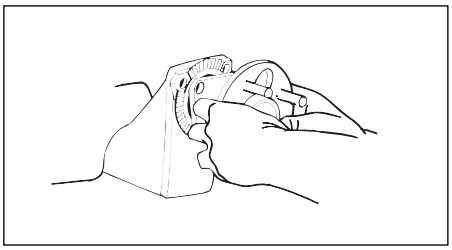


Figure 4

7. Remove the shim from template and using a side cutter, nip the very edge of the slots on either side of the tabs you wish to remove. (this will split the membrane) Next, grasp the tabs with the side cutter and bend **downward** to break tabs at the relief line causing them to neatly separate from shim body. **(Fig. 3)**

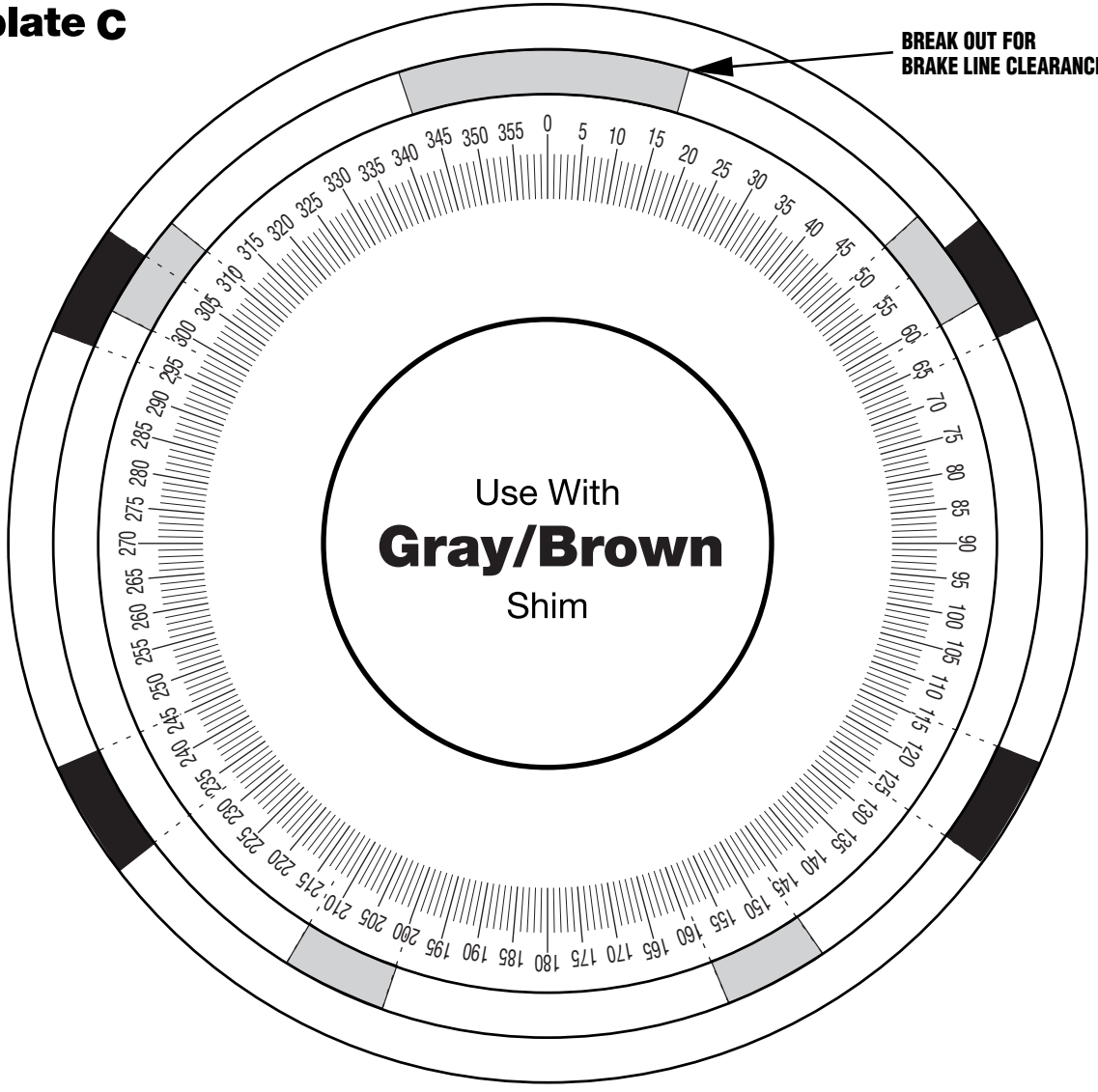
8. Remove the spindle or hub from the vehicle, clean all surfaces and install the shim with the top reference mark directly at 12:00 position and the serrations facing out (toward you) **{Figure 4}**

9. Torque hub mounting bolts to specifications, complete front alignment and road test vehicle.

NOTE: A FINE TIPPED PAINT PEN WORKS BEST FOR MARKING OF BOLT BREAK OUT PATTERNS AND "0" DEGREE TOP REFERENCES.

U.S. PATENT NO. 4,872,699

Template C



HONDA - Civic & CRX
Civic Wagon
ACURA - Integra

GM - X-J-N Cars
CHEVROLET - Corsica, Beretta & Cobalt
SATURN - ION

REAR SHIM APPLICATIONS
Application Chart
FULL CONTRACT/DUAL ANGLE REAR SHIM SYSTEM

American Passenger Cars & Vans

Vehicle	Year	Body Type	Shim Series (Color)	Template No.	Torque Ft. Lbs.	Metric (N.m)
Buick (Except Models w/Rear Disc Brakes)						
Century (FWD)	82-96	A	Burgundy	D	45	60
Electra	85-96	C	Burgundy	D	52	70
LaSabre	86-98	H	Burgundy	D	52	70
Park Avenue/Ultra	85-96	C	Burgundy	D	52	70
Rendezvous	2002	B	Burgundy	D1	45	60
Riviera (Includes Rear Disc Brakes)	79-92	E	Burgundy	D	52	70
Skyhawk	82-89	J	Gray	C	45	60
Skylark	80-89	X/N	Gray	C	45	60
Somerset	85-90	N	Gray	C	45	60
Cadillac (Except Models w/Rear Disc Brakes)						
Cimarron	82-88	J	Gray	C	45	60
Eldorado (Includes Rear Disc Brakes)	79-85	E	Burgundy	D	52	70
Seville (Includes Rear Disc Brakes)	80-85	K	Bugundy	D	52	70
Chevrolet (Except Models w/Rear Disc Brakes)						
Beretta/Corsica	87-97	L	Gray	C	37	51
Cavalier	82-02	J	Gray	C	45	60
Celebrity	82-90	A	Burgundy	D	45	60
Citation	80-85	X	Gray	C	45	60
Lumina APV	90-96	U	Burgundy	D	45	60
Nova FWD	85-89	S	Burgundy	D	59	80
Spectrum	85-89	R	Blue	E	41	56
Venture	97-02	U	Burgundy	D1	45	60
Venture Van	97-98	U	Burgundy	D1	63	86
Chrysler & Imperial						
Dynasty (Canada)	91-93	AC	Blue	A	45	60
E-class Exe. Sedan	83-87	E	Blue	A	45	60
Fifth Avenue	90-93	AY	Blue	A	45	60
Imperial	90-93	AY	Blue	A	45	60
Laser	84-86	AG	Blue	A	45	60
LeBaron/GTS	82-95	H	Blue	A	45	60
LeBaron TwnCity Wagon	82-85	AJ	Blue	A	45	60
New Yorker- Exc. Fifth Avenue	83-93	AC	Blue	A	45	60
TC by Maserati	90-91	AQ	Blue	A	45	60
Town & Country-Van	96-02	NS	Green	L & M	95	130
Town & Country-Van	90-95	White	B	80	109	
Dodge						
400	82-83	K	Blue	A	45	60
600	83-88	E	Blue	A	45	60
Aries	81-89	K	Blue	A	45	60
Caravan Van	96-02	NS	Green	L & M	95	130
Caravan Van	84-95	AS	White	B	80	109
Charger	83-87	L	Blue	H	45	61
Daytona	84-93	G	Blue	A	45	61
Dynasty	88-93	AC	Blue	A	80	108
Lancer	85-89	H	Blue	A	45	61
Monaco	90-92	B	Blue	E	47	64
Omni/024	78-90	L	Blue	H	45	61
Rampage	82-84	L	Blue	H	45	61
Shadow	87-94	P	Blue	A	45	61
Spirit	89-95	A	Blue	A	45	61
Eagle						
Premiere	88-92	BB	Blue	E	47	64
Medallion	88-89	BC	Blue	E	47	64
Ford						
Aspire	94-97		Blue	J	45	61
Festiva	88-93		Blue	J	45	61
Windstar	95-02		White	K	50-68	68-92
Geo (Except Models w/Rear Disc Brakes)						
Spectrum	89	R	Blue	E	59	79
Prism	89-97	S	Gray	G	59	79
Mercury						
Villager	93-02		White	I	52	71
NOTE: Hub & Bearing Assembly Nut 145/210 Ft. Lbs. - 196/284 (N.m.)						
Nissan						
Quest	93-02		White	I	52	71
NOTE: Hub & Bearing Assembly Nut 145/210 Ft. Lbs. - 196/284 (N.m.)						
Oldsmobile (Except Models w/Rear Disc Brakes)						
Achieva	92-98	N	Gray	C	43	58
Calais	85-91	N	Gray	C	43	58
Cutlass/Ciera & Cruiser	86-96	A	Burgundy	D	60	81
Delta 88 & Royale FWD	86-98	H	Burgundy	D	60	81
Firenza	82-88	J	Gray	C	39	53
98 Regency	85-96	C	Burgundy	D	52	70
Omega	80-84	X	Gray	C	43	58
Silhouette	97-98	U	Burgundy	D1	63	85
Silhouette	89-02	U	Burgundy	D	45	60
Toronado (Includes Rear Disc Brakes)	79-85	E	Burgundy	D	52	71
Plymouth						
Acclaim	89-95	A	Blue	A	45	61
Caravelle	85-88	E	Blue	A	45	61
Horizon/TC-3	78-90	L	Blue	H	45	61
Reliant	84-89	K	Blue	A	45	61
Reliant	81-83	K	Blue	A		
Scamp	82-83	L	Blue	H	45	61
Sundance	87-95	P	Blue	A	45	61
Turismo	83-87	L	Blue	H	45	61
Voyager Van	96-02	NS	Green	L & M	95	129
Voyager Van	84-95	A	white	B	80	109

American Passenger Cars & Vans (Continued)

Vehicle	Year	Body Type	Shim Series (Color)	Template No.	Torque Ft. Lbs.	Metric (N.m)
Pontiac (Except models w/Rear Disk Brakes)						
6000	82-91	A	Burgundy	D	45	60
Bonneville	87-98	H	Burgundy	D	52	70
Grand Am	85-98	N	Gray	C	43	58
Phoenix	80-84	X	Gray	C	43	58
SSE	87-97	H	Burgundy	D	52	70
Sunbird/J2000	82-94	J	Gray	C	39	53
Sunburst	85-88	R	Blue	E	43	58
Sunfire	95-98	J	Gray	C	44	60
Tempest (Canada)	88-95	L	Gray	C	39	53
Trans Sport/Mont.	97-02	U	Burgundy	D1	63	86
Trans Sport	89-98	U	Burgundy	D	45	60
Saturn						
L	2001-02	L	Grey	–	37	50

Import Car Vehicles

Vehicle	Year	Body Type	Shim Series (Color)	Template No.	Torque Ft. Lbs.	Metric (N.m)
Acura						
Integra	86-89		Gray	C	40	54
Audi (Except Models w/Rear Disc Brakes)						
80	88-92 (Exc. Quattro)		Blue	A	22	30
90	88-95 (Exc. Quattro)		Blue	A	22	30
100/200 (2 WD)	89-94 (Exc. Quattro)		White	B	22	30
4000 (2 WD)	80-87		Blue	H	44	58
5000 (2 WD)	78-88 (Exc. Quattro)		White	B	22	30
Fox	73-79		Blue	A	44	58
GT Cope	83-87		Blue	A	44	58
Honda						
CRX	84-87		Gray	C	40	54
Civic (Hatchback & Sedan)	80-87		Gray	C	40	54
Civic Wagon	84-87		Gray	C	40	54
Prelude	79-82		White	F	40	54
Isuzu						
I-Mark FWD	85-90		Blue	E	41	56
Toyota						
Camry	83-98		Burgundy	D	59	79
Corolla FWD	88-98		Burgundy	D	59	80
Corolla FWD	84-87		Burgundy	D	59	80
FX-16	87-88		Burgundy	D	59	80
Tercel (Exc/SW)	83-86		Gray	G	29-39	39-53
Volkswagen (Except Models w/Rear Disc Brakes)						
Cabrio	95-02		Blue	A	44	60
Cabriolet	85-93		Blue	A	44	60
Corrado	89-94		Blue	A	44	60
Dasher	74-81		Blue	A	44	60
Fox	87-94		Blue	A	44	60
Golf & GTI	85-98		Blue	A	44	60
Jetta	80-98		Blue	A	44	60
Passat	90-97		Blue	A	44	60
Quantum	82-88		Blue	A	44	60
Rabbit	75-84		Blue	A	44	60
Rabbit Pickup	80-83		Blue	A	44	60
Scirocco	74-91		Blue	A	44	60

NOTE: Because this shim system is so versatile, you will find many other applications can be covered. If no bolt pattern template exists, simply calculate your toe and camber changes as usual, determine proper position number from chart, select appropriate shim style and number. Place shim on any proper size template. Rotate shim to previously calculated number, mark the "0" on 12: position on shim and use spindle from vehicle to mark bolt pattern.

NOTE:
WHEN USING "DUAL CENTER' BLUE SHIM ON THE FOLLOWING APPLICATIONS:
CHEVROLET - SPECTRUM
DODGE - MONACO
EAGLE - PREMIER, MEDALLIAN
ISUZU - I-MARK

BREAK OUT SHIM CENTER AS ILLUSTRATED IN FIGURES 1 AND 2

Figure 1

Using a small side cutter of special "Micro - Shear", cut membrane (4 places).

Figure 2

Using a small plier, break out each section as shown.

INSTRUCTIONS

Rear Camber Shim For General Motors "E" and "K" Body Vehicles

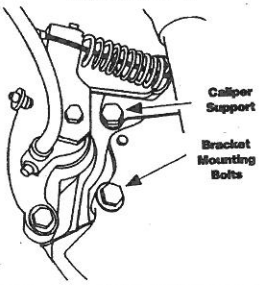
Inspect vehicle for damaged or worn parts and replace as needed.

Take initial readings to determine the amount of camber change needed and select proper shim.

Raise vehicle in a safe manner and remove wheel assembly.

Next, remove rear disc brake caliper. **NOTE:** To speed removal of brake caliper and to eliminate disconnecting parking brake cable and lever, remove the two (2) mounting bolts holding caliper support bracket and slide total assembly off rotor.
(See figure 1) (Be sure brake caliper is supported so the weight of the caliper is not being held by brake line.)

Figure No. 1



Remove rear disc brake rotor.

Remove rear hub and bearing assembly.

Install selected shim in proper position. (See chart at end of this instruction sheet.)

Place shim behind rear hub and bearing assembly. (Check to be sure caliper bolt holes and protruding shim tab holes line up.)

Replace hub and bearing assembly and torque all four (4) bolts to 52 ft. lbs. (71 N.M.)

(Installation tip): When Re-installing rotor, secure rotor by replacing two (2) lug nuts (in reverse position, flat side toward rotor) This holds rotor in place for re-installation of caliper assembly. Slide caliper assembly over rotor and torque caliper mounting bolts to 83 ft. lbs. (113 N.M.) Remove lug nuts securing rotor.

Replace wheel assembly and torque lug nuts to specifications.

Re-install alignment equipment and lower vehicle onto alignment rack.

Re-check camber setting.

Repeat rear camber shim installation of other side of vehicle if necessary.

Adjust toe.

Proceed with alignment of front wheels.

Road test vehicle.

—SHIM POSITIONING GUIDE:—

Camber Decrease

Position selected shim with the letters "NEG" to the top. **NOTE:** Before installing shim on vehicle, cut off (along score line) and discard unneeded caliper shim tabs, as they are only needed when shim is mounted in reverse position for camber increase.

Camber Increase

Position selected shim with the letters "POS" to the top. **NOTE:** Before installing shim on vehicle, cut off (along score line) and discard unneeded caliper shim tabs, as they are only needed when shim is mounted in reverse position for camber decrease.

NOTE: A DEFECTIVE AIR RIDE SYSTEM MAY CAUSE A CHANGE IN RIDE HEIGHT WHICH WILL EFFECT CAMBER READINGS. BE SURE THE AIR RIDE SYSTEM IS WORKING PROPERLY.
(See Alignment Specification Manual for checking procedures as well as rear toe setting procedures)

INSTALLATION INSTRUCTIONS
FORD FOCUS REAR CAMBER SHIM

1) Inspect vehicle for worn, damaged, or loose components. Repair as necessary.

2) Check rear alignment. It is essential to adjust rear toe to specification on both sides of the vehicle, because toe angle affects camber.

3) Choose proper shim for each side of vehicle. It is suggested to mark the shim with an L or R at the top of the shim. The thick part of the shim should be UP for positive camber, DOWN for negative camber.

4) Raise vehicle, support safely.

5) Remove wheel.

6) Use a suitable tool to pinch off the rubber brake hose.

7) Remove the brake line at the wheel cylinder.

8) Remove the ignition key to prevent setting an ABS code. Remove the ABS wire from the brake backing plate.

9) Remove the four hub attaching bolts from the back side of the brake backing plate.

10) Remove the brake drum and wheel hub assembly.

11) Collect brake dust using approved methods.

12) Use a hammer and chisel to cut off the rivet heads attaching the brake backing plate to the suspension arm. Leave the emergency cable attached. Swing the backing plate out of the way.

13) Use a 3/16" punch or drill to remove the rivet shank.

14) Place the camber shim in position for positive or negative camber change. Make sure the large oval hole is in the correct place for the ABS sensor.

15) Place backing plate over camber shim using a small punch through one of the rivet holes to align all components.

16) Insert a rivet through second rivet hole using a hammer. Drive rivet only part way through at this time.

17) Remove punch and install the second rivet using a pneumatic air hammer. Drive both rivets in until they are sealed.

18) Looking inside the brake drum, align hub assembly so bolt holes and ABS sensor location are properly oriented. Slip assembly over brake shoes to mate with the backing plate.

19) If you are installing 1/2 degree shim, reuse four factory hub bolts. For one degree shim installation, use two bolts pro-vided with shim through thick side of shim (top holes for positive camber, bottom holes for negative camber). Install and snug four bolts. Make sure brake drum rotates freely. Torque bolts to 50 ft. lb. (68 N.m.). Reverify free rotation of brake drum.

20) Reinstall brake line into wheel cylinder and tighten. Place catch pan under brake drum. Remove clamp from brake hose. Open brake bleeder. Brake will self-bleed.

21) When air bubbles stop, tighten bleeder screw.

22) Reinstall ABS wire. Reinstall wheel.

23) Reinstall and recompensate alignment sensor.

24) Repeat procedure on other side of vehicle as required.

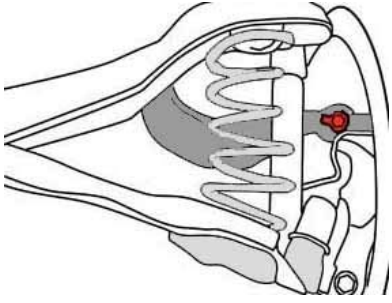
25) Top off brake fluid in master cylinder.

26) Lower vehicle, verify proper camber change. Proceed with rest of alignment, road test vehicle.

Form # 95-210-0503 Part # 46-1700

Ford Focus Rear Camber Kit Instructions

1. Take alignment readings and determine amount of rear camber change needed.
2. Raise rear of vehicle by pinch welds and remove tire and wheel assembly.
3. Remove the upper control arm to knuckle bolt.
4. Using a cutoff wheel, remove the tack-welded nut and clean the area around the hole to remove any raised surfaces.
5. Remove the nut, washer and outer cam washer from the new cam bolt. Align the small tab of inner cam washer with the cam lobe on the bolt.
6. Install bolt with the large tab out toward the wheel for negative camber or in away from the wheel for positive camber.
7. Add outer cam washer with the large tab aligned with inner cam washer and the small tab engaging in the hole of the knuckle. Add flat washer and nut and tighten lightly.
8. Reinstall tire and wheel assembly and re-compensate alignment equipment.
9. Rotate cam bolt to obtain the desired camber reading. Torque nut to spec while holding cam bolt head
10. Complete alignment and road test the vehicle.



95-262-0109

INSTRUCTIONS FOR

Rear Camber Shim

For General Motors C,G,K, and H Body Vehicles with Rear Disk Brakes.

1. Inspect vehicle for damaged or worn parts and replace as needed.
2. Take initial readings to determine the amount of camber change needed and select the proper shim.
3. Raise vehicle in a safe manner and remove wheel assembly.
4. Remove rear disk brake caliper. **Note: For easier removal of the brake caliper, remove (2) mounting bolts holding caliper support bracket and slide total assembly off rotor. (Be sure brake caliper is supported so weight of the caliper is not being held by brake line.)**
5. Remove rear disk brake rotor.
6. Mark top of hub/bearing and backing plate for easier reinstallation.
7. Remove rear hub/bearing assembly.
8. Install selected shim in proper position for either a positve or negative change. **Note: a notch is provided in center opening of shim for reference. When notch faces upward, camber is changed in positive direction. When notch faces downward, camber is changed in negative direction.** Install hub/bearing assembly and torque all four (4) bolts to (52) ft. lbs. (71 N.M.) (Installation tip: When Re-installing rotor, secure rotor by replacing two (2) lug nuts (in a reversed position, flat side toward rotor) This holds rotor in place for re-installation of the caliper assembly. Slide caliper over rotor and torque mounting bolts to 83 ft. Lbs. (113 N.M.) Remove lug nuts from the securing rotor.
9. Replace wheel assembly and alignment equipment re comp as needed.
10. Lower vehicle onto alignment rack. Check camber setting.
11. Repeat rear camber shim installation on other side of vehicle if necessary. Adjust toe.
12. Proceed with alignment, and road test vehicle.

Form# 95-202-0303
46-1900

INSTRUCTIONS

FULL CONTACT/DUAL ANGLE
REAR WHEEL ALIGNMENT SHIM SYSTEM

PRIOR TO HOOKING UP THE ALIGNMENT EQUIPMENT INSPECT THE REAR SPINDLE MOUNTING AREA FOR ANY EXISTING ALIGNMENT SHIMS. IF ANY SHIMS ARE PRESENT THEY MUST BE REMOVED TO ESTABLISH A BASE READING.

USE THE VEHICLE APPLICATION GUIDE SHOWN ON THE CHART TO SELECT WHICH SERIES/COLOR OF SHIM TO USE.

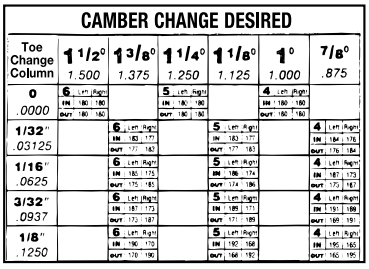


Figure 1

1. Take and record rear alignment readingts. Note the camber and toe changes desired.

2. Select the correct side of the shim **Application/Position Chart** (Included with shim). One side is for **computerized** four wheel alignment equipment and the other is for **(Non-Computerized)** equipment. **(Fig. 1)**

   The difference is that when using non computerized equipment you must measure the diameter of the tires and select toe change desired from proper tire diameter column. Tire diameter is not measured when using electronic 4 wheel computerized equipment.

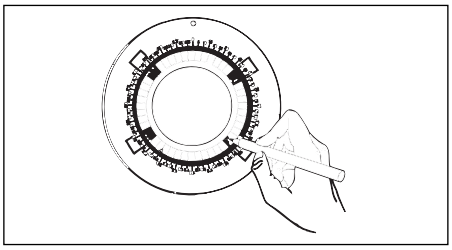


Figure 2

3. Select the amount of toe change desired (From appropriate chart) by reading down the toe change column on the left side of the chart.

4. Select the amount of camber change (Increase or decrease) from camber change listing across the top of the chart. Next read down the camber change column and across the toe change column to find the box where the two columns meet. **(Fig. 1)**

   Use the information shown in the box to obtain the correct shim number to use (Bold number in the upper left corner of the box). Determine if you are working on the right or left side and if you want to change toe inward or outward from the reading you now have. The number shown is the indexing number for the shim when locating it on the template. (See template furnished with shims).

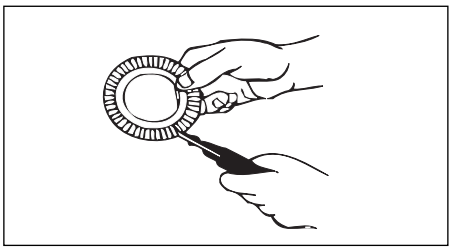


Figure 3

5. Select correct template and place shim over template with the notch indexed to the location number obtained from the chart. The serrated side of the shim faces up.

6. Select the mounting bolt pattern from the template (Included with shim) and mark the tabs on the shim which are to be removed to mount the shim **(Fig. 2)**

   Mark a line on the shim at the 0 degree position of the template. This is the top position of the shim when it is installed.

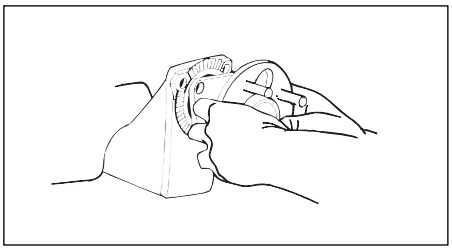


Figure 4

7. Remove the shim from template and using a side cutter, nip the very edge of the slots on either side of the tabs you wish to remove. (this will split the membrane) Next, grasp the tabs with the side cutter and bend **downward** to break tabs at the relief line causing them to neatly separate from shim body. **(Fig. 3)**

8. Remove the spindle or hub from the vehicle, clean all surfaces and install the shim with the top reference mark directly at 12:00 position and the serrations facing out (toward you) **{Figure 4}**

9. Torque hub mounting bolts to specifications, complete front alignment and road test vehicle.

NOTE: A FINE TIPPED PAINT PEN WORKS BEST FOR MARKING OF BOLT BREAK OUT PATTERNS AND "0" DEGREE TOP REFERENCES.

U.S. PATENT NO. 4,872,699

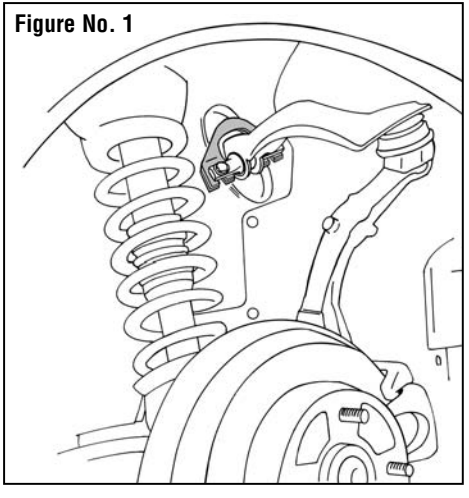
Installation Instructions
HONDA/ACURA REAR CAMBER SHIMS

1. Do pre-alignment checks. Inspect vehicle for damaged, bent or worn parts and repair as necessary. Install alignment equipment and determine amount of rear camber change wanted.
2. Raise rear of vehicle so suspension hangs freely. Support safely.
3. Loosen two bolts holding inner end of upper control arm to body. Install shims as required to achieve desired camber change (see figure No. 1).

   Note: Each 1/16" shim will change camber approximately +0.2°. Each 1/8" shim will change camber approximately +0.4°. For shim packs of 3/16" or less, the factory bolts can be used. For 1/4" to 1/2" shim packs, use the longer bolts provided (with washers under the heads).

   Note: For 4 door models of the Acura Legend the shim will need to be cut at it's midpoint to accommodate bolt spacing.

Figure No. 1



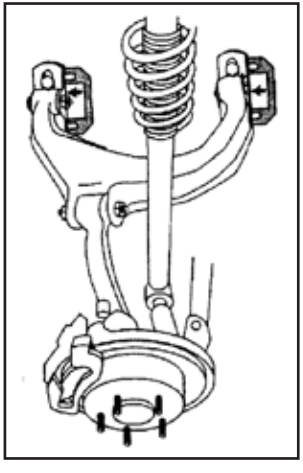
4. Tighten bolts to 29 ft. lbs. (39 N.m)
5. Lower vehicle to alignment rack, being careful to check for adequate clearance between the outer end of the upper control arm and the fender. Verify camber change.
6. Set toe to factory specification.

   Note: We do not recommend using more than 1/2" shim pack. Should more camber change be needed and adequate clearance between the upper control arm and fender is present, an adjustable ball joint can be used in the outer end of the control arm.
7. Complete front alignment and road test vehicle.

Installation Instructions

MITSUBISHI GALANT/ MITSUBISHI ECLIPSE/ DODGE AVENGER/ CHRYSLER SEBRING COUPE/ EAGLE TALON "EXTRA-RANGE" REAR CAMBER SHIMS

1. Do pre-alignment checks. Inspect vehicle for damaged, bent or worn parts and repair as necessary. Install alignment equipment and determine amount of rear camber change wanted.
2. Raise rear of vehicle so suspension hangs freely. Support safely.
3. Loosen four bolts holding inner end of upper control arm to body. Install shims as required to achieve desired camber change (see figure No.1). Be sure to use the same thickness for both ends of control arm.
   Note: Each 1/16" shim will change camber approximately +0.2°. Each 1/8" shim will change camber approximately +0.4°. For shim packs of 1/8" or less, the factory bolts can be used. For 1/8" to 1/2" shim packs, use the longer bolts provided (with washers under the heads).
4. Tighten bolts to 29 ft. lbs. (39 N.m)
5. Lower vehicle to alignment rack, being careful to check for adequate clearance between the outer end of the upper control arm and the fender. Verify camber change.
6. Set toe to factory specifications.
   Note: We do not recommend using more than 1/2" shim pack.
7. Complete rest of alignment and road test vehicle.



Honda/Acura Adjustable Rear Camber Link

Vehicle Applications: 2001 and newer Honda Civic
2002 and newer Acura RSX

1. Inspect vehicle for loose or worn parts and odd tire wear patterns. Check tire pressure, determine amount of camber change needed.
2. Be sure that both jam nuts are threaded all the way against the center hex of the adjustment turnbuckle. Install both adjustment links equally until threads of the adjustment turnbuckle are no longer visible. IMPORTANT: Be sure to match left and right hand threads of all parts.
3. Raise the rear of vehicle and support in a safe manner. Remove rear tire and wheel assembly.
4. Remove the ABS wire bracket (if equipped) from the existing upper arm.
5. Remove the two bolts from the in board end of the upper arm at the center mount.
6. Remove flange bolt from the spindle end of the upper arm and remove arm.
7. Install the flange end of the adjustable camber arm onto the spindle using the existing OE bolt and only snug, do not tighten at this time.
8. Install the other end of the adjustable camber arm onto the body end using the two original bolts and torque to factory specifications.
9. Install the ABS wire bracket (if equipped) onto the adjustable camber arm.
10. Replace the tire and wheel assembly.
11. Lower the vehicle and jounce suspension.
12. Rotate adjusting turnbuckle to achieve rear camber to specifications. DO NOT exceed maximum length ¾” (19mm) of exposed threads on either side of adjusting turnbuckle.
13. Check for suspension clearance.
14. Holding turnbuckle with a wrench, tighten jam nuts against adjustment links, Torque to 80 ft. lbs (108 n. m.)
15. Torque spindle bracket bolt to factory specifications.
16. Proceed with rest of alignment and road test vehicle.

Form # 95-251-0107

Honda Element/CR-V 2003 and Newer
Rear Adjustable Arm

Installation Instruction:

1. Perform pre-alignment checks in normal manner.
2. Install alignment equipment, record readings and determine amount of rear camber change needed.
3. Raise rear of vehicle by the body and support in a safe manner.
4. Remove rear wheel and tire assembly.

   Note: If applicable, carefully remove the plastic antilock brake wire bracket from the upper arm and position out of the way.

5. Remove bolt and nut from spindle at the upper control arm and remove the bolt holding the upper control arm to the body and remove arm.

   Note: Make sure that both ends of the adjustable arm have equal threads showing on either side of the turnbuckle.

6. Install the adjustable arm by first installing the bolt at the body, but DO NOT tighten. **(SEE FIG. 1)**
7. Install the arm to spindle but DO NOT tighten.

   Note: tightening the inner mounting bolt with the vehicle in the raised position may cause premature bushing wear due to preloading the bushing.

8. Replace the wheel and tire assembly, alignment equipment and re-compensate.
9. Watching your alignment reading, adjust camber by loosening the jam nuts and turning the center piece to the desired camber specification.

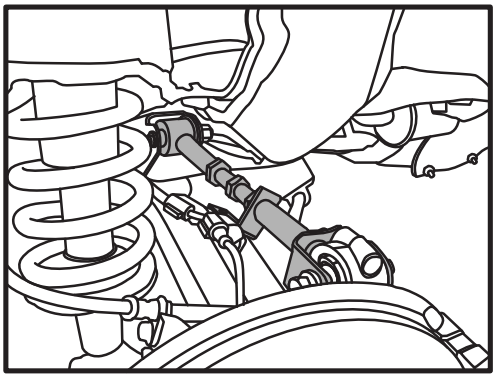
   Note: The maximum length of the arm is reached when the groove on one rod is visible at the end of the turnbuckle adjuster. Do not lengthen the arm beyond this point.

10. After camber adjustment is made, make sure that either set of holes on the center piece are facing up and down and then tighten the jam nuts.
11. Tighten the arm to spindle bolt and the arm to body bolt to manufacturer's specifications.

    Note: If vehicle has rear ABS, attach the ABS bracket plate to the adjustable arm, use the 2 holes in the plate NOT marked ABS. Attached the OE ABS wire bracket into the bracket plate marked ABS.

12. Tighten jam nuts, set rear toe to specifications.
13. Proceed with alignment and road test vehicle.

FIG.1



Honda Element/CR-V 2003 and Newer
Rear Adjustable Arm

Installation Instruction:

1. Perform pre-alignment checks in normal manner.
2. Install alignment equipment, record readings and determine amount of rear camber change needed.
3. Raise rear of vehicle by the body and support in a safe manner.
4. Remove rear wheel and tire assembly.

   Note: If applicable, carefully remove the plastic antilock brake wire bracket from the upper arm and position out of the way.

5. Remove bolt and nut from spindle at the upper control arm and remove the bolt holding the upper control arm to the body and remove arm.

   Note: Make sure that both ends of the adjustable arm have equal threads showing on either side of the turnbuckle.

6. Install the adjustable arm by first installing the bolt at the body, but DO NOT tighten. **(SEE FIG. 1)**
7. Install the arm to spindle but DO NOT tighten.

   Note: tightening the inner mounting bolt with the vehicle in the raised position may cause premature bushing wear due to preloading the bushing.

8. Replace the wheel and tire assembly, alignment equipment and re-compensate.
9. Watching your alignment reading, adjust camber by loosening the jam nuts and turning the center piece to the desired camber specification.

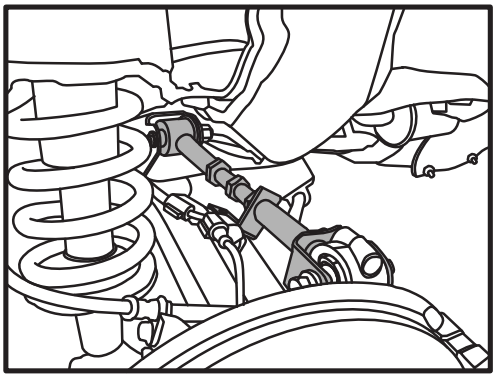
   Note: The maximum length of the arm is reached when the groove on one rod is visible at the end of the turnbuckle adjuster. Do not lengthen the arm beyond this point.

10. After camber adjustment is made, make sure that either set of holes on the center piece are facing up and down and then tighten the jam nuts.
11. Tighten the arm to spindle bolt and the arm to body bolt to manufacturer's specifications.

    Note: If vehicle has rear ABS, attach the ABS bracket plate to the adjustable arm, use the 2 holes in the plate NOT marked ABS. Attached the OE ABS wire bracket into the bracket plate marked ABS.

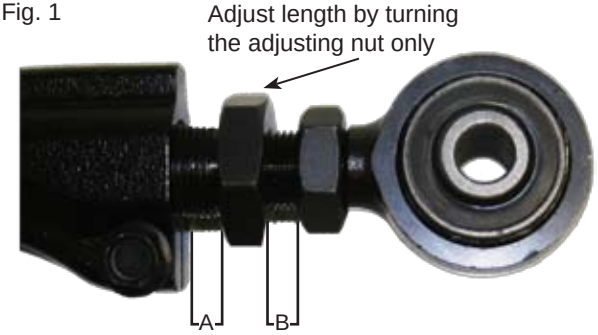
12. Tighten jam nuts, set rear toe to specifications.
13. Proceed with alignment and road test vehicle.

FIG.1



Adjustable Rear Camber Arm Installation Instructions

Fig. 1



Measurement A must equal Measurement B, and neither may exceed 1/2"

1. Always check for loose or worn parts
2. Raise vehicle under rear coil springs so suspension is loaded and support with safety stands
3. Remove rear wheel assembly
4. Remove stock rear upper control arm by removing both inner and outer bolts
5. Adjusts the new control arm so the outer bushing and adjusting nut are threaded completely with no threads showing
6. On all arms, hold the outer bushing to keep it from turning and unscrew the larger adjusting nut until the arm length is approximately the same as the stock arm
7. Being careful not to rotate adjuster nut or outer bushing, install arm onto vehicle using stock bolts and tighten to manufacturer's specifications
8. Make sure suspension is fully loaded before tightening the bushing bolts
9. Install tire and wheel assembly
10. Adjust camber by turning large 32mm adjusting nut until desired camber is reached.

Warning: the gap between the large adjusting nut and the outer end of the arm should not exceed 1/2" (Measurement A, Figure 1). Exceeding the range of adjustment may cause the arm to fail and void the warranty.

11. Tighten small pinch bolt and nut to 20 lb-ft. Tighten jam nut against adjuster nut
12. Adjust rear toe, recheck alignment, and road test vehicle

Note: always check for proper clearance between suspension components and other components of the vehicle.

ASSEMBLY INSTRUCTIONS
REAR CAMBER ARMS
HONDA ACCORD
ACURA 3.2TL
ACURA 3.5RL

1) Check vehicle for bent, worn or loose components and repair as necessary.

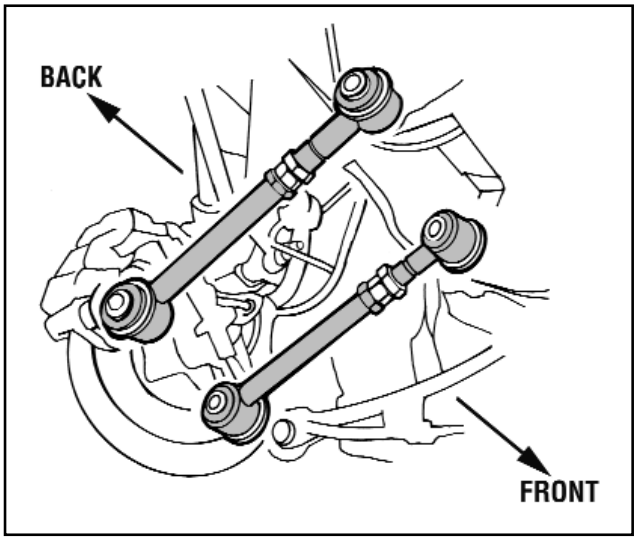
2) Check alignment and determine rear camber changes required.

3) Lift rear of vehicle so suspension hangs freely and fasteners can be accessed. Support safely.

NOTE: This kit replaces the two parallel links connecting the hub assembly to the center of the vehicle

4) Remove the front parallel link. This link will have a longer bushing at the inboard end.

5) Assemble the front link. Thread left and right hand nuts onto the center turnbuckle. Thread the short link with the LONGER bushing onto one end of the turnbuckle. Thread a long link onto the other end of the turnbuckle. Adjust this link with the turnbuckle until the length matches the factory link, with an equal number of threads showing on each end of the turnbuckle.



6) Install the front link with the LONGER bushing at the INBOARD end. Position flanges on bushings toward the FRONT of the vehicle (**See illustration**). Reinstall hardware as removed. Snug bolts and nuts but do not tighten.

7) Assemble rear link as described above. Adjust length to match the factory link with equal threads exposed on each end of the turnbuckle.

8) Remove the rear parallel link.

9) Install the rear link with the SHORT end INBOARD. Position flanges on bushings toward the REAR of the vehicle (**See illustration**). Snug outer nut but do not tighten. Snug inner bolt (toe adjuster) in neutral position but do not tighten.

10) Replace wheel assembly and alignment sensor if removed. Recompensate sensor. Lower vehicle onto alignment rack.

11) Check toe-in and adjust with turnbuckle in rear link to get close to specification.

12) To adjust camber, lengthen or shorten both adjustable links equally to achieve desired reading.

13) Adjust toe-in using factory adjuster at inner end of rear link.

14) Torque fasteners at ends of both links to factory specifications.

15) Verify that alignment readings are correct. If not, fine-tune with turnbuckles. Torque turnbuckle nuts to 75 ft. lb. (102 N. m.).

16) Proceed with rest of alignment and road test vehicle.

Honda/Acura
Rear Camber Arm
Installation Instructions

1. Perform pre inspection, checking for loose or worn parts.
2. Raise the rear of the vehicle and support securely.
3. Remove the rear OE upper control arm.
4. Make sure that both ends of the new adjustable camber arm have equal threads showing on either side of the turnbuckle.
5. Adjust the camber arm to the same length as the stock arm.
6. When installing the camber arm, first install the bolt at the body but do not tighten until after lowering the vehicle.
7. Install the ball joint end into the knuckle. Tighten nut and install new cotter pin.
8. Install tire and wheel assembly. Install and re-compensate alignment equipment. Lower vehicle
9. Tighten the arm-to-body bolt to OE specification with the suspension in the loaded position.

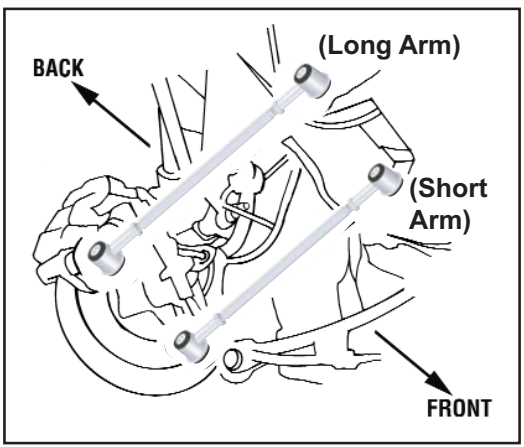
Note: the max length of the arm is reached when ¾ of inch of threads are visible at the end of the turnbuckle adjuster. Do not adjust past this point.

10. Adjust camber by loosening jam nuts and turning center piece to desired camber specifications.
11. Tighten jamb nuts on camber arm. Finish by performing a complete alignment.

ASSEMBLY INSTRUCTIONS
REAR CAMBER ARMS

Installation Instruction:

1. Perform Pre-alignment checks in normal manner.
2. Install alignment equipment and record readings and determine amount of rear camber change needed.
3. Raise rear of vehicle by the body and support in a safe manner.
4. Remove the shorter arm and replace with the new adjustable arm. (See Fig 1)
5. Remove the longer arm and replace with the new adjustable arm. (See Fig 1)
6. Tighten all the arm bolts to manufacture specification.
7. Loosen both jam nuts to adjust the desired arm to the proper alignment specification.
8. Tighten the jam nuts against the hex on both arms and road test vehicle.



CHEVY CRUZE REAR CAMBER/TOE SHIM PACK

1. Perform pre inspection, checking for loose or worn parts.
2. Perform complete alignment check to determine the alignment need.
3. Raise the rear the vehicle and support securely.
4. Remove tire and wheel assembly.
5. Loosen the four wheel hub bolts.
6. Pick between the four options of camber/toe shims to achieve proper alignment.
7. Install shim(s) behind the backing plate and evenly torque hub bolts to manufacturer's specification.
8. Reinstall tire assembly and finish alignment.

INSTRUCTIONS
BUSHING REMOVAL TOOL
FORD FULLSIZE AND DOWNSIZE 4X4 TRUCKS

1. Remove cotter key and upper ball joint stud nut.

2. Select appropriate stem adapter and stud cap for type of bushing to be removed. (See Figure No. 1)

   NOTE: For OE style bushings on **full size** vehicles use stem adapter "E" and stud cap "D".
   For OE style bushings on **downsize** vehicles use stem adapter "E" and stud cap "H".
   For **aftermarket** bushings use stem adapter "I" and stud cap "D" for full size vehicles and "H" for downsize vehicles.

3. Place proper stud cap over ball joint stud, insert proper stem adapter in threaded drive and install bushing puller. (see Figure No. 2)

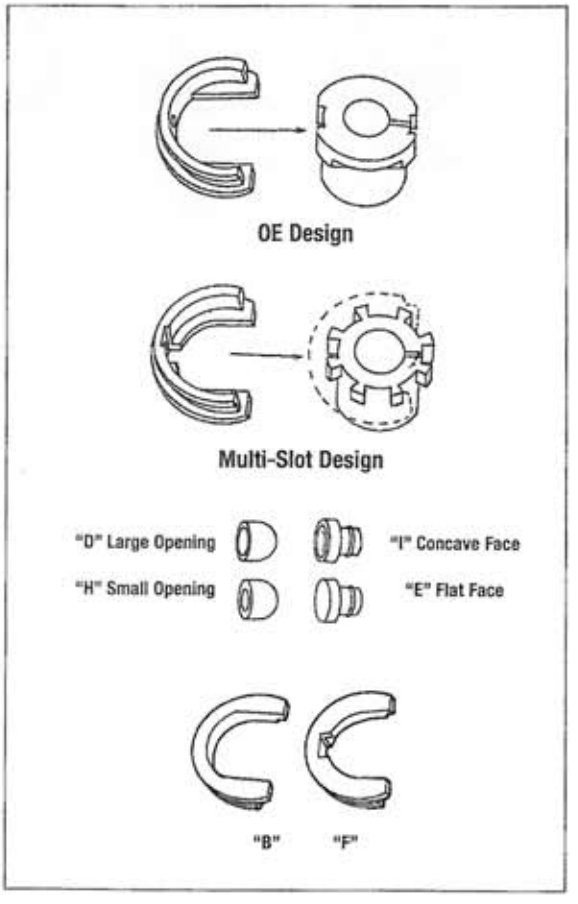
   NOTE: Be sure to use appropriate bushing adapter ("B" for removal of OE style bushings or "F" for aftermarket style bushings). (See Figure No. 1)

Installation of Bushing Adapters: (See Figure No. 4)
When installing bushing adapters "B","F" place leading edge of adapter rail into slot on base of puller body and slide into position with a turning motion. Tighten into place with allen screw located on back of puller body.

4. Tension bushing puller, but do not overtighten.

5. Break the lock between the tapered ball joint stud and the bushing by striking a solid hammer blow (repeat several times) or by using vibrating action of an air hammer against axle flange. (See Figure No. 3)

Caution: Don't make the tool do all the work!
Use of the puller as the ONLY means of breaking the tapered lock between the ball joint stud and bushing, could result in damage to the bushing puller.



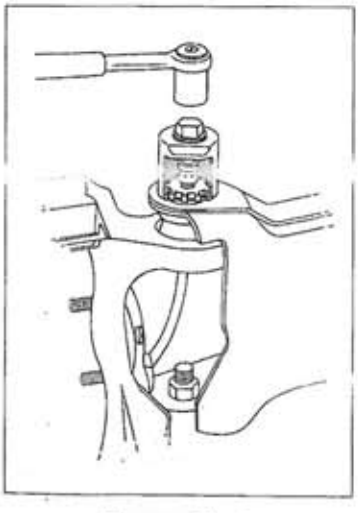


Figure No. 2

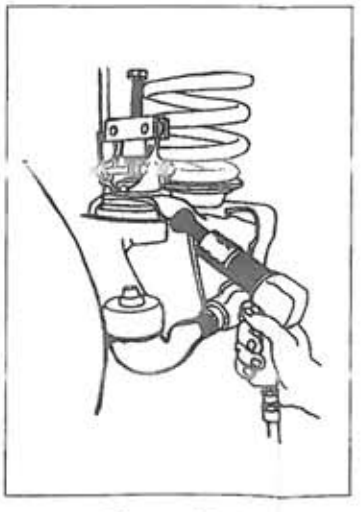


Figure No. 3

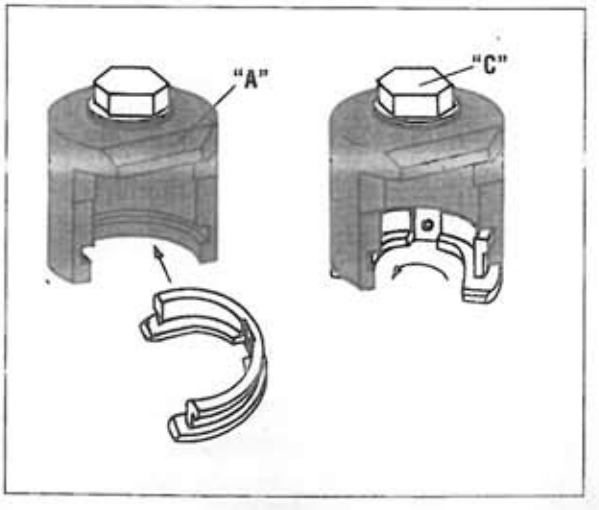


Figure No. 4

MODE D'EMPLOI SPECIAL

INSTRUCTIONS D'INSTALLATION

OUTILS DE DÉPOSE DU BOULON ET DE L'ÉCROU

POUR EMPLOI AVEC UN MARTEAU PNEUMATIQUE
ET UNE CLÉ PLATE DE 3/4 PO

POUR USAGE AVEC DES MÈCHES TORX

QUAND VOUS DESSERREZ DES BOULONS À TÊTE TORX, CHOISISSEZ LE BON CARRÉ (3/8 PO POUR LES MÈCHES TORX N° 50 ET 1/2 PO POUR LES MÈCHES N° 60) ET INSÉREZ-LE DANS LE MARTEAU PNEUMATIQUE. INSTALLEZ LA MÈCHE TORX DE TAILLE CORRECTE SUR L'EXTRÉMITÉ DE L'OUTIL DE DÉPOSE.

À L'AIDE D'UNE CLÉ DE 3/4 PO, APPLIQUEZ UN COUPLE DE TORSION ALORS QUE VOUS METTEZ EN MARCHE LE MARTEAU PNEUMATIQUE. **REMARQUE** : UNE PETITE QUANTITÉ DE **« MASTIC DE RODAGE DE SOUPAPE »** AU BOUT DE LA MÈCHE TORX L'EMPÊCHERA DE S'ÉCHAPPER DE LA TÊTE DU BOULON DURANT LE FONCTIONNEMENT.

POUR BOULONS ET ÉCROUS À TÊTE HEXAGONALE STANDARD

SUIVEZ LA MÊME PROCÉDURE QUE CELLE CI-DESSUS, EXCEPTÉ QUE VOUS UTILISEREZ UNE DOUILLE AVEC VOTRE « OUTIL DE DÉPOSE ».

INSTRUCCIONES EXPECIALES

INSTRUCCIONES DE INSTALACIÓN
HERRAMIENTAS DE REMOCIÓN DE PERNO/TUERCA

PARA USO CON UN MARTILLO DE AIRE Y UNA LLAVE DE 3/4".

PARA USARSE CON PUNTAS TORX

AL AFLOJAR LOS PERNOS DE CABEZA TORX, SELECCIONE LA HERRAMIENTA DE CUADRANTE APROPIADO; DE (3/8" PARA PUNTAS TORX # 50 Y DE 1/2" PARA PUNTAS # 60), E INSÉRTELA EN EL MARTILLO DE AIRE. INSTALE LA PUNTA TORX DEL TAMAÑO CORRECTO EN LA PUNTA DE LA HERRAMIENTA DE REMOCIÓN.

USANDO UNA LLAVE DE 3/4", APLÍQUELE PRESIÓN DE GIRO AL ACTIVAR EL MARTILLO DE PRESIÓN. NOTA: UNA PEQUEÑA CANTIDAD DE "COMPUESTO PARA PULIR VÁLVULAS" COLOCADA EN LA PUNTA DE LA PUNTA TORX EVITARÁ QUE SE SALGA DE LA CABEZA DEL PERNO DURANTE LA OPERACIÓN.

PARA TUERCAS Y PERNOS DE CABEZA HEXAGONAL ESTÁNDAR

SIGA EL MISMO PROCEDIMIENTO DE ARRIBA, EXCEPTO QUE USTED ESTARÁ USANDO UN DADO CON SUS "HERRAMIENTAS DE REMOCIÓN"

SPECIAL INSTRUCTIONS

INSTALLATION INSTRUCTIONS

BOLT/NUT REMOVING TOOLS

FOR USE WITH PNEUMATIC AIR HAMMER AND 3/4" HAND WRENCH.

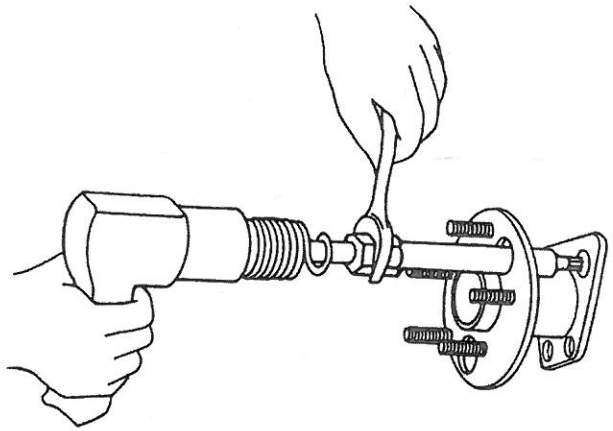
FOR USE WITH TORX BITS

WHEN LOOSENING TORX HEAD BOLTS, SELECT PROPER TOOL (3/8") DRIVE FOR #50 TORX BITS AND 1/2" DRIVE FOR #60 TORX BIT) AND INSERT INTO AIR HAMMER. INSTALL CORRECT SIZE TORX BIT ONTO END OF REMOVING TOOL.

USING A 3/4" WRENCH, APPLY TURNING PRESSURE WHILE ACTIVATING THE AIR HAMMER. **NOTE:** A SMALL AMOUNT OF **"VALVE GRINDING COMPOUND"** ON THE TIP OF THE TORX BIT WILL PREVENT IT FROM BACKING OUT OF BOLT HEAD DURING OPERATION.

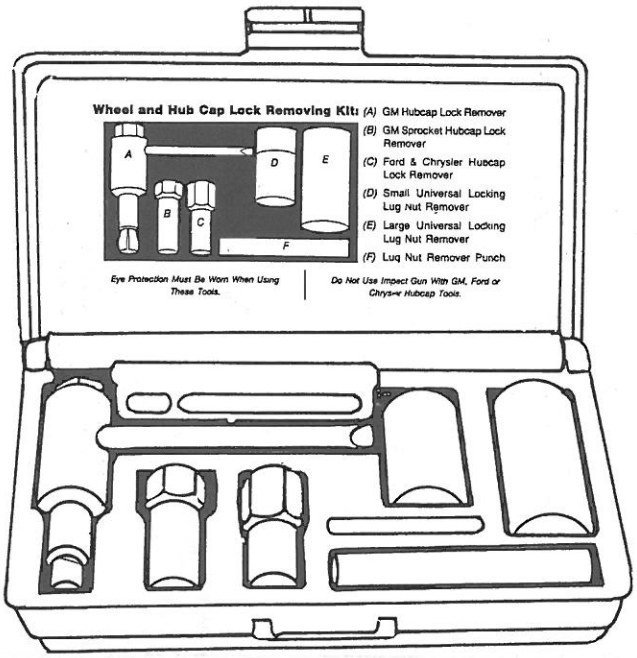
FOR STANDARD HEX NUTS AND BOLTS

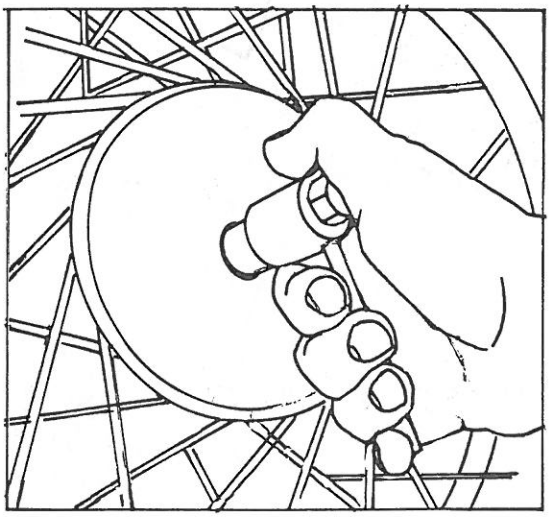
FOLLOW SAME PROCEDURE AS ABOVE, EXCEPT YOU WILL BE USING A SOCKET WITH YOUR "REMOVING TOOLS"



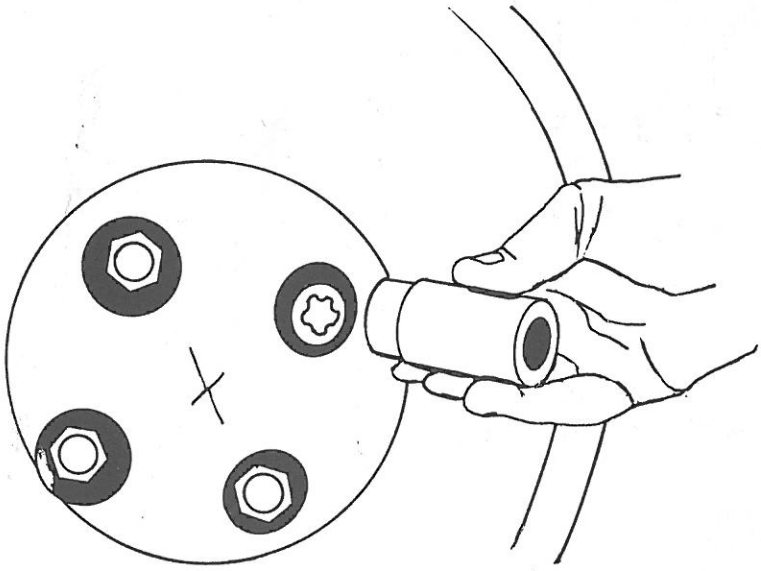
NORTHSTAR®
QUALITY AUTOMOTIVE PRODUCTS
MANUFACTURING COMPANY, INC.
AUTOMOTIVE/TRUCK PARTS & TOOLS

HUBCAP & WHEEL LOCK REMOVAL KIT





REMOVES SPECIAL LOCKING LUG NUTS WITHOUT DAMAGE TO THE LOCK ON WHEEL/STUD.



EASILY REMOVES HUB CAPS SECURED WITH CENTER MOUNTED LOCKS. USE ON CHRYSLER, FORD AND GM VEHICLES.

NO MORE SEARCHING FOR LOST OR MISPLACED CUSTOMER LOCK KEYS.

NO MORE WAITING TO START THE SERVICE WORK BECAUSE YOU CAN'T GET THE HUB CAPS OR LOCKING LUG NUTS OFF.

GUARANTEED—ONE YEAR AGAINST DEFECTS IN WORKMANSHIP AND MATERIAL.

KIT CONTAINS: • TOOL A FOR GM LARGE AND SMALL HUB CAP LOCKS • TOOL B FOR GM SPLINED HUB CAP LOCKS • TOOL C FOR CHRYSLER AND FORD HUB CAPS ALONG WITH LARGE GM TRIANGULAR LOCKS. TOOL D AND E FOR AFTERMARKET WHEEL LOCKING LUG NUTS, STRIPPED OE NUTS AND FORD AND CHRYSLER HUB CAP LOCKS. ALSO INCLUDES A PUNCH TO USE WITH TOOL D AND E TO REMOVE LUG NUT FROM SOCKET.

MADE IN USA

MODE D'EMPLOI SPECIAL

INSTRUCTIONS

JEU D'OUTILS DE RÉGLAGE DE PARALLÉLISME

CHRYSLER CONCORDE	1993 ET PLUS RÉCENTES
CHRYSLER NEW YORKER	1993 ET PLUS RÉCENTES
DODGE INTREPID	1993 ET PLUS RÉCENTES
EAGLE VISION	1993 ET PLUS RÉCENTES

1. Le véhicule en marche, centrez le volant de direction et bloquez-le en place avec le dispositif de maintien de volant de direction. Éteignez le véhicule.

2. Commencez la procédure du côté du véhicule qui requiert le plus de changement de parallélisme.

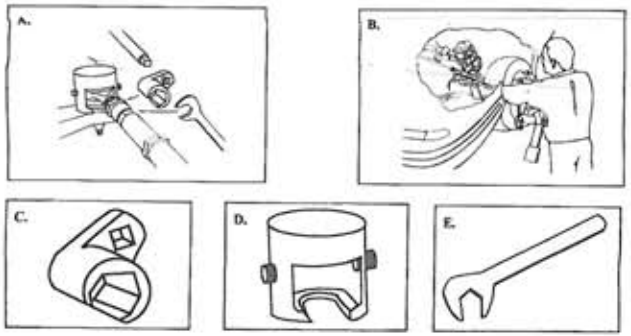
3. Installez le stabilisateur d'extrémité de bielle de direction **(illustration « D »).** (Ceci stabilise l'extrémité de la bielle de direction et aide à desserrer les contre-écrous du manchon de la bielle de direction.)

4. Fixez la douille de bielle de direction **(illustration « C »)** sur une rallonge à carré de 1/2 po avec l'extrémité profonde de la douille vous faisant dos **(voyez l'illustration « A »).** La douille reposant contre le manchon de réglage, glissez la douille vers l'intérieur ou vers l'extérieur pour toucher les contre-écrous et les desserrer. **(Voyez l'illustration « B ».)**

REMARQUE : Tournez les deux contre-écrous dans le sens inverse au sens des aiguilles d'une montre pour les desserrer.

5. En vous servant de la clé de réglage de manchon spéciale **(illustration « E »)**, réglez le parallélisme selon les spécifications.

6. Répétez la procédure de l'autre côté du véhicule.



INSTRUCCIONES EXPECIALES

JUEGO DE HERRAMIENTAS PARA AJUSTAR LA CONVERGENCIA

CHRYSLER CONCORDE	1993 & MÁS RECIENTES
CHRYSLER NEW YORKER	1993 & MÁS RECIENTES
DODGE INTREPID	1993 & MÁS RECIENTES
EAGLE VISION	1993 & MÁS RECIENTES

1. Con el vehículo funcionando, centre el volante de dirección y trábelo en posición con un sujetador de volantes de dirección. Apague el motor del vehículo.

2. Comience el procedimiento con el lado del vehículo que necesite el mayor ajuste de convergencia.

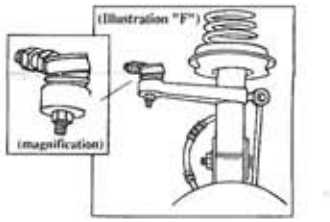
3. Instale el estabilizador del extremo de la barra tirante (ilustración "D"). (Esto estabiliza la punta de la barra tirante y ayuda a espegar las contratuercas de la manga).

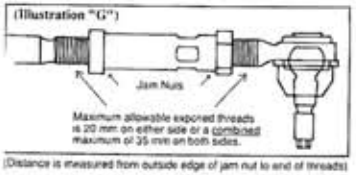
4. Instale el dado de la barra tirante (ilustración "C") en una extensión con cuadrante de 1/2" con el lado profundo del dado de cara opuesta a usted (Vea la ilustración "A"). Con el dado descansando contra la manga de ajuste, deslice el dado hacia adentro o hacia afuera para entrar en contacto con las contratuercas y despegarlas. (Vea la ilustración "B").

NOTA: Gire ambas contratuercas en el sentido anti-horario para flojarlas.

5. Usando la llave especial de ajuste de la manga (ilustración "E"), ajuste la convergencia de acuerdo con las especificaciones.

6. Repita el procedimiento en el otro lado del vehículo.





SPECIAL INSTRUCTIONS

INSTRUCTIONS

TOE ADJUSTMENT TOOL SET

CHRYSLER CONCORDE	1993 & NEWER
CHRYSLER NEW YORKER	1993 & NEWER
DODGE INTREPID	1993 & NEWER
EAGLE VISION	1993 & NEWER

1. With vehicle running, center steering wheel and lock in place with steering wheel holder. Shut off vehicle.
2. Begin procedure with the side of the vehicle that needs the most toe change.
3. Install tie rod end stabilizer **(illustration "D").** (This stabilizes tie rod end and aids in breaking loose tie rod sleeve jam nuts).
4. Attach tie rod socket **(illustration "C")** to 1/2" drive extension with deep end of socket facing away from you **(See illustration "A").** With socket resting against adjustment sleeve, slide socket either inward or outward to contact jam nuts and break loose. **(See illustration "B").**
   NOTE: Turn both jam nuts counter clockwise to loosen.
5. Using special sleeve adjusting wrench **(illustration "E")**, adjust toe to specifications.
6. Repeat procedure on the other side of vehicle.

RETORQUING PROCEDURE

Note - Outer tie rod housings on these vehicles have a tendency to rotate off center to the ball stud during toe adjustment. This can cause abnormal wear and changed toe settings **(See Illustration "F").**

Important: To insure adequate torquing and retention of the tie rod sleeve jam nuts, (and to keep the outer tie rod housing perpendicular to the ball stud,) the following procedure must be followed:

1. Install tie rod end stabilizer **(Illustration "D")** over outboard (wheel side) tie rod housing.
2. Using the tie rod sleeve adjustment wrench **(E)** to hold sleeve; tighten the outboard jam nut first, than the inboard jam nut. Torque both jam nuts to 55 ft. lbs. (75 NM). **Note:** Due to limited working area around wheel - it is helpful to use a 3/8" drive extension bar when tightening jam nut.
3. Check to be sure outer tie rod housing is perpendicular to the ball stud. Remove tie rod end stabilizer.
4. Proceed with alignment.
5. Road test vehicle.

CAUTION

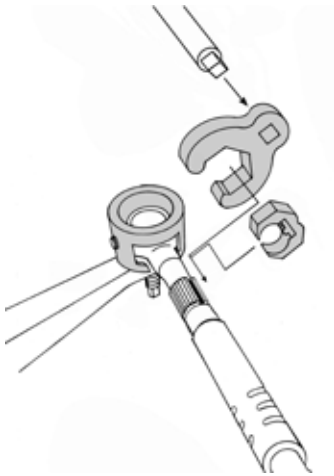
When setting toe on these vehicles, the maximum amount of exposed threads allowed on inner and outer tie rods can not exceed the distance shown in **(Illustration "G").**

CHRYSLER “LH” MODELS
TOE ADJUSTING TOOL SET

This tool set is designed to assist the technician in adjusting toe, obtaining a straight steering wheel and properly centering the outer tie rod end.

Instructions for use

Note: should the alignment computer offer a special toe adjust program, use it in conjunction with this tool set. If not, proceed with numbered steps.



1. Start vehicle, center steering wheel and lock in place with steering wheel holder. Shut off vehicle.
2. Start on the side of the vehicle needing the most toe change, or as directed by alignment computer.
3. Loosen the pinch bolt for the tie rod sleeve.
4. Slide inner wrench over the thin part of the outer tie rod. Work inner tab of tool into slot of adjuster sleeve (see illustration).
5. Installl the outer wrench on the end of a long 1/2” drive extension and slide the outer wrench over the inner wrench, as illustrated.
6. Using a long ratchet or breaker bar, break the tie rod adjuster sleeve loose.
7. Spray the outer tie rod boot with a suitable lubricant to ease tool installation. Install the tie rod end stabilizer over the outer tie rod end. Tighten the allen bolts evenly to center the tie rod. See Illustration. Note: some tie rod ends have a grease fitting that must be removed to install the stabilizer.
8. Adjust the tie rod to desired toe setting. Torque tie rod pinch bolt to 45 ft.lb. (62 N.m.). Repeat adjustment procedure on other side of vehicle.
9. Complete alignment and road test vehicle.

INSTRUCTIONS FOR TIE ROD STABILIZER SET
PASSENGER CAR, SUV, AND LIGHT TRUCK APPLICATIONS

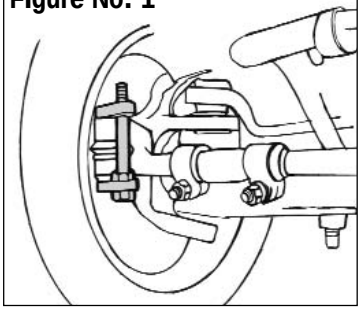
This tool set is designed to center tie rod ends in their sockets when setting toe-in. This will help in obtaining a straight steering wheel, insuring proper steering performance and maximum component life.

Note: For best results use stabilizers in pairs.

1) Perform alignment up to the point of setting toe on front wheels.
2) Using your normal procedure or special toe setting procedure recommended by alignment equipment manufacturer, begin by breaking adjusting sleeves loose from tie rod assemblies and work adjuster sleeves loose.

   Note: Steps 3 through 12 are detailed for aligners with electronic toe adjustment programs.
   For aligners with more basic functions, refer to steps 13 through 22.

Figure No. 1



FOR ELECTRONIC TOE ADJUSTMENT PROGRAMS

3) Start engine, rock steering wheel a few times, center wheel, shut off engine. It is NOT necessary to use a steering wheel holder.
4) Level and lock front sensors.
5) Proceed to next step of toe setting program. Note which tie rod assembly is shown on screen to be adjusted first.
6) Place stabilizer(s) on tie rod end(s) of assembly. Tighten until plane of top of tie rod matches plane of corresponding part. The tool needs to be tightened, but not torqued. (**See Figures No. 1, 2 and 3).**
7) Adjust tie rod sleeve until reading on screen is exact. Jounce vehicle, tighten adjusting sleeve clamps or jam nuts, verify proper reading.
8) Proceed to next step of program, noting tie rod assembly indicated.
9) Repeat steps 6 and 7 on this assembly.
10) Start engine, relevel steering wheel. Verify proper individual and total toe readings.
11) Remove stabilizers from tie rods.
12) Road test vehicle.

Figure No. 2

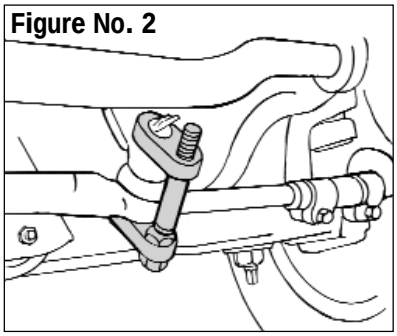
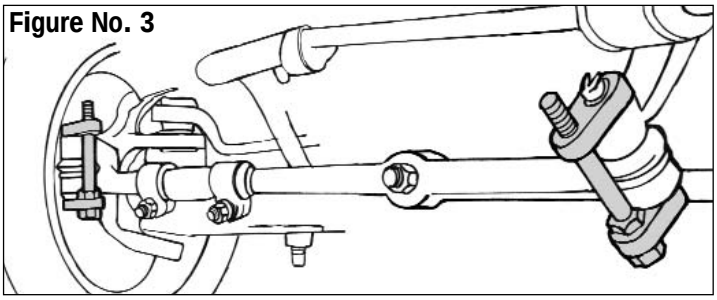


Figure No. 3



BASIC TOE PROGRAM

13) Start engine, rock steering wheel a few times, center wheel, install steering wheel holder, shut off engine. Level and lock front sensors.
14) Program alignment machine to display individual toe and total toe readings.
15) Place stabilizer(s) on tie rod end(s) of LONGER assembly, or tie rod for RIGHT wheel. For Ford pickups with twin I-beam suspension, this would be the pitman arm and right outer tie rod end. (**See Figures No. 1, 2, and 3)**.
16) Adjust this tie rod assembly to desired reading.
17) Repeat step 13. Recheck right toe reading, fine-tune if necessary. Tighten adjusting sleeve clamps or jam nuts.
18) Transfer stabilizer(s) to tie rod end(s) of SHORTER assembly, or tie rod for LEFT wheel.
19) Adjust this tie rod assembly until TOTAL TOE is at desired reading.
20) Tighten adjusting sleeve clamps or jam nuts.
21) Remove stabilizer(s) from tie rods.
22) Road test vehicle.

Installation Instruction

Universal Inner Tie Rod Socket

"Positive Lock"

1. Remove outer tie rod end and inner tie rod dust boot. (Fig. 1)
2. Install positive lock socket over inner tie rod end. Line up one of the two locking bolts.
3. Use a 3/16" allen wrench to lock the socket into place. (Fig. 2)

   Note make sure the jam nut is loose:
4. Use a 9/16" wrench to tighten the jam nut. (Fig. 3)
5. Use a breaker bar with a 3/8 extension to turn, and loosen the inner tie rod end. (Fig 4. & Fig. 5)

Fig 1

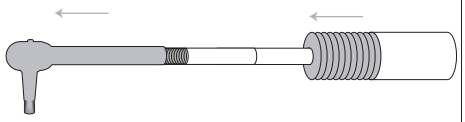
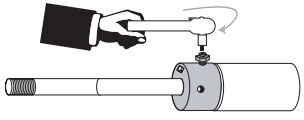


Fig 2



Note make sure the jam nut is lose:

Fig 3

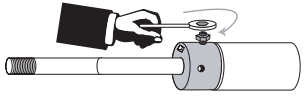


Fig 4

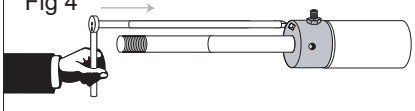
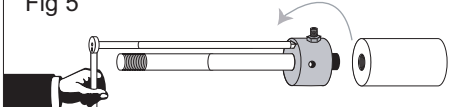


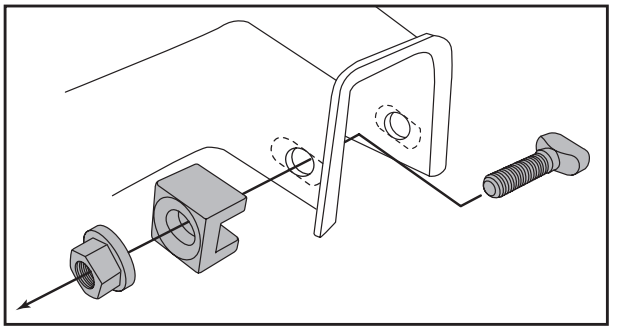
Fig 5



INSTALLATION INSTRUCTIONS FOR

GM Upper Control Arm Bracket Punch Tool Instructions

1. Locate jack under the lower control arm as near ball joint as possible. Raise vehicle and remove wheel.
2. Remove the bolts holding the upper control arm to frame and move control arm out of way.
3. Locate OE knockout slug on frame and install punch into OE bolt hole with threaded end facing front of vehicle.
4. Install the channel shaped part of punch with the open end facing toward the rear of vehicle as shown in figure. Install the washers and nut as shown.
5. After insuring that the punch is properly aligned with the slug in the control arm, tighten nut until the tool punches the slug out of bracket.
6. Repeat steps 3 through 5 for other control arm bracket and install control arm using K6302 Cam bolt kit.
7. Repeat entire procedure for other side of vehicle if necessary.



CAUTION: Proper service and repair procedures are essential for safe and reliable installation of chassis parts, and require experience and tools specially designed for the purpose. These parts MUST be installed by a qualified mechanic. otherwise an unsafe vehicle and/or personal injury could result.

Domestic and Import Vehicle
Adjustable Upper Ball Joint Installation Instructions

CAUTION: A very limited number of Honda Civic/CRX vehicles from 1988-1990 were produced with the upper ball joint welded to the control arm. The adjustable ball joint cannot be used on these vehicles.

Note: For camber and/or caster changes of 1/2° or less, use 1/2° adjustable ball joint. For changes greater than 1/2°, use 1° ball joint.

WARNING: Honda and Acura ball joints appear similar, but they must not be substituted for each other. They are dimensionally different and will not fit or perform properly. Installing wrong application could cause possible failure.

1. Inspect vehicle for loose or worn parts and odd tire wear patterns. Check tire pressure. Determine amount of camber/caster change needed.
2. Raise and support vehicle securely under lower control arms.
3. Remove wheel assembly. Remove cover, cotter pin and nut from upper ball joint stud.
4. Remove upper ball joint from steering knuckle, using a ball joint separator. **(See Fig. 1)** IMPORTANT- do not allow knuckles to pull out on axle shaft - inner CV joint disassembly may occur.
5. Remove circlip and boot from upper ball joint.
6. Using a ball joint press (with optional extractor stem and receiver tube), press the upper ball joint in an upward direction out of control arm. **(See Fig. 2)** Make sure all components stay in proper alignment during this procedure.
7. Install adjustable ball joint in upper control arm. Install support washer with flat side up. Install lock nut. Snug nut to point where ball joint can just turn in control arm. **(See Fig. 3)**

WARNING: When installing in the maximum negative camber or caster, check for proper clearance.

8. Install ball joint stud into steering knuckle. Install nut and torque to 30-35 ft lbs. (40-48 NM). Install new cotter pin and reinstall cover.
9. Reinstall tire and wheel assembly. Recompensate alignment equipment. Recheck camber and caster readings. Proceed to step 10 - be sure to use alignment equipment manufacturer's recommended procedures.
10. Turn ball joint with 1-5/8" open end wrench to desired camber/caster settings. **(See Fig. 4)**
11. Raise vehicle using a suitable body lifting point to allow the control arms to drop. Hold ball joint with 1-5/8" wrench to prevent rotating and torque upper nut to 140-160 ft lbs. (190-217 NM).
12. Lower vehicle and verify proper camber and caster readings. Set toe to specifications and road test vehicle.

Figure #4 — **Front of Vehicle**

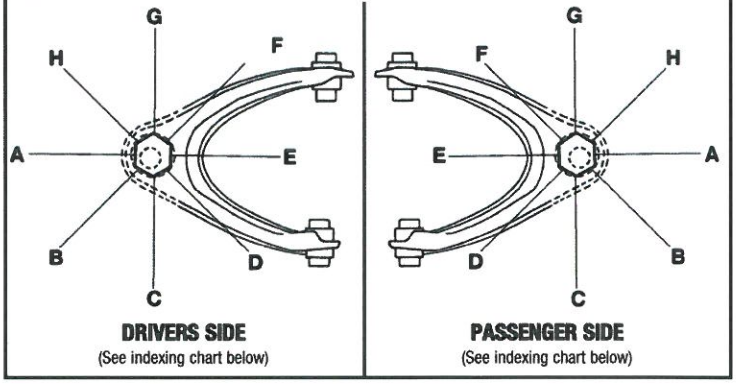


Figure #1

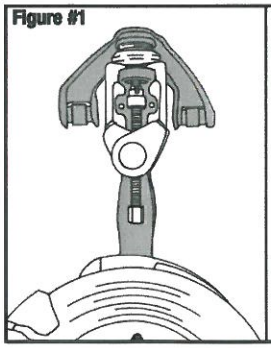


Figure #2

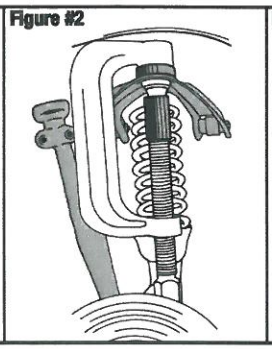
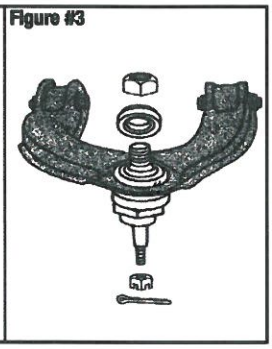


Figure #3



INDEXING CHART
Referenced from position of offset stud

Position	Camber Change	Caster Change
A	+	0
B	+	+
C	0	+
D	-	+
E	-	0
F	-	-
G	0	-
H	+	-

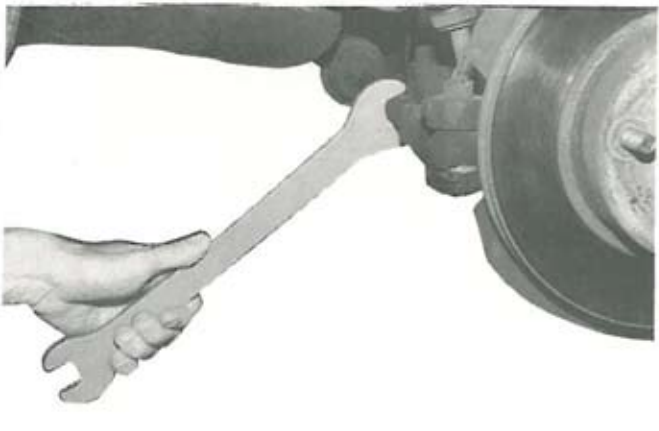
FORM# 95-162-0411

TIE ROD WRENCH

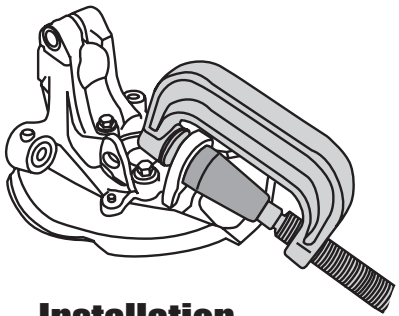
#21 & #22 COMBINATION

88-7813

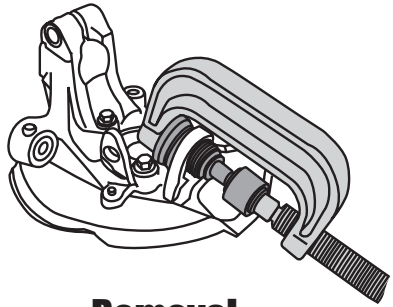
This special double-ended, extended length wrench was developed to be utilized when adjusting the front tie rods on most ASIAN, EUROPEAN and DOMESTIC automobiles which includes over 29 different automobile manufacturers. The extended length enables the technician to reach into the confined area of the front wheel tie rod and apply additional torque to loosen these often tight tie rod nuts. The open end dimensions of the tool are sized for a close, tight fit on the tie rod nut for a maximum grip. The tool is made from quality steel and comes in a black finish.



For Removal And Installation See figures



Installation



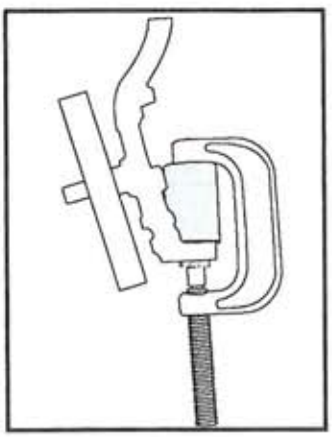
Removal

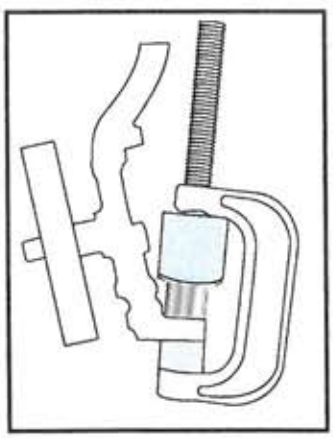
95-264-0409

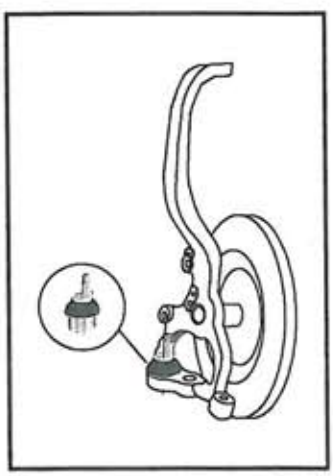
Chrysler/Dodge
Adjustable Lower Ball joint Installation Instructions

CAUTION: Check for clearance with the front control arm when adjusting ball joint in the positive caster position.

1. Inspect vehicle for loose or worn parts and uneven tire wear patterns. Check tire pressure.
2. Determine amount of camber/Caster change needed.
3. Raise and support vehicle allowing the lower control arms to hang free.
4. Remove wheel assemble.
5. Remove the brake caliper and secure out of the way.
6. Remove the front control arm ball joint from steering knuckle, using al ball joint separator.
7. Remove the main control arm ball joint from lower control arm knuckle, using al ball joint separator.
8. Use a 88-7880A ball joint adapter to remove the old lower ball joint from steering knuckle.
9. Use a 88-7880A ball joint adapter to install the new adjustable ball joint.
10. Reinstall main lower control arm on new ball joint (Do not Seat ball joint tapper at this time.
11. Reinstall front control arm and torque to manufacture specification.
12. Reinstall brake caliper and torque to manufacture specification.
13. Reinstall wheel assemble.
14. lower vehicle and determine amount of camber/caster needed. (Use Jack Up And hold) If available. and jack the front of the car up and adjust ball joint to desired camber/caster specification.
15. Lower vehicle and torque ball joint nut to manufacture specification.
16. Set toe to specifications and road test vehicle.







95-234-0705

Removal of old ball Joint

Installation of New ball Joint

Chevrolet & GMC Truck Offset Camber Bushings Installation Instructions

4x2 & 4x4
1999 & Newer Chevrolet Silverado and GMC Sierra 1500 and 2500,
2001 & Newer 1500HD, 2500HD and 3500HD
2000 and Newer Tahoe and Yukon without Auto Ride
2000 & Newer Suburban and Yukon XL 1500 & 2500 without Auto Ride
2002 and Newer Chevrolet Avalanche 1500 & 2500
2002 and Newer Cadillac Escalade
2002 and Newer Hummer H2

NOTE: Offset Camber Bushings must be installed in pairs to supplement OE adjustment range, when alignment specifications cannot be achieved.

Pre Checks:
Perform pre alignment checks in a normal manner.
Take alignment readings to determine if the right or left side needs the most correction. Proceed to install product on that side first.

General Instructions (All Models)

1. Raise vehicle in a safe manner.

Note: Vehicle must be supported under the lower control arms with an appropriate safety device.

2. Remove wheel assembly.
3. Remove brake line brackets from upper control arm.
4. Uncouple plastic fastener and remover ABS line from control arm.
5. Remove and discard both pinned plastic inserts, holding factory-adjusting cams from rotating.
6. Remove upper control arm flange bolts and spin arm 180 degrees to gain access to the control arm bushings.

Removal Instructions: * (Using Optional ìC-Clampî Adapter Kit)

7. Install receiver tube over large end of bushing and install extractor plug on small end of bushing. **(See Fig. 1 & 2)**
8. Install open eyelet of ball joint press over the extractor plug. Holding the ball joint press in a level position, snug screw assembly.
9. Check Alignment of all components, then using steady pressure from an impact gun to remove bushing.
10. Check and clean control arm eyelets of any burs or rust as needed.

Note: (1/2, 3 / 4 & 1Ton, HD Models, Hummer H2 Models) The Control arm has a double eyelet at each end, a spacer is needed which is placed between these eyelets to (To Prevent bending)when removing and installing control arm bushings. **(See Fig. 2)**

11. Repeat process for other control arm bushings.

See Other side for Installation instructions →

FIG. 1 (1/2 Ton. Except HD)

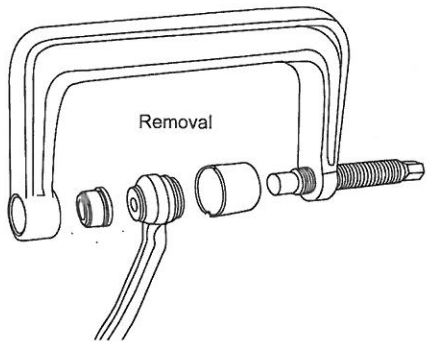
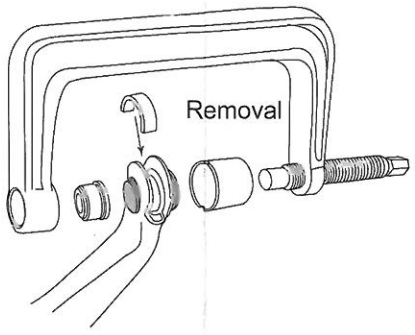


FIG. 2 (1/2. 3 / 4. & 1 Ton HD Series)



*Contact your parts supplier for optional Adapter Kit

Installation Instruction:

Installation Note: On the large end cap of each replacement bushing is stamped a reference arrow. Replacement bushings need to be installed in pairs having each reference arrow pointing in the same direction with the bolt holes in line with each other. This is to insure that the control arm swings up and down in an ark and the pivot points are level to each other. **(See Fig. 5 & 6)**

Having indicating arrows on the offset bushings horizontally pointing towards control arm ball joint results in a **negative (-) Camber change. (See Fig. 5)**

Having indicating arrows horizontal pointing away from ball joint results in a **positive (+) Camber change. (See Fig. 6)**

Bushing Installation:

12. Install Receiver tube over small end of bushing, and install installation plug on large end of bushing.
13. Install open eyelet of ball joint press over the receiver tube.
14. Holding ball joint press in a level position push plugs over large end of control arm bushing and snug screw assembly.
15. Check Alignment of all components, then using steady pressure from an impact gun Install the bushing.
16. Repeat process for other control arm bushings.
17. Reinstall the ABS line to the upper control arm.
18. Reinstall the brake line brackets to the upper control arm.
19. Reinstall the wheel assembly.
20. Proceed with alignment and road test vehicle.

FIG. 3 (1/2 Ton. Except HD)

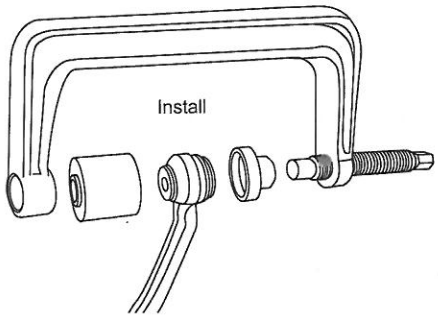


FIG. 5

FIG. 4 (1/2. 3 / 4. & 1 Ton HD Series)

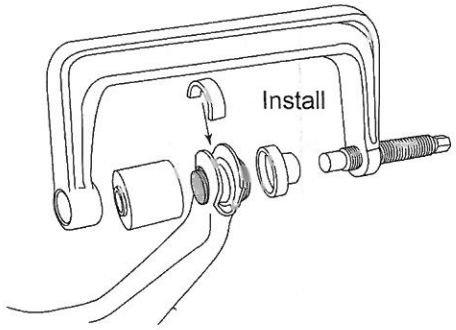
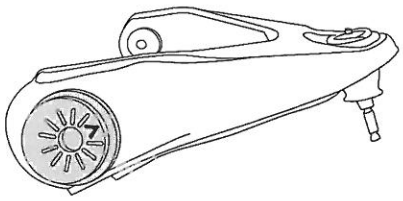
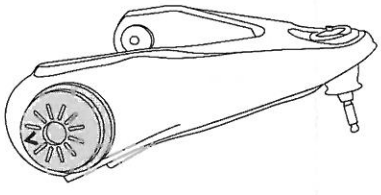


FIG.6

Negative



Positive



19mm TOE ADJUSTMENT WRENCH

88-8350

This unique tool is designed to set the toe adjustment for front alignment on General Motors "J" cars, Chevrolet Cavalier, Cadillac Cimarron, Buick Sunbird and Oldsmobile Firenza, from 1982 and later. This wrench turns the adjustment bolt on the tie rod which then changes the toe setting during the alignment process. A long ½ inch drive extension snaps on this special 19mm wrench allowing the toe adjustment to be made from the side of the car. Made from heat treated steel, this tool comes in a black finish.

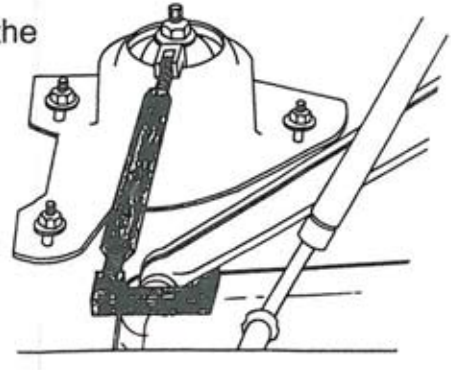
Rev. A

Instructions
1982 & Newer
Camaro, Firebird Camber Adjusting Tool

1. Install alignment equipment and record initial readings.

2. Remove plastic strut cover on top of strut tower. (If still in place.)

3. Install tool by placing the small swivel hook end over inside top edge of strut tower and the large swivel hook end around the base of the hood support arm bracket. **(See illustration.)**



4. Adjust camber with open-end wrench until desired reading is achieved. Repeat procedure on opposite side of vehicle.

5. Adjust toe to specifications and road test.

MODE D'EMPLOI SPECIAL

Outil de réglage du parallélisme arrière de carrosserie « W » de GM

Applications : (1990 et plus récents)
Buick Regal
Chevrolet Lumina (excepté les vans)
Oldsmobile Cutlass Supreme
Pontiac Grand Prix

Remarque: Les bielles latérales arrière et la plate-forme élévatrice centrale des véhicules GM à carrosserie « W » de 1990 et plus récents sont conçues avec des trous pour recevoir notre outil de réglage du parallélisme arrière. **(Voyez la fig. 1.)**

1.) Installez l'appareil de réglage de la géométrie et faites rebondir le véhicule trois fois (pour éliminer les fausses mesures) et relevez les mesures de parallélisme arrière.
2.) Réglez la longueur de l'outil pour qu'il convienne entre la plate-forme élévatrice (trou de montage central) et le trou dans la bielle latérale arrière.
3.) Installez l'outil avec le bras long dans la bielle latérale, le bras court dans le trou de montage de la plate-forme élévatrice centrale et serrez le tendeur à la main. **(Voyez la fig. 1.)**
4.) Desserrez l'écrou interne sur la bielle latérale et tournez le tendeur jusqu'à obtenir le réglage de parallélisme désiré (raccourcissez l'outil pour l'ouverture et allongez-le pour le pincement).
5.) Serrez l'écrou interne sur la bielle latérale à un couple de 110 Nm (81 lb/pi).
6.) Déposez l'outil de réglage, continuez le réglage de la géométrie et testez le véhicule sur la route.

INSTRUCCIONES EXPECIALES

Herramienta para Ajustar la Convergencia Trasera en los Vehículos GM con Carrocerías "W"

Usos: (1990 y más recientes)
Buick Regal
Chevrolet Lumina (Excepto el Van)
Oldsmobile Cutlass Supreme
Pontiac Grand Prix

NOTA: Las articulaciones traseras y la almohadilla para el gato central de los vehículos GM con carrocería "W" fueron diseñados con agujeros para acomodar nuestra herramienta de ajuste de convergencia trasera. (Vea la Fig. 1)

1.) Instale el equipo de alineamiento y sacuda el vehículo tres veces (para eliminar lecturas falsas) y anote las lecturas de convergencia trasera.
2.) Ajuste la longitud de la herramienta para que encaje entre la almohadilla del gato (agujero de montaje central) y el agujero de la articulación lateral trasera.
3.) Instale la herramienta con el brazo largo en la articulación lateral trasera y el brazo corto en el agujero de montaje central y apriétela con la mano. (Vea la Fig. 1)
4.) Afloje la tuerca del lado de adentro de la articulación lateral y gire el tensor hasta que obtenga el ajuste de convergencia deseado. (Acorte la herramienta para divergencia y alárguela para convergencia).
5.) Apriete la tuerca del lado de adentro de la articulación lateral a una torsión de 110 Nm (81 lbs. pie).
6.) Remueva la herramienta de ajuste y proceda con el resto del alineamiento y pruebe el vehículo en la carretera.

SPECIAL INSTRUCTIONS

GM "W" Body Rear Toe Adjusting Tool

Applications: **(1990 & Newer)**
Buick Regal
Chevrolet Lumina (Except Van)
Oldsmobile Cutlass Supreme
Pontiac Grand Prix

Note: The rear lateral links and center jack pad of the 1990 & newer "W" body GM vehicles are designed with holes to acommodate our Rear toe adjusting tool. **(See Fig. 1)**

1.) Install alignment equipment and jounce vehicle three times (to eliminate false readings) and record rear toe readings.
2.) Adjust tool length to fit between the jack pad (center mounting hole) and the hole in the rearward lateral link.
3.) Install tool with long arm in lateral link and short arm in center mounting hole and hand tighten. **(See Fig. 1)**
4.) Loosen inboard nut on lateral link and rotate turnbuckle until desired toe setting is reached. (shorten tool for toe-out and lengthen tool for toe-in)
5.) Tighten inboard nut on lateral link to 81 ft.. lbs. (110 N.m)
6.) Remove adjusting tool and proceed with balance of alignment and road test vehicle.

INSTRUCTIONS

HEAVY DUTY CASTER/CAMBER ADJUSTMENT TOOL
1994 & NEWER CAMARO/FIREBIRD

Note: If adjustments are needed, make them in the following order:

1) Caster Adjustment
2) Camber Adjustment
3) Toe Adjustment

1. With weight on vehicle, position tool in either caster or camber slots (depending on corrections needed). **TOOL MUST BE IN PLACE BEFORE** loosening lower control arm nuts so suspension does not shift (See Illustration). Position "A" adjusts caster - Position "B" adjusts camber.

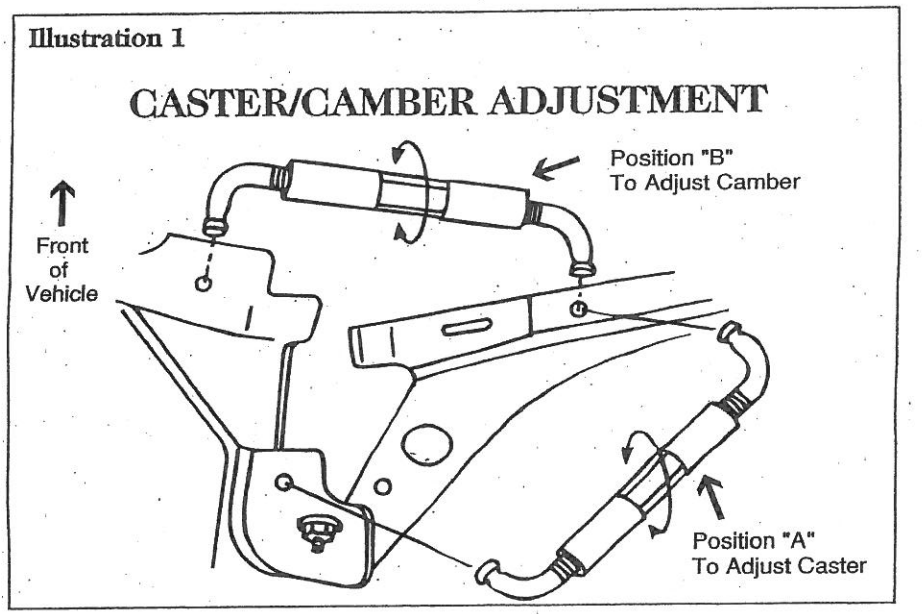
2. Loosen lower control arm nuts, and with weight on vehicle, make needed adjustments.
NOTE: Both front lower control arm mounting points are slotted to provide adequate adjustment range.

3. Retorque lower control arm nuts as follows:

Horizontal Nut	74 ft. lbs. (100 NM)
Vertical Nut	85 ft. lbs. (115 NM)

Set toe to proper specifications and test drive vehicle.

Illustration 1



INSTRUCTIONS FOR
FORD SPORT UTILITY CASTER/CAMBER TOOL

2002 and newer Ford Explorer 2002 and newer Mercury Mountaineer

Beginning with the 2002 model year Ford Exporer and Mercury Mountaineer front upper control arms are locked within the frame bracket by four factory installed fixed plates (2 per side) **See Figure No. 1.**

The plates must be removed and replaced with washers to allow for adjustment of the control arm within the frame slot (contact your alignment products supplier).

NOTE: Prior to checking alignment readings, ride height must be checked and reset if necessary. Refer to shop service manual for proper procedure.

1. Perform pre- alignment check for worn or damaged parts. Check Tire pressure and adjust as needed.

2. Install alignment equipment and take initial readings to determine amount of change needed.

3. Raise vehicle in a safe manner **Note: Vehicle must be supported under the lower control arms with appropriate safety devices.**

4. Remove tire & wheel assembly.

5. Remove both “square” factory fixed plates (on each shaft assembly-2 per side).

6. Install new washers and loosely install locking nuts but do not tighten at this time.

7. Install tire and wheel assembly recompensate alignment equipment.

8. Install alignment tool having front blocks attach to coil spring tower and back adjusting blocks attached to control arm shaft assembly **See Figure No. 2.**

NOTE: For positive camber adjustment rotate adjustment bolts equally; counter clockwise. For negative camber adjustment rotate adjustment bolts equally; clockwise.

9. Rotate adjusting bolts as needed to achieve caster/camber per vehicle specifications.

10. With alignment tool holding control arm in place; tighten upper arm shaft assembly nuts to factory specifications.

11. Proceed with the rest of the alignment; set toe and road test vehicle.

Figure No. 1

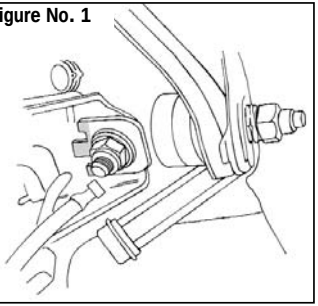
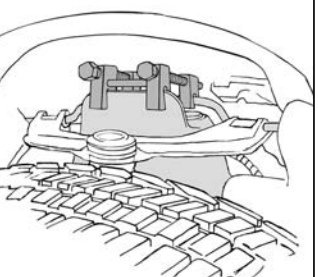


Figure No. 2



1. Jack up the front of the truck by the frame. See (FIG. 1)
2. Loosen one of the nuts on the lower control arm. See (FIG. 2)
3. Install the F150 alignment tool on the nut, line up the pin on the tool with the hole on the frame. See (FIG. 3)
4. When using the tool on the rear bolts you need drop the sway bar out of the way. See (FIG. 4)
4. Use a 1-1/16 hand wrench on the tool to adjust within alignment specification.
5. While holding the tool in alignment specification, torque down the bolt head to manufacturer specification.
6. Lower the vehicle and finish with alignment.

FIG.1

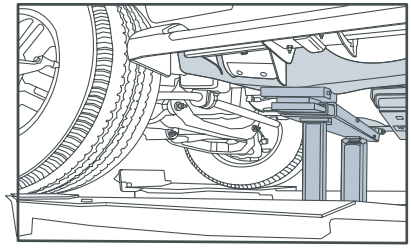
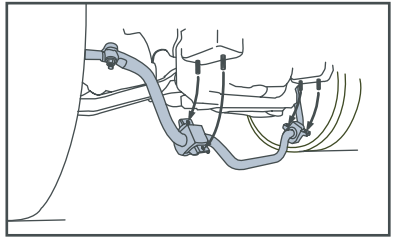


FIG.2

FIG.3

FIG.4



95-952-0407

User Instructions For

Dodge Truck Camber/Caster Tools

2002 & UP DODGE RAM 1500 2WD/4WD

These tools are designed to adjust camber and caster by allowing controlled adjustment, as the control arm slides in the adjustment slots.

1. Perform pre-alignment checks in a normal manner.
2. Hook-up alignment equipment, record readings.
3. Before installing tools on the vehicle, make sure the jaws are all the way closed on both tools.

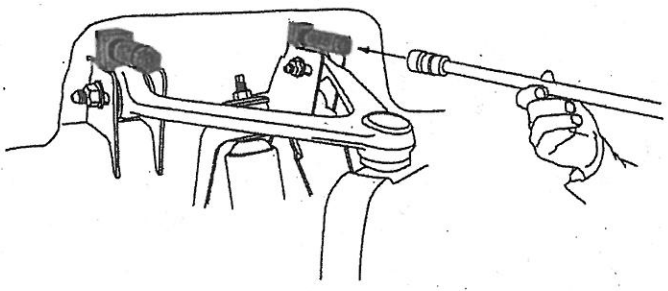
Note: Threads on the tools may need to be lubricated for ease of adjustment.

4. Install tools one at a time through the inner fender opening. Rotate and drop into place between inside of control arm frame bracket and control arm. (See Figure 1.)
5. Using a long extension and swivel socket, adjust both alignment tools until they are securely against the control arm.
6. Loosen both upper control arm pivot bolts.

Note: This will cause the control arm to go inward and rest firmly against the tools.

7. Alternate between tools, turning each adjustment tool within the control arm slot frame bracket till the needed adjustment is achieved.
8. Torque both upper control arm pivot bolts to 85 ft. lbs.
9. Proceed with the alignment and road test the vehicle.

Figure 1.



Mid Size SUV
Camber /Caster
Adjusting Tool

1. Raise the front of the vehicle under the frame rails for ease of movement of the lower control arm in its frame slots and support.

2. Loosen the lower control arm adjustment bolts

3. Adjust caster/camber to specifications by repositioning the lower control arm with the SUV tool.

4. Tighten Lower control arm adjustment bolts to specification.

5. Finish alignment and road test.

95-256-0807

88-9065

FORD TAURUS & MERCURY SABLE STATION WAGONS REAR TOE ADJUSTMENT WRENCH

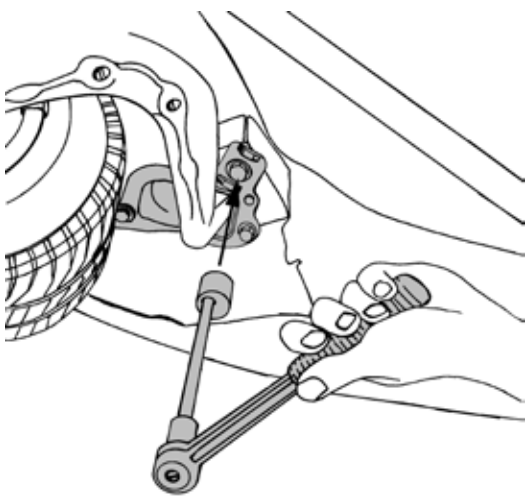
This unique wrench has been developed to allow for quick and easy rear toe adjustments on Ford Taurus and Mercury Sable Station Wagons 1986-1995. The wrench is held by a long 1/2 inch drive extension which enables the technician, in most cases, to easily adjust the vehicle's toe alignment from outside the cramped suspension, wheel and tire area. The specially configured opening of the wrench fits easily over the toe adjuster cam (which has an off-center thru hole). Adjustments can be made while the vehicle sits on an alignment machine. Made from heat treated alloy steel with a black finish.

REAR TOE ADJUSTING TOOL
BMW 3 SERIES

Installation Instructions:

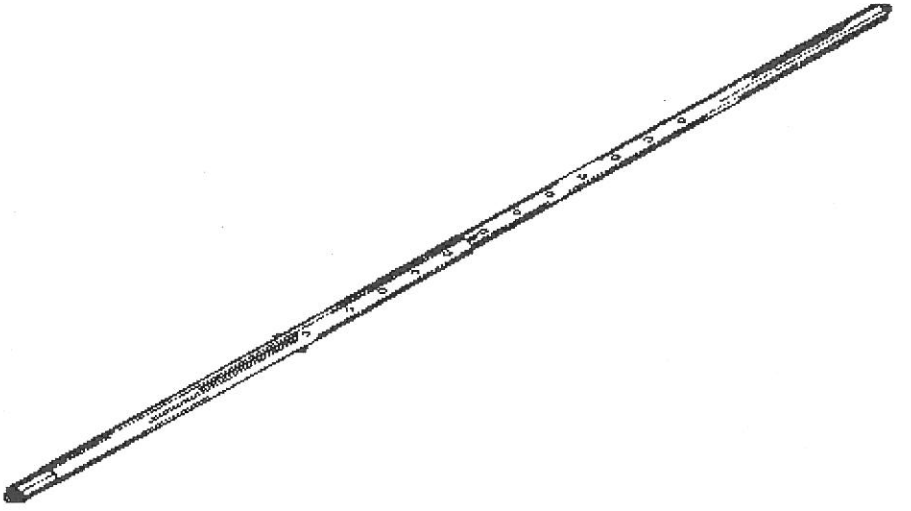
1. With weight on vehicle and alignment equipment attached, loosen the three (3) fronttrailing arm bolts slightly. (See Figure No.1)
2. Place toe adjusting tool between tabs (as shown in figure no.1) and rotate to adjust to proper toe setting.
3. Tighten trailing arm bolts to factory specifications

Note: On some models there may be only one (1) tab provided for the toe adjusting tool to rotate against while making adjustment.



Instructions

Wheel Spreader

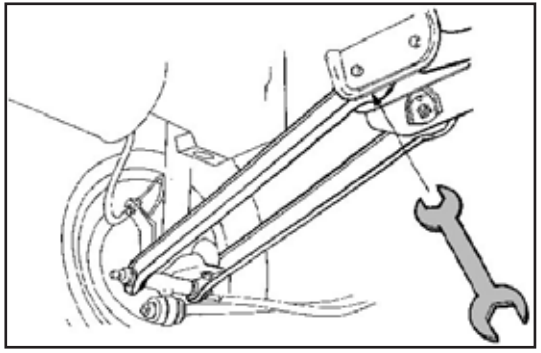


NOTE: BAR IS ADJUSTABLE MIN. 52 IN.(1.32M) MAX 72.13 IN.(1.83M)

Recommended for use with all TOE GAUGES that check TOE without moving the car. Adjust WHEEL SPREADER to distance between front tires, then elongate one more hole.

Compress spring and place WHEEL SPREADER between tires at front, as near spindle height as possible. Leave WHEEL SPREADER in this position while checking TOE. This puts the wheels in a position similar to a running condition on the road.

Form# 95-259-1008 88-9188



88-9200
FORD/MERCURY REAR TOE WRENCH

FOR Taurus/Sable & Tempo/Topaz sedans

Instructions:

Tkae and record desired rear toe change. Loosen rear lower control arm bolt & nut at the inner frame bracket. Rotate the large hex-shaped eccentric (located inside the frame bracket) to adjust rear toe to manufacturer's specifications. To complete front alignment, tighten control arm nut to 85 ft. lbs. (115 nm).

CASTER/CAMBER ADJUSTMENT TOOL
LATE MODEL FULL-SIZE FORT RWD VEHICLES

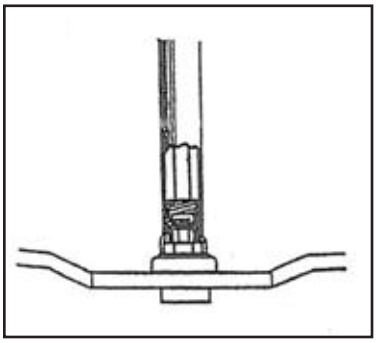
1. Using a 1/2” drive ratchet and long extension with 21mm socket, loosen locking nuts on top of both adjusting cams. (Note: In order to make either a caster or camber adjustment, lock nuts must be loosened on BOTH adjusting cams.)

2. Insert the 1/2” drive extension through the center tube of the caster/camber adjustment tool and reattach 21mm socket.

3. Install adjusting tool (with extension) over the top of the eccentric cam that is to be adjusted first. (See Figures 1 and 2)

4. Hold extension in place (so locking nut doesn’t turn) and rotate adjusting tool to obtain manufacturer’s specifications

5. With 1/2’,’ drive extension still inserted through tube of adjusting tool, tighten lock nuts to manufacturer’s specifications (107 - 129 Ft. Lbs) or (145 - 175Nm). (Note:, Adjustment cams must be held in place while locking nuts are tightened so alignment settings do not change.)

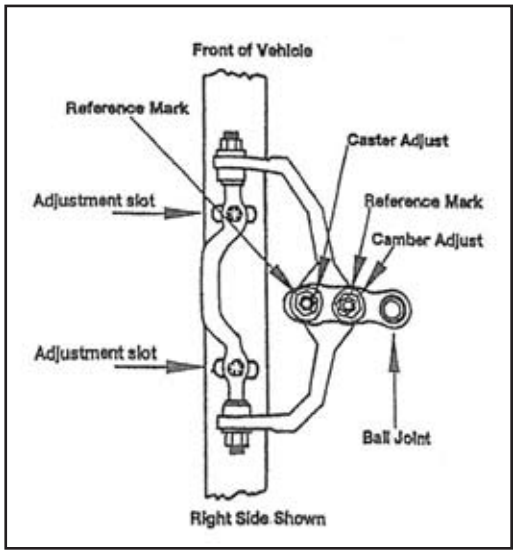


▲Figure 1
◄Figure 2

6. Repeat steps 1 thru 5 on opposite side of vehicle.

7. Adjust toe settings to manufacture’s specifications.
8. Road test vehicle.

TECH TIP - If specifications cannot be obtained or vehicle exhibits a slight pull or drift when driven, check the front upper-arm-to-frame retaining bolts to be sure they are centered in adjustment slots. Loosen and reposition as required. Tighten to manufacturers specification (101 - 104 Ft. Lbs.) or (136 - 190 Nm). (See figure No.3.)



Installation Instructions
STRUT REMOVAL TOOL

FRONT STRUT REMOVAL & RE-INSTALLATION PROCEDURES

FORD TAURUS
FORD WINDSTAR
MERCURY SABLE

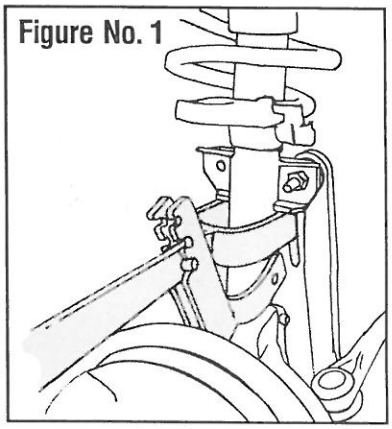
REMOVAL PROCEDURE:

1. Raise vehicle by subframe so suspension hangs freely. Support safely.

2. Remove tire, ABS wire bracket, brake hose bracket at both strut and frame, tie rod end and sway bar bracket at strut (Use 8mm socket and 18mm box wrench to keep sway bar stud from spinning.)

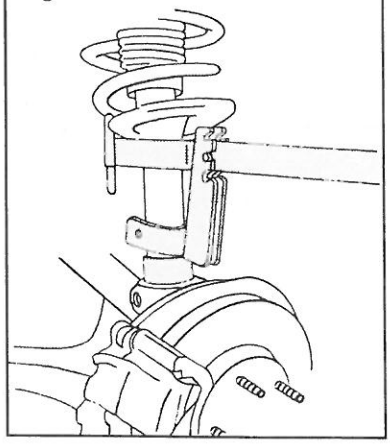
3. **FOR TAURUS/SABLE THROUGH 1995**
   Remove the pinch bolt from the knuckle. Place the base of the fulcrum around the strut body against the knuckle. Install the lever into the lowest notch of the base with the short tabs facing up under the two side ears on the strut. (see figure No. 1) Push down on the handle. As you push the knuckle downward, move lever handle toward the car door (rearward). This causes the knuckle to roll off the bottom of the strut. Move the lever up one or two notches in the fulcrum if required.

Figure No. 1



3. **FOR LATE TAURUS/SABLE/WINDSTAR**
   Remove the nut and pinch bolt from the knuckle. Place the short collar on the knuckle. Place the fulcrum on top of the collar. Install the lever in the middle notch of the fulcrum with the long tabs facing up behind the lower spring plate. (see figure No. 2) Push down on the handle until the knuckle moves down about 3 inches. Remove lever & fulcrum as an assembly. Remove the collar from the strut. Reinstall lever & fulcrum as an assembly directly on top of the knuckle. Place the round crossbar on top of the lever underneath the sway bar bracket on the inside of the strut. (see figure No. 3) While pushing down on the lever, move lever handle toward the car door (rearward). This causes the knuckle to roll off the bottom of the strut.

Figure No. 2



REINSTALLATION:

4. Rotate the strut about 30° toward the "toe-out" direction. Do the same with the knuckle. Roll the knuckle onto the base of the strut.

5. Insert a round prybar into the pinch bolt hole and rotate the knuckle to the proper angle to go onto the strut. (see figure No. 4) Check the alignment of the tab on the strut to the split in the knuckle. If necessary, insert the round prybar into the sway bar hole on the strut and rotate the strut to align the tab. (see figure No. 5)

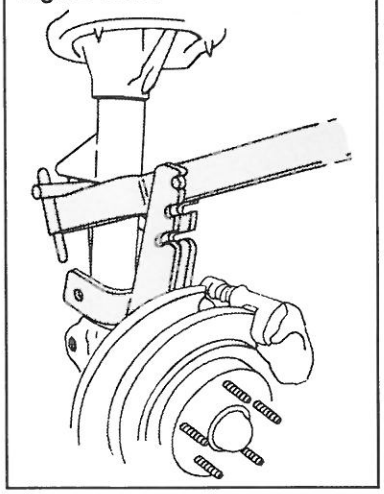
6. Using a small bottle jack or screw-type jack stand, push the knuckle onto the strut until the pinch bolt can be installed. Apply Loctite to the threads, install and torque the pinch bolt to 85 ft. lbs. (115 N.m). Reinstall parts removed in step No. 2.

7. Repeat steps on other side of the vehicle as required.

REAR STRUT REMOVAL & RE-INSTALLATION PROCEDURES

FORD TAURUS
MERCURY SABLE

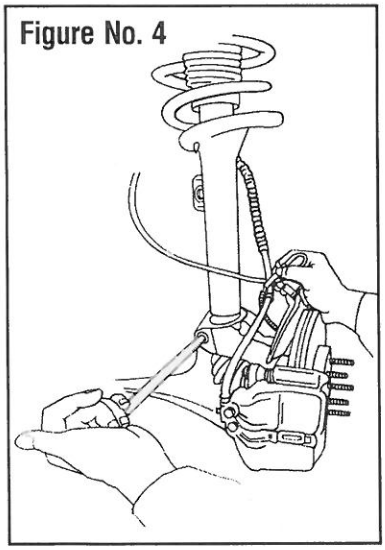
Figure No. 3



REMOVAL PROCEDURE:

1. Raise rear of vehicle by subframe so suspension hangs freely. Support safely.
2. Remove tire, lower hardware from both sway bar links, brake hose bolts (at strut and frame), and strut pinch bolt. Carefully re-position the brake line away from the strut to gain clearance for the tool if required
3. Install the tall split collar around the tab at the base of the strut with the split facing UP. Place the base of the fulcrum on top of the collar. Install the lever into the middle notch of the fulcrum with the long tabs facing up. Hook these tabs behind the lower spring plate. (see figure No. 6.)
4. Push down on the handle until the knuckle moves down about 1". Remove the tool and the collar. Place the fulcrum directly on the knuckle, install the lever into the middle notch with the short tabs facing up. Place the round crossbar across the top of the lever under the sway bar bracket on the strut. (see figure No. 7)

Figure No. 4



5. Push down on the handle until knuckle is off the strut.
6. Remove top strut hardware through interior of vehicle.

REINSTALLATION:

7. Reinstall strut through interior of vehicle.
8. Position knuckle onto bottom of the strut. Check alignment of the strut tab to the split in the knuckle. Adjust knuckle as required.
9. Using a small bottle jack or screw-type jack stand, push the knuckle onto the strut until the pinch bolt can be installed. Apply Loctite to the threads, install and torque the pinch bolt to 59 ft. lbs. (80 N.m). Reinstall parts removed in step No. 2.
10. Repeat steps on the other side of the vehicle as required.

Figure No. 5

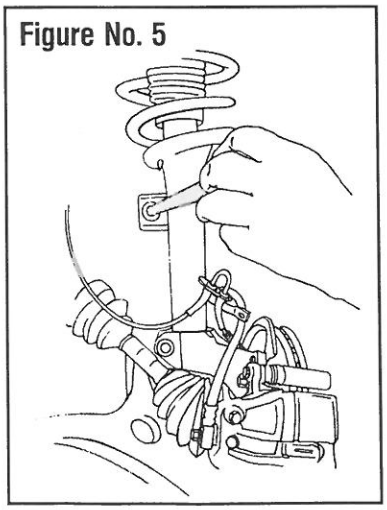


Figure No. 6

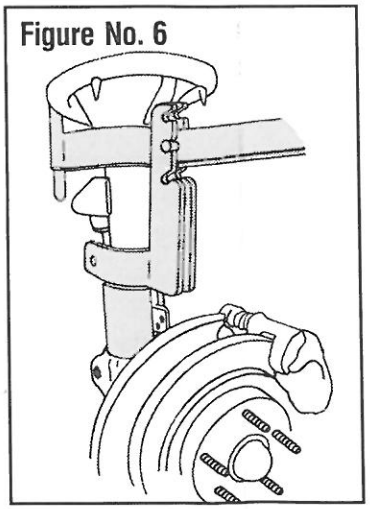
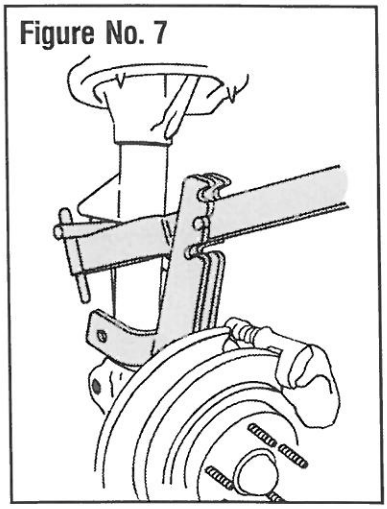


Figure No. 7



95-167-0899

Installation Instructions
STRUT REMOVAL TOOL

FRONT STRUT REMOVAL & RE-INSTALLATION PROCEDURES

FORD CONTOUR
MERCURY MYSTIQUE
MERCURY COUGAR

REMOVAL PROCEDURE:

1. Raise front of vehicle by subframe so suspension hangs freely. Support safely.
2. Remove tire, ABS wire bracket, tie rod end, and sway bar bracket (at strut) (use 15mm open-end wrench on sway bar stud to keep it from spinning.)
3. Remove pinch bolt from the knuckle. Place the fulcrum against the knuckle at the base of the strut. Install the lever in the bottom notch with the long tabs facing up under the two side brackets on the strut. (See figure No.1)
4. Push down on the handle until the knuckle is off the bottom of the strut. Move the lever up one or two notches in the fulcrum as required.

REINSTALLATION:

5. Using a large prybar, pry down on the lower control arm until the strut can be inserted into the knuckle.
6. Insert a round prybar in the pinch bolt hole in the knuckle to rotate the knuckle to the proper angle to go onto the strut. (see figure No. 2) Check alignment of the strut tab to the split in the knuckle, adjust as required by inserting a round prybar into one of the two holes in the side tabs of the strut and rotate the strut. (see figure No. 3)
7. Using a small bottle jack or screw-type stand, push the knuckle onto the strut until the pinch bolt can be installed. Apply Loctite to the threads, install and torque the pinch bolt to 40 ft. lbs. (54 N.m). Reinstall parts removed in step No. 2.
8. Repeat steps on the other side of the vehicle as required.

Figure No. 1

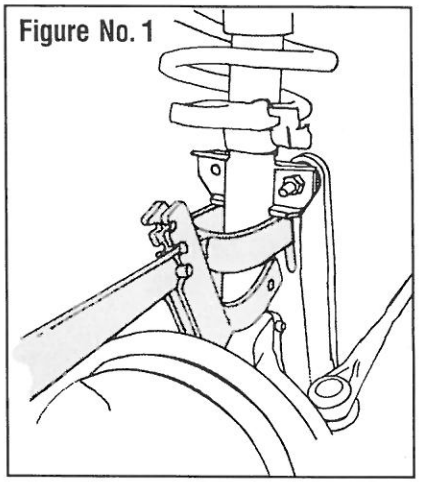


Figure No. 2

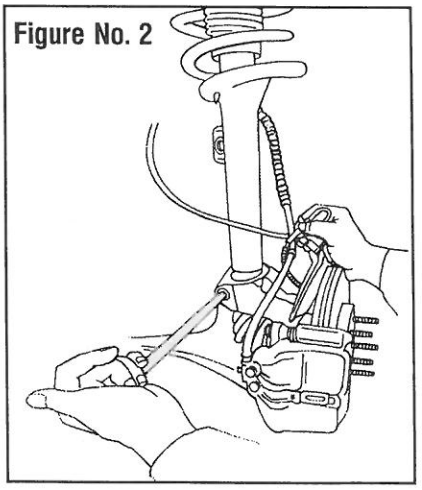
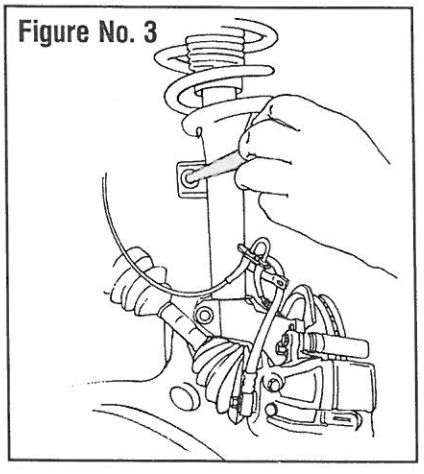


Figure No. 3



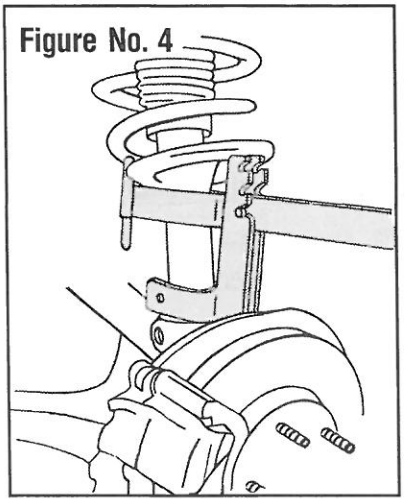
REAR STRUT REMOVAL & RE-INSTALLATION PROCEDURES

FORD CONTOUR
MERCURY MYSTIQUE
MERCURY COUGAR

REMOVAL PROCEDURE:

1. Raise rear of vehicle by subframe so suspension hangs freely. Support safely.
2. Remove tire, ABS wire bracket, brake hose clip (at strut), and sway bar link bolt.
3. Remove the pinch bolt from the knuckle. Place the fulcrum against the knuckle at the base of the strut. Install the lever in the bottom notch with the long tabs facing up under the lower spring seat. (see figure No.4)
4. Push down on handle until the knuckle is off the bottom of the strut. Move the lever up one or two notches in the fulcrum as required.
5. On the side being worked on, remove the two bolts holding the suspension cross-member to the body.
6. From under the fender remove 2 bolts holding top plate of strut. Remove strut from vehicle.

Figure No. 4



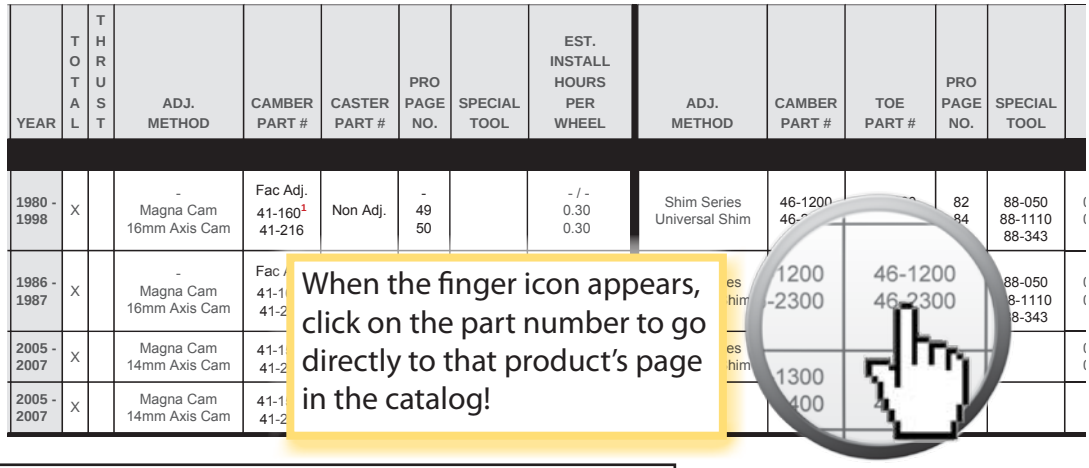
REINSTALLATION:

7. Install 2 bolts through top strut plate to body, torque to 20 ft. lbs. (37 N.m).
8. Position the knuckle onto the bottom of the strut. It may be necessary to loosen three bolts from the knuckle to align it to the strut, two at the lateral links and one at the trailing link. Check bottom strut tab for proper alignment to the split in the knuckle, adjust as required.
9. Using a small bottle jack or a screw-type jack stand, push the knuckle onto the strut until the pinchbolt can be installed. It may be necessary to use the round crossbar on top of the jack or stand to push equally on the front and rear bottom ears of the knuckle.
10. Install and torque suspension crossmember bolts to 92 ft. lbs. (125 N.m).
11. Apply Loctite to the threads of the pinch bolt, install and torque to 62 ft. lbs. (84 N.m). Reinstall parts removed in step No. 2, use a tie-wrap on the ABS wire bracket if equipped. Leave sway bar bolt loose until next step.
12. Lower vehicle to normal ride height and torque the three bolts loosened in step No. 8 to 66 ft. lbs. (90 N.m) and torque the sway bar bolt to 25 ft. lbs. (35 N.m).
13. Repeat steps on the other side of the vehicle as required.

tips for viewing this pdf catalog

In the product application guide, pages 11-48
To find a particular vehicle, either search using the search box at the top of the page, or hit Ctrl+F to take you to the search box. Type in the make and model (but not year) of the desired vehicle. The pdf will switch to that page automatically.
or
The application guide is organized alphabetically, so flip through using the headers on each page as your guide until you get to the make and model you're seeking.

Once there, hover over the part number until the arrow turns into a pointing finger. When that happens, click on the part number and it will take you right to that product in the catalog.



YEAR	TOTAL	THRUST	ADJ. METHOD	CAMBER PART #	CASTER PART #	PRO PAGE NO.	SPECIAL TOOL	EST. INSTALL HOURS PER WHEEL	ADJ. METHOD	CAMBER PART #	TOE PART #	PRO PAGE NO.	SPECIAL TOOL
1980 - 1998	X		- Magna Cam 16mm Axis Cam	Fac Adj. 41-160[1] 41-216	Non Adj.	- 49 50		- / - 0.30 0.30	Shim Series Universal Shim	46-1200 46-		82 84	88-050 88-1110 88-343
1986 - 1987	X		- Magna Cam 16mm Axis Cam	Fac 41-1 41-2					es him	1200 -2300	46-1200 46-2300		88-050 8-1110 8-343
2005 - 2007	X		Magna Cam 14mm Axis Cam	41-1 41-2					es him	1300 400			
2005 - 2007	X		Magna Cam 14mm Axis Cam	41-1 41-2									

When the finger icon appears, click on the part number to go directly to that product's page in the catalog!

When you see this red icon, that means there's an instruction sheet for this product. Just click on the icon and it will take you to the sheet, which you can then print or download.

remember . . .

all this information is also available on our web page
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F4

opens and closes the bookmark panel. The bookmark panel is a list of shortcuts to all the products and instruction sheets in the catalog. Click on one and you're there!