



M-2300-K Cobra Disc Brake Conversion Kit INSTALLATION INSTRUCTIONS

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Please visit www.fordracingparts.com for the most current instruction information

!!! PLEASE READ ALL OF THE FOLLOWING INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION. AT ANY TIME YOU DO NOT UNDERSTAND THE INSTRUCTIONS, PLEASE CALL THE FORD RACING TECHLINE AT 1-800-367-3788 !!!

INTRODUCTION:

The components in this kit will significantly improve the braking performance of your 1987-93 Mustang 5.0L. They were first used on the 1993 Mustang Cobra R and were also used on the 1994-95 Mustang Cobras. This kit requires the use of 17" x 8" wheels (not included in this kit), with a 5 lug, 4.5" diameter mounting pattern and 5.75" backspacing. The rear fender lips should be "rolled" for tire clearance. Some vehicles may also require front fender well modifications depending on tire size and ride height. For road use, a 5 lug, 4.5" diameter spare wheel/tire that clears calipers in front and rear is also required. The 1994-95 Cobra mini spare, (F4ZZ-1K007-C), is available for purchase from Ford Dealers.

The installation of this kit can be performed by anyone with an average amount of mechanical experience, but it is very important to follow the instructions and refer to the 1994-95 Mustang Shop Manual or equivalent. If you do not feel comfortable after reading the instructions and the shop manual, have the installation performed by an experienced mechanic.

!!! Caution: Improper installation of this kit could adversely affect the safety of your vehicle !!!

PARTS IN KIT:

<u>ITEM #</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>SERVICE PART #</u>	<u>REPLACEMENT SOURCE</u>
1	1	SPINDLE, R.F.	F4ZZ-3105-A	F/L/M DEALER
2	1	SPINDLE, L.F.	F4ZZ-3106-A	F/L/M DEALER
3	4	BOLT, SPINDLE TO STRUT	N800234-S151	F/L/M DEALER
4	4	NUT, SPINDLE TO STRUT	N800236-S100	F/L/M DEALER
5	1	DUST SHIELD, R.F.	F4ZZ-2K004-A	F/L/M DEALER
6	1	DUST SHIELD, L.F.	F4ZZ-2K005-A	F/L/M DEALER
7	6	RIVET, SHIELD TO SPINDLE	N806002-S100	F/L/M DEALER
8	2	HUB ASSEMBLY, FRONT	F4ZZ-1104-B	F/L/M DEALER
9	2	NUT, HUB	F3LY-3B477-A	F/L/M DEALER
10	2	CAP, HUB	F3DZ-1N135-A	F/L/M DEALER
11	1	ROTOR, R.F.	F4ZZ-1125-B	F/L/M DEALER
12	1	ROTOR, L.F.	F4ZZ-1125-C	F/L/M DEALER
13	1	CALIPER, R.F.	F4ZZ-2B120-A	F/L/M DEALER
14	1	CALIPER, L.F.	F4ZZ-2B121-A	F/L/M DEALER
15	8	BOLTS, CALIPER TO SPINDLE	N805163-S190	F/L/M DEALER
16	1	HOSE, R.F.	F4ZZ-2078-A	F/L/M DEALER
17	1	HOSE, L.F.	F4ZZ-2078-C	F/L/M DEALER

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18	5	BANJO BOLT	N802724-S150	F/L/M DEALER
19	10	WASHER	E0AZ-2149-B	F/L/M DEALER
20	1	BOOSTER	F3ZZ-2005-A	F/L/M DEALER
21	1	MASTER CYLINDER	F3ZZ-2140-A	F/L/M DEALER
22	2	COTTER PIN, BALL JOINT TO SPINDLE	N642588-S	F/L/M DEALER
23	2	BALL JOINT SPACER	M-3080-K	FORD RACING
24	1	PROPORTIONING VALVE, FIXED	E0ZZ-2B57-A	F/L/M DEALER
25	1	PROPORTIONING VALVE, ADJUSTABLE	M-2328-C	FORD RACING
26	1	PLUG, FIXED PROPORTIONING VALVE	M-2450-A	FORD RACING
27	1	HOSE, R.R.	F4ZZ-2A442-A	F/L/M DEALER
28	1	HOSE, L.R.	F4ZZ-2A442-B	F/L/M DEALER
29	2	BOLT, HOSE	N802119-S2	F/L/M DEALER
30	1	TUBE, R.R.	-----	FABRICATE
31	1	TUBE, L.R.	-----	FABRICATE
32	2	CLIP, TUBE TO AXLE	N804381-S100	F/L/M DEALER
33	2	BOLT, CLIP	N610957-S36	F/L/M DEALER
34	1	HOSE, BODY TO AXLE	E8ZZ-2282-A	F/L/M DEALER
35	1	NUT, HOSE	3/8-16 HEX LOCK	HARDWARE STORE
36	1	CONNECTOR, HOSE TO TUBE	E5ZZ-2C230-A	F/L/M DEALER
37	1	CLIP, CONNECTOR	386493-S100	F/L/M DEALER
38	1	ADAPTER, CALIPER TO AXLE L.R.	F4ZZ-2C101-B	F/L/M DEALER
39	1	ADAPTER, CALIPER TO AXLE R.R.	F4ZZ-2C100-B	F/L/M DEALER
40	2	AXLE SHAFT	F4ZZ-4234-B	F/L/M DEALER
41	2	DUST SHIELD	F4ZZ-2C028-A	F/L/M DEALER
42	6	BOLTS, DUST SHIELD	N602726-S2	F/L/M DEALER
43	1	CALIPER, R.R.	F4ZZ-2552-B	F/L/M DEALER
44	1	CALIPER, L.R.	F4ZZ-2553-B	F/L/M DEALER
45	2	ROTOR, REAR	F4ZZ-2C026-B	F/L/M DEALER
46	1	MOAN BRACE, R.R.	F4ZZ-2C366-A	F/L/M DEALER
47	1	MOAN BRACE, L.R.	F4ZZ-2C367-A	F/L/M DEALER
48	2	INVERTED FLARE FITTING, 3/8 MALE X 7/16 FEMALE (FIXED PROP. VALVE)	WEATHERHEAD 7828	AUTO PARTS STORE
49	1	TUBE NUT, 7/16	358609-S8	F/L/M DEALER
50	2	INVERTED FLARE FITTING, 1/4 NPT MALE X 3/16 FEMALE (ADJUSTABLE PROP. VALVE)		AUTO PARTS STORE
51	2	REAR BRAKE CABLE, 1987-92	M-2809-A	FORD RACING
52	2	REAR BRAKE CABLE, 1993	F3ZZ-2A635-A	F/L/M DEALER
53	1	FRONT BRAKE CABLE	M-2810-A	FORD RACING
54	2	HEX NUTS, 8 mm	-----	HARDWARE STORE
55	2	CLIP, BRAKE CABLE TO CALIPER	97413-S2	F/L/M DEALER

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TOOLS REQUIRED:

Cobra/Mustang Shop Manual
Tubing bender
Tubing cutter
Double flaring tool
T40 Torx socket
Torque wrench
Welder
3/8" Electric Drill with assorted bits
Power brake bleeder* (not mandatory but recommended)
Stud and Bearing Mount E0AZ-19554-BA tool or equivalent
* Bench bleeding master cylinder and calipers before installation is recommended.

SERVICE PRECAUTIONS:

1. Grease or any other foreign material must be kept off lining surfaces and braking surfaces of the rotor, and external surfaces of hub during service operation. In handling rotor and caliper assemblies, avoid deformation, nicking or scratching of brake linings and rotor.
2. If a caliper piston is removed for any reason, piston seal and dust boot must be replaced. Exercise care not to damage steel piston by protecting it from contact with any metal or sharp edged objects.
3. During removal and installation of a wheel assembly, exercise care not to interfere with or damage caliper splash shield, if so equipped, or the bleeder screw fitting.
4. Vehicle must be centered on hoist before servicing any front end components to avoid bending or damaging rotor splash shield, if so equipped, on full right or left wheel turns.
5. Do not attempt to clean or restore oil or grease-soaked brake lining. When contaminated linings are found, brake linings must be replaced in complete axle sets and rotor braking surfaces wiped clean.
6. The LH and RH calipers must be installed on the correct side of the vehicle to be sure the bleed screw is in the topmost position for proper purging of air from the front brake system during bleeding.

!!! Warning: Do not inhale dust from brakes, clutches or associated components. Inhalation of dust containing asbestos fibers can be injurious to your health and could cause cancer or asbestosis. Compressed air or brushes must not be used to clean brakes, brake drums, clutches and associated components. A vacuum cleaner equipped for this purpose should be carefully used to remove any dust. Adherent dust should be removed with a damp cloth. Any dust should be contained in a sealed and labeled bag for disposal. Wear an approved high efficiency cartridge or air-line respirator and use extra caution to avoid breathing this dust. Use non-asbestos replacement parts whenever possible !!!

!!! Warning: Brake fluid contains polyglycol ethers and polyglycols. Avoid contact with eyes. Wash hands thoroughly after handling. If brake fluid contacts eyes, flush eyes with running water for 15 minutes. Get medical attention if irritation persists. If taken internally, drink water and induce vomiting. Get medical attention immediately !!!

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TORQUE SPECIFICATIONS:

FASTENER	TORQUE (FT./LBS.) (EXCEPT WHERE NOTED)
DIFFERENTIAL PINION SHAFT LOCKNUT	15-30
REAR AXLE COVER	25-35
REAR SHOCK ABSORBER BOLTS	55-75
FRONT/REAR CALIPER ATTACHING BOLTS	70-95
BALL JOINT TO FRONT SPINDLE	110-150
FRONT STRUT TO SPINDLE	140-200
FRONT HUB NUT	190-250
BANJO BOLTS	30-40
WHEEL NUTS	85-105
DUST SHIELD ATTACHING BOLTS -- REAR	6-9
AXLE ADAPTER/REARBACKING PLATE BOLTS	45-50
AXLE HOUSING COVER BOLTS w/o TAG	28-28
AXLE HOUSING COVER BOLTS w/ TAG	18-28
AXLE FILL PLUG	15-30
REAR MOAN BRACE U-BOLT NUTS	40-45
REAR AXLE HOUSING NUTS	16-21
PARKING BRAKE CONTROL ASSEMBLY BOLT	14-21
FRONT STABILIZER BAR LINK	11-16
FRONT TIE ROD END NUTS	35-47
BRAKE MASTER CYLINDER CONTROL VALVE	8-9
MASTER CYLINDER RETAINING NUTS	16-21
POWER BRAKE BOOSTER RETAINING NUTS	16-21
HYDRAULIC TUBE CONNECTIONS	<i>124-212 in./lbs.</i>

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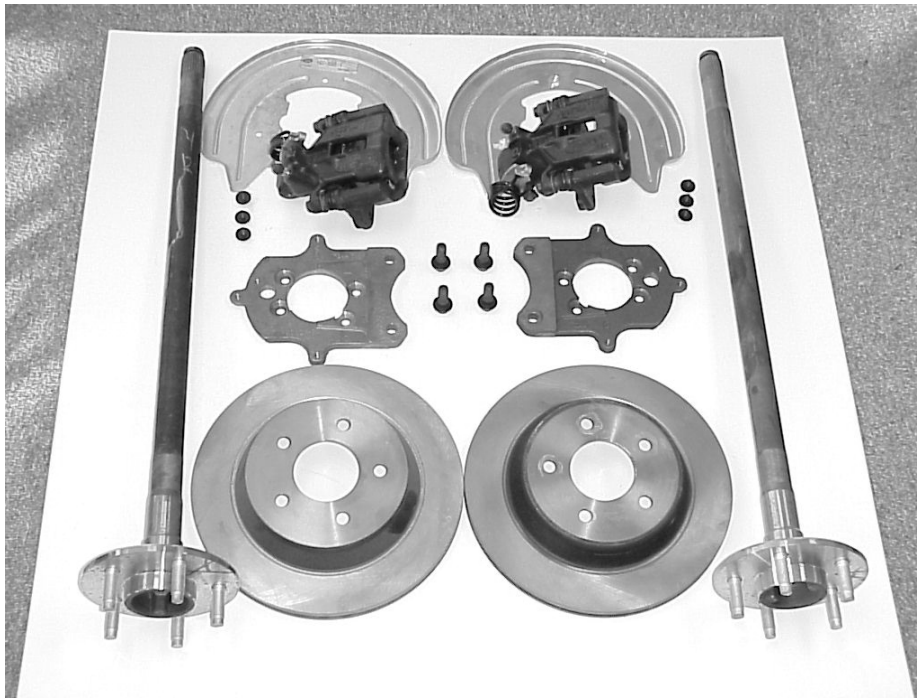


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REAR BRAKE INSTALLATION INSTRUCTIONS:

Note: Refer to the shop manual for the recommended procedures to remove and install axle shafts, rear brake components and brake lines. The parts group shown below will be needed for converting the rear brakes from drum to disc.



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- STEP 1:** Disconnect battery.
- STEP 2:** Raise vehicle off ground and support with jack stands.

!!! Caution: Be sure to support the vehicle properly to avoid personal hazards !!!

- STEP 3:** Remove wheel cover and the wheel.
- STEP 4:** Remove the drum retainer nuts, and remove the brake drums. If the drum will not come off, pry the rubber plug from the backing plate. Insert a narrow screwdriver through the hole in the backing plate, and disengage the adjusting lever from the adjusting screw. Loosen the adjusting screw to retract the brake shoes. The drum can now be removed.
- STEP 5:** Remove the brake shoe to anchor springs, the shoe guide (anchor pin) plate, the shoe hold-down springs, shoes, adjusting screw, pivot nut, socket and automatic adjustment parts.
- STEP 6:** Remove the parking brake link, spring and retainer. Disconnect the parking brake cable from the parking brake lever.
- STEP 7:** Remove axle housing cover from the rear axle and drain lubricant.
- STEP 8:** Working through cover opening, remove differential pinion shaft lock pin and remove the differential pinion shaft and differential pinion gears.
- STEP 9:** Push axle shafts inward until rear axle shaft retaining u-washers at button end of the axle shaft are clear of the side gear recess.

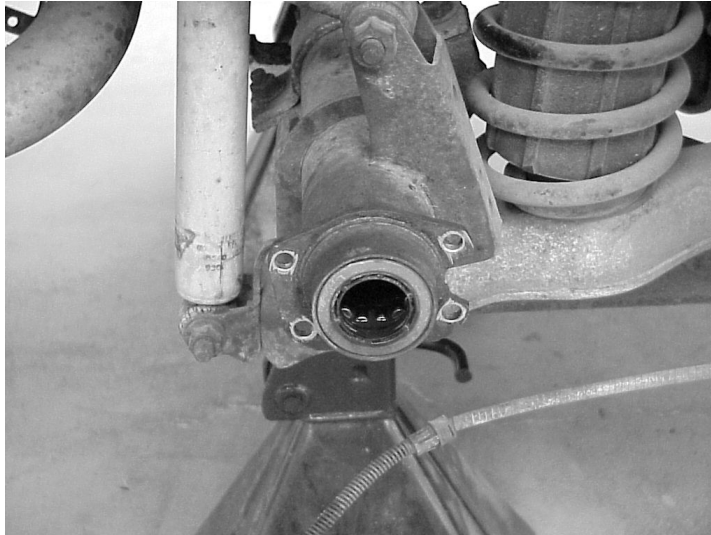
!!! Caution: Care should be taken not to damage inner wheel bearing oil seals when removing axle shafts from rear axle housing. !!!

- STEP 10:** Remove rear axle shaft retaining u-washers and pull the axle shafts out of the rear axle housing.
- STEP 11:** Remove brake hoses, brake tubes and parking brake cables.

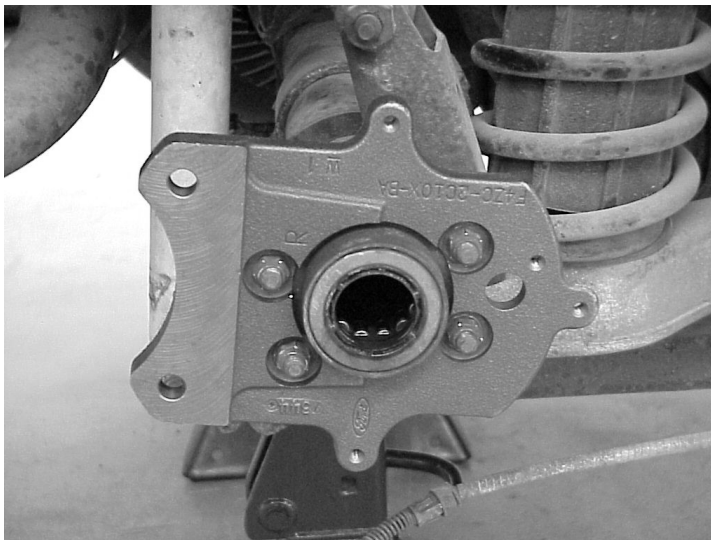
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STEP 12: Remove rear brake wheel cylinders and backing plates. Rear axle should look as shown below.

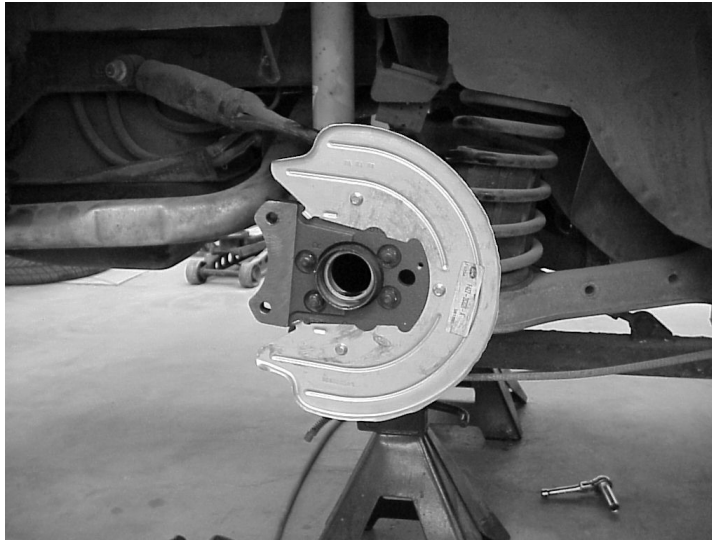


STEP 13: Reusing the backing plate bolts, install the caliper to axle adapters (item 38 and 39). Torque bolts to 45-50 ft./lbs. Axle adapters are marked LH and RH. The RH is shown below.



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STEP 14: Using the three 6mm bolts (item 42), mount the dust shields (item) as shown below. Tighten bolts 6-9 ft./lbs.



STEP 15: Select new left and right axle shafts (Item 40).

!!! Caution: Care must be taken not to let axle shaft splines damage inner wheel bearing oil seals or rear wheel bearing assembly. !!!

STEP 16: Carefully slide LH axle shaft into rear axle housing, without damaging rear wheel bearing or inner wheel bearing oil seal assembly. Start splines into differential side gear and push firmly until the button end of the axle shaft can be seen in the differential case.

STEP 17: Reinstall the rear axle shaft retaining u-washer on the button end of the axle shaft splines, then push the axle shaft outboard until the shaft splines engage and the rear axle shaft retaining u-washer seats in the counterbore of the differential side gear.

STEP 18: Repeat steps 16 and 17 to install the RH axle shaft.

STEP 19: Position the differential pinion shaft through the differential case and differential pinion gears, aligning the hole in the shaft with the differential pinion shaft lock pin hole. Install differential pinion shaft lock pin and tighten to 15-30 ft./lbs.



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!!! Caution: Differential pinion shaft lock pin must be tightened to specification using Stud and Bearing Mount EOAZ-19554-BA and Loctite™. !!!

STEP 20: Clean axle housing cover and mating surface on the axle housing.

!!! Caution: Inside of axle must be covered when cleaning the axle housing surface to prevent contamination. Tighten axle housing cover bolts in a crosswise pattern to ensure uniform draw on the axle housing. !!!

STEP 21: Apply a continuous bead of Silicone Rubber sealer recommended for axle housings to the axle housing mating surface.

Note: The axle housing cover assembly must be installed within 15 minutes of application of the silicone rubber or new silicone rubber must be applied.

STEP 22: Install axle housing cover and tighten axle housing cover bolts to 28-38 ft./lbs. Tighten ratio tag cover bolt (two o'clock position) to 18-28 ft./lbs.

STEP 23: Add Rear Axle Lubricant XY-90-QL or -KL or equivalent meeting Ford specification ESP-M2C154-A until it is 6-14mm (1/4-9/16 inch) below bottom of fill hole.

STEP 24: Add 118ml (4 oz) of Additive Friction Modifier C8AZ-19B546-A or equivalent meeting Ford specification EST-M2C118-A for Traction-Lok axles.

STEP 25: Install fill plug and tighten to 15-30 ft./lbs.

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STEP 26: Slide LH and RH caliper brace u-bolts (Item 46 and Item 47) around axle tube as shown below.



STEP 27: Slide the caliper brace into place over the U-bolt as shown and loosely install the nuts.

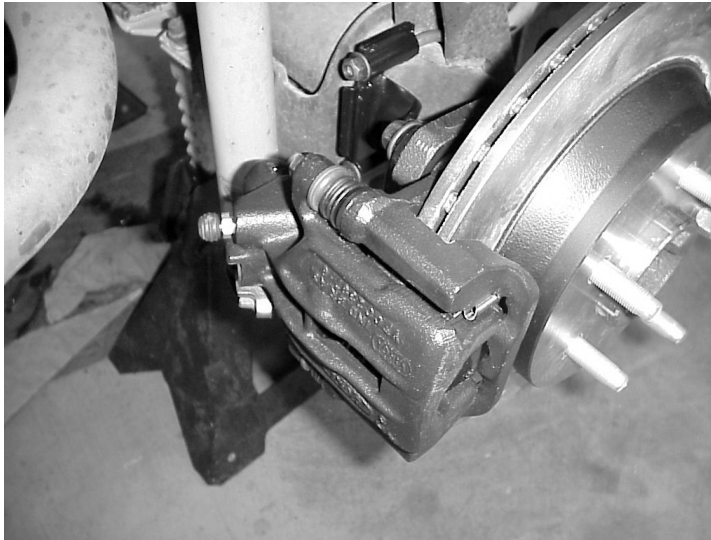


STEP 28: Install new rear rotors (Item 45) on the axle using a lug nut to temporarily hold the rotor in place.

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STEP 29: Install caliper (item 44 RH and item 43 LH) over the rotor as shown using the bolts pre-coated with Loctite™ and torque to 70-95 ft./lbs.



STEP 30: Tighten U-bolts evenly to a torque of 40-45 ft./lbs. as shown.

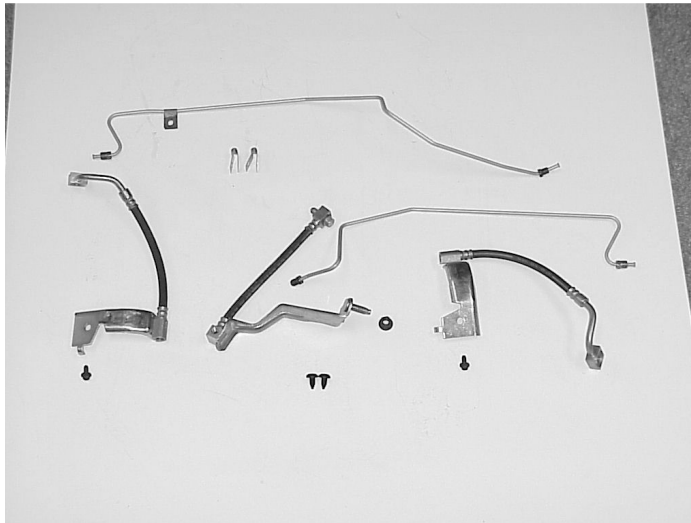


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STEP 31: Remove banjo bolt connecting the main rear brake line to the hose block. Remove the nut holding the body to the axle hose bracket. Remove the bracket from the axle housing.

Note: The following parts will be needed to hook up the rear brake calipers to the brake hydraulic system.



STEP 32: Install the new body to axle hose bracket (Item 34) on the rear axle housing in the position shown. **Note: Do not install the nut until after the wheel lines are connected.** Connect the banjo fitting to the main brake line. Torque to 30-40 ft./lbs.

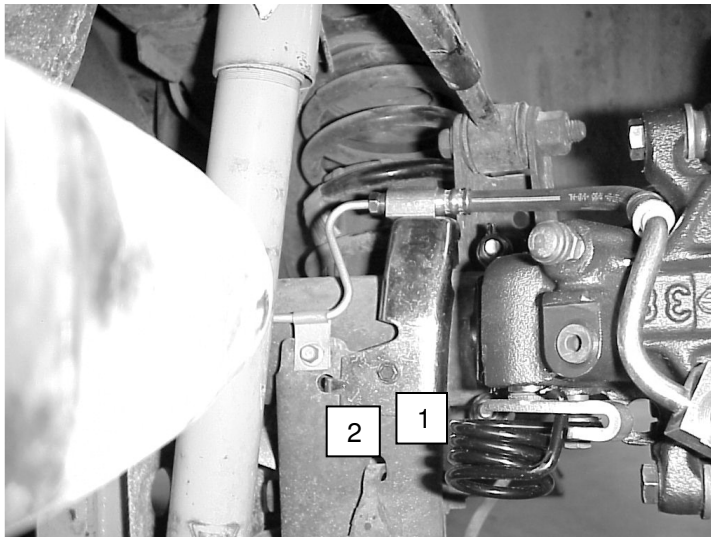


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- STEP 33:** Install the steel brake lines (Items 30 and 31) from the T-block to the calipers. Use the metal clips (Items 32 and 33) as shown to secure the line to the axle tube. The longer line is used on the right side.
Note: Do not tighten the brake line nuts completely.



- STEP 34:** Unbolt the lower shock mounting hardware and wire the shocks out of the way toward the center of the car. Using the hose bracket (Item 27 RR and Item 28 LR) as a guide, mark and drill a 9/64" hole (position 1 shown below) for the bolt and a 11/32" hole (position 2) for the bracket guide tab. The installed bracket position should as shown.



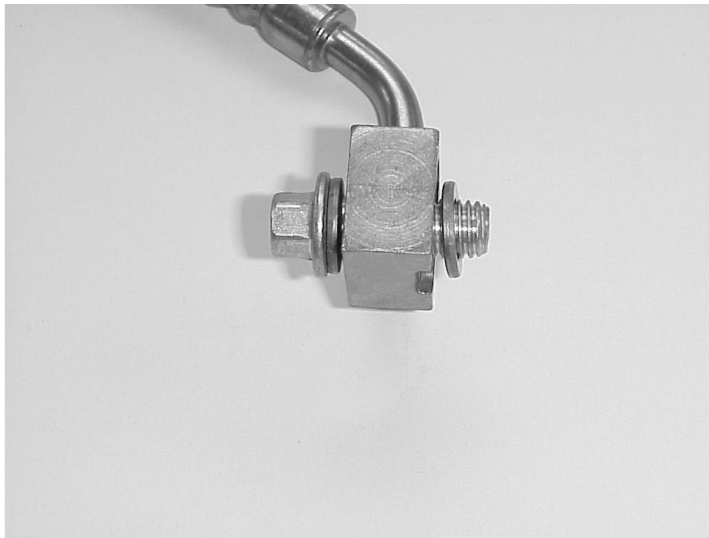
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- STEP 35:** Install the RH bracket (Item 27) and connect the brake tube (Item 30) to the rear caliper hose. Tighten the bolt for the brake tube. Fold the axle tube clip (Item 32) tab over the line and tighten the bolt (Item 33). Connect other end of the tube to the rear axle housing connector. Hydraulic tube connection - torque to 124-212 in./lbs.
- STEP 36:** Install the LH bracket (Item 28) and connect the brake tube (Item 31) to the rear caliper hose. Tighten the bolt for the brake tube. Fold the axle tube clip (Item 32) tab over the line and tighten the bolt (Item 33). Connect other end of the tube to the rear axle housing connector. Hydraulic tube connection - torque to 124-212 in./lbs.
- STEP 37:** Install and tighten the nut (Item 35) holding the bracket (Item 34) to the rear axle housing. Torque nut to 16-21 ft./lbs.
- STEP 38:** Attach the hose ends to the calipers with the sealing rings (Item 19) installed on the banjo bolts (Item 18) as shown. Torque banjo bolts to 30-40 ft./lbs.



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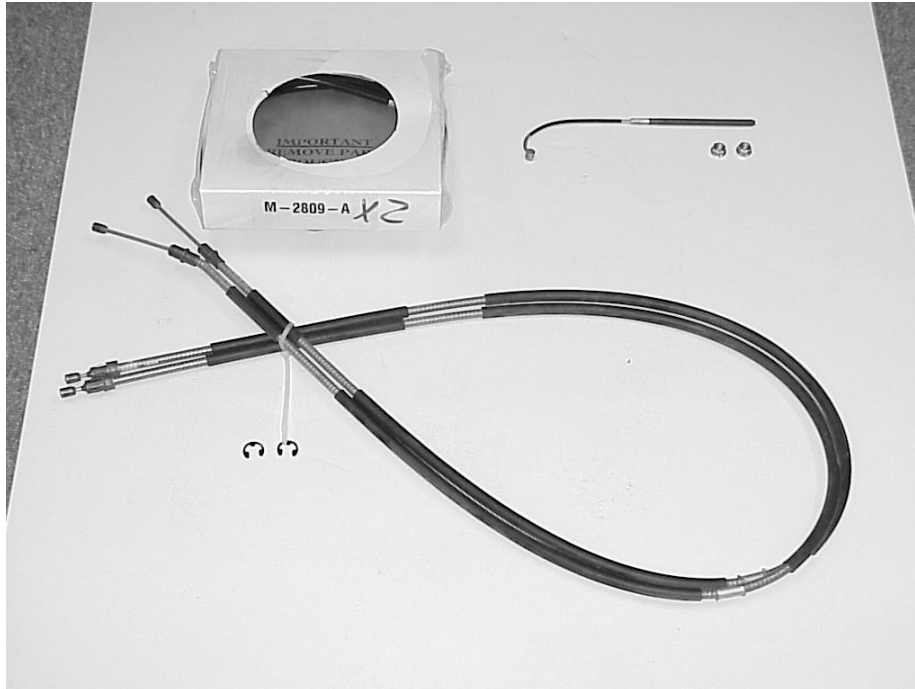


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PARKING BRAKE INSTALLATION INSTRUCTIONS:

Note: The parts group shown below will be needed to update the parking brake system for rear disc brakes.



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STEP 1: If your vehicle is a 1987-92 Mustang, install rear brake cables (Item 51) furnished. Secure at the rear calipers with clips (Item 55).



STEP 2: If your vehicle is a 1993 Mustang, install the rear brake cables (Item 52). Secure the cables to the body with the original clips.

STEP 3: Place the parking brake hand control assembly in the released position.

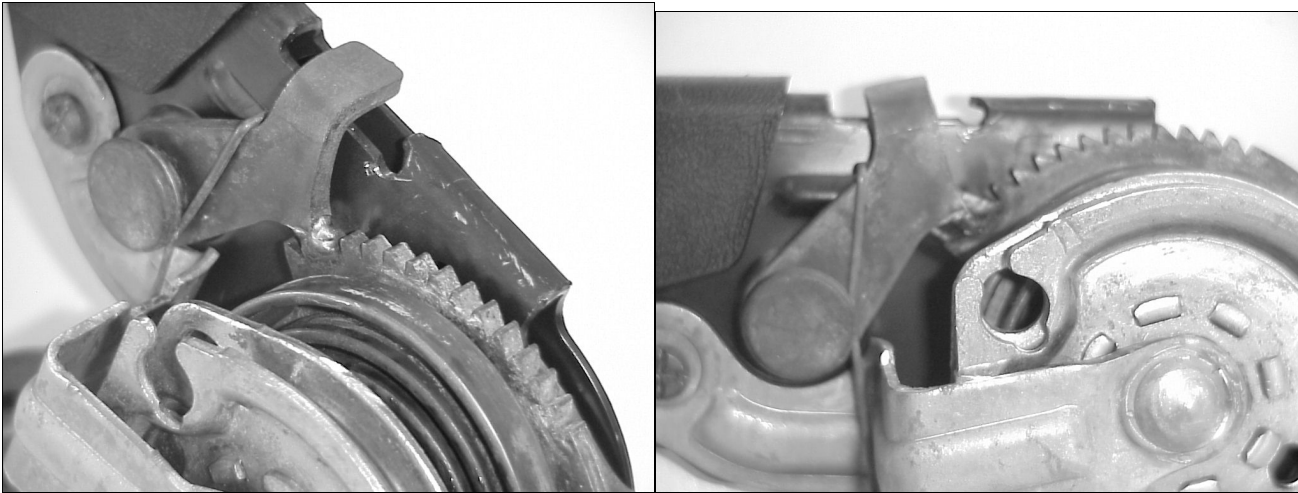
STEP 4: Remove floor console.

STEP 5: Disconnect front cable and equalizer from control.

STEP 6: Remove bolts retaining control assembly to the floor pan. Remove control assembly.

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- STEP 7:** Remove the self-adjusting feature by cutting off the spring tab (disables spring). Weld the paw to the handle with second from the last tooth engaged as shown.
This step is mandatory for correct operation of the parking brake system.

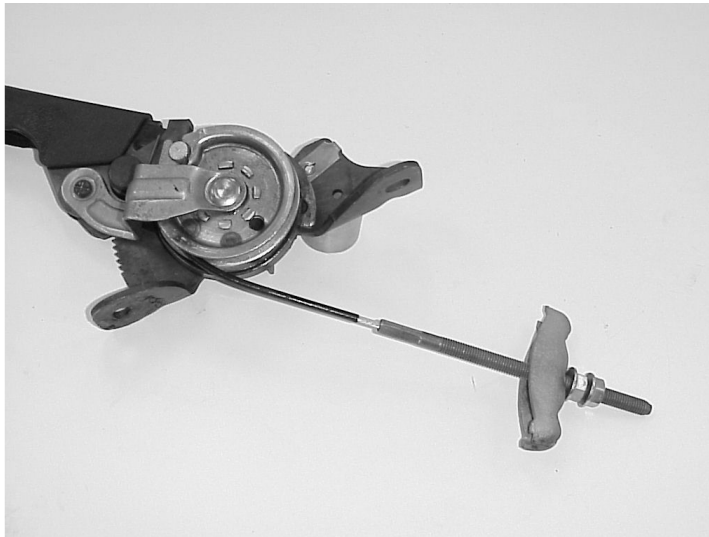


- STEP 8:** Drill out the center hole in the rear cable equalizer to 11/32" diameter.



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- STEP 9:** Install the front parking brake cable (Item 53) between the modified control assembly and the equalizer. The threaded portion will extend through the 11/32" diameter hole. Install two (2) 8mm nuts (Item 54) on the rear side of the equalizer as shown.



- STEP 10:** Attach front cable to control. Install parking brake hand control in vehicle. Bolt torque 10-16 ft./lbs.
- STEP 11:** Attach forward ends of the rear parking brake cables to the equalizer and adjust the parking brake system. When adjustment is completed, tighten the locking nut to the adjusting nut.

Note: As the cables stretch and brake linings wear, it will be necessary to periodically adjust the system.

- STEP 12:** Reinstall the floor console.
- STEP 13:** Reinstall the rear shock absorbers. Bolt torque to 55-75 ft./lbs.

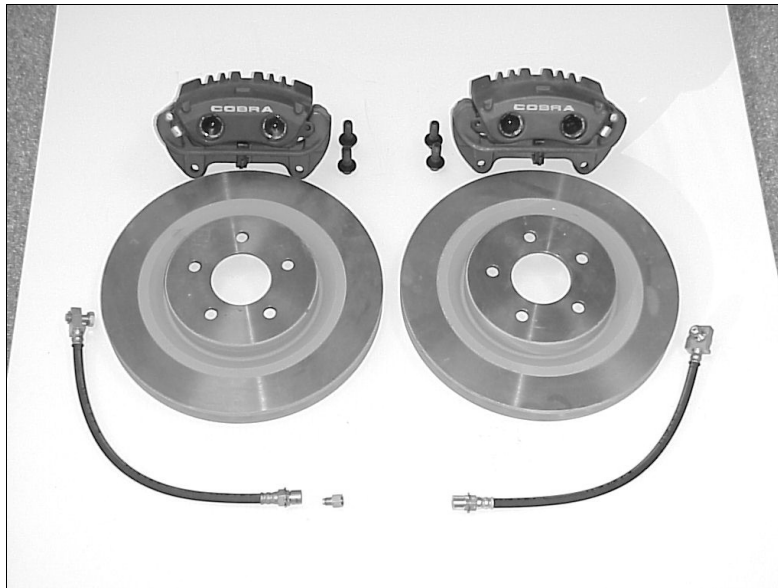
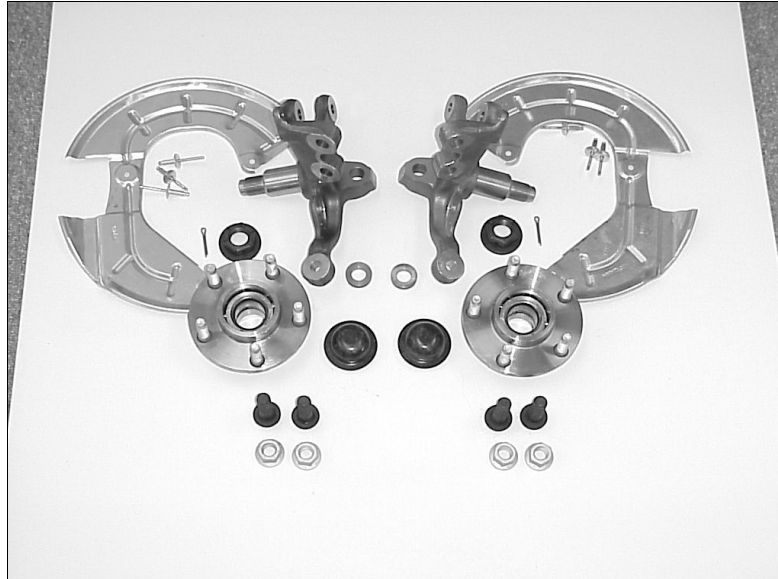


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FRONT BRAKE INSTALLATION INSTRUCTIONS:

Note: The parts group shown below will be needed to update the front brake system.



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!!! Caution: All front suspension fasteners are important attaching parts because they could affect the performance of vital parts and systems, and/or could result in major service expense. Any part must be replaced with one of the same part number or with an exact equivalent part if replacement becomes necessary. Do not use a replacement part of lesser quality or substitute design. Torque values must be used as specified during assembly to ensure proper retention of these parts. !!!

!!! Caution: Never attempt to heat, quench or straighten any front suspension part. Replace with a new part. !!!

- STEP 1:** Raise the front of vehicle and position safety stands under both sides at the jacking pads just behind the front suspension lower arms.
- STEP 2:** Remove the wheel and tire assembly. If equipped, remove front brake anti-lock sensor from front wheel spindle.
- STEP 3:** Remove the front disc brake caliper, front disc brake rotor, and front disc brake rotor shield. Remove wheel hub.
- STEP 4:** Remove the front stabilizer bar link from the front suspension lower arm assembly.
- STEP 5:** Remove the front wheel spindle connecting rod or end from the front wheel spindle with Tie Rod End Remover Tool-3290-D or equivalent.

!!! Caution: Do not remove the nut from the ball joint stud at this time. !!!

- STEP 6:** Remove and discard the cotter pin from the ball joint stud nut, and loosen the ball joint nut one or two turns.
- STEP 7:** Tap the spindle boss sharply to relieve the stud pressure.
- STEP 8:** Place a floor jack under the front suspension lower arm, compress the front coil spring as outlined in Front Spring Removal and Installation.
- STEP 9:** On Mustang with 3.8L engine, use Spring Compressor Tool T82P-5310-A to place the upper plate in position into the spring pocket cavity on the crossmember. The hooks on the plate should be facing the center of the vehicle.
- On Mustang with 5.0L engine, use Spring Compressor Tool D78P-5310-A or equivalent, to install a plate between coils near the toe of the front coil spring. Mark location of upper plate on coils for installation. Use care not to nick spring coils when installing upper plate.

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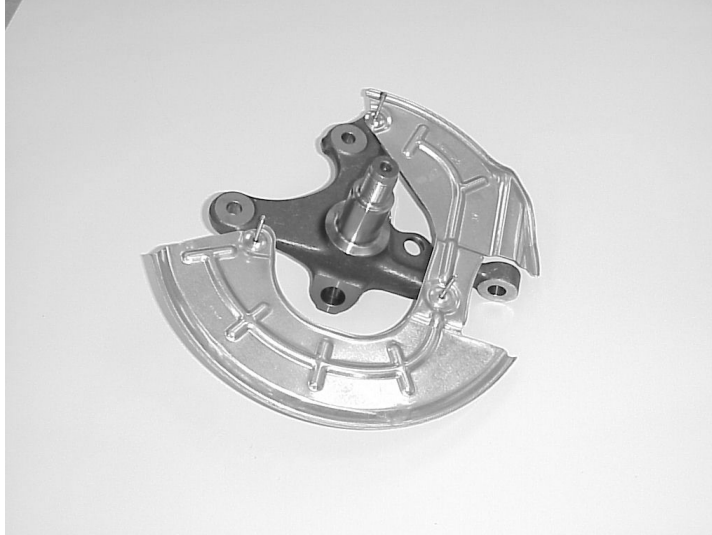
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- STEP 10:** Install the compression rod into the lower arm spring pocket hole, through the coil spring, into the upper plate.
- STEP 11:** Install the lower plate, lower ball nut, thrust washer and bearing, and forcing nut onto the compression rod.
- STEP 12:** Tighten the forcing nut on the compressor tool until a drag on the nut is felt.
- STEP 13:** Remove the suspension arm-to-crossmember nuts and bolts. The compressor tool forcing nut may have to be tightened or loosened for easy bolt removal.
- STEP 14:** Loosen the compression rod-forcing nut until spring tension is relieved and remove the forcing nut.
- STEP 15:** Remove the compression rod and front coil spring.
- STEP 16:** Remove the ball joint stud nut. Remove front anti-lock sensor bracket. Save nut for installation.
- STEP 17:** Remove and discard the two bolts and nuts retaining the front wheel spindle to front strut. Compress the front strut until working clearance is obtained.
- STEP 18:** Remove the front wheel spindle.



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- STEP 19:** Install dust shields (Items 5, 6) on new spindles (Items 1, 2) using rivets (Item 6) provided. If you do not wish to use the rivets, the dust shields can be secured to the spindles with bolts/nuts and blue Loctite™. **For race applications, you may want to discard the dust shields for improved brake cooling.**



- STEP 20:** Install new spindle (Item 1 RF and Item 2 LF) over ball joint stud and place ball joint spacer (Item 23) on ball joint shaft.

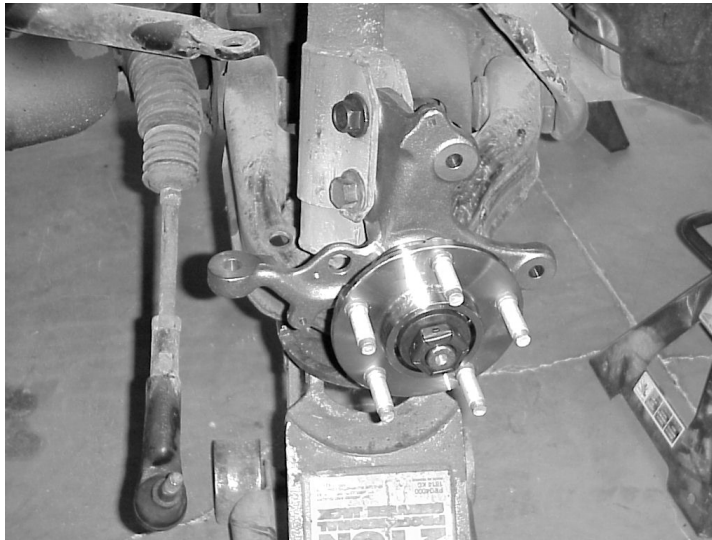


- STEP 21:** Install the original ball joint nut on the stud. Do not tighten at this time.

M-2300-K Cobra Disc Brake Conversion Kit INSTALLATION INSTRUCTIONS

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- STEP 22:** Raise the floor jack under the lower control arm until the strut can be re-attached with new bolts and nuts (Items 3, 4). Torque to 140-200 ft./lbs.
- STEP 23:** Tighten the ball joint stud nut to 110-150 ft./lbs. Install the new cotter pin (Item 22) through the nut and stud and fold over.
- STEP 24:** Reinstall the compressed springs.
- STEP 25:** Install the stabilizer bar link. Tighten the retaining bolt and nut to 11-16 ft./lbs.
- STEP 26:** Install new hub assembly (Item 8) and nut (Item 9). Torque to 190-250 ft.-lbs. Install cap (Item 10).



- STEP 27:** Reconnect the tie rod ends and install the nut. Torque to 35-47 ft./lbs.

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STEP 28: Install rotors (Items 11, 12) and calipers (Items 13, 14). Secure calipers to spindles with new Loctite™ coated bolts (Item 15). Torque bolts to 70-95 ft./lbs.



STEP 29: You will also have to move the right front brake tube approximately 1" forward. Re-drill the holes for the clip alignment tab (1/4" diameter) and screw (3/16" diameter) using the clip as a template for hole location. Install the mounting clip using the original self-tapping screw. Install front brake hose in the mounting clip.



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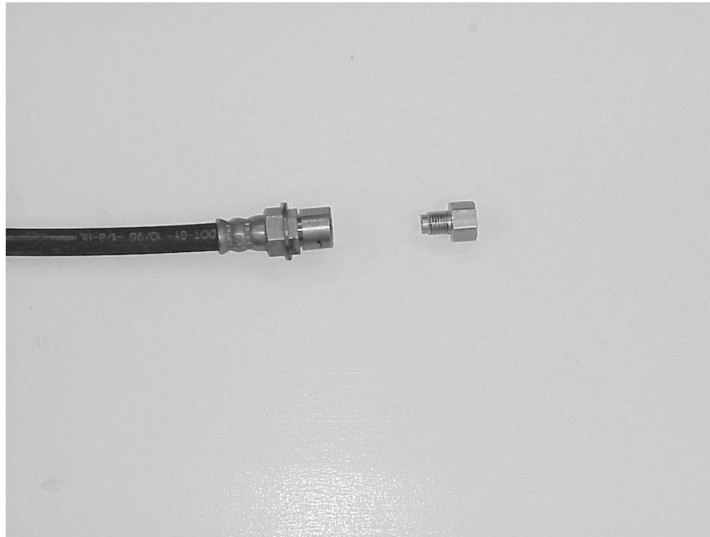
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STEP 30: Install new front brake hoses (Items 16, 17) to calipers with one (1) banjo bolt (Item 18) and two (2) washers (Item 19) per caliper. Torque bolts to 30-40 ft./lbs.

The left front hose (Item 17) will connect directly to the left front brake tube. Torque 124-212 ft./lbs.

For the right front brake hose (Item 16), connect Weatherhead fitting 7828 (Item 48) between the hose and right front brake tube. Torque 124-212 ft./lbs.



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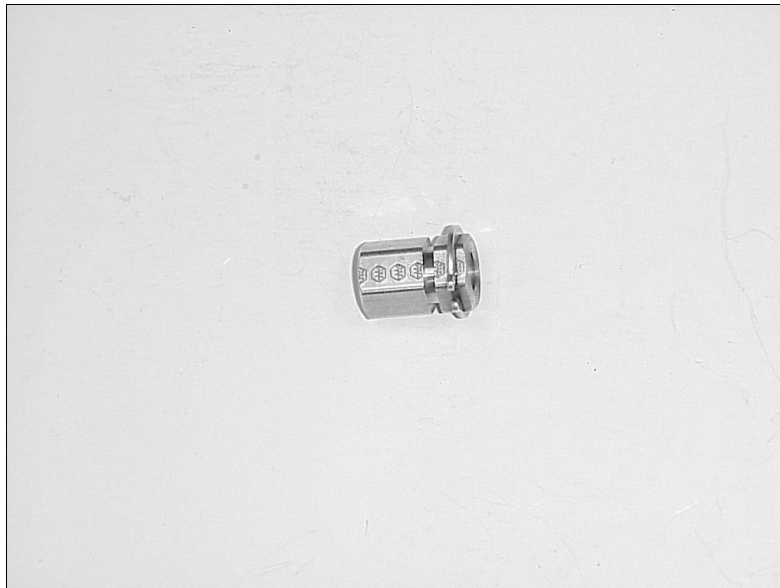
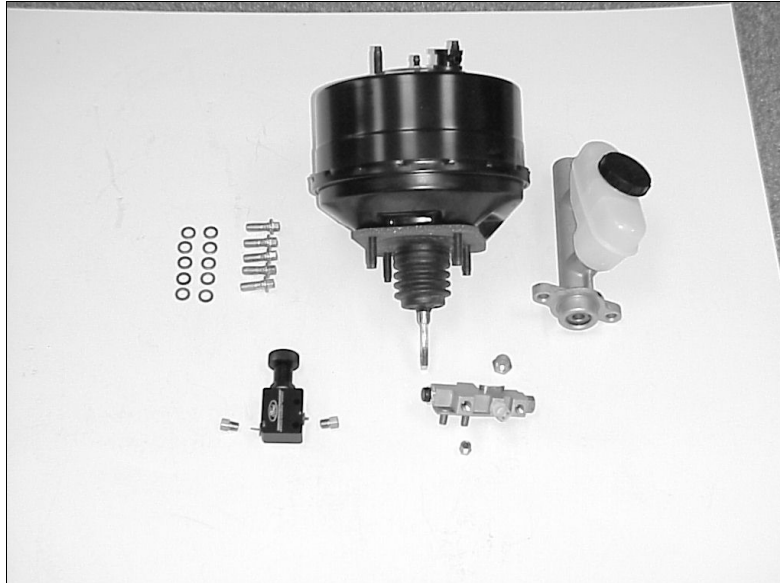


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MASTER CYLINDER, BOOSTER AND PROPORTIONING VALVE INSTALLATION INSTRUCTIONS:

Note: The parts group shown below will be needed to update the master cylinder and proportioning valve.



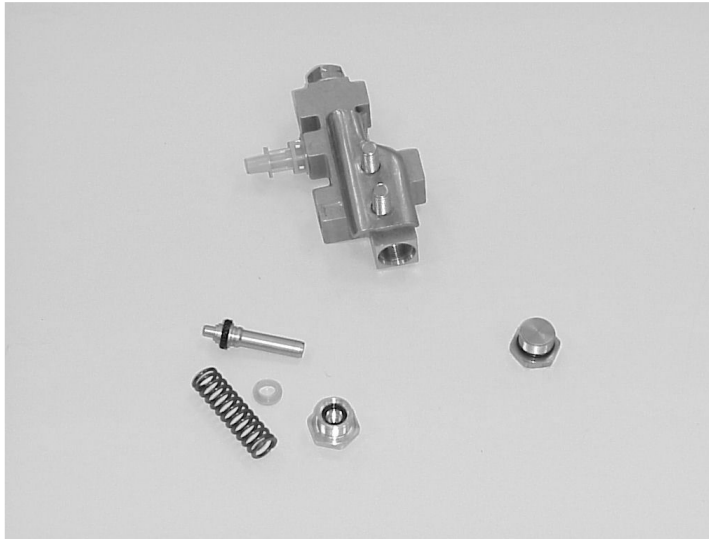
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STEP 1: Remove existing master cylinder, brake booster and proportioning valve.

STEP 2: Modify new fixed proportioning valve (Item 24) by removing the plug, spring, seat and plunger from the front of the old valve.



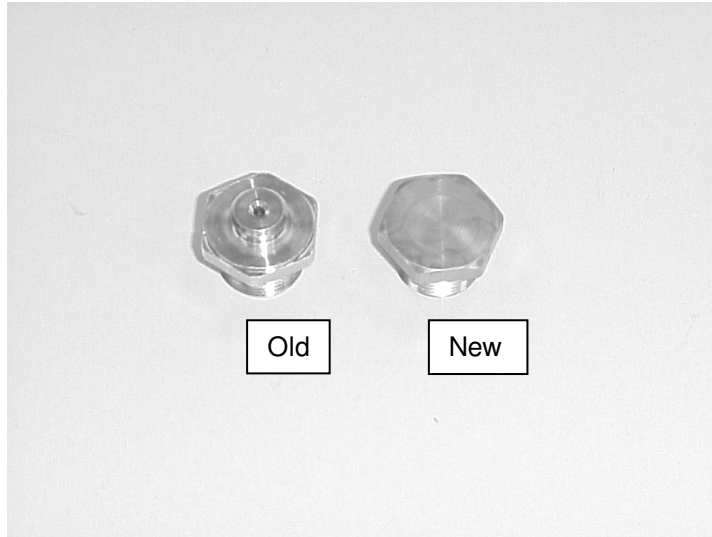
STEP 3: Remove O-ring from old valve plug and install the O-ring on the new valve plug (without hole--Item 26). Install the new plug (Item 26) in the new proportioning valve.

!!! Caution: It is absolutely mandatory to use the new plug without the hole. Use of the original plug in a modified proportioning valve can result in a brake system failure. !!!

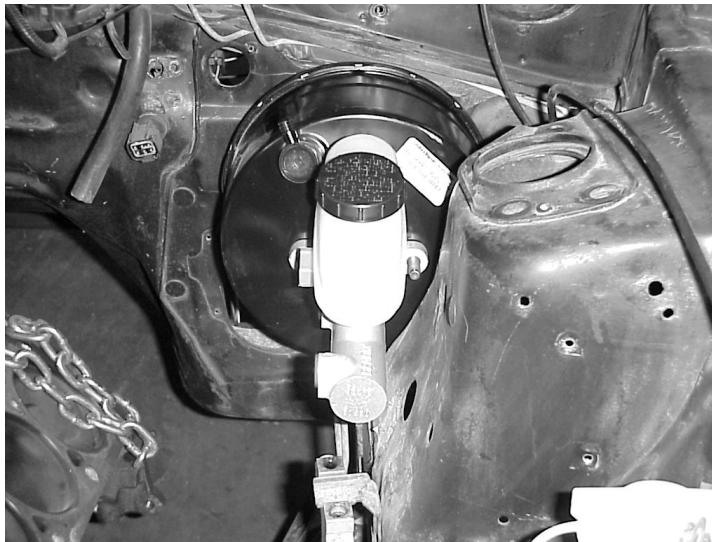
Note: This modification defeats the proportioning valve function. The new adjustable proportioning valve will be installed downstream to provide the proportioning function.

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STEP 4: Install the new master cylinder (Item 21) - torque to 16-21 ft./lbs, brake booster (Item 20) - torque to 16-21 ft./lbs. and new proportioning valve (Item 24) - torque 8-9 ft./lbs. It may be necessary to “relieve” the inner fender panel for booster clearance on models prior to 1991.



STEP 5: Reconnect the wiring harness plug to the master cylinder float switch.

STEP 6: Connect the new master cylinder to the modified proportioning valve with existing vehicle “pigtailed”.

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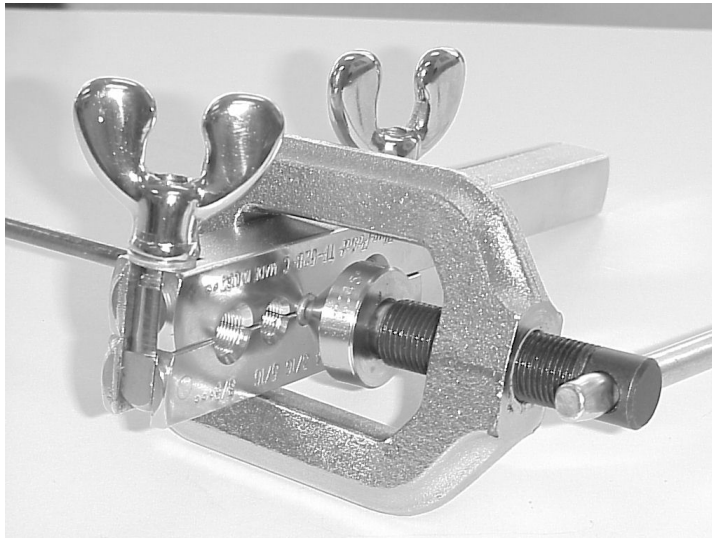
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STEP 7: Re-route and cut the steel brake lines that were originally routed from the master cylinder to the left front brake so that it will line up with the rearmost port of the new proportioning valve. Slide a 7/16" tube nut (Item 49) on the line, double flare the end of the line and attach it to the rearmost port of the proportioning valve.

!!! Caution: Connection must be double flared. !!!

STEP 8: A double flare can be made using any commonly available double flare tool as shown below.



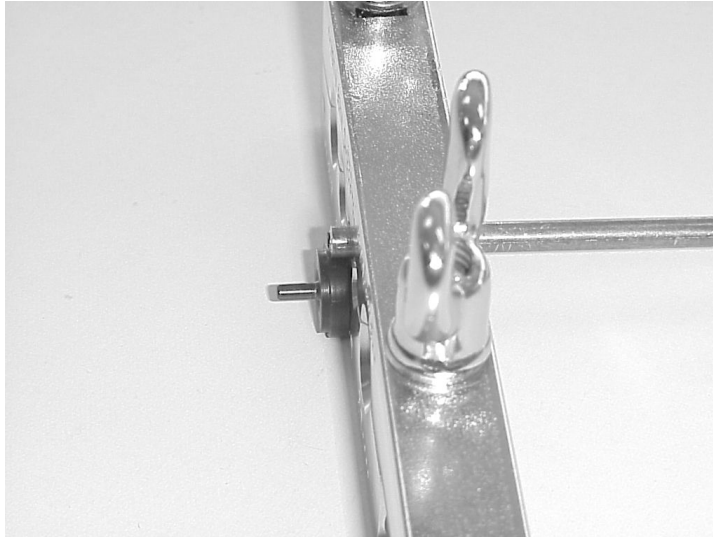
STEP 9: In step 1, the 7/16" tube nut is slid on the line and the line is placed in the proper hole in the flaring bar and the wing nuts tightened. The end of the tube should protrude above the top of the flaring bar by a distance equal to the thickness of the shoulder on the 7/16" adapter.

Be sure that the end of the tubing to be flared has been cut off squarely and the burr removed from inside edge. The tubing should be chamfered on the outside edge with a file to ensure a good result on the first forming operation.



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STEP 10: Insert the 7/16" adapter in the brake tube.

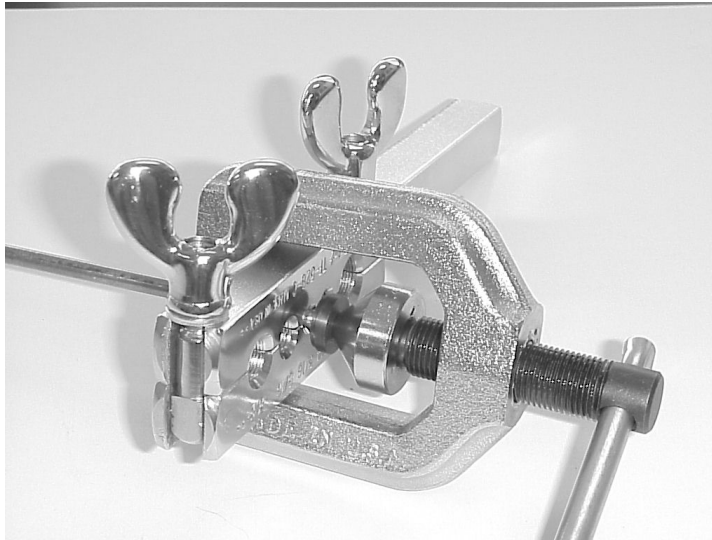


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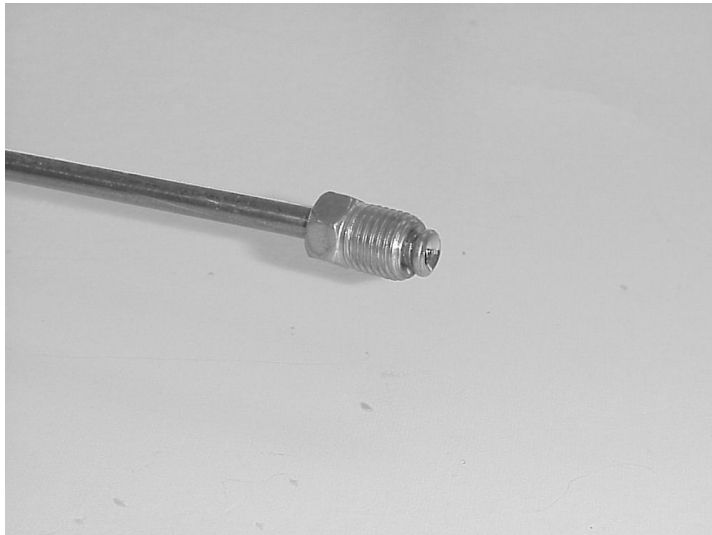
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- STEP 11:** Place yoke tool over flaring bar as shown below centering the flaring cone in the brake line. Screw the cone down until the shoulder of the adapter rests on the flaring bar.



- STEP 12:** Back off the flaring cone slightly, remove the adapter, and then screw cone down again tightly, this time directly into the tubing. This folds the tubing back on itself forming an accurate 45° double-flare.





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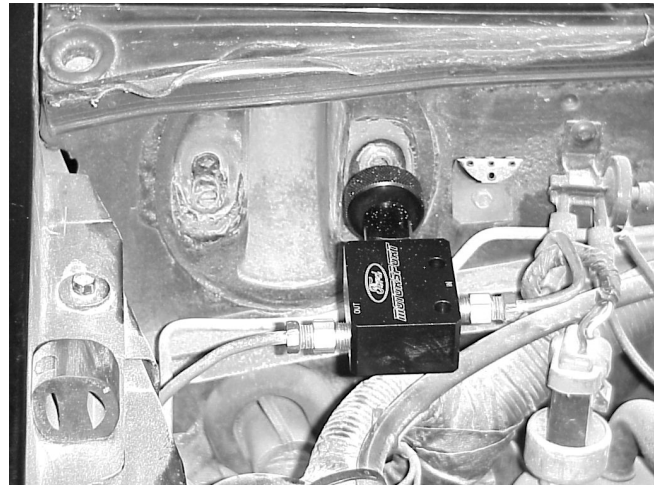
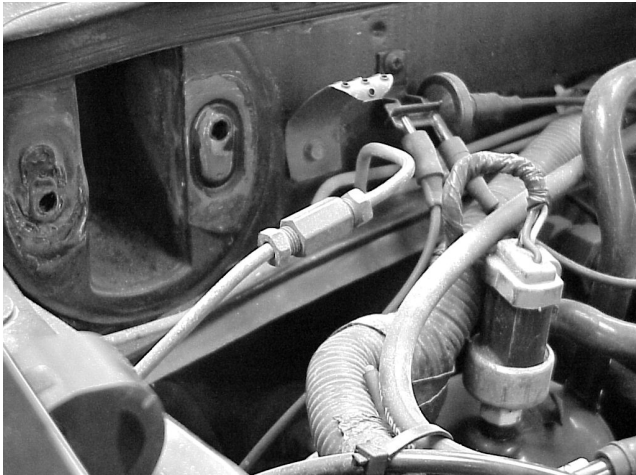
- STEP 13:** Attach the remaining vehicle brake lines to the bottom ports of the new proportioning valve. You will need to attach the line to the lower rear port with a Weatherhead 7828 fitting (Item 48) Torque to 124-212 in./lbs.
- STEP 14:** Install the two (2) Weatherhead 202X2 fittings (Item 50) in the adjustable proportioning valve (Item 25) Torque to 124-212 in./lbs.



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- STEP 15:** Install the variable proportioning valve assembly in place of the brake line union at the firewall on the passenger side. Screw the knob on the adjustable proportioning valve all the way in (clockwise) at this time.



- STEP 16:** Recheck all fittings to ensure all connections are tight.

- STEP 17:** Fill the master cylinder with new DOT 3 or DOT 4 (recommended) brake fluid and keep it full during the brake bleeding process.

!!! Caution: Brake fluid contains polyglycol ethers and polyglycols. Avoid contact with eyes. Wash hands thoroughly after handling. If brake fluid contacts eyes, flush eyes with running water for 15 minutes. Get medical attention if irritation persists. If taken internally, drink water and induce vomiting. Get medical attention immediately. !!!

- STEP 18:** Bleed the brake system manually or with a power bleeder (recommended) in the following sequence:
- Right rear
 - Left rear
 - Right front
 - Left front.

Continue bleeding the brake system in this sequence until all air is removed from the system and a firm brake pedal is obtained.



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Note: The rear calipers may trap air. Tap them lightly while bleeding the rear brakes.

- STEP 19:** After bleeding is completed, inspect all connections in the front and rear system for leaks and repair as required.
- STEP 20:** Now turn the adjusting screw on the proportioning valve counter clockwise until it stops. Then turn it four turns clockwise for the initial adjustment.
- STEP 21:** Reinstall the wheel and tire assemblies. Torque bolts to 85-105 ft./lbs.
- STEP 22:** Remove jack stands and safely lower the vehicle to the ground.
- STEP 23:** Find a safe place to check and adjust your brake system for proper operation. The optimum adjustment will result in the front brakes locking just prior to the rear, under the worst conditions (minimum traction surface and minimum rear wheel load).

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