

8-16 SUSPENSION AND STEERING

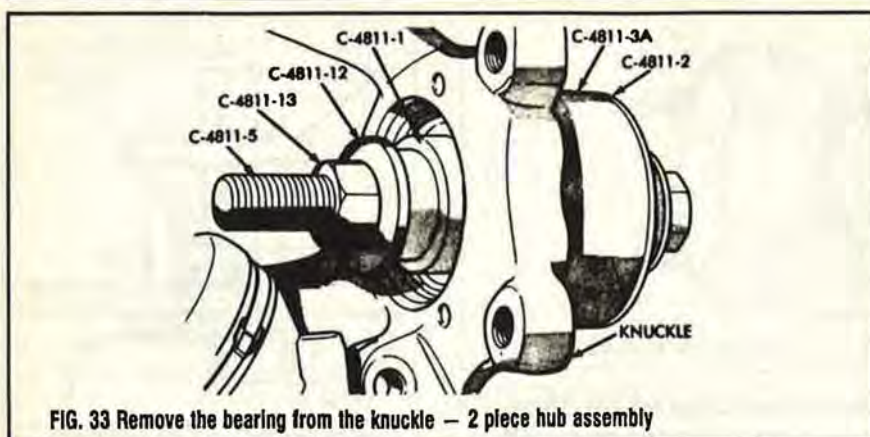


FIG. 33 Remove the bearing from the knuckle — 2 piece hub assembly

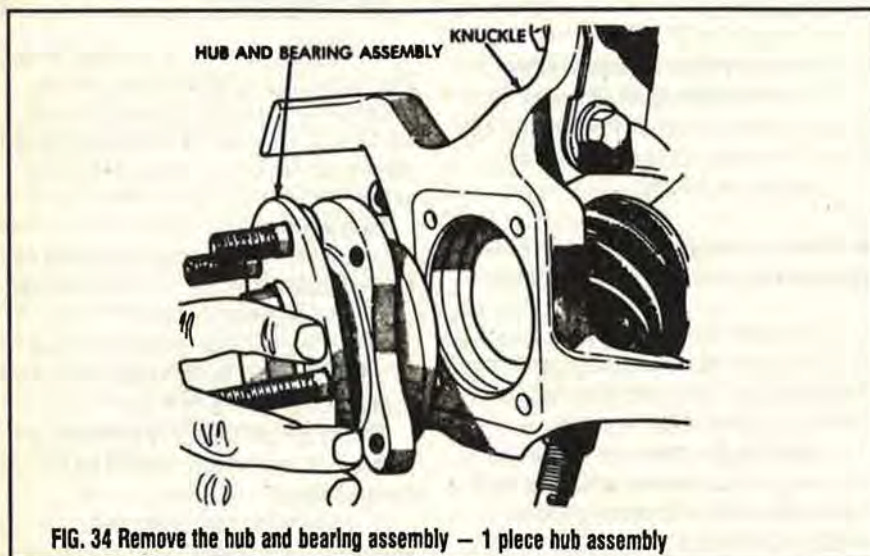


FIG. 34 Remove the hub and bearing assembly — 1 piece hub assembly

8. Thoroughly clean and dry the knuckle and bearing mating surfaces and the seal installation area.

To Install:

9. Install the hub and bearing assembly to the knuckle and torque the bolts in a criss-cross pattern to 45 ft. lbs. (65 Nm).

10. Install a new seal and wear sleeve. Lubricate the circumferences of the seal and sleeve liberally with grease.

11. The installation of the knuckle and halfshaft is the reverse of the removal procedure. Torque the tie rod nut to 35 ft. lbs. (47 Nm).

12. Align the front end.

1990-92 Laser And Dodge Stealth

1. Disconnect the negative battery cable.
2. Remove the cotter pin, halfshaft nut and washer. It is recommended that the halfshaft nut is removed while the vehicle is on the floor with the brakes applied.
3. Raise the vehicle and support safely. If equipped with ABS, remove the front wheel speed sensor. Remove the ball joint and tie rod end from the steering knuckle.

4. Remove the caliper and pads and suspend with a wire.

5. On vehicles with an inner shaft, remove the center support bearing bracket bolts and washers. Remove the halfshaft by setting up a puller on the outside wheel hub and pushing the halfshaft from the front hub. Then tap the joint case with a plastic hammer to remove the halfshaft shaft and inner shaft from the transaxle.

6. On vehicles without an inner shaft, remove the halfshaft by setting up a puller on the outside wheel hub and pushing the halfshaft from the front hub. After pressing the outer shaft, insert a prybar between the transaxle case and the halfshaft and pry the shaft from the transaxle.

7. On Stealth with AWD, the front hub/bearing assembly can be serviced at this point as a unit. If the knuckle is being removed, proceed. All others require knuckle removal.

8. Unbolt the lower end of the strut and remove the hub and steering knuckle assembly.

9. Set up a puller with the knuckle/hub in a vise and pull the hub from the knuckle. Do not use a hammer to accomplish this or the bearing will be damaged.

10. Once the hub and outer bearing inner race are removed with a puller, the bearing outer races can be removed by tapping out with a brass drift pin and a hammer.

To Install:

11. Assemble the hub/knuckle assembly with pressing tools, using new parts as required.

12. Install the knuckle assembly to the vehicle and install the strut bolts.

13. On AWD Stealth, torque the front hub/bearing assembly nuts to 76 ft. lbs. (105 Nm).

14. Apply a thin coat of grease to the outside of the outer races and install into the hub with a bearing driver.

15. Apply multi-purpose grease to the bearings, inside surface of the hub and the lip of the grease seal. Place the outside bearing into the knuckle and install the seal with a driver.

16. The hub is assembled to the knuckle with a puller. Draw the parts together firmly to seat the bearings. Use a small torque wrench to check the bearing turning torque. It should be 16 inch lbs. or less. for Laser and Stealth. Check that the bearings feel smooth when rotated.

17. Apply a thin coat of grease to the lip of the halfshaft side axle seal and drive into place until it contacts the inner bearing outer race.

18. Replace the circlips on the ends of the halfshafts.

19. Insert the halfshaft into the transaxle. Make sure it is fully seated.

20. Pull the strut assembly out and install the other end to the hub.

21. Install the center bearing bracket bolts and tighten to 33 ft. lbs. (45 Nm).

22. Install the washer so the chamfered edge faces outward. Install the nut and tighten temporarily.

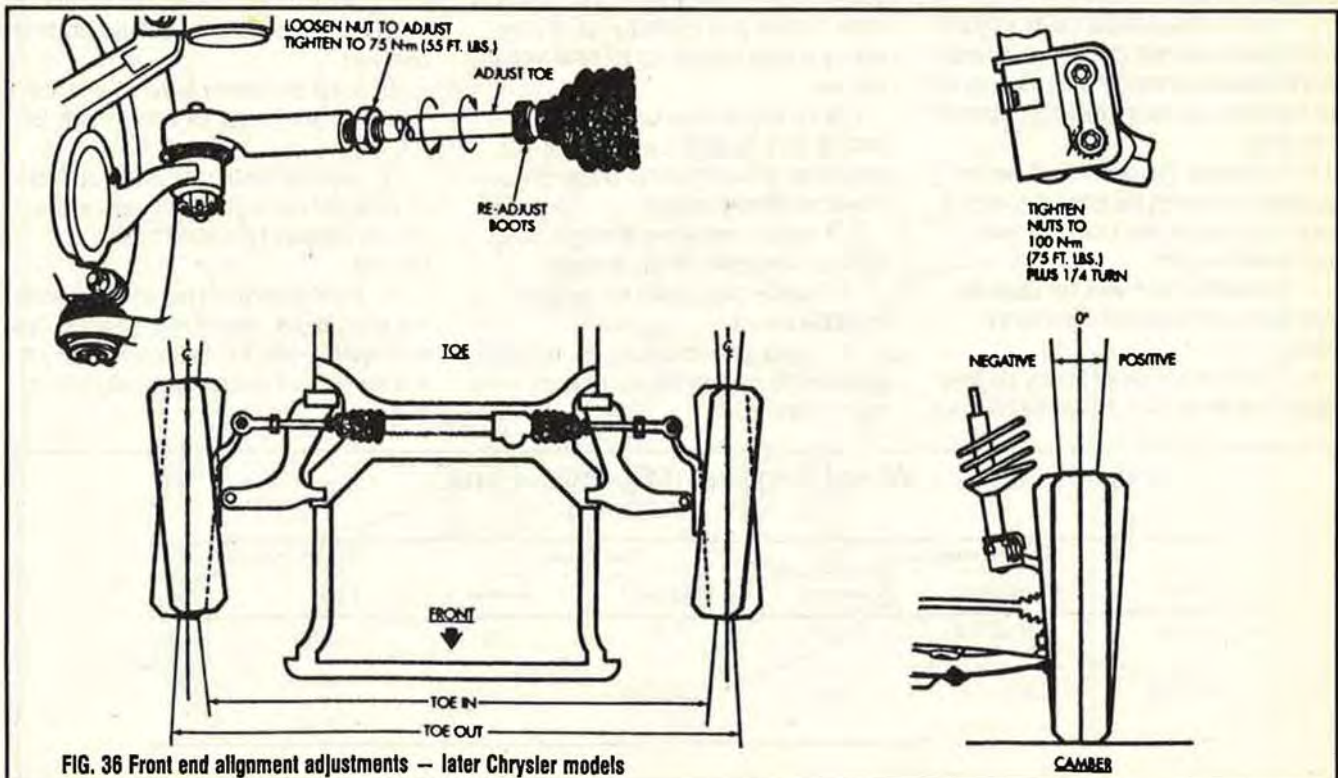
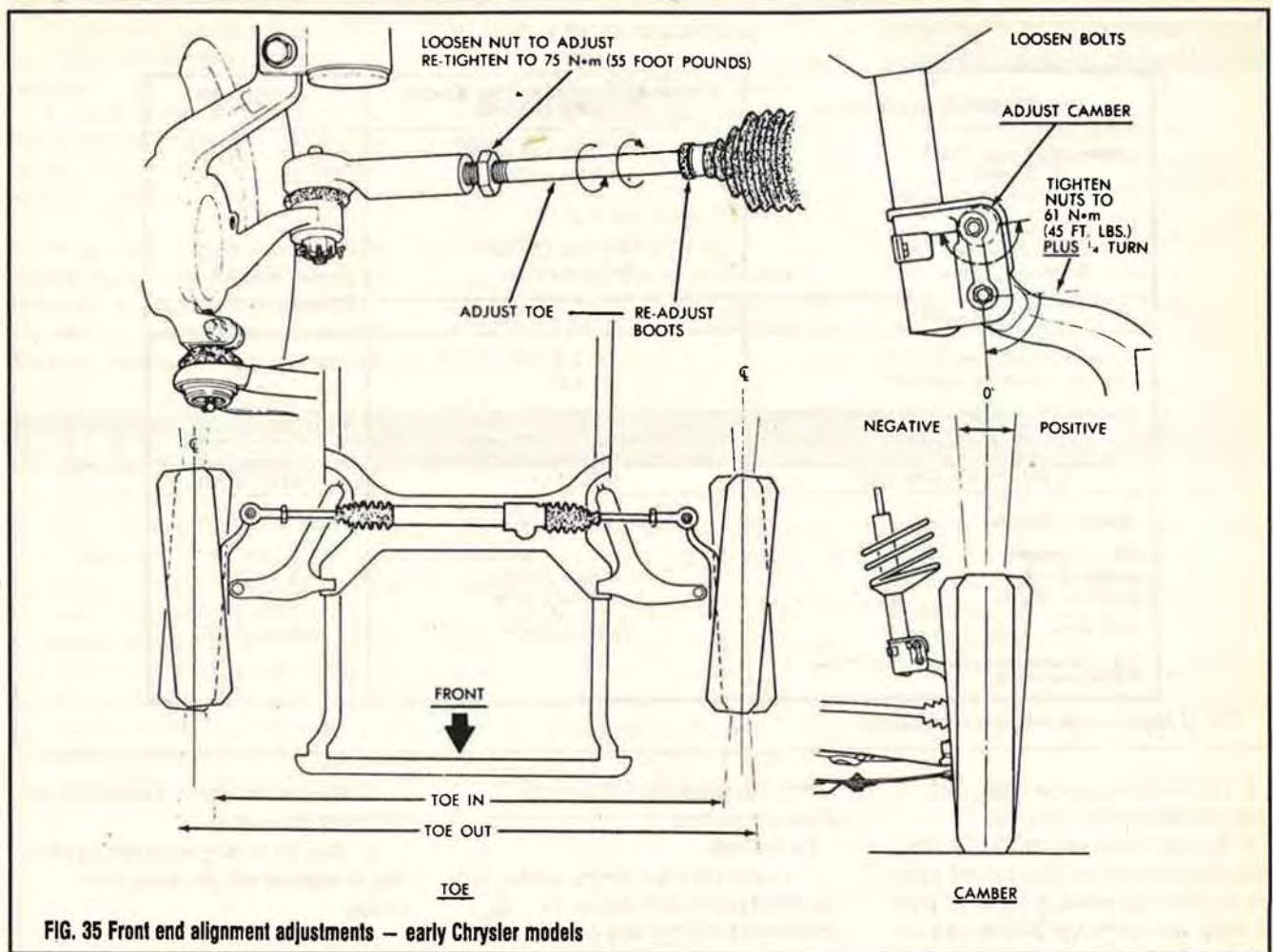
23. Install the tie rod end and ball joint.

24. Install the wheel and lower the vehicle to the floor. Tighten the axle nut with the brakes applied. Tighten the nut to a maximum torque of 188 ft. lbs. (260 Nm) maximum. Install the cotter pin and bend it securely.

Dodge Monaco

The front wheel hub can be removed without removing the bearing from the steering knuckle. However, the wheel hub must be removed before the bearing can be removed from the knuckle. The wheel hub and bearing are independently replaceable.

When servicing the steering knuckle, the wheel hub and bearing can and should be removed as a unit. Although the wheel bearing components can be disassembled for inspection, the bearing must be replaced as a unit only. If any of the bearing components are worn, damaged or defective, the complete bearing must be replaced.



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SPECIFICATIONS 1989-91

FRONT WHEEL ALIGNMENT	ACCEPTABLE ALIGNMENT RANGE AT CURB HEIGHT	PREFERRED SETTING
Camber - All (Except AY with Air Suspension) AY with Air Suspension	-0.2° to +0.8° (1/4° to 3/4°) -0.3 to +0.5	+0.3° (+5/16")
TOE - All models Specified in inches Specified in degrees	7/32" in to 1/8" out 0.4° in to 0.2° out	1/16" in ± 1/16" 0.1° in ± 0.1°
CASTER*	REFERENCE ANGLE	
AY (with Air Suspension) All (Except AY with Air Suspension) *Side-to-Side Caster should not exceed 1.5 degrees.	2.9° 2.8°	
REAR WHEEL ALIGNMENT	ACCEPTABLE ALIGNMENT RANGE AT CURB HEIGHT	PREFERRED SETTING
CAMBER - All models TOE* - All models Specified in inches Specified in degrees Thrust Angle *TOE OUT when backed on alignment rack is TOE IN when driving.	-1.3° to -0.2° (-1/4° to +1/4°) 5/16" out to 5/16" in 0.60° out to 0.60° in -0.40° to +0.40°	-0.5 ± 0.5 (1/2") 0° ± 1/8" 0 ± 0.25 -0.40° to +0.40°

FIG. 37 Alignment specifications at curb height

1. Disconnect the negative battery cable. Raise and safely support the vehicle.
2. Remove the halfshaft end nut. Push the halfshaft inward and disengage the shaft splines from the wheel hub splines. If it does not push out easily, use a screw type puller to press the shaft from the hub.
3. Install a puller plate that can be used with a slide hammer and pull the rotor/hub assembly from the steering knuckle. Use care to keep dirt and debris from the bearing as the hub assembly is removed.
4. If necessary, the rotor and hub can be separated by removing the rotor safety nuts. If these safety nuts are damaged by removal, replace with new ones.
5. Remove the Torx® bolts that attach the wheel bearing to the knuckle. Remove the bearing.
6. If the wheel hub and/or bearing are being replaced without the other, remove the outer race

from the hub with a shop press and the appropriate adapters.

To Install:

7. If a new wheel hub is being installed, force the original bearing outer race on the replacement hub with a shop press and a suitable length of steel pipe that has the correct inside diameter to fit around the hub. If a new bearing is being installed, do the same with the new race.
8. If the original wheel bearing is being installed, pack the bearing and lubricate both races (inner and outer) with an extreme pressure type wheel bearing lubricant.
9. If a replacement wheel bearing is being installed, prepare the bearing as follows:
 - a. Remove and discard the plastic protective covers.
 - b. Locate, remove and discard the plastic protective sleeve from the replacement bearing bore.

- c. Remove the inner and outer bearing races from the bearing.
- d. Pack the bearing with lubricant which may be supplied with the replacement bearing.
- e. Insert the bearing inner race in the bearing and force the bearing outer race on the wheel hub with a press and suitable length of steel pipe.
10. Install the bearing to the knuckle and install the bolts. Torque the bolts to 11 ft. lbs. (15 Nm).
11. Lubricate the bearing mating surface on the wheel hub bearing outer race with an extreme pressure type wheel bearing lubricant.
12. Position the wheel hub on the halfshaft and insert the hub into the wheel bearing. Tap the wheel hub with a brass hammer until 3 or 4 of the halfshaft threads extend beyond the hub.

Wheel Alignment Specifications

(Caster is not adjustable)

Year	Front Camber		Rear Camber		Toe-Out (in.)	
	Range (deg.)	Preferred	Range (deg.)	Preferred	Front	Rear
'81-'85	1/4N to 3/4P	5/16P	1N-0	1/2N	7/32 out to 1/8 in	3/16 out to 3/16 in
'86-'88	1/4N to 3/4P	5/16P	1 1/4N-1/4P	1/2N	7/32 in to 1/8 out	1/16 in

13. If removed, install the brake rotor on the wheel hub, using new safety nuts if required.

14. Install the halfshaft-to-wheel hub nut. Use an appropriate holding tool to keep the hub from rotating while tightening the nut to 181 ft. lbs. (245 Nm) torque.

➔ **Do not use an impact wrench to tighten the driveshaft-to-wheel hub nut. Use a torque wrench only to tighten the nut. It is also essential that the halfshaft-to-wheel hub nut**

be tighten to the specified torque. In addition to retaining the wheel hub on the halfshaft, the specified torque also establishes the wheel bearing preload.

15. Install the brake caliper, tire and wheel assembly and lower the vehicle.

16. Connect the negative battery cable. **DEPRESS THE BRAKE PEDAL SEVERAL TIMES TO SEAT THE BRAKE PADS BEFORE MOVING THE VEHICLE.**

Front End Alignment

♦ SEE FIGS. 35-38

Front wheel alignment is the proper adjustment of all the inter-related suspension angles affecting the running and steering of the front wheels. There are six basic factors which are the foundation of front wheel alignment. These are: height, caster, camber, toe-in, steering axis inclination, and toe-out/toe-in on turns. Of these basic factors, only camber and toe-out/toe-in are mechanically adjustable.

REAR SUSPENSION

♦ SEE FIGS. 39-40

All Chrysler front wheel drive vehicles use a flexible beam axle with trailing links and coil (or air) springs. The blade type trailing arms, attached to body mounted pivots, provide fore and aft location of the suspension while a Track Bar provides lateral location.

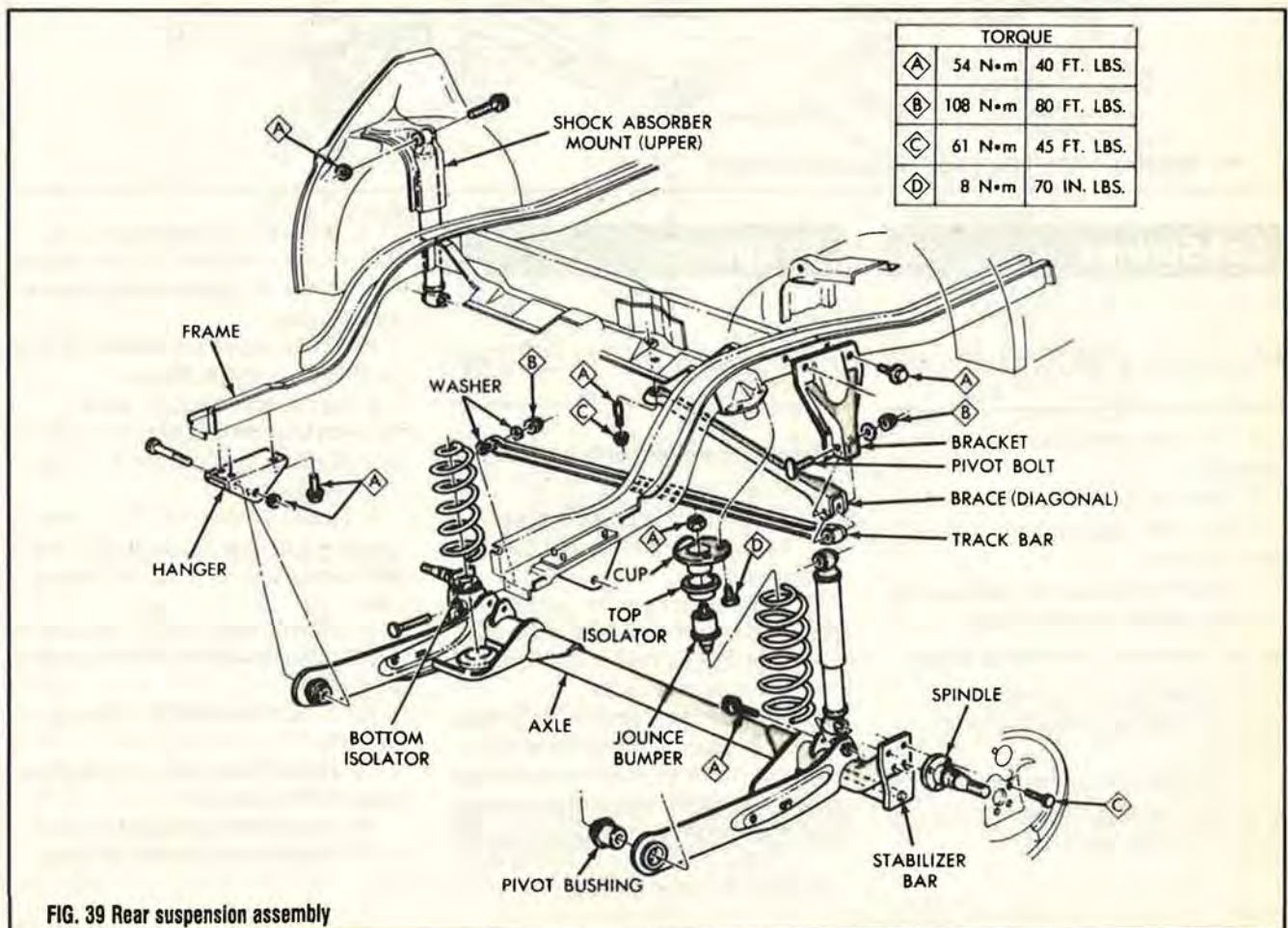
Located in line with the spindles, an open channel section beam axle assures that the rear tires remain parallel to each other and essentially

perpendicular to the road surface. While being able to twist as one wheel moves vertically with respect to the other.

Roll resistance is provided partly by the axle's resistance to twist. But primarily by a torque tube or rod depending (on the rear suspension) running through the channel and attached rigidly to its end plates by welding. Because the torque tube or rod is an integral part of the axle assembly, it cannot be individually replaced.

One shock absorber on each side is mounted outside the coil spring and attached to the body and the beam axle. Wheel spindles are bolted to the outer ends of the axle and can be individually replaced if necessary.

Rear wheel alignment changes require the use of shims between the spindle and the axle end plates.



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TORQUE		
40 FT. LBS.	54 N-m	
50 FT. LBS.	68 N-m	
55 FT. LBS.	75 N-m	
70 IN. LBS.	8 N-m	
70 FT. LBS.	95 N-m	
45 FT. LBS.	61 N-m	

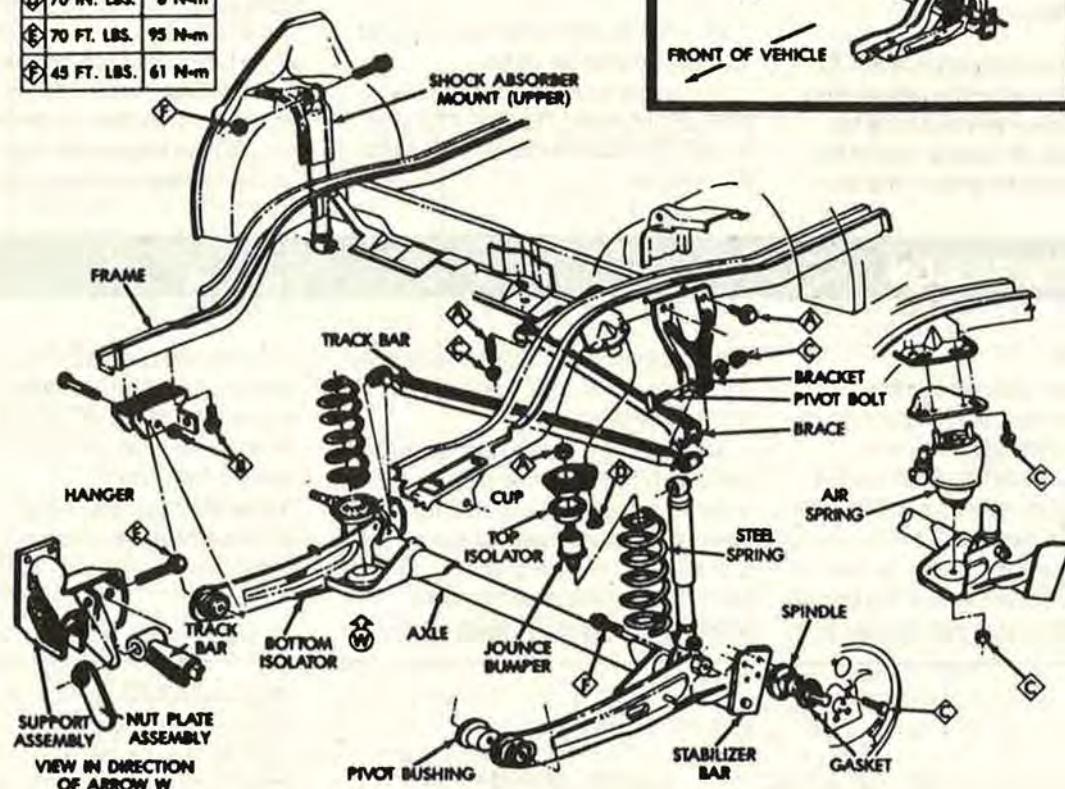


FIG. 40 Trailing arm rear suspension — late model Chrysler cars

Coil Springs

REMOVAL & INSTALLATION

1. Jack up the vehicle and support it with jackstands.
2. Support the rear axle with a floor jack.
3. Remove the bottom bolt from both rear shock absorbers.
4. Lower the axle assembly until the spring and support isolator can be removed.

Do not stretch the brake hoses.

5. Remove the spring and isolator. Note position of spring and isolator for correct installation.
6. Installation is the reverse of removal. With suspension supporting vehicle, torque the lower shock bolts to 40-45 ft. lb.

Air Springs

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles

SEE FIGS. 41-44

1. Disconnect the negative battery cable.
2. Raise the vehicle and support safely. Remove the wheel.
3. To disconnect the air line, pull back on the plastic ring and pull the air line from the fitting.
4. Disconnect the electrical leads from the solenoid and the height sensor.
5. The solenoid has a molded square tang that fits into stepped notches in the air spring housing to provide for exhaust and a retaining positions. To vent the air spring:
 - a. Release the retaining clip.
 - b. Rotate the solenoid to the first step in the housing and allow the air pressure to vent.

- c. Rotate the solenoid farther to the release slot and remove it from the housing.

6. Release the upper air spring alignment/retaining clips.

7. Remove the nut that attaches the lower portion of the spring to the axle.

8. Pry the assembly down, pull the alignment studs through the retaining clips and remove the assembly from the vehicle.

To Install:

9. Position the lower stud into its seat in the axle and the upper alignment pins through the frame rail adaptor. Install the retaining clips.

10. Loosely install the lower mounting nut.
11. Install the solenoid to the top step in the housing.

12. Connect the electrical lead to the solenoid.

13. Connect the air line by pushing it into place; it will lock in place.

14. Connect the negative battery cable.

15. To partially recharge the air spring:

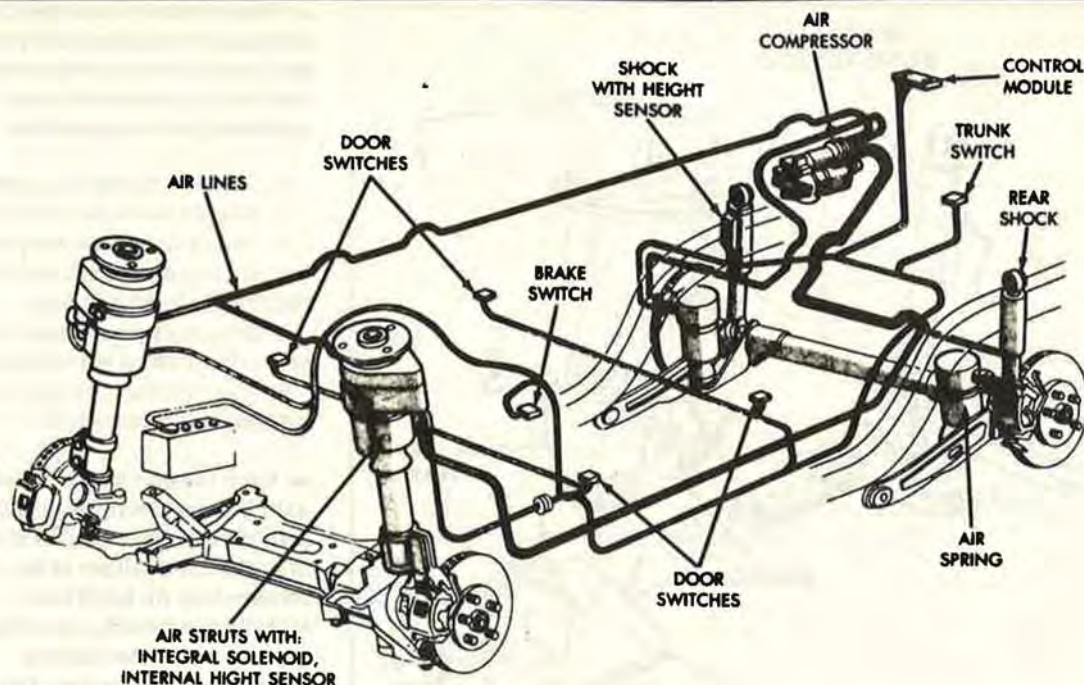


FIG. 41 Automatic air suspension

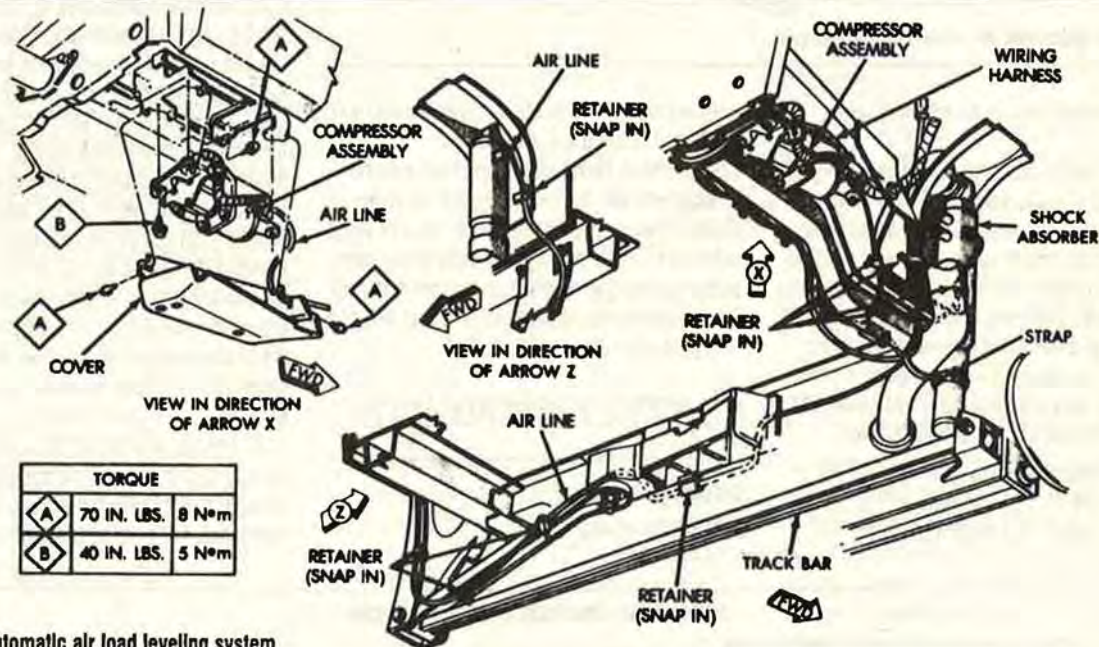


FIG. 42 Automatic air load leveling system

a. To activate the right rear spring solenoid, ground Pin 10 (light green with orange tracer) to Pin 19 (gray with black tracer) of the controller connector.

b. Run the compressor for 60 seconds by jumping from pin No. 9 (black wire with red tracer) to pin No. 19 (gray wire with black tracer) of the controller connector.

c. The air suspension controller is located behind the right side trunk trim panel.

16. When the air spring is properly inflated, torque the lower mounting nut to 50 ft. lbs. (68 Nm).

17. Install the wheel and tire.

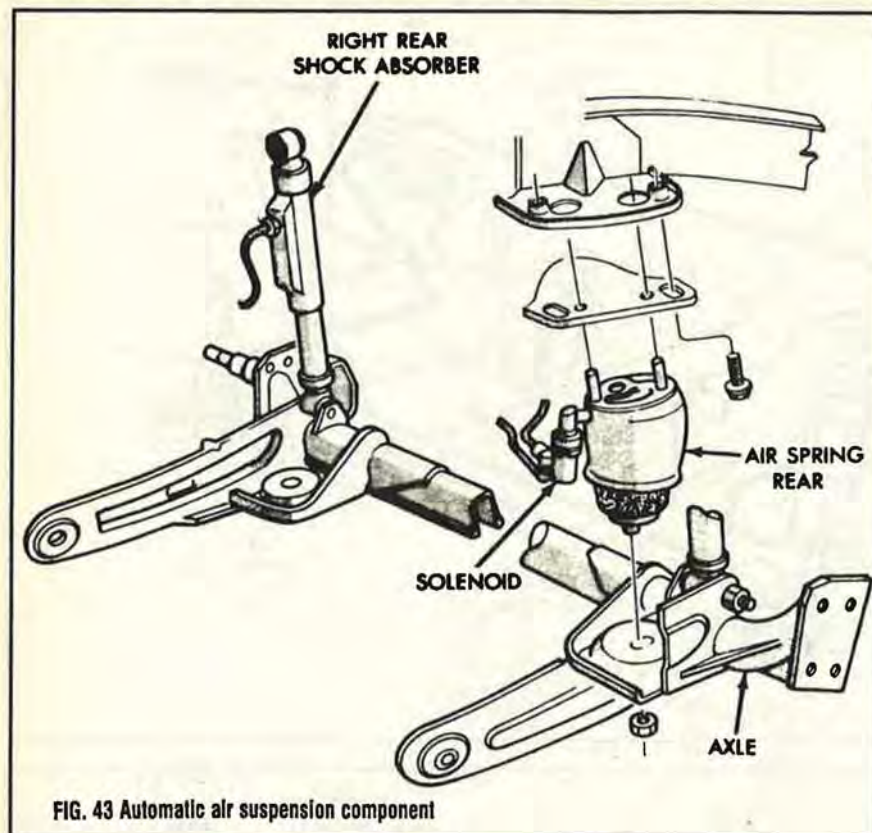
18. Check the system for proper operation.

Torsion Bars

Since torque is developed at different angles, the rear torsion bars at each side of the vehicle

twist in different directions. The bars are machined differently and must be installed at the correct location in the rear suspension. The left side bar is identified by the letter **G** stamped twice on its outer end. The right side bar is identified by the letter **D** stamped twice on its outer end. In addition, the outer end of each torsion bar has 31 splines and the inner end has 30 splines. The torsion bars have a dot stamped onto their outer ends to assist in end identification and installation reference. This end

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with the dot must always be installed facing outward.

The front and rear torsion bars serve different purposes on Monaco vehicles. The front torsion bar is the actual suspension component, while the rear is used mostly as an anti-sway bar. The front bar is 26.25 in. (667mm) in length. The rear bar is 23.26 in. (591mm) in length. Also, the rear torsion bar in a vehicle is dependent upon the suspension package originally installed on the vehicle. The bars are color-coded to identify its diameter. The color codes are as follows:

- White/blue — 0.96 in. (24mm)
- Red/white — 1 in. (25mm)
- Brown/green — 1.04 in. (26mm)

Never raise a Dodge Monaco vehicle with a lift positioned under the V-shaped rear crossmember. Never let the hoist arms come into contact with the lower edge of the rocker panel. If necessary, place a small block of wood between the hoist pad and the body lifting points so the vehicle does not rest on the rocker panels. The manufacturer does not recommend use of a twin post under-the-vehicle hoist.

REMOVAL & INSTALLATION

Dodge Monaco

♦ SEE FIGS. 45-50

➔ This service repair requires above average mechanical ability or skill and special tools. Extreme care should be exercised when performing this operation.

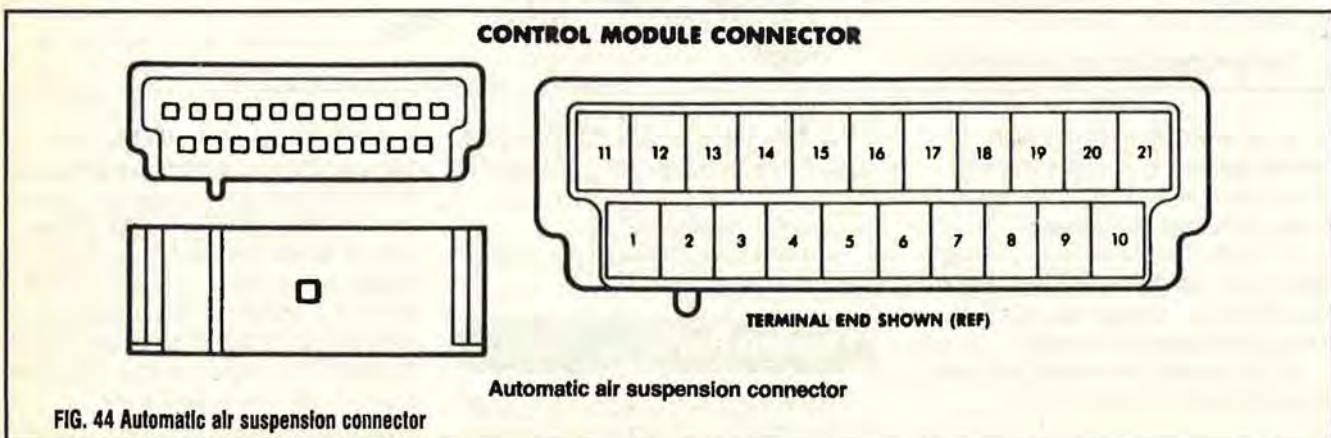
1. Disconnect the negative battery cable.
2. Raise the vehicle and support safely.
3. Remove the both rear wheels and shocks.
4. Pry the protective end caps and remove them from the front torsion bars.
5. Unthread the protective end caps and remove them from the rear torsion bars.
6. Pry the retaining clips away from the ends of the torsion bars and remove.

➔ Each torsion bar bracket has an existing dot stamped into it that provides a reference for the initial installation position of the front torsion bar. An additional installation position mark must be punched into the trailing suspension arm before the bar is removed from the crossmember.

7. Place a straightedge on the centerline of the 2 torsion bar installation holes and punch a dot into the trailing suspension arm adjacent to the rear torsion bar spline groove.

8. Note and record the relative positions of the installation reference dots on the ends of the torsion bars in respect to the dots on the torsion bar support bracket and the trailing suspension arm. In other words, count the number of splines between the dot on the bar and the dot made on the bracket or trailing arm. These dots will ensure that the proper "initial twist" is applied to the torsion bar upon installation, according to the suspension package originally installed in the vehicle.

9. Loosen and extract the front torsion bars using a slide hammer. Pull the bars out far enough to disengage the splines from the connecting link and the torsion support brackets.



10. Loosen and extract the rear torsion bars using a slide hammer. Pull the bars out far enough to disengage the splines from the connecting link and the trailing suspension arms.

11. The crossmember must be lowered before the torsion bars can be removed from it. Using the proper equipment, support the weight of the rear crossmember. Do not apply lifting force to the crossmember.

12. Loosen both torsion support bracket front bolts about 4 turns. Do not remove these bolts.

13. Loosen both torsion support bracket rear bolts about 10 turns. Do not remove these bolts.

14. Slowly allow the torsion support bracket and crossmember to lower about 1 in. (25mm).

15. Remove the torsion bars and connecting link from the crossmember.

To Install:

16. Make sure the correct torsion bar will be installed to the correct side — **G** is stamped on left side bars; **D** is stamped on right side bars.

17. Insert the torsion bars into the rear crossmember. At this time, do not insert it so far as to engage the torsion bar splines with the splines in the support brackets or suspension arms.

18. Raise the crossmember and torsion support bracket and tighten the attaching bolts to 68 ft. lbs. (92 Nm).

➔ **Before the torsion bar splines are meshed with the connecting link splines, the torsion support bracket splines and the trailing suspension arm splines must be positioned at the correct location in relation to the vehicle chassis.**

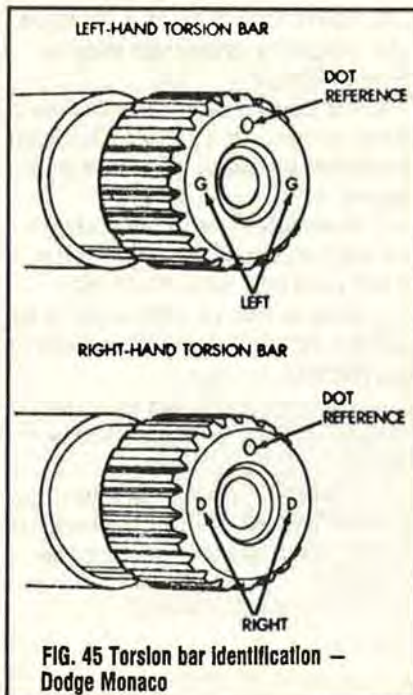


FIG. 45 Torsion bar identification — Dodge Monaco

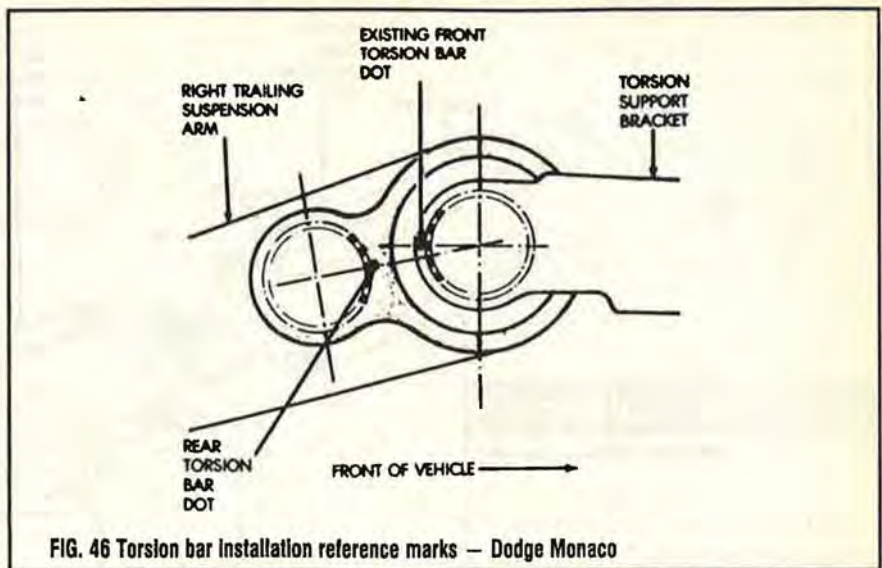


FIG. 46 Torsion bar installation reference marks — Dodge Monaco

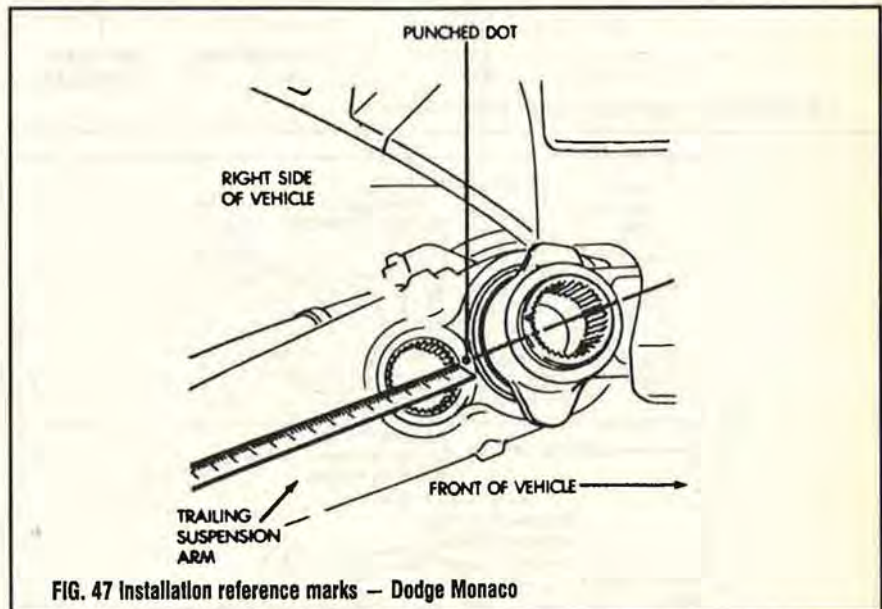


FIG. 47 Installation reference marks — Dodge Monaco

19. Position the trailing suspension arms in the correct location on each side of the vehicle using 2 sets of special tool 6049 (threaded rod). Two spacers from tool set 7466 must also be used. Adjust each positioning tool so the distance between the center of the rod eyelet and the center of the hub is on the adjusting bracket is $17\frac{15}{16}$ in. (456mm).

20. After the distance has been properly set, install the positioning tools where the rear shocks are installed.

21. Insert the upper attaching bolt through the eyelet and loosely tighten it. Insert the spacer into the lower shock attaching bolt hole and insert the adjustable bracket hub into the spacer.

22. Liberally apply all-purpose lubricant to all torsion bar splines.

➔ **If the bars are not being replaced, they must be installed in their exact original locations. The dot reference positions must be the same on both sides of the vehicle to prevent added stress from being applied to the bars.**

23. Refer to the previously made torsion bar dot reference positions and correctly mesh the splines of the torsion bars with the trailing suspension arm splines.

24. Mesh the connecting link splines with the splines of the previously positioned rear torsion bar so the connecting link is correctly centered within the V-shaped channel in the rear crossmember. Use large pliers to assist in this operation if necessary.

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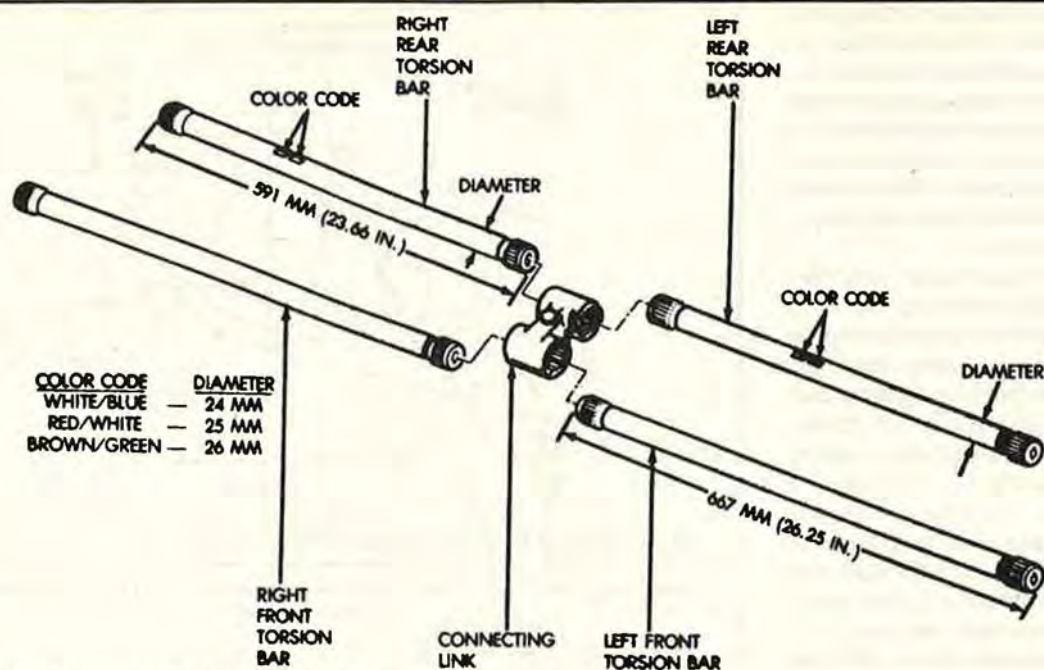


FIG. 48 Front and rear torsion bars — Dodge Monaco

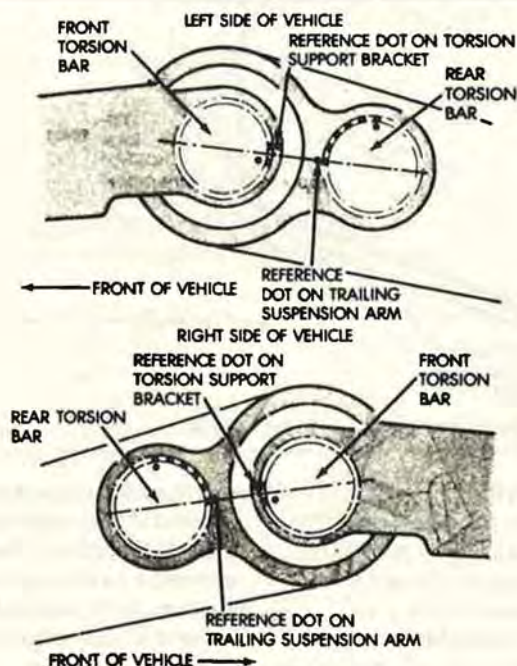


FIG. 49 Torsion bar installation positions — Dodge Monaco

25. Mesh the splines of the opposite rear torsion bar with the trailing suspension arm splines and the connecting link splines.

26. Mesh the splines of one of the front torsion bars with the torsion support bracket splines and the connecting link splines.

27. Mesh the splines of the opposite front torsion bar with the torsion support bracket splines and the connecting link splines. Recheck all bars for correct re-installation.

Do not directly contact the splined ends of the bars with a hammer because this could damage the splines.

28. After all 4 bars have been installed, the ends must be centered in the torsion support brackets and the trailing suspension arms. Tap on the ends of the front torsion bars using a hammer and brass drift to position. Adjust so the outer end of each bar is recessed $\frac{13}{16}$ in. $\pm \frac{1}{16}$

in. ($20.6\text{mm} \pm 1.6\text{mm}$) from the outer edge of the torsion support bracket boss.

29. Tap on the ends of the rear torsion bars using a hammer and brass drift to position. Adjust so the outer end of each bar is recessed $\frac{1}{4}$ in. $\pm \frac{1}{16}$ in. ($6.3\text{mm} \pm 1.6\text{mm}$) from the outer edge of the trailing suspension arm.

30. Position and press the retaining clips inward against the ends of the torsion bars.

31. Install the protective caps.

32. Remove the position tools from the vehicle and install the shock absorbers.

33. Install the wheels and lower the vehicle.

34. Measure the vehicle height using the following procedure:

a. The vehicle should be unloaded, on a flat level surface, with a full tank of fuel, and with the tires all adjusted to the same proper pressure.

b. Measure from the centerline of the front wheel hubs to the ground (H1) and from the rear wheel hubs to the ground (H4).

c. Measure from the engine cradle at the wheel hub vertical centerline to the ground on each side (H2).

d. Measure from the front torsion bar horizontal center line to the ground on each side (H3).

e. Subtract H2 from H1. This value should be 3.36–3.98 in. (85–101mm). If this height is not within specification, replace worn front end parts.

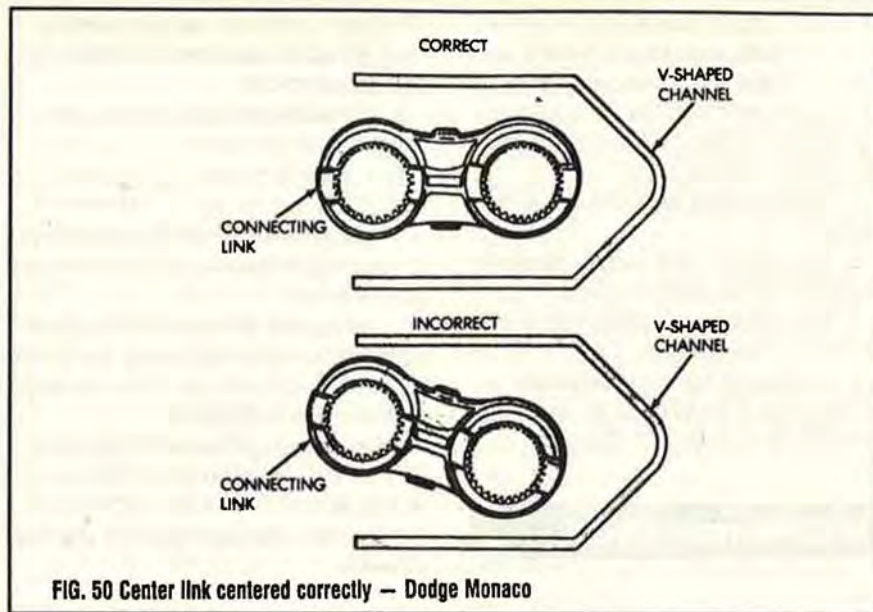


FIG. 50 Center link centered correctly — Dodge Monaco

f. Subtract H3 from H4. This value should be 1.25–1.87 in. (31.5–47.5mm).

35. If the rear vehicle height is not within specification, reposition the front torsion bar(s). This is accomplished by adjusting the length of special tool 6049 (threaded rod) when re-installing the bar (Step 19 in the procedure). Do not attempt to adjust vehicle height with the rear torsion bars.

36. Connect the negative battery cable and road test the vehicle.

Shock Absorbers

TESTING

Shock absorbers require replacement if the car fails to recover quickly after hitting a large bump or if it sways excessively following a directional change.

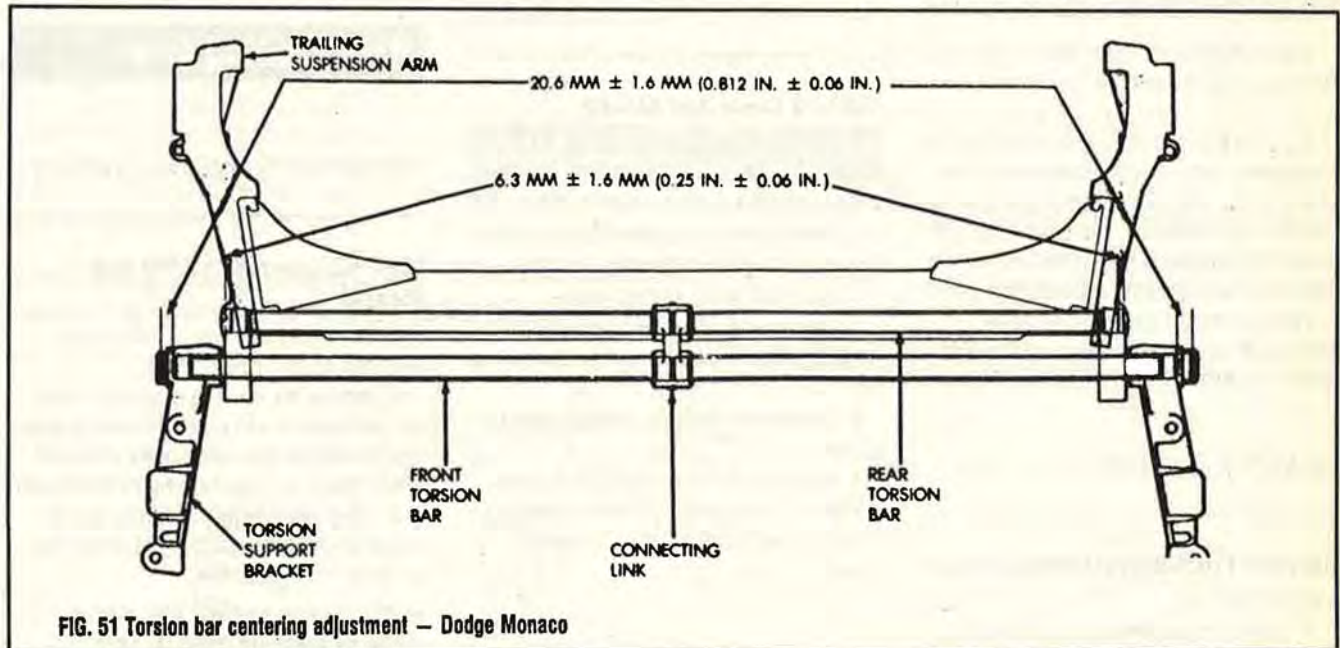


FIG. 51 Torsion bar centering adjustment — Dodge Monaco

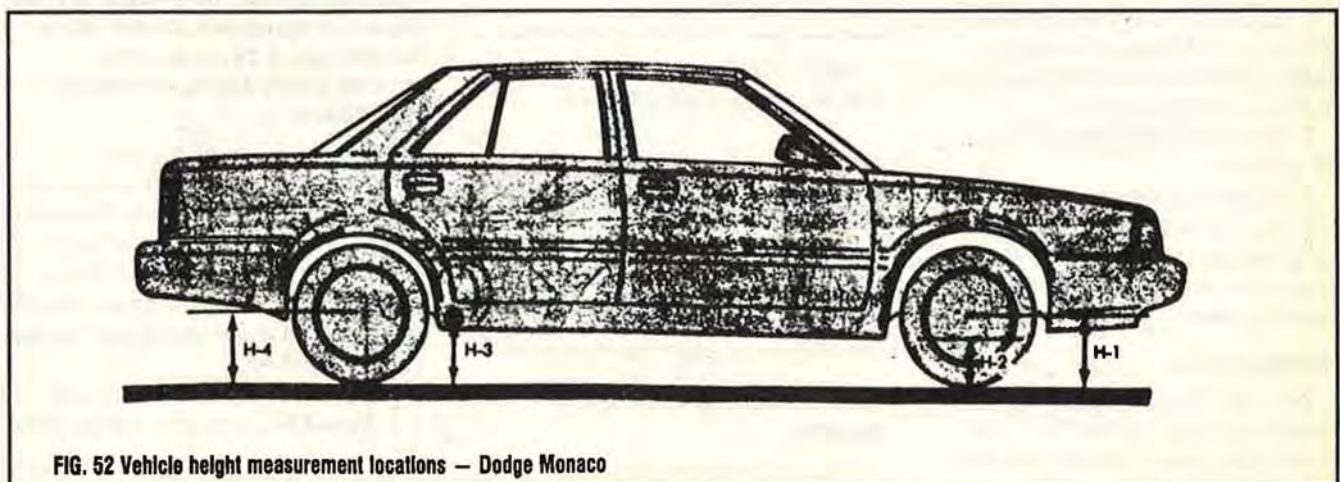


FIG. 52 Vehicle height measurement locations — Dodge Monaco

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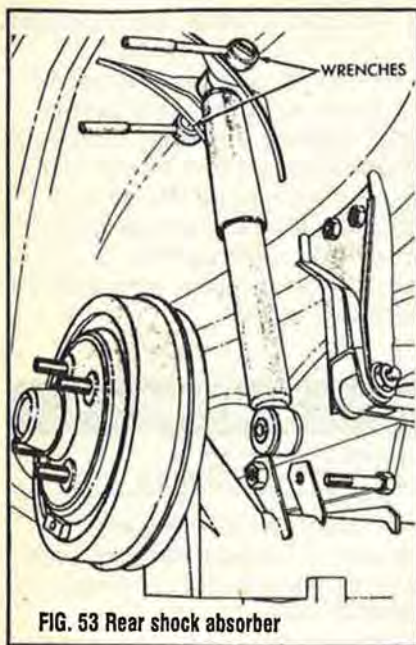


FIG. 53 Rear shock absorber

Always check shock absorbers for signs of oil fluid leaks, if shock absorber is leaking replace it.

A good way to test the shock absorbers is to intermittently apply downward pressure to the side of the car until it is moving up and down for almost its full suspension travel. Release it and observe its recovery. If the car bounces once or twice after having been released and then comes to a rest, the shocks are alright. If the car continued to bounce, the shocks will probably require replacement.

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles

♦ SEE FIG. 53

1. Jack up the vehicle and support it with jackstands.
2. Support the rear axle with a floor jack. Disconnect the height sensor and air line, if equipped. The air line is released by pulling back on the plastic retaining ring.
3. Remove the top and bottom shock absorber bolts.
4. Remove the shock absorbers.
5. Installation is the reverse of removal. Torque the upper and lower bolts to 40 ft. lb. Torque lower retaining bolt with suspension supporting vehicle.

Dodge Monaco

Never raise a Dodge Monaco vehicle with a lift positioned under the V-shaped rear crossmember. Never let the hoist arms come

into contact with the lower edge of the rocker panel. If necessary, place a small block of wood between the hoist pad and the body lifting points so the vehicle does not rest on the rocker panels. The manufacturer does not recommend use of a twin post under-the-vehicle hoist.

1. Raise and safely support the rear of the vehicle.
2. Lift upward on the trailing arm to relieve the weight from the shock absorber.
3. Remove the top and bottom bolts and remove the shock absorber.
4. Installation is the reverse of removal. Torque the top bolt to 60 ft. lbs. (81 Nm) and the bottom bolt to 85 ft. lbs. (115 Nm).

MacPherson Struts

REMOVAL & INSTALLATION

1990-92 Laser And Stealth

1. Disconnect the negative battery cable. Remove the trim panel inside the trunk or hatch area for access to the top mounting nuts.
2. Remove the top cap and mounting nuts. Disconnect the ECS connector if equipped.
3. Raise and safely support vehicle.
4. Remove the brake tube bracket bolt if necessary, then remove the strut lower mounting bolt.
5. Remove the rear strut assembly from the vehicle.
6. Installation is the reverse of the removal procedure. Do not tighten the lower mounting nut until the full weight of the vehicle is on the ground.

OVERHAUL

Refer to "Front Suspension" section as a guide for overhaul service procedures.

Rear Control Arms

REMOVAL & INSTALLATION

1990-92 Laser With AWD And Stealth

1. Disconnect the negative battery cable. On

FWD Stealth, remove the rear strut assembly. Raise and safely support vehicle. Remove the brake line clamp bolt.

2. Remove the ball joint(s) from the rear trailing arm/steering knuckle.
3. If removing the lower arm, disconnect the sway bar link from the arm.
4. Matchmark and remove the inboard lower arm pivot bolt, if necessary, and remove the arm from the vehicle.
5. Installation is the reverse of the removal procedure. Replace all self-locking nuts. Do not torque the inboard pivot nuts until the full weight of the vehicle is on the ground.
6. On Laser, torque the lower inboard pivot nut to 65-80 ft. lbs. (90-110 Nm). All other nuts are torqued to 101-116 ft. lbs. (140-160 Nm).
7. Perform a rear wheel alignment. Road test the vehicle.

Rear Trailing Arm

REMOVAL & INSTALLATION

1990-92 Laser With AWD And Stealth

1. Disconnect the negative battery cable. Raise and safely support vehicle.
2. Remove the rear caliper from the brake disc and suspend with a wire. Remove the brake disc. Disconnect the parking brake cable and remove the mounting bolts along the trailing arm.
3. Remove the bolt(s) holding the speed sensor bracket to the knuckle and remove the assembly from the vehicle.

➡ **The speed sensor has a pole piece projecting from it. This exposed tip must be protected from impact or scratches. Do not allow the pole piece to contact the toothed wheel during removal or installation.**

4. On AWD, remove the rear axle to companion flange bolts and nuts and separate the axle from the companion flange. Remove the self-locking nut and remove the axle hub and companion flange. Remove the dust shield.
5. On FWD Stealth, remove the axle hub unit, parking brake shoes and backing plate. Remove the sway bar link bolt.
6. Remove the lower strut mounting bolt.
7. Remove the control arms from the trailing arm.

8. Remove the trailing arm front mounting nuts and bolts and remove the trailing arm from the vehicle. On AWD, remove the connecting rod at the front of the arm using tool MB991254 or equivalent.

To Install:

9. Assemble the trailing arm and connecting rod. Install the trailing arm to the vehicle and install the front mounting nuts and bolts. Complete the final tightening of these when the full weight of the vehicle is on the ground.

10. Install the control arms to the trailing arm, using new self-locking nuts.

11. Install the lower strut bolt.

12. On FWD Stealth, install the sway bar link. Install the parking brake parts and axle hub unit.

13. On AWD, install the dust shield, axle hub and companion flange with a new self-locking nut. Connect the rear axle to the companion flange.

14. Temporarily install the speed sensor to the knuckle; tighten the bolts only finger-tight.

15. Route the cable correctly and loosely install the clips and retainers. All clips must be in their original position and the sensor cable must not be twisted. Improper installation may cause cable damage and system failure.

➔ **The wiring in the harness is easily damaged by twisting and flexing.**

Use the white stripe on the outer insulation to keep the sensor harness properly placed.

16. Use a brass or other non-magnetic feeler gauge to check the air gap between the tip of the pole piece and the toothed wheel. Correct gap is 0.012–0.035 in. (0.3–0.9mm). Tighten the 2 sensor bracket bolts to 10 ft. lbs. (14 Nm) with the sensor located so the gap is the same at several points on the toothed wheel. If the gap is incorrect, it is likely that the toothed wheel is worn or improperly installed.

17. Install the brake disc, caliper and connect the parking brake cable, if not already done. Install the mounting clamps bolts.

18. Double check everything for correct routing and installation. Lower the vehicle so its full weight is on the floor.

19. On Laser and FWD Stealth, torque the front mount nuts to 101–116 ft. lbs. (140–160 Nm). On AWD Stealth, tighten to 145–174 ft. lbs. (200–240 Nm).

20. Perform a rear wheel alignment. Road test the vehicle.

1. Raise the vehicle and support it securely by the body. Then, raise the rear axle to approximately its normal curb height and support it **securely** with an axle stand under either side.

2. If the car has a load-leveling system, disconnect the link from the sensor to the track bar.

3. Remove the track bar-to-axle pivot bolt and the track bar-to-frame pivot bolt. Then, remove the track bar.

4. Installation is the reverse of the service removal procedures. Torque the support bracket retaining bolts 40 ft. lbs., diagonal brace and track bar to frame retaining bolt to 55 ft. lbs. and track bar to axle retaining bolt to 70 ft. lbs.

REAR AXLE ASSEMBLY (SUSPENSION TYPE)

Track Bar

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive vehicles

♦ SEE FIG. 54

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles

1. Raise the vehicle and support safely.
2. Disconnect the parking brake cable at the connection.

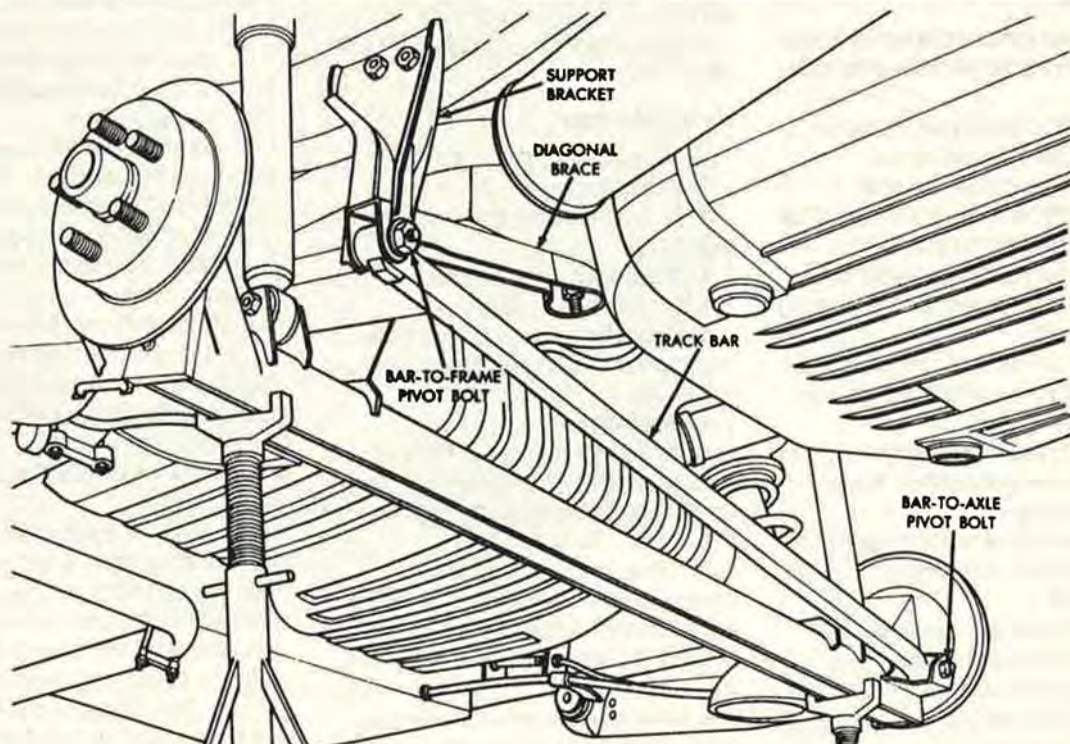


FIG. 54 Track bar brace bracket — Chrysler cars

8-28 SUSPENSION AND STEERING

3. Disconnect the brake tubes from the hoses and unclip the brake tubes from the axle housing. Disconnect the rear wheel speed sensors, if equipped with anti-lock brakes.

4. Disconnect the link from the sensor to the track bar used for automatic load leveling system, if equipped. Remove the rear air spring, if equipped.

5. Using the proper equipment, support the weight of the axle.

6. Unbolt the shock absorbers and remove the track bar to axle pivot bolt. Suspend the track bar with a wire.

7. Lower the axle and remove the coil springs.

8. Remove the axle from the vehicle.

9. The installation is the reverse of the removal procedure. Refer to the illustrations in this section.

1990-92 Laser

1. Raise the vehicle and support safely.

2. Remove the tire and wheel assembly.

3. If equipped with ABS, remove the bolts holding the speed sensor bracket to the trailing arm and remove the sensor assembly from the vehicle.

➔ **The speed sensor has a pole piece projecting from it. This exposed tip must be protected from impact or scratches. Do not allow the pole piece to contact the toothed wheel during removal or installation.**

4. If equipped with rear disc brakes, remove the caliper from the disc and remove the brake disc.

5. Remove the dust cap and bearing nut. Do not use an air gun to remove the nut.

6. Remove the outer wheel bearing.

7. Remove the drum and/or axle hub with the inner wheel bearing and the grease seal.

8. Remove the parking brake cable, brake hose, tube bracket and brake shoes with backing plate from the axle.

9. Remove the lateral rod mounting bolt and nut and secure the lateral rod to the axle beam with a piece of wire.

10. Using the proper equipment, slightly raise the torsion axle and arm assembly. Remove lower strut mounting bolt.

11. Remove the front trailing arm mount bolts and remove the rear axle assembly.

To Install:

12. Install the rear axle assembly to the vehicle and install the strut mounting bolts. Install the front mount bolts and lateral rod bolts. Do not tighten these until the full weight of the vehicle is on the ground.

13. Install the backing plate, brake shoes, cable and hose.

14. Install the tongue washer and a new self-locking nut. Torque the nut to 144-188 ft. lbs. (200-260 Nm), align with the indentation in the spindle, and crimp.

15. Install the grease cap and all related brake parts.

16. Temporarily install the speed sensor to the knuckle; tighten the bolts only finger-tight.

17. Route the cable correctly and loosely install the clips and retainers. All clips must be in their original position and the sensor cable must not be twisted. Improper installation may cause cable damage and system failure.

➔ **The wiring in the harness is easily damaged by twisting and flexing. Use the white stripe on the outer insulation to keep the sensor harness properly placed.**

18. Use a brass or other non-magnetic feeler gauge to check the air gap between the tip of the pole piece and the toothed wheel. Correct gap is 0.012-0.035 in. (0.3-0.9mm). Tighten the 2 sensor bracket bolts to 10 ft. lbs. (14 Nm) with the sensor located so the gap is the same at several points on the toothed wheel. If the gap is incorrect, it is likely that the toothed wheel is worn or improperly installed.

19. Install the wheel.

20. Lower the vehicle so the full weight of the vehicle is on the floor.

21. On Laser vehicles, torque the trailing arm bolt to 72-87 ft. lbs. (100-120 Nm).

22. Torque the lateral rod nut to 58-72 ft. lbs. (80-100 Nm).

Dodge Monaco

1. Raise and safely support the vehicle.

2. Remove the rear wheels.

3. Remove the parking brake cables from the body support.

4. Disconnect and plug the brake hoses at the axle. Remove the shock absorbers.

5. Support the axle assembly and remove the support bracket bolts. Lower the axle assembly and remove.

To Install:

6. Installation is the reverse of removal. Position the axle under the vehicle and raise it into place. Install and tighten the support bracket bolts, tighten to 68 ft. lbs. (92 Nm).

7. Connect the brake hoses at the axle. Connect the parking brake cables. Install the shock absorbers, tighten the upper shock bolt to 60 ft. lbs. (81 Nm) and the lower bolt to 85 ft. lbs. (115 Nm).

8. Install the rear wheels, bleed the brake system and adjust the parking brake cable.

Rear Wheel Bearings

REPLACEMENT

♦ SEE FIGS. 55-57

Chrysler Front Wheel Drive Vehicles - Drum Brakes

*** CAUTION

Brake linings contain asbestos. Avoid using compressed air or any other means to remove dust from the drum or brake shoes or areas nearby. Failure to heed this warning could cause inhalation of asbestos fibers, a known carcinogen!

1. Raise the car and support it securely. Remove the wheel and tire.

2. Remove the grease cap, cotter pin, nut lock and retaining nut.

3. Slide the washer off the spindle. Refer to Section 9 and adjust the rear brakes away from the drum if necessary. Then, pull the brake drum and outer bearing off the spindle. Remove the bearing from the drum.

4. Slide the inner bearing cone off the spindle. Slide the seal off the spindle.

5. Inspect the bearing rollers. If they turn roughly or the surfaces are cracked, rough or brinelled, replace them.

6. Inspect the inner diameter of the brake drum where the bearing rolls. If the surface is cracked, rough or brinelled, replace the drum.

7. Inspect the cone-shaped bearing surface of the spindle. If it is cracked, rough or brinelled, replace the spindle.

8. If the spindle must be replaced:

a. Disconnect the brake hydraulic tube from the back of the wheel cylinder. Disconnect the parking brake cable at the adjustment. Remove the four mounting bolts and remove the brake backing plate, spindle, and seal.

b. Route the parking brake cable through the trailing arm opening and route the brake tube over the trailing arm. Put the spindle, seal, and backing plate into position on the axle (with bolt holes aligned). Install the four bolts and tighten them finger tight to position all parts. Then, torque them to 55 ft. lbs. Bleed the brake system as described in the next section.

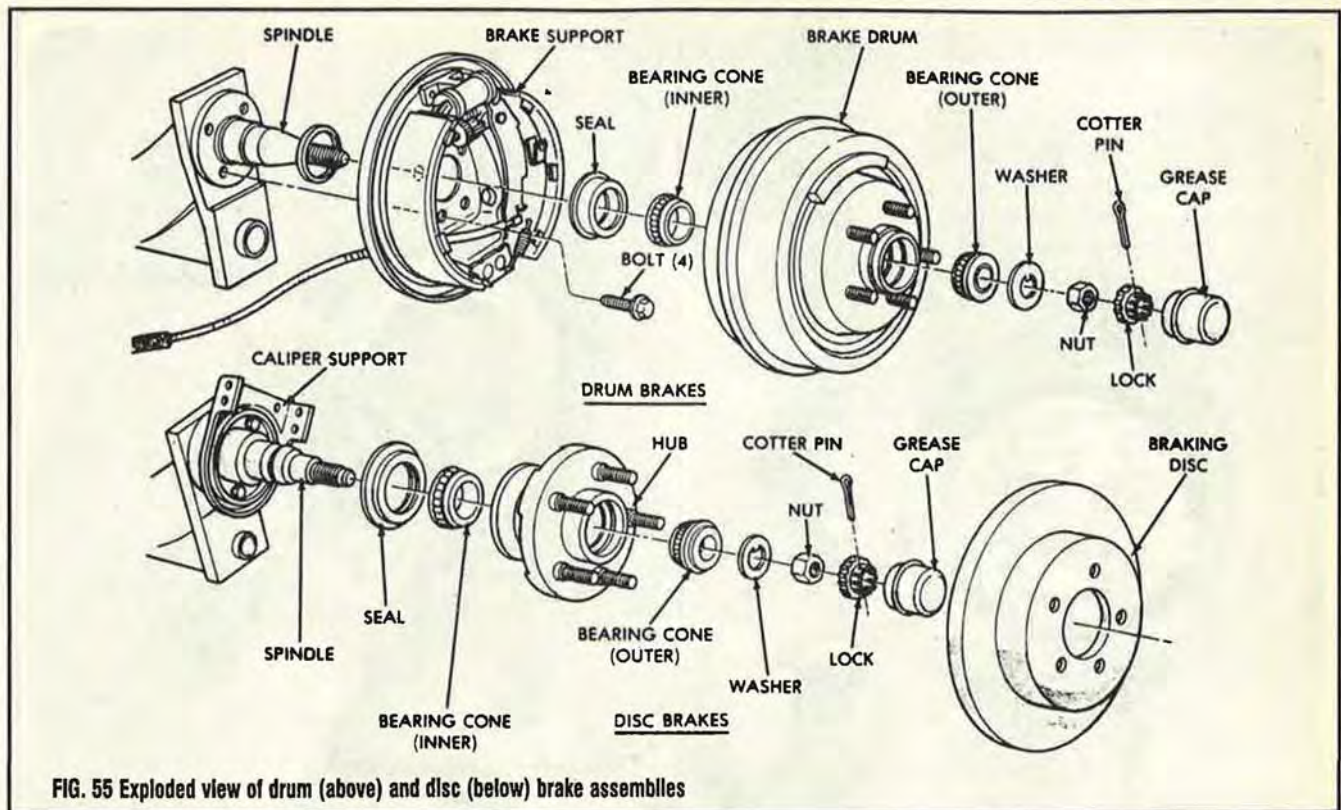


FIG. 55 Exploded view of drum (above) and disc (below) brake assemblies



FIG. 55A Removing the dust cap — rear wheel bearings

9. Make sure all spindle surfaces and the inner diameter bearing surface in the brake drum are clean.

10. Very thoroughly pack the wheel bearings with **wheel bearing grease** (ordinary Multi-Purpose grease is **not** satisfactory). Work the grease thoroughly into the spaces between the rollers by forcing grease through them repeatedly.

11. Install the seal, inner bearing cone, brake drum, and outer bearing cone onto the spindle. Note that the inner cone's larger diameter goes on first, while the outer cone's outer diameter goes on last.

12. Align the tab in the washer with the groove in the threaded portion of the spindle and slide it on. Screw the nut onto the spindle threads.

13. Rotating the drum, torque the nut to 240–300 inch lbs. Then back off the nut until preload is completely eliminated (the nut turns freely). Then, finger tighten the nut.

14. Install the nut lock until it touches the wheel bearing nut. Then, turn it backward **just** until the next slot aligns with the cotter pin hole.

15. Reconnect the parking brake cable and adjust it as described in Section 9.

16. Clean and install the grease cap. Install the wheel and tire and lower the vehicle to the floor.

8-30 SUSPENSION AND STEERING

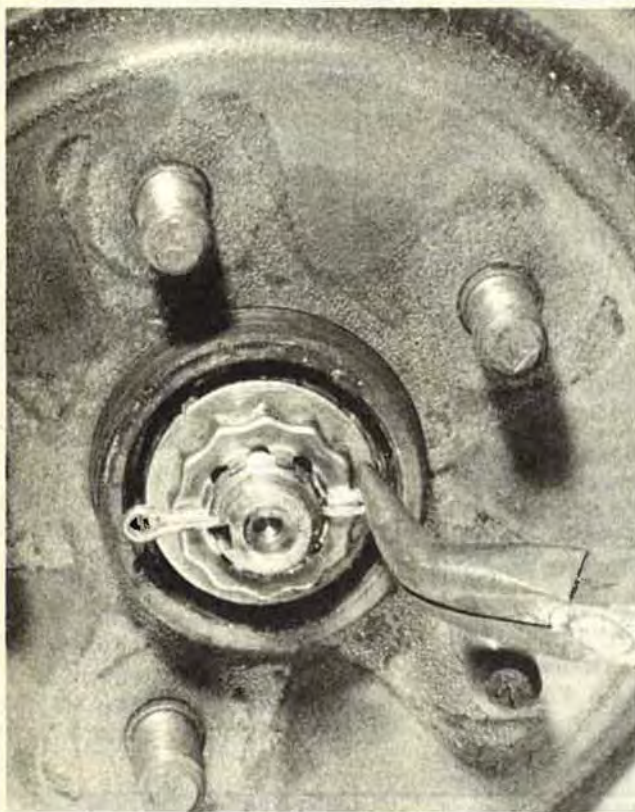


FIG. 55B Removing the cotter pin — rear wheel bearings



FIG. 55D Removing the locknut — rear wheel bearings



FIG. 55C Removing the locknut retainer — rear wheel bearings



FIG. 55E Removing the washer — rear wheel bearings

Chrysler Front Wheel Drive Vehicles – Rear Disc Brakes

** CAUTION

Brake linings contain asbestos. Avoid using compressed air or any other means to remove dust from the rotor or brake calipers or linings or areas nearby. Failure to heed this warning could cause inhalation of asbestos fibers, a known carcinogen!



FIG. 55F Removing the rear wheel bearings

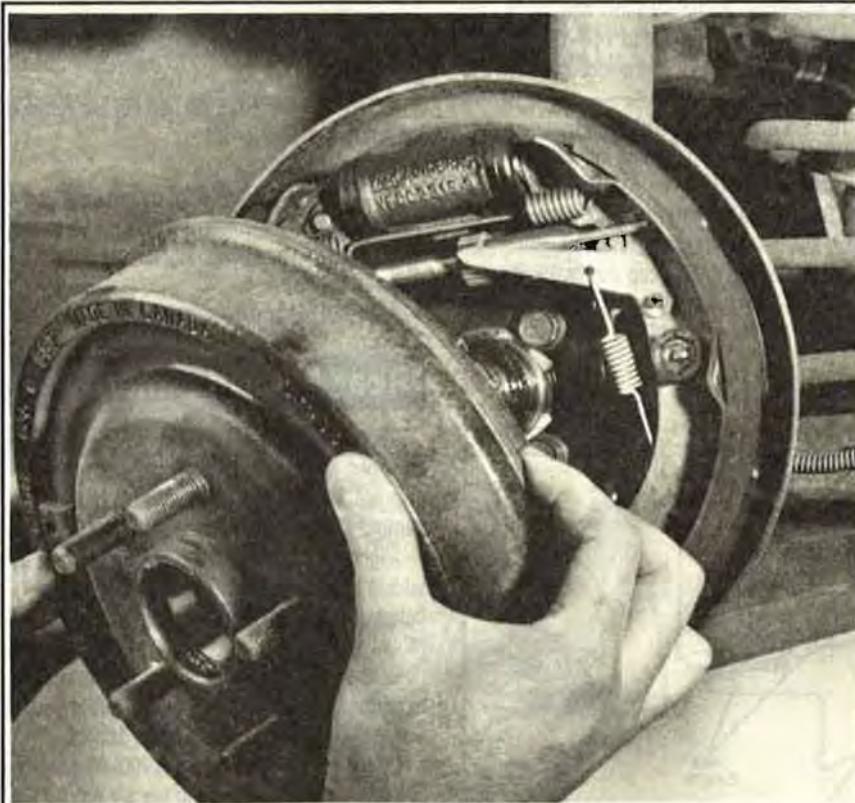


FIG. 55G Removing the rear brake drum

1. Raise the car and support it securely. Remove the wheel and tire.
2. Disconnect the brake hose mounting bracket from the caliper support. Remove the parking brake cable and brake hose from the caliper assembly. Then, remove the caliper assembly as described in Section 9.
3. Unbolt and remove the caliper adapter. Slide the disc off the wheel studs.
4. Remove the grease cap, cotter pin, nut lock and retaining nut.
5. Remove the outer bearing cone. Then, slide the hub off the spindle. Remove the inner bearing cone. Remove the inner seal.
6. Inspect the bearing rollers. If they turn roughly or the surfaces are cracked, rough or brinneled, replace them.
7. Inspect the inner diameter of the brake hub where the bearing rolls. If the surface is cracked, rough or brinneled, replace the hub.
8. Inspect the cone-shaped bearing surface of the spindle. If it is cracked, rough or brinneled, replace the spindle.
9. If the spindle must be replaced:
 - a. Remove the bolts and remove the caliper support and the spindle.
 - b. Position the caliper support and new spindle onto the axle with the bolt holes aligned. Install the four retaining bolts finger tight. Then, torque to 55 ft. lbs.
10. Make sure all spindle surfaces and the inner diameter bearing surface in the brake hub are clean.
11. Very thoroughly pack the wheel bearings with **wheel bearing grease** (ordinary Multi-Purpose grease is **not** satisfactory). Work the grease thoroughly into the spaces between the rollers by forcing grease through them repeatedly.
12. Install the caliper adapter. Install the seal, inner bearing cone, brake hub and outer bearing cone onto the spindle. Note that the inner cone's larger diameter goes on first, while the outer cone's outer diameter goes on last.

8-32 SUSPENSION AND STEERING

12. Align the tab in the washer with the groove in the threaded portion of the spindle and slide it on. Screw the nut onto the spindle threads.

13. Install the rotor onto the wheel studs. Rotating the rotor, torque the nut to 240–300 inch lbs. Then back off the nut until preload is completely eliminated (the nut turns freely). Then, finger tighten the nut.

14. Install the nut lock until it touches the wheel bearing nut. Then, turn it backward just until the next slot aligns with the cotter pin hole.

15. Install the caliper as described in Section 9.

16. Clean and install the grease cap. Install the wheel and tire and lower the vehicle to the floor.

Do not add grease to wheel bearing that already has grease packed in it. Relubricate complete. Mixing of different types of grease in wheel bearings should be avoided since it may result in excessive thinning and leakage of the grease.

To clean bearings, soak them in appropriate cleaning solvent. Strike the flat surface of the bearing inner race against a hardwood block several times, immersing the bearings in solvent between the blows to jar loose and wash old particles of hardened grease form

the bearings. Repeat this operation until bearings are clean.

Do not drag seal or inner bearing over the threaded area of the stub axle. Always replace grease seals when servicing rear wheel bearings.

1990–92 Laser And Stealth

1. Raise the vehicle and support safely.
2. Remove the tire and wheel assembly.
3. Remove the bolt(s) holding the speed sensor bracket to the knuckle and remove the assembly from the vehicle.

➔ **The speed sensor has a pole piece projecting from it. This exposed tip must be protected from impact or scratches. Do not allow the pole piece to contact the toothed wheel during removal or installation.**

4. Remove the caliper from the brake disc and suspend with a wire.
5. Remove the brake disc.
6. Remove the grease cap, self-locking nut and tapered washer.
7. Remove the rear hub assembly. This assembly is not serviceable and must be replaced as a unit.

To Install:

8. Install the hub assembly.
9. Install the tapered washer and a new self-locking nut. Torque the nut to 144–188 ft. lbs. (200–260 Nm), align with the indentation in the spindle, and crimp.
10. Set up a dial indicator and measure the endplay while moving the hub in and out. If the endplay exceeds 0.004 in. (0.01mm) for Laser or 0.002 in. (0.005mm) for Stealth, retorque the nut. If still beyond the limit, replace the hub unit.
11. Install the grease cap and brake parts.

12. Temporarily install the speed sensor to the knuckle; tighten the bolts only finger-tight.

13. Route the cable correctly and loosely install the clips and retainers. All clips must be in their original position and the sensor cable must not be twisted. Improper installation may cause cable damage and system failure.

➔ **The wiring in the harness is easily damaged by twisting and flexing. Use the white stripe on the outer insulation to keep the sensor harness properly placed.**

14. Use a brass or other non-magnetic feeler gauge to check the air gap between the tip of the pole piece and the toothed wheel. Correct gap is 0.012–0.035 in. (0.3–0.9mm). Tighten the 2 sensor bracket bolts to 10 ft. lbs. (14 Nm) with the sensor located so the gap is the same at several points on the toothed wheel. If the gap is incorrect, it is likely that the toothed wheel is worn or improperly installed.

15. Install the wheel.

Dodge Monaco

The rear wheel bearings and hubs are replaced as assemblies only. They are non-adjustable. The maximum allowable bearing endplay is 0.001 in. (0.025mm). If the endplay exceeds this, the bearing/hub assembly should be replaced.

1. Raise and safely support the rear of the vehicle. Remove the wheel.
2. Remove the brake drum from the axle shaft hub.
3. Remove the axle shaft hub nut and remove the hub/bearing assembly.

To Install:

4. Lightly oil the axle shaft before installing the hub/bearing assembly. Install the hub to the axle shaft using a new nut. Tighten the nut to 123 ft. lbs. (167 Nm).
5. Install the brake drum and wheel.

Rear Axle Alignment

Chrysler front wheel drive vehicles are equipped with a rear suspension, using wheel spindles, thereby making it possible to align the camber and toe of the rear wheels.

Alignment adjustment, if required, is made by adding shims (Part #5205114 or equivalent) between the spindle mounting surface and axle mounting plate.

Because of the specialized equipment needed to perform this procedure it is best left to your Chrysler dealer or a reliable repair facility.

On the Dodge Monaco and 1990–92 Laser vehicles the rear camber and toe are not adjustable.

On the Stealth vehicle the rear camber and toe by an eccentric bolt in the rear suspension.



FIG. 56 Packing wheel bearings

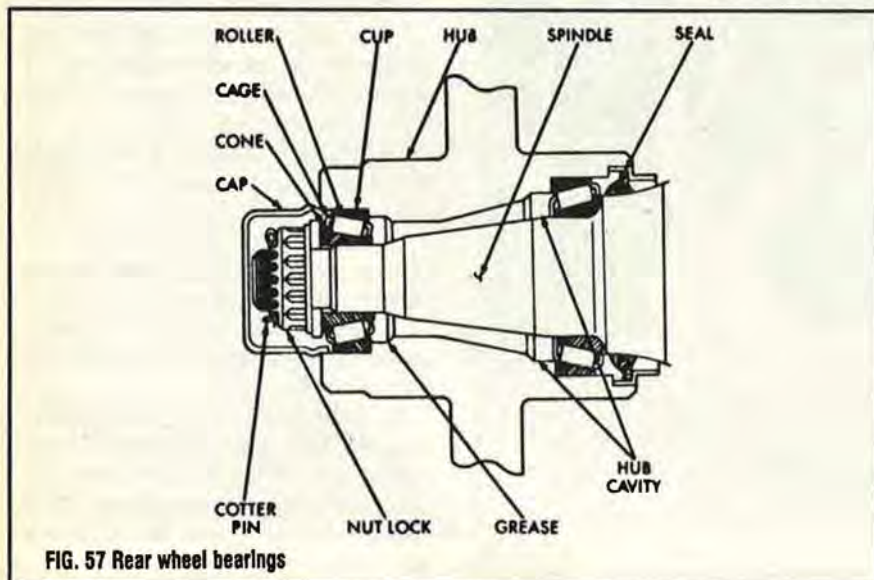


FIG. 57 Rear wheel bearings

STEERING

Steering Wheel

REMOVAL & INSTALLATION

♦ SEE FIGS. 58-59

*** CAUTION

On vehicles equipped with an air bag, the negative battery cable must be disconnected and isolated before working on the system. Failure to do so may result in deployment of the air bag and possible personal injury.

Without Airbag System

1. Disconnect the negative battery cable.
2. Straighten the steering wheel so the front tires are pointing straight forward.
2. Remove the horn pad.
3. Remove the steering wheel hold-down nut and remove the damper, if equipped. Matchmark the steering wheel to the shaft.

4. Using a suitable steering wheel puller, pull the steering wheel off of the shaft.

5. The installation is the reverse of the removal procedure. Torque the hold-down nut to 45 ft. lbs. on 1982 and later vehicle (60 ft. lbs. on 1981 models) Do not torque the nut against the steering column lock or damage will occur.

With Airbag System

♦ SEE FIGS. 60-61

➡ This service repair requires above average mechanical ability or skill and special tools. Extreme care should be exercised when performing this operation.

1. Disconnect the negative battery cable.
2. Straighten the steering wheel so the front tires are pointing straight forward.
3. Remove the 4 nuts located on the back side of the steering wheel that attach the airbag module to the steering wheel.
4. Lift the module and disconnect the connectors. Remove the speed control switch, if equipped.

➡ All columns except Acustar are equipped with a clock spring set screw held by a plastic tether on

the steering wheel. Acustar-mounted clock springs are auto-locking. If the steering column is not an Acustar and is lacking the set screw, obtain one before proceeding.

5. If equipped with the set screw, place it in the clock spring to ensure proper positioning when the steering wheel is removed.

6. Remove the steering wheel hold-down nut and remove the damper, if equipped. Matchmark the steering wheel to the shaft.

7. Using a suitable steering wheel puller, pull the steering wheel off of the shaft.

To Install:

8. Position the steering wheel on the steering column. Make sure the flats on the hub of the steering wheel are aligned with the formations on the clock spring.

9. Pull the airbag and speed control connectors through the lower, larger hole in the steering wheel and pull the horn wire through the smaller hole at the top. Make sure the wires are not pinched anywhere.

10. Install the damper, if equipped.

11. Install the hold-down nut and torque to 45 ft. lbs. (60 nm).

12. If equipped with a clock spring set screw, remove the screw and place it in its storage location on the steering wheel.

13. Connect the horn wire.

14. Connect the speed control wire and install the speed control switch.

15. Connect the clock spring lead wire to the airbag module and install module to steering wheel.

➡ Do not allow anyone to enter the vehicle from this point on, until this procedure is completed.

16. Connect the DRB II to the Airbag System Diagnostic Module (ASDM) connector located to the right of the console.

17. From the passenger side of the vehicle, turn the key to the **ON** position.

18. Check to make sure nobody has entered the vehicle. Connect the negative battery cable.

19. Using the DRB II, read and record any active fault data or stored codes.

20. If any active fault codes are present, perform the proper diagnostic procedures before continuing.

21. If there are no active fault codes, erase the stored fault codes; if there are active codes, the stored codes will not erase.

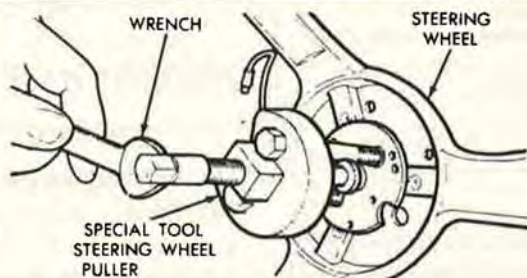


FIG. 58 Steering wheel removal

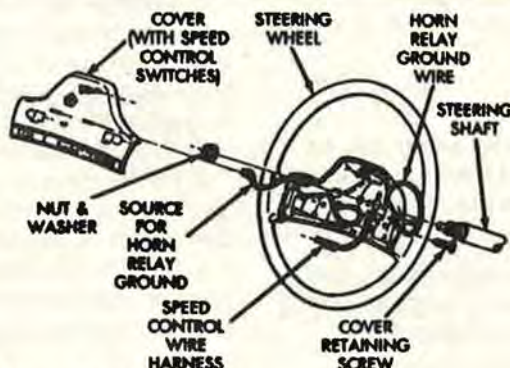


FIG. 59 Horn pad removal (typical)

8-34 SUSPENSION AND STEERING

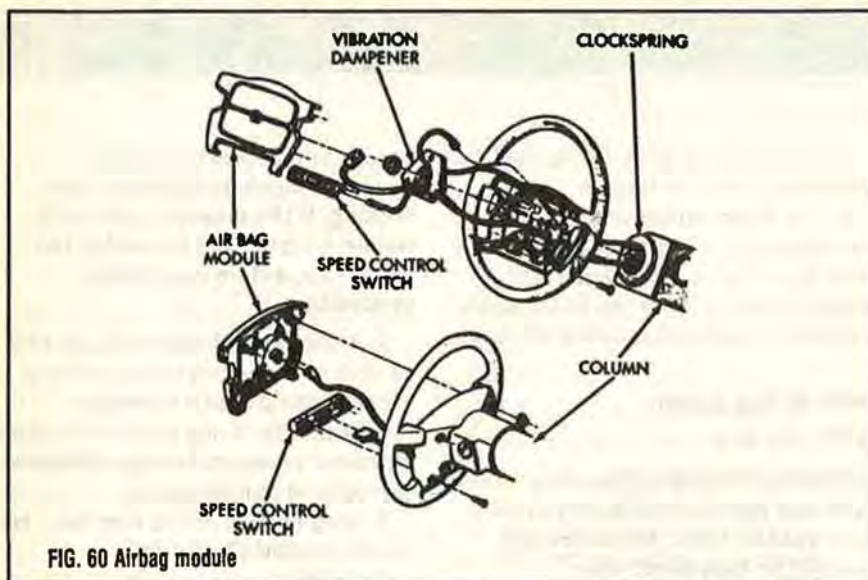


FIG. 60 Airbag module

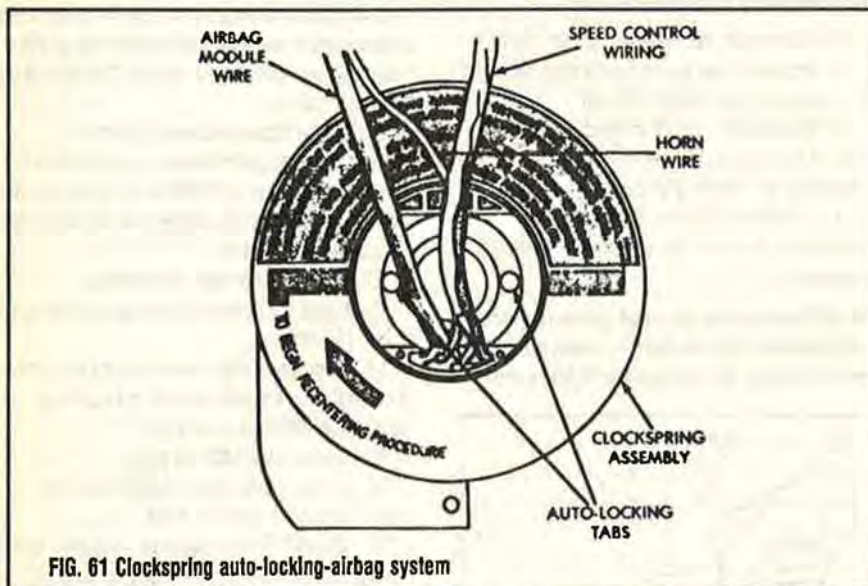


FIG. 61 Clockspring auto-locking-airbag system

22. From the passenger side of the vehicle, turn the key **OFF**, then **ON** and observe the instrument cluster airbag warning light. It should come on for 6-8 seconds, then go out, indicating the system is functioning normally. If the warning light either fails to come on, or stays lit, there is a system malfunction and further diagnostics are needed.

1990-92 Laser

1. Disconnect the negative battery cable.
2. Remove the horn pad and disconnect horn button connector.
3. Remove steering wheel retaining nut.
4. Matchmark the steering wheel to the shaft.
5. Use a steering wheel puller to remove the steering wheel. Do not hammer on steering wheel to remove it. The collapsible column mechanism may be damaged.

To Install:

6. Line up the matchmarks and install the steering wheel. Torque the retaining nut to 29 ft. lbs. (40 Nm).
7. Install the steering wheel attaching nut and torque to 33 ft. lbs. (45 Nm).
8. Reconnect the horn connector and install the horn pad.

Stealth

➔ **If equipped with an air bag, be sure to disarm it before entering the vehicle. Refer to the service procedure below.**

1. Disconnect the negative battery cable.
2. Remove the air bag module mounting nut from behind the steering wheel.
3. Carefully disconnect the module connector.

4. Store the air bag module in a clean, dry place with the pad cover facing up.

5. Remove the steering wheel retaining nut. Matchmark the steering wheel to the shaft. Use a steering wheel puller to remove the wheel. Do not use a hammer or the collapsible mechanism in the column could be damaged.

To Install:

6. Center the clock spring by aligning the **NEUTRAL** mark on the clock spring with the mating mark on the casing.
7. Line up the matchmarks and install the steering wheel. Torque the retaining nut to 29 ft. lbs. (40 Nm).

AIR BAG DISARMING

1. Position the front wheels in the straight ahead position and place the key in the **LOCK** position.
2. Disconnect the negative battery cable and insulate the cable end with high-quality electrical tape or similar non-conductive wrapping.
3. Wait at least 1 minute before working on the vehicle. The air bag system is designed to retain enough voltage to deploy for a short period of time even after the battery has been disconnected.
4. If necessary, enter the vehicle from the passenger side and turn the key to unlock the steering column.

Turn Signal Switch

REMOVAL & INSTALLATION

1981-87 Chrysler FWD - Without Tilt Wheel

♦ SEE FIG. 62

1. Disconnect the negative battery terminal.
2. Remove the steering wheel as described earlier.
3. On vehicles equipped with intermittent wiper or intermittent wiper with speed control, remove the two screws that attach the turn signal lever cover to the lock housing and remove the turn signal lever cover.
4. Remove the wash/wipe switch assembly.
5. Pull the slider up the control stalk and remove the two screws that attach the control stalk sleeve to the wash/wipe shaft.
6. Rotate the control stalk shaft to the full clockwise position and remove the shaft from the switch by pulling straight out of the switch.

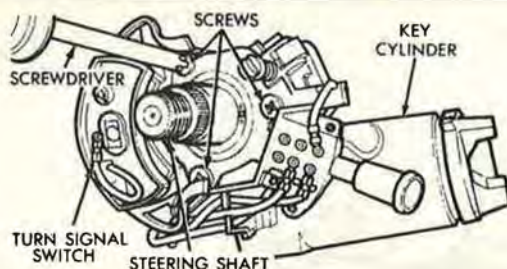


FIG. 62 Turn signal switch assembly removal

7. Remove the turn signal switch and upper bearing retainer screws. Remove the retainer and lift the switch up and out.

1981-87 Chrysler FWD – With Tilt Wheel

1. Disconnect the negative battery terminal.
2. Remove the steering wheel as previously described.
3. Remove the tilt lever and push the hazard warning knob in and unscrew it to remove it.
4. Remove the ignition key lamp assembly.
5. Pull the knob off the wash/wipe switch assembly.
6. Pull the slider up the stalk and remove the two screws that attach the sleeve to the wash/wipe switch and remove the sleeve.
7. Rotate the shaft in the wiper switch to the full clockwise position and remove the shaft by pulling straight out of the wash/wipe switch.
8. Remove the plastic cover from the lock plate. Depress the lock plate with tool C-4156 and pry the retaining ring out of the groove. Remove the lock plate, canceling cam and upper bearing spring.
9. Remove the switch actuator screw and arm.
10. Remove the three turn signal switch attaching screws and place the shift bowl in low position. Wrap a piece of tape around the connector and wires to prevent snagging then remove the switch and wires.
11. Installation is the reverse of removal.

1988-89 Chrysler FWD – With Standard Column

♦ SEE FIGS. 63-65

1. Disconnect the negative battery cable.
2. Remove the lower steering column cover, if equipped.
3. Straighten the steering wheel so the tires are pointing straight-ahead.

➔ **If equipped with an airbag, it is imperative that the "Steering Wheel" removal and installation procedure under Steering is followed.**

4. Remove the steering wheel.
5. Remove the plastic wiring channel from the under the steering column and disconnect the turn signal switch connector.
6. Remove the hazard switch knob. Remove the slotted hex-head screw that attaches the wiper switch to the turn signal switch.
7. Remove the 3 screws and pull the turn signal switch out of the column.

To Install:

8. Run the wiring through the opening and down the steering column, position the switch and install the hex-head screw. Make sure the dimmer switch rod is properly engaged.
9. Install the 3 screws and the hazard switch knob.
10. Connect the wires and install the wiring channel.
11. Install the steering wheel and torque the nut to 45 ft. lbs. (61 Nm).

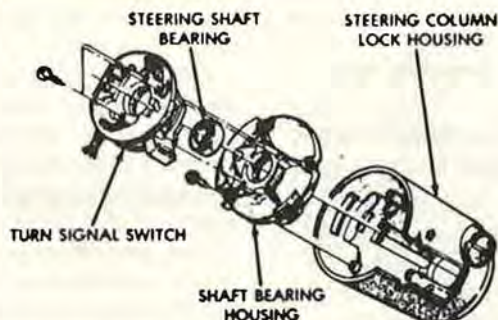


FIG. 63 Turn signal switch assembly

12. Install the horn pad.

13. Connect the negative battery cable and check the turn signal switch and dimmer switch for proper operation.

14. Install the lower column cover, if equipped.

1988-89 Chrysler FWD – With Tilt Wheel

1. Disconnect the negative battery cable.
2. Remove the lower steering column cover, if equipped and remove the plastic wiring channel from the under the steering column.
3. Straighten the steering wheel so the tires are pointing straight-ahead.

➔ **If equipped with an airbag, it is imperative that the "Steering Wheel" removal and installation procedure under Steering is followed.**

4. Remove the steering wheel.
5. Depress the lockplate with the proper depressing tool, remove the retaining ring from its groove and remove the tool, ring, lockplate, canceling cam and spring.
6. Remove the stalk actuator screw and arm.
7. Remove the hazard switch knob.
8. Disconnect the turn signal switch connector.
9. Remove the 3 screws and remove the turn signal switch. Tape the connector to the wires to aid in removal.

To Install:

10. Run the wiring through the opening and down the steering column, install the turn signal switch, switch stalk actuator arm and hazard switch knob.
11. Install the spring, canceling cam, lockplate and ring on the steering shaft. Depress the plate with the depressing tool and install the ring securely in the groove. Remove the tool slowly.
12. Connect the turn signal switch connector and install the channel.
13. Install the steering wheel and torque the nut to 45 ft. lbs. (61 Nm).
14. Install the horn pad.
15. Connect the negative battery cable and check the turn signal switch and dimmer switch for proper operation.
16. Install the lower column cover, if equipped.

1990-92 Daytona And LeBaron

♦ SEE FIGS. 66-67

1. Disconnect the negative battery cable.
2. Remove the panel vent grille above the switch pod assembly and remove the 2 revealed pod mounting screws.

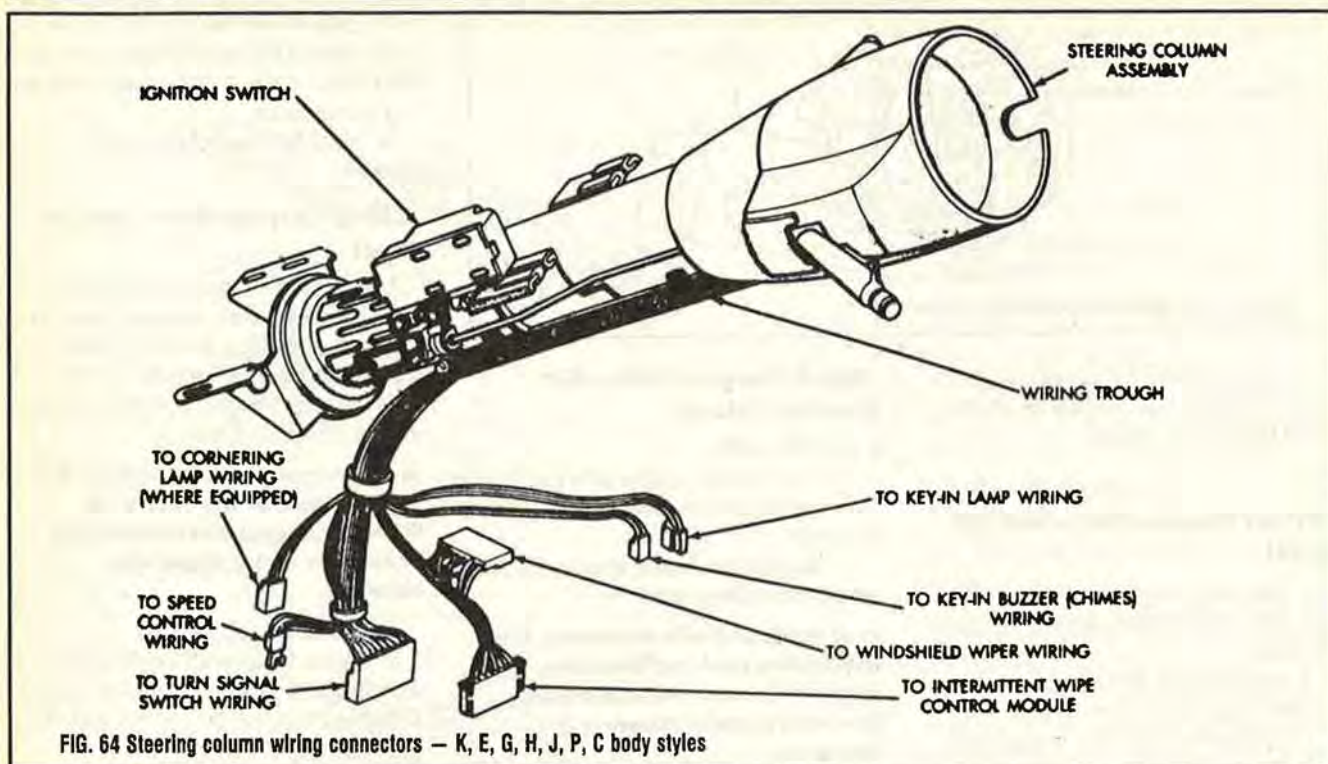


FIG. 64 Steering column wiring connectors — K, E, G, H, J, P, C body styles

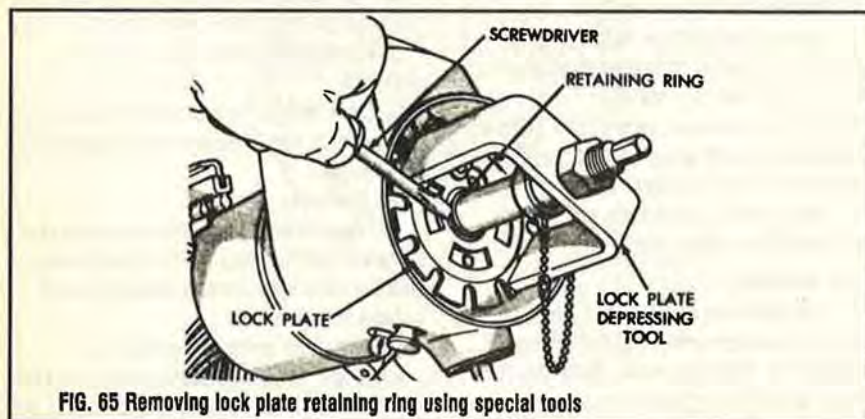


FIG. 65 Removing lock plate retaining ring using special tools

3. Remove the 2 remaining screws under the pod and pull the pod out to disconnect the wiring harnesses. Remove the pod from the instrument panel.

4. Remove the turn signal switch lever by pulling it straight out of the pod.

5. Remove the inner panel from the pod. Unplug the switch from the printed circuit board.

6. Remove the turn signal switch mounting screws and slide the switch out of the slot.

7. The installation is the reverse of the removal procedure.

8. Connect the negative battery cable and check the turn signal switch and dimmer function for proper operation.

Combination Switch

REMOVAL & INSTALLATION

1990-92 Dynasty, Imperial, New Yorker

1990-92 LeBaron Landau, Shadow, Sundance, Spirit and Acclaim

♦ SEE FIG. 68

1. Disconnect the negative battery cable.
2. Remove the tilt lever, if equipped.
3. Remove the steering column covers.
4. Remove the combination switch tamper-proof mounting screws and pull the switch away from the steering column.

5. Loosen the connector screw; the screw will remain in the connector. Disconnect the connector from the switch.

6. The installation is the reverse of the removal procedure.

7. Connect the negative battery cable and check all functions of the combination switch for proper operation.

1990-92 Laser

➔ The headlights, turn signals, dimmer switch, windshield/washer and, on some models, the cruise control function are all built into 1 multi-function combination switch that is mounted on the steering column.

1. Disconnect the negative battery cable.
2. Remove the knee protector panel under the steering column, then the upper and lower column covers.
3. Remove the horn pad by pulling the lower end.
4. Matchmark and remove the steering wheel with a steering wheel puller. Do not hammer on the steering wheel to remove it or the collapsible mechanism may be damaged.
5. Locate the rectangular plugs in the knee protector on either side of the steering column. Pry these plugs out and remove the screws. Remove the screws from the hood lock release lever and remove the knee protector.
6. Remove the upper and lower column covers.

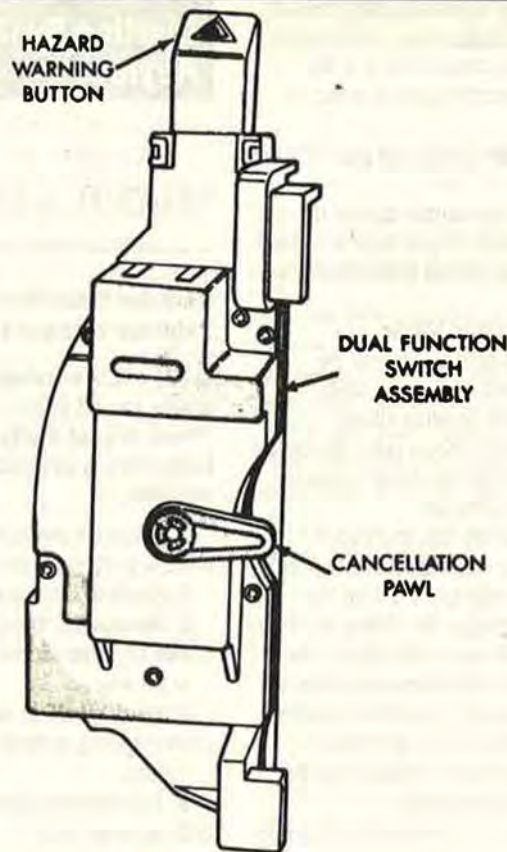


FIG. 66 Dual function switch — AG and AJ body styles

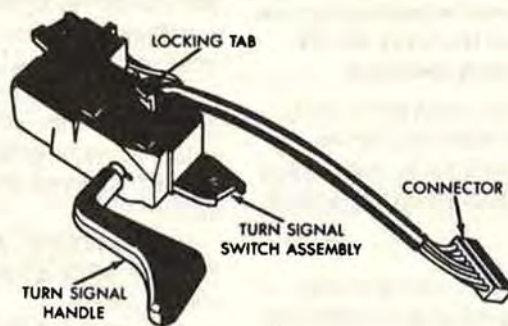


FIG. 67 Remote turn signal switch assembly — AG and AJ body styles

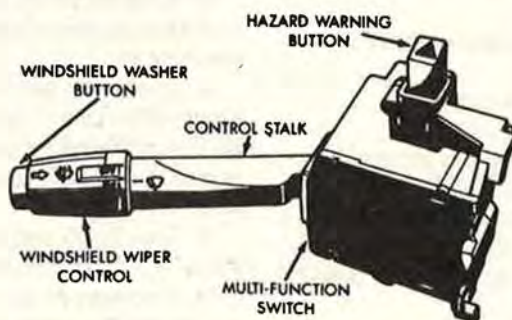


FIG. 68 Multi-function switch — AA, AC, AP, AY body styles

7. Remove the lap cooler ducts.
8. Remove the band retaining the switch wiring.
9. Disconnect all connectors, remove the wiring clip and remove the column switch assembly.

To Install:

10. Install the switch assembly and secure the clip. Make sure no wires are pinched or out of place.
11. Install the lap cooler ducts.
12. Install the column covers and knee protector.
13. Install the steering wheel. Torque the steering wheel-to-column nut to 29 ft. lbs. (40 Nm).
14. Connect the negative battery cable and check all functions of the combination switch for proper operation.

Stealth

➡ The headlights, turn signals and dimmer switch are all built into 1 multi-function combination switch that is mounted on the left side of the steering column.

1. Disconnect the negative battery cable.

➡ If equipped with an air bag, be sure to disarm it before entering the vehicle. Refer to the service procedure below.

2. Remove the steering wheel:
 - a. Remove the air bag module mounting nut from behind the steering wheel.
 - b. Carefully disconnect the module connector.
 - c. Store the air bag module in a clean, dry place with the pad cover facing up.
 - d. Remove the steering wheel retaining nut and use a steering wheel puller to remove the wheel. Do not use a hammer or the collapsible mechanism in the column could be damaged.
3. Remove the hood lock release handle.
4. Remove the switches from the knee protector below the steering column, and remove the exposed retaining screws. Then remove the knee protector.
5. Remove the column covers.
6. Remove necessary duct work and disconnect the combination switch connectors.
7. Remove the retaining screws and remove the combination switch assembly from the steering column.

8-38 SUSPENSION AND STEERING

To Install:

8. Install the switch to the steering column and connect the connectors.
9. Install any removed duct work.
10. Install the column covers.
11. Install the knee protector and switches.
12. Install the hood release handle.
13. Center the clock spring by aligning the **NEUTRAL** mark on the clock spring with the mating mark on the casing. Then install the steering wheel and torque the retaining nut to 29 ft. lbs. (40 Nm).
14. Connect the negative battery cable and check all functions of the combination switch for proper operation.

AIRBAG DISARMING

1. Position the front wheels in the straight ahead position and place the key in the **LOCK** position.
2. Disconnect the negative battery cable and insulate the cable end with high-quality electrical tape or similar non-conductive wrapping.
3. Wait at least 1 minute before working on the vehicle. The air bag system is designed to retain enough voltage to deploy for a short period of time even after the battery has been disconnected.
4. If necessary, enter the vehicle from the passenger side and turn the key to unlock the steering column.

Dodge Monaco

➔ **The windshield wiper, turn signal, headlight and dimmer switches are all combined in the combination switch on the left side of the steering column.**

1. Disconnect the negative battery cable.
2. If not equipped with passive restraint, remove the lower instrument panel cover. If equipped with passive restraint, perform the following:
 - a. Pull the ashtray from the receptacle, remove the receptacle and unplug the lighter.
 - b. Remove the 2 screws fastening the console to the front bracket.
 - c. Remove the armrest and the 2 screws fastening the console to the rear bracket.
 - d. Reach inside the console and push out the seatbelt guides. Remove the console.
 - e. Remove the bolts fastening the pivot bracket to the knee bolster. Loosen, but do not remove, the 2 bolts fastening the pivot bracket to the front console bracket.
 - f. Remove the screw and the 2 Torx® screws that attach the bracket to the floor and slide the bracket back.
 - g. Remove the screw located at the top of the knee bolster to the left of the steering column.

h. Remove the screw attaching the air duct to the knee bolster.

i. Remove the screw located at the bottom of the instrument panel holding the garnish panel.

j. Remove both bolster end caps and the revealed nuts.

k. Move the knee bolster toward the rear of the vehicle enough to gain access to the 2 screws holding the parking brake handle, then lower the handle.

l. Remove the knee bolster.

3. Remove the screws, remove the support rod and pull the air duct aside.

4. Cut the plastic tie-wrap straps.

5. Loosen the hold-down nut in the center of the steering column electrical connector and separate the connector.

6. Separate the left side pod switch connector from the steering column connector by placing a flat blade tool between the connectors to disengage the locking tab. Push on the wire side of the left side pod switch connector and slide the connector out of the channels of the steering column connector.

7. Disconnect the electrical connector, then remove the bottom 2 screws (not the rivets) from the pod assembly.

8. To gain access to the inside of the pod, remove the screws from the back of the left side switch pod assembly and remove the switch pod housing back cover.

➔ **There are small retaining clips on the left side pod that may fall off when the switch is removed.**

9. Carefully pull the switch pod far enough from the housing to expose the 2 screws, remove them and gently pull the switch forward and pull the harness out through the housing to remove the switch.

To Install:

10. Route the switch assembly connector through the housing and along the underside of the steering column.

11. Connect the switch connector.

12. Connect the steering column connector and install the hold-down nut. Secure with a new tie.

13. Position the switch and secure with the screws.

14. Connect the air duct.

15. Install the lower support bar.

16. Install the knee bolster and console by reversing their removal procedure, if equipped, or install the lower instrument cover.

17. Connect the negative battery cable and check all functions of the combination switch for proper operation.

Ignition Switch and Keylock

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles Without Tilt Wheel

➔ **Use this service procedure as guide for all other models. Refer to "Turn Signal Switch" removal and installation procedures in this section.**

1. Follow the turn signal switch removal procedure previously described.
2. Unclip the horn and key light ground wires.
3. Remove the retaining screw and move the ignition key lamp assembly out of the way.
4. Remove the four screws that hold the bearing housing to the lock housing.
5. Remove the snapping from the upper end of the steering shaft.
6. Remove the bearing housing from the shaft.
7. Remove the lock plate spring and lock plate from the steering shaft.
8. Remove the ignition key, then remove the screw and lift out the buzzer/chime switch.
9. Remove the two screws attaching the ignition switch to the column jacket.
10. Remove the Ignition switch by rotating the switch 90 degrees on the rod then sliding off the rod.
11. Remove the two mounting screws from the dimmer switch and disengage the switch from the actuator rod.
12. Remove the two screws that mount the bellcrank and slide the bellcrank up in the lock housing until it can be disconnected from the ignition switch actuator rod.
13. To remove the lock cylinder and lock lever places the cylinder in the lock position and remove the key.
14. Insert a small diameter screwdriver or similar tool into the lock cylinder release holes and push into the release spring loaded lock retainers. At the same time pull the lock cylinder out of the housing bore.
15. Grasp the lock lever and spring assembly and pull straight out of the housing.
16. If necessary the lock housing may be removed from the column jacket by removing the hex head retaining screws.

17. Installation is the reverse of removal. If the lock housing was removed tighten the lock housing screws to 90 inch lbs.

18. To install the dimmer switch, firmly seat the push rod into the switch. Compress the switch until two $\frac{3}{32}$ in. drill shanks can be inserted into the alignment holes. Reposition the upper end of the push rod in the pocket of the wash/wipe switch. With a light rearward pressure on the switch, install the two screws.

19. Grease and assemble the two lock levers, lock lever spring and pin.

20. Install the lock lever assembly in the lock housing. Seat the pin firmly into the bottom of the slots and make sure the lock lever spring leg is firmly in place in the lock casting notch.

21. Install the ignition switch actuator rod from the bottom through the oblong hole in the lock housing and attach it to the bellcrank. Position the bellcrank assembly into the lock housing while pulling the ignition switch rod down the column, install the bellcrank onto its mounting surface. The gearshift lever should be in the park position.

22. Place the ignition switch on the ignition switch actuator rod and rotate it 90 degrees to lock the rod into position.

23. To install the Ignition lock, turn the key to the lock position and remove the key. Insert the cylinder far enough into the housing to contact the switch actuator. Insert the key and press inward and rotate the cylinder. When the parts align the cylinder will move inward and lock into the housing.

24. With the key cylinder in the lock position and the ignition switch in the lock position (second detent from top) tighten the ignition switch mounting screws.

25. Feed the buzzer/chime switch wires behind the wiring post and down through the space between the housing and the jacket. Remove the ignition key and position the switch in the housing and tighten the mounting screws. The ignition key should be removed.

26. Install the lock plate on the steering shaft.

27. Install the upper bearing spring, then the upper bearing housing.

28. Install the upper bearing snapping on the steering shaft, locking the assembly in place.

29. Install the four screws attaching the bearing housing to the lock housing.

30. Install the key lamp and turn signal switch, following the procedure given previously.

Lock Cylinder

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles With Tilt Wheel

➤ **Use this service procedure as a guide for all other models. This service repair requires above average mechanical ability or skill. Refer to "Turn Signal Switch" removal and installation procedures in this section.**

1. Remove the turn signal switch as previously described.
2. Place the lock cylinder in the lock position.
3. Insert a thin tool into the slot next to the switch mounting screwing boss (right hand slot) and depress the spring latch at the bottom of the slot and remove the lock.
4. Installation is the reverse of removal. Turn the ignition lock to the **Lock** position and remove the key. Insert the cylinder until the spring loaded retainer snaps into place.

Ignition Switch

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles With Tilt Wheel

♦ SEE FIGS. 69-72

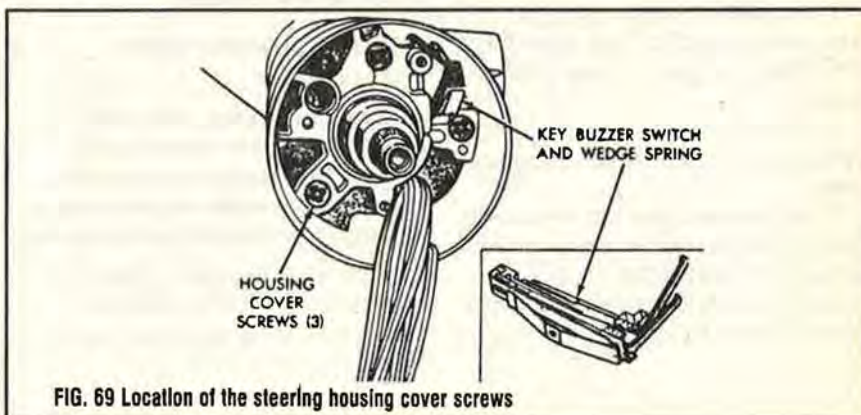
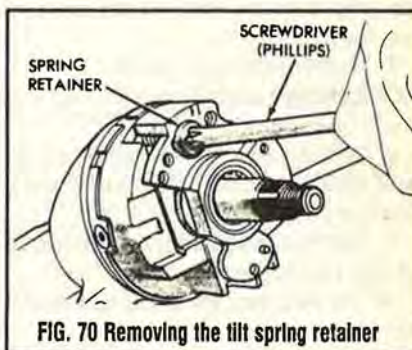
➤ **Use this service procedure as a guide for all other models. This service repair requires above average mechanical ability or skill.**

Refer to "Turn Signal Switch" removal and installation procedures in this section.

1. Remove the turn signal switch as described above. Remove the ignition lock cylinder as described above.

➤ **If the wedge spring described in the next step is dropped, it could drop into the column, requiring complete disassembly. Follow the directions and work carefully to avoid dropping it.**

2. Bend a paper clip or similar type of wire into a hook. Insert the curved end of the hook into the exposed loop of the buzzer/chime switch wedge spring. Pull the wire hook straight up to remove both the buzzer/chime switch and the spring.
3. Remove the three housing cover screws and remove the housing cover. Then, remove the wash/wipe switch.
4. Adjust the column into the full up position. Then, to remove the tilt spring retainer, insert a large Phillips screwdriver into the tilt spring opening, press the lock screw in about $\frac{3}{16}$ in. (5mm) and then turn it approximately $\frac{1}{8}$ turn counterclockwise to align the ears with the grooves in the housing. Remove the spring and guide.
5. Pull the actuating rod out of the dimmer switch. Remove the dimmer switch mounting screws and remove the switch.



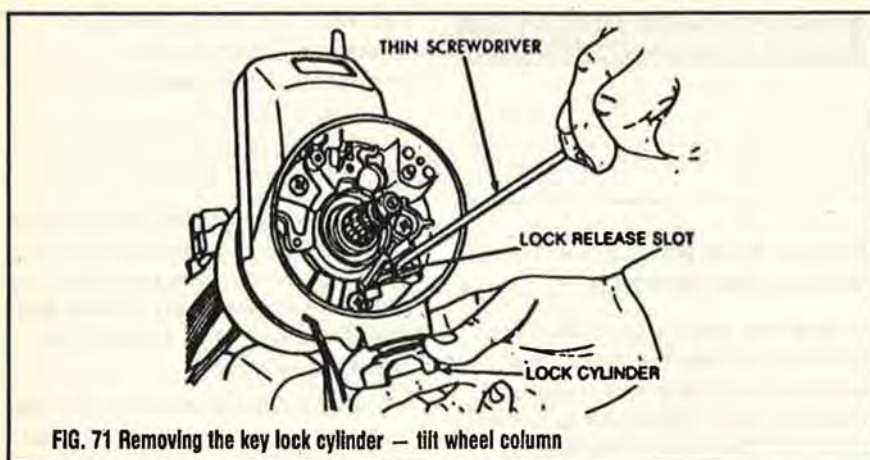


FIG. 71 Removing the key lock cylinder — tilt wheel column

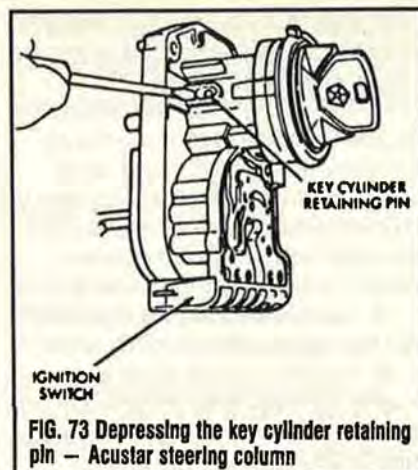


FIG. 73 Depressing the key cylinder retaining pin — Acustar steering column

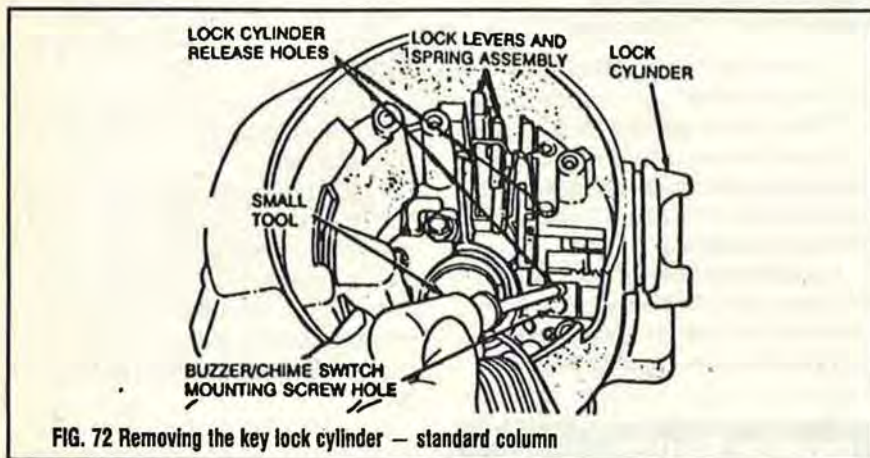


FIG. 72 Removing the key lock cylinder — standard column

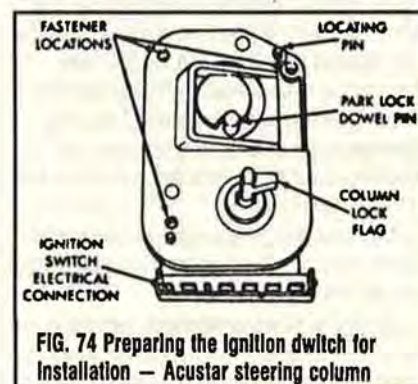


FIG. 74 Preparing the ignition switch for installation — Acustar steering column

6. Push the upper steering shaft inward far enough to remove the inner race and inner race seat, and remove both.

7. Turn the ignition switch to the **ACCESSORY** position, remove its mounting screws, and remove it.

8. To install the new switch, first turn it to the **ACCESSORY** position and slide it into place. Install the mounting screws.

9. Hold the steering shaft inward and replace the inner race seat and inner race.

10. Put the dimmer switch into position and then install its retaining screws. Install the actuating rod.

11. Install the tilt spring and guide. Put the tilt spring retainer into position. Then, use a Phillips screwdriver to re-engage the spring retainer lock screw.

12. Install the wash/wipe switch. Install the housing cover and install the three housing cover screws.

13. Insert the curved end of the hook used in removal into the loop of the buzzer/chime switch wedge spring. Use it to install both the buzzer/chime switch and the spring without allowing the spring to drop into the column.

14. Install the ignition lock cylinder as described above. Install the turn signal switch as described above.

Ignition Lock/Switch

REMOVAL & INSTALLATION

Late Model Chrysler Front Wheel Drive Vehicles

ACUSTAR STEERING COLUMN

♦ SEE FIGS. 73-75

➔ **The Acustar column can be identified by the "halo" light around the ignition key cylinder. This service repair requires above average mechanical ability or skill.**

1. Disconnect the negative battery cable.
2. Remove the tilt lever, if equipped.
3. Remove the upper and lower column covers.

4. Remove the 3 ignition switch Torx® screws; APEX 440-TX20H or equivalent required.

5. Pull the switch away from the column. Release the connector locks on the 2 wiring connectors and disconnect them from the switch.

6. Remove the key lock cylinder from the ignition switch:

a. Insert the key and turn the switch to the **LOCK** position. Using a suitable small tool, depress the key cylinder retaining pin flush with the key cylinder surface.

b. Rotate the key clockwise to the **OFF** position to unseat the key cylinder from the ignition switch assembly. The cylinder bezel should be about 1/8 in. (3mm) above the ignition switch halo light ring. Do not attempt to remove the key cylinder yet.

c. With the key cylinder in the unseated position, rotate the key counterclockwise to the **LOCK** position and remove the key.

d. Remove the key cylinder from the ignition switch.

To Install:

7. Connect the wiring connectors.

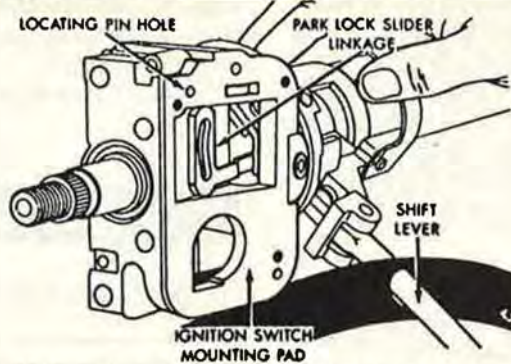


FIG. 75 Ignition switch mounting pad - Acustar steering column

8. Mount the ignition switch to the column:
 - a. Position the shifter in **PARK** position. The park lock dowel pin on the ignition switch assembly must engage with the column park lock slider linkage.
 - b. Verify that the ignition switch is in the **LOCK** position; the flag should be parallel to the ignition switch terminals. Apply a small amount of grease to the flag and pin.
 - c. Position the park lock link to mid-travel.
 - d. Align the locating pin hole and its pin, position the ignition switch against the lock housing face and make sure the pin is inserted into the park lock link contour slot. Torque the retaining screws to 17 Inch lbs.

9. With the key cylinder and ignition switch in the **LOCK** position, key not in cylinder, gently insert the key cylinder into the ignition switch until it bottoms.

10. Insert the key. Simultaneously, push in on the cylinder and rotate the key to the **RUN** position. This action should fully seat the cylinder in the ignition switch.

11. Install the column covers and the tilt lever, if equipped.

12. Connect the negative battery cable and check the push-to-lock and park lock functions, halo lighting and all ignition switch positions for proper operation.

Steering Column

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles

♦ SEE FIGS. 76-78

➔ Use this service procedure as a guide for all other models. Refer to the exploded view illustrations in this section.

⚠ CAUTION

On vehicles equipped with an air bag, the negative battery cable must be disconnected and isolated before working on the system. Failure to do so may result in deployment of the air bag and possible personal injury.

1. Disconnect the negative battery cable.
2. If the car has a column shift, disconnect the cable rod by prying the rod out of the grommet in the shift lever. On these cars, also remove the cable clip and remove the cable from the lower bracket.

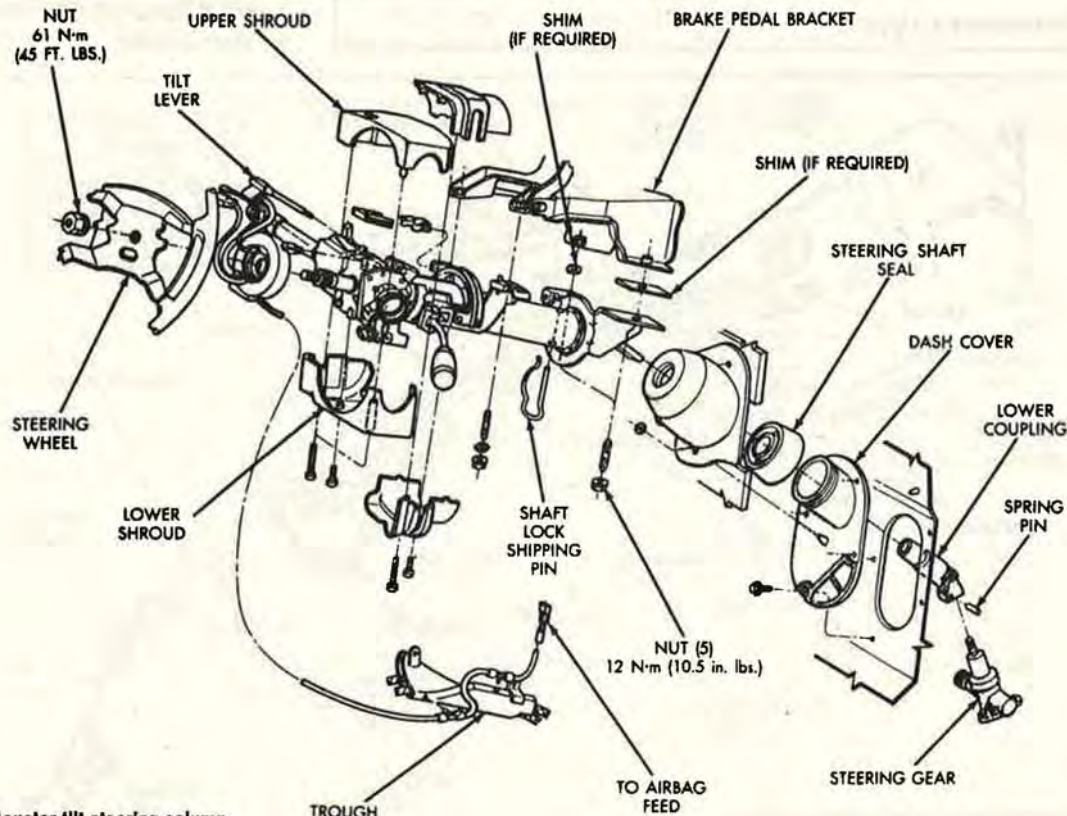


FIG. 76 Acustar tilt steering column

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3. Disconnect the wiring connectors at the steering column jacket. Remove the steering wheel center pad assembly. Disconnect the horn wires.

4. Remove the steering wheel as described above.

5. Remove the instrument panel steering column cover and lower reinforcement. Disconnect the bezel.

6. Remove the indicator set screw and gearshift indicator pointer from the shift housing.

7. Remove the nuts which attach the column bracket to the instrument panel support and lower the bracket. Make sure to retain the washers used on the breakaway capsules. **Do not remove the roll pin!**

8. Grasp the column assembly and pull it to the rear so as to disconnect the stub shaft from the steering gear coupling. Then, pull the column out through the door, avoiding damaging paint or trim.

9. Grease a new gearshift lever grommet. The grommet must be forced into place with a pair of pliers, working so as to install it from the side of the lever. Close the pair of pliers around the portion of the lever where the grommet goes and the grommet, with a washer located between the one jaw of the pair of pliers and the grommet to protect it from the teeth.

To Install:

10. Position it in the car, align the stub shaft with the coupling in the steering gear, and gently thrust it forward to engage the two.

11. Raise the column and engage it with the 5 studs. Put the bracket in place below the column. Loosely install the 5 nuts, making sure to install washers on the breakaway capsules. Exert a force which will pull the column to the rear and then torque the nuts to 105 inch lbs.

12. Connect the gearshift cable rod to the shift lever on column shift-equipped cars.

Grease the cable rod and then use a pair of pliers to force the rod to snap into the grommet. Check the linkage adjustment.

13. Install the steering wheel as described above.

Steering Linkage

REMOVAL & INSTALLATION

Outer Tie Rod End

♦ SEE FIG. 79

1. Jack up your car and support it with jackstands.

2. Loosen the jam nut which connects the tie rod end to the rack.

3. Mark the tie rod position on the threads.

4. Remove the tie rod cotter pin and nut.

5. Using a puller, remove the tie rod from the steering knuckle.

6. Unscrew the tie rod end from the rack. Count the number of complete turns it takes to remove the tie rod end from the rack assembly.

To Install:

7. Install a new tie rod end assembly (install new grease fitting if equipped) the same of amount turns it took to remove, and retighten the jam nut to 55 ft. lbs.

8. Toe adjustment is made by turning the tie rod end. Install nut with NEW cotter pin. Recheck the wheel alignment.



FIG. 77 Removing rod out of grommet

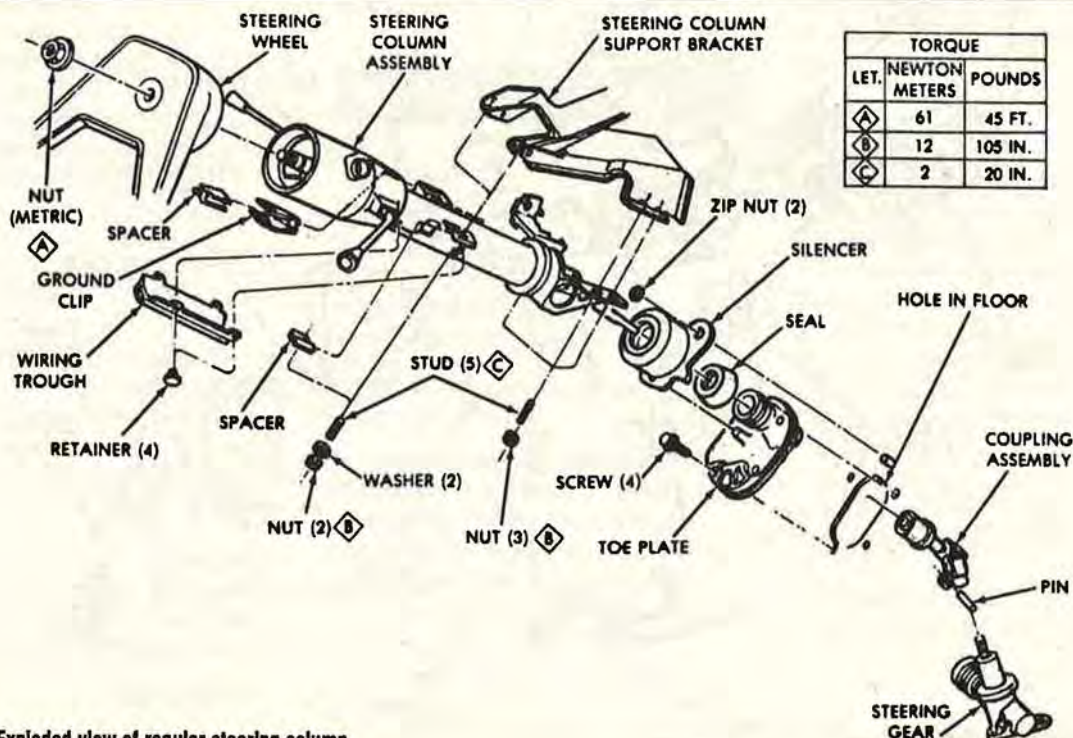


FIG. 78 Exploded view of regular steering column

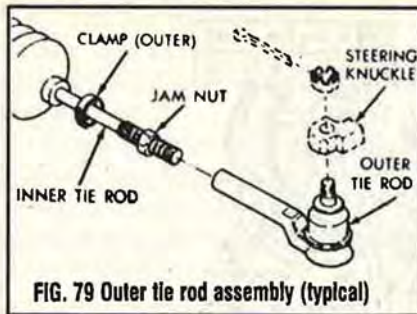


FIG. 79 Outer tie rod assembly (typical)

Manual and Power Steering Gear

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles

♦ SEE FIGS. 80A-81

➔ **An assistant will be needed to perform this procedure. Use this service procedure as a guide for all other models.**

1. Loosen the wheel nuts. Raise the vehicle and support it securely by the body.
2. Detach the tie rod ends at the steering knuckles as described above.

3. Support the lower front suspension crossmember securely with a jack. Then, remove all four suspension crossmember attaching bolts. Lower the crossmember with the jack until it is possible to gain access to the steering gear and the lower steering column. Slide the gear off the steering column coupling.

4. Remove the splash shields and boot seal shields.

5. If the car has power steering, remove the fasteners from the hose locating bracket attachment points. Get a drain pan and

disconnect both hoses at the opening nearest the steering gear and drain them into the pan. Discard the O-rings.

6. Remove the bolts attaching the power steering unit to the crossmember.

7. Remove the steering gear from the crossmember by pulling it off the steering column coupling and then removing it.

To install:

8. To install, first bolt the steering gear to the crossmember, torquing them to 250 inch lbs. on

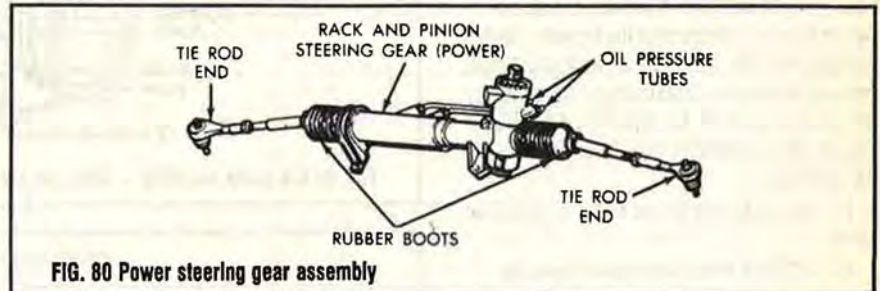


FIG. 80 Power steering gear assembly

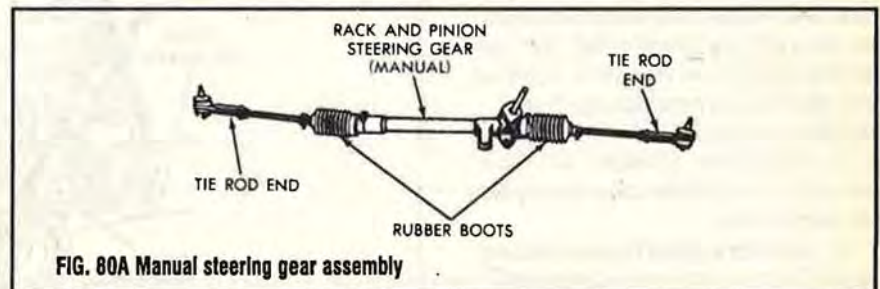


FIG. 80A Manual steering gear assembly

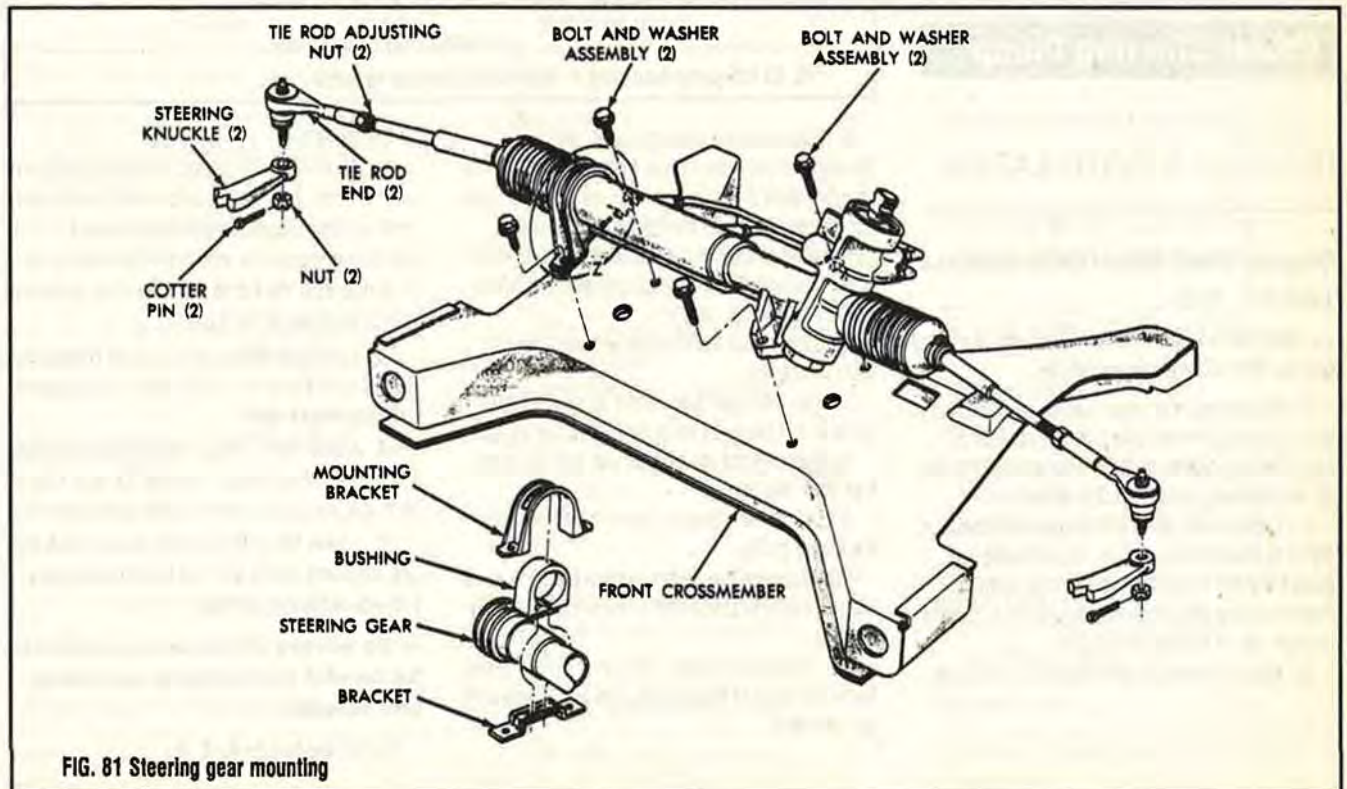


FIG. 81 Steering gear mounting

8-44 SUSPENSION AND STEERING

vehicles to 1988, 50 ft. lbs. on 1989-90 vehicles and 90 ft. lbs. on 1991 vehicles.

9. Raise the crossmember into position with the jack, lining up the steering column coupling and the corresponding fitting on the end of the steering rack pinion shaft. Have an assistant inside the car help to position the column. If the car has manual steering, make sure the master serrations are lined up. Then, maneuver the crossmember/rack assembly so as to engage the column coupling and pinion shaft.

10. Position the crossmember so the bolt holes will line up. Install the bolts, but do not tighten them — merely start the threads. Tighten the right rear bolt, which serves as a pilot bolt to properly locate the crossmember. Then, torque all four bolts to 90 ft. lbs. **PROPER TORQUE TO THESE CROSSMEMBER BOLTS IS VERY IMPORTANT.**

11. Reconnect the tie rod ends, as described above.

12. Wipe the ends of the power steering pump hoses and the ports in the steering gear. Install new O-rings on the hose tube ends and coat them with power steering fluid. Then, route the hose carefully in all clips and in such a way as to avoid kinks or close proximity to any exhaust system parts.

13. Make the hose connections and torque them to 25 ft. lbs. Refill the power steering pump with approved fluid.

14. Adjust toe in. Bleed the power steering system. Run the engine and check for leaks.

Power Steering Pump

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive vehicles

♦ SEE FIGS. 82-83

➔ **Use this service procedure as a guide for all other models.**

1. Disconnect the vapor separator hose from the carburetor/throttle body. If the car has air conditioning, disconnect the two wires from the air conditioning clutch cycling switch.

2. Remove the drive belt adjustment lockbolt (refer to illustrations on later model vehicles) from the front of the power steering pump. Remove drive belt. Remove the pump end hose bracket nut, if the pump has one.

3. Raise the vehicle and support it securely.

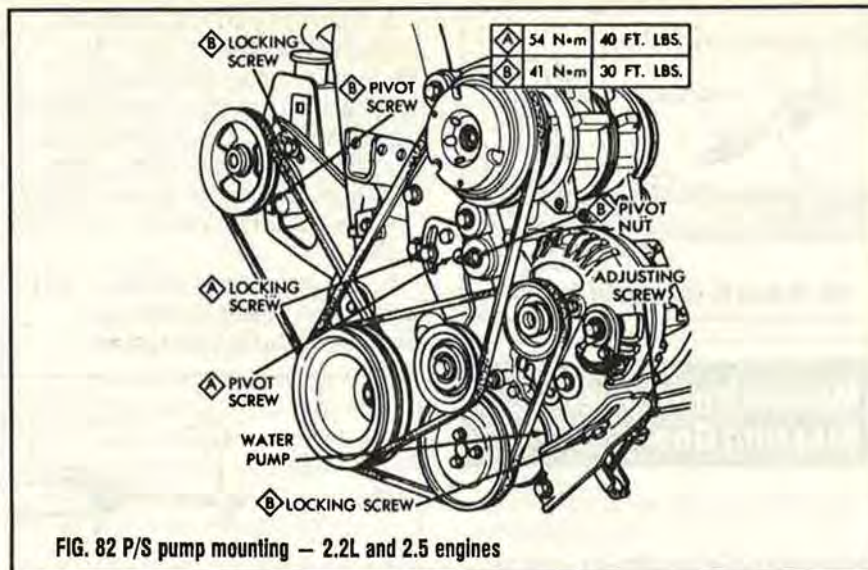


FIG. 82 P/S pump mounting — 2.2L and 2.5 engines

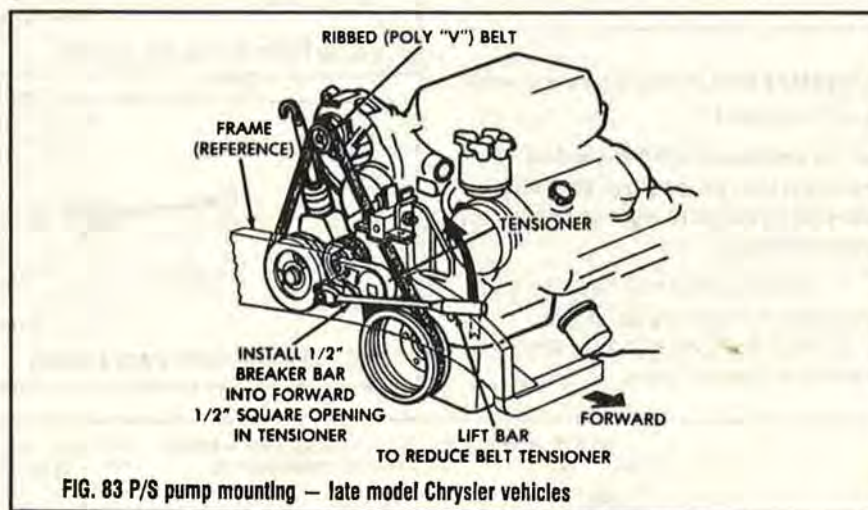


FIG. 83 P/S pump mounting — late model Chrysler vehicles

4. Place a drain pan under the pump. Disconnect the return hose from the tube on the steering gear and lower the end of the hose into the pan to drain the fluid from the pump (fluid will continue to drain during the next step).

5. Remove the right side splash shield (this protects the drive belts).

6. Disconnect both power steering hoses from the pump.

7. Cap the open hose ends as well as the ports in the pump to keep dirt out of the system.

8. Remove the lower stud nut and the pivot bolt from the pump.

9. Lower the vehicle. Remove the belt from the pump pulley.

10. Remove the pump rearward and to clear the mounting bracket and remove the adjusting bracket.

11. Rotate the pump clockwise so the pulley faces the rear of the vehicle and pull it upwards to remove it.

To Install:

12. To replace the pump, position it as it was when it came out (pulley to the rear) and lower it into position. Then, turn it to its normal orientation. Install the adjustment bracket onto the pump with the tab in the lower left mounting hole in the front of the housing.

13. Raise the vehicle and support it securely. Then, install the lower pump stud nut and pivot bolt **only finger tight**.

14. Install new O-rings on the pressure hose and connect both hoses. Torque the tube nuts to 25 ft. lbs. Install the belt into both pulley grooves.

15. Lower the vehicle to the floor. Install the belt adjusting screw into the bracket and then and adjust the belt tension.

➔ **Do not pry on the pump reservoir. Be careful not to create excessive belt tension**

Torque the bolt to 30 ft. lbs.

16. Again raise and support the vehicle securely. Torque the lower stud nut and pivot bolt to 40 ft. lbs. Install the splash shield that protects the belt.

17. Lower the vehicle to the ground and connect the vapor separator and vent hoses to the carburetor/throttle body. Connect the two wires to the air conditioning cycling switch, if the car has air conditioning.

18. Fill the pump reservoir to the correct (cold) level with approved fluid. Bleed the system as described immediately below.

BLEEDING THE SYSTEM

1. Check the fluid level in the reservoir and fill

to the correct level with the approved power steering fluid.

2. Start the engine and allow it to idle with the transmission in Neutral (manual) or Park (automatic).

3. Slowly turn the steering wheel all the way to the left and then all the way to the right. Turn it from lock to lock like this through several cycles. Then, refill the fluid reservoir.

TORQUE SPECIFICATIONS

Component	English	Metric
Steering gear to crossmember bolts:	50 ft. lbs.	68 Nm
Tie rod end to steering knuckle attaching nut:	35 ft. lbs.	52 Nm
Outer tie rod to inner tie rod lock nut:	55 ft. lbs.	75 Nm
Power steering pressure hose tube nuts:	25 ft. lbs.	34 Nm
Return tube nut:	25 ft. lbs.	34 Nm
Power steering fluid pressure hose banjo bolt:	25 ft. lbs.	34 Nm
Power steering pump to bracket bolt:		
M-10 type:	30 ft. lbs.	40 Nm
M-8 type:	21 ft. lbs.	28 Nm
Steering wheel to shaft nut:	45 ft. lbs.	61 Nm
Steering column clamp bolt or stud nut:	105 in. lbs.	12 Nm

Troubleshooting the Power Steering Pump

Problem	Cause	Solution
Chirp noise in steering pump	• Loose belt	• Adjust belt tension to specification
Belt squeal (particularly noticeable at full wheel travel and stand still parking)	• Loose belt	• Adjust belt tension to specification
Growl noise in steering pump	• Excessive back pressure in hoses or steering gear caused by restriction	• Locate restriction and correct. Replace part if necessary.
Growl noise in steering pump (particularly noticeable at stand still parking)	• Scored pressure plates, thrust plate or rotor • Extreme wear of cam ring	• Replace parts and flush system • Replace parts
Groan noise in steering pump	• Low oil level • Air in the oil. Poor pressure hose connection.	• Fill reservoir to proper level • Tighten connector to specified torque. Bleed system by operating steering from right to left—full turn.
Rattle noise in steering pump	• Vanes not installed properly • Vanes sticking in rotor slots	• Install properly • Free up by removing burrs, varnish, or dirt
Swish noise in steering pump	• Defective flow control valve	• Replace part
Whine noise in steering pump	• Pump shaft bearing scored	• Replace housing and shaft. Flush system.

8-46 SUSPENSION AND STEERING

Troubleshooting the Power Steering Pump (cont.)

Problem	Cause	Solution
Hard steering or lack of assist	- Loose pump belt - Low oil level in reservoir NOTE: Low oil level will also result in excessive pump noise - Steering gear to column misalignment - Lower coupling flange rubbing against steering gear adjuster plug - Tires not properly inflated	- Adjust belt tension to specification - Fill to proper level. If excessively low, check all lines and joints for evidence of external leakage. Tighten loose connectors. - Align steering column - Loosen pinch bolt and assemble properly - Inflate to recommended pressure
Foaming milky power steering fluid, low fluid level and possible low pressure	Air in the fluid, and loss of fluid due to internal pump leakage causing overflow	Check for leaks and correct. Bleed system. Extremely cold temperatures will cause system aeration should the oil level be low. If oil level is correct and pump still foams, remove pump from vehicle and separate reservoir from body. Check welsh plug and body for cracks. If plug is loose or body is cracked, replace body.
Low pump pressure	- Flow control valve stuck or inoperative - Pressure plate not flat against cam ring	- Remove burrs or dirt or replace. Flush system. - Correct
Momentary increase in effort when turning wheel fast to right or left	- Low oil level in pump - Pump belt slipping - High internal leakage	- Add power steering fluid as required - Tighten or replace belt - Check pump pressure. (See pressure test)
Steering wheel surges or jerks when turning with engine running especially during parking	- Low oil level - Loose pump belt - Steering linkage hitting engine oil pan at full turn - Insufficient pump pressure	- Fill as required - Adjust tension to specification - Correct clearance - Check pump pressure. (See pressure test). Replace flow control valve if defective.
Steering wheel surges or jerks when turning with engine running especially during parking (cont.)	Sticking flow control valve	Inspect for varnish or damage, replace if necessary
Excessive wheel kickback or loose steering	Air in system	Add oil to pump reservoir and bleed by operating steering. Check hose connectors for proper torque and adjust as required.
Low pump pressure	- Extreme wear of cam ring - Scored pressure plate, thrust plate, or rotor - Vanes not installed properly - Vanes sticking in rotor slots - Cracked or broken thrust or pressure plate	- Replace parts. Flush system. - Replace parts. Flush system. - Install properly - Freeup by removing burrs, varnish, or dirt - Replace part

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9-2 BRAKES

BASIC OPERATING PRINCIPLES

Hydraulic systems are used to actuate the brakes of all automobiles. The system transports the power required to force the frictional surfaces of the braking system together from the pedal to the individual brake units at each wheel. A hydraulic system is used for two reasons.

First, fluid under pressure can be carried to all parts of an automobile by small pipes and flexible hoses without taking up a significant amount of room or posing routing problems.

Second, a great mechanical advantage can be given to the brake pedal end of the system, and the foot pressure required to actuate the brakes can be reduced by making the surface area of the master cylinder pistons smaller than that of any of the pistons in the wheel cylinders or calipers.

The master cylinder consists of a fluid reservoir and a double cylinder and piston assembly. Double type master cylinders are designed to separate the front and rear braking systems hydraulically in case of a leak.

Steel lines carry the brake fluid to a point on the vehicle's frame near each of the vehicle's wheels. The fluid is then carried to the calipers and wheel cylinders by flexible tubes in order to allow for suspension and steering movements.

In drum brake systems, each wheel cylinder contains two pistons, one at either end, which push outward in opposite directions.

In disc brake systems, the cylinders are part of the calipers. One cylinder in each caliper is used to force the brake pads against the disc.

All pistons employ some type of seal, usually made of rubber, to minimize fluid leakage. A rubber dust boot seals the outer end of the cylinder against dust and dirt. The boot fits around the outer end of the piston on disc brake calipers, and around the brake actuating rod on wheel cylinders.

The hydraulic system operates as follows: When at rest, the entire system, from the piston(s) in the master cylinder to those in the wheel cylinders or calipers, is full of brake fluid. Upon application of the brake pedal, fluid trapped in front of the master cylinder piston(s) is forced through the lines to the wheel cylinders. Here, it forces the pistons outward, in the case of drum brakes, and inward toward the disc, in the case of disc brakes. The motion of the pistons is opposed by return springs mounted outside the cylinders in drum brakes, and by spring seals, in disc brakes.

Upon release of the brake pedal, a spring located inside the master cylinder immediately returns the master cylinder pistons to the normal position. The pistons contain check valves and

the master cylinder has compensating ports drilled in it. These are uncovered as the pistons reach their normal position. The piston check valves allow fluid to flow toward the wheel cylinders or calipers as the pistons withdraw. Then, as the return springs force the brake pads or shoes into the released position, the excess fluid reservoir through the compensating ports. It is during the time the pedal is in the released position that any fluid that has leaked out of the system will be replaced through the compensating ports.

Dual circuit master cylinders employ two pistons, located one behind the other, in the same cylinder. The primary piston is actuated directly by mechanical linkage from the brake pedal through the power booster. The secondary piston is actuated by fluid trapped between the two pistons. If a leak develops in front of the secondary piston, it moves forward until it bottoms against the front of the master cylinder, and the fluid trapped between the pistons will operate the rear brakes. If the rear brakes develop a leak, the primary piston will move forward until direct contact with the secondary piston takes place, and it will force the secondary piston to actuate the front brakes. In either case, the brake pedal moves farther when the brakes are applied, and less braking power is available.

All dual circuit systems use a switch to warn the driver when only half of the brake system is operational. This switch is located in a valve body which is mounted on the firewall or the frame below the master cylinder. A hydraulic piston receives pressure from both circuits, each circuit's pressure being applied to one end of the piston. When the pressures are in balance, the piston remains stationary. When one circuit has a leak, however, the greater pressure in that circuit during application of the brakes will push the piston to one side, closing the switch and activating the brake warning light.

In disc brake systems, this valve body also contains a metering valve and, in some cases, a proportioning valve. The metering valve keeps pressure from traveling to the disc brakes on the front wheels until the brake shoes on the rear wheels have contacted the drums, ensuring that the front brakes will never be used alone. The proportioning valve controls the pressure to the rear brakes to lessen the chance of rear wheel lock-up during very hard braking.

Warning lights may be tested by depressing the brake pedal and holding it while opening one of the wheel cylinder bleeder screws. If this does

not cause the light to go on, substitute a new lamp, make continuity checks, and, finally, replace the switch as necessary.

The hydraulic system may be checked for leaks by applying pressure to the pedal gradually and steadily. If the pedal sinks very slowly to the floor, the system has a leak. This is not to be confused with a springy or spongy feel due to the compression of air within the lines. If the system leaks, there will be a gradual change in the position of the pedal with a constant pressure.

Check for leaks along all lines and at wheel cylinders. If no external leaks are apparent, the problem is inside the master cylinder.

Disc Brakes

BASIC OPERATING PRINCIPLES

Instead of the traditional expanding brakes that press outward against a circular drum, disc brake systems utilize a disc (rotor) with brake pads positioned on either side of it. Braking effect is achieved in a manner similar to the way you would squeeze a spinning phonograph record between your fingers. The disc (rotor) is a casting with cooling fins between the two braking surfaces. This enables air to circulate between the braking surfaces making them less sensitive to heat buildup and more resistant to fade. Dirt and water do not affect braking action since contaminants are thrown off by the centrifugal action of the rotor or scraped off the by the pads. Also, the equal clamping action of the two brake pads tends to ensure uniform, straight line stops. Disc brakes are inherently self-adjusting.

There are three general types of disc brake:

1. A fixed caliper.
2. A floating caliper.

3. A act, these two types are often lumped together. In both designs, the pad on the inside of the rotor is moved into contact with the rotor by hydraulic force. The caliper, which is not held in a fixed position, moves slightly, bringing the outside pad into sliding caliper.

The fixed caliper design uses two pistons mounted on either side of the rotor (in each side of the caliper). The caliper is mounted rigidly and does not move.

The sliding and floating designs are quite similar. In f contact with the rotor. There are various methods of attaching floating calipers. Some pivot at the bottom or top, and some slide on mounting bolts. In any event, the end result is the same.

Drum Brakes

BASIC OPERATING PRINCIPLES

Drum brakes employ two brake shoes mounted on a stationary backing plate. These shoes are positioned inside a circular drum which rotates with the wheel assembly. The shoes are held in place by springs. This allows them to slide toward the drums (when they are applied) while keeping the linings and drums in alignment. The shoes are actuated by a wheel cylinder which is mounted at the top of the backing plate. When the brakes are applied, hydraulic pressure forces the wheel cylinder's actuating links outward. Since these links bear directly against the top of the brake shoes, the tops of the shoes are then forced against the inner side of the drum. This action forces the

bottoms of the two shoes to contact the brake drum by rotating the entire assembly slightly (known as servo action). When pressure within the wheel cylinder is relaxed, return springs pull the shoes back away from the drum.

Most modern drum brakes are designed to self-adjust themselves during application when the vehicle is moving in reverse. This motion causes both shoes to rotate very slightly with the drum, rocking an adjusting lever, thereby causing rotation of the adjusting screw.

Power Boosters

Power brakes operate just as non-power brake systems except in the actuation of the master cylinder pistons. A vacuum diaphragm is located on the front of the master cylinder and assists the driver in applying the brakes, reducing both the effort and travel he must put into moving the brake pedal.

The vacuum diaphragm housing is connected to the intake manifold by a vacuum hose. A check valve is placed at the point where the hose enters the diaphragm housing, so that during periods of low manifold vacuum brake assist vacuum will not be lost.

Depressing the brake pedal closes off the vacuum source and allows atmospheric pressure to enter on one side of the diaphragm. This causes the master cylinder pistons to move and apply the brakes. When the brake pedal is

released, vacuum is applied to both sides of the diaphragm, and return springs return the diaphragm and master cylinder pistons to the released position. If the vacuum fails, the brake pedal rod will butt against the end of the master cylinder actuating rod, and direct mechanical application will occur as the pedal is depressed.

The hydraulic and mechanical problems that apply to conventional brake systems also apply to power brakes, and should be checked for if the tests below do not reveal the problem.

Test for a system vacuum leak as described below:

1. Operate the engine at idle without touching the brake pedal for at least one minute.
2. Turn off the engine, and wait one minute.
3. Test for the presence of assist vacuum by depressing the brake pedal and releasing it several times. Light application will produce less and less pedal travel, if vacuum was present. If there is no vacuum, air is leaking into the system somewhere.

Test for system operation as follows:

1. Pump the brake pedal (with engine off) until the supply vacuum is entirely gone.
2. Put a light, steady pressure on the pedal.
3. Start the engine, and operate it at idle. If the system is operating, the brake pedal should fall toward the floor if constant pressure is maintained on the pedal.

Power brake systems may be tested for hydraulic leaks just as ordinary systems are tested.

BRAKE SYSTEM

Adjustments

DRUM BRAKES

Chrysler Front Wheel Drive Vehicles

The brakes are self-adjusting and require no periodic adjustment. If the pedal is low and there are no apparent hydraulic problems, the rear drum brake linings are excessively worn or the automatic adjusters may be defective. The brakes are adjusted (the automatic adjusters are actuated) after drum removal or lining replacement.

In removing or installing the drums, the

adjusters will have been adjusted down so the linings will be located well inside the drum. First, pump the pedal through its full stroke and with firm pressure repeatedly until the adjusters bring the linings out to fit the drum (the pedal comes up to a normal level). Then, adjust the parking brake cable as described later in this section. Finally, drive the car and stop normally several times to allow the adjusters to reach their final position.

Dodge Monaco

♦ SEE FIGS. 4-6

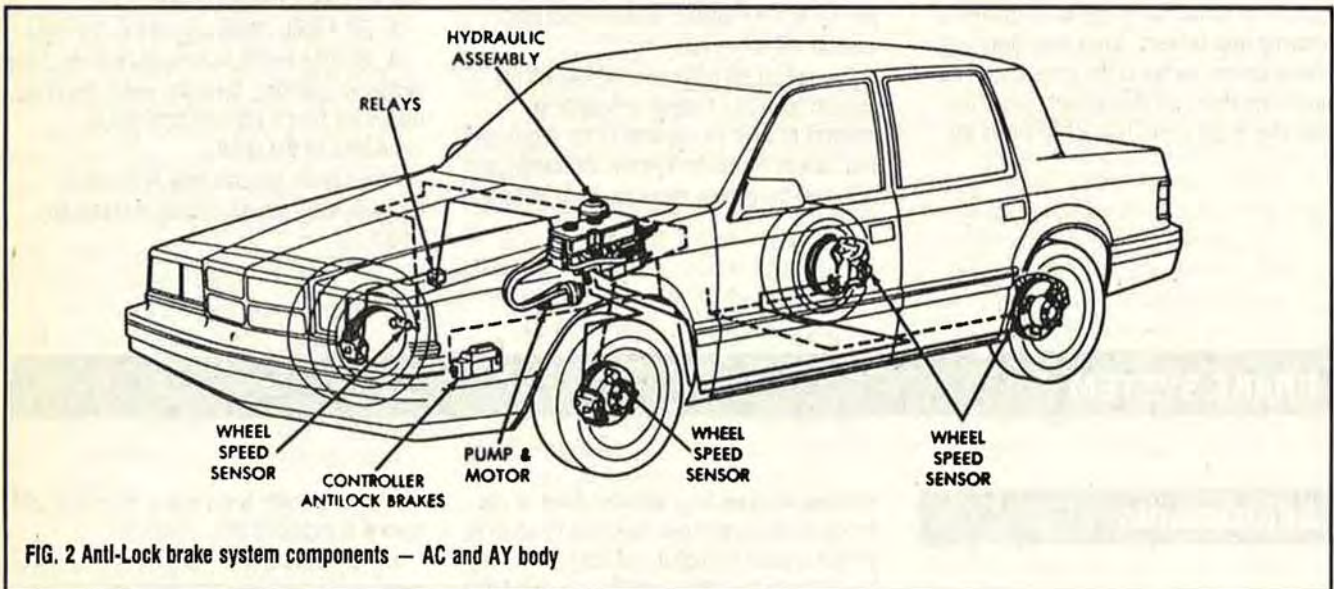
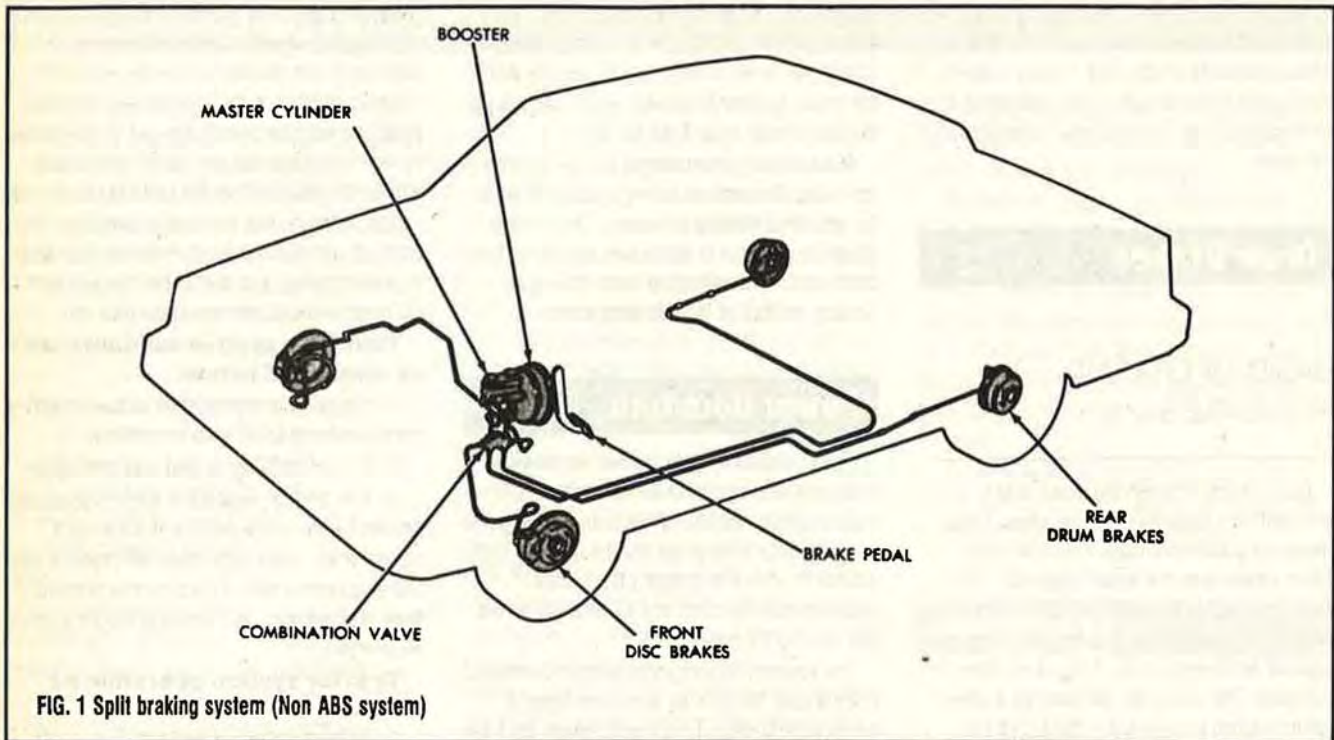
1. Raise the rear of vehicle and remove the rear wheels.
2. Remove access plate from the backing plate.
3. Working through access plug hole, tighten

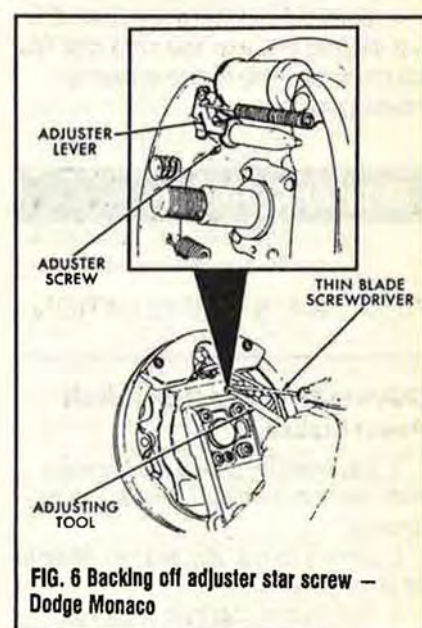
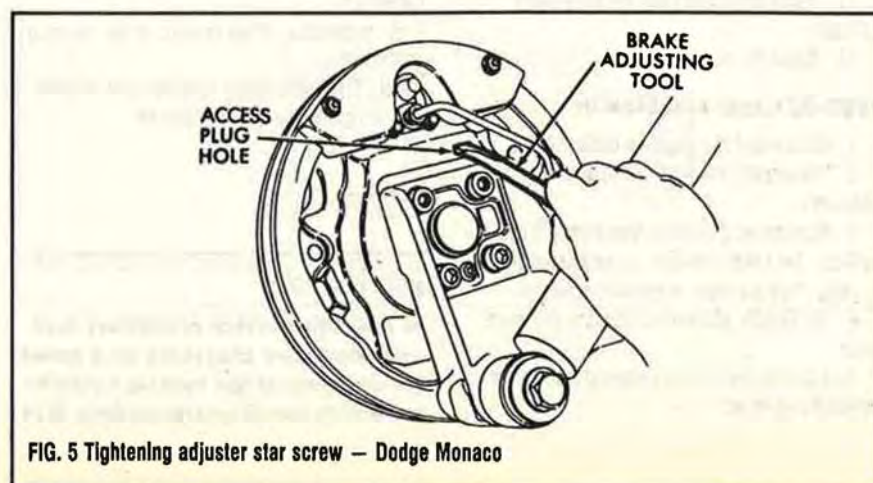
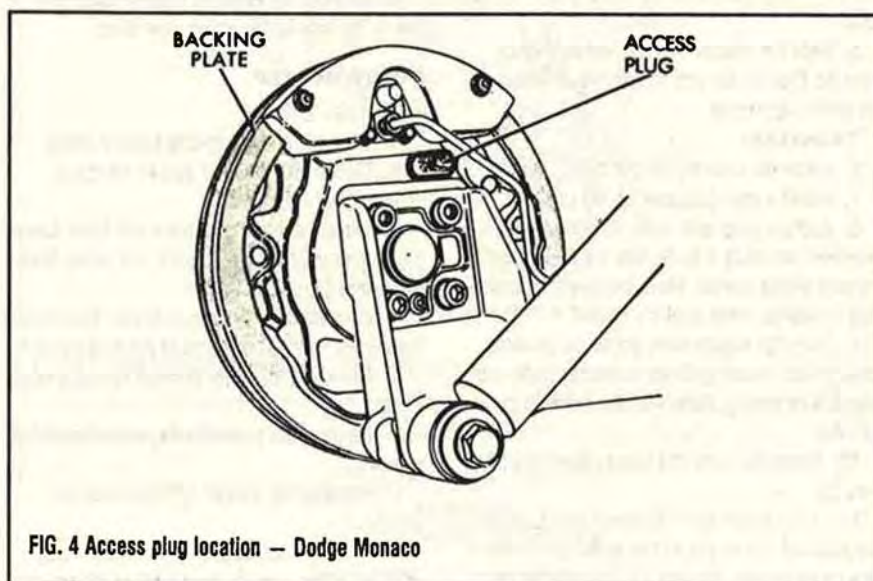
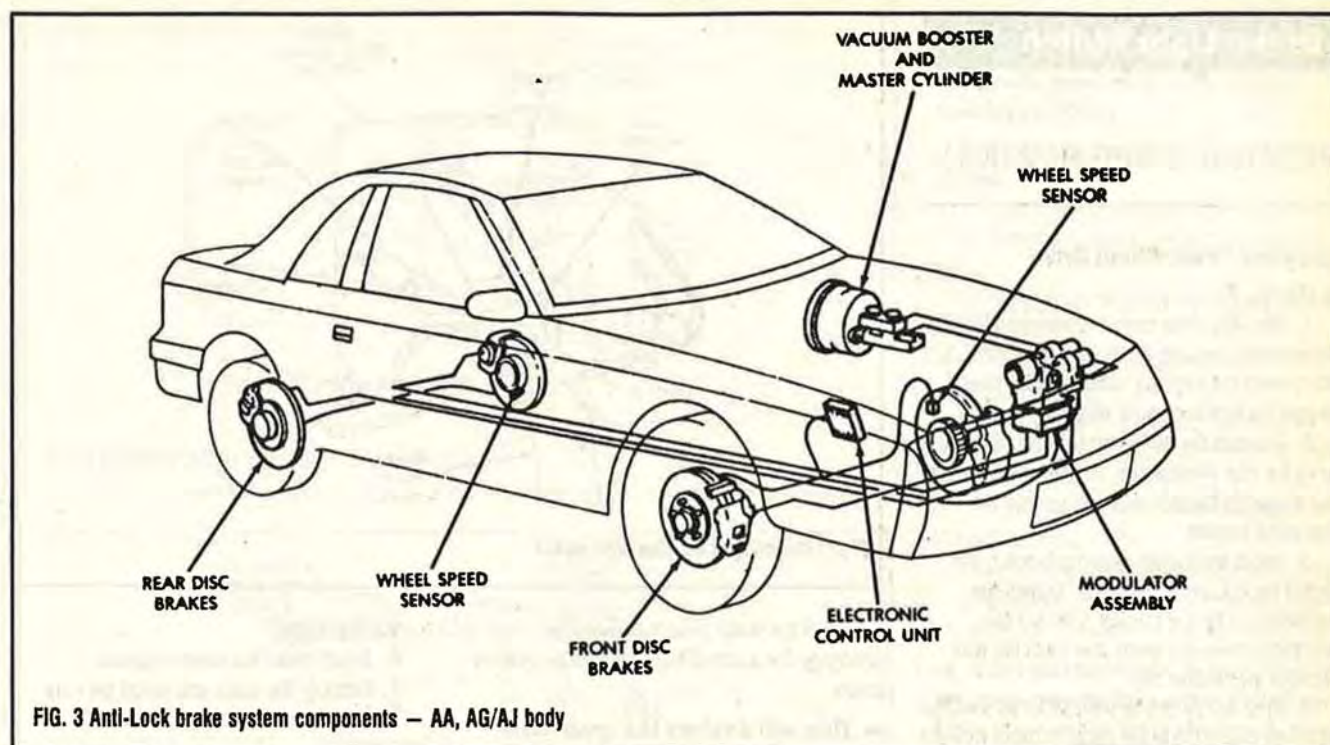
adjuster screw with brake tool or equivalent until drum is at moderate drag condition.

4. Hold adjuster lever away from the adjuster screw with a thin blade tool. Back off adjuster screw until rear wheels spin freely without noticeable brake shoe to rear brake drum drag.

5. Install access plug into backing plate, install wheel and lower the vehicle. Road test the vehicle for proper operation.

9-4 BRAKES





9-6 BRAKES

Brake Light Switch

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive

♦ SEE FIG. 7

1. The stop lamp switch is incorporated with its mounting bracket. To replace the switch, first disconnect the negative battery cable. Then, unplug the two connector plugs.

2. Remove the wiring harness for the switch from the clip. Remove the nut and washer from the mounting bracket stud and remove the mounting bracket.

3. Install the switch/retaining bracket and install the nut and lockwasher. Tighten the retaining nut for the bracket. Connect the electrical connector plugs and route the wire through the retainer clip.

4. Push the switch forward as far as it will go (this will cause the brake pedal to move forward slightly).

5. Gently pull backward on the brake pedal until the pedal lever rests against the stop. This will ratchet the switch back to its properly adjusted position.

Master Cylinder

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive With Power Brakes

1. Disconnect the primary and secondary brake lines from the master cylinder. Plug the openings.

2. Remove the nuts attaching the cylinder to the power brake booster.

3. Slide the master cylinder straight out, away from the booster.

4. Installation is the reverse of removal. Torque the mounting bolts to 15–25 ft. lbs.

5. Remember to bleed the brake system.

Chrysler Front Wheel Drive With Non-Power Brakes

1. Disconnect the primary and secondary brake lines and install plugs in the master cylinder openings.

2. Disconnect the stoplight switch mounting bracket from under the instrument panel. Pull the stop light switch out of the way to prevent switch damage.

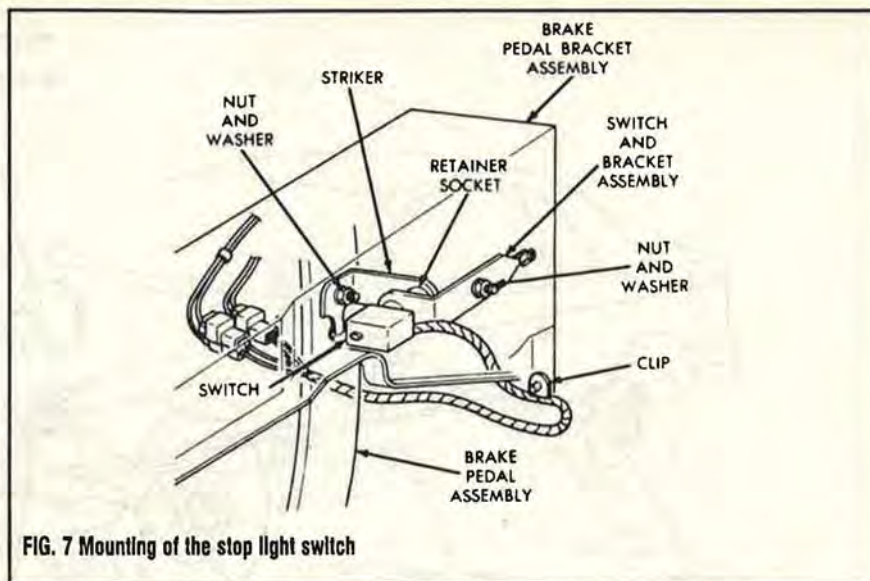


FIG. 7 Mounting of the stop light switch

3. Pull the brake pedal backward to disengage the pushrod from the master cylinder piston.

➔ **This will destroy the grommet.**

4. Remove the master cylinder-to-firewall nuts.

5. Slide the master cylinder out and away from the firewall. Be sure to remove all pieces of the broken grommet.

To Install:

6. Install the boot on the pushrod.

7. Install a new grommet on the pushrod.

8. Apply a soap and water solution to the grommet and slide it firmly into position in the primary piston socket. Move the pushrod from side to side to make sure it's seated.

9. From the engine side, press the pushrod through the master cylinder mounting plate and align the mounting studs with the holes in the cylinder.

10. Install the nuts and torque them to 250 inch lbs.

11. From under the instrument panel, place the pushrod on the pin on the pedal and install a new retaining clip. Be sure to lubricate the pin.

12. Install the brake lines on the master cylinder.

13. Bleed the system.

1990–92 Laser And Stealth

1. Disconnect the negative battery cable.

2. Disconnect the fluid level sensor connector.

3. Disconnect the brake lines from the master cylinder. On Laser vehicles, a separate reservoir is used. Plug the lines to prevent drainage.

4. On Stealth, disconnect the low pressure hose.

5. Remove the 2 nuts securing the master cylinder and lift off.

To Install:

6. Bench bleed the master cylinder.

7. Install to the studs and install the nuts.

8. Install the brake lines to the master cylinder.

9. Connect the negative battery cable and check the brakes for proper operation.

Dodge Monaco

♦ SEE FIGS. 8-9

1. Disconnect the negative battery cable.

2. Disconnect the fluid sensor electrical connector, if equipped.

3. Disconnect and plug the brake lines. Cover the master cylinder outlet ports and brake lines to prevent the entry of dirt.

4. If equipped with manual brake, disconnect the master cylinder pushrod at the brake pedal.

5. Remove the master cylinder retaining bolts or nuts.

6. Remove the proportioning valve bracket, if required.

7. Remove the master cylinder from the vehicle.

8. Before installing the replacement master cylinder on the vehicle, bench bleed the master cylinder.

9. Installation is the reverse of the removal procedure.

10. The entire brake system must be bled after installing the master cylinder.

OVERHAUL

♦ SEE FIGS. 10-14

➔ **Use this service procedure and exploded view diagrams as a guide for overhaul of the master cylinder assembly for all years/models. If in**

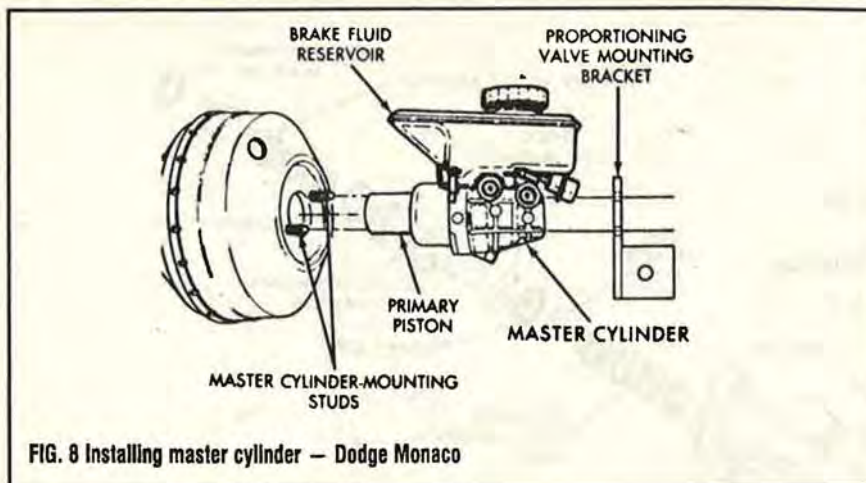


FIG. 8 Installing master cylinder — Dodge Monaco

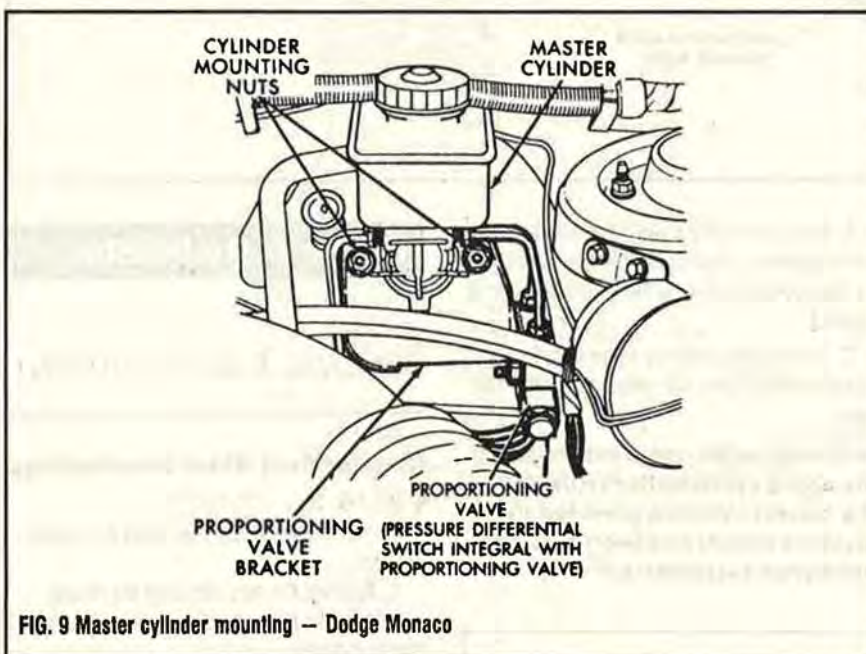


FIG. 9 Master cylinder mounting — Dodge Monaco

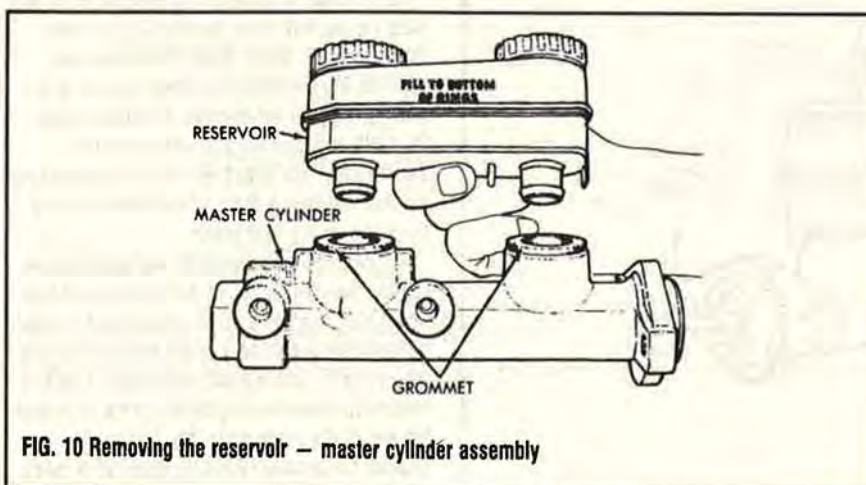


FIG. 10 Removing the reservoir — master cylinder assembly

doubt about overhaul condition or service procedure REPLACE the complete assembly with a new master cylinder.

1. Remove the master cylinder as previously outlined.
2. Clean the housing and reservoir.
3. Remove the caps and empty the brake fluid.
4. Remove the reservoir by rocking it from side to side.
5. Remove the housing-to-reservoir grommets.
6. Use needle-nose pliers to remove the secondary piston stop pin from inside the master cylinder housing.
7. Remove the snapping from the outer end of the cylinder bore.
8. Slide the piston out of the cylinder bore.
9. Gently tap the end of the master cylinder on the bench to remove the secondary piston.

➡ If the piston sticks in the bore use air pressure to force the piston out. New cups must be installed, if air pressure is used to force the piston out as the old cups will be damaged.

10. Remove the rubber cups from the pistons (except the primary cup of the primary piston), after noting the position of the cup lips.

➡ Do not remove the primary cup of the primary piston. If the cup is damaged, the entire piston assembly must be replaced.

Install new piston cups in every case but the primary cup of the primary piston, unless it is certain that cups are in perfect condition. They must be flexible and free of cracks or wear, especially at the outer edges.

11. If the brass tube seats are not reuseable, remove them with an Easy-out®, and insert new ones.

12. Wash the cylinder bore with clean brake fluid. Check for scoring, pitting or scratches. If any of these conditions exist replace the master cylinder. Replace the pistons if they are corroded. Replace the cups and seals. Discard all used rubber parts.

13. During installation, coat all components with clean brake fluid. This will protect them from corrosion and moisture and permit assembly without damaging rubber cups and seals.

14. With the rubber cups and master cylinder bore thoroughly lubricated, slide the secondary piston back into the bore. Follow it with the primary piston.

15. Install the snapping into the outer end of the cylinder bore. Then, use needle-nose pliers

9-8 BRAKES

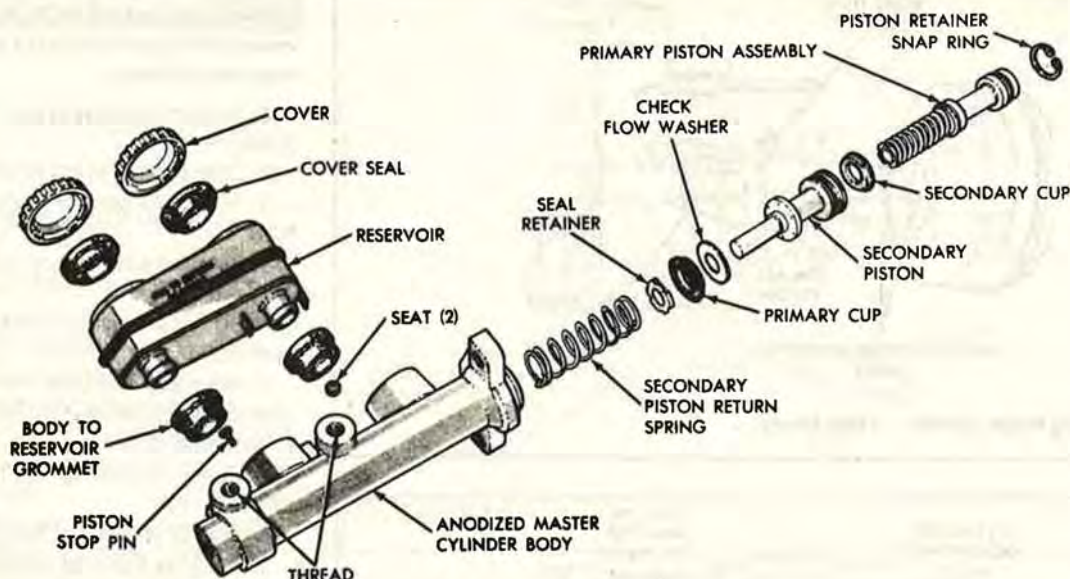


FIG. 11 Master cylinder assembly

to install the secondary piston stop pin from inside the master cylinder housing.

MASTER CYLINDER BLEEDING

♦ SEE FIG. 12

1. Place the master cylinder in a vise.
2. Connect two lines to the fluid outlet orifices, and into the reservoir.
3. Fill the reservoir with brake fluid.

4. Using a wooden dowel, depress the pushrod slowly, allowing the pistons to return. Do this several times until the air bubbles are all expelled.

5. Remove the bleeding tubes from the master cylinder, plug the outlets and install the caps.

➔ **It may not be necessary to bleed the entire system after replacing the master cylinder, provided the master cylinder has been bled and filled upon installation.**

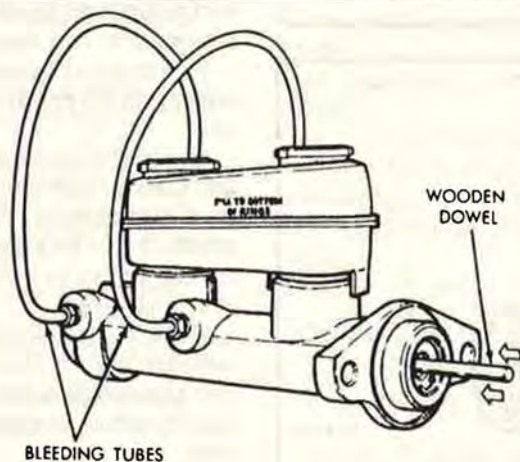


FIG. 12 Bench bleeding the master cylinder

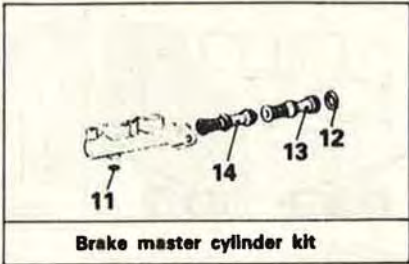
Power Brake Booster

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles

♦ SEE FIG. 15

1. Remove the brake lines from the master cylinder.
2. Remove the nuts attaching the master cylinder to the brake booster, and remove the master cylinder.
3. Release its tension with a pair of pliers and slide the vacuum hose retaining clamp back from the check valve. Then, disconnect the vacuum line supplying the brake booster at the check valve. **Do not remove the check valve.** On 1985 and later models with a manual transmission: Remove the clutch cable mounting bracket and then pull the wiring harness away from and up the strut tower.
4. Working underneath the instrument panel, remove the retainer clip from the brake pedal pin. To do this, position a small, bladed instrument between the center tang of the retainer clip and the pin on the brake pedal and twist it. Use this method to cause the tang on the clip to pass over the end of the brake pedal pin. Discard the retainer clip because it will no longer lock safely.
5. Remove the brake light switch and striker plate.
6. Remove the four power booster attaching nuts.



1. Reservoir cap assembly
2. Diaphragm
3. Reservoir cap
4. Filter
5. Brake fluid level sensor
6. Float
7. Reservoir
8. Nipple
9. Reservoir seal
10. Piston stopper bolt

11. Gasket
12. Piston stopper ring
13. Primary piston assembly
14. Secondary piston assembly
15. Master cylinder body

NOTE
(1)  : Non-reusable parts
(2) • : Vehicles with ABS

FIG. 14 Exploded view brake master cylinder — 1990-92 Laser

9-10 BRAKES

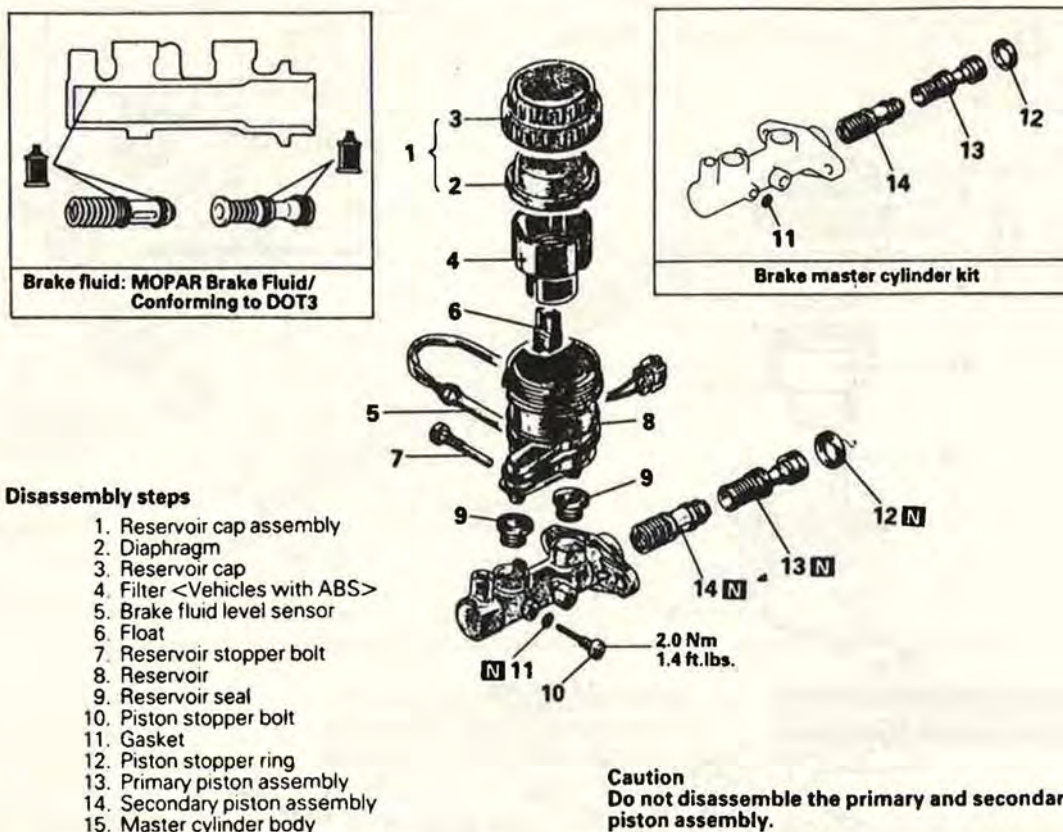


FIG. 13 Exploded view brake master cylinder — Dodge Stealth

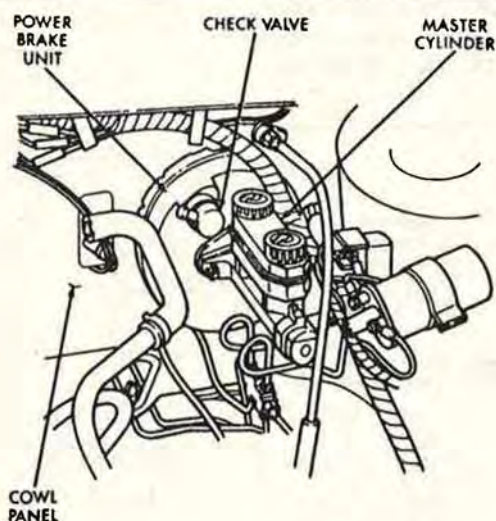


FIG. 15 Power brake unit mounting

7. Remove the booster from the car. The power brake booster is not repairable. Do not attempt to disassemble it.

To Install:

8. Position the booster on its mounting bracket and install its four mounting nuts. Torque them to 250 inch lbs.

9. Coat the load bearing surface of the brake pedal pin with Lubriplate® or equivalent to reduce wear. Then, connect the pushrod to the pedal pin and install a new retaining clip through the end. Lock the retaining clip securely.

10. Position the master cylinder onto the brake booster, install the mounting nuts and torque them to 250 inch lbs.

11. Route the vacuum hose carefully to the booster, ensuring that it is not kinked or pinched. Then, position its retaining clamp carefully.

12. Install each brake hydraulic tube into its correct master cylinder opening and torque the retaining flare nut to 145 inch lbs.

13. Slide the wiring harness down over the strut tower and reinstall the retaining clips. On 1985 and later models with a manual transmission, install the clutch cable mounting bracket.

14. Bleed the brake system, making sure to keep the master cylinder full of the approved brake fluid throughout the procedure. Make sure the unit is filled to the correct level when bleeding is completed. Road test the vehicle for proper operation.

1990-92 Laser And Stealth

1. Disconnect the negative battery cable.
2. Disconnect the vacuum hose from the booster. Pull it straight off. Prying off the vacuum hose could damage the check valve installed in the brake booster.
3. Remove the nuts attaching the master cylinder to the booster and remove the master cylinder.
4. From inside the passenger compartment, remove the cotter pin and clevis pin that secures the booster pushrod to the brake pedal.
5. Remove the nuts that attach the booster to the dash panel and remove it from the vehicle.
6. The installation is the reverse of the removal procedure.
7. Connect the negative battery cable, bleed the brakes and check for proper operation.

Dodge Monaco

1. Disconnect the negative battery cable.
2. Disconnect the vacuum line from the booster.
3. Remove the clip retaining the throttle cables to the bracket on the booster. Remove the master cylinder.
4. Inside the vehicle, disconnect the connector from the brake light switch. Remove the pushrod from the brake pedal.
5. Remove the booster retaining nuts and remove the booster. Inspect the seal for damage.

To Install:

6. Transfer parts to the replacement booster. Install the booster to the firewall and connect the pushrod to the brake pedal. Connect the brake light switch.
7. Install the master cylinder and clip the throttle cables in place.
8. Connect the negative battery cable and bleed the brake system.

Proportioning Valve

REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Disconnect and plug the brake lines from the proportioning valve.
3. Remove the bolt and nut attaching the valve to the bracket.

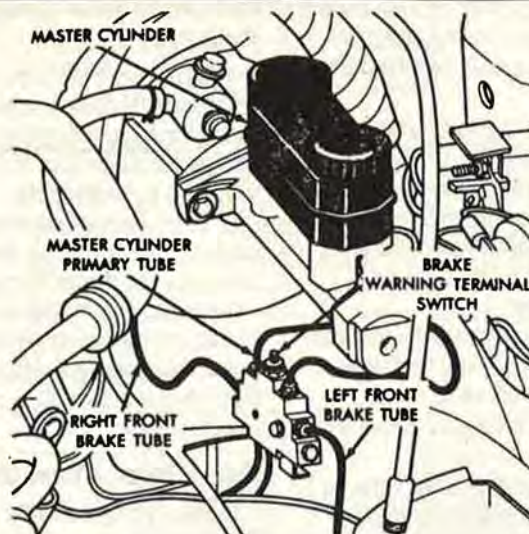


FIG. 16 Mounting and hydraulic line identification for the brake combination valve

4. Remove the valve from the vehicle.
5. Installation is the reverse of removal.
6. Bleed the brakes after installation.

Combination Control Valve

REMOVAL & INSTALLATION

♦ SEE FIG. 16

1. Unplug the electrical connector from the valve.
2. Place a drain pan underneath the valve. Disconnect all six hydraulic line flare nuts.
3. Remove the mounting bolt and remove the valve from the fender well.
4. To install: bolt the new valve onto the fender well.
5. Reconnect all six flare nut fittings. Torque to 145 inch lbs.
6. Reconnect the electrical connector.
7. Thoroughly bleed the brake system as described below. Then, repeatedly stop the vehicle with firm application on the pedal to center the warning switch spool valve and extinguish the brake light.

Brake Hoses

It is important to use quality brake hose intended specifically for the application. Hose of

less than the best quality, or hose not made to the specified length will tend to fatigue and may therefore create premature leakage and, consequently, a potential for brake failure. Note also that brake hose differs from one side of the car to the other and should therefore be ordered specifying the side on which it will be installed.

Make sure hose end mating surfaces are clean and free of nicks and burrs, which would prevent effective sealing. Use new copper seals on banjo fittings. Torque brake tubing connections to 115-170 inch lbs.; hose-to-caliper connections to 19-29 ft. lbs.; and front brake hose-to-intermediate bracket fittings to 75-115 inch lbs.

⚠ CAUTION

WHEN ROUTING A BRAKE HOSE TO A VEHICLE, MINIMIZE HOSE TWISTING AND BENDING UPON INSTALLATION!

REMOVAL & INSTALLATION

♦ SEE FIG. 17

➡ **The procedures below for Brake Hose Removal and Installation can be used as a service guide for all years and models.**

Front Brake Hose

1. Place a drain pan under the hose

9-12 BRAKES

connections. First, disconnect the hose where it connects to the body bracket and steel tube.

2. Unbolt the hose bracket from the strut assembly.

3. Remove the bolt to disconnect the banjo connection at the caliper.

4. Position the new hose, noting that the body bracket and the body end of the hose are keyed to prevent installation of the hose in the wrong direction. First attach the hose to the banjo connector on the caliper.

5. Bolt the hose bracket located in the center of the hose to the strut, allowing the bracket to position the hose so it will not be twisted.

6. Attach the hose to the body bracket and steel brake tube.

7. Torque the banjo fitting on the caliper to 19–29 ft. lbs.; the front hose to intermediate bracket to 75–115 inch lbs.; and the hose to brake tube to 115–170 inch lbs. Bleed the system thoroughly, referring to the procedure below.

Rear Brake Hose (Trailing Arm-to-Floor Pan)

1. Place a drain pan under the hose connections. Disconnect the double nut (using a primary wrench and a backup wrench) at the tube mounted on the floor pan. Then, disconnect the hose at the retaining clip.

2. Disconnect the hose at the trailing arm tube. Install the new tube to the trailing arm connection first. Torque the connection to 115–170 inch lbs. Then, making sure it is not twisted, connect it to the tube on the floor pan. Again, torque the connection to 115–170 inch lbs. Bleed the system thoroughly, referring to the procedure below.

Caliper Hose – Rear Disc Brakes

1. Place a drain pan under the hose connections. Disconnect the double nut (using a primary wrench and a backup wrench) at the tube mounted on the clip, located on the caliper-

mounted bracket. Then, disconnect the banjo connector by removing the through bolt.

2. Install the new hose by connecting the banjo connector first, using new copper seals and torquing the through-bolt to 19–29 ft. lbs.

3. Making sure the hose is not twisted, make the connection to the tube, torquing to 115–170 in lbs.

4. Secure the hose to the bracket with the retaining clip. Bleed the system thoroughly, referring to the procedure below.

Bleeding The System

SEE FIGS. 18-20

For bleeding of the Anti-Lock Brake system refer to the service procedure in the "Anti-Lock Brake Section" in this section.

The purpose of bleeding the brakes is to expel

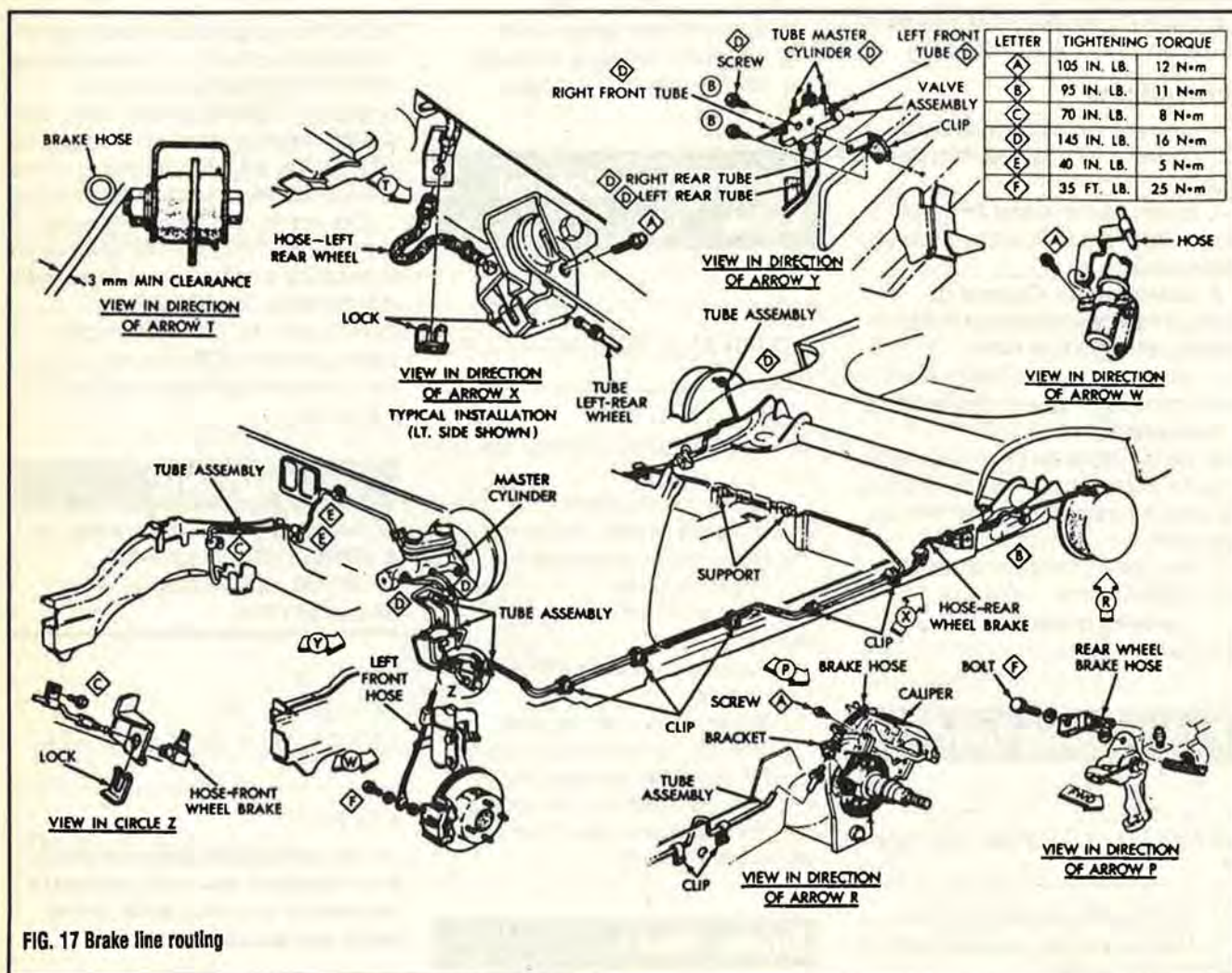


FIG. 17 Brake line routing

air trapped in the hydraulic system. The system must be bled whenever the pedal feels spongy, indicating that compressible air has entered the system. It must also be bled whenever the system has been opened or repaired. You will need a helper for this job.

➔ **Never reuse brake fluid which has been bled from the brake system. It contains moisture and corrosion products and should therefore always be replaced with fresh fluid.**

1. The sequence for bleeding is right rear, left front, left rear and right front for Chrysler front wheel drive vehicles without ABS system. If the car has power brakes, remove the vacuum by applying the brakes several times. Do not run the engine while bleeding the brakes.

2. Clean all the bleeder screws. You may want to give each one a shot of penetrating solvent to loosen it up; seizure is a common problem with bleeder screws, which then break off, sometimes requiring replacement of the part to which they are attached.

3. Fill the master cylinder with DOT 3 brake fluid.

➔ **Brake fluid absorbs moisture from the air. Don't leave the master cylinder or the fluid container uncovered any longer than necessary. Be careful handling the fluid—it eats paint.**

Check the level of the fluid often when bleeding, and refill the reservoirs as necessary. Don't let them run dry, or you will have to repeat the process.

4. Attach a length of clear vinyl tubing to the bleeder screw on the wheel cylinder. Insert the other end of the tube into a clear, clean jar half filled with brake fluid.

5. Have your assistant slowly depress the brake pedal. As this is done, open the bleeder screw $\frac{1}{3}$ – $\frac{1}{2}$ turn, and allow the fluid to run through the tube. Then close the bleeder screw before the pedal reaches the end of its travel. Have your assistant slowly release the pedal. Repeat this process until no air bubbles appear in the expelled fluid.

6. Repeat the procedure on the other three brakes, checking the level of fluid in the master cylinder reservoir often.

After finishing, there should be no feeling of sponginess in the brake pedal. If there is, either there is still air in the line, in which case the process must be repeated, or there is a leak somewhere, which, of course, must be corrected before the car is moved. After all repairs and service work is finished roadtest the vehicle for proper operation.

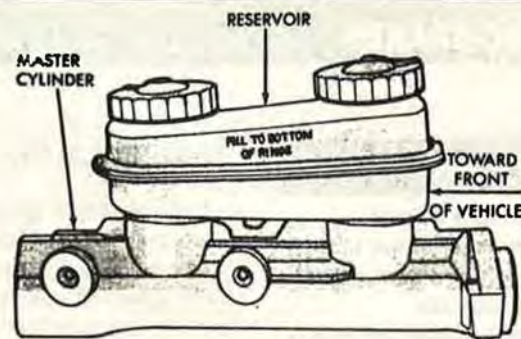


FIG. 18 Master cylinder level information

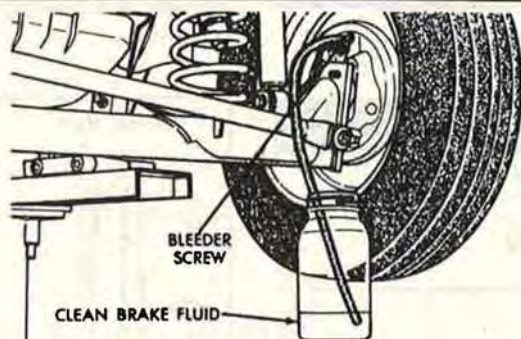


FIG. 19 Proper method for bleeding brake system

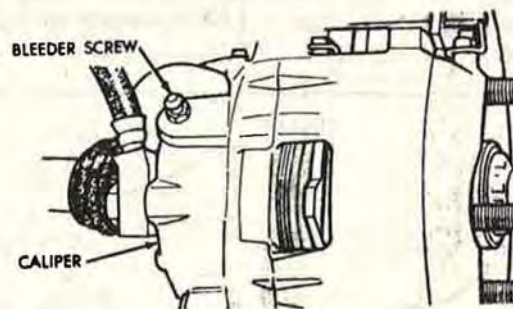


FIG. 20 Bleeder screw location

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FRONT DISC BRAKES

CAUTION

Brake shoes contain asbestos, which has been determined to be a cancer-causing agent. Never clean the brake surfaces with compressed air! Avoid inhaling any dust from any brake surface! When cleaning brake surfaces, use a commercially available brake cleaning fluid.

Brake Pads

INSPECTION

SEE FIGS. 21-23

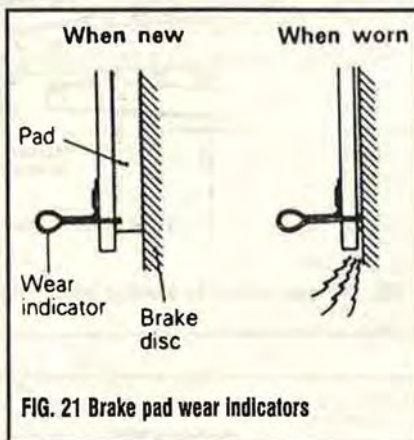
Measure lining wear by measuring the combined thickness of the shoe and lining at the thinnest point. It must be $\frac{5}{16}$ in. (8mm) on front disc brakes on Chrysler front wheel drive and Dodge Monaco vehicles.

Measure lining wear by measuring the brake pad at the thinnest point. It must be at least $\frac{1}{8}$

inch (3mm) on front disc brakes on 1990-92 Laser and Stealth.

Some vehicles are equipped with a wear sensor on the outboard pad of the front disc brake assemblies. This sensor when emitting a sound signals that brake linings may need inspection and or replacement.

Always replace both front brake pad assemblies (inboard and outboard pad) on both front wheels whenever necessary. The specifications given above on front disc brake lining wear should be used as guide for replacement.



Disc Brake Pads and Calipers

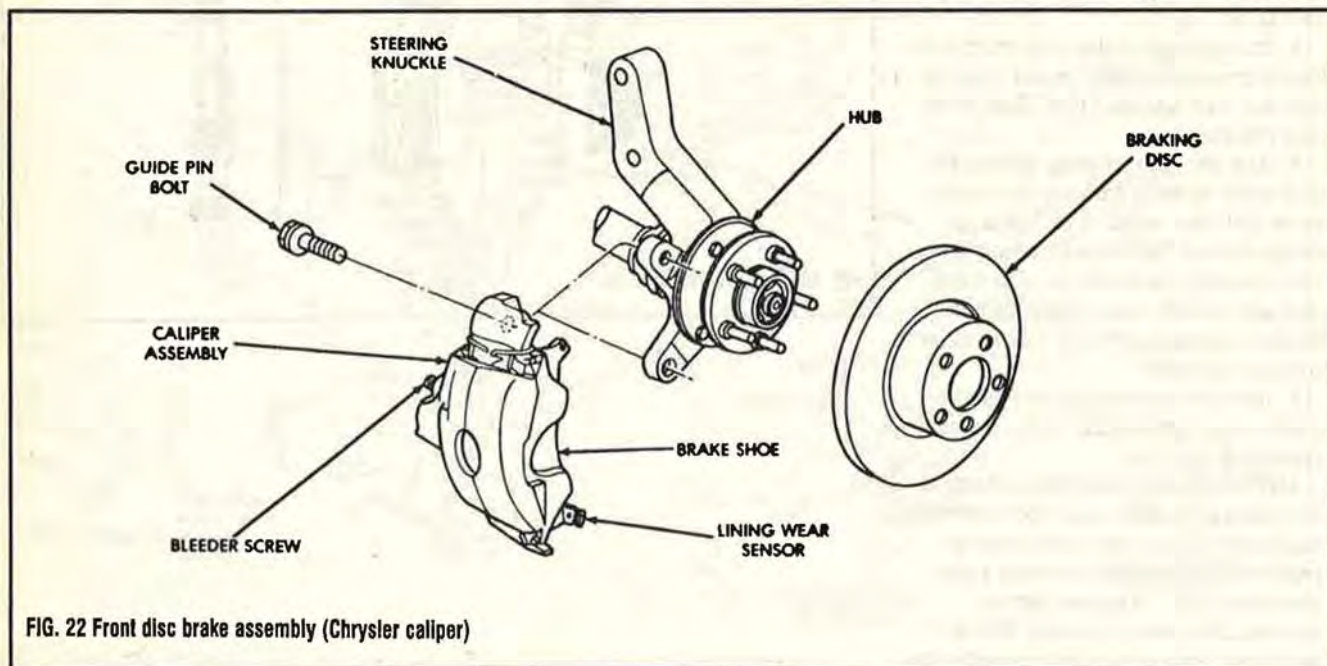
REMOVAL & INSTALLATION

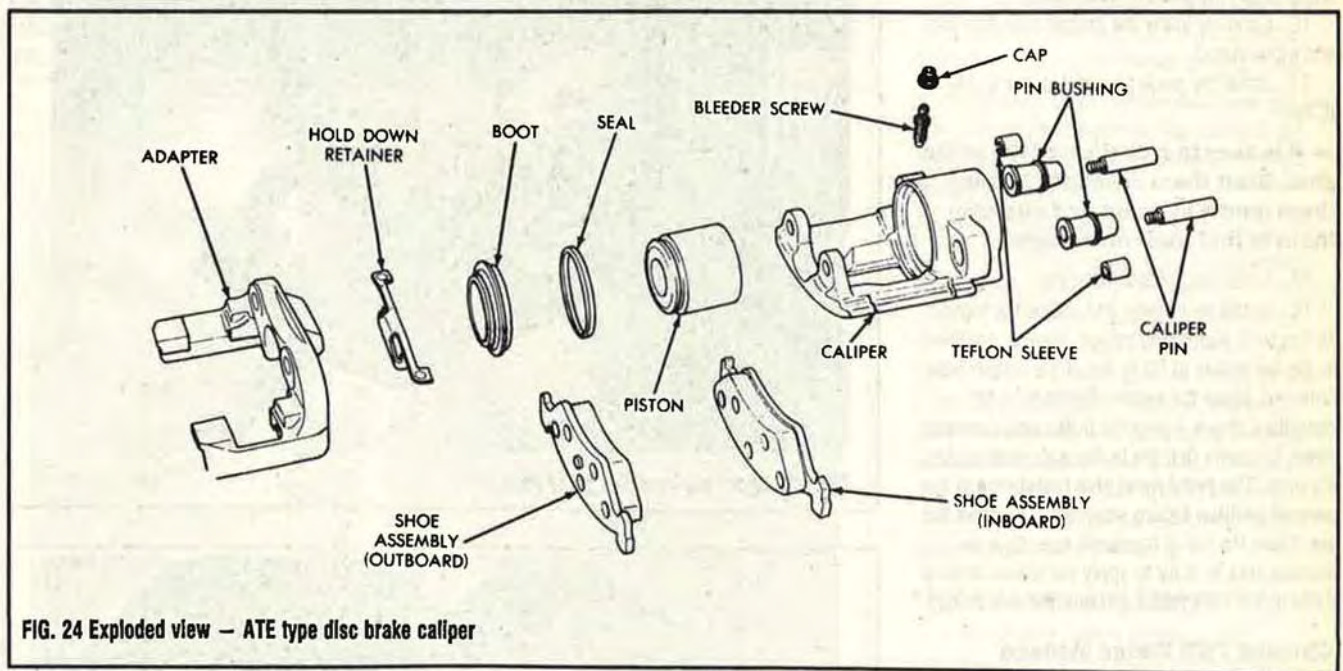
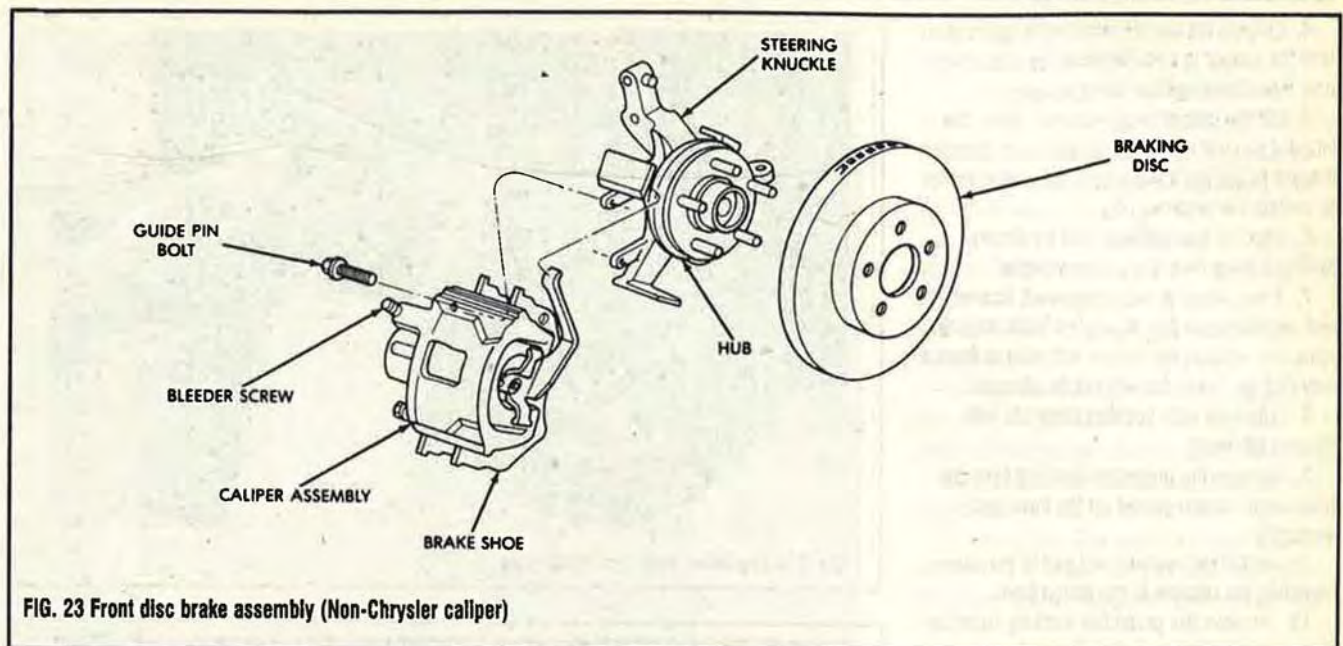
When replacing the front disc brake pads remove some of the brake fluid from the master cylinder first, then after removing the caliper use a large C-clamp or equivalent and slowly compress the piston back into the caliper bore to aid installation. On vehicles equipped with ABS system refer to the necessary service procedures.

Chrysler FWD ATE Type Brake Caliper

SEE FIGS. 24-25

1. Raise and support the front end on jackstands.
2. Remove the front wheels.
3. Remove the caliper holddown spring by pushing in on the center of the spring and pushing outward.





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4. Loosen but do not remove the guide pins, until the caliper is free. Remove the guide pins only if the bushings are being replaced.

5. Lift the caliper away from the rotor. The inboard pad will remain with the caliper. Remove the pad by pulling it away from the caliper piston to unsnap the retaining clip.

6. Remove the outboard pad by simply pulling it away from the caliper adapter.

7. If the caliper is being removed, disconnect and cap the brake line. If only the pads are being removed, support the caliper with wire in such a way that the brake line will not be stressed.

8. Lubricate both bushing channels with silicone lubricant.

9. Remove the protective backing from the noise suppression gasket on the inner pad assembly.

10. Install the new inboard pad in the caliper, centering the retainer in the piston bore.

11. Remove the protective backing from the noise suppression gasket on the outboard pad and position the pad on the adapter.

12. Carefully lower the caliper over the rotor and inboard pad.

13. Install the guide pins and torque to 18–22 ft. lbs.

➡ **It is easy to crossthread the guide pins. Start them carefully, turning them gently by hand and allowing them to find their own angle.**

14. Install the hold-down spring.

15. Install the wheels and torque the lugs to $\frac{1}{2}$ torque in a crossing pattern, then torque them to the full torque of 95 ft. lbs. If the caliper was removed, bleed the system thoroughly, as described above. Pump the brake pedal several times to ensure that the brake pads seat against the rotor. **The pedal must give resistance at the normal position before attempting to drive the car.** Drive the car at moderate speeds in an isolated area in order to apply the brakes several times to test the system and seat the new linings.

Chrysler FWD Dodge Monaco Kelsey-Hayes Type Brake Caliper

♦ SEE FIGS. 26-31

1. Raise and support the front end on jackstands. Refer to the illustrations in this section.

2. Remove the front wheels.

3. Remove the caliper guide pin. To do this, unscrew it until it is free from the threads and then pull it out of the caliper adapter.

4. Using a small prybar, gently wedge the caliper away from the rotor, breaking the adhesive seals.

5. Slowly slide the caliper away from the rotor and off the caliper adapter. Support the caliper securely by hanging it from the body with



FIG. 24A Replacing front disc brake pads

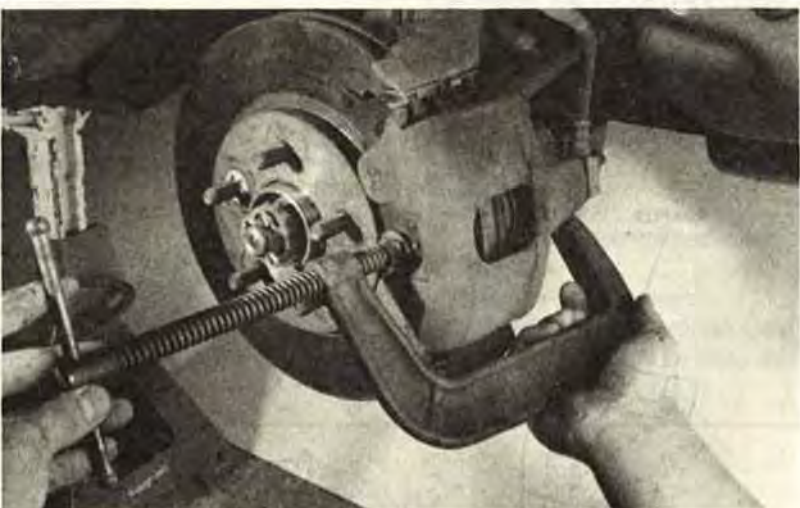


FIG. 24B Replacing front disc brake pads



FIG. 24C Removing the front caliper

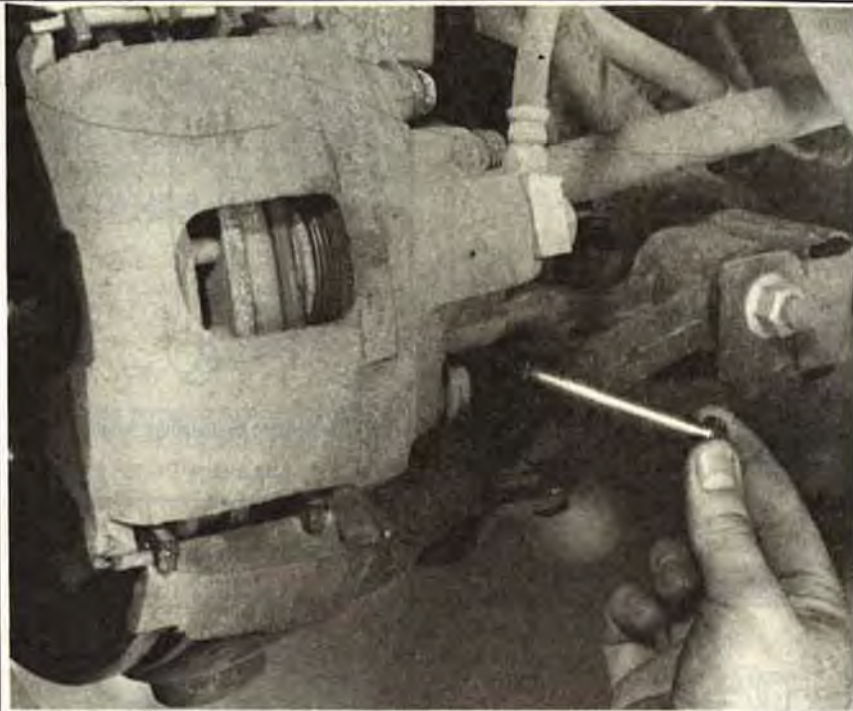


FIG. 24D Removing the front caliper

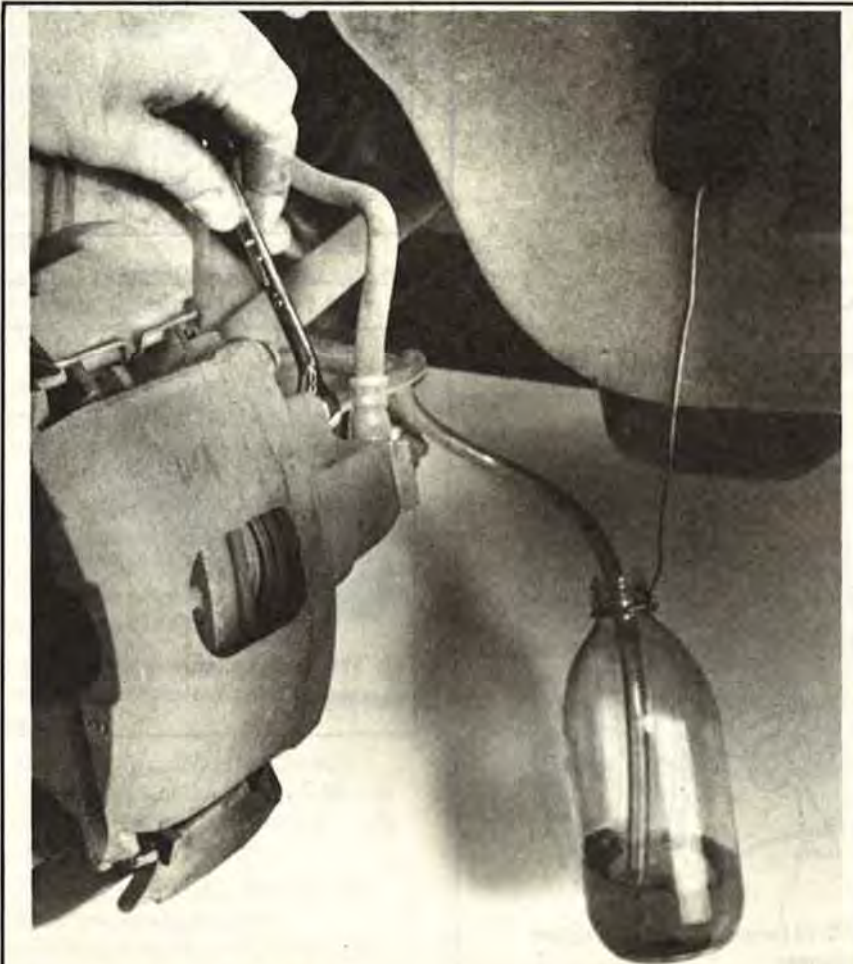


FIG. 24E Bleeding the front brakes

wire (this is necessary to keep its weight from damaging the brake hose).

6. Slide the outboard pad off the caliper adapter. Then remove the disc by simply sliding it off the wheel studs.

7. Remove the inboard pad by sliding it off the caliper adapter.

8. If the caliper is to be removed, disconnect and cap the brake line. Then, remove it from the hanger and remove it.

9. Lubricate both bushing channels with silicone grease.

10. Remove the protective paper backing from the anti-squeal surfaces on both pads. Install the inboard pad on the adapter. Be careful to keep grease from the bushing channels from getting onto the pad as you do this.

11. Install the rotor onto the wheel studs of the steering knuckle. Install the outboard pad in the caliper and carefully slide it into place over the rotor.

12. If necessary, reconnect the brake line or remove the caliper from the hanger. Lower the caliper into position over the rotor and pads. Install the guide pin and torque it to 35 ft. lbs.

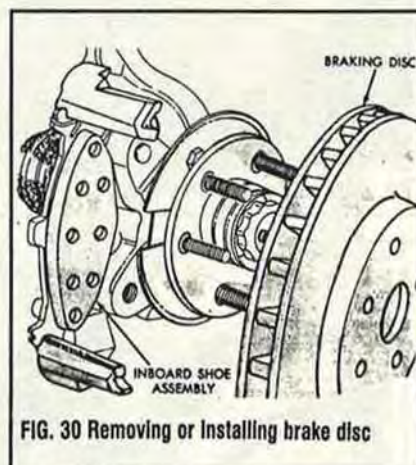
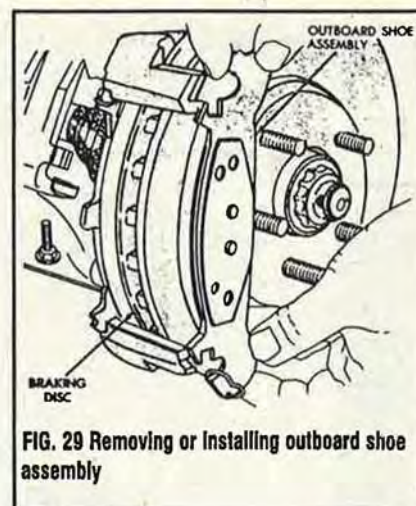
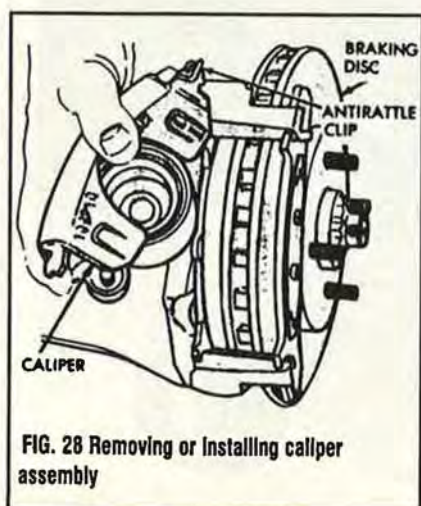
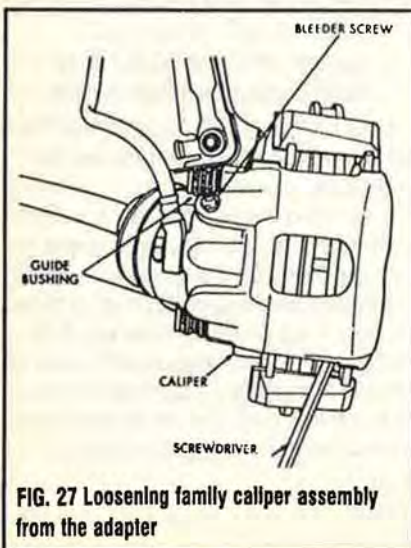
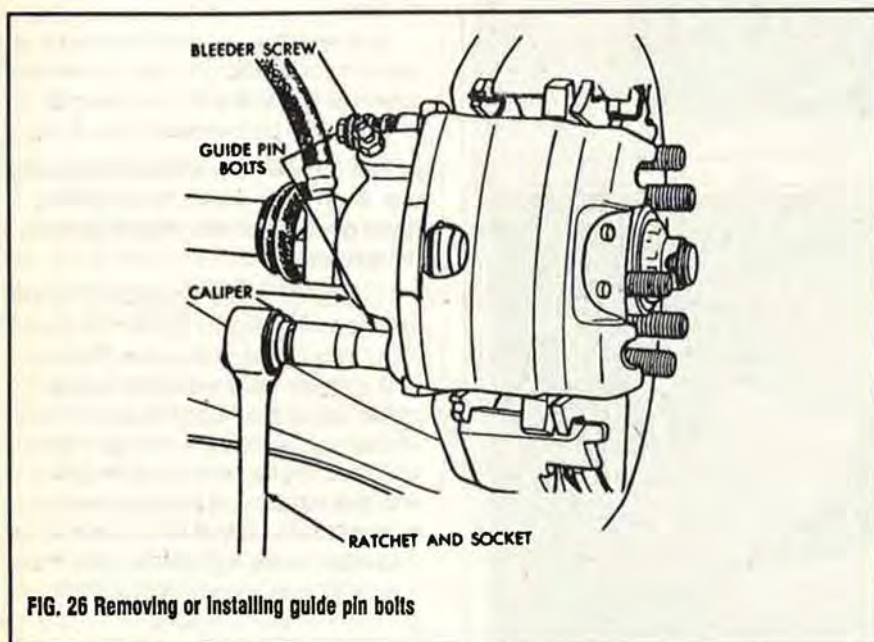
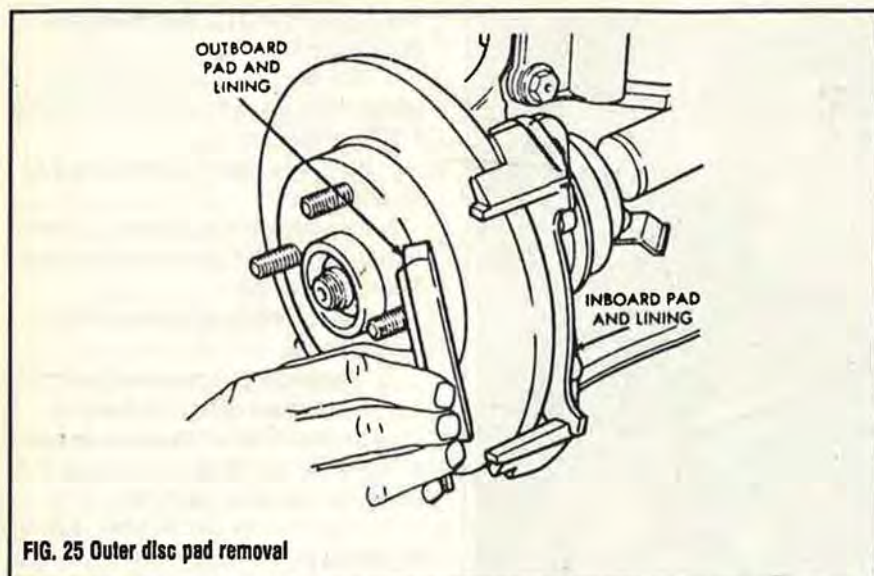
➡ It is easy to crossthread the guide pin. Start it carefully, turning it by hand gently and allowing it to find its own angle.

13. Install the wheels and torque the lugs to half the specified torque in a criss-cross pattern. Then, torque the lugs to full torque (95 ft. lbs.). If the brake line was disconnected, bleed the system thoroughly as described above. Pump the brake pedal several times to ensure that the brake pads seat against the rotor. **The pedal must give resistance at the normal position before attempting to drive the car.** Drive the car at moderate speeds in an isolated area in order to apply the brakes several times to test the system and seat the new linings.

1990-92 Laser And Stealth

1. Disconnect battery negative cable.
2. Raise the vehicle and support safely.
3. Remove appropriate wheel assembly.
4. On the front of AWD Stealth, remove the pad retaining pins and pull the pads out of the caliper body.
5. On others, remove the caliper from its adaptor but do not allow the caliper to hang by the brake line. On some vehicles, the caliper can be flipped up by leaving the upper pin in place and using it as a pivot point. Take note of the clips, pins, anti-squeal shims and other parts for reference at assembly. On some applications, the lock pins or guide pins are matched marked to the caliper body for proper installation.

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To Install:

7. Use a large C-clamp to compress the piston(s) back into the caliper bore. Install the pads and all other small parts.
8. Install the caliper (torque is 50 ft. lbs. on retaining pins). Make sure the brake hose is not twisted after installation. Refill the master cylinder if necessary.

CALIPER OVERHAUL

♦ SEE FIGS. 32-36

➔ **Use this service procedure as a guide for overhaul of the caliper assembly for all years/models. If in doubt about overhaul condition or service procedure REPLACE the complete assembly.**

1. Remove the caliper as previously outlined, leaving the brake line connected.
2. Carefully have a helper depress the brake pedal to hydraulically push the piston out of the bore. When the piston has passed out of the bore, fluid and pedal pressure will drop. As soon as pedal pressure drops, hold the pedal in position with the foot and then devise a means to keep it there during work—this will minimize fluid loss and difficulty bleeding the system later.

CAUTION

Under no condition should air pressure be used to remove the piston. Personal injury could result from this practice.

3. Disconnect the flexible brake line at the frame bracket and immediately plug the open end of the line. If the piston from the caliper on the opposite side of the car must now be removed, it can be removed in the same way. When the piston has been removed, disconnect and plug the other flexible line.

4. Place the caliper in a vise which has soft jaws, clamping it as lightly as possible.

➔ **Excessive vise pressure will cause bore distortion and piston binding.**

5. Remove the dust boot and discard it.
6. Use a plastic rod to work the piston seal out of its groove in the piston bore. Discard the old seal.

➔ **Do not use a metal tool for this procedure, because of the possibility of scratching the piston bore or damaging the edges of the seal.**

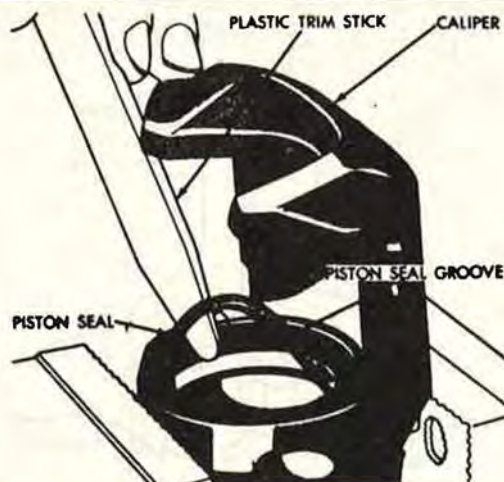


FIG. 32 Removing piston seal

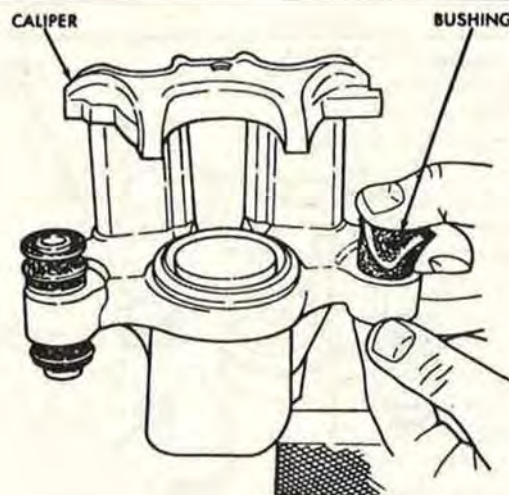


FIG. 33 Removing bushings from the caliper assembly

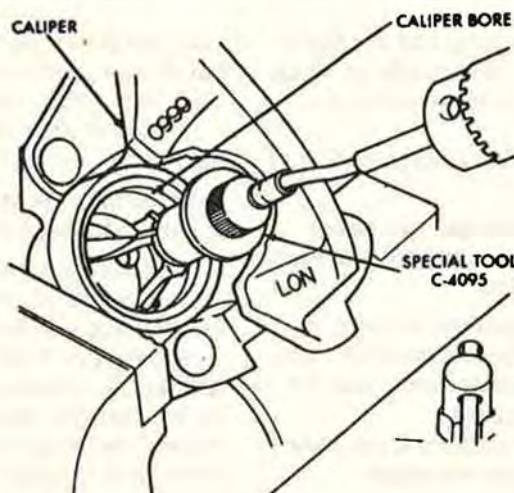


FIG. 34 Honing piston bore

9-20 BRAKES

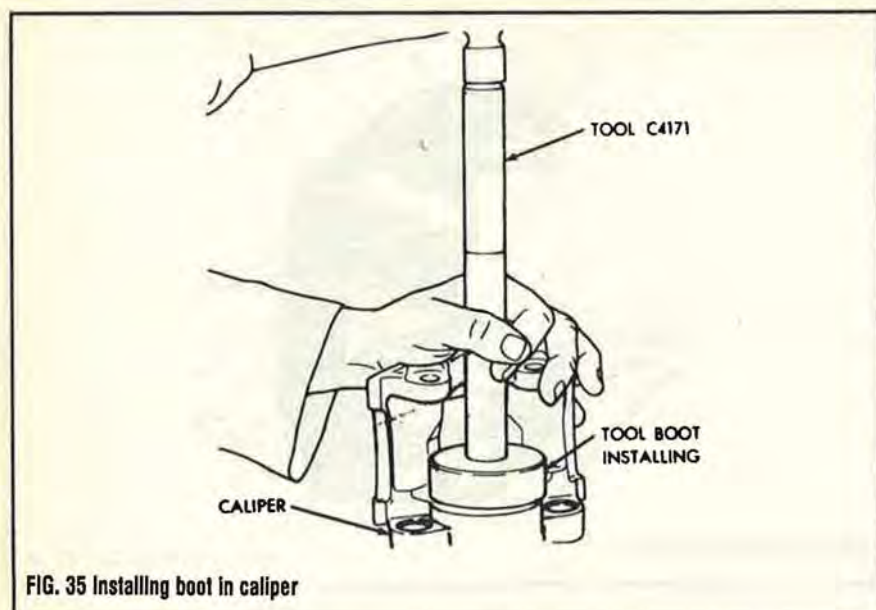


FIG. 35 Installing boot in caliper

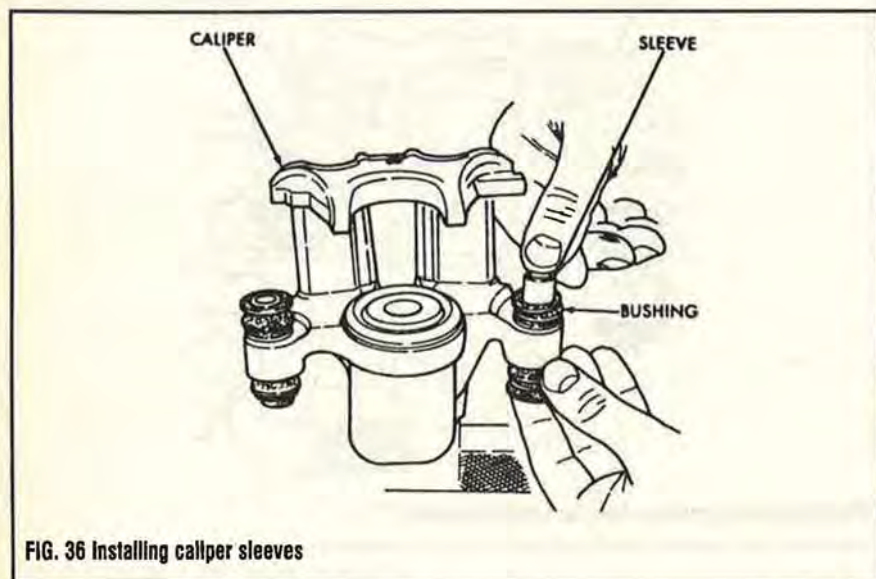


FIG. 36 Installing caliper sleeves

7. Remove the bushings from the caliper by pressing them out, using a suitable tool. Discard the old bushings. If a Teflon® sleeve is used, discard this also.

8. Clean all parts using alcohol and blow dry with compressed air.

➔ **Whenever a caliper has been disassembled, a new boot and seal must be installed.**

9. Inspect the piston bore for scoring or pitting. Bores with light scratches can be cleaned up. If the bore is scratched beyond repair, the caliper should be replaced.

10. Dip the new piston seal in clean brake fluid and install it in the bore groove.

➔ **Never use an old piston seal.**

11. Coat the new piston with clean brake fluid, leaving a generous amount inside the boot.

12. Position the dust boot over the piston.

13. Install the piston into the bore, pushing it past the piston seal until it bottoms in the bore.

➔ **Force must be applied uniformly to avoid cocking the piston.**

14. Position the dust boot in the counterbore.
15. Using tools #C-4689 and C-4171 or their equivalents install the dust boot.

16. Remove the Teflon® sleeves from the guide pin bushings before installing the bushings into the caliper. After the new bushings are installed in the caliper, reinstall the Teflon® sleeves into the bushings.

17. Be sure the flanges extend over the caliper casting evenly on both sides.

18. When reinstalling the calipers use new seal washers and torque the brake hose connections to the specified torque. Follow the installation procedure above.

19. Bleed the brake system. Pump the brake pedal several times to ensure that the brake pads seat against the rotor. **The pedal must give resistance at the normal position before attempting to drive the car.** Drive the car at moderate speeds in an isolated area in order to apply the brakes several times to test the system.

Brake Disc

REMOVAL & INSTALLATION

1. Raise and support the front end on jackstands.

2. Remove the caliper from the rotor, but do not disconnect the brake line.

3. Suspend the caliper out of the way with wire. Do not put stress on the brake hose.

4. On ATE type brake caliper systems, remove the adapter from the knuckle.

5. Remove the rotor (some applications have 2 hold down in the brake disc or rotor screws that must be removed) from the drive flange studs.

To Install:

6. Coat both sides of the rotor with alcohol or equivalent (to clean assembly) and slide it onto the studs.

7. Install the adapter ATE type brake caliper.

8. Install the caliper as described above.

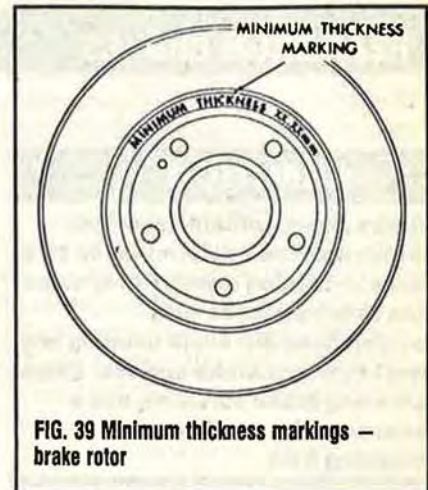
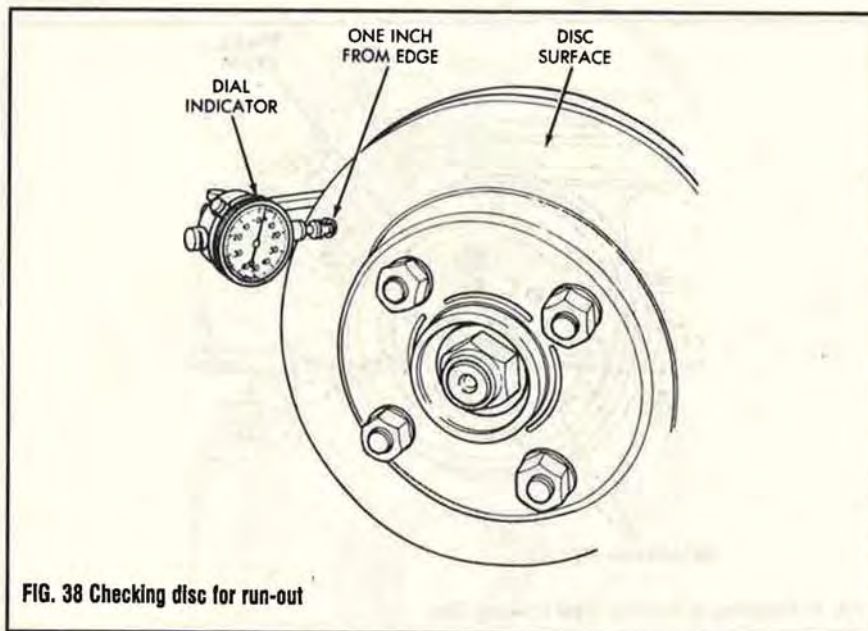
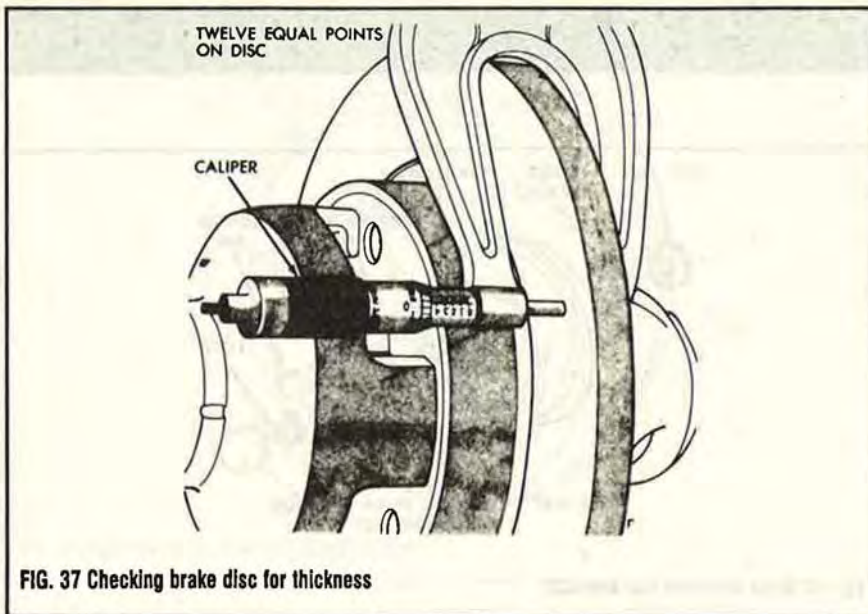
INSPECTION

♦ SEE FIGS. 37-39

Light scoring is acceptable. Heavy scoring or warping will necessitate refinishing or replacement of the disc. The brake disc must be replaced if cracks or burned marks are evident.

Check the thickness of the disc. Measure the thickness at 12 equally spaced points 1 in. (25.4mm) from the edge of the disc. If thickness varies more than 0.0005 in. (0.013mm) the disc should be refinished, provided equal amounts are out from each side and the thickness does not fall below 0.882 inch (22.4mm) on Chrysler front wheel drive vehicles.

Check the run-out of the disc. Total runout of the disc installed on the car should not exceed 0.005 in. (0.013mm). The disc can be resurfaced to correct minor variations as long as



equal amounts are cut from each side and the thickness is at least 0.882 inch (22.4mm) on Chrysler front wheel drive vehicles after resurfacing.

Check the run-out of the hub (disc removed). It should not be more than 0.002–0.003 inch (0.050–0.076mm) on Chrysler front wheel drive vehicles. If so, the hub should be replaced.

All brake discs or rotors have markings for MINIMUM allowable thickness cast on an unmachined surface or an alternate surface. ALWAYS USE THIS SPECIFICATION AS THE MINIMUM ALLOWABLE THICKNESS OR REFINISHING LIMIT. Refer to a local auto parts store or machine shop if necessary shop where brake disc or rotors are resurfaced.

If the brake disc or rotor needs to be replaced with a new part, the protective coating on the braking surface of the rotor must be removed with an appropriate solvent.

9-22 BRAKES

REAR DRUM BRAKES

CAUTION

Brake shoes contain asbestos, which has been determined to be a cancer-causing agent. Never clean the brake surfaces with compressed air! Avoid inhaling any dust from any brake surface! When cleaning brake surfaces, use a commercially available brake cleaning fluid.

Brake Drums

REMOVAL & INSTALLATION

Chrysler Front Wheel Drive Vehicles

♦ SEE FIGS. 40-41

1. Jack up the car and support it with jack stands.
 2. Remove the rear wheels.
 3. On 1984 and later models, loosen the parking brake cable adjustment by backing off the adjusting nut if necessary. On all models, remove the plug from the support plate and insert a brake spoon or similar tool and release the brake shoe drag (to gain further clearance for brake drum removal if necessary). Do this by moving up (up rotating motion on automatic adjuster — left side of vehicle) on the left side and down (down rotating motion on automatic adjuster — right side of the vehicle) on the right side on 1981-83 models, and by using an rotating upward motion on both sides of the vehicle on later models. Refer to illustration in this section.
 4. Remove the grease cap.
 5. Remove the cotter pin, locknut, retaining nut and washer.
 6. Remove the brake drum and bearings.
 7. Installation is the reverse of removal.
- Adjust the wheel bearings and brake system. Refer to Section 8 if necessary for additional information. Tighten wheel bearing adjusting nut to 240-300 inch lbs. while rotating hub this seats the bearing — Back off adjusting nut $\frac{1}{4}$ turn or 90° — Then tighten adjusting nut finger tight — Position locknut with a pair of slots in line with cotter pin — Install cotter pin, always use a NEW cotter pin upon installation.

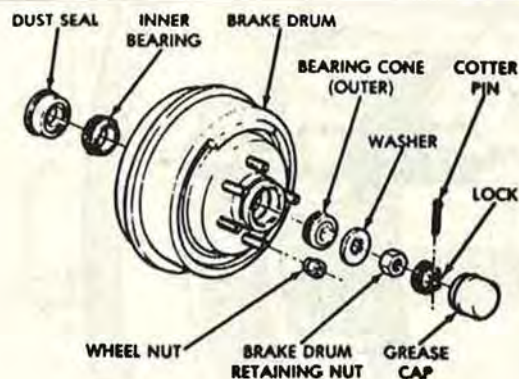


FIG. 40 Brake drum and hub assembly

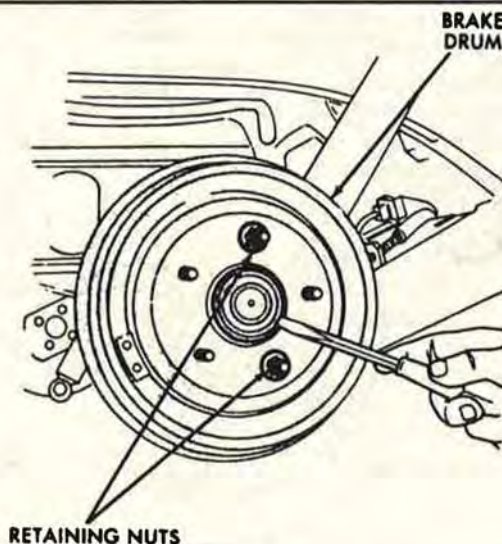


FIG. 41 Removing or Installing drum retaining clips

Dodge Monaco

1. Raise and safely support vehicle.
2. Remove wheel and tire assemblies.
3. Remove drum retaining nuts and pull the drum from the hub.
4. If the drum is difficult to remove, the brake shoes are probably holding the drum in place and must be backed off. Remove the access plug from the backing plate. Unseat the adjuster lever with a small pointed tool and back off the adjuster screw with a brake tool.
5. Installation is the reverse of removal. Adjust the brake shoes as necessary.

INSPECTION

♦ SEE FIGS. 42-43

Measure drum run-out and diameter. If the drum is not to specifications, have the drum resurfaced. The run-out should not exceed 0.006 in. (0.15mm). The diameter variation (ovalness) of the drum must not exceed 0.0025 in. (0.06mm) in 30° or 0.0035 in. (0.089mm) in 360° . All brake drums will show markings of the maximum allowable diameter.

All brake drums have markings for MINIMUM allowable thickness. ALWAYS USE THIS SPECIFICATION AS THE MINIMUM ALLOWABLE THICKNESS OR REFINISHING LIMIT. Refer to a

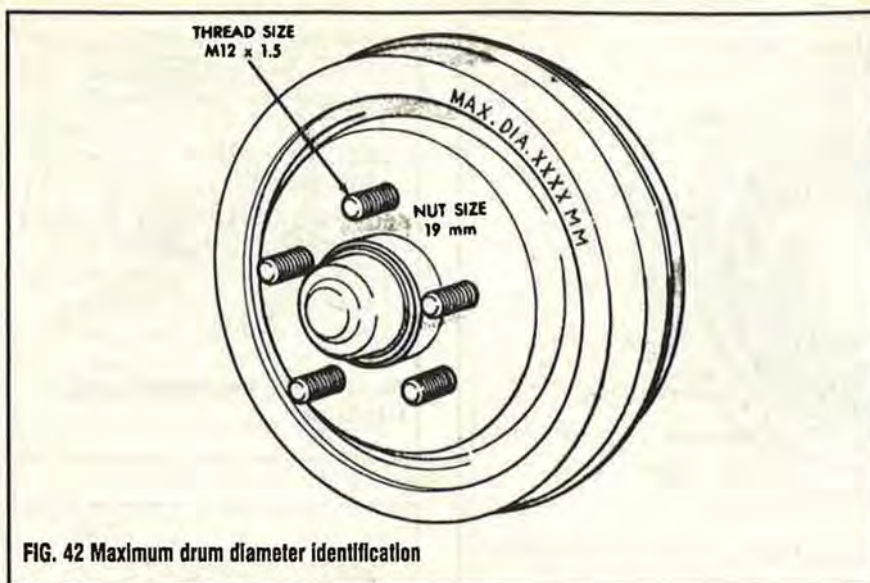


FIG. 42 Maximum drum diameter identification

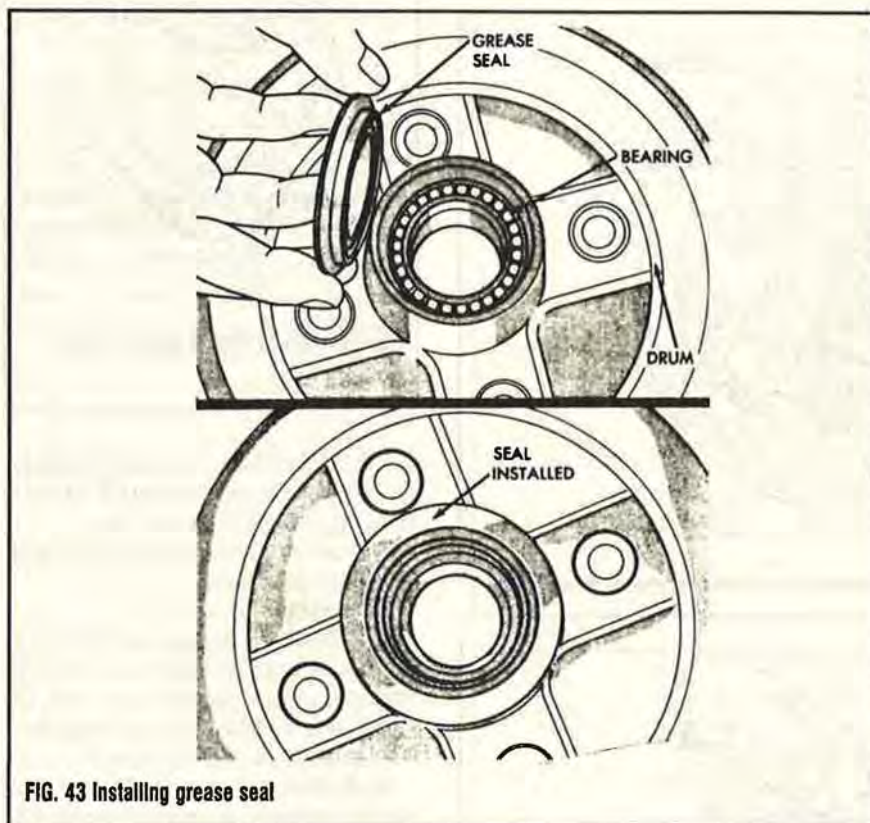


FIG. 43 Installing grease seal

local auto parts store or machine shop if necessary shop where brake drums are resurfaced.

Once the drum is off, clean the shoes and springs with a damp rag to remove the accumulated brake dust.

CAUTION

Do not use compressed air to blow brake dust off the linings or other

brake system parts. Brake dust contains asbestos, a known cancer causing agent.

Grease on the shoes can be removed with alcohol or fine sandpaper.

After cleaning, examine the brake shoes for glazed, oily, loose, cracked or improperly (unevenly) worn linings. Light glazing is common and can be removed with fine sandpaper. Linings that are worn improperly or below $\frac{1}{16}$ in. (1.5mm) above rivet heads or

brake shoe should be replaced. The NHSTA advises states with Inspection programs to fail vehicles with brake linings less than $\frac{1}{32}$ in. (0.8mm). A good "eyeball" test is to replace the linings when the thickness is the same as or less than the thickness of the metal backing plate (shoe).

Wheel cylinders are a vital part of the brake system and should be inspected carefully. Gently pull back the rubber boots; if any fluid is visible, it's time to replace or rebuild the wheel cylinders. Boots that are distorted, cracked or otherwise damaged, also point to the need for service. Check the flexible brake lines for cracks, chafing or wear.

Check the brake shoe retracting and hold-down springs; they should not be worn or distorted. Be sure that the adjuster mechanism moves freely. The points on the backing plate where the shoes slide should be shiny and free of rust. Rust in these areas suggests that the brake shoes are not moving properly.

Brake Shoes

REMOVAL & INSTALLATION

➡ If you are not thoroughly familiar with the procedures involved in brake replacement, disassemble and assemble one side at a time, leaving the other wheel intact, as a reference. This will reduce the risk of assembling brakes incorrectly. Special brake tools are available to make this repair easier.

1981-83 Models

♦ SEE FIGS. 44-48

1. Remove the brake drum. See the procedure earlier in this section.
2. Unhook the parking brake cable from the secondary (trailing) shoe.
3. Remove the shoe-to-anchor springs (retracting springs). They can be gripped and unhooked with a pair of pliers.
4. Remove the shoe hold down springs: compress them slightly and slide them off of the hold down pins.
5. Remove the adjuster screw assembly by spreading the shoes apart. The adjuster nut must be fully backed off.
6. Raise the parking brake lever. Pull the secondary (trailing) shoe away from the backing plate so pull-back spring tension is released.
7. Remove the secondary (trailing) shoe and disengage the spring end from the backing plate.

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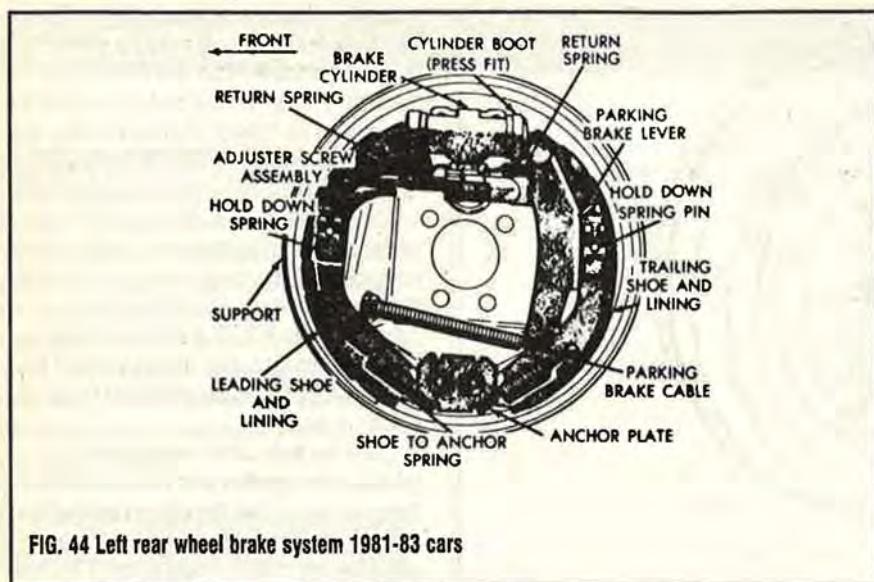


FIG. 44 Left rear wheel brake system 1981-83 cars

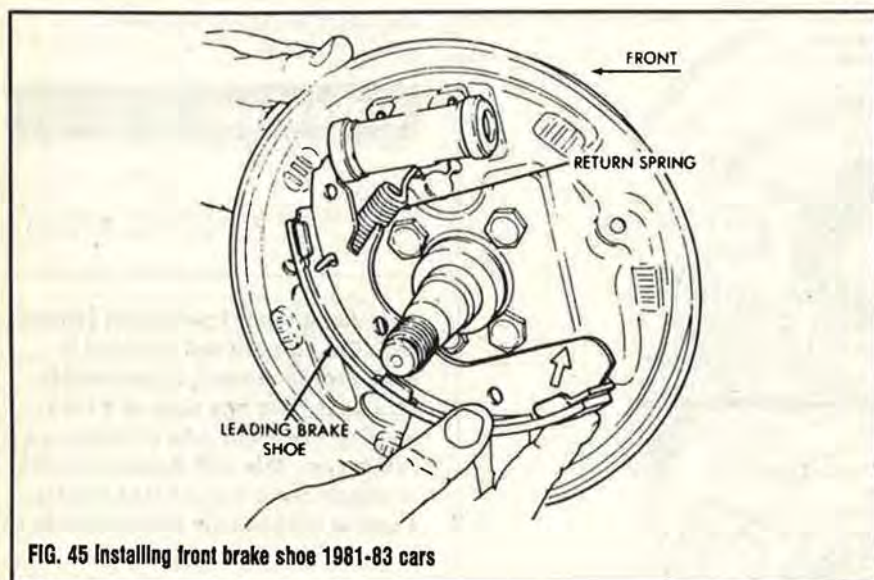


FIG. 45 Installing front brake shoe 1981-83 cars

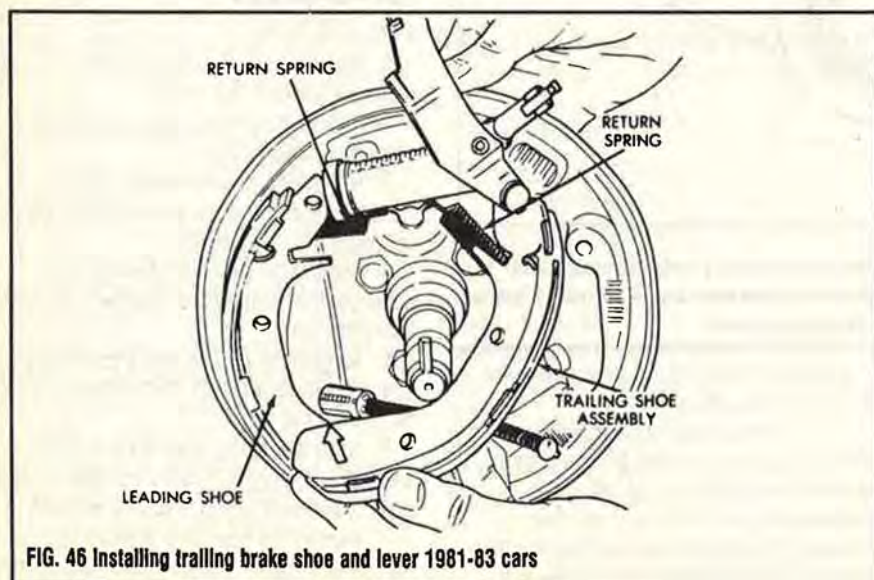


FIG. 46 Installing trailing brake shoe and lever 1981-83 cars

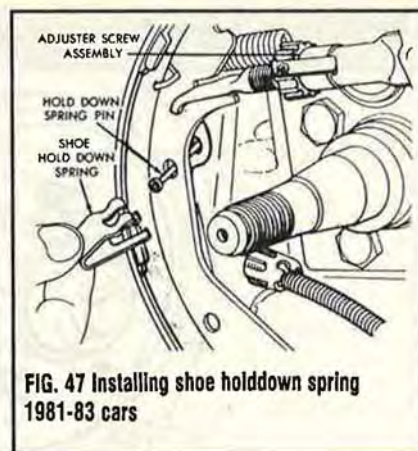


FIG. 47 Installing shoe holddown spring 1981-83 cars

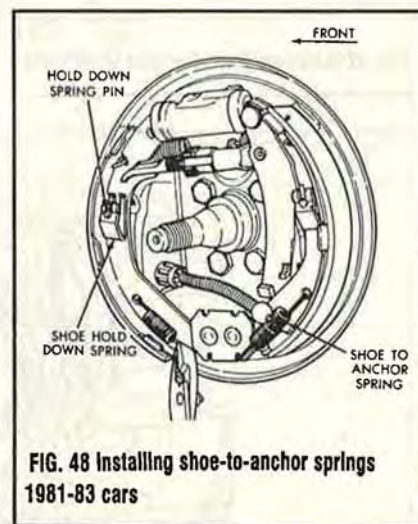


FIG. 48 Installing shoe-to-anchor springs 1981-83 cars

8. Raise the primary (leading) shoe to release spring tension. Remove the shoe and disengage the spring end from the backing plate.

9. Inspect the brakes (see procedures under Brake Drum Inspection).

To Install:

10. Lubricate the six shoe contact areas on the brake backing plate and the web end of the brake shoe which contacts the anchor plate. Use a multi-purpose lubricant or a high temperature brake grease made for this purpose.

11. Chrysler recommends that the rear wheel bearings be cleaned and repacked whenever the brakes are renewed. Be sure to install a new bearing seal. Refer to the illustration in this section.

12. With the leading shoe return spring in position on the shoe, install the shoe at the same time as you engage the return spring in the end support.

13. Position the end of the shoe under the anchor.

14. With the trailing shoe return spring in position, install the shoe at the same time as you engage the spring in the support (backing plate).

15. Position the end of the shoe under the anchor.

16. Spread the shoes and install the adjuster screw assembly making sure that the forked end that enters the shoe is curved down.

17. Insert the shoe hold down spring pins and install the hold down springs.

18. Install the shoe-to-anchor springs.

19. Install the parking brake cable onto the parking brake lever.

20. Replace the brake drum and tighten the nut to 240-300 inch lbs. while rotating the wheel.

21. Back off the nut enough to release the bearing preload and position the locknut with one pair of slots aligned with the cotter pin hole. Refer to service procedures in this section.

22. Install the cotter pin. The end play should be 0.001-0.003 inch (0.025-0.076mm).

23. Install the grease cap.

1984 And Later Models

♦ SEE FIGS. 49-60

➔ **Refer to the brake component illustrations in this section as a service guide for this repair.**

1. Remove the brake drum as described above. Remove the automatic adjuster spring by disconnecting the upper hook with a pair of pliers and then disconnecting it at the bottom. Then, remove the automatic adjuster lever.

2. Rotate the adjuster screw assembly to move each shoe out far enough to be free of the wheel cylinder boots.

3. Disconnect the parking brake cable from the parking brake actuating lever located at the brake mounting plate.

4. Remove the two shoe holddown springs (use special brake tool if possible) by depressing and then turning each mounting washer so the narrow cut in the center of the clip is lined up with the locking bar. When the washer is properly lined up, slowly remove the tension and then remove the washer and spring.

5. Rock the shoes away from the wheel cylinder at the top and then loosen the adjustment on the automatic adjuster until tension is removed from the brake return spring (linking the tops of the shoes). Then, unhook and remove this spring. Unhook the shoe-to-shoe spring from the bottoms of the shoes, too.

6. Pull the shoes down and away from the support plate and remove them. In the case of the trailing shoe, use a suitable small lever to pull the C-clip off the retaining post. Remove the C-clip and the wave washer underneath, and then disconnect the parking brake lever at the shoe.

7. Clean the metal parts of the brake shoes

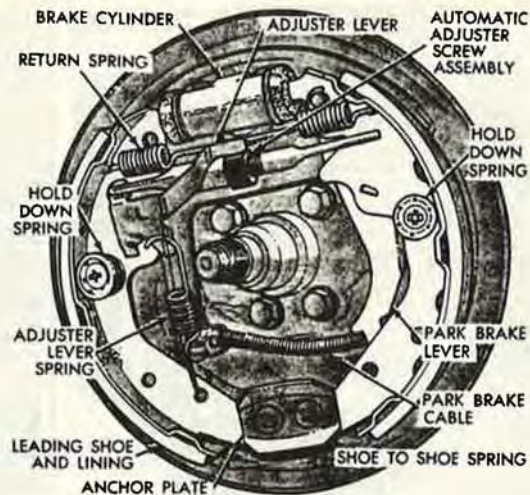


FIG. 49 Drum brake system for 1984 and later models

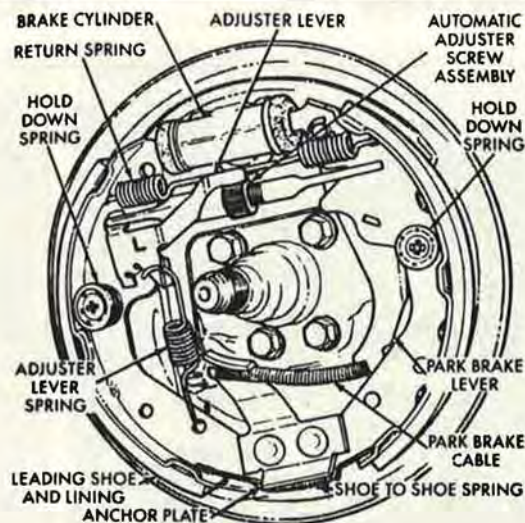


FIG. 50 Kelsey-Hayes left rear wheel brake component

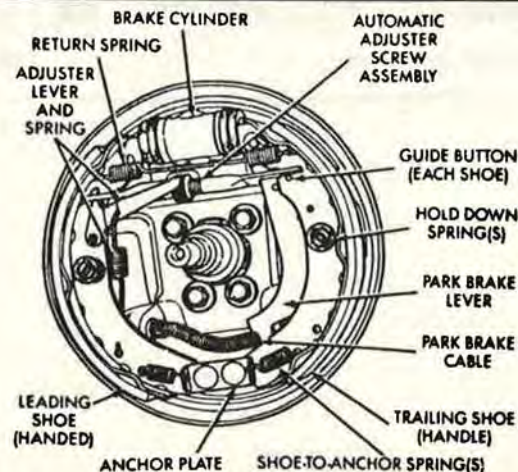


FIG. 51 Varga left rear wheel components 1984 and later

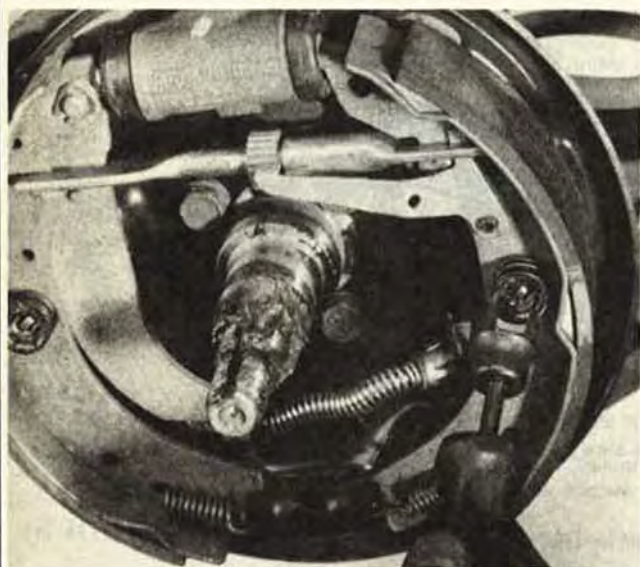


FIG. 52A Replacing the rear brake shoes

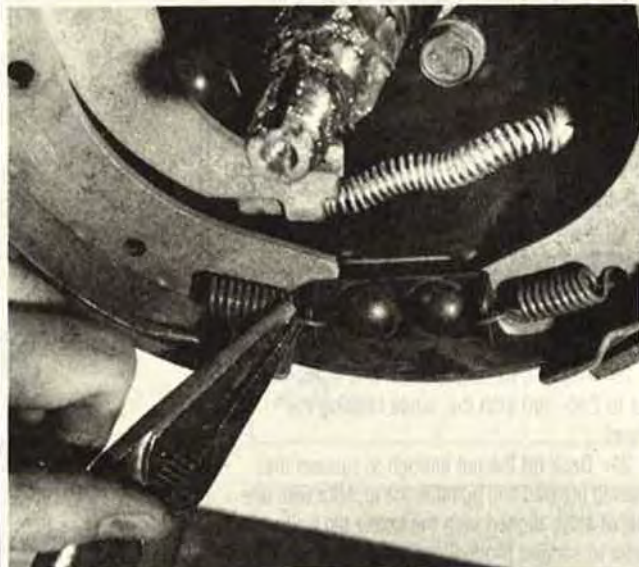


FIG. 52B Replacing the rear brake shoes

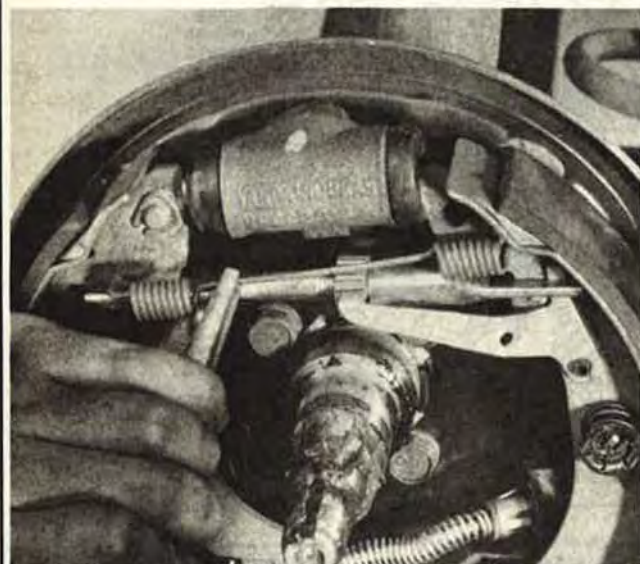


FIG. 52C Replacing the rear brake shoes

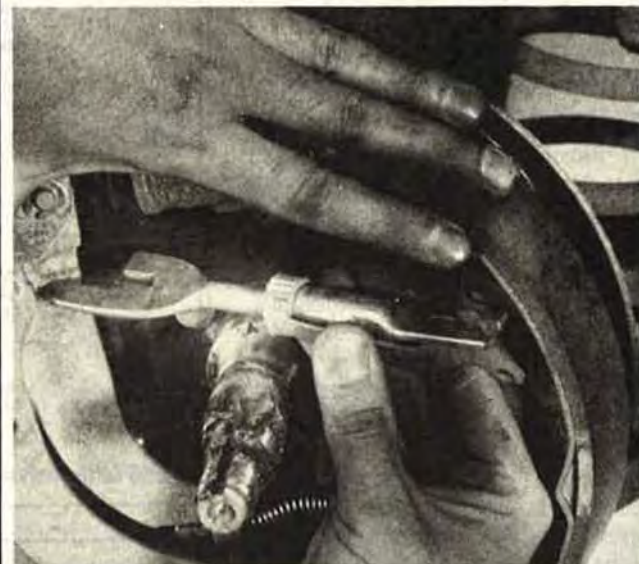


FIG. 52D Replacing the rear brake shoes

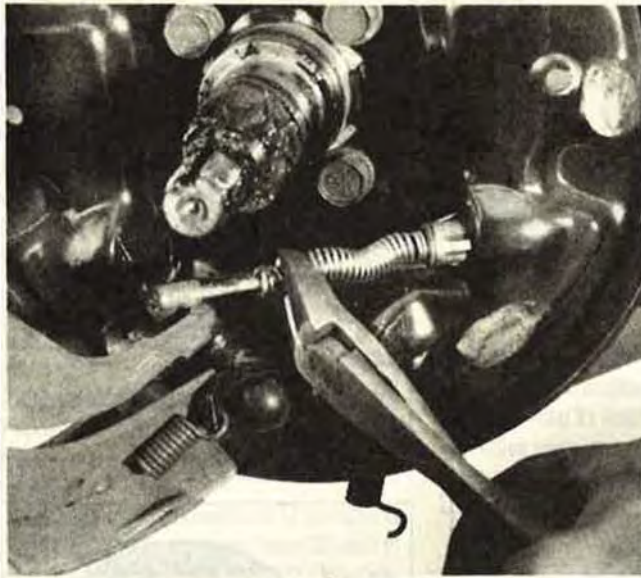


FIG. 52E Replacing the rear brake shoes



FIG. 52F Rear brake shoe hardware

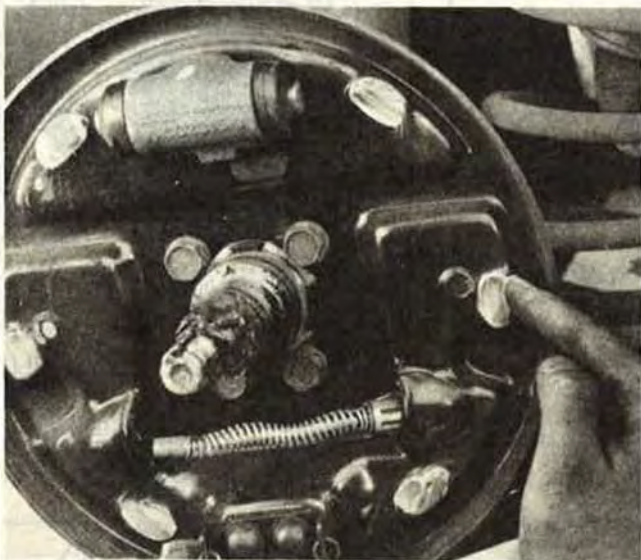


FIG. 52G Installing the rear brake shoes



FIG. 52H Bleeding the rear brakes

9-28 BRAKES

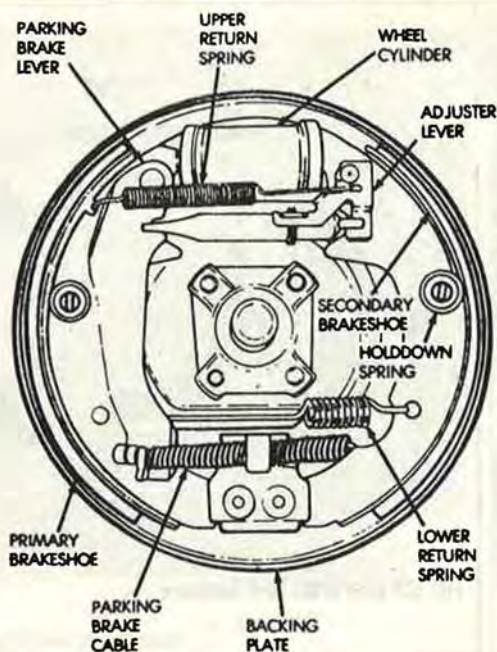


FIG. 52 Brake components right rear wheel — Dodge Monaco

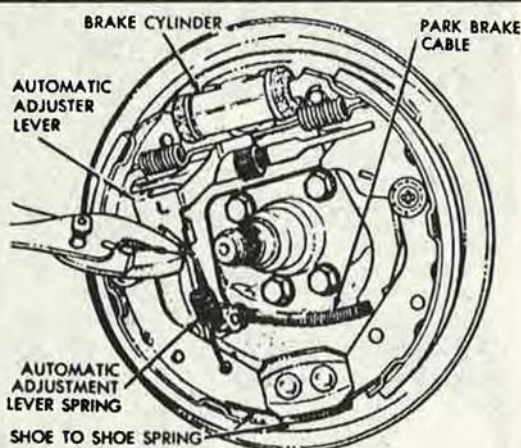


FIG. 53 Removing or installing adjuster lever spring

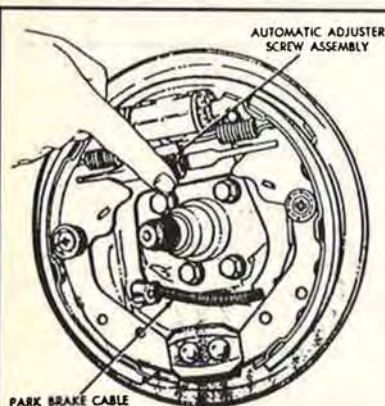


FIG. 54 Expand or retract adjuster screw

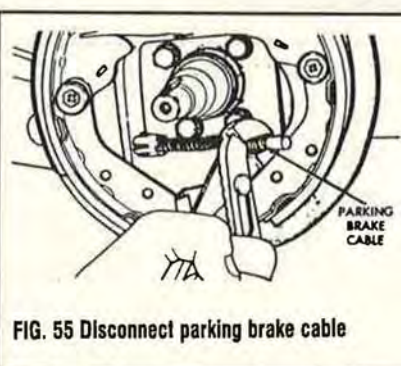


FIG. 55 Disconnect parking brake cable

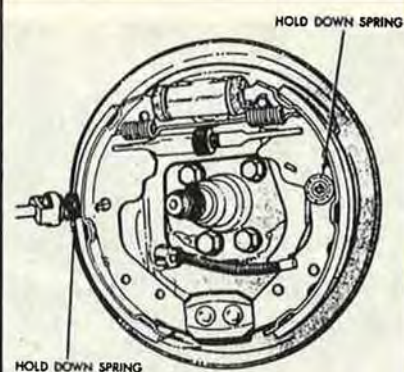


FIG. 56 Removing or installing holddown springs

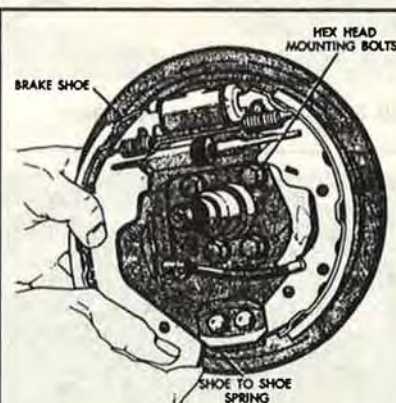


FIG. 57 Removing or installing brake shoes

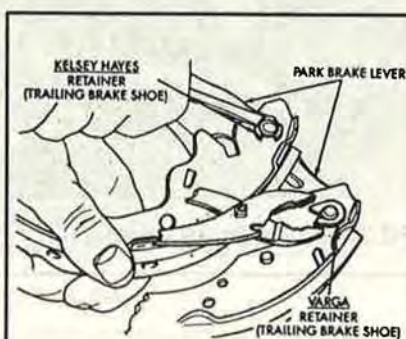


FIG. 58 Installing parking brake lever retainer

and inspect them to ensure that they are not bent or severely worn. Inspect the lining to make sure it contacts the drum evenly. Also inspect it to make sure that the minimum lining thickness requirement shown in the Brake Specifications chart and any applicable state inspection standards for lining thickness are met. Always use these specifications as a guide. Replace the brake shoes before damage to the brake drum starts.

To Install:

8. Clean and inspect the brake support plate and the self-adjuster threads. Apply Multipurpose grease to the threads. Replace the self-adjuster if the threads are corroded. Inspect the springs for overheating (signs are burned paint or distorted end coils) and replace as necessary.

9. Lubricate all 8 contact areas of the support plate with Multipurpose grease. Insert the post of the parking brake lever through the trailing shoe. Install the wave washer and a new C-clip.

10. Attach the return (upper) spring between the two shoe assemblies; then install the brake automatic adjuster with the two stepped sides of the forks facing to the front or outboard sides of the shoes. The longer fork must face toward the rear.

11. Connect the shoe-to-shoe spring to the bottoms of the shoes. Then, expand the automatic adjuster assembly by turning the screw until the shoes are far enough apart that they will not disturb the wheel cylinder boots when installing them. Move the shoes upward and into position on the support plate, sliding the bottoms under the retaining clip at the bottom of the plate.

12. Install the hold-down springs by forcing the locks over the retainers and then turning them 90° to ensure they lock positively.



FIG. 60 The self adjuster and lever used on 1984 and later models — note that the adjuster must be installed only in the proper direction and with each end turned so the stepped side is outboard

13. Install the automatic adjuster lever and its retaining spring. Connect the parking brake cable to the parking brake actuating lever on the mounting plate.

14. Adjust the automatic adjuster well inward so the brake drum can be installed without resistance.

➡ Make sure the adjuster nut stays in contact with the tubular strut of the adjuster when you do this.

15. Install the brake drum. Readjust the wheel bearings as described in Section 8 and install a new cotter pin. Install the wheel and torque the bolts.

16. After lowering the car, pump the brake pedal several times to adjust the brakes. When there is adequate pedal, road test the car in an isolated area at lower speeds applying the brakes repeatedly to ensure that they are performing well and to complete the adjustment.

Refer to the necessary service procedures in this book.

Wheel Cylinders

REMOVAL & INSTALLATION

➡ SEE FIGS. 61-62

1. Jack up your vehicle and support it with jack stands.

2. Remove the brake drums as previously outlined.

3. Visually inspect the wheel cylinder boots for signs of excessive leakage. Replace any boots that are torn or broken.

➡ A slight amount of fluid on the boots may not be a leak but may be preservative fluid used at the factory.

4. If a leak has been discovered, remove the brake shoes and check for contamination. Replace the linings if they are soaked with grease or brake fluid.

5. Disconnect the brake line from the wheel cylinder.

6. Remove the wheel cylinder attaching bolts, then pull the wheel cylinder out of its support.

7. Installation is the reverse of removal. Torque the wheel cylinder mounting bolts to 75 inch lbs. and the brake line connection to 115–170 inch lbs.

8. Bleed the brake system.

OVERHAUL

➡ Refer to the exploded view illustration of the rear wheel cylinder as a guide for this repair.

1. Pry the boots away from the cylinder and remove the boots and piston as an assembly.

2. Disengage the boot from the piston.

3. Slide the piston into the cylinder bore and press inward to remove the other boot and piston. Also remove the spring with it the cup expanders.

4. Wash all parts (except rubber parts) in clean brake fluid thoroughly. Do not use a rag; lint will adhere to the bore.

5. Inspect the cylinder bores. Light scoring can usually be cleaned up with crocus cloth. Black stains are caused by the piston cups and are no cause of concern. Bad scoring or pitting means that the wheel cylinder should be replaced.

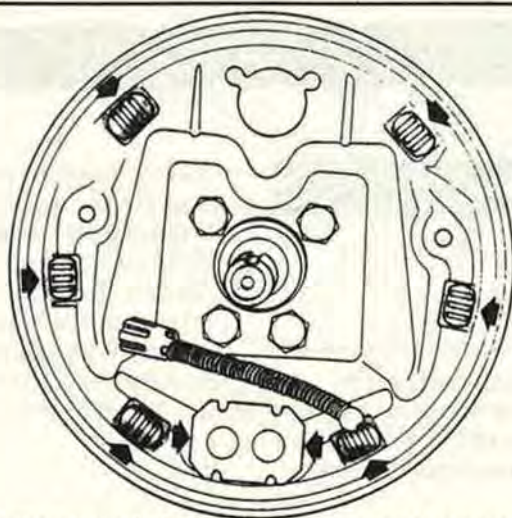


FIG. 59 Apply multipurpose grease to the eight areas shown on 1984 and later models to ensure smooth brake operation

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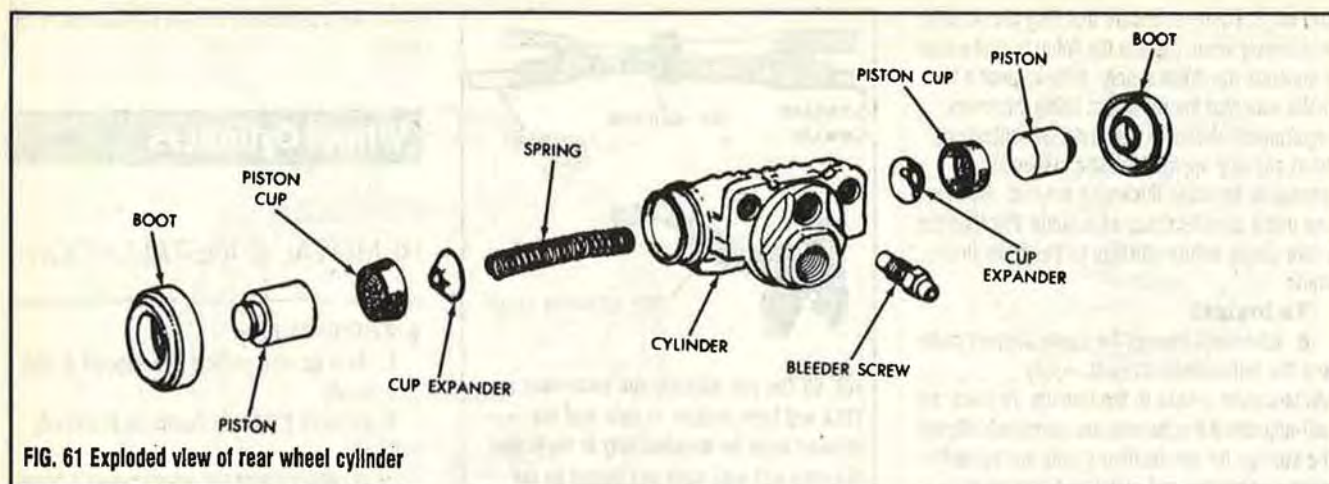


FIG. 61 Exploded view of rear wheel cylinder

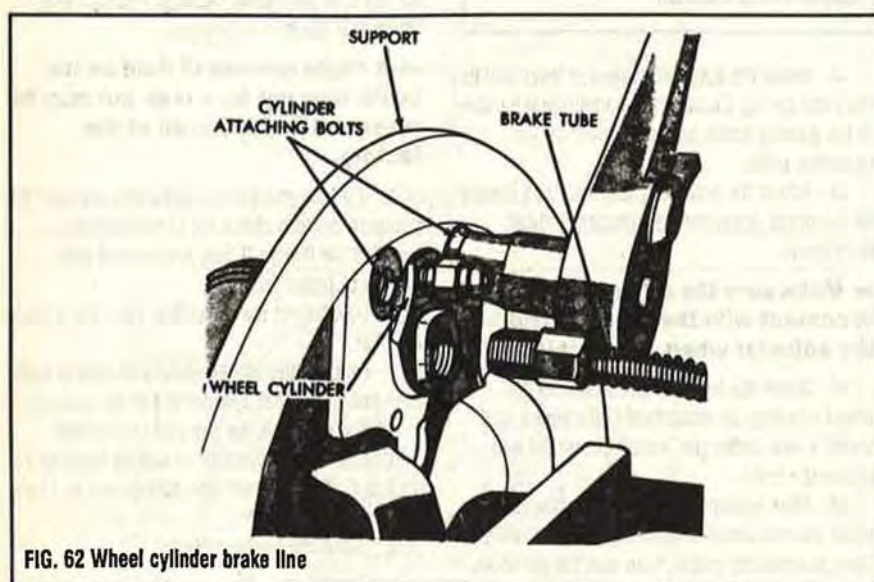


FIG. 62 Wheel cylinder brake line

6. Dip the pistons and new cups in clean brake fluid prior to assembly.

7. Coat the wheel cylinder bore with clean brake fluid.

8. Install the expansion spring with the cup expanders.

9. Install the cups in each end of the cylinder with the open ends facing each other.

10. Assemble new boots on the piston and slide them into the cylinder bore.

11. Press the boot over the wheel cylinder until seated.

12. Install the wheel cylinder.

REAR DISC BRAKES

CAUTION

Brake shoes contain asbestos, which has been determined to be a cancer-causing agent. Never clean the brake surfaces with compressed air! Avoid inhaling any dust from any brake surface! When cleaning brake surfaces, use a commercially available brake cleaning fluid.

Brake Pads

INSPECTION

Measure lining wear by measuring the combined thickness of the shoe and lining at the thinnest point. It must be $\frac{3}{32}$ on rear disc brakes for Chrysler front drive vehicles and Dodge Monaco.

Measure lining wear by measuring the brake pad at the thinnest point. It must be at least $\frac{1}{16}$ inch (3mm) or more on rear disc brakes on 1990-92 Laser and Stealth.

Use these specifications as a guide for rear disc brake pad replacement.

WHENEVER THE DISC BRAKE PAD IS TO BE REPLACED, REPLACE THE PADS ON THE RIGHT AND LEFT WHEELS AS A SET!

Brake Caliper and Pads

REMOVAL & INSTALLATION

♦ SEE FIG. 63

➔ **On all vehicles covered in this manual, the rear disc brake caliper piston (for brake pad and caliper R&R) is retracted in several different service procedures. Refer to the necessary service procedure for your vehicle. On ABS equipped vehicles read the necessary procedures in this section.**

1988 Chrysler Front Wheel Drive Vehicles

➔ **You'll need a metric size Allen wrench (4mm) to perform this operation.**

1. Raise the vehicle and support it securely by the body structure or rear axle. Remove the rear wheels.
2. There is an access plug on the inboard side of the caliper that looks like an ordinary bolt. It is located just under the parking brake cable lever. Clean the plug and the area around it to keep dirt out of the caliper and then remove it.
3. Install the 4mm Allen wrench into the access hole and turn it counterclockwise to retract the pads from the disc. Turn the retractor a few turns—until there is daylight between the disc and the pads.
4. Remove the anti-rattle spring by prying it off the outside of the caliper with a small, blunt

instrument. Be careful to pry outward on the spring just far enough to release it, in order to avoid damaging it.

5. Clean the guide pins and the areas around them of dirt and then unscrew them. Pull them out just far enough to free the caliper from the adaptor if it is not necessary to replace the caliper bushings. If the bushings are to be replaced, remove the guide pins.

6. Lift the caliper (and the inboard pad, which will remain with it) upward and away from the braking disc and then suspend it securely on a piece of wire, so as to prevent putting stress on the brake hose.

7. Pull the inboard pad away from the caliper piston and remove it. Pull the outboard pads off the caliper adaptor.

➔ **In the following step, be careful to retract the piston very slowly and carefully and by using only a minimum of effort. The use of excessive force will damage the retraction and actuation shafts.**

8. Insert the Allen wrench into the access hole and retract the piston all the way by rotating the wrench **very gently just until the rotating effort increases very slightly.**

9. Install a new inboard brake pad to the bore of the caliper piston. Then, install a new outboard pad marked **L** or **R**, according to the side of the vehicle you are working on. This pad is installed by sliding it onto the caliper adaptor.

10. Lower the caliper over the disc and outboard pad. Gently and cautiously turn the guide pins **in order to start them in their threads without cross-threading them.** Use a minimum amount of force and allow the pins to find their own angle so the threads will not be damaged. Torque the guide pins to 18–26 ft. lbs.

11. Install the anti-rattle spring. Then, insert the Allen wrench back through the access hole and turn the retraction shaft clockwise just until there is a slight amount of tension on it and the clearance between the pads and disc has been removed. Then, retract the shaft $\frac{1}{3}$ of a turn.

12. If the brake line has been disconnected, bleed the brake system. Pump the brake pedal several times to ensure that the brake pads seat against the rotor. **The pedal must give resistance at the normal position before attempting to drive the car.** Drive the car at moderate speeds in an isolated area in order to apply the brakes several times to test the system.

1989–92 Chrysler Front Wheel Drive Vehicles 1990–92 Laser And Stealth

♦ SEE FIGS. 64-68

➔ **All brake pins, shims and other parts must be installed in the proper location. Record location before removing any brake hardware. On vehicles equipped with ABS system refer to the necessary service procedures in this section.**

1. Remove some of the fluid from the master cylinder.
2. Raise the vehicle and support safely. Remove the tire and wheel assemblies.
3. Remove the hold-down spring if necessary. Remove the caliper mounting pin(s). Lift the caliper off the rotor assembly and remove the caliper and outer pad.
4. Remove the inner pad from the adaptor.
To Install:
5. Use a large C-clamp to (SLOWLY) compress the piston back into the caliper bore.
6. Install the inner pad to the adaptor.
7. Position the caliper over the rotor so the caliper engages the adaptor correctly (tighten guide pins to 25–35 ft. lbs.) and install the retainer pin(s).
8. Install the hold-down spring, if removed.
9. Refill the master cylinder as necessary.

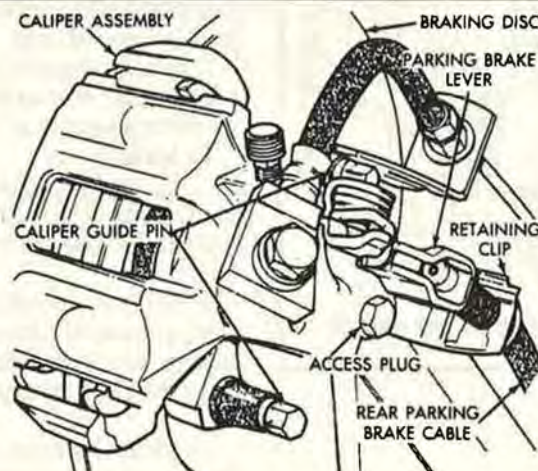


FIG. 63 Rear disc brake caliper assembly — Chrysler cars

9-32 BRAKES

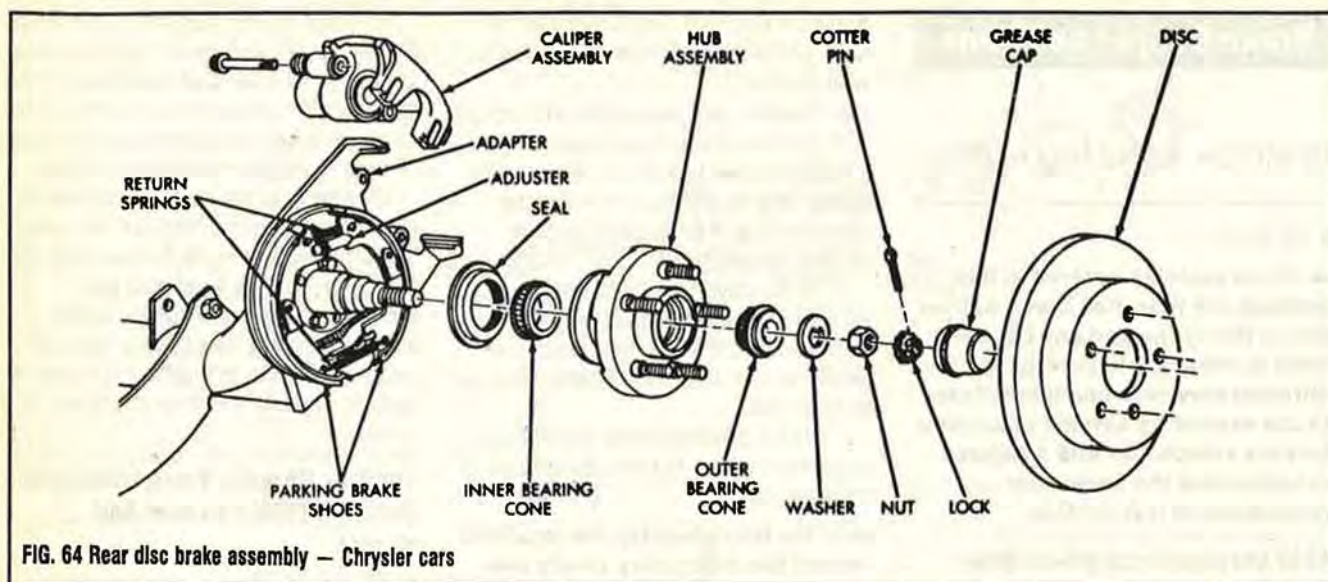


FIG. 64 Rear disc brake assembly — Chrysler cars

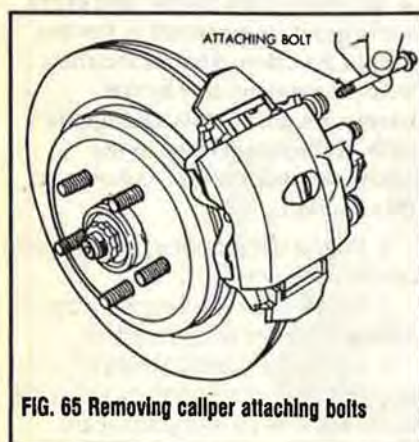


FIG. 65 Removing caliper attaching bolts

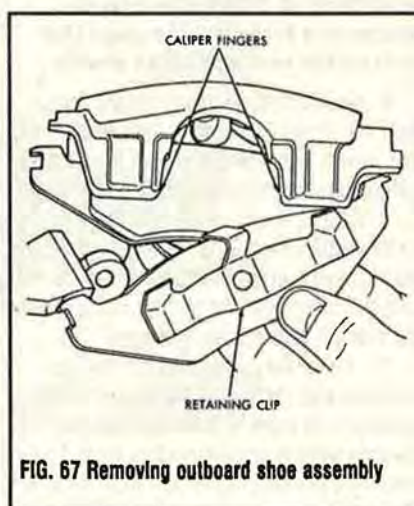


FIG. 67 Removing outboard shoe assembly

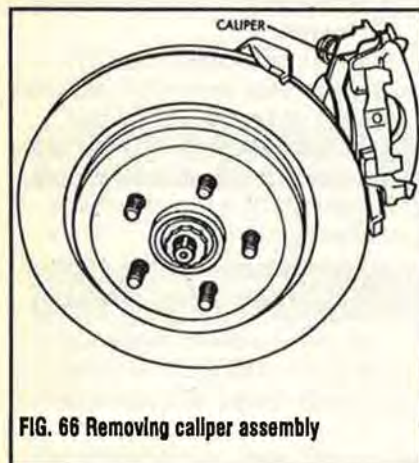


FIG. 66 Removing caliper assembly

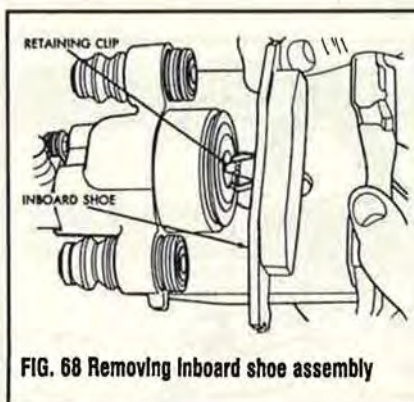


FIG. 68 Removing inboard shoe assembly

Dodge Monaco

♦ SEE FIGS. 69-72

1. Raise and safely support vehicle.

➔ **Do not attempt to press the caliper piston back into the bore at this time. A special spanner type tool #6366 is required for this operation to rotate the piston into the bore. Refer to the illustration in this section.**

2. Remove wheel and tire assemblies.

3. Unseat the operating lever return spring at the caliper.

4. Remove the operating lever attaching bolt and pry the lever (matchmark before removal) off the drive disc.

5. Remove the lever return spring.

6. Remove the operating lever from the parking brake cable. Pull the parking brake cable out of the mounting flange.

7. Remove caliper slide pins and remove the caliper. Remove the brake shoe retaining pin and remove the brake pads and anti-rattle spring.

To Install:

8. A spanner tool may be required, along with an appropriate socket and extension, to turn the piston **clockwise** until it is fully seated in the bore.

9. Install the brake pads and anti-rattle spring. Lubricate the caliper slide pins and bushings with silicone lubricant and install the caliper assembly. (tighten guide pins to 22 ft. lbs.)

10. Install the operating lever assembly and the return spring to the brake operating lever.

11. Bleed the brakes after installation. Pump the brake pedal to seat the brakes before moving vehicle.

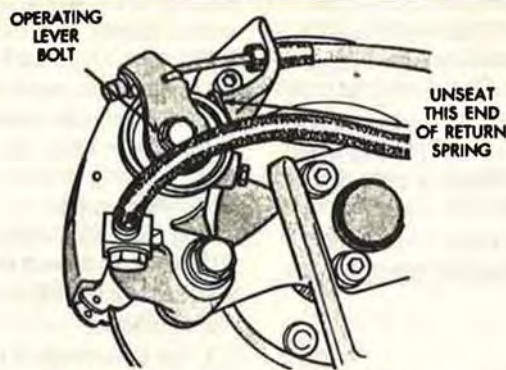


FIG. 69 Operating lever and return spring attachment — Dodge Monaco

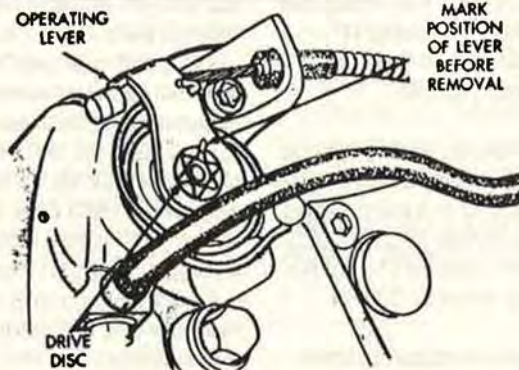


FIG. 70 Mark operating lever position — Dodge Monaco

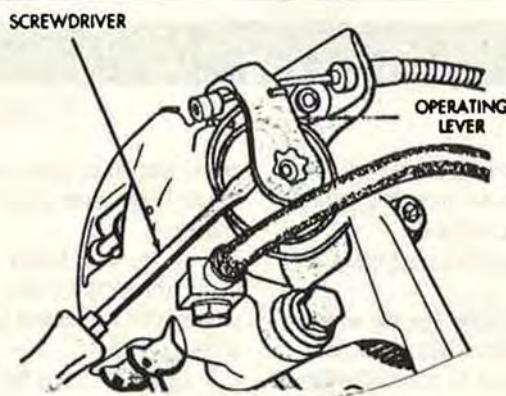


FIG. 71 Removing operating lever — Dodge Monaco

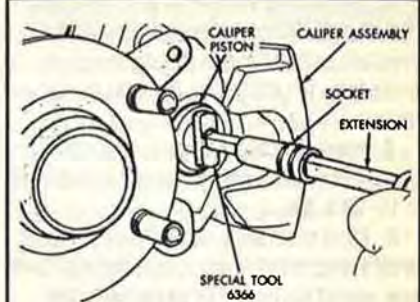


FIG. 72 Rear disc brake service — Dodge Monaco

Brake Caliper

OVERHAUL

Rear disc brake calipers are not overhauled, but are replaced on most vehicles. Check with local Auto Supply store or Dealership for the availability of service related parts. Only the dust boots and guide pin bushings are serviced, as described here. If a new caliper assembly complete with dust boots and guide pin bushings is to be installed, make sure to transfer usable pads and related parts and replace those which are worn.

1. Disconnect and plug the brake line. Disconnect the parking brake cable retaining clips from the hanger bracket and caliper. Disconnect the cable at the parking brake lever. Then, remove the caliper.

2. Check the caliper dust boot and inboard pad area for piston seal leaks. If there is a visible leak, the caliper must be replaced (they are not serviceable).

3. Inspect the dust boot and the caliper pin bushings. Replace them if they are damaged, dry, or embrittled.

4. Clean the area around the dust boot with alcohol or a suitable solvent and wipe it dry. Remove the dust boot retainer with a finger or a blunt instrument and remove the dust boot from the caliper and piston grooves and discard it.

5. Clean the grooves in the piston and caliper and then coat a new boot with clean brake fluid, leaving a heavy coating inside. Position the boot over the piston and into the grooves of both piston and caliper. Install a boot retainer over the groove in the caliper.

6. Pry the bushings from the caliper with a small, dull tool. Discard the bushings and Teflon® sleeves.

9-34 BRAKES

7. Remove the Teflon® sleeves from new bushings. Install the bushings by putting pressure on their flanges with the fingers to press them in until seated. Reinstall the Teflon® sleeves.

8. Install the caliper as described above. Connect the brake hose, torquing the banjo bolt to 19–29 ft. lbs.

9. Bleed the brake system. Pump the brake pedal several times to ensure that the brake pads seat against the rotor. **The pedal must give resistance at the normal position before attempting to drive the car.** Drive the car at moderate speeds in an isolated area in order to apply the brakes several times to test the system.

Brake Disc Rotor

REMOVAL & INSTALLATION

Remove the brake caliper (suspend brake caliper — do not disconnect the caliper) and pads as described above. The disc is held in place by the wheel and wheel nuts. Before removing the disc, mark it and one adjacent

wheel stud so it may be installed in the same position. It may be simply pulled off the studs once the caliper and pads have been removed. Install in reverse order of the removal procedure.

On the 1988 ATE front and rear brake system remove the adapter if necessary. The tightening torque for the caliper adapter mounting bolts on this application is 130–190 ft. lbs.

On some vehicles an adapter may be used unbolt and remove the adapter then remove the rear disc brake rotor.

INSPECTION

Inspect the disc for scoring, rust, impregnated lining material and ridges, and replace or machine it if serious problems in these areas are visible. Take the following specific measurements:

1. With the wheel removed, install the lugnuts to hold the disc snugly in place against the hub. Then, mount a dial indicator so it will read runout about 1 in. (25.4mm) from the outer edge of the rotor. Zero the indicator, rotate the disc, and read the maximum reading. It must be 0.005 in. (0.13mm) or less.

2. If the specification is excessive, remove the rotor and repeat the process, this time

mounting the indicator so as to measure the runout of the hub. This must not exceed 0.003 in. (0.076mm). If it does, the hub requires replacement. If hub runout meets the specification and disc runout does not, replace the disc or have it machined, if it can be trued up while maintaining minimum thickness specifications (stamped on an unmachined surface). Note that this specification includes 0.030 in. (0.76mm) wear beyond the maximum machining limit of 0.030 in. (0.76mm) from original thickness.

3. Use a micrometer to measure disc thickness at 4 locations. Thickness variation must not exceed 0.0005 in. (0.013mm). If thickness variation can be corrected by machining the disc while maintaining maximum thickness limits, this may be done.

All brake discs or rotors have markings for MINIMUM allowable thickness cast on an unmachined surface or an alternate surface. ALWAYS USE THIS SPECIFICATION AS THE MINIMUM ALLOWABLE THICKNESS OR REFINISHING LIMIT. Refer to a local auto parts store or machine shop if necessary shop where brake disc or rotors are resurfaced.

If the brake disc or rotor needs to be replaced with a new part, the protective coating on the braking surface of the rotor must be removed with an appropriate solvent.

PARKING BRAKE

Cable

ADJUSTMENT

**Chrysler FWD Vehicles
Except 1990–92 Daytona, Daytona
Shelby (AG) And LeBaron (AJ)**

➔ **The service brakes must be properly adjusted before adjusting the parking brake.**

1. Release the parking brake lever, then back off the parking brake cable adjuster so there is slack in the cable.

2. Before loosening cable adjusting nut, clean and lubricate the threads.

3. Tighten the parking brake adjuster (after service brake adjustment if necessary) until a slight drag is felt while rotating the wheels.

4. Loosen the cable adjusting nut until the rear wheels can be rotated freely, then back the cable adjuster nut off 2 full turns.

5. Apply and release the parking brake several times.

6. Test the parking brake. The rear wheels should rotate freely without dragging when parking brake is released. To check operation, make sure the parking brake holds on an incline.

**1990–92 Daytona, Daytona Shelby
And LeBaron**

The parking brake hand lever contains a self-adjusting loaded clock spring feature. Routine parking brake adjustment is not required. Refer to the "Parking Brake Cable Removal and Installation" below for additional information.

1990–92 Laser And Stealth

1. Make sure the parking brake cable is free and is not frozen or sticking. With the engine running, forcefully depress the brake pedal 5–6 times. Check the parking brake stroke. It should

be 5–7 notches on Laser and 3–5 notches on Stealth. If not, adjust using the following procedure.

2. On rear drum brakes, adjust the rear brakes. On rear disc brakes, make sure the parking brake mechanism is not frozen or sticking.

3. On Laser, remove the console carpeting. On Stealth, remove the coin holder and plug. This will expose the adjusting nut within the console.

4. Rotate the adjusting nut to adjust the parking brake stroke to the 5–7 notch setting. After making the adjustment, check there is no looseness between the adjusting nut and the parking brake lever, then tighten the locknut.

➔ **Do not adjust the parking brake too tight. If the number of notches is less than specification, the cable has been pulled too much and the automatic adjuster will fail or the brakes will drag.**

5. After adjusting the lever stroke, raise the rear of the vehicle. With the parking brake lever in the released position, turn the rear wheels to confirm that the rear brakes are not dragging.

6. Check that the parking brake holds the vehicle on an incline.

Dodge Monaco

1. Adjust the rear brakes if necessary.
2. Apply and release the parking brake 5 times to center the shoes in the drums. Set the pedal on the first notch from the released position.
3. Raise and support the vehicle safely.
4. Tighten the cable at the equalizer so the wheels can just barely be turned forward, then loosen 1 turn. Be sure to hold the end of the cable screw to prevent the cable from turning.
5. Release the parking brake and check for rear brake drag. The wheels should rotate freely with the parking brake no applied.

REMOVAL & INSTALLATION

♦ SEE FIGS. 73-75

➔ Use these service procedures as a guide for all models/years. Refer to the "Parking Brake Cable Routing" Illustrations in this section. On the 1990-92 Daytona, Daytona Shelby (AG) And LeBaron (AJ) a one piece cable is used refer to the correct service procedure below.

Chrysler FWD – Front Cable

1. Jack up your car and support it with jack stands.
2. Loosen the cable adjusting nut and disengage the cable from the connectors.
3. Lift the floor mat for access to the floor pan.
4. Remove the floor pan seal panel.
5. Pull the cable end forward and disconnect it from the clevis.
6. Pull the cable assembly through the hole.
7. Installation is the reverse of removal.
8. Adjust the service and parking brakes.

Chrysler FWD – One Piece Cable 1990-92 Daytona And LeBaron

♦ SEE FIG. 76

CAUTION

The parking brake hand lever contains a self-adjusting loaded clock spring loaded to about 30 lbs. Care must be taken when handling components in the vicinity of the hand lever or serious personal injury may result.

1. Disconnect the negative battery cable.
2. Disengage the cable from the equalizer bracket in the console.
4. Lift the carpet and floor matting and remove the floor pan seal.
5. Separate the cable from the rear parking brake shoes lever.
6. Pull the cable through the hole and remove.

To Install:

7. Install the cable and connect to the rear shoes and equalizer bracket. Install the floor pan seal and position the carpet.
8. To reload, lockout and adjust the system:
 - a. Pull on the equalizer output cable with

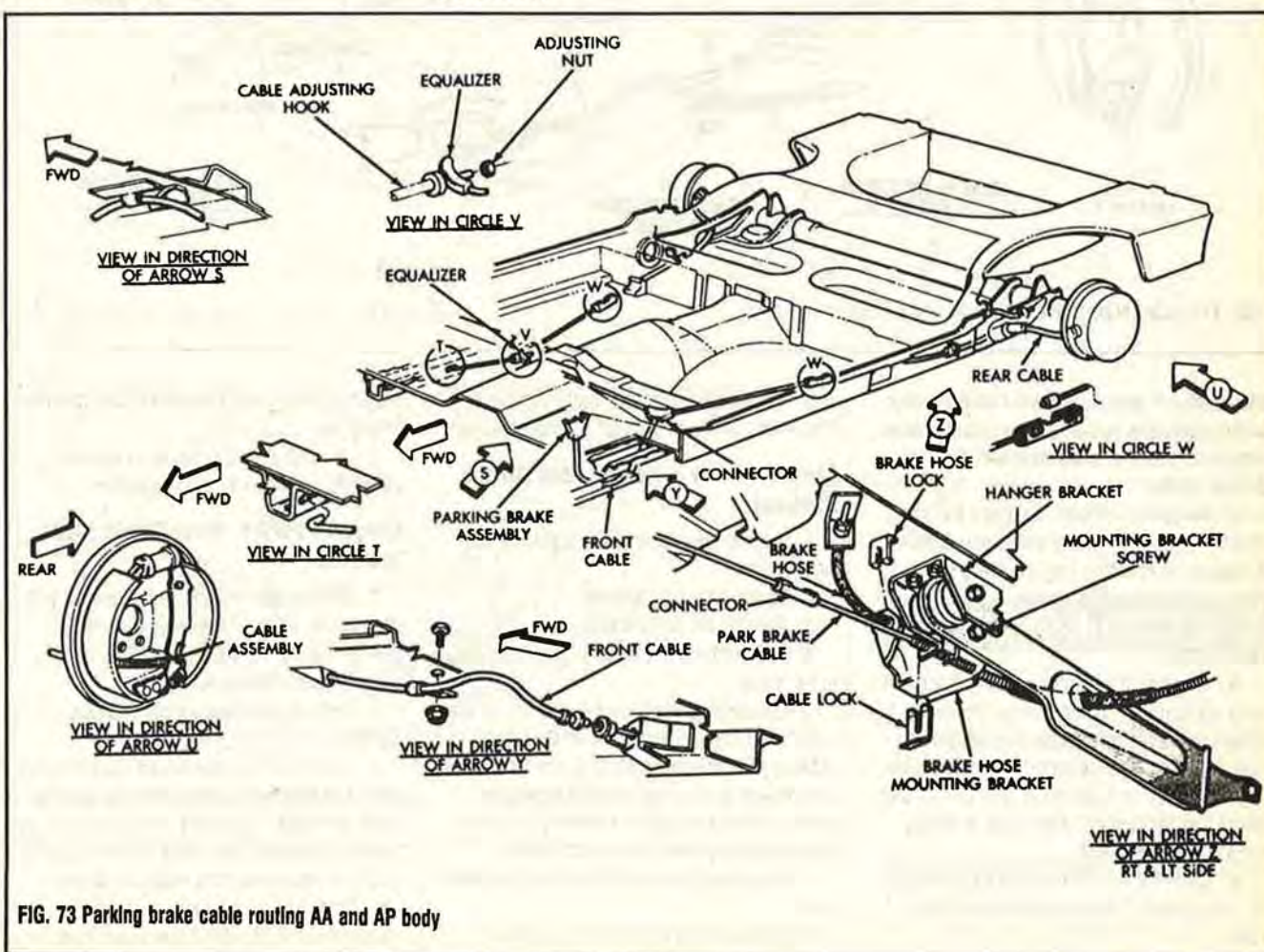


FIG. 73 Parking brake cable routing AA and AP body

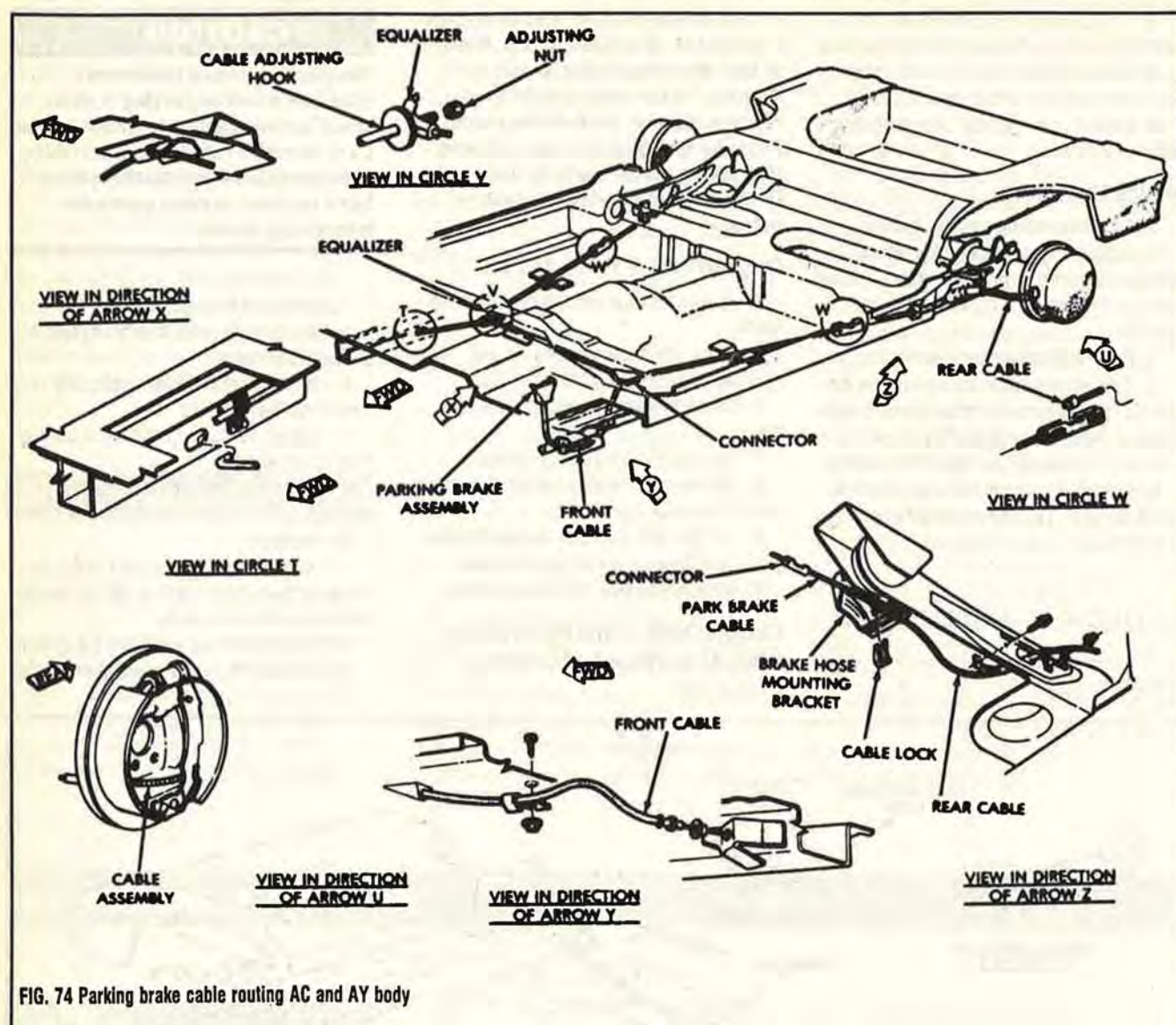


FIG. 74 Parking brake cable routing AC and AY body

at least 30 lbs. pressure to wind up the spring. Continue until the self-adjuster lockout pawl is positioned about midway between the self-adjuster sector.

b. Rotate the lockout pawl into the self-adjuster sector by turning the Allen screw clockwise. This action requires very little effort; do not force the screw.

c. Adjust the rear drum-in-hat parking brake shoes.

d. Turn the Allen screw counterclockwise about 15 degrees. When turning the lockout device, self-adjuster release is a snapping noise followed by a detent that should be felt. Very light effort is required to seat the lockout device into the detent. Make sure to follow through into the detent.

e. Cycle the lever a few times to complete the adjustment. The wheels should rotate freely.

9. Connect the negative battery cable and check the parking brakes for proper operation.

Chrysler FWD – Rear Cable (Drum Brakes)

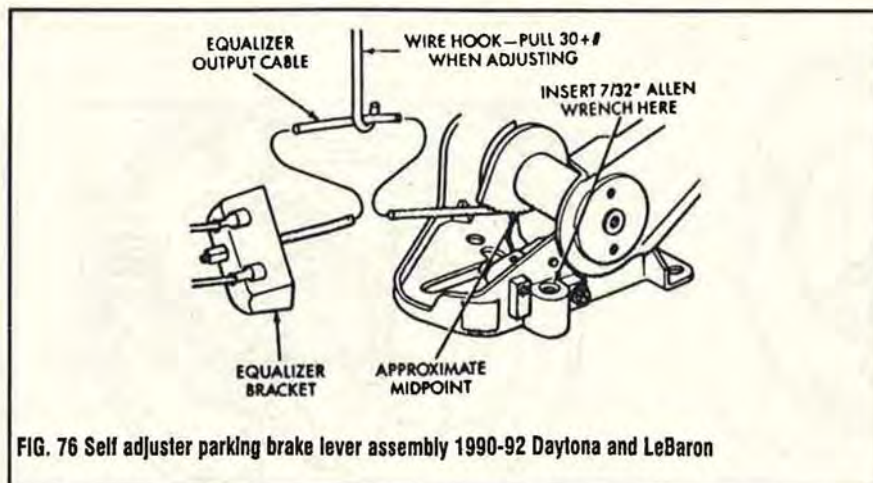
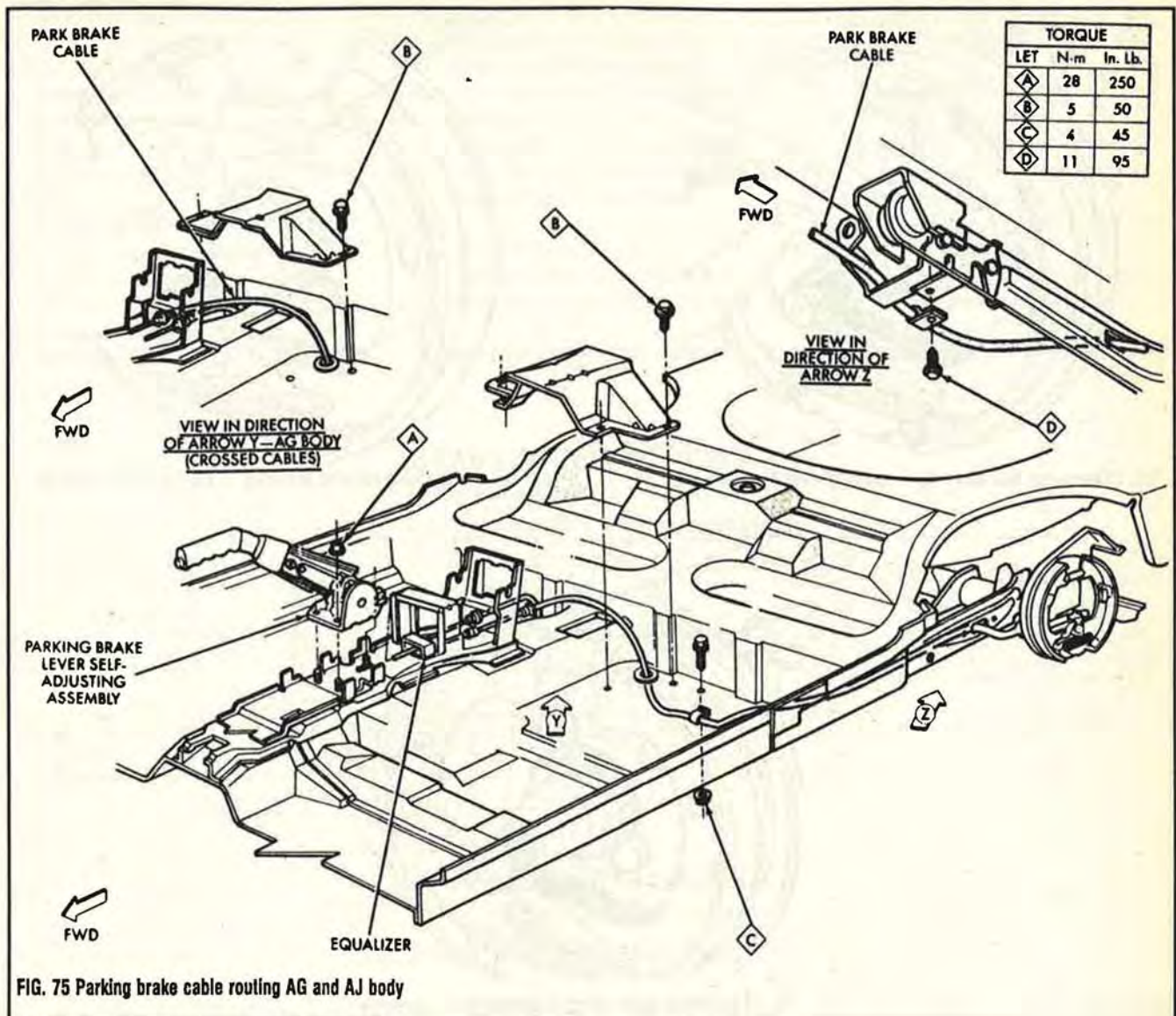
1. Jack up your vehicle and support it with jack stands.
2. Remove the rear wheels.
3. Remove the brake drums.
4. Back off the cable adjuster to provide slack in the cable.
5. Compress the retainers on the end of the cable and remove the cable from the brake backing plate or support plate. A worm gear type hose clamp can be used for this procedure (remove the clamp before removing the brake cable assembly from the support plate).
6. Disconnect the cable from the brake shoe lever.
7. Remove the clip from brake cable at

support bracket. Pull the brake cable from the trailing arm.

8. Installation is the reverse of removal. Adjust the service and parking brakes.

Chrysler FWD – Rear Cable (Disc Brakes)

1. Jack up your vehicle and support it with jack stands. Back off the cable adjuster to provide slack in the cable.
2. Remove the rear wheels.
3. Remove the brake caliper and disc assembly.
4. Compress the retainers on the end of the cable and remove the cable from the adapter. A worm gear type hose clamp can be used for this procedure (remove the clamp before removing the brake cable assembly from the adapter).
5. Remove the clip from brake cable at support bracket. Pull the brake cable from the trailing arm.



6. Installation is the reverse of removal. Be sure that the retainers on the brake cable are expanded around the mounting hole in adapter. Adjust the parking brake shoe diameter to 6.75 inch (171.5mm). Install the brake disc, callper and wheel/tire assembly.

Parking Brake Shoes

REMOVAL, INSTALLATION AND ADJUSTMENT

Chrysler Front Wheel Drive Vehicles

♦ SEE FIGS. 77-81

1. Remove the callper from the disc assembly. Refer to the necessary service procedures in this section.

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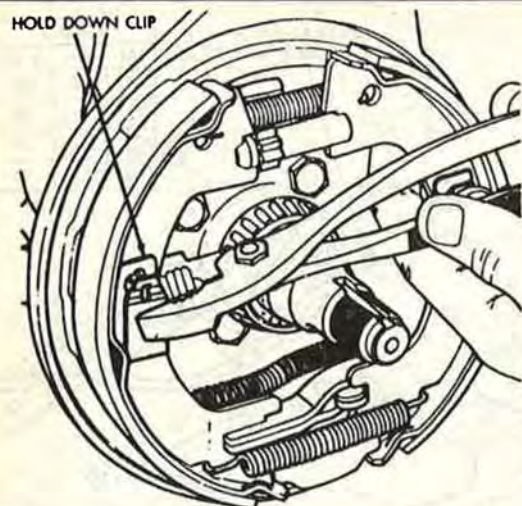


FIG. 77 Removing hold down clip — parking brake assembly

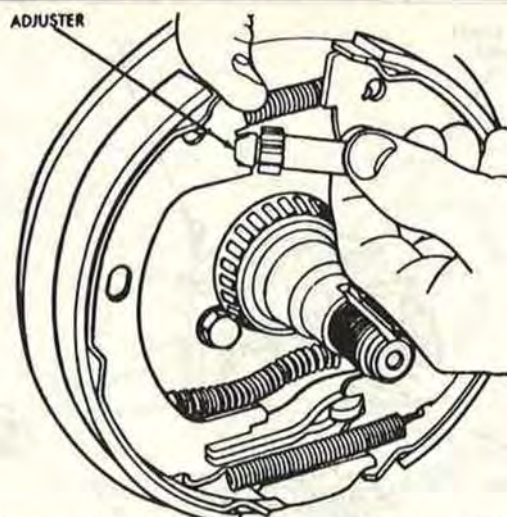


FIG. 78 Removing adjuster assembly — parking brake assembly

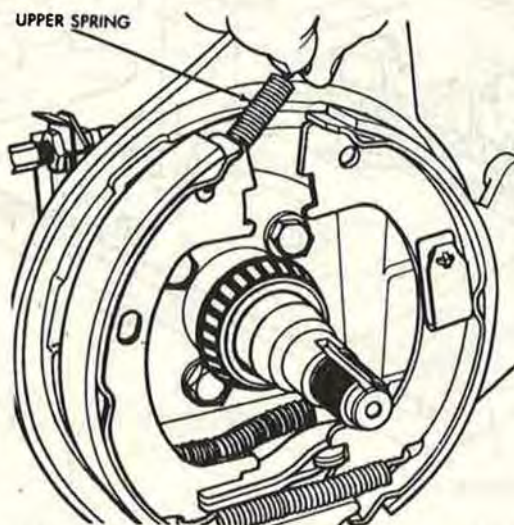


FIG. 79 Removing upper spring — parking brake assembly

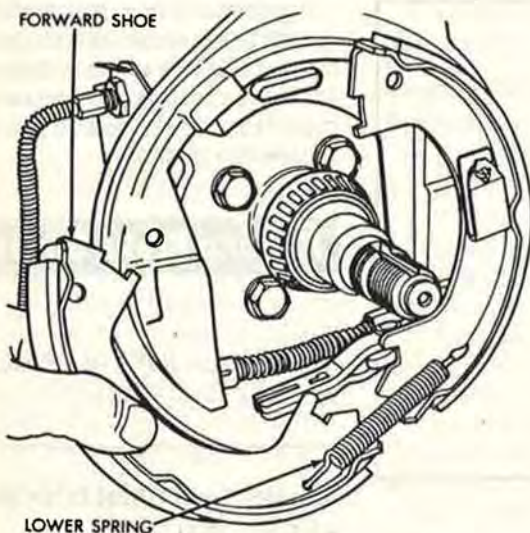


FIG. 80 Removing shoe and lower spring — parking brake assembly

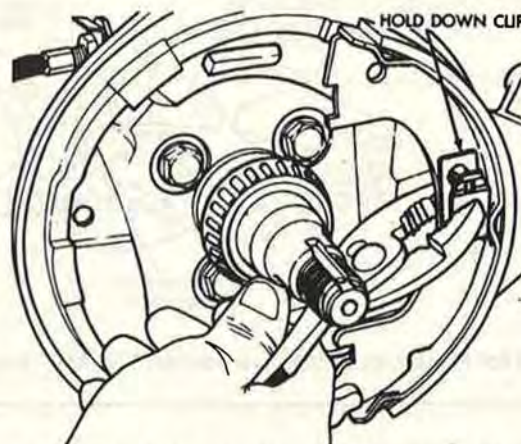


FIG. 81 Removing rear holddown clip and shoe — parking brake assembly

2. Remove the brake disc from the hub assembly. Refer to the necessary service procedures in this section.
3. Remove the grease cap, cotter pin, lock nut, retaining nut and washer.
4. Remove the hub and bearing assembly.
5. Remove the forward hold down clip on brake shoes.
6. Turn adjuster wheel until adjuster is at shortest length. Remove the adjuster assembly.
7. Remove the upper shoe to shoe spring. Pull front shoe away from anchor and remove the front shoe and lower spring.
8. Remove the rear hold-down clip and shoe.

To Install:

9. Install rear shoe and holddown clip.
10. Install the lower shoe to shoe spring. Pull forward shoe over anchor block until properly located on adapter.
11. Install upper shoe to shoe spring. Install adjuster assembly (grease threads with suitable grease before installation) with star wheel forward.
12. Install front holddown clip.
13. Adjust parking brake shoe diameter to 6.75 inch (171mm). Install hub assembly on the spindle.
14. Install outer bearing, thrust washer and

nut. Tighten wheel bearing adjusting nut to 240-300 inch lbs. while rotating hub this seats the bearing

15. Back off adjusting nut 1/4 turn or 90° then tighten adjusting nut finger tight.

16. Position locknut with a pair of slots in line with cotter pin. Install cotter pin, always use a NEW cotter pin upon installation.

17. Install grease cap, brake disc, caliper and wheel/tire assemblies.

18. Test the parking brake. The rear wheels should rotate freely without dragging when parking brake is released. To check operation, make sure the parking brake holds on an incline.

BRAKE SPECIFICATIONS 1990-92 Dodge Monaco

All measurements given are (in.) unless noted

Year	Lug Nut Torque (ft. lbs.)	Master Cylinder Bore	Brake Disc		Brake Drum			Minimum Lining Thickness	
			Minimum Thickness	Maximum Run-Out	Diameter	Max. Machine O/S	Max. Wear Limit	Front	Rear
1990-92	(Front) 63	0.945	0.890	0.003	—	—	—	0.06	0.06
	(Rear) 63	—	0.380	0.003	8.92	①	①	0.06	0.06

NOTE: Minimum lining thickness is as recommended by the manufacturer. Because of variations in state inspection regulations, the minimum allowable thickness may be different than recommended by the manufacturer.

- ① See figure stamped on the drum

BRAKE SPECIFICATIONS 1990-92 Laser

All measurements given are (in.) unless noted

Year	Lug Nut Torque (ft. lbs.)	Master Cylinder Bore	Brake Disc		Brake Drum			Minimum Lining Thickness	
			Minimum Thickness	Maximum Run-Out	Diameter	Max. Machine O/S	Max. Wear Limit	Front	Rear
1990	(Front) 87-101	①	0.882	0.003	—	—	—	0.080	0.080
	(Rear) 87-101	—	0.331	0.003	—	—	—	0.080	0.080
1991-92	(Front) 87-101	②	0.882	0.003	—	—	—	0.080	0.080
	(Rear) 87-101	—	0.331	0.003	—	—	—	0.080	0.080

NOTE: Minimum lining thickness is as recommended by the manufacturer. Because of variations in state inspection regulations, the minimum allowable thickness may be different than recommended by the manufacturer.

- ① Non-turbocharged engine: 7/8 inch
Turbocharged engine: 15/16 inch
- ② Non-turbocharged without ABS: 7/8 inch
Non-turbocharged with ABS: 15/16 inch
Turbocharged with FWD: 15/16 inch
Turbocharged with AWD: 1 inch

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BRAKE SPECIFICATIONS 1991-92 Dodge Stealth

All measurements given are (in.) unless noted

Year	Model	Lug Nut Torque (ft. lbs.)	Master Cylinder Bore	Brake Disc		Diameter	Brake Drum		Minimum Lining Thickness	
				Minimum Thickness	Maximum Run-Out		Max. Machine O/S	Max. Wear Limit	Front	Rear
1991-92	FWD	(Front) 87-101	①	0.880	0.003	—	—	—	0.080	0.080
		(Rear) 87-101	—	0.650	0.003	—	—	—	0.080	0.080
	AWD	(Front) 87-101	1 1/16	1.12	0.003	—	—	—	0.080	0.080
		(Rear) 87-101	—	0.720	0.003	—	—	—	0.080	0.080

NOTE: Minimum lining thickness is as recommended by the manufacturer. Because of variations in state inspection regulations, the minimum allowable thickness may be different than recommended by the manufacturer.

FWD: Front Wheel Drive

AWD: All Wheel Drive

① Without ABS: 1 inch

With ABS: 1 1/16 inch

BRAKE SPECIFICATIONS

Acclaim, Aries, Caravelle, Daytona, Dynasty, E-Class, Executive, Sedan, Imperial, Lancer, Laser (1984-86), LeBaron, New Yorker, Reliant, Shadow, Spirit, Sundance, Town & Country, 400 and 600 Models

All measurements given are (in.) unless noted

Year	Lug Nut Torque (ft. lbs.)	Master Cylinder Bore	Brake Disc		Diameter	Brake Drum		Minimum Lining Thickness	
			Minimum Thickness	Maximum Run-Out		Max. Machine O/S	Max. Wear Limit	Front	Rear
1981-85	95	.827	.882 ⑤	.004	7.87 ②	①	①	.300	5/16 ④
1986-92	95	.827	.882 ⑤	.005	7.87 ③	①	①	5/16	5/16 ④

NOTE: Minimum lining thickness is as recommended by the manufacturer. Because of variations in state inspection regulations, the minimum allowable thickness may be different than recommended by the manufacturer.

① See figure stamped on the drum

② Caravelle, 600 and New Yorker: 8.66

③ Caravelle, 600 and New Yorker, and Daytona, Aries, Reliant, LeBaron and Town and Country with Heavy Duty Brakes and towing option: 8.66

④ Applied to drum brakes. Rear disc: 9/32

⑤ Front Disc Brakes—On Rear Disc Brake Applications, see figure stamped on Disc Assembly

BENDIX ANTI-LOCK 6 BRAKE SYSTEM SERVICE**Daytona, LeBaron,
LeBaron Landau,
Spirit And Acclaim****PRECAUTIONS**

♦ SEE FIGS. 82-87

Failure to observe the following precautions may result in system damage.

- Before performing electric arc welding on the vehicle, disconnect the control module and the hydraulic unit connectors.

- When performing painting work on the vehicle, do not expose the control module to temperatures in excess of 185°F (85°C) for longer than 2 hrs. The system may be exposed to temperatures up to 200°F (95°C) for less than 15 min.

- Never disconnect or connect the control module or hydraulic modulator connectors with the ignition switch ON.

- Never disassemble any component of the Anti-Lock Brake System (ABS) which is designated non-serviceable; the component must be replaced as an assembly.

- When filling the master cylinder, always use brake fluid which meets DOT-3 specifications; petroleum-based fluid will destroy the rubber parts.

- Working on ABS system requires extreme amount of mechanical ability, training and special tools. If you are not familiar have your vehicle repaired by a certified mechanic or refer to a more advanced publication on this subject.

Pump/Motor Assembly**REMOVAL & INSTALLATION****Bendix Anti-Lock 6 Brake System****DAYTONA, LEBARON, LEBARON LANDAU,
SPIRIT AND ACCLAIM**

The pump and motor assembly used on the Bendix Anti-lock 6 brake system is not removable. If the pump or motor fails, the modulator assembly must be replaced.

Modulator Assembly**REMOVAL & INSTALLATION****Bendix Anti-Lock 6 Brake System****DAYTONA, LEBARON, LEBARON LANDAU,
SPIRIT AND ACCLAIM**

1. Remove the battery, battery tray and the protective cover from the modulator.
2. Disconnect the electrical connector from the Delta P switch.
3. Remove the top bolt holding the modulator bracket to the fender shield.
4. Disconnect the 2 master cylinder supply tubes at the modulator. Loosen (but do not remove) the other end of the tubes at the master cylinder; swing the tubes aside without kinking them.
5. Elevate and safely support the vehicle.
6. From below, disconnect the modulator 10-pin electrical connector. Remove the remaining 4 brake tubes from the modulator assembly.
7. Remove the modulator bracket mounting bolt which is closest to the hydraulic junction block.

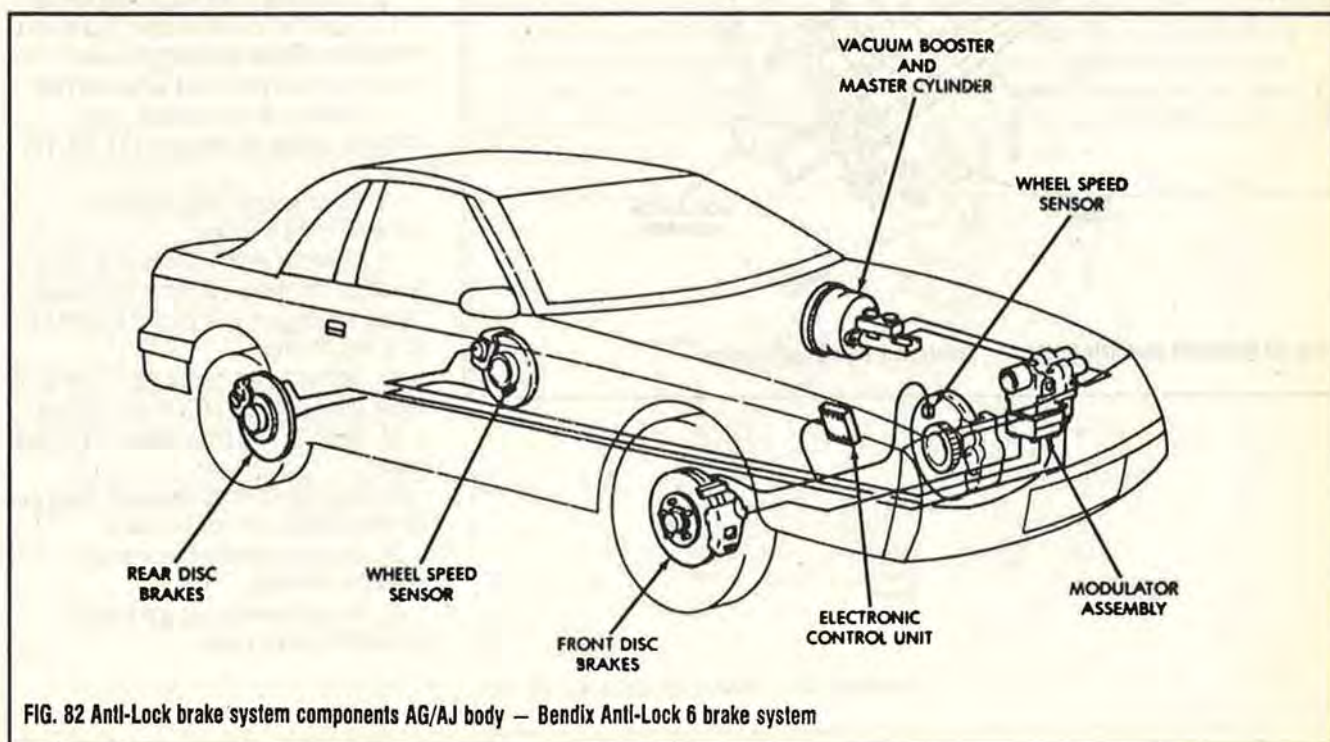


FIG. 82 Anti-Lock brake system components AG/AJ body — Bendix Anti-Lock 6 brake system

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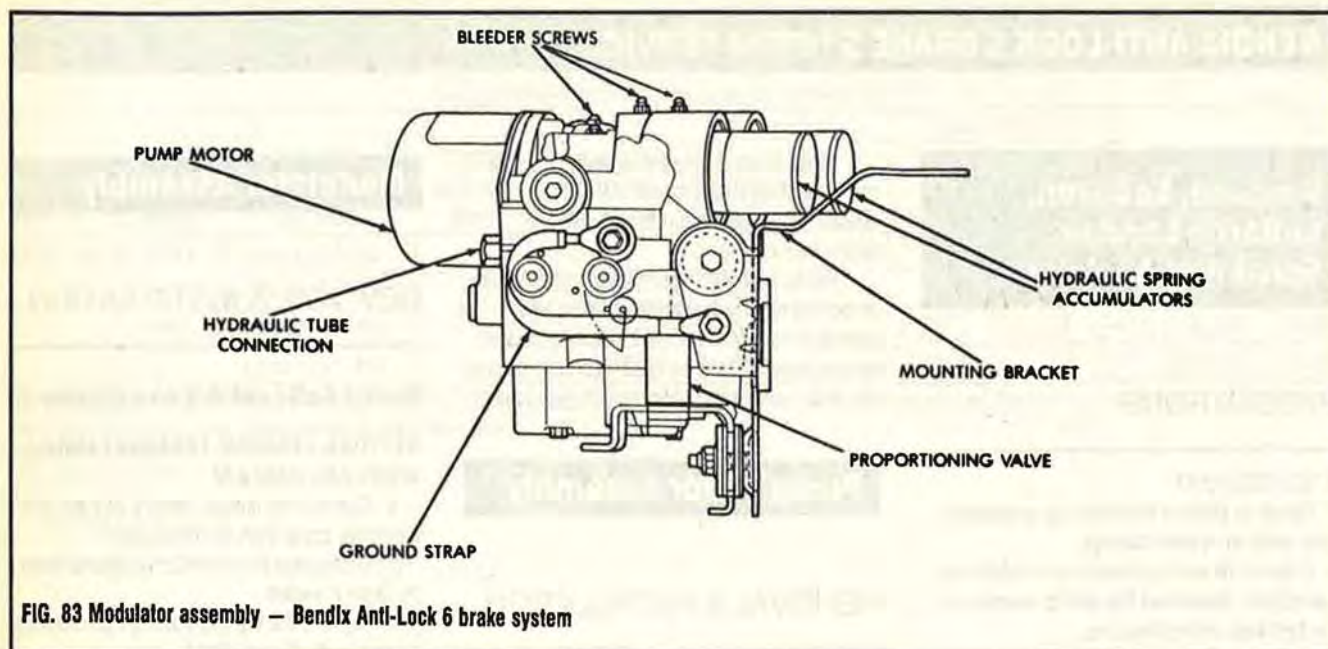


FIG. 83 Modulator assembly — Bendix Anti-Lock 6 brake system

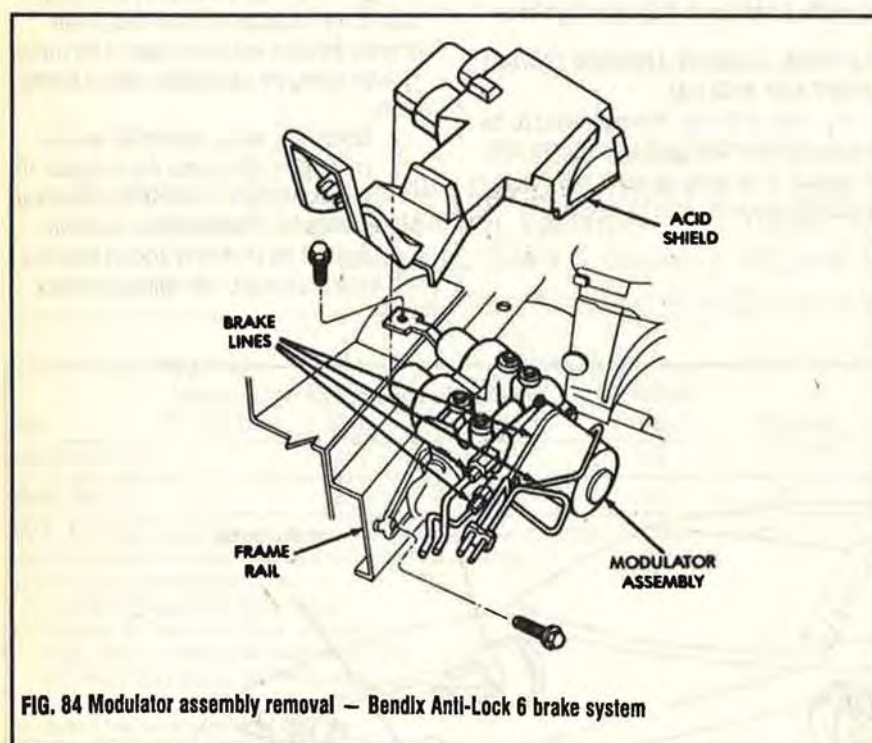


FIG. 84 Modulator assembly removal — Bendix Anti-Lock 6 brake system

8. Loosen but do not fully remove the bracket mounting bolt closest to the radiator.

9. Lower the vehicle; lift the modulator assembly and bracket out of the vehicle.

To Install:

10. Install the modulator and bracket into position. Use the protruding tab on the modulator to locate and hold the assembly. Make certain the bracket is held by the front mounting bolt.

11. Install but do not tighten the bolt holding the bracket to the fender shield.

12. Elevate and safely support the vehicle.

13. Install the bracket mounting bolt closest to the junction block. Tighten both lower mounting bracket bolts to 21 ft. lbs. (28 Nm).

14. Install the 4 hydraulic lines at the modulator; tighten the fittings to 12 ft. lbs. (16 Nm).

15. Reconnect the 10-pin electrical connector to the modulator.

16. Lower the vehicle. Connect the 2 supply tubes from the master cylinder to the modulator. Tighten the fittings at both ends of the tubes to 12 ft. lbs. (16 Nm).

17. Tighten the bolt holding the bracket to the fender shield (Step 11) to 21 ft. lbs. (28 Nm).

18. Bleed the base brake system in the usual fashion.

19. Bleed the modulator assembly following the correct sequences and procedure.

20. Install the protective cover on the modulator assembly.

21. Install the battery tray and battery. Connect the battery cables.

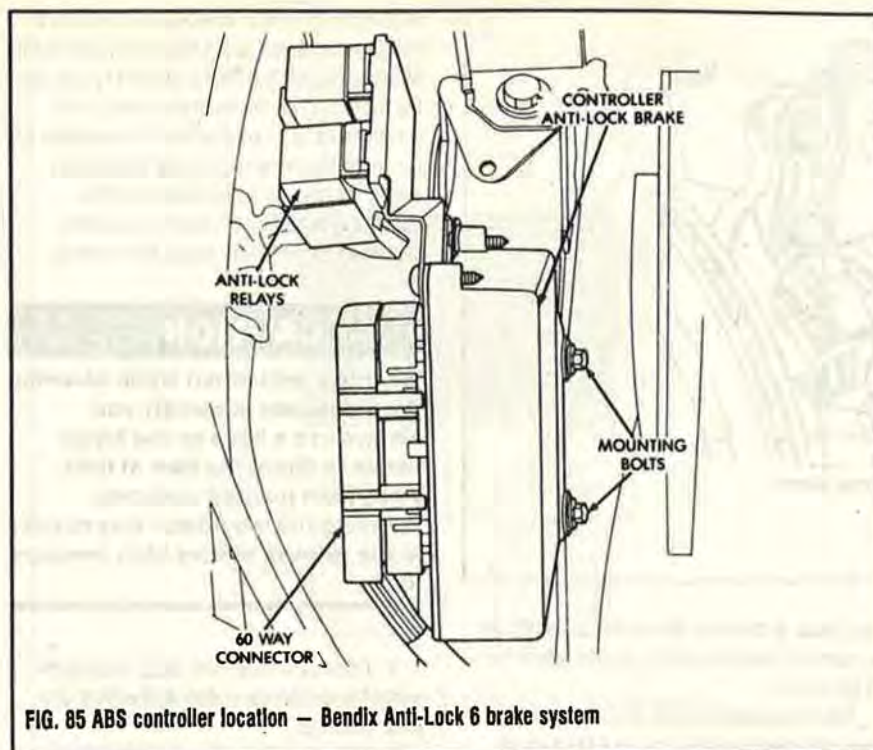


FIG. 85 ABS controller location — Bendix Anti-Lock 6 brake system

Wheel Speed Sensors

REMOVAL & INSTALLATION

Bendix Anti-Lock 6 Brake System

DAYTONA, LEBARON, LEBARON LANDAU, SPIRIT AND ACCLAIM

Front Wheel

1. Elevate and safely support the vehicle. Remove the wheel and tire.
2. Remove the clip holding the wiring grommet to the fender well.
3. Remove the screws holding the sensor wiring tube to the fender well.
4. Carefully remove the grommet from the fender shield.
5. Make certain the ignition switch is **OFF**. Disconnect the sensor wiring from the ABS harness.
6. Remove the triangular retaining clip from the bracket on the strut. Not all vehicles have this clip.
7. Remove the sensor wiring grommets from the bracket.
8. Remove the fastener holding the sensor head.
9. Carefully remove the sensor head from the steering knuckle. Do not use pliers on the sensor head; if it is seized in place, use a hammer and

small punch to tap the edge of the sensor ear. The tapping and side-to-side motion will free the unit.

To Install:

10. Connect the speed sensor to the ABS harness.
11. Push the sensor assembly grommet into the hole in the fender shield. Install the retainer clip and screw.
12. Install the sensor wiring tube and tighten the retaining bolts to 35 inch lbs. (4 Nm).
13. Install the sensor grommets into the brackets on the fender shield and strut. Install the retainer clip at the strut.

14. Install the sensor to the knuckle. Install the retaining screw and tighten it to 60 inch lbs. (7 Nm).

➔ **Proper installation of the sensor and its wiring is critical to system function. Make certain that wiring is installed in all retainers and clips. Wiring must be protected from moving parts and not be stretched during suspension movements.**

15. Install the tire and wheel. Lower the vehicle to the ground.

Rear Wheel

1. Elevate and safely support the vehicle. Remove the wheel and tire.
2. Remove the sensor assembly grommet from the underbody and pull the harness through the hole in the body.
3. Make certain the ignition switch is **OFF**. Disconnect the sensor wiring from the ABS harness.
4. Remove the clip retaining screw from the bracket just forward of the trailing arm bushing.
5. Remove the sensor and brake tube assembly clip from the inboard side of the trailing arm.
6. Remove the sensor wire retainer from the rear brake hose bracket.
7. Remove the outboard sensor assembly nut. This nut is also used to hold the brake tube clip.
8. Remove the fastener holding the sensor head.
9. Carefully remove the sensor head from the adapter assembly. Do not use pliers on the sensor head; if it is seized in place, use a hammer and small punch to tap the edge of the sensor ear. The tapping and side-to-side motion will free the unit.

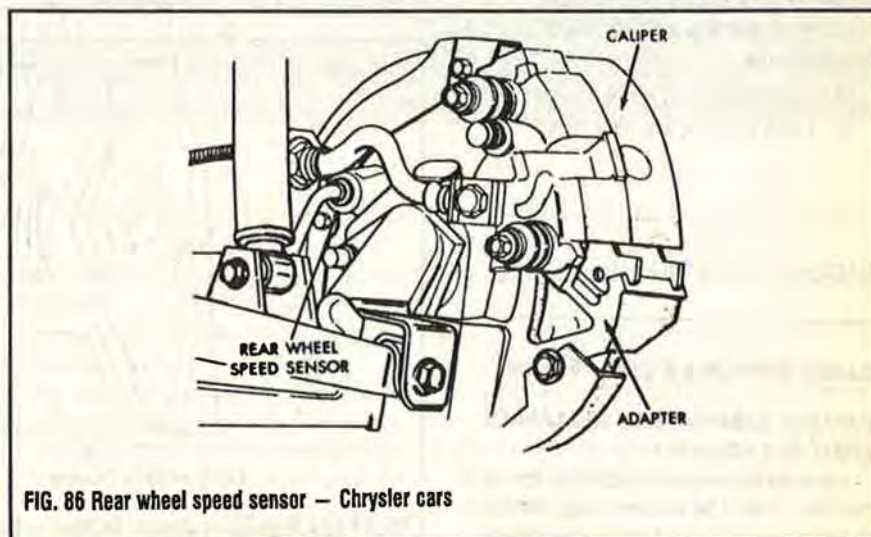


FIG. 86 Rear wheel speed sensor — Chrysler cars

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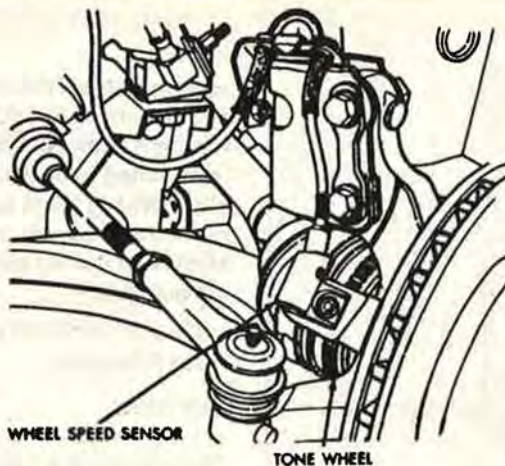


FIG. 87 Front wheel speed sensors — Chrysler cars

To Install:

10. Before installation, coat the sensor with high temperature multi-purpose grease.
11. Install the sensor; install the retaining screw and tighten it to 60 inch lbs. (7 Nm).
12. Install the outboard retaining nut.
13. Install the clips and nuts at and around the trailing arm.
14. Connect the sensor wiring to the ABS harness; make sure the connector lock is engaged.
15. Push the sensor assembly grommet into the hole in the underbody.

➔ **Proper installation of the sensor and its wiring is critical to system function. Make certain that wiring is installed in all retainers and clips. Wiring must be protected from moving parts and not be stretched during suspension movements.**

16. Install the tire and wheel.
17. Lower the vehicle to the ground.

modulator is removed. Excessive air within the system will cause a soft or spongy feel in the brake pedal.

When bleeding any part of the system, the reservoir must remain close to **FULL** at all times. Check the level frequently and top off fluid as needed.

The Bendix Anti-lock 6 brake system must be bled as 2 separate brake systems. Proper procedures must be followed if the system is to work correctly. The normal portion of the brake system is bled in the usual fashion with either pressure or manual bleeding equipment and must be fully and properly bled before bleeding the modulator.

Bleeding the Modulator Assembly

♦ SEE FIGS. 88-89

To bleed the ABS unit, the battery must be relocated outside the vehicle and connected to the vehicle with jumper cables. This allows access to the 4 bleeder screws on top of the

modulator assembly. Additionally, the DRB II must be connected to the diagnostic plug before bleeding begins; the DRB II is used to activate the system(s) during the procedure. The 4 components to be bled within the modulator are (in order) the secondary sump, the primary sump, the primary accumulator and the secondary accumulator. Use the following procedure to bleed the modulator assembly.

CAUTION

Wear eye protection when bleeding the modulator assembly and always use a hose on the bleed screw to direct the flow of fluid away from painted surfaces. Bleeding the modulator may result in the release of very high pressure fluid.

1. Connect a clear hose to the secondary sump bleeder screw and route the hose to a clear container.
2. Either install and pressurize the pressure bleeding equipment at the master cylinder or have an assistant provide light and constant pressure on the brake pedal.
3. Open the bleeder screw about 1/2-3/4 turn. Use the DRB II to select the ACTUATE VALVES test; actuate the left front build/decay valve.
4. Bleed until the fluid flows free of air bubbles or until the brake pedal bottoms.
5. Tighten the bleeder screw and release the brake pedal if it was being held.
6. Repeat Steps 2 through 5 until the fluid is free of air bubbles. Remember to check the fluid reservoir level periodically.
7. Select and actuate the right rear build/decay valve and perform Steps 2-5 until the fluid flows without air bubbles.

BRAKE SYSTEM BLEEDING

Bendix Anti-Lock 6 Brake System

DAYTONA, LEBARON, LEBARON LANDAU, SPIRIT AND ACCLAIM

The brake system must be bled any time air is permitted to enter the system through loosened or disconnected lines or hoses, or anytime the

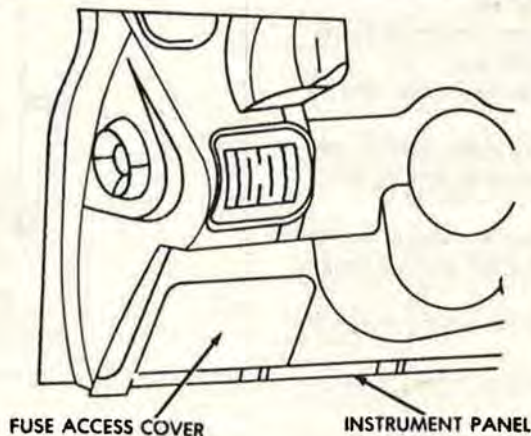


FIG. 88 ABS diagnostic connector location — Bendix Anti-Lock 6 brake system

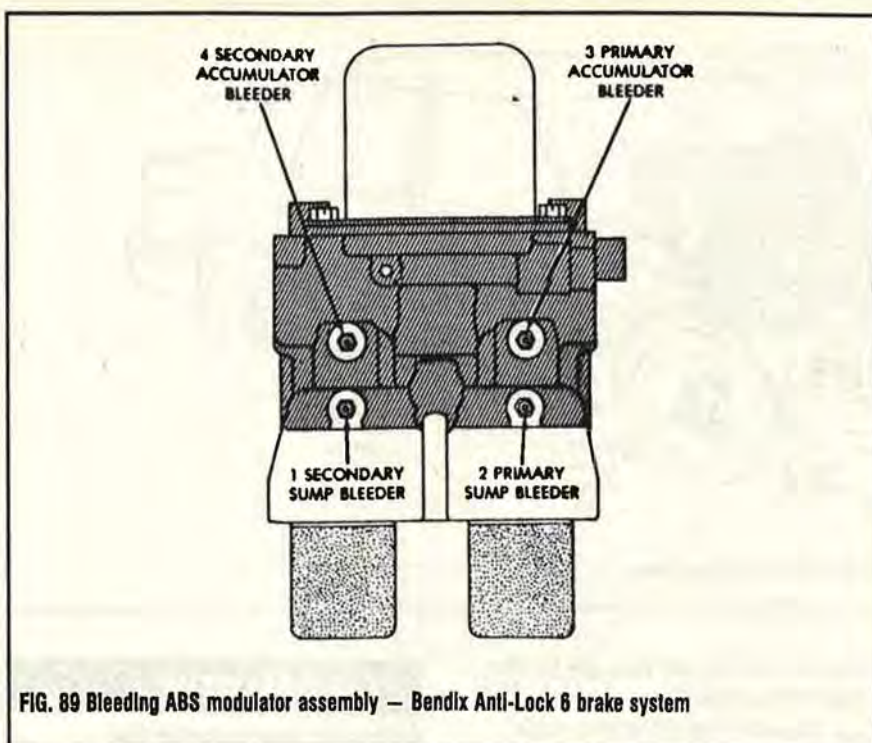


FIG. 89 Bleeding ABS modulator assembly — Bendix Anti-Lock 6 brake system

8. Move the bleeder tube to the primary sump bleeder screw.

9. Pressurize the pressure bleeding equipment at the master cylinder or have an assistant provide light and constant pressure on the brake pedal.

10. Open the bleeder screw about $1/2-3/4$ turn. Using the DRB II, actuate the right front build/decay valve.

11. Bleed until the fluid flows free of air bubbles or until the brake pedal bottoms.

12. Tighten the bleeder screw and release the brake pedal if it was being held.

13. Repeat Steps 2 through 5 until the fluid is free of air bubbles. Remember to check the fluid reservoir level periodically.

14. Select and actuate the left rear build/decay valve. Perform Steps 2-5 until the fluid runs free of air bubbles.

15. Move the bleeder tube to the primary accumulator bleeder screw.

16. Pressurize the pressure bleeding

equipment at the master cylinder or have an assistant provide light and constant pressure on the brake pedal.

17. Open the bleeder screw about $1/2-3/4$ turn. Using the DRB II, actuate the right front/left rear isolation valve.

18. Bleed until the fluid flows free of air bubbles or until the brake pedal bottoms.

19. Tighten the bleeder screw and release the brake pedal if it was being held.

20. Repeat Steps 2 through 5 until the fluid is free of air bubbles. Check the fluid reservoir level periodically.

21. Select and actuate the right front build/decay valve. Perform Steps 2-5 until the fluid runs free of air bubbles.

22. Move the bleeder tube to the secondary accumulator bleeder screw.

23. Pressurize the pressure bleeding equipment at the master cylinder or have an assistant provide light and constant pressure on the brake pedal.

24. Open the bleeder screw about $1/2-3/4$ turn. Using the DRB II, actuate the left front/right rear isolation valve.

25. Bleed until the fluid flows free of air bubbles or until the brake pedal bottoms.

26. Tighten the bleeder screw and release the brake pedal if it was being held.

27. Repeat Steps 2 through 5 until the fluid is free of air bubbles. Check the fluid reservoir level periodically.

28. Select and actuate the left front build/decay valve. Perform Steps 2-5 until the fluid runs free of air bubbles.

29. Remove the bleeding apparatus; fill the brake fluid reservoir to the correct level and install the cap.

BOSCH ABS III BRAKE SYSTEM SERVICE (1989-90)

BENDIX ANTI-LOCK 10 BRAKE SYSTEM (1991-92)

Chrysler FWD Dynasty, Imperial And New Yorker

PRECAUTIONS

♦ SEE FIGS. 90-94

Failure to observe the following precautions may result in system damage.

- Before performing electric arc welding on the vehicle, disconnect the Electronic Brake Control Module (EBCM) and the hydraulic modulator connectors.

- When performing painting work on the vehicle, do not expose the Electronic Brake Control Module (EBCM) to temperatures in excess of 185°F (85°C) for longer than 2 hrs. The system may be exposed to temperatures up to 200°F (95°C) for less than 15 min.

- Never disconnect or connect the Electronic Brake Control Module (EBCM) or hydraulic modulator connectors with the ignition switch ON.

- Never disassemble any component of the Anti-Lock Brake System (ABS) which is designated non-serviceable; the component must be replaced as an assembly.

- When filling the master cylinder, always use brake fluid which meets DOT-3 specifications; petroleum-based fluid will destroy the rubber parts.

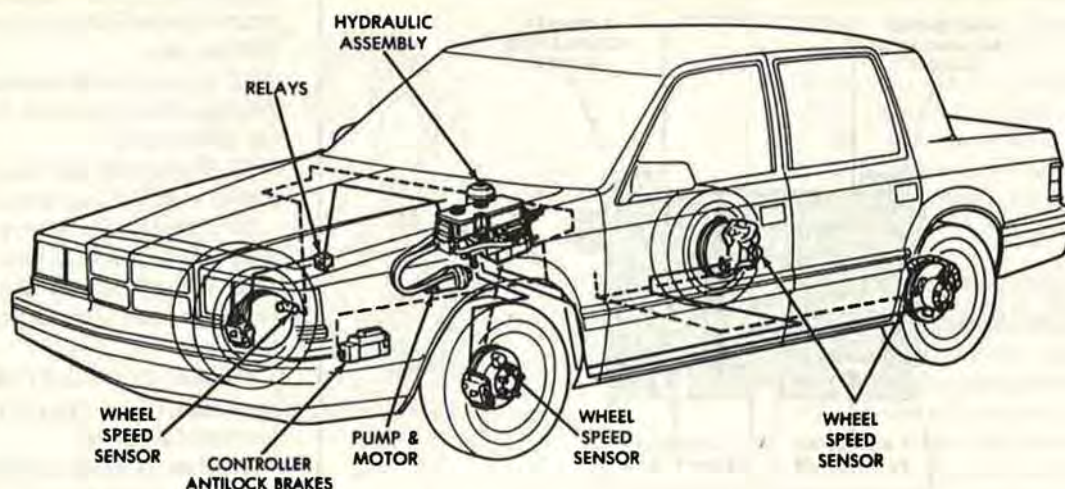


FIG. 90 Anti-Lock brake system components — Bendix Anti-Lock 10 brake system

Depressurizing the Hydraulic Accumulator

1. With the Ignition **OFF**, pump the brake pedal a minimum of 40 times, using approximately 50 lbs. (222 N) pedal force. A noticeable change in pedal feel will occur when the accumulator is discharged.
2. When a definite increase in pedal effort is felt, stroke the pedal a few additional times. This should remove all hydraulic pressure from the system.

Pump/Motor Assembly

REMOVAL & INSTALLATION

1989-90 Vehicles

BOSCH ABS III SYSTEM

1. Disconnect the negative battery cable. Depressurize the hydraulic accumulator.

CAUTION

Failure to depressurize the hydraulic accumulator, prior to performing this operation may result in personal injury and/or damage to the painted surfaces.

2. Remove the fresh air intake ducts.
3. Disconnect all electrical connectors to the pump motor.
4. Disconnect the high and low pressure

hoses from the hydraulic assembly. Cap the spigot on the reservoir.

5. Disconnect the shift selection cable bracket from the transaxle and move it aside.
6. Loosen the nuts on the 2 studs that position the pump/motor to the transaxle differential cover.
7. Remove the retainer bolts that are used to mount hose bracket and pump/motor. The engine inlet water extension pipe is also held in position by these bolts.

Do not disturb the inlet water extension pipe, or engine coolant will leak out.

8. Disconnect the wiring harness retaining clip from the hose bracket.
9. Lift the pump/motor assembly off of the studs and out of the vehicle.
10. Remove the heat shield from the pump/motor, if equipped and discard.

To Install:

11. Place a new heat shield to the pump/motor bracket, using fasteners provided.
12. Install the pump/motor assembly in the reverse order of the removal.
13. Readjust the gearshift linkage, if it was disturbed.
14. Connect the negative battery cable and check the assembly for proper operation.

1991-92 Vehicles

BENDIX SYSTEM 10

1. Disconnect the negative battery cable.

CAUTION

Failure to depressurize the hydraulic accumulator, prior to performing this operation may result in personal injury and/or damage to the painted surfaces.

2. Depressurize the brake system.
3. Remove the fresh air intake ducts from the engine.
4. Remove the clip holding the high pressure line to the battery tray.
5. Disconnect the electrical connectors running across the engine compartment in the vicinity of the pump/motor high and low pressure hoses. One of these connectors is the one for the pump/motor assembly.
6. Disconnect the high and low pressure hoses from the hydraulic assembly. Cap or plug the reservoir fitting.
7. Disconnect the pump/motor electrical connector from the engine mount.
8. Remove the heat shield bolt from the front of the pump bracket. Remove the heat shield.
9. Lift the pump/motor assembly from the bracket and out of the vehicle.

To Install:

10. Fit the pump motor assembly onto the bracket; install the heat shield and its retaining bolt.
11. Install the pump/motor electrical connector to the engine mount.
12. Connect the high and low pressure hose to the hydraulic assembly. Tighten the high pressure line to 145 inch lbs. (16 Nm). Tighten the hose clamp on the low pressure hose to 10 inch lbs (1 Nm).

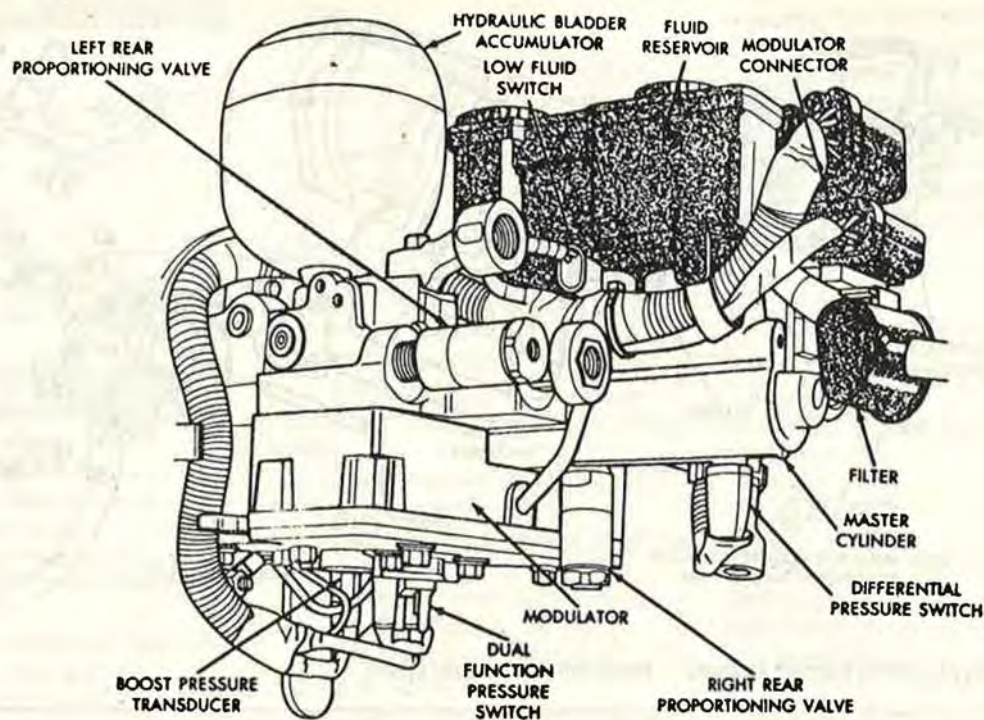


FIG. 91 Hydraulic assembly — Bendix Anti-Lock 10 brake system

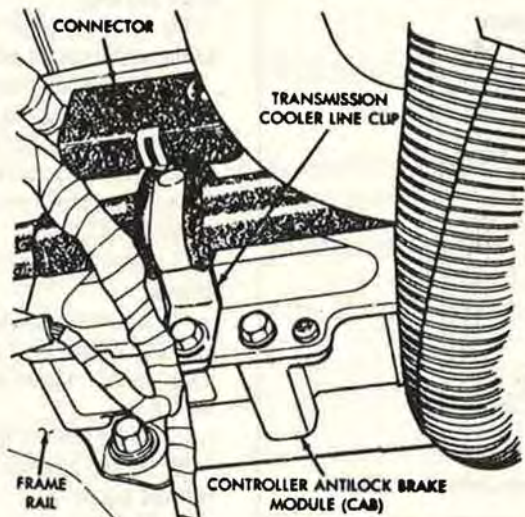


FIG. 92 ABS controller location — Bendix Anti-Lock 10 brake system

13. Connect the electrical connectors which were removed for access.

14. Install the high pressure line retaining clip to the battery tray if it was removed.

15. Install the fresh air intake ducts.

16. Bleed the brake system.

Hydraulic Assembly

REMOVAL & INSTALLATION

1. Disconnect the negative battery cable. Depressurize the hydraulic accumulator.

CAUTION

Failure to depressurize the hydraulic accumulator, prior to performing this operation may result in personal injury and/or damage to the painted surfaces.

2. Remove the fresh air intake ducts.

3. Disconnect all electrical connectors from the hydraulic unit and pump/motor.

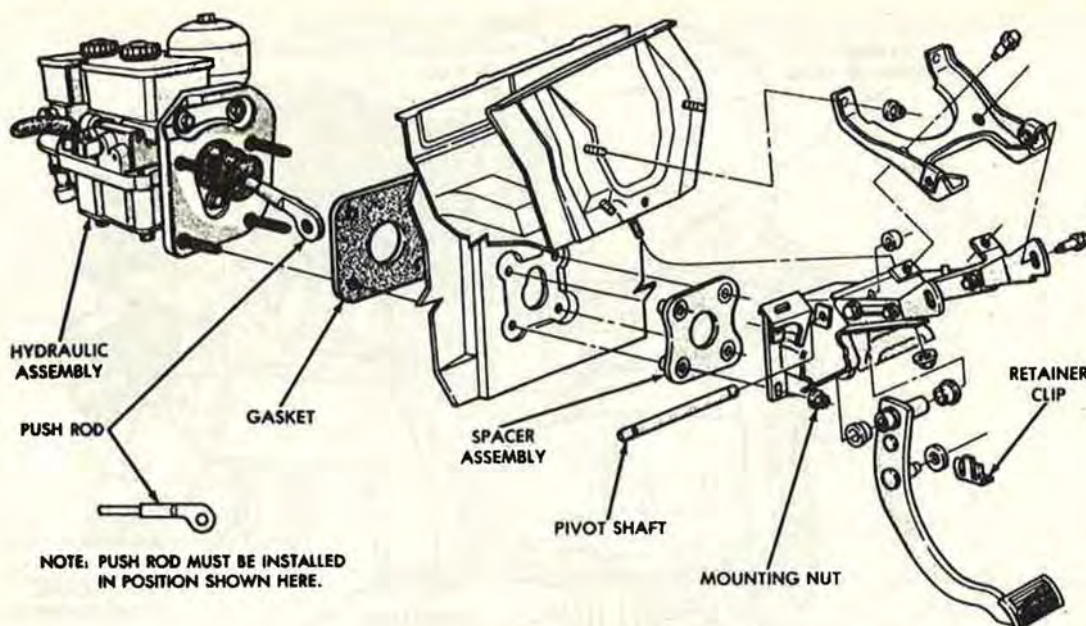


FIG. 94 Removing or Installing hydraulic assembly — Bendix Anti-Lock 10 brake system

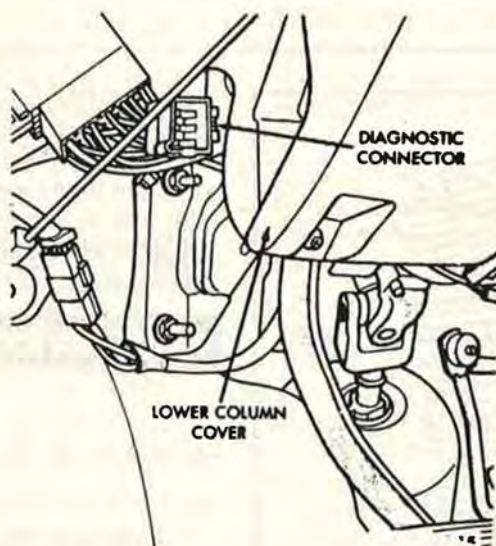


FIG. 93 ABS diagnostic connector location — Bendix Anti-Lock 10 brake system

4. Remove as much of the fluid as possible from the reservoir on the hydraulic assembly.

5. Remove the pressure hose fitting (banjo bolt) from the hydraulic assembly. Use care not to drop the 2 washers used to seal the pressure hose fitting to the hydraulic assembly inlet.

6. Disconnect the return hose from the reservoir nipple. Cap the spigot on the reservoir.

7. Disconnect all brake tubes from the hydraulic assembly.

8. Remove the driver's side sound insulation panel.

9. Disconnect the pushrod from the brake pedal by using a small, flat tool to release the retainer clip on the brake pedal pin. The center tang on the clip must be moved back enough to allow the lock tab to clear the pin. Disconnect the pushrod from the pedal pin.

10. Remove the 4 underdash hydraulic assembly mounting nuts.

11. Remove the hydraulic assembly.

To Install:

12. Position the hydraulic assembly on the vehicle.

13. Install and torque the mounting nuts to 21 ft. lbs. (28 Nm).

14. Using Lubriplate® or equivalent, coat the bearing surface of the pedal pin.

15. Connect the pushrod to the pedal and install a new retainer clip.

16. Install the brake tubes. If the proportioning valves were removed from the hydraulic assembly, reinstall valves and tighten to 20 ft. lbs. (27 Nm).

17. Install the return hose to the nipple on the reservoir.

18. Install the pressure hose to the hydraulic assembly; be sure the 2 washers are in their proper position. Tighten the banjo bolt to 13 ft. lbs. (18 Nm).

19. Fill the reservoir to the top of the screen.

20. Connect all electrical connectors to the hydraulic assembly.

21. Bleed the entire brake system.

22. Install the cross-car brace, if disturbed. Install the fresh air intake duct.

23. Connect the negative battery cable and check the assembly for proper operation.

Sensor Block

REMOVAL & INSTALLATION

1989-90 Vehicles

BOSCH ABS III SYSTEM

1. Disconnect the negative battery cable. Depressurize the hydraulic accumulator.

CAUTION

Failure to depressurize the hydraulic accumulator, prior to performing this operation may result in personal injury and/or damage to the painted surfaces.

2. Disconnect all electrical connectors from the reservoir on the hydraulic assembly.
3. Working from under the dash, disconnect the pushrod from the brake pedal.
4. Remove the driver's side sound insulator panel.
5. Remove the 4 hydraulic assembly mounting nuts.
6. Working from under the hood, pull the hydraulic assembly away from the dash panel and rotate the assembly enough to gain access to the sensor block cover.

➔ **The brake lines should not be removed or deformed during this procedure.**

7. Remove the sensor block cover retaining bolt and remove the sensor block cover. Care should be used not to damage the cover gasket during removal.
8. Disengage the locking tabs and disconnect the valve block connector (12 pin) from the sensor block.
9. Disengage the reed block connector, marked PUSH, by carefully pulling outward on the orange connector body. The connector is partially retained by a plastic clip and will only move outward approximately 1/2 in. (13mm).
10. Remove the 3 block retaining bolts.
11. Carefully disengage the sensor block pressure port from the hydraulic assembly and remove the sensor block from the vehicle. The sensor block pressure port is sealed with an O-ring and extra care should be taken to prevent damage to the seal.
12. Inspect the sensor block pressure port O-ring for damage. Replace the O-ring if cut or damaged. Check the sensor block wiring for any mis-positioning or damage. Correct any damage

or replace the sensor block, if damage cannot be corrected.

To Install:

13. Pull the reed block connector (2 pin) outward to the disengage position prior to installing the sensor block on the hydraulic unit.
14. Thoroughly lubricate the sensor block pressure port O-ring with fresh, clean brake fluid. Carefully insert the pressure port into the hydraulic assembly's orifice, taking care not to cut or damage the O-ring. Position the sensor block for installation of the mounting bolts.
15. Install the sensor block mounting bolts. Tighten to 11 ft. lbs. (15 Nm).
16. Engage the reed block connector by pressing on the orange connector body marked **PUSH**.
17. Connect the valve block connector (12 pin) to the sensor block.
18. Install the sensor block cover, gasket and mounting bolt.
19. Connect the sensor block and control pressure switch connectors.
20. Install the hydraulic assembly by reversing the removal procedure.
21. Connect the negative battery cable and check the sensor block for proper operation.

Wheel Speed Sensors

REMOVAL & INSTALLATION

Chrysler FWD Dynasty, Imperial And New Yorker

FRONT SENSOR

1. Raise the vehicle and support safely. Remove the wheel and tire assembly.
2. Remove the screw from the clip that holds the sensor to the fender shield.
3. Carefully pull the sensor assembly grommet from the fender shield.
4. Unplug the connector from the harness. Remove the retainer clip from the strut damper bracket.
5. Remove the sensor mounting screw.
6. Carefully remove the sensor.
- To Install:**
7. Coat the sensor with high temperature multi-purpose anti-corrosion compound before installing into the steering knuckle. Install the screw and tighten to 60 inch lbs. (7 Nm).
8. Connect the sensor connector to the harness and install the sensor connector lock.
9. Install the sensor assembly grommet and attach the clip to the fender shield.

➔ **Proper installation of the wheel speed sensor cables is critical to continued system operation. Be sure the cables are installed in retainers. Failure to install the cables in the retainers may result in contact with moving parts and/or over-extension of the cables, resulting in an open circuit.**

10. Install the wheel.

REAR SENSOR

1. Raise the vehicle and support safely. Remove the wheel and tire assembly.
2. Carefully pull the sensor assembly grommet from the underbody and pull the harness through the hole.
3. Unplug the connector from the harness. Remove the retainer clip from the strut damper bracket.
4. Remove the sensor spool grommet clip retaining screw from the body hose bracket, located in front of the inside of the trailing arm.
5. Remove the outboard sensor assembly retaining nut and sensor mounting screw.
6. Carefully remove the sensor.

To Install:

7. Coat the sensor with high temperature multi-purpose anti-corrosion compound before installing into the steering knuckle. Install the screw and tighten to 60 inch lbs. (7 Nm). Install the retaining nut.
8. Install the sensor spool grommet clip retaining screw.
9. Feed the sensor connector wire through the grommet and connect to the harness.
10. Install the sensor assembly grommet.
11. Install the wheel.

BRAKE SYSTEM BLEEDING

Chrysler FWD Dynasty, Imperial And New Yorker

BOOSTER BLEEDING BOSCH ABS III (1989-90)

1. The hydraulic accumulator must be depressurized.
2. Connect all pump/motor and hydraulic assembly electrical connections, if previously disconnected. Be sure all brake lines and hose connections are tight.
3. Fill the reservoir to the full level.
4. Connect a transparent hose to the bleeder screw location on the right side of the hydraulic assembly. Place the other end of the hose into a clear container to receive brake fluid.
5. Open the bleeder screw 1/2-3/4 of a turn.

9-50 BRAKES

6. Turn the ignition switch to the **ON** position. The pump/motor should run, discharging fluid into the container. After a good volume of fluid has been forced through the hose, an air-free flow in the plastic hose and container will indicate a good bleed.

7. Turn the ignition switch **OFF**.

➔ **If the brake fluid does not flow, it may be due to a lack of prime to the pump/motor. Try shaking the return hose to break up air bubbles that may be present within the hose. Should the brake fluid still not flow, turn the ignition switch to the OFF position. Remove the return hose from the reservoir and cap nipple on the reservoir. Manually fill the return hose with brake fluid and connect to the reservoir. Repeat the bleeding process.**

8. Remove the hose from the bleeder screw. Tighten the bleeder screw to 7.5 ft. lbs. (10 Nm). Do not overtighten.

9. Top off the reservoir to the correct fluid level.

10. Turn the ignition switch to the **ON** position. Allow the pump to charge the accumulator, which should stop after approximately 30 seconds.

Pressure Bleeding

The brake lines may be pressure bled, using a standard diaphragm type pressure bleeder. Only diaphragm type pressure bleeding equipment should be used to bleed the system.

1. The ignition should be turned **OFF** and remain **OFF** throughout this procedure.

2. Depressurize the hydraulic accumulator.

CAUTION

Failure to depressurize the hydraulic accumulator, prior to performing this operation may result in personal injury and/or damage to the painted surfaces.

3. Remove the electrical connector from fluid level sensor on the reservoir cap(s) and remove the reservoir cap(s).

4. Install the pressure bleeder adapter.

5. Attach the bleeding equipment to the bleeder adapter. Charge the pressure bleeder to approximately 20 psi (138 kPa).

6. Connect a transparent hose to the caliper bleed screw. Submerge the free end of the hose in a clear glass container, which is partially filled with clean, fresh brake fluid.

7. With the pressure turned **ON**, open the caliper bleed screw $1/2$ – $3/4$ turn and allow fluid to flow into the container. Leave the bleed screw open until clear, bubble-free fluid slows from the hose. If the reservoir has been drained or the hydraulic assembly removed from the vehicle prior to the bleeding operation, slowly pump the brake pedal 1–2 times while the bleed screw is open and fluid is flowing. This will help purge air from the hydraulic assembly. Tighten the bleeder screw to 7.5 ft. lbs. (10 Nm).

8. Repeat Step 7 at all calipers. Calipers should be bled in the following order:

- Left rear
- Right rear
- Left front
- Right front

9. After bleeding all 4 calipers, remove the pressure bleeding equipment and bleeder adapter by closing the pressure bleeder valve and slowly unscrewing the bleeder adapter from the hydraulic assembly reservoir. Failure to release pressure in the reservoir will cause spillage of brake fluid and could result in injury or damage to painted surfaces.

10. Using a syringe or equivalent method, remove excess fluid from the reservoir to bring the fluid level to full level.

11. Install the reservoir cap and connect the fluid level sensor connector. Turn the ignition **ON** and allow the pump to charge the accumulator.

MANUAL BLEEDING

1. Depressurize the hydraulic accumulator.

CAUTION

Failure to depressurize the hydraulic accumulator, prior to performing this operation may result in personal injury and/or damage to the painted surfaces.

2. Connect a transparent hose to the caliper bleed screw. Submerge the free end of the hose in a clear glass container, which is partially filled with clean, fresh brake fluid.

3. Slowly pump the brake pedal several times, using full strokes of the pedal and allowing approximately 5 seconds between pedal strokes. After 2 or 3 strokes, continue to hold pressure on the pedal, keeping it at the bottom of its travel.

4. With pressure on the pedal, open the bleed screw $1/2$ – $3/4$ turn. Leave the bleed screw open until fluid no longer flows from the hose. Tighten the bleed screw and release the pedal.

5. Repeat this procedure until clear, bubble-free fluid flows from the hose.

6. Repeat all steps at each of the calipers. Calipers should be bled in the following order:

- Left rear
- Right rear
- Left front
- Right front

EXTERIOR

- Antenna 10-9
- Bumpers 10-5
- Convertible top 10-10
- Doors 10-2
- Fog lights 10-8
- Grille 10-7
- Hood 10-3
- Outside mirrors 10-9
- Sunroof/Moonroof 10-12
- Tailgate, hatch, trunk lid 10-4

INTERIOR

- Console 10-12
- Door glass & regulator 10-19
- Door locks 10-18
- Door panels 10-15
- Electric window motor 10-22
- Headliner 10-14
- Heater & a/c ducts 10-15
- Inside mirror 10-26
- Instrument Panel & Pad 10-12
- Power seat motor 10-30
- Seat belt systems 10-29
- Seats 10-27
- Stationary glass 10-26
- Windshield glass 10-25

STAIN REMOVAL 10-31

TORQUE SPECIFICATIONS 10-32

10

BODY

Exterior 10-2

Interior 10-12

Stain Removal 10-31

EXTERIOR

Doors

REMOVAL & INSTALLATION

♦ SEE FIGS. 1-2

All Chrysler Front Wheel Drive cars are equipped with doors the hinges of which are welded to both the door panel and the door pillar. Doors are removed and installed basically by disconnecting them at the hinges.

➔ **To perform this procedure, you'll need a hinge alignment tool C-4741 and a removal tool C-4614 or C-4716 (depending on the size of the hinge). It will also be helpful to have a grinding wheel.**

1. Disconnect the negative battery cable. If there is any kind of wiring harness to the door, remove the door panel as described later in this section. Then, label all electrical connectors. Unplug each connector. Route the harness through the grommet in the edge of the door, coil it and tape it in a spot where it will be kept away from the area of the door hinges.

2. Open the door and, using a padded device of some kind, support it securely from underneath near the outer end.

3. Use the hinge removal tool to remove the **lower** hinge pin. Then, immediately install the hinge alignment tool in place of the hinge pin.

4. Make sure the door is steadied against falling over. Use the appropriate sized hinge removal tool to remove the upper hinge pin. Then, remove the alignment tool and remove the door.

5. Grind a chamfer on the lower end of both hinge pins to ease installation.

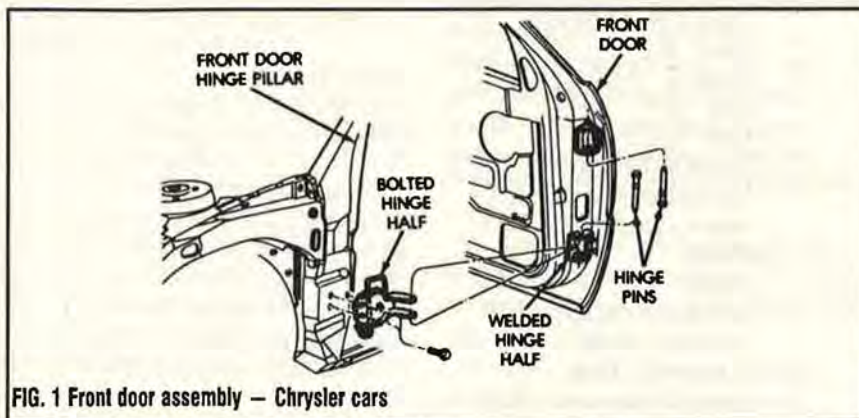


FIG. 1 Front door assembly — Chrysler cars

6. Position the door so as to fit its hinge-halves into the hinge-halves welded to the body. Align the door precisely and install two hinge alignment tools.

7. Position the upper hinge pin under the upper hinge and use a small hammer to tap it upward and through the hinge. Install the lower hinge pin from the upper side of the lower hinge in a similar manner. Remove the two alignment tools.

8. Route the wiring harness through the door, connecting all connectors to their original locations. Install the door panel as described later in this section.

ADJUSTMENT

Except Laser and Stealth

The door hinges are welded to both the door panels and door pillars. Because of this fact, adjustments can be performed only through the use of a special door hinge adjusting tool (C-

4736), which bends the hinges in a controlled way.

Before adjusting either hinge, check these items:

- The alignment of the striker plate. Is it correct?
- The fit and condition of the hinge roll pins. If there is looseness, they must be replaced.
- The installation of the door seal. Sealing problems which may seem to be door misalignment may actually be due to irregular/incorrect positioning of the seal on the body.

1. If it is necessary to adjust the striker plate:

a. Scribe around the striker plate to mark its location against the door jamb. Then, loosen the mounting screws just slightly.

b. Open and close the door slowly to watch engagement of the door with the striker. The door should not rise or fall as it is closed. Reposition the striker vertically to ensure that this requirement is met.

c. Close the door and inspect its outer surface to see if it is flush with adjacent sheet metal. If not, adjust the striker inward or outward until the door rests in a flush position.

d. Tighten the striker adjustments securely.

2. If these other checks fail to resolve door alignment problems, it is necessary to bend the hinges. Keep in mind that this process must be done gradually to fine tune the door position. First, determine the exact angle/area of misalignment.

3. Slip the hinge bending tool **completely** over the hinge to be bent. Then, slowly and gradually apply pressure so the change in door position can be monitored accurately. Stop the process and check the point of misalignment frequently.

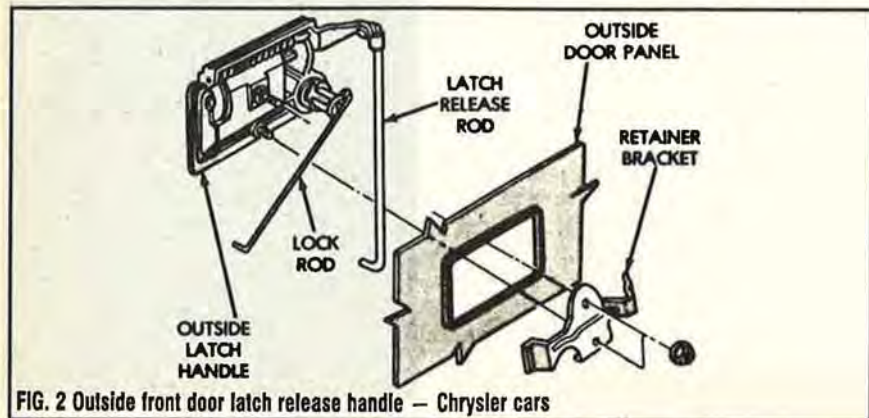


FIG. 2 Outside front door latch release handle — Chrysler cars

LATCH ADJUSTMENT

SEE FIG. 3

The latch adjustment affects both the smoothness of door latch operation and the door handle-to-skin position.

1. Insert a $\frac{5}{32}$ in. (4mm) Allen wrench through the access hole in the end of the door and engage it with the Allen screw in the latch mechanism. Slide the screw up or down in the slot to adjust the latch position and then tighten the Allen screw to about 30 inch lbs. Remove the wrench.

2. Close the door and check the operation of the latch as well as the door handle position.

3. Readjust as described in Steps 1 and 2 until the door closes smoothly and the door handle is flush.

1990-92 Laser And Dodge Stealth

SEE FIG. 4

1. Use a special tool MB99034 or equivalent to loosen the hinge mounting bolts on the body side and then adjust the clearance around the door so that it is uniform on all sides.

2. When the hinge is replaced, loosen hinge mounting bolts on door side and adjust alignment of the fender panel with door assembly.

3. Loosen door striker mounting screws to adjust alignment of door panel. Increase or decrease the number of shims and move the striker to adjust engagement of striker with door latch. Refer to the illustrations in this section.



FIG. 4 Door adjustment procedures 1990-92 Laser and Dodge Stealth

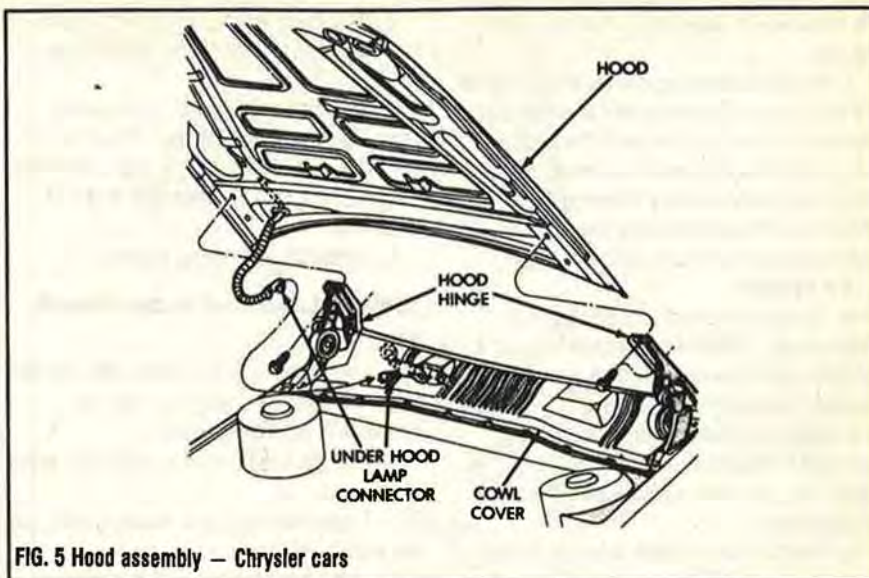


FIG. 5 Hood assembly — Chrysler cars

Hood

REMOVAL & INSTALLATION

SEE FIGS. 5-6

To perform this operation a cover that will protect both the windshield and the two fenders is required, as well as an assistant.

1. Scribe a mark around each hinge where it connects to the underside of the hood for reinstallation with a minimum of adjustment.

2. Protect the windshield and fenders with a cover. Then, place blocks of wood behind the hood—between it and the windshield to protect

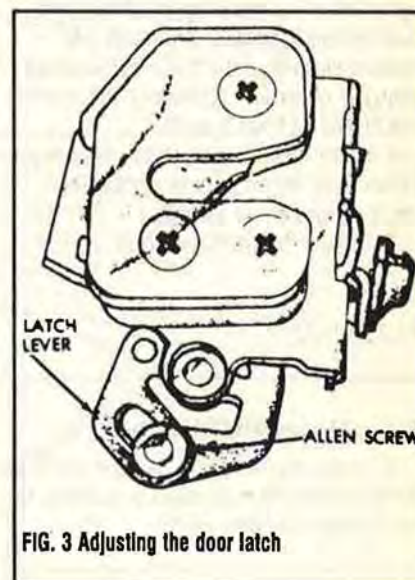


FIG. 3 Adjusting the door latch

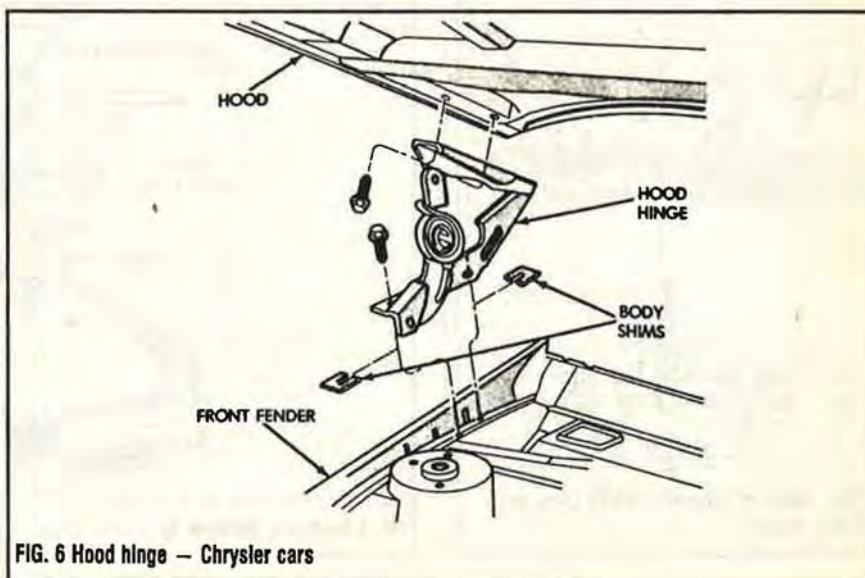


FIG. 6 Hood hinge — Chrysler cars

10-4 BODY

the windshield in case the hood should slide to the rear.

3. As an assistant supports the hood, remove the hood bolts. With one person on either side, remove the hood from the car. If the hood is being replaced with a new one, transfer the latch striker and safety catch by removing the attaching bolts and reinstalling these components onto the new hood with them.

To Install:

4. To install the hood, first position it as precisely as possible—with the bolt holes of the upper hinge and the hood lined up. Then, with the assistant both supporting the front of the hood and keeping the assembly from sliding back toward the windshield, install the bolts until their heads are just a turn or two below the lower hood surface.

5. Shift the hood on both sides to align the matchmarks and hinges precisely. Tighten one bolt on either side gradually, checking that the hood remains in position and shifting it to maintain alignment (refer to service procedure below) as necessary. Tighten one bolt on either side to hold the hood in position.

6. Have the assistant hold the hood up as you tighten all the remaining bolts slightly. Then, torque all bolts evenly and tight.

7. Remove the cover and blocks.

ALIGNMENT

Except Laser and Stealth

1. Inspect the clearances (about 0.160 in. or 4mm) between the hood edges in relation to the cowl, fenders and grille panel.

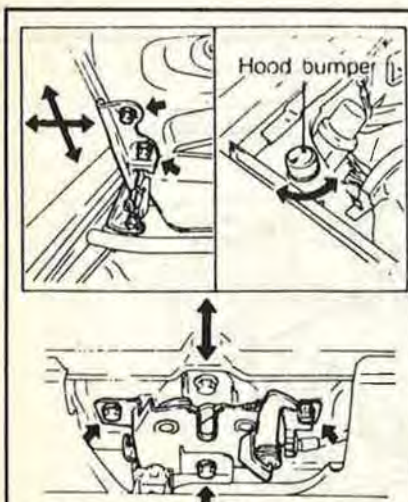


FIG. 7 Hood adjustment 1990-92 Laser and Dodge Stealth

2. If the hood requires adjustment, loosen the mounting bolts located on the underside of the hood.

3. Shift the hood forward or rearward to change the dimension between its rear and the cowl first, if this adjustment is necessary. Once this is correct, shift the hood right or left as necessary.

4. Torque all bolts evenly and tight.

1990-92 Laser And Dodge Stealth

♦ SEE FIG. 7

1. Loosen the hood mounting bolts, and then adjust the hood by moving it so that the clearance is equal on all sides.

2. Turn the hood bumpers, adjust the height of the hood.

3. Loosen the hood latch mounting bolts, and move the hood latch to adjust the attachment between the hood latch and hood striker.

Trunk Lid

REMOVAL & INSTALLATION

♦ SEE FIGS. 8-10

→ **This operation requires the help of an assistant to prevent possible physical injury or damage to the rear window and fenders.**

1. Scribe a mark around each hinge where it connects to the underside of the trunk lid for reinstallation with a minimum of adjustment.

2. As an assistant supports the trunk lid remove the bolts (2 on on either side) which

fasten it to the outer arm of the hinge. Then, with one person on either side, remove the lid from the car. If a new trunk lid is to be installed, unbolt and transfer the lock cylinder, Chrysler medallion and gasket, lock cylinder and gasket, and latch.

To Install:

4. To install the trunk lid, first position it as precisely as possible—with the bolt holes of the upper hinge and the lid lined up. Then, with the assistant both supporting the rear of the lid and keeping the assembly from sliding forward toward the rear window, install the bolts until their heads are just a turn or two below the lower hood surface.

5. Shift the lid on both sides to align the matchmarks and hinges precisely. Tighten one bolt on either side gradually, checking that it remains in position and shifting it to maintain alignment (about 0.160 in. or 4mm) as necessary. Tighten one bolt on either side to hold the trunk lid in position.

6. Have the assistant hold it up as you tighten all the remaining bolts slightly. Then, torque all bolts evenly tight.

ADJUSTMENT

1. Inspect the clearances (about 0.160 in. or 4mm) between the edges of the trunk lid in relation to the rear of the body under the rear window, the fenders, and the rear panel.

2. If the lid requires adjustment, loosen the mounting bolts located on its underside.

3. Shift the lid forward or rearward to change the dimension between its front end and the fore and after seals first, if this adjustment is necessary. Once this is correct, shift the hood right or left as necessary.

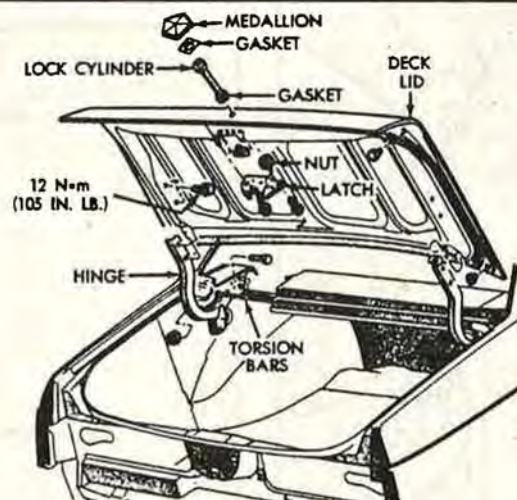


FIG. 8 Replacing the trunk lid

4. Torque the bolts evenly tight.

Hatch or Liftgate

REMOVAL & INSTALLATION

➡ It is necessary to use an assistant to perform this procedure without risking damage to areas of the body adjacent to the hatch. Masking tape and rope type sealer are also required. Use this service procedure as guide for this repair.

1. Securely support the hatch in the wide-open position. Mark the outline of each hinge where it contacts the underside of the hatch.
2. Apply masking tape to the underside of the door and the rear edge of the roof to prevent damage to these areas in case the hatch should slip or shift during removal.
3. Remove the upper and lower lift prop mounting bolts and remove the lift props from both sides of the hatch.
4. Have the assistant hold the hatch. Remove the two bolts on either side which fasten the hatch to the upper hinge halves and remove the hatch. If the hatch is to be re-used, unbolt and transfer the bumper, latch, and lock cylinder.

To Install:

5. To install the hatch, position it against the hinges with the holes in the hinges and those in the hatch precisely aligned. Have the assistant hold the hatch in position. Apply rope type sealer to the outer edges of the hinges where they will fit against the hatch.
6. Install the hinge mounting bolts and tighten them alternately and evenly.
7. Locate one of the lift props, having the assistant adjust the height of the hatch so hinge holes will align. Install the attaching bolts. Have the assistant hold the opposite side as you install the prop and bolts on the other side.
8. Remove the masking tape installed to protect various areas of the car body.

ADJUSTMENT

♦ SEE FIG. 11

1. Loosen the liftgate or hatch hinges mounting bolts, and then adjust the liftgate or hatch by moving it so clearance is equal on all sides.

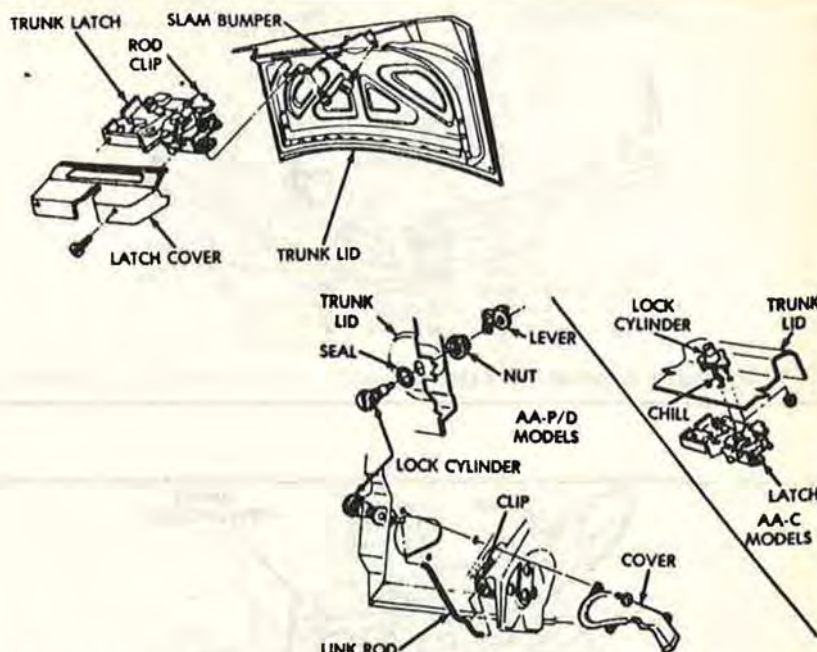


FIG. 9 Trunk lid lock assembly

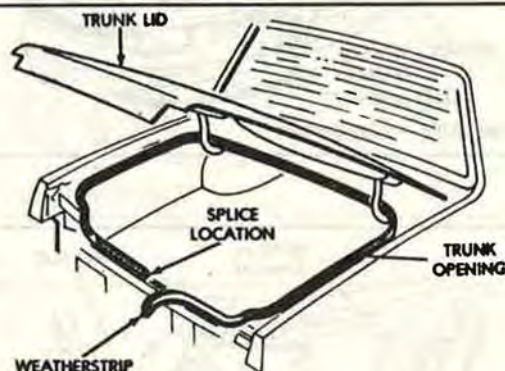


FIG. 10 Trunk opening weatherstrip — Chrysler cars

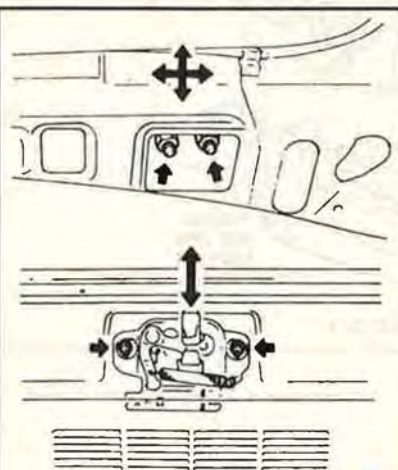


FIG. 11 Liftgate or hatch adjustment 1990-92 Laser and Dodge Stealth

2. Loosen the liftgate or hatch latch mounting bolts and move the liftgate or hatch latch to adjust the attachment between the latch and striker. Refer to the illustrations in this section.

Bumpers

ADJUSTMENT

It is possible to adjust the bumper's side-to-side or vertical location. Loosen the bumper-to-energy absorber (outer) attaching nuts or bolts. Shift the bumper as necessary, use a helper or an infinitely adjustable jack to hold it in position and torque to 105 inch lbs. on 1981-85 models and 250 inch lbs. on later models. Refer to illustrations.

10-6 BODY

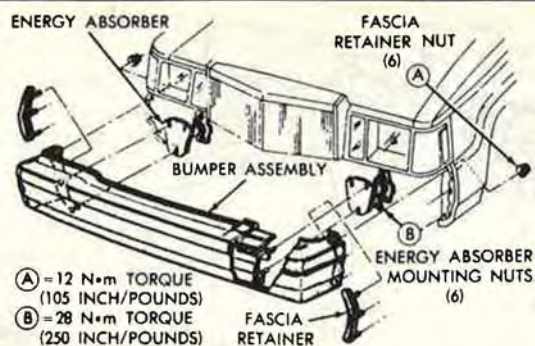


FIG. 12 Replacing the bumper on 1981 K car

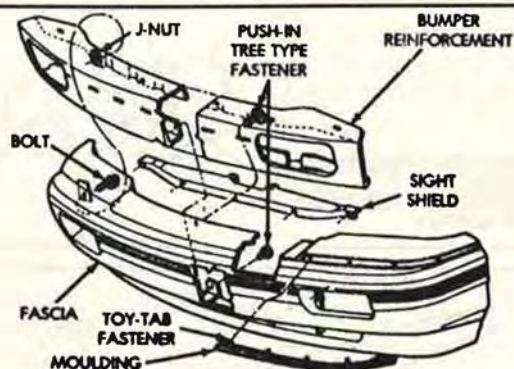


FIG. 13 Front bumper assembly — Chrysler cars

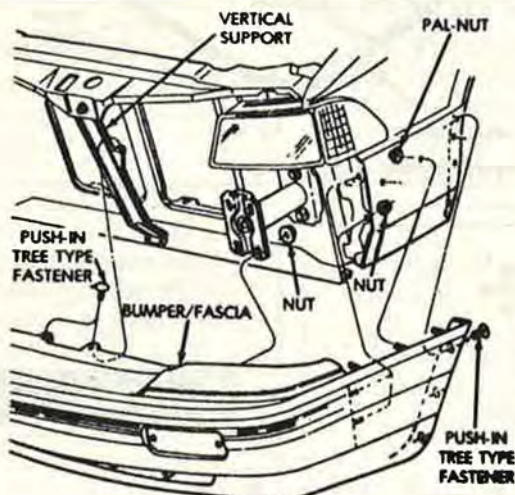


FIG. 14 Wrap around front bumper assembly — Chrysler cars

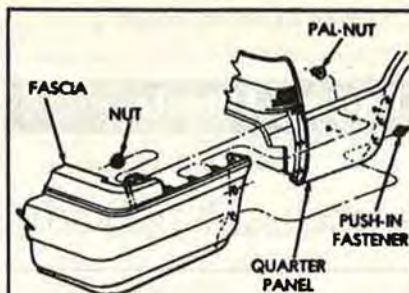


FIG. 15 Wrap around rear bumper assembly — Chrysler cars

REMOVAL & INSTALLATION

♦ SEE FIGS. 12-16

CAUTION

Energy absorbing units may become stuck in the retracted position because of an impact. **DO NOT DRILL THE ABSORBER TO REMOVE PRESSURE!** This could result in the release of this pressure! If loosening the bolts or nuts at either end to relieve torque on the energy absorber does not cause it to expand, it **MUST BE DISCARDED.**

1. Refer to the Illustrations in this section as a guide for this repair. Place supports under the bumper. If the bumper has a fascia, remove the retaining nuts and remove it.

2. Remove the bumper-to-energy absorber (outer end) retaining nuts or bolts. Then, lower the bumper assembly to the floor.

To install:

3. To install the bumper, raise it into its normal position and install the retaining nuts/bolts loosely. Now, shift the bumper as necessary, use a helper or an infinitely adjustable jack to hold it in position and then torque that attaching nuts or bolts to 105 inch lbs. on 1981-85 models and 250 inch lbs. on later models.

4. Install the bumper fascia and retaining nuts as necessary.

Grille

REMOVAL & INSTALLATION

➔ Use these service procedures as guide for all years/models. Carefully install the grille assembly to create even spacing on either side upon installation. Refer to the illustrations in this section.

K- and E-Cars

♦ SEE FIGS. 17-18

The grille on these cars is retained by 2 mounting screws at the top and two return springs at the bottom. The use of springs at the bottom permits the grille to flex during a parking lot type of low-speed collision.

To replace the grille, all that is necessary is to open the hood, remove the two top mounting screws, disconnect the two return springs at the bottom, and pull the grille out. Reverse this procedure to install it.

Lancer, LeBaron GTS

The grille on these models is retained very simply. There is once screw on either side, accessible from in front of the car. Simply remove both these screws to remove the grille. Install it in reverse order.

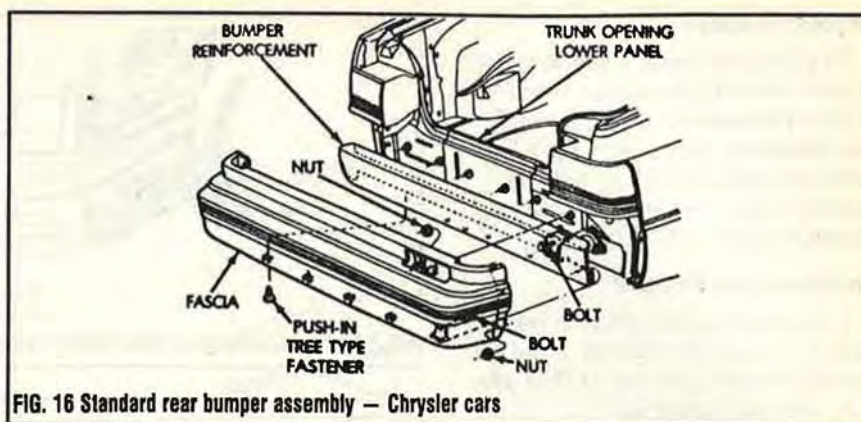


FIG. 16 Standard rear bumper assembly — Chrysler cars

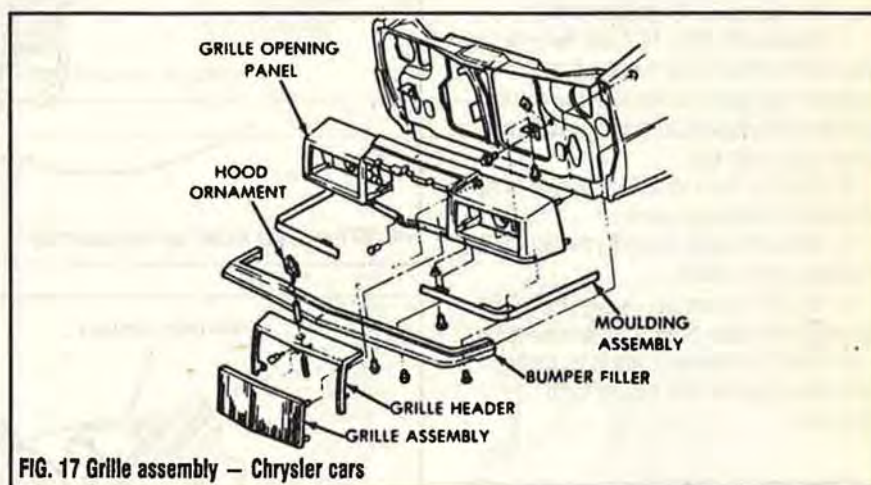


FIG. 17 Grille assembly — Chrysler cars

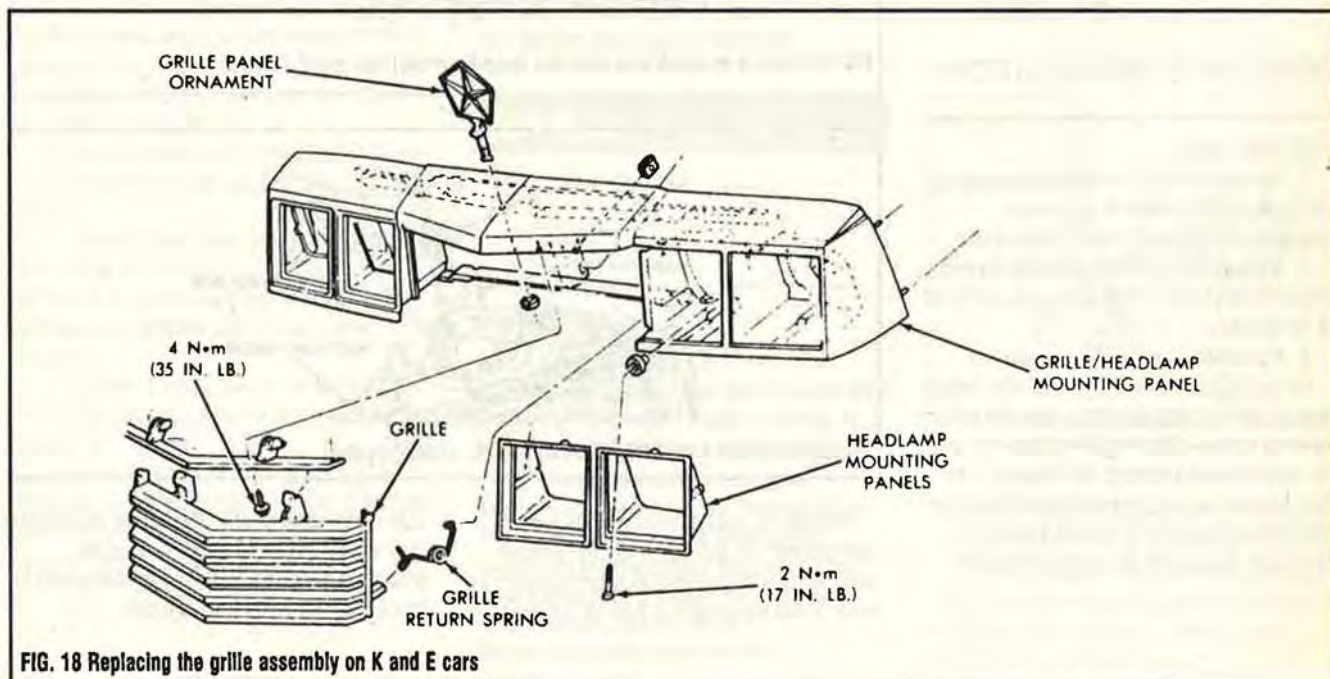


FIG. 18 Replacing the grille assembly on K and E cars

10-8 BODY

Daytona & Laser

The grille on the Daytona & Laser is retained by two screws at the top (reached from in front of the car) and two at the bottom, accessible from above and by going behind the grille. These screws are accessible once the hood is open. Remove the four screws and remove the grille. Replace the grille in reverse order.

Sundance and Shadow

1. Open the hood. Then remove the headlamp bezel by removing the screws and rotating it upward at the bottom and then out of the grille.

2. Remove the headlamps.

3. Loosen the bolts attaching the grille to the outboard mounting brackets. Remove the bolts attaching the grille to the radiator panel.

4. Remove the grille. To install the grille, position the slotted ends over the bolts in the outboard mounting brackets and then carefully shift the grille from left to right to create even spacing on either side.

5. Install the bolts attaching the grille to the brackets in the radiator panel.

6. Tighten the bolts attaching the grille to the outboard grille brackets.

7. Insert the headlamps through the grille openings and install them to the radiator panel.

8. Install the headlamp bezels by starting them at the top and then rotating them downward.

Fog Lights

REMOVAL & INSTALLATION

♦ SEE FIGS. 19-22

1. Disconnect the 2 pin wiring connector for the fog light. It is located in the engine compartment, rearward of the radiator panel.

2. Remove the fog lamp mounting nut from behind the fog lamp. Pull the lamp and wiring out of the bumper.

3. Installation is the reverse of removal.

On later model vehicles a special type bulb is used for the fog light assembly. Remove the retaining screws of the fog lamp assembly pull the lamp assembly through the opening in the front bumper fascia. Separate the harness boot from the socket cover to expose the wiring connector. Disconnect the wiring connector.

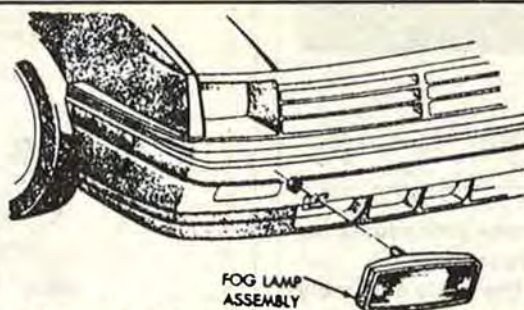


FIG. 19 Removal/Installation of the factory installed fog lamps used on 1988 models

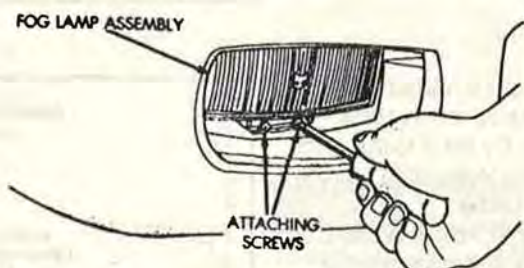


FIG. 20 Remove or install fog lamp assembly — late model Chrysler cars

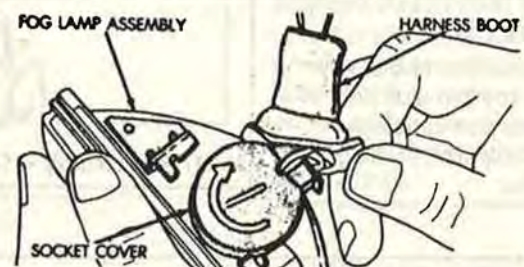


FIG. 21 Remove or install wire boot (fog lamp assembly) late model Chrysler cars

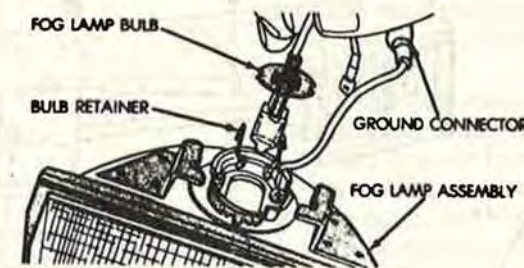


FIG. 22 Remove or install fog lamp bulb — late model Chrysler

Remove the socket cover and squeeze the bulb retainer clip together. Pivot the retainer aside remove the bulb/pigtail assembly from the lamp. When replacing this bulb do not touch the

bulb with fingers or any oily surface as reduced bulb life will result. To install reverse the preceding operation. Refer to the illustrations in this section as guide for this repair.

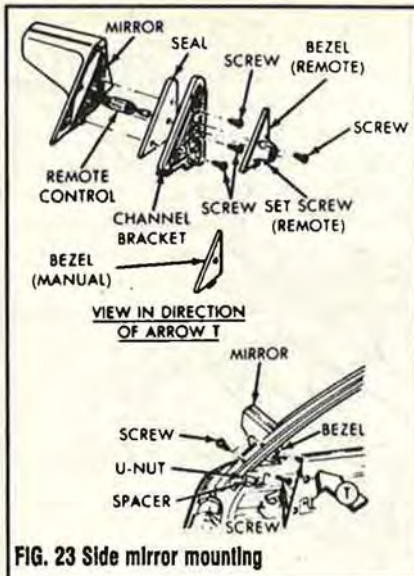


FIG. 23 Side mirror mounting

Mirrors

REMOVAL & INSTALLATION

♦ SEE FIG. 23

1. Remove the mirror bezel mounting screw to release the bezel from the channel bracket. If the mirror is the remote control type, loosen the bezel set screw (this will release the cable control).

2. If the mirror is the power type, remove the door trim panel, and then disconnect the mirror wiring harness at the connector.

3. Remove the 3 screws from the inboard side of the channel bracket.

4. Remove the 2 screws from the door frame. Release the mirror and seal from the channel bracket.

5. To install the mirror, assemble the mirror and seal to the channel bracket. Install the 2 screws to the door frame and then install the 3 screws to the inboard side of the channel bracket.

6. If working with a power mirror, reconnect the wiring harness connector and install the trim panel.

7. On remote control mirrors, tighten the bezel set screw. Then, on all mirrors, install the mirror bezel-to-channel bracket mounting screw.

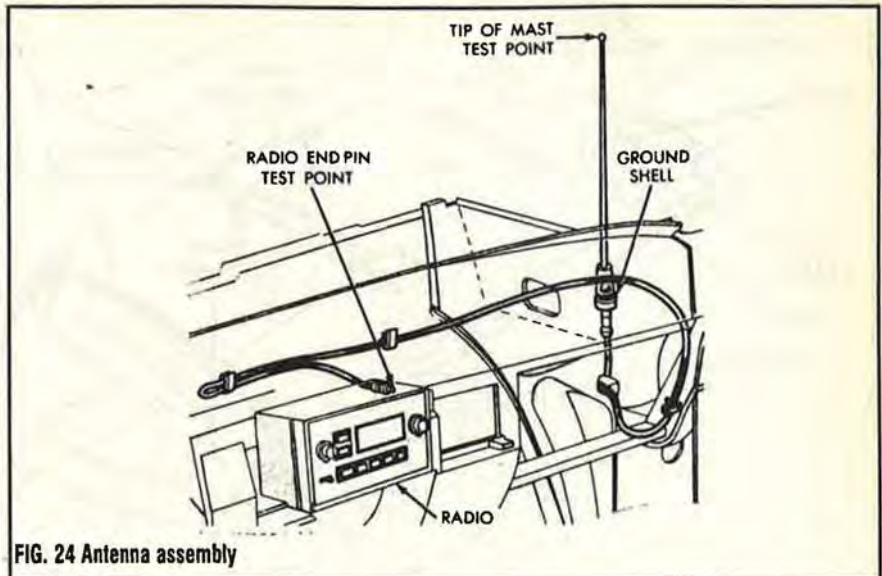


FIG. 24 Antenna assembly

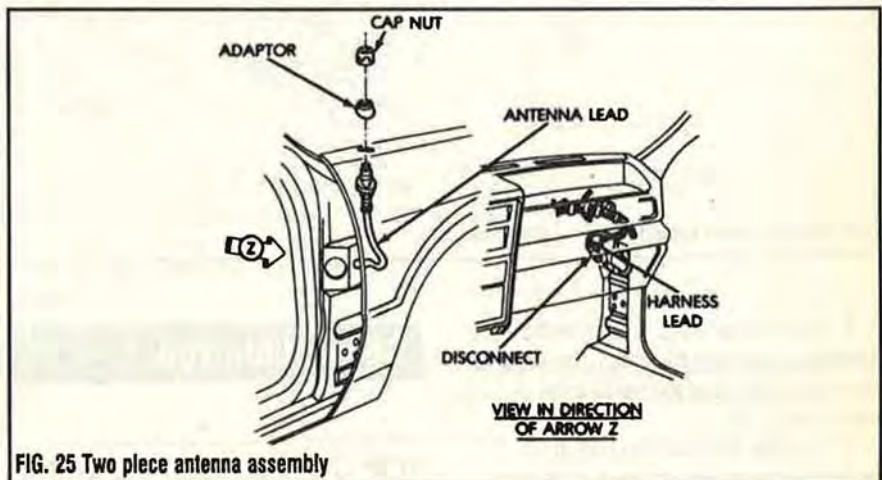


FIG. 25 Two piece antenna assembly

Antenna

REPLACEMENT

♦ SEE FIGS. 24-26

➡ **To perform this operation, a special antenna cap nut (much like a socket wrench), Tool C-4816, is required. On some vehicles the radio must be removed to gain access to the antenna connection. Some vehicles use a two piece cable do not remove the radio but disconnect the cable at harness connection. Refer to the illustrations in this section.**

1. The radio may have to be removed from the car to gain access to the antenna connection.

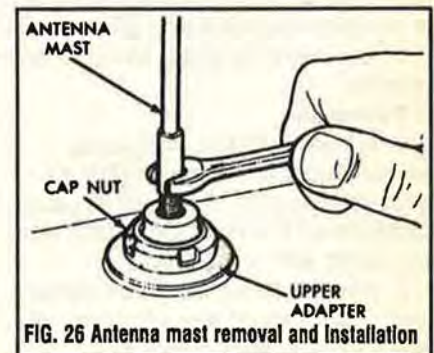


FIG. 26 Antenna mast removal and installation

Remove the radio if necessary. Then, unplug the antenna lead at the radio or harness connection.

2. Use an open-end wrench of appropriate size across the flats at the bottom of the antenna mast to unscrew the mast from the antenna adapter. Then, remove the mast.

10-10 BODY

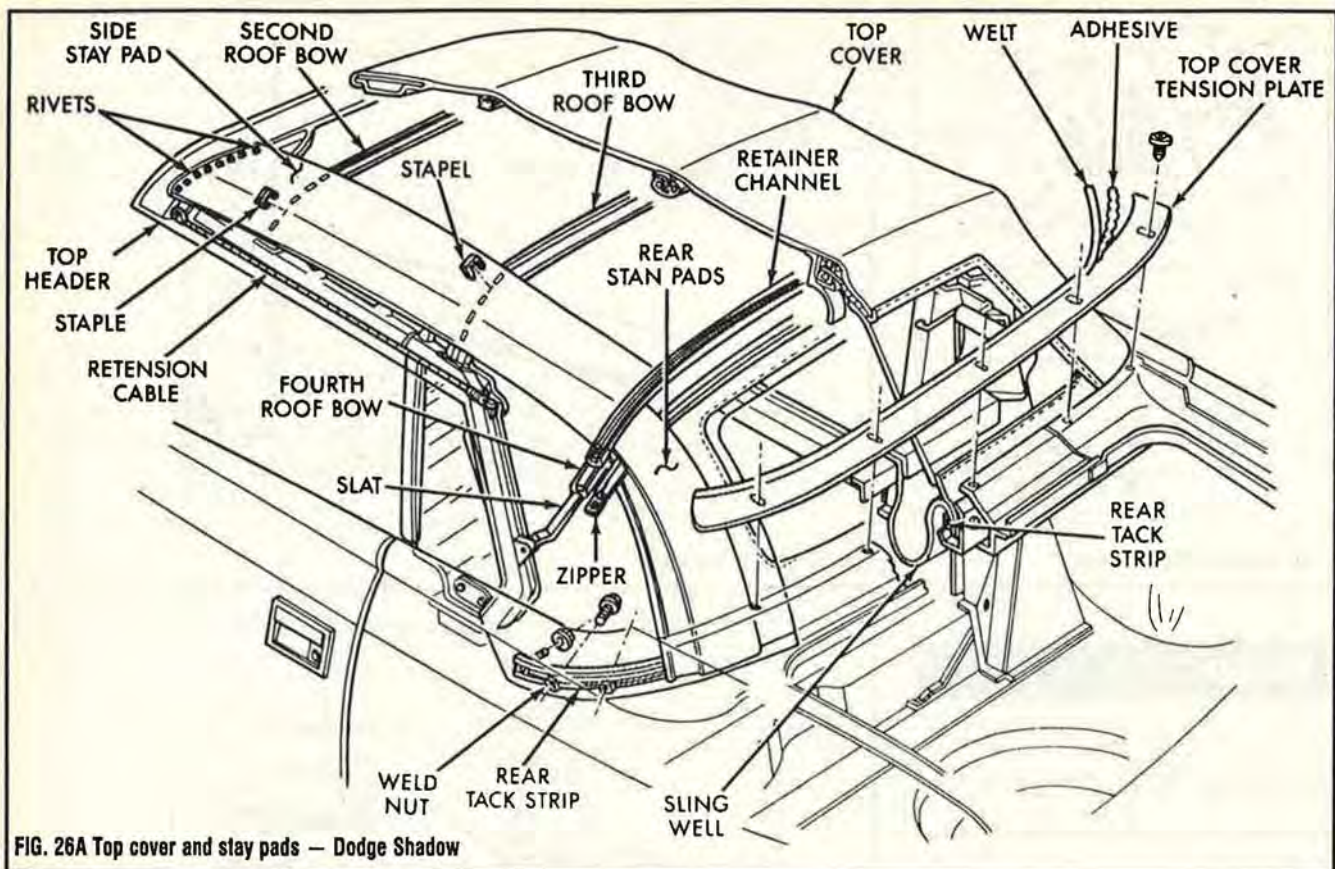


FIG. 26A Top cover and stay pads — Dodge Shadow

3. Use the special tool to unscrew the antenna cap nut from the fender. Then, remove the cap nut and the adapter and gasket underneath it.

4. If access to the antenna body from underneath the fender is blocked by an inner fender shield, remove the 3 screws from the rear of the shield and bend it away to gain access.

5. Then, remove the antenna lead and body assembly.

To Install:

6. To install the antenna, first insert the antenna body and cable through the hole in the fender from underneath. Then, install the gasket, adapter and cap nut torquing the cap nut to 100–150 inch lbs. with the special tool.

7. Screw the antenna mast into the antenna body. Tighten it with the open-end wrench until its sleeve bottoms on the antenna body.

8. Route the antenna cable to the radio, connect it to the radio (or harness connection) and then reinstall the radio if necessary. Check radio for proper operation.

Convertible Top

TOP COVER REPLACEMENT

Shadow AP/27

♦ SEE FIG. 26A

➡ **Review the complete service procedure before starting this repair — refer to the illustrations.**

1. Open rear window and position glass, as flat as possible, in the drop well area.
2. Lower the convertible top.
3. Remove the rear seat cushion and back.
4. Remove the quarter trim panels.
5. Remove the quarter glass assemblies.
6. Raise the convertible top to mid-point position.
7. Remove the screws holding cover retainer to top header. Separate retainer from the header.
8. Separate convertible top cover from the adhesive on top header.
9. Open trunk lid. Remove the screws holding rear deck filler panel to rear deck below rear window. Mark screw locations before removal to

aid installation. The rear deck filler panel applies pressure to top cover to eliminate wrinkles.

10. From in luggage compartment, remove the nuts and bolts holding lower top tack strip to deck and quarter panels. Lift sling well upward to gain access to fasteners.

➡ **Do not damage painted surface when separating tack strip from the mounting location.**

11. Separate tack strip from the deck and quarter panels and remove staples holding top cover. Leave rear window skirt, pads and drop well attached to tack strip.

12. Pull top cover from adhesive in quarter glass weatherstrip channel.

13. Remove the rivets holding top cover rail tension cables to top header. Pull tension cables from rear of listing pockets on top cover.

14. Remove screws holding top cover fastener strip to center roof bows. Separate top cover roof bows and pull retainers from the listing pockets on top cover.

15. Fold top cover so that all material is above rear roof bow. Slide rear top cover retainer to one side from rear roof bow channel. Separate convertible top cover from the vehicle.

To Install:

16. To install convertible top cover to the vehicle reverse the removal procedure steps. Use contact adhesive to secure top cover to header and quarter glass weatherstrip channels.

17. Fold replacement convertible top along center line and mark. Measure and mark the center line of header, center bow and tack strip.

18. Install top cover from the center line out.

19. Do not over stretch top cover when removing wrinkles. Allow for some shrinkage.

20. Water leak and wind noise test should be preformed. Check convertible top operation.

TOP LIFT ASSIST CYLINDER

Shadow AP/27

♦ SEE FIG. 26B

➔ **Review the complete service procedure before starting this repair — refer to the illustrations.**

1. Remove the interior trim as necessary to gain access to quarter panel to top frame attachment bolts and gas cylinder.

2. With top in up position (not latched). Loosen top frame to quarter panel reinforcement bolts to allow top frame to shift rearward.

3. Remove the clevis pin holding gas cylinder to top frame.

4. Remove the door ajar switch from the B-pillar below the door stricker.

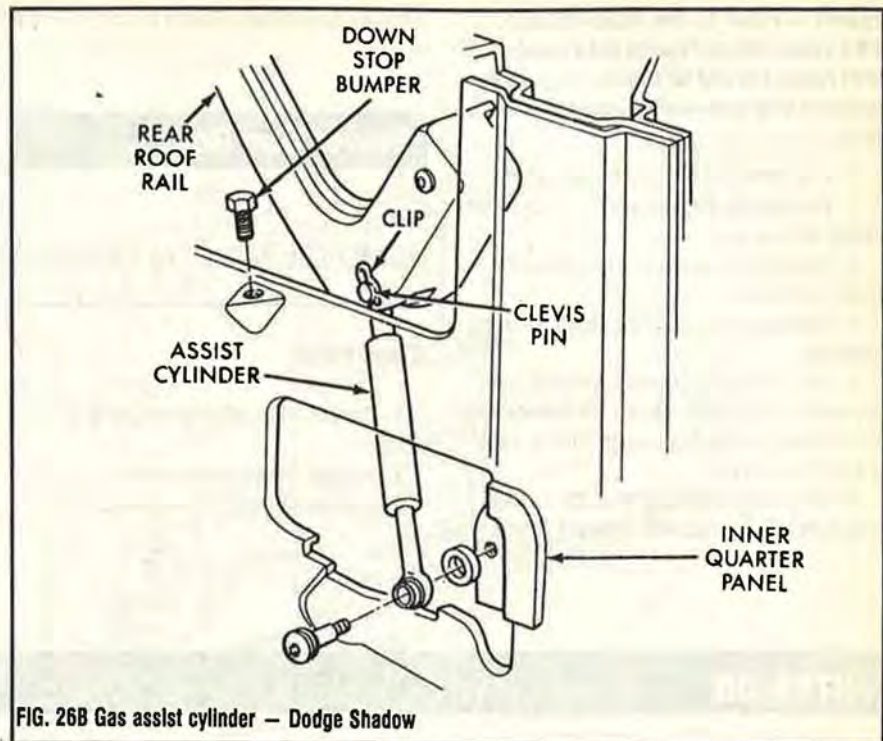


FIG. 26B Gas assist cylinder — Dodge Shadow

5. Through door ajar switch mounting hole, remove the bolt holding bottom of gas cylinder to quarter panel reinforcement.

6. Separate top lift assist cylinder from the vehicle.

7. To install top lift assist cylinder assembly to the vehicle reverse the removal procedure steps.

HYDRAULIC PUMP ASSEMBLY

LeBaron AJ/27

♦ SEE FIG. 26C

➔ **Review the complete service procedure before starting this**

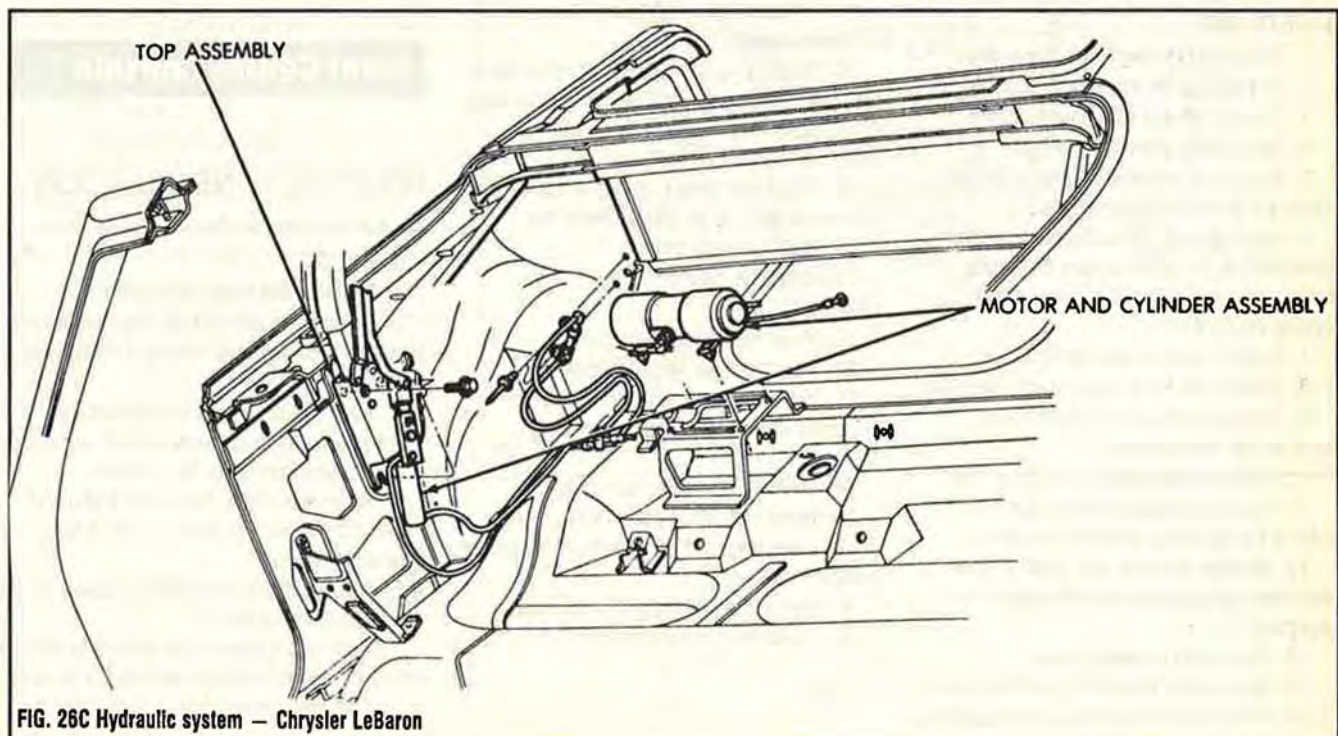


FIG. 26C Hydraulic system — Chrysler LeBaron

10-12 BODY

repair — refer to the illustrations. The convertible top on this model will raise slowly or make abnormal noise if the hydraulic fluid level is low.

1. Disconnect the negative battery cable.
2. Remove the sling well and floor cover from behind the rear seat.
3. Disconnect pump wire connector and ground connection.
4. Disconnect hydraulic lines from the pump assembly.
5. Remove the motor pump assembly from the vehicle. The rubber mounts are pressed and locked into the mounting bracket. Pull up motor assembly to remove.
6. Installation is the reverse of the removal procedure. Fill reservoir with Dexron® II, type A,

automatic transmission fluid to the bottom of the fill hole.

Power Sun Roof

REMOVAL & INSTALLATION

Glass Panel

1. Remove wind deflector mechanism covers.
2. Position glass to vent position.
3. Position sunshade full rearward.

4. Loosen nuts holding glass panel to side adjustment brackets.

5. Slide glass panel rearward 0.05 in. (1.3mm) and separate glass from sunroof unit.

To Install:

6. Position glass panel in opening with logo rearward and slide panel forward 0.05 in. (1.3mm).

7. Verify that attaching nuts are below top surface of glass adjustment brackets.

8. Close sunroof to center glass panel in roof opening. Tighten center screws to hold adjustment.

9. Open glass to vent position and tighten nuts 70 inch lbs. Close glass and check alignment.

10. Install the mechanism covers. Adjust wind deflector if necessary.

INTERIOR

Instrument Panel and Pad

REMOVAL & INSTALLATION

♦ SEE FIG. 26D

1. Disconnect the negative battery cable.
2. Remove the left and right A-pillar trim.
3. Remove left and right cowl side trim.
4. Remove the glove box assembly.
5. Remove all necessary electrical relays above the glove box assembly area.
6. Reach through glove box opening and disconnect A/C control vacuum lines, radio noise suppressor wires and blower motor/cycling switch wires.
7. Remove hood release handle.
8. Remove the lower steering column cover.
9. Remove lower left instrument panel silencer and reinforcement.
10. Remove instrument panel center bezel.
11. Remove the floor console assembly — refer to the necessary service procedures.
12. Remove the radio, A/C control, lighter assembly and message center/traveler if so equipped.
13. Disconnect demister hoses.
14. Remove the instrument panel top cover.
15. Remove the instrument cluster assembly.

16. Remove the radio and rear window defogger bezels.

17. Lower steering column.

18. Loosen instrument panel pivot bolts.

19. Remove screws which attach instrument panel to windshield fence line.

20. Allow panel to roll down slightly and disconnect all remaining electrical connections. Remove the panel pivot bolts and remove instrument panel assembly from vehicle.

To Install:

21. Position the instrument panel assembly in the vehicle and reconnect all necessary electrical connections. Install and evenly tighten the instrument panel pivot bolts.

22. Install and tighten screws which attach instrument panel to windshield fence line.

23. Install steering column.

24. Install the radio and rear window defogger bezels.

25. Install the cluster assembly.

26. Reconnect the demister hoses.

27. Install the radio, A/C control, lighter assembly and message center/traveler as equipped.

28. Install floor console assembly.

29. Install instrument panel center bezel.

30. Install lower left instrument reinforcement and panel silencer.

31. Install lower steering column cover.

32. Install hood release handle.

33. Working through glove box opening and reconnect A/C control vacuum lines, radio noise suppressor wires and blower motor/cycling switch wires — install all necessary relays at this time.

34. Install glove box assembly.

35. Install left and right cowl side trim.

36. Install left and right A-pillar trim. Reconnect negative battery cable.

Front Center Console

REMOVAL & INSTALLATION

♦ SEE FIG. 26E

1. Position front seats full forward.
2. Remove the access hole plugs on sides of center arm rest riser and remove bolts holding riser to floor bracket.
3. Remove the coin holder and remove screws holding arm rest riser to front console.
4. Position front seats full rearward.
5. Remove the radio bezel from instrument panel. Remove screws holding console to instrument panel.
6. Remove the screws holding console to lower instrument panel rail.
7. Remove the screws and disengage hook and loop fastener holding carpet panels to sides of console and separate panels from console.

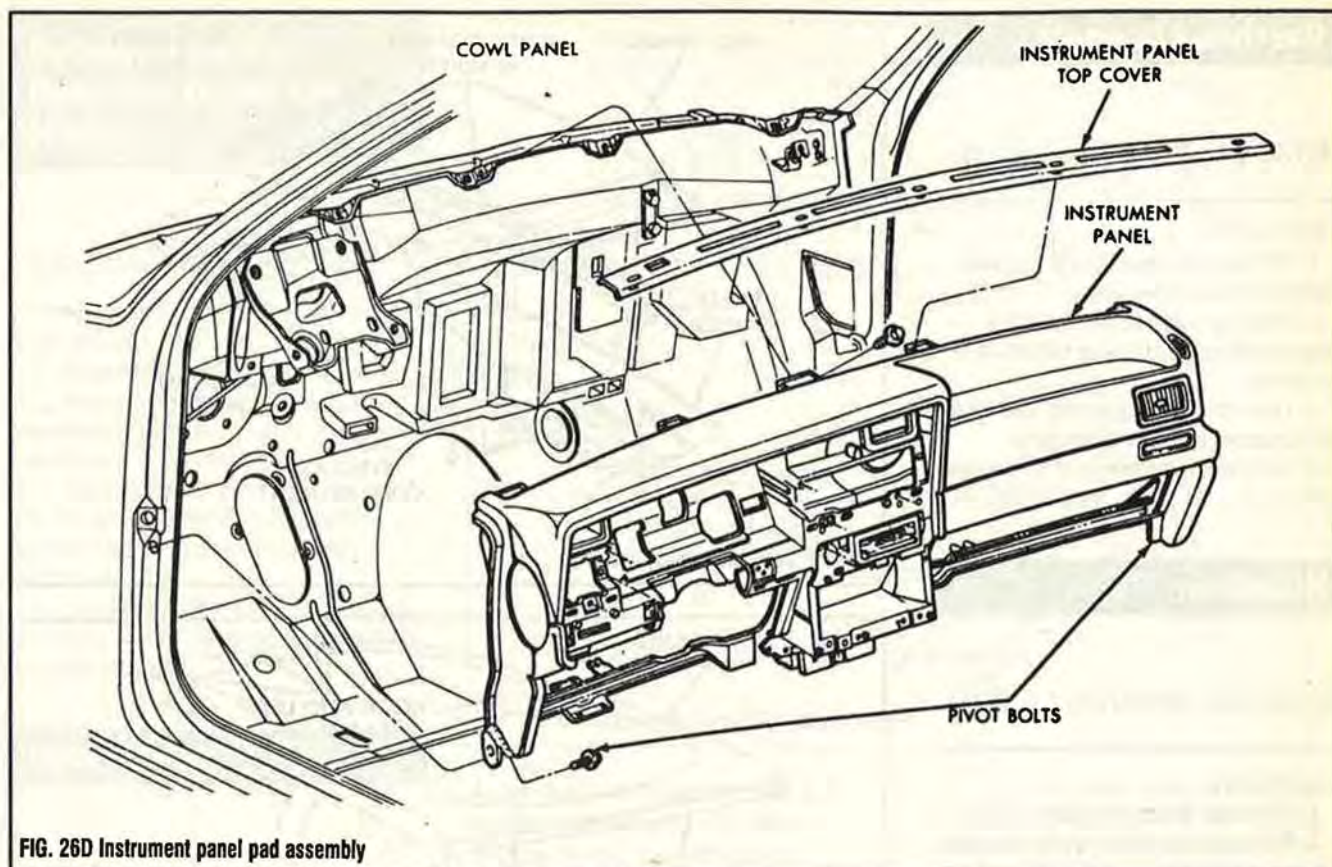


FIG. 26D Instrument panel pad assembly

8. Remove screws holding console to forward floor mounting bracket.

9. Remove the set screw holding gear selector knob to shift lever and pull knob from shifter on vehicles with automatic transaxles.

10. Lift forward edge of PRNDL cover and separate cover from the console on vehicles with automatic transaxle.

11. Lift gear shift boot adapter from the console and push adapter through opening in console on vehicles with manual transaxle.

12. Separate console assembly from floor and remove the unit from the vehicle.

13. Installation is the reverse of the removal procedure. On vehicles with automatic transaxle, verify gear selector indicator adjustment, check all necessary items for proper operation.

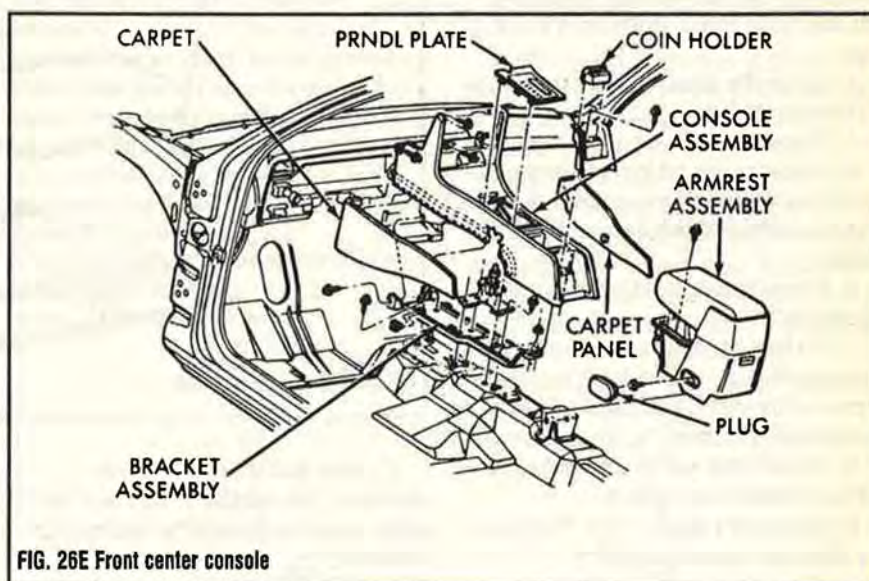


FIG. 26E Front center console

10-14 BODY

Overhead Console

REMOVAL & INSTALLATION

♦ SEE FIG. 26F

1. Remove the screws holding overhead console to reinforcement bracket.
2. Slide overhead console rearward to separate reinforcement bracket retainer tab from the console.
3. Lower the console assembly from the roof and disconnect electrical connections.
4. Installation is the reverse of the removal procedure.

Headliner

REMOVAL & INSTALLATION

♦ SEE FIG. 26G

1. Disconnect the negative battery cable.
2. Pull dome lamp downward to disengage from the retaining ring in headliner. Separate lens from lamp body and remove the bulb. Separate bulb holder from the lamp body. Remove the attaching screw holding retaining ring to roof bow.
3. Remove the screws holding coat hooks to roof above rear doors.
4. Remove roof rail and A-pillar mouldings.
5. Remove screws holding sun visors to roof header and disconnect wire connector, if so equipped. Remove the inboard sun visor hangers.
6. Remove the overhead console assembly if so equipped.
7. Pull front reading lamp downward to disengage from the retaining ring in headliner and disconnect the electrical connection. Remove screws holding retaining ring to roof header.
8. Remove pinch welt holding headliner to sun roof opening if so equipped.
9. Remove the inside rear view mirror from the windshield bracket if necessary.
10. Disengage hook and loop fasteners holding headliner to roof above rear window and slide headliner forward about 1 in. (25mm).
11. Shift the front of headliner to one side to pull headliner from behind B-pillar trim. Pull headliner from behind other B-pillar trim.

12. Allow front of headliner to drop downward. Slide headliner forward from behind quarter panel trim. Remove the headliner from the vehicle.

To Install:

13. Install the headliner in the proper position — engage the necessary fasteners and panel trim components.
14. Install rear view mirror to the windshield as necessary.

15. Install the front reading lamp assembly.
16. Install the overhead console if so equipped.
17. Install sun visors.
18. Install A-pillar mouldings and roof rail.
19. Install coat hooks to roof above the rear doors.
20. Install dome light assembly. Check all necessary items for proper operation.

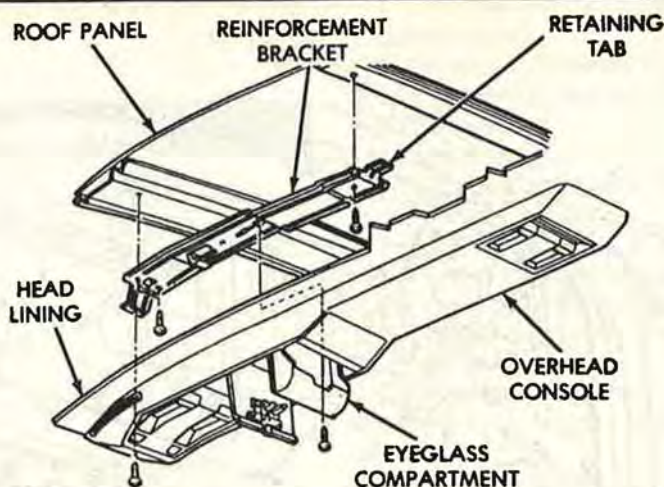


FIG. 26F Overhead console assembly

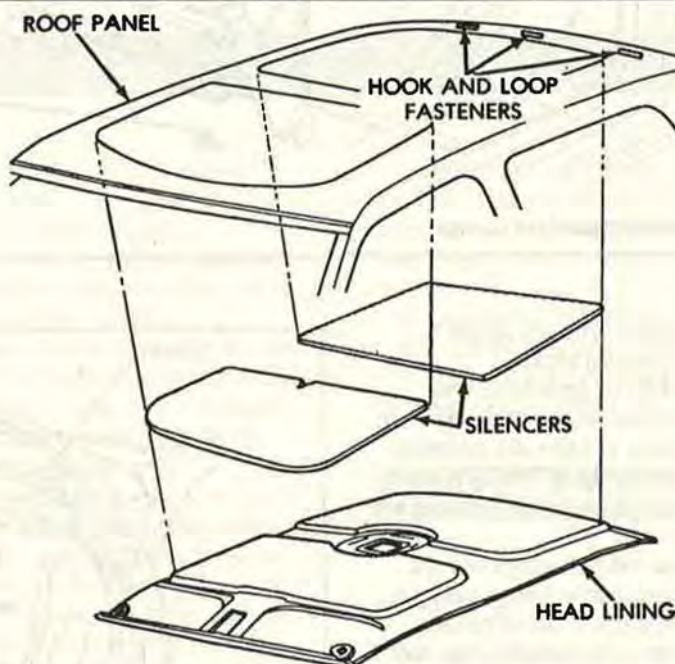


FIG. 26G Headliner assembly

Defroster Ducts/ Demister Ducts and Hoses

REMOVAL & INSTALLATION

♦ SEE FIG. 26H

1. Disconnect the negative battery cable.
2. Remove the instrument panel assembly to gain access if necessary — refer to the service procedures in this section.
3. Separate the defroster/demister ducts from the air distribution duct. Remove the demister tubes and hoses. Refer to the illustrations.
4. Installation is the reverse of the removal procedure. Check all systems and components for proper operation.

Door Panels

REMOVAL & INSTALLATION

♦ SEE FIGS. 27-35

➡ **Use these service procedures as guide to all years/models. Refer to the illustrations in this section.**

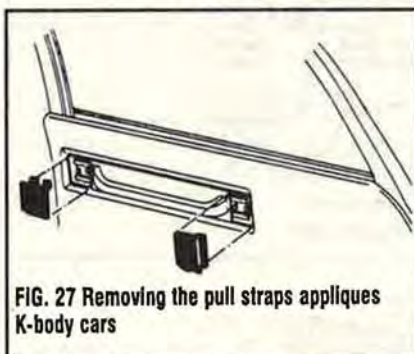


FIG. 27 Removing the pull straps appliques K-body cars

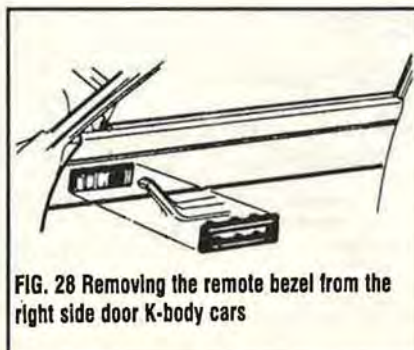


FIG. 28 Removing the remote bezel from the right side door K-body cars

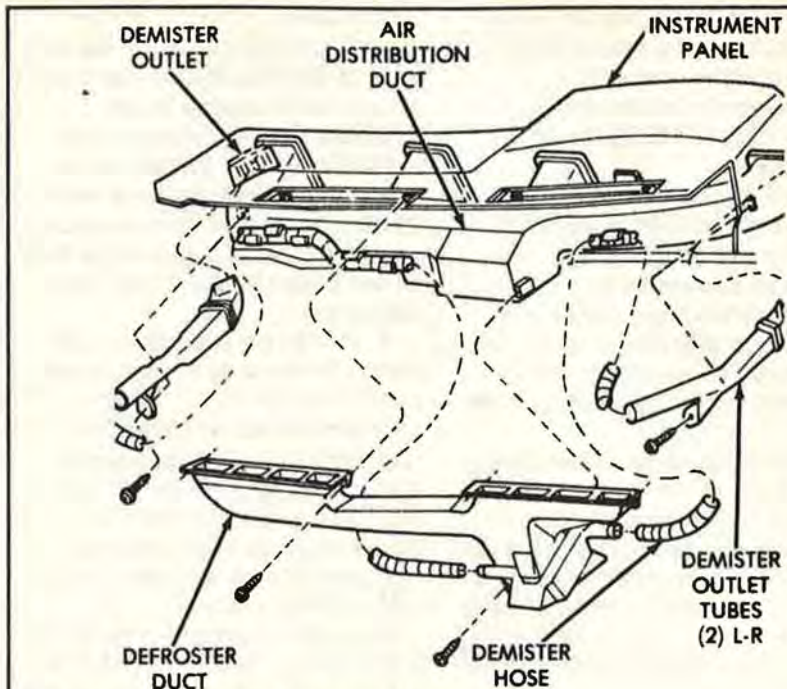


FIG. 26H Defroster ducts/demister ducts and hoses

Aries, Reliant, LeBaron, Town & Country, Caravelle, 600, New Yorker Turbo, Sundance and Shadow

➡ **If the watershield must be removed to work on the window mechanism or other items mounted inside the door, you will need a soft, water-resistant material designed to retain the watershield to the door metal. Since rain water that gets into the window slit drains down inside the door, it is necessary to seal the watershield carefully so there will not be leakage inside the car.**

1. Unsnap the plastic appliques from the door pull strap and the remote bezel. Then, pull the front edge of the bezel outward and push the bezel backward to release it.

2. Remove the mounting screws at either end of the pull strap and remove it from the door panel.

3. Note the installation angle of the window crank handle and then remove it. To do this, use an Allen wrench to remove the Allen screw from the center of the window mechanism shaft.

4. Remove the retaining screws from the lower side of the door handle and remove it.

5. There are spring clips mounted to the door panel which slip into holes drilled into the door metal. Using a flat stick, gently pry the panel off the door at front, back and bottom to release the clips.

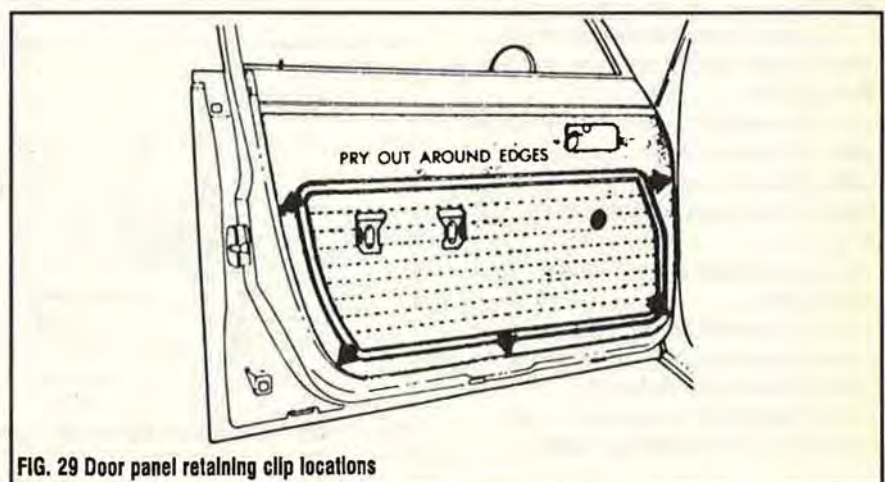


FIG. 29 Door panel retaining clip locations

10-16 BODY

6. Lift the panel straight upward to release clips which retain it to the inside of the door by running down into the window slot.

7. If the watershield must be removed, carefully pull it off the retaining material.

To Install:

8. To install the panel, first run new sealer around the door metal under the watershield and then stick the watershield to the door.

9. Hook the panel over the door at the window slit and hang it down over the door. Make sure the retaining clips line up with their corresponding holes and then press the panel inward directly over each clip to engage it with the door.

10. Install the door handle with the retaining screws if the car has one.

11. Install the window crank handle at the same angle by engaging its internal splines with those on the window mechanism shaft. Then, install the retaining screw and tighten it with the Allen wrench.

12. Install the pull strap, its retaining screws and the bezels.

13. Install the remote bezel.

Daytona & Laser

1. Lower the window all the way. Disconnect the battery negative cable.

2. If the car has manual windows, remove the Allen screw from the end of the window mechanism shaft and remove the crank handle.

3. With a piece of thin, relatively soft material (such as a strip of wood), gently pry the electric mirror/door lock bezel out of the arm rest. Then, disconnect the wiring connectors for the electric mirror and the door lock switch.

4. Remove the bezel surrounding the remote lock/latch release switches.

5. Disconnect the four arm rest electrical plugs at the arm rest. Remove the screw located behind each plug and the single screw in the opening of the switch bezel.

6. Rotate the arm rest to release it and remove it.

7. Remove the one remaining trim panel retaining screw from the area of the door near the body pillar.

8. There are spring clips mounted to the door panel which slip into holes drilled into the door metal. Using a flat stick, gently pry the panel off the door at front, back and bottom to release the clips.

9. Disconnect the wire connector at the courtesy lamp.

10. Lift the panel straight upward to release clips which retain it to the inside of the door by running down into the window slot.

11. If the watershield must be removed, carefully pull it off the retaining material.

To Install:

12. To install the panel, first run new sealer around the door metal under the watershield and then stick the watershield to the door.

13. Hook the panel over the door at the window slit and hang it down over the door. Make sure the retaining clips line up with their corresponding holes and then press the panel inward directly over each clip to engage it with the door. Connect the wire connector at the courtesy lamp.

14. Install the trim panel retaining screw located in the area of the door near the body pillar.

15. Rotate the arm rest into position.

16. Install the screw located behind the location of each plug in the arm rest and the single screw in the opening of the switch bezel. Connect the four arm rest electrical plugs.

17. Install the bezel surrounding the remote lock/latch release switches.

18. Connect the wiring connectors for the electric mirror and the door lock switch. Then, install the electric mirror/door lock bezel into the arm rest.

19. If the car has manual windows, install the crank handle and then install the Allen screw into the end of the window mechanism shaft.

20. Reconnect the negative battery cable.

Lancer, LeBaron GTS

FRONT DOOR WITH MANUAL WINDOW REGULATOR

1. Roll the window all the way down. With an Allen wrench, remove the window crank handle retaining screw. Note the installation angle of the handle and remove it.

2. Snap off the mirror remote control bezel. Then, remove the two screws at the mirror remote control. Slide the inside handle bezel rearward and remove it.

3. Remove the door panel retaining screw from the forward/upper corner of the panel. There are spring clips mounted to the door panel which slip into holes drilled into the door metal. Using a flat stick, gently pry the panel off the door at the bottom, at the rear and half way up the front. Then, flex the panel at the forward, upper corner to to disengage the two additional clips located there.

4. Disconnect the courtesy light electrical connector.

5. Lift the panel straight upward to release clips which retain it to the inside of the door by running down into the window slot.

6. If the watershield must be removed, carefully pull it off the retaining material.

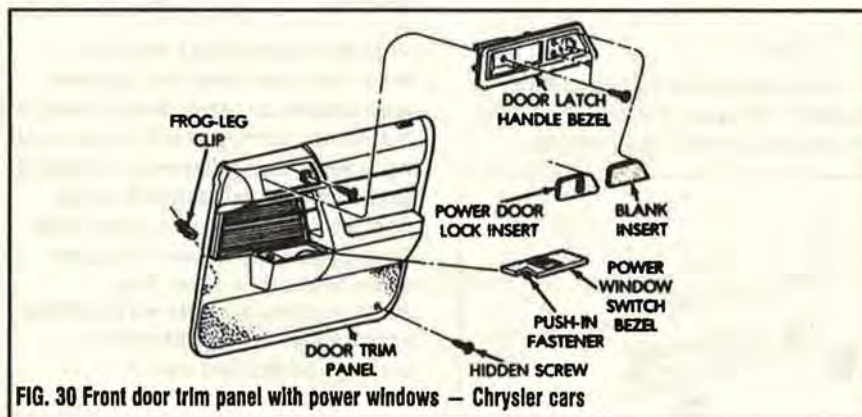


FIG. 30 Front door trim panel with power windows — Chrysler cars

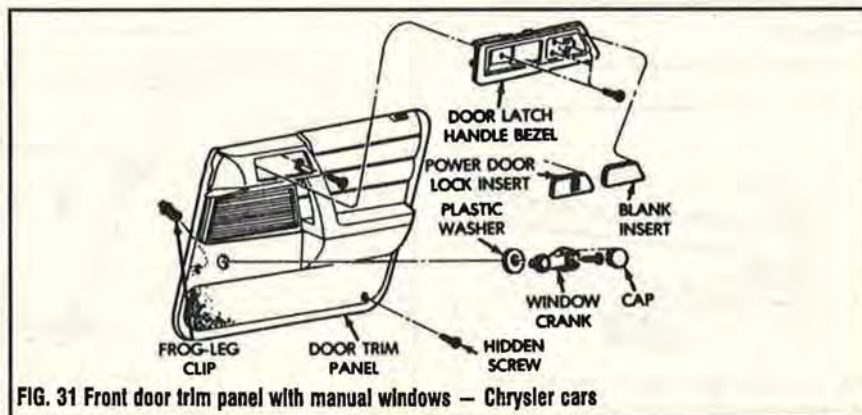


FIG. 31 Front door trim panel with manual windows — Chrysler cars

To Install:

7. To install the panel, first run new sealer around the door metal under the watershield and then stick the watershield to the door.

8. Hook the panel over the door at the window slit and hang it down over the door. Make sure the retaining clips line up with their corresponding holes and then press the panel inward directly over each clip to engage it with the door. Connect the wire connector at the courtesy lamp.

9. Install the door panel retaining screw to the forward/upper corner of the panel.

10. Slide the inside handle bezel rearward and install it. Install the two screws at the mirror remote control. Snap the mirror remote control bezel back on.

11. Reinstall the crank handle at its original angle.

FRONT DOOR WITH ELECTRIC WINDOW REGULATOR

1. Lower the glass all the way. Then, disconnect the negative battery cable.

2. Remove the single retaining screw located at the electric window switch plate's forward edge. Lift the switch plate off the door panel, note how the connectors are hooked up, and then disconnect the connectors.

3. Follow Steps 2 through 6 of the procedure above to complete removal. Then, follow 7 through 10.

4. Remake the electrical connections to the window switch. Then, slip the switch plate into the door panel. Install the switch plate retaining screw. Reconnect the battery.

REAR DOOR WITH MANUAL REGULATOR

1. Roll the glass all the way down. Disconnect the negative battery cable.

2. Using an Allen wrench, remove the retaining screw for the window crank handle from the regulator shaft. Note the angle of the crank handle and remove it.

3. Remove the retaining screw from the pull cup behind the arm rest. Then, slide the remote control bezel rearward to remove it.

4. There are spring clips mounted to the door panel which slip into holes drilled into the door metal. Using a flat stick, gently pry the panel off the door at the bottom, at the rear and half way up the front (there are 6 clips).

5. Disconnect the courtesy lamp electrical connector.

6. Lift the panel straight upward to release clips which retain it to the inside of the door by running down into the window slot.

7. If the watershield must be removed, carefully pull it off the retaining material.

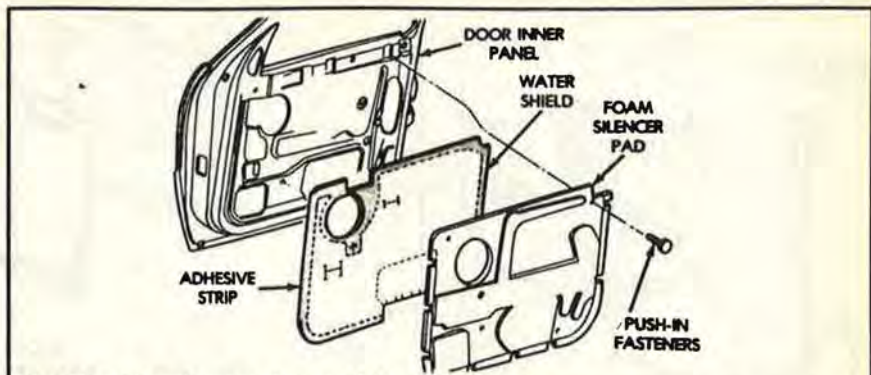


FIG. 32 Front door silencer and water shield — Chrysler cars

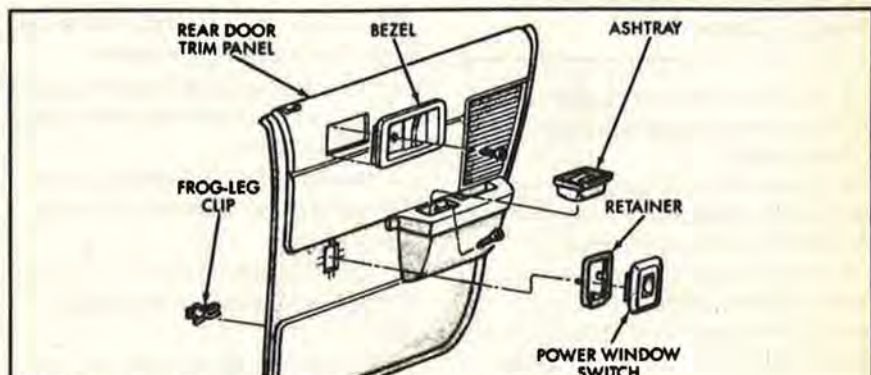


FIG. 33 Rear door trim panel with power windows — Chrysler cars

To Install:

8. To install the panel, first run new sealer around the door metal under the watershield and then stick the watershield to the door.

9. Hook the panel over the door at the window slit and hang it down over the door. Make sure the retaining clips line up with their corresponding holes and then press the panel inward directly over each clip to engage it with the door. Connect the wire connector at the courtesy lamp.

10. Position the remote control bezel into the panel and slide it forward to install it. Install the retaining screw into the pull cup behind the arm rest.

11. Install the crank handle at its original installation angle. Reconnect the battery.

REAR DOOR WITH ELECTRIC REGULATOR

1. Roll the glass all the way down. Disconnect the negative battery cable.

2. Unsnap the window lift bezel and pull the switch out of the door panel just far enough to reach wiring. Note the wiring connector locations and disconnect them.

3. Follow Steps 2 through 10 of the procedure above.

4. Reconnect the electric window motor wiring connectors to the correct terminals.

Locate the switch into the door panel and snap the bezel back in.

5. Reconnect the battery.

LeBaron

1. Lower the window all the way.

2. Remove the switch bezel and the radio speaker from the door.

3. Remove the screw from the opening in which the switch bezel was located.

4. Remove the 2 screws attaching the door panel from the through-slits in the carpeted area of the map pocket.

5. If the car has manually operated windows, remove the retaining Allen screw for the regulator handle from the center of the window regulator shaft. Note the installation angle of the regulator handle and then remove it. Remove the spacer behind the handle.

6. Pull the bottom of the trim panel outward carefully to disengage the the lower clips. Pull it out just far enough to gain access to the courtesy lamp connection. Then, reach behind the panel and disconnect the courtesy lamp wire.

7. Pull the panel in order to remove the remaining clips from the door. Lift the panel straight upward to release clips which retain it to the inside of the door by running down into the window slot.

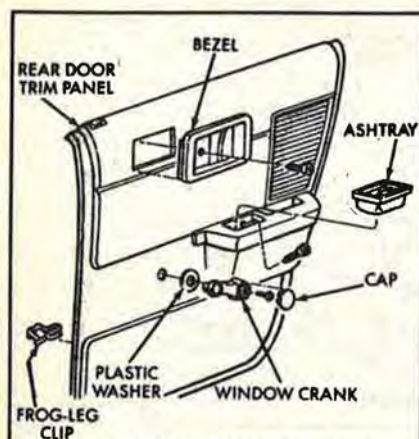


FIG. 34 Rear door trim panel with manual windows — Chrysler cars

8. If the watershield must be removed, carefully pull it off the retaining material.

To Install:

9. To install the panel, first run new sealer around the door metal under the watershield and then stick the watershield to the door.

10. Hook the panel over the door at the window slit and hang it down over the door. Connect the wire connector at the courtesy lamp. Make sure the retaining clips line up with their corresponding holes and then press the panel inward directly over each clip to engage it with the door.

11. Reinstall the regulator handle at its original installation angle.

12. Install the 2 screws attaching the door panel working through the slits in the carpeted area of the map pocket.

13. Install the panel retaining screw into the opening in which the switch bezel was located.

14. Install the switch bezel and the radio speaker into the door.

Door Locks

REMOVAL & INSTALLATION

Except Daytona & Laser

➔ On Sundance, Shadow, Lancer and LeBaron GTS a Torx® screwdriver is required to remove the lock mechanism mounting screws.

1. Raise the glass until it is up all the way. Remove the trim panel and plastic air shield as described above.

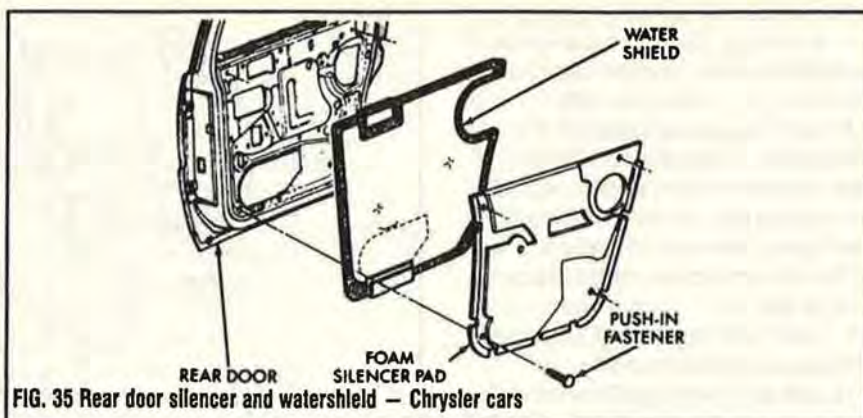


FIG. 35 Rear door silencer and watershield — Chrysler cars

2. Disconnect the outside handle link and key cylinder link from the lock mechanism.

3. Disconnect the remote control link, remote latch lock link and, if the car has electric locks, the electric motor link.

4. Remove the three lock attaching screws and remove the lock through the access hole.

To Install:

5. Reposition the lock inside the door through the access hole. Install the three attaching screws.

6. Reconnect the remote control link, remote latch lock link and, if the car has electric locks, the electric motor link.

7. Reconnect the outside handle link and key cylinder link from the lock mechanism.

8. Install the water shield and trim panel as described above. Adjust the latch as described above.

Daytona & Laser

➔ SEE FIGS. 36-37

➔ If the car has electric door locks, you will need two short 1/4-20 bolts and corresponding nuts.

1. Roll the window down all the way. Disconnect the battery.

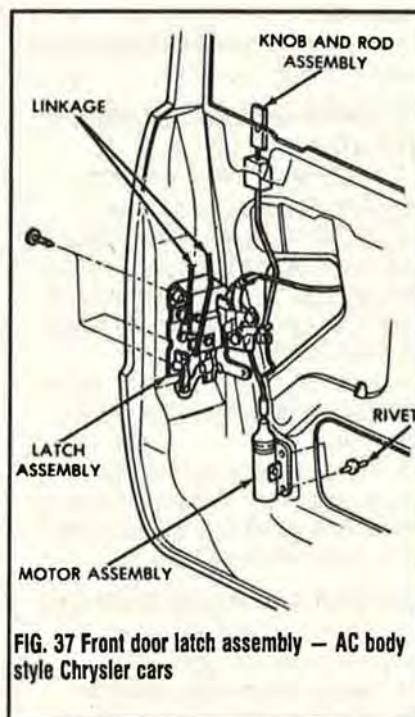


FIG. 37 Front door latch assembly — AC body style Chrysler cars

2. Remove the door panel as described above. Peel the water shield away at the top/rear to gain access to the hole located on the inside of the door and near the lock mechanism.

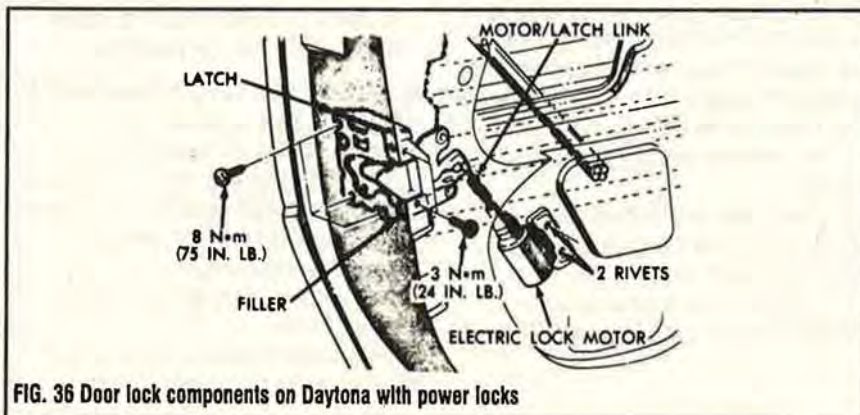


FIG. 36 Door lock components on Daytona with power locks

3. Raise the window all the way (if the car has electric windows, reconnect the battery to do this and then disconnect it again).
4. Disconnect the lock cylinder-to-lock link. Disconnect the outside handle-to-lock mechanism link.
5. Disconnect the inside handle-to-lock link and the inside remote lock actuator-to-lock link.
6. If the car is equipped with electric door locks, drill out the two rivets that retain the locking motor.
7. Remove the three bolts attaching the lock mechanism to the door. Remove the lock and, if the car has electric locks, the locking motor.

To Install:

8. To install the mechanism, first transfer the locking motor to the new mechanism (on cars with electric locks).
9. Position the latch assembly on the door and install the three attaching bolts. Torque these bolts to 75 inch lbs.
10. If the car has electric locks, attach the locking motor to the door with two short 1/4-20 bolts and corresponding nuts. Torque these to 90 inch lbs.
11. Connect the lock cylinder to the latch link.
12. Connect the outside handle to the latch link. Do the same with the inside handle.
13. Connect the inside lock remote switch to the latch link.
14. Lower the window all the way (temporarily connecting the battery on cars equipped with electric windows to do so). Then, install the air shield, water shield and trim panel as described above. Reconnect the battery.

Door Glass and Regulator

REMOVAL & INSTALLATION

➡ **Window regulators are riveted to the door frame. The rivets must be drilled out and replaced by bolts or bolt/nut combinations of certain specification. Read through the procedure and make sure all parts are in hand before beginning work.**

Aries, Reliant, LeBaron, Town & Country

FRONT DOOR

♦ SEE FIGS. 38-39

1. Lower the glass all the way. Remove the trim panel as described above.

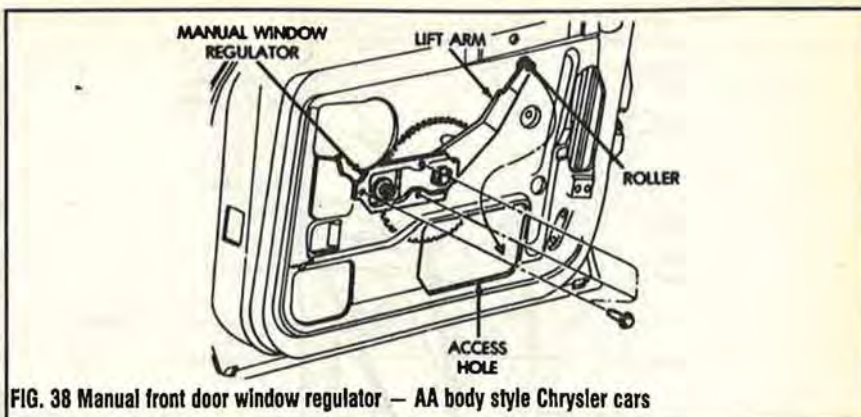


FIG. 38 Manual front door window regulator — AA body style Chrysler cars

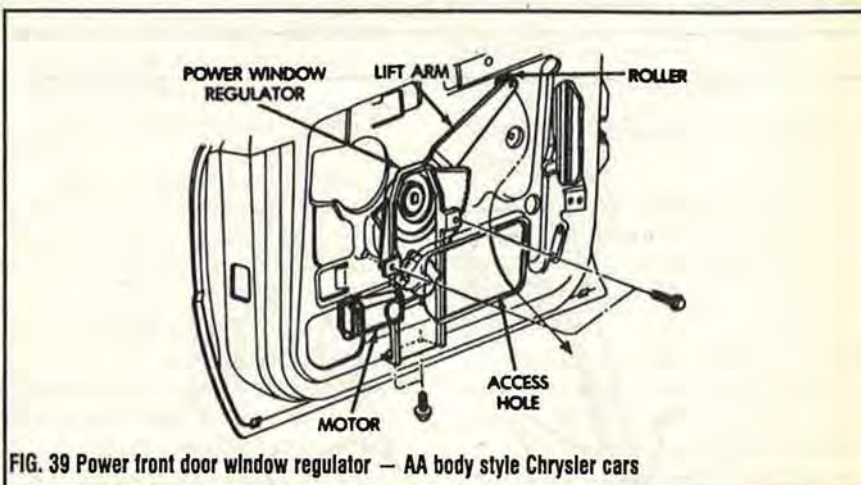


FIG. 39 Power front door window regulator — AA body style Chrysler cars

2. Gently pull the air and water shields off the door.
3. Remove the three nuts that attach the glass to the regulator channel. Then, lower the glass all the way.
4. Remove the outer glass-sealing weatherstrip by disengaging the spring clip tabs from the slots in the outer door panel. To do this, grasp the weatherstrip between the thumb and forefinger on either side of each spring clip. Pull out slightly and then up at each clip until the weatherstrip is free.
5. Work the glass off the mounting studs and remove it through the slot in the top of the lower door.
6. To remove the regulator, drive the center pin of each regulator mounting rivet out with a hammer and drift punch. Then, drill the rivets out with a 1/4 in. (6mm) drill.
7. Disengage the regulator arm from the lift plate and then remove the regulator through the access hole in the inside of the door.

To Install:

8. To install the new regulator, load it through the access hole and engage the access arm with

the lift plate. Then, bolt the regulator to the door with 1/4-20 nuts and short screws, **making sure these screws will not interfere with regulator operation.** Torque the screws and nuts to 90-115 inch lbs.

9. Install the new glass by lowering it into the door. Position the glass on the mounting studs.

10. Install the outer weatherstrip by sliding the clips into the door panel slots and sliding them downward until they lock.

11. Raise the glass to the top of its travel and then install the three retaining nuts, but without tightening them. Seat the glass fully in the upper glass run to adjust it, and then tighten the mounting nuts gently.

12. Install the air and water shields and the trim panel as described above.

Aries, Reliant, LeBaron, Town & Country, Caravelle, 600, New Yorker Turbo

REAR DOOR

♦ SEE FIGS. 40-41

1. Remove the trim panel as described above.

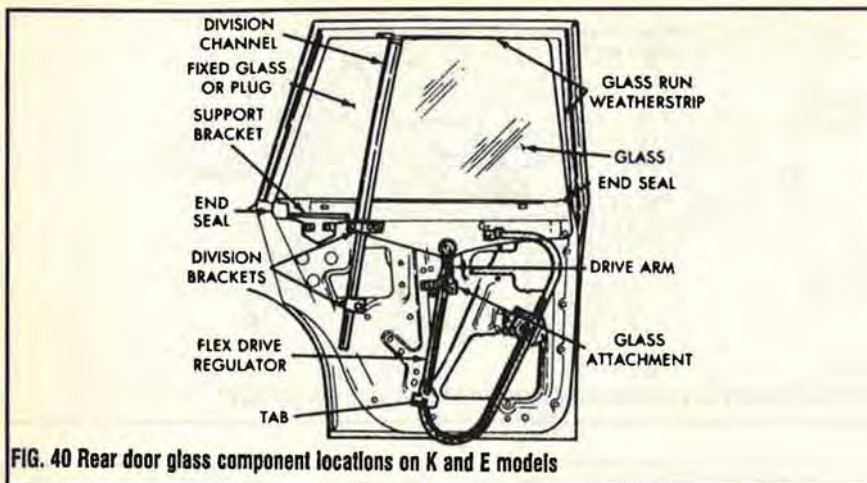


FIG. 40 Rear door glass component locations on K and E models

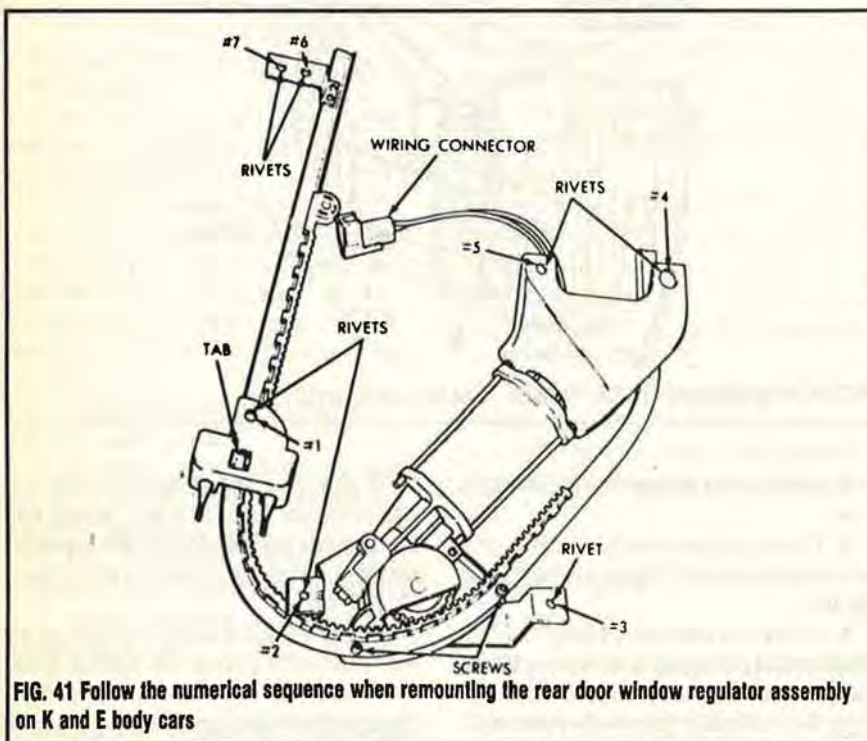


FIG. 41 Follow the numerical sequence when remounting the rear door window regulator assembly on K and E body cars

2. Remove the watershield and air shield. Remove the end seals from the front and rear of the door at the belt line.

3. Remove its two mounting bolts and remove the support bracket from underneath the fixed glass at the rear of the door.

4. Remove, from inside the door, the two brackets that attach the "division" channel (dividing the moveable and stationary glass sections).

5. Remove the glass run weatherstrip from the forward and top edges of the door where the moveable glass contacts it.

6. Remove the mounting screw from the top of the division channel.

7. Remove the fixed glass.

8. Remove the outer glass-sealing weatherstrip by disengaging the spring clip tabs from the slots in the outer door panel. To do this, grasp the weatherstrip between the thumb and forefinger on either side of each spring clip. Pull out slightly and then up at each clip until the weatherstrip is free.

9. Remove the bolt (it has a shoulder on it) which attaches the glass to the drive arm of the flex drive mechanism.

10. Then, remove the division channel, moveable glass and drive arm together by raising the assembly. Rotate it 90 degrees, so

the lower division channel bracket is parallel to the opening. Then, lift the assembly out through the belt opening.

11. Drive the center pins from the 6 mounting rivets (7 with electric windows) for the regulator using a hammer and drift pin. Then drill the rivets out with a 1/4 in. (6mm) drill. Then, rotate the regulator as necessary for clearance and remove it through the access hole in the door.

12. If re-using the same regulator, clean and lubricate the flex drive teeth. Then, orient the regulator so it can be installed through the access hole and locate it inside the door with its locating tab engaging the appropriate hole.

➡ The torque sequence specified for the following step must be followed to prevent binding of the flex drive unit for the window.

13. Use 1/4-20 bolts and nuts to remount the regulator, **tightening the nuts as specified in the illustration.** Torque to 90 inch lbs.

14. To install the new glass, start the bottom of the division channel, the glass, and the drive arm assembly into the belt opening. With the lower bracket parallel to the opening, lower the assembly into the door until the upper division channel bracket is near the belt opening.

15. Rotate the assembly 90 degrees to bring it into its normal orientation. Then, rest the channel on the bottom of the door.

16. Raise the glass by hand. Then, position the drive arm onto the flex drive and secure it with the bolt with the shoulder on it.

17. Install the outer glass-sealing weatherstrip.

18. Install the fixed-glass bracket, but do not tighten the bolts. Then, position the fixed-glass into the opening and rock it into position. Allow it to rest lightly on the support bracket.

19. Fit the rear edge of the division channel over the front edge of the fixed-glass. Then, install the mounting screw into the top of the division channel.

20. Install the glass run weatherstrip into the forward and top door channels.

21. Install the upper bracket retaining the division channel. Then, install the lower bracket retaining the division channel.

22. Push the fixed glass bracket upward and secure it in place.

23. Install the end seals at the belt opening. Install the air and water shields.

24. Install the door trim panel as described above.

Daytona & Laser

♦ SEE FIGS. 42

CAUTION

If the glass has shattered, wear gloves and work cautiously. Use a protective, heavy cloth to cover all painted surfaces, plastic parts, and interior trim near the glass. Remove the glass from the window frame before removing the gloves.

1. Roll the window all the way down. Disconnect the battery.

2. Remove the trim panel and air and water shields as described above. Then, raise the glass until it is possible to work on the glass mounting nuts through the lower access hole (reconnecting the battery temporarily to operate the window motor, if the car has electric windows).

CAUTION

If the glass is still in position, make sure to support it during the next step.

3. Remove the three lift plate-to-glass attaching nuts.

4. Remove the two glass stabilizers. If the glass is intact, remove it through the window frame.

CAUTION

If the glass has been shattered, wear gloves and goggles and then use a heavy duty vacuum to carefully remove all glass particles from the door and glass run at this point.

5. Remove the lift plate-to-regulator screw and remove the lift plate from the door.

6. Using a hammer and drift punch, drive out the center pin in each of the 8 rivets (7 on cars with electric windows) that mount the regulator to the door. Then, drill out each rivet with a 1/4 in. (6mm) drill.

7. Turn the regulator as necessary and then remove it through the access hole in the door.

8. Remove the flex window drive and install it onto the new regulator. Clean and lubricate the teeth.

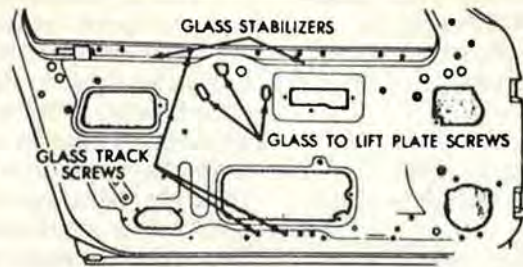


FIG. 42 Location of components involved in removal/installation of door glass on Daytona and Laser

9. Work the assembly back into the door through the access hole, and position it so its mounting holes line up with the holes where rivets were installed. Install 1/4-20 bolts and corresponding nuts to mount the regulator. Torque to 90 inch lbs.

10. Attach the lift plate to the regulator with an M6 x 25 bolt.

11. Attach the three glass-to-lift plate mounting studs to the new glass. Then, install the glass through the window opening. It must initially be cocked to the rear to work it into position and then leveled. Install the retaining nuts without tightening them.

12. Attach the two inner stabilizers without tightening them. Then, loosen the three glass track mounting screws.

13. Connect the battery if the car has electric windows and install the crank handle if it has manually operated windows. Then, guiding the glass, move the window up carefully until it has reached its uppermost position.

14. Tighten the three lift plate-to-glass attaching nuts, starting with the one in the middle, to 85 inch lbs.

15. Tighten the three glass track mounting screws to 115 inch lbs.

16. Adjust the inner glass stabilizers so they just touch the glass and then tighten them to 115 inch lbs.

17. Lower the glass and disconnect the battery or remove the window regulator handle. Install the door trim panel as described above.

Sundance & Shadow, Lancer, LeBaron, and LeBaron GTS

FRONT DOOR W/MANUAL REGULATOR

♦ SEE FIG. 43

➡ A special tool must be used to remove the glass, or the glass-run channel may be damaged. Use Miller Tool No. C-4867 or equivalent.

1. Remove the door trim panel as described above. Carefully remove the watershield as described there also.

2. Lower the glass to gain the best possible access to the rear glass sliders. Then, use the special tool to disengage the sliders from the rear glass guide, holding the glass to keep it from rotating and falling.

3. Rotating the glass on the regulator roller, slide it rearward and lower the rear until it reaches a 45 degree angle. Then, remove it.

4. Temporarily install the regulator handle and set the position of the unit for easy access to the regulator mounting rivets (just below the position where the window would normally be all the way up).

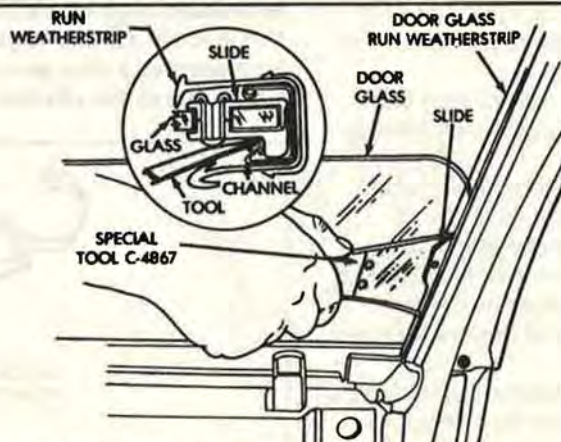


FIG. 43 Front or rear door glass removal — AP body style Chrysler cars

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5. Drill out the three rivets on the regulator with a 1/4 in. (6mm) drill. Then, slide the regulator off the glass lift channel. Cock the regulator to an appropriate angle and remove it through the access hole.

To Install:

6. Angle and position the regulator appropriately and work it through the access hole in the door.

7. Line up the regulator mounting and rivet holes and then install short 1/4-20 bolts and nuts (it may be easier to install the bolts if you reset the position of the regulator by temporarily installing the handle). Torque the bolts to 90-115 inch lbs. and make sure they are short enough that they will not interfere with the moving parts as the window is raised and lowered.

8. Transfer the lift channel and sliders to the new glass. Then, slide the glass back into the door at the angle at which it was removed.

9. Rotate the glass to its normal position and slide it forward on the regulator roller in reverse of the removal procedure.

10. Position the glass for best possible access to the rear sliders, holding it to keep it from rotating and falling. Then, use the special tool to engage the sliders with the rear glass guide.

11. Install the watershield and trim panel as described above.

FRONT DOOR W/ELECTRIC REGULATOR

➔ **A special tool must be used to remove the glass, or the glass-run channel may be damaged. Use Miller Tool No. C-4867 or equivalent.**

1. Remove the door trim panel as described above. Carefully remove the watershield as described there also.

2. Follow Steps 2-3 of the procedure above to remove the glass from the door.

3. Adjust the position of the regulator until there is access to all the regulator mounting rivets (this is just below the position where the glass is all the way up).

4. Disconnect the negative battery cable. Then, disconnect the window motor electrical connector.

5. Drill out the 6 regulator mounting rivets with a 1/4 in. (6mm) drill. Then, slide the regulator off the glass channel.

6. Remove the motor from the regulator. Then, remove the regulator from the door, turning it as necessary so it will fit easily through the access hole.

7. If the regulator is being re-used, clean and lubricate the teeth on the flex drive rack. Then, load the regulator assembly through the door access panel.

8. Install the motor onto the regulator. Then, engage the regulator roller with the lift channel.

9. Line up the regulator mounting and rivet holes and then install short 1/4-20 bolts and nuts (it may be easier to install the bolts if you reset the position of the regulator by temporarily installing the handle). Torque the bolts to 90-115 inch lbs. and make sure they are short enough that they will not interfere with the moving parts as the window is raised and lowered.

10. Connect the regulator wiring connector and the negative battery cable. Install the window as described in Steps 8-10 of the procedure above.

11. Install the watershield and trim panel as described above.

REAR DOOR W/MANUAL REGULATOR

Follow the procedure above for the front door, noting that there are only 3 or 4 mounting rivets for the regulator assembly.

REAR DOOR W/ELECTRIC REGULATOR

Follow the procedure above for the front door through Step 4. Remove the regulator-to-regulator arm bolt; then proceed with the remaining steps of the procedure. Note that the rear door electric window regulator is retained by only 5 mounting rivets.

Electric Window Motor

REMOVAL & INSTALLATION

Cars w/Conventional (Gear Type) Regulators

♦ SEE FIGS. 44-46

CAUTION

The electric window regulator incorporates a very powerful spring which forces the window toward

the top of the window frame at all times. Failure to ensure that the window is in this position before beginning this operation could result in a dangerous situation. The same is true of failing to support the window upward, in case a malfunction of this spring should occur. RAISE WINDOW TO FULL UP POSITION AND KEEP IT THERE AT ALL TIMES WHILE REPLACING MOTOR!

1. Remove the trim panel as described in the appropriate procedure above. Raise the window until it is in the full up position. Then, **securely** prop the window in this position.

2. Disconnect the negative battery cable. Then, disconnect the electric window motor electrical connector located about 11 in. (28cm) away from the motor in the wiring harness.

3. Remove the 3 mounting screws which attach the motor gearbox to the window regulator. On most models, there are three holes in the inner panel to provide access to these screws. On AJ body cars, go in through the opening in the inner panel and reach around to the rear of the regulator to gain access to these screws.

4. Remove the motor from the regulator by grabbing the motor housing and pulling it toward either the inner or outer panel.

CAUTION

Keep fingers well away from the gears while disengaging the motor. Gears may turn a small amount, and could pinch!

Rock or twist the motor as necessary to get it to disengage from the regulator.

5. To install the motor, position it onto the regulator, gaining access as during removal. Work the motor into a position that will ensure the motor gear engages the regulator sector

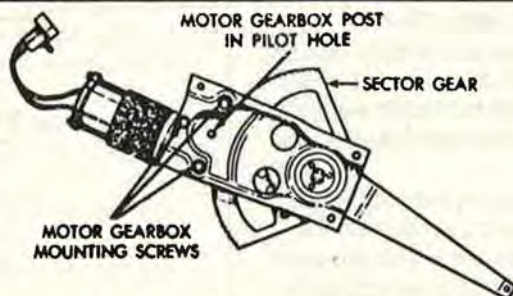


FIG. 44 Electric motor mounting — conventional window regulator

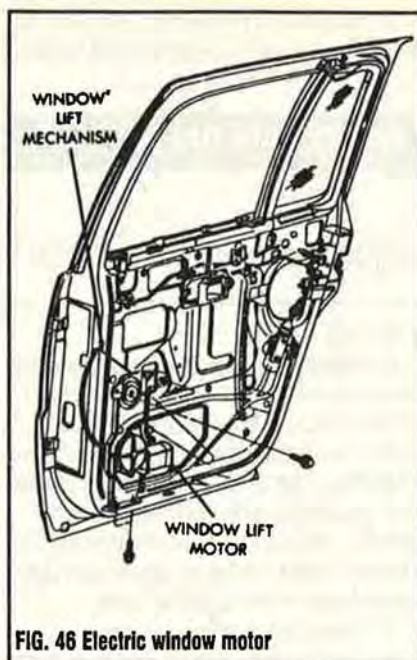


FIG. 46 Electric window motor

teeth and the center post on the motor gearbox enters the pilot hole in the mounting plate. As the motor approaches its final position, rock it to ensure easy engagement of the gear teeth.

6. Align the motor screw holes with those in the mounting plate. Install the 3 motor gearbox screws and the single tie-down bracket screw. Torque them to 50-60 inch lbs.

7. Remove the blocking device. Connect the multi-prong connector and then the battery.

Cars w/Flex-Drive Type Regulators

♦ SEE FIGS. 47-49

➡ **To perform this procedure, a center punch, a 1/4 in. (6mm) drill, and 7 #8-32 x 1/2 in. screws are required.**

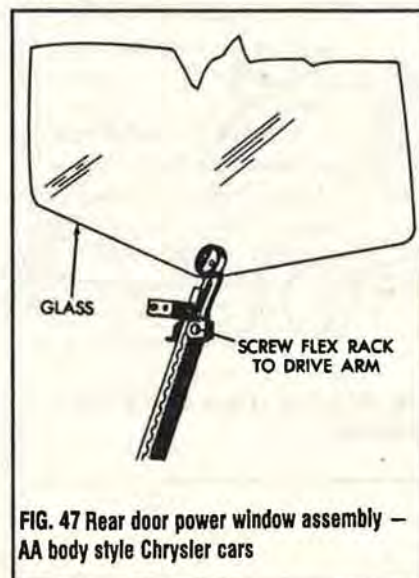


FIG. 47 Rear door power window assembly — AA body style Chrysler cars

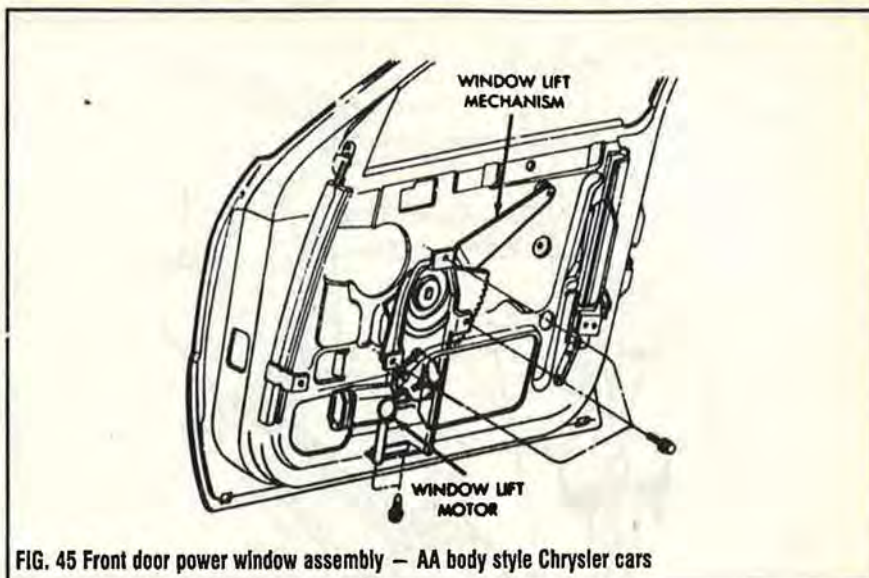


FIG. 45 Front door power window assembly — AA body style Chrysler cars

1. Remove the trim panel as described in the appropriate procedure above. Then, the screw that attaches the flexible rack to the drive arm must be removed. Adjust the position of the window up and down until the position is right for access to this screw and then remove it. Now, **securely** prop the window in this position. If the motor will not operate on its own, try assisting it cautiously. If this fails, see the note below.

2. Disconnect the battery. Disconnect the motor electrical connector.

3. Remove the regulator/ motor attaching rivets by knocking out the rivet center mandrels with a hammer and the center punch. Then, drill the rivets out with the 1/4 in. (6mm) drill.

4. Start the motor end of the flex drive regulator out through the largest access hole in the door panel, maneuvering and rotating the unit out. Remove the screws attaching the motor to the flexible track.

➡ **If the motor will not move, it will be necessary follow steps 2 and 3 to drill out the attaching rivets. Then, move the motor/flexible drive assembly as necessary to gain access to the screws mounting the motor to the flex drive. Manually lift the window upward until it is possible to access the screw that attaches the flexible rack to the drive arm and then remove it.**

6. Remove the 2 screws attaching the motor to the flex drive.

7. To install the motor, feed the top of the flexible drive track into the access hole and then rotate it toward the door pillar until the motor is horizontal. Then, rotate the assembly (about 1/4 turn) in the opposite direction to align the bracket tab with the slot in the inner door panel.

8. Install the mounting screws and torque them to 40 inch lbs. In the sequence shown. Refer to the Illustrations in this section.

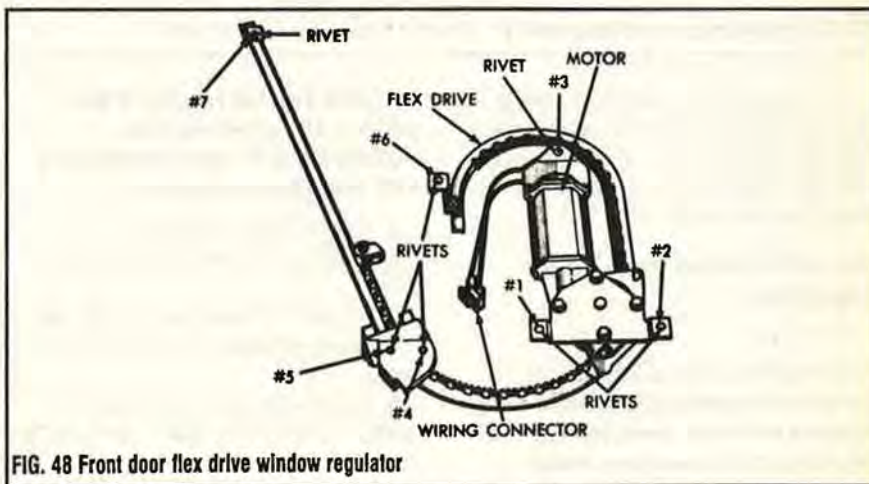


FIG. 48 Front door flex drive window regulator

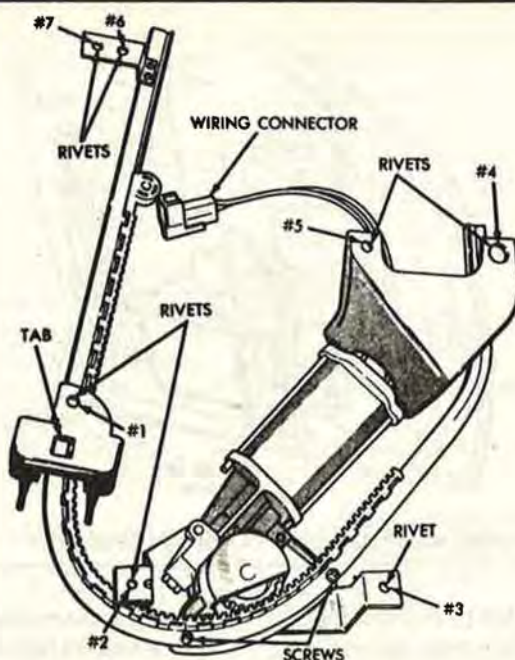


FIG. 49 Rear door flex drive window regulator

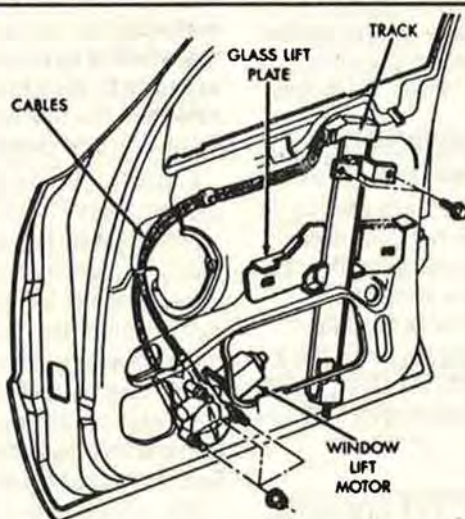


FIG. 50 Front door power window assembly — Ac and AY body style Chrysler cars

9. Connect the motor electrical connector. Reconnect the battery. Position the window drive so the flex rack fitting lines up with the window drive arm. Install the screw and torque to 40 inch lbs. Remove the window prop.

Cars w/Cable And Drum Type Regulators

♦ SEE FIG. 50

➔ **The window lift motor is not serviced separately. Removal of the window lift motor from the the regulator will cause the assist**

spring to unwind rapidly. If the window lift motor requires replacement, it must be replaced with the window regulator.

1. Remove the door trim panel.
2. Disconnect window lift plate from the glass.
3. Disconnect window track from the door.
4. Disconnect window lift motor and drive cables.
5. Disconnect electrical connections. Carefully remove window track, cables and lift motor assembly from the door.

6. Installation is the reverse of the removal procedure. Refer to the illustration this section.

Windshield Glass

REMOVAL & INSTALLATION

♦ SEE FIGS. 50A-50F

It is difficult to salvage a windshield during the removal operation. THE WINDSHIELD IS PART OF THE STRUCTURAL SUPPORT FOR THE ROOF. The urethane bonding used to secure the windshield to the fence is difficult to cut or clean from any surface. If the mouldings are set in urethane, it would also be unlikely they could be salvaged. Before starting this glass repair check the availability of the necessary parts.

1. Remove the inside rear view mirror — refer to the necessary service procedures in this section.
2. Remove the wipers and cowl cover.

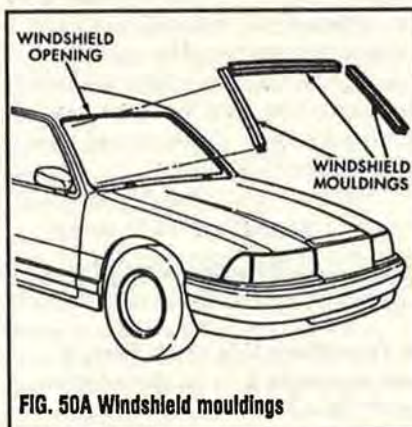


FIG. 50A Windshield mouldings



FIG. 50B Cutting urethane sealer around windshield



FIG. 50C Center windshield and mark at support spacers

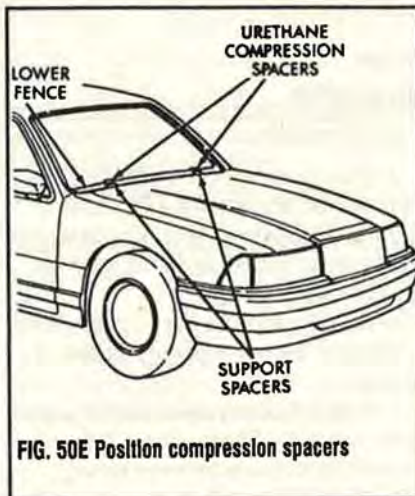


FIG. 50E Position compression spacers

3. Remove windshield mouldings.
4. Cut urethane bonding from around windshield using a suitable tool.
5. Separate windshield from the vehicle.

To Install:

➔ **Open the front door glass before installing windshield to avoid pressurizing the passenger compartment if a door or the trunk lid is slammed before urethane bonding is cured leaks can result. Allow the urethane sealer at least 5 hours to cure before returning the vehicle to use. The windshield fence should be cleaned of old bonding material. Support spacers should be cleaned and properly installed on weld studs or repair screws at bottom of windshield opening.**

6. Place the replacement windshield into windshield opening and position glass in the center of the opening against the support spacers.

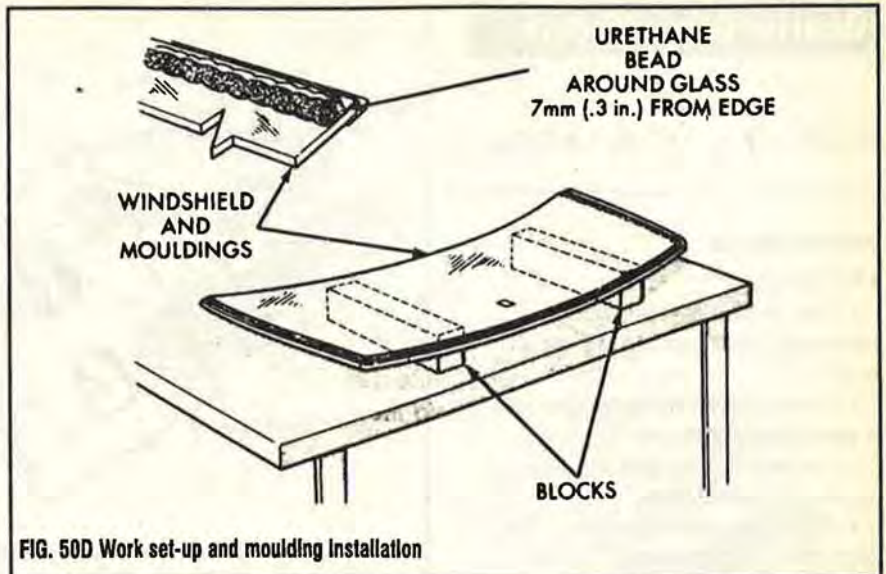


FIG. 50D Work set-up and moulding installation

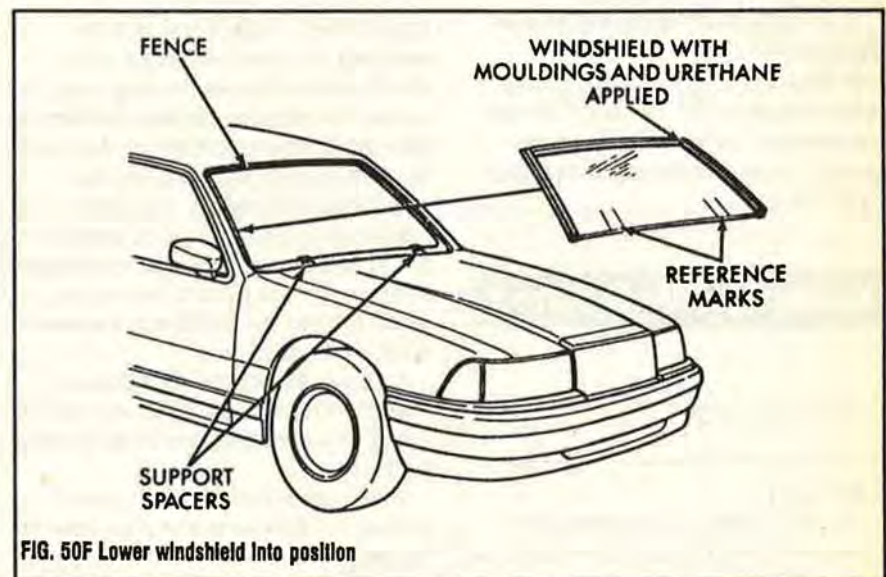


FIG. 50F Lower windshield into position

7. Mark glass at the support spacers with masking tape to use as a reference for installation. Remove the replacement windshield from the windshield opening.

8. Position the windshield inside up on a suitable work surface. Clean inside of glass — apply clear glass primer 1 in. (25mm) wide around the perimeter of the windshield and wipe clean.

9. Install mouldings on windshield. Apply black-out primer 0.75 in. (19mm) wide on top and sides of windshield and 1 in. (25mm) on bottom of windshield. Allow at least 30 minutes drying time.

10. Position windshield bonding compression spacers on lower fence above the support spacers at the edge of the windshield opening.

11. Apply a 0.04 in. (1mm) bead of urethane around perimeter of windshield along the inside of the mouldings.

12. Position the windshield over the opening — align the reference marks at the bottom of the windshield to the support spacers.

13. Slowly lower windshield glass to windshield opening fence. Guide the top molding into proper position if necessary.

14. Push windshield inward to fence spacers at bottom and until top molding is flush to roof line.

15. Clean access urethane from exterior. Install cowl cover and wipers.

16. Install inside rear view mirror.

17. After repair has cured, water test windshield if necessary.

Quarter Glass Module

REMOVAL & INSTALLATION

Daytona Series

♦ SEE FIG. 50G

1. Remove the quarter trim panel as necessary to gain access to quarter glass module.
2. Remove nuts holding quarter glass module to quarter glass opening.
3. Cut urethane sealer around perimeter of quarter glass opening fence.
4. Push quarter glass module from quarter glass opening. separate module from vehicle.

To Install:

5. Clean all surfaces of opening fence and glass module.
6. Prepare fence and glass module using method described in the "Windshield removal and installation" service procedures in this section. Reverse the necessary removal steps for installation.

Inside Rear View Mirror

REPLACEMENT

♦ SEE FIG. 51

The mirror is mechanically attached to the mirror button, and if it should become cracked or develop a mechanical problem which prevents easy adjustment, it can be replaced very simply by disconnecting it from the button. The button,

in turn, serves to mount the mirror to the windshield. If it should be damaged or the adhesive bond should become partly broken, it can be removed and replaced after the mirror is detached. Note that removal of the button and/or remaining adhesive requires the use of a controllable electric heat gun. Also needed, if the button must be replaced, are a rag soaked in alcohol, ordinary kitchen cleanser, and fine-grit sandpaper. The new button is installed using a special adhesive kit 4054099 or an equivalent available in the aftermarket.

1. Loosen the setscrew with a standard screwdriver until all tension is removed. Slide the base of the mirror upward and off the mounting button.
2. If the mirror mounting button must be removed, first mark the location of the button on the outside of the windshield with a wax pencil. Then, apply low heat with the electric heat gun to soften the vinyl. When it is soft, peel the button off the glass.

3. Clean the surface of the windshield where the button was mounted with a rag soaked in alcohol and the cleanser. Then, wipe the surface with an alcohol soaked rag. Do not touch this area of the windshield glass!

4. Crush the vial in the plastic housing of the accelerator in the new button kit to saturate the applicator.

5. Remove the paper sleeve and then apply a generous amount of the accelerator to the onto the mounting surface of the mirror button.

6. Allow the accelerator to dry for 5 minutes; during this time, be careful not to touch the mounting surface of the button.

7. Apply a thin film of the accelerator to the inner surface of the windshield where the button will be mounted. Allow this to dry for 1 minute.

8. Apply one drop of the adhesive to the center of the mounting surface of the button. Then, use the bottom of the adhesive tube, distribute the adhesive evenly over the entire button bonding surface.

➡ **Precise alignment of the button is essential in the following step from the beginning, as the adhesive sets up very fast!**

9. Position the bottom edge of the button against the lower edge of the mark made earlier with the button lined up side-to-side. Then, rock the button upward until it touches the windshield over its entire surface. Press it firmly to the glass and hold it there firmly for 1 full minute.

10. Remove the pressure, but allow 5 minutes more time for the button mounting adhesive to dry.

11. With an alcohol-dampened cloth, remove any adhesive which may have spread beyond the mounting surface of the button.

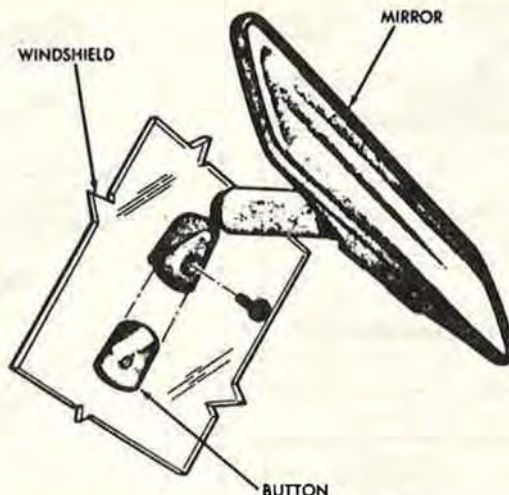


FIG. 51 Mounting of the rearview mirror to the button and windshield

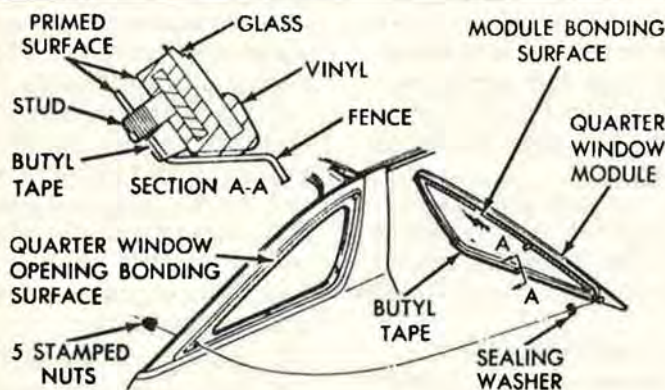


FIG. 50G Quarter glass module — Dodge Daytona

➡ Be careful not to over-tighten the mirror mounting screw in the following procedure, as the mirror mounting button could be distorted, destroying its bond with the windshield.

12. Slide the mirror downward and over the mount. Tighten the screw gently!

Seats

REMOVAL & INSTALLATION

➡ Use these service procedures as a guide for all models/years. Refer to the "Seat Assembly" illustrations as necessary.

Caravelle, 600, New Yorker Turbo

♦ SEE FIG. 52

FRONT

1. Move the seat forward all the way. Then, remove the mounting nuts from the vertical studs welded into the floor (one on each side).

2. Move the seat all the way to the rear. On all but power bench seats, there are 2 bolts, oriented horizontally, on either side (on power bench there is only 1). Remove the bolts.

3. If the car has power seats, disconnect the battery and then disconnect the motor electrical connector. Remove the seat from the car by lifting upward on the rear until the stud clears the

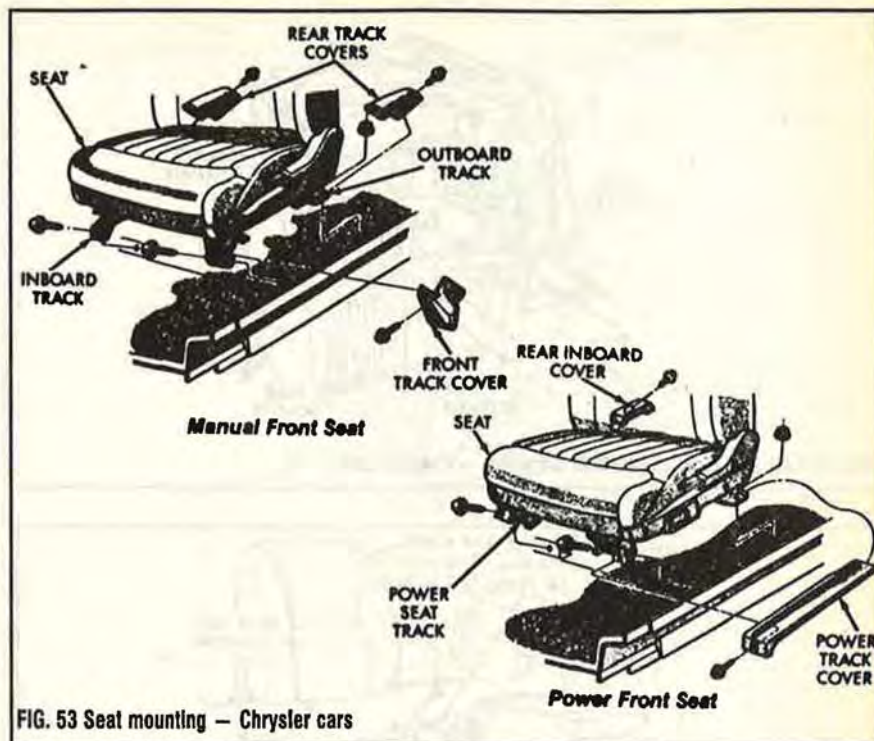


FIG. 53 Seat mounting — Chrysler cars

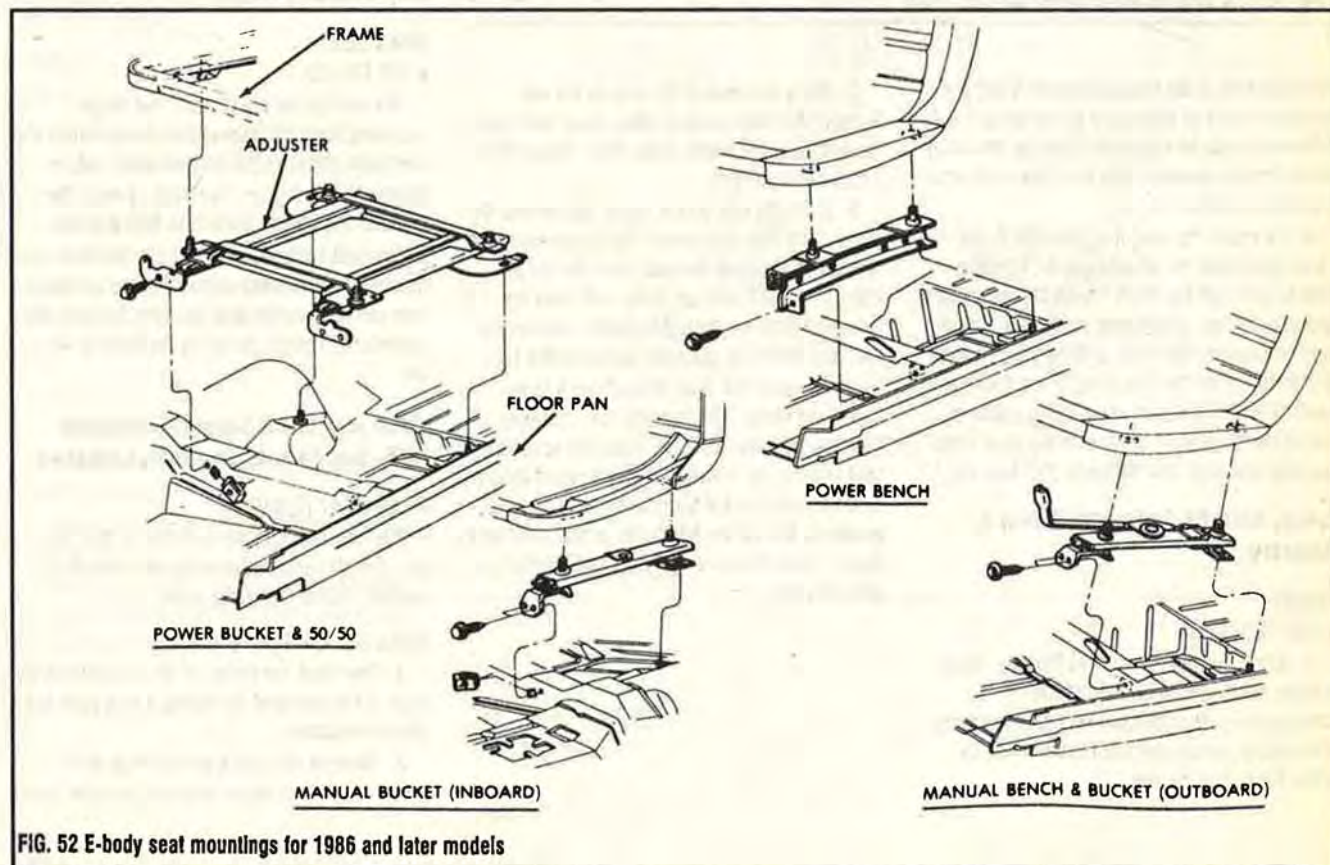


FIG. 52 E-body seat mountings for 1986 and later models

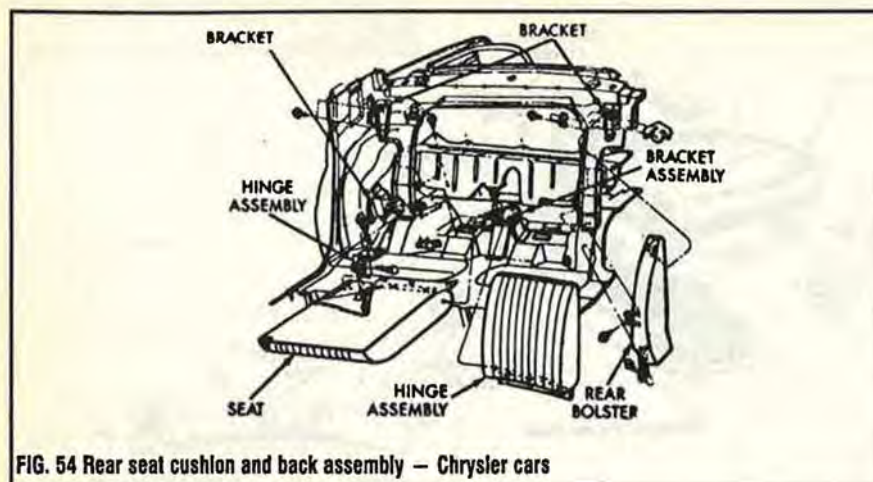


FIG. 54 Rear seat cushion and back assembly — Chrysler cars

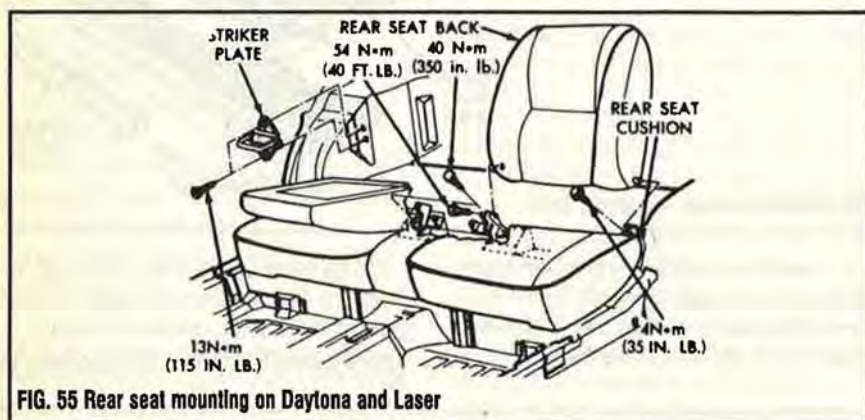


FIG. 55 Rear seat mounting on Daytona and Laser

mounting hole in the frame and then lifting and angling the seat as necessary to maneuver it out. If the seat must be detached from the mounting frame, remove the four nuts from the studs and separate the two.

4. To install the seat, first, attach it to the frame and install the attaching nuts, torquing them to 250 inch lbs. Then, install the assembled seat into the car, positioning the forward mount over the beam on the floor, shifting the seat side-to-side to line up the bolt holes in the frame and beam. Then, tilt the seat rearward to cause the rear of the frame to sit down over the stud. Install the bolts and nuts and torque to 250 inch lbs.

Aries, Reliant, LeBaron, Town & Country

FRONT

♦ SEE FIGS. 53-54

1. Move the seat forward all the way. Then, remove the mounting bolts from the crossmember. Note that bucket seats use a nut and washer, accessible from underneath, to retain the bolt at the rear.

2. Move the seat all the way to the rear. Remove the bolts (one on either side) that retain the seat adjuster frame at the front. These sit in a horizontal position.

3. If the car has power seats, disconnect the battery and then disconnect the motor electrical connector. Remove the seat from the car by lifting it upward and out. If the seat must be detached from the mounting frame, remove the four nuts from the studs and separate the two.

4. To install the seat, first, attach it to the frame and install the attaching nuts, torquing them to 250 inch lbs. Then, install the assembled seat into the car, positioning the forward mount over the beam on the floor, shifting the seat side-to-side to line up the bolt holes in the frame and beam. Install the bolts and nuts and torque to 250 inch lbs.

1986 and Later Caravelle, 600, New Yorker Turbo Aries, Reliant, LeBaron, Town & Country

REAR BENCH SEAT

1. To remove the rear cushion, remove the 2 screws from the underside of the front of the rear seat cushion. Remove the cushion from the vehicle.

2. To remove the seat back, remove the 2 screws from the bottom/rear of the seat back. Then, unsnap the 2 seatbelt retainers. Lift the seat back upward to disengage the seat back wires from the support pockets.

3. Install the seat back and rear cushion by reversing the removal procedure.

Daytona, Laser, Lancer, LeBaron GTS, LeBaron, Sundance & Shadow

FRONT SEAT

1. Move the seat forward all the way. Remove the mounting nuts attaching the seat to the floor at the rear.

2. Move the seat all the way to the rear and remove the two seat frame-to-crossmember bolts, located horizontally, from the front on either side. Remove the seat.

3. Install in reverse order, torquing the nuts/bolts to 250 inch lbs.

Daytona and Laser

REAR SEAT

♦ SEE FIG. 55

The seat backs are hinged. The hinge mounting bolts are accessible directly under the seat back. Remove the bolt on either side to remove the seat back. To install, reverse the procedure, torquing the bolt to 350 inch lbs.

The seat cushions are bolted to the floor pan. Remove the mounting bolt at the rear on either side and remove the seat cushion. Reverse the procedure to install, torquing the bolts to 40 ft. lbs.

1986 and Later Lancer, LeBaron GTS, Sundance, Shadow, LeBaron

REAR SEAT CUSHION

The rear seat cushion is bolted to the floor pan. Simply remove the bolts and remove the cushion. Install in reverse order.

REAR BENCH SEAT BACK

1. Peel back the corner of the carpet from the back of the rear seat by pulling it free from the Velcro® retainers.

2. Remove the seat back-to-hinge arm screws from both sides. Remove the seat back.

3. Reverse this procedure to install the seat back.

REAR 60/40 SEAT BACK

To remove the seat back, simply remove the seat back-to-hinge arm screws from the seat back. Then, remove the seat back. Reverse the procedure to install the seat back.

1981-85 Cars

REAR SEAT CUSHION AND BACK

1. To remove the rear seat cushion, remove the 2 screws from the underside of the rear seat cushion and remove it from the vehicle. Install it in reverse order.

2. To remove the seat back, first remove the 2 screws from the bottom of the seat back. Then, unsnap the 2 seat belt retainers.

3. Remove the seat back by lifting it upward so as to disengage the seat back retaining wires from the support pockets.

4. To install the seat back, lower it into position so as to engage the retaining wires.

Seat Belt Systems

REMOVAL & INSTALLATION

Front

♦ SEE FIG. 55A

1. Remove the necessary trim panel(s).
2. Remove the bolt holding seat belt retractor to B-pillar.
3. Separate retractor from the vehicle.
4. Installation is the reverse of the removal procedure. Refer to the illustrations. Torque for seat belt retaining bolts is 350 inch lbs.

Rear

♦ SEE FIG. 55B

1. Remove the necessary trim panel(s).
2. Remove the bolt holding lap belt to floor at wheelhouse pickup.
3. Remove the bolt holding seat belt retractor to quarter panel.
4. Installation is the reverse of the removal procedure. Refer to the illustrations. Torque for seat belt retaining bolts is 350 inch lbs.

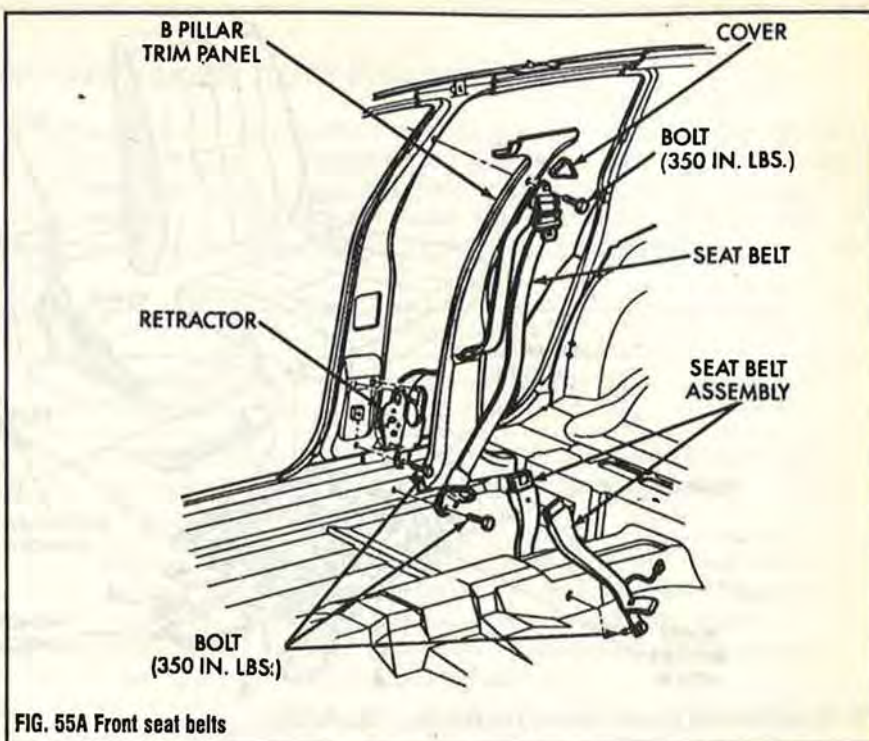


FIG. 55A Front seat belts

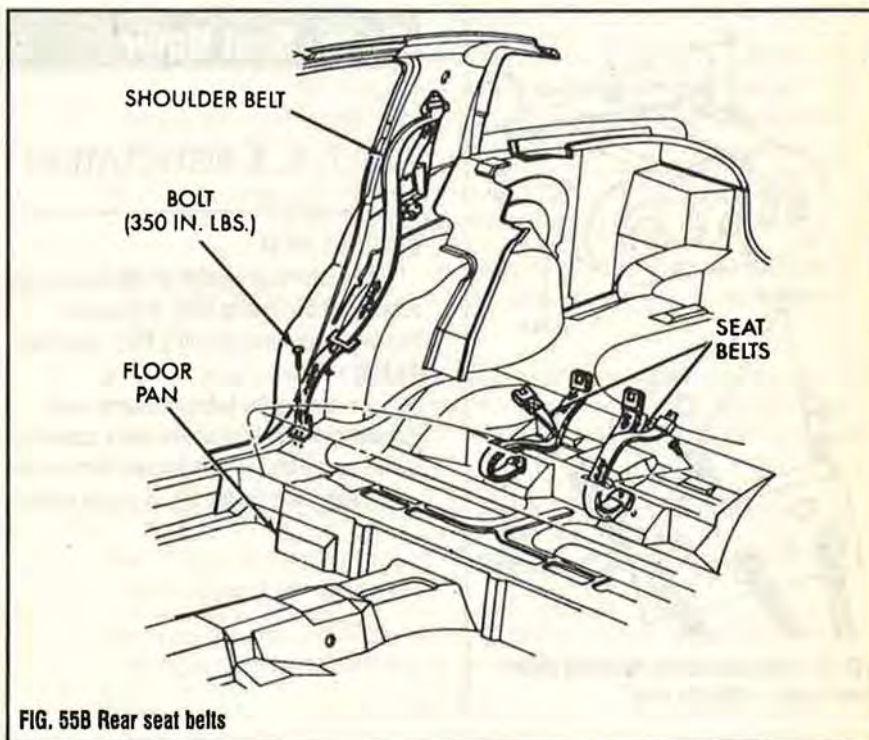


FIG. 55B Rear seat belts

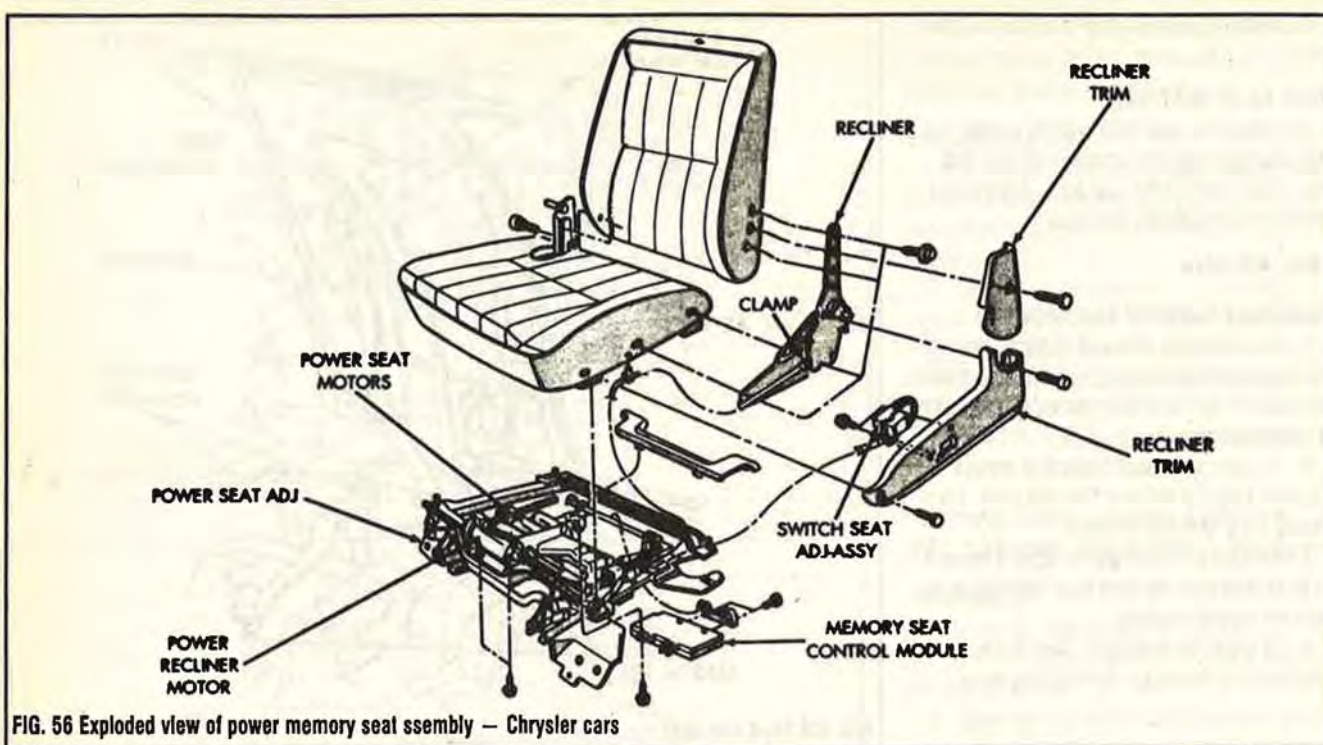


FIG. 56 Exploded view of power memory seat assembly — Chrysler cars

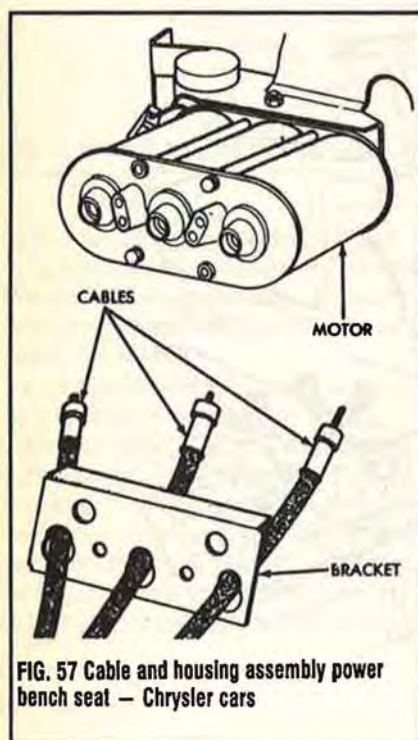


FIG. 57 Cable and housing assembly power bench seat — Chrysler cars

Power Seat Motor

REMOVAL & INSTALLATION

♦ SEE FIGS. 56-57

1. Move the seat adjuster as required for easy access to the mounting bolts, if possible. Remove the adjuster mounting bolts/nuts from the floor pan.
2. Disconnect the battery negative cable. Disconnect the wiring harness motor connector at the carpet. Then, remove the seat from the car.
3. Lay the seat on its back on a clean surface.

Then, remove the motor mounting screws from the motor bracket and the single mounting bolt from the adjuster.

4. Note the routing of cable to the motor. Then, carefully disconnect the housing and cables from the motor assembly. Remove the motor.

5. To install the motor, first position it in its mounted position. Then, connect the cables and the housing to the motor.

6. Install the transmission-to-motor mounting screws. Install the bolt fastening the motor to the adjuster. Then, install the seat in reverse of the removal procedure. Reconnect the wiring harness connector and the battery negative cable. Check seat for proper operation.

How to Remove Stains from Fabric Interior

For best results, spots and stains should be removed as soon as possible. Never use gasoline, lacquer thinner, acetone, nail polish remover or bleach. Use a 3' x 3" piece of cheesecloth. Squeeze most of the liquid from the fabric and wipe the stained fabric from the outside of the stain toward the center with a lifting motion. Turn the cheesecloth as soon as one side becomes soiled. When using water to remove a stain, be sure to wash the entire section after the spot has been removed to avoid water stains. Encrusted spots can be broken up with a dull knife and vacuumed before removing the stain.

Type of Stain	How to Remove It
Surface spots	Brush the spots out with a small hand brush or use a commercial preparation such as K2R to lift the stain.
Mildew	Clean around the mildew with warm suds. Rinse in cold water and soak the mildew area in a solution of 1 part table salt and 2 parts water. Wash with upholstery cleaner.
Water stains	Water stains in fabric materials can be removed with a solution made from 1 cup of table salt dissolved in 1 quart of water. Vigorously scrub the solution into the stain and rinse with clear water. Water stains in nylon or other synthetic fabrics should be removed with a commercial type spot remover.
Chewing gum, tar, crayons, shoe polish (greasy stains)	Do not use a cleaner that will soften gum or tar. Harden the deposit with an ice cube and scrape away as much as possible with a dull knife. Moisten the remainder with cleaning fluid and scrub clean.
Ice cream, candy	Most candy has a sugar base and can be removed with a cloth wrung out in warm water. Oily candy, after cleaning with warm water, should be cleaned with upholstery cleaner. Rinse with warm water and clean the remainder with cleaning fluid.
Wine, alcohol, egg, milk, soft drink (non-greasy stains)	Do not use soap. Scrub the stain with a cloth wrung out in warm water. Remove the remainder with cleaning fluid.
Grease, oil, lipstick, butter and related stains	Use a spot remover to avoid leaving a ring. Work from the outside of the stain to the center and dry with a clean cloth when the spot is gone.
Headliners (cloth)	Mix a solution of warm water and foam upholstery cleaner to give thick suds. Use only foam—liquid may streak or spot. Clean the entire headliner in one operation using a circular motion with a natural sponge.
Headliner (vinyl)	Use a vinyl cleaner with a sponge and wipe clean with a dry cloth.
Seats and door panels	Mix 1 pint upholstery cleaner in 1 gallon of water. Do not soak the fabric around the buttons.
Leather or vinyl fabric	Use a multi-purpose cleaner full strength and a stiff brush. Let stand 2 minutes and scrub thoroughly. Wipe with a clean, soft rag.
Nylon or synthetic fabrics	For normal stains, use the same procedures you would for washing cloth upholstery. If the fabric is extremely dirty, use a multi-purpose cleaner full strength with a stiff scrub brush. Scrub thoroughly in all directions and wipe with a cotton towel or soft rag.

10-32 BODY

TORQUE SPECIFICATIONS

Component	English	Metric
Grade 5 Bolts		
1/4-20:	95 inch lbs.	11 Nm
1/4-28:	95 inch lbs.	11 Nm
5/16-18:	200 inch lbs.	23 Nm
5/16-24:	20 ft. lbs.	27 Nm
3/8-16:	30 ft. lbs.	41 Nm
3/8-24:	35 ft. lbs.	48 Nm
7/16-14:	50 ft. lbs.	68 Nm
7/16-20:	55 ft. lbs.	75 Nm
1/2-13:	75 ft. lbs.	102 Nm
1/2-20:	85 ft. lbs.	115 Nm
9/16-12:	105 ft. lbs.	142 Nm
9/16-18:	115 ft. lbs.	156 Nm
5/8-11:	150 ft. lbs.	203 Nm
Grade 8 Bolts		
1/4-20:	125 inch lbs.	14 Nm
1/4-28:	150 inch lbs.	17 Nm
5/16-18:	270 inch lbs.	31 Nm
5/16-24:	25 ft. lbs.	34 Nm
3/8-16:	40 ft. lbs.	54 Nm
3/8-24:	45 ft. lbs.	61 Nm
7/16-14:	65 ft. lbs.	88 Nm
7/16-20:	70 ft. lbs.	95 Nm
1/2-13:	100 ft. lbs.	136 Nm
1/2-20:	110 ft. lbs.	149 Nm
9/16-12:	135 ft. lbs.	183 Nm
9/16-18:	150 ft. lbs.	203 Nm

GLOSSARY

AIR/FUEL RATIO: The ratio of air to gasoline by weight in the fuel mixture drawn into the engine.

AIR INJECTION: One method of reducing harmful exhaust emissions by injecting air into each of the exhaust ports of an engine. The fresh air entering the hot exhaust manifold causes any remaining fuel to be burned before it can exit the tailpipe.

ALTERNATOR: A device used for converting mechanical energy into electrical energy.

AMMETER: An instrument, calibrated in amperes, used to measure the flow of an electrical current in a circuit. Ammeters are always connected in series with the circuit being tested.

AMPERE: The rate of flow of electrical current present when one volt of electrical pressure is applied against one ohm of electrical resistance.

ANALOG COMPUTER: Any microprocessor that uses similar (analogous) electrical signals to make its calculations.

ARMATURE: A laminated, soft iron core wrapped by a wire that converts electrical energy to mechanical energy as in a motor or relay. When rotated in a magnetic field, it changes mechanical energy into electrical energy as in a generator.

ATMOSPHERIC PRESSURE: The pressure on the Earth's surface caused by the weight of the air in the atmosphere. At sea level, this pressure is 14.7 psi at 32°F (101 kPa at 0°C).

ATOMIZATION: The breaking down of a liquid into a fine mist that can be suspended in air.

AXIAL PLAY: Movement parallel to a shaft or bearing bore.

BACKFIRE: The sudden combustion of gases in the intake or exhaust system that results in a loud explosion.

BACKLASH: The clearance or play between two parts, such as meshed gears.

BACKPRESSURE: Restrictions in the exhaust system that slow the exit of exhaust gases from the combustion chamber.

BAKELITE: A heat resistant, plastic insulator material commonly used in printed circuit boards and transistorized components.

BALL BEARING: A bearing made up of hardened inner and outer races between which hardened steel balls roll.

BALLAST RESISTOR: A resistor in the primary ignition circuit that lowers voltage after the engine is started to reduce wear on ignition components.

BEARING: A friction reducing, supportive device usually located between a stationary part and a moving part.

BIMETAL TEMPERATURE SENSOR: Any sensor or switch made of two dissimilar types of metal that bend when heated or cooled due to the different expansion rates of the alloys. These types of sensors usually function as an on/off switch.

BLOWBY: Combustion gases, composed of water vapor and unburned fuel, that leak past the piston rings into the crankcase during normal engine operation. These gases are removed by the PCV system to prevent the buildup of harmful acids in the crankcase.

BRAKE PAD: A brake shoe and lining assembly used with disc brakes.

BRAKE SHOE: The backing for the brake lining. The term is, however, usually applied to the assembly of the brake backing and lining.

BUSHING: A liner, usually removable, for a bearing; an anti-friction liner used in place of a bearing.

BYPASS: System used to bypass ballast resistor during engine cranking to increase voltage supplied to the coil.

CALIPER: A hydraulically activated device in a disc brake system, which is mounted straddling the brake rotor (disc). The caliper contains at least one piston and two brake pads. Hydraulic pressure on the piston(s) forces the pads against the rotor.

CAMSHAFT: A shaft in the engine on which are the lobes (cams) which operate the valves. The camshaft is driven by the crankshaft, via a belt, chain or gears, at one half the crankshaft speed.

CAPACITOR: A device which stores an electrical charge.

CARBON MONOXIDE (CO): A colorless, odorless gas given off as a normal byproduct of combustion. It is poisonous and extremely dangerous in confined areas, building up slowly to toxic levels without warning if adequate ventilation is not available.

CARBURETOR: A device, usually mounted on the intake manifold of an engine, which mixes the air and fuel in the proper proportion to allow even combustion.

CATALYTIC CONVERTER: A device installed in the exhaust system, like a muffler, that converts harmful byproducts of combustion into carbon dioxide and water vapor by means of a heat-producing chemical reaction.

CENTRIFUGAL ADVANCE: A mechanical method of advancing the spark timing by using fly weights in the distributor that react to centrifugal force generated by the distributor shaft rotation.

CHECK VALVE: Any one-way valve installed to permit the flow of air, fuel or vacuum in one direction only.

CHOKE: A device, usually a movable valve, placed in the intake path of a carburetor to restrict the flow of air.

CIRCUIT: Any unbroken path through which an electrical current can flow. Also used to describe fuel flow in some instances.

CIRCUIT BREAKER: A switch which protects an electrical circuit from overload by opening the circuit when the current flow exceeds a predetermined level. Some circuit breakers must be reset manually, while most reset automatically.

COIL (IGNITION): A transformer in the ignition circuit which steps up the voltage provided to the spark plugs.

10-34 GLOSSARY

COMBINATION MANIFOLD: An assembly which includes both the intake and exhaust manifolds in one casting.

COMBINATION VALVE: A device used in some fuel systems that routes fuel vapors to a charcoal storage canister instead of venting them into the atmosphere. The valve relieves fuel tank pressure and allows fresh air into the tank as the fuel level drops to prevent a vapor lock situation.

COMPRESSION RATIO: The comparison of the total volume of the cylinder and combustion chamber with the piston at BDC and the piston at TDC.

CONDENSER: 1. An electrical device which acts to store an electrical charge, preventing voltage surges.

2. A radiator-like device in the air conditioning system in which refrigerant gas condenses into a liquid, giving off heat.

CONDUCTOR: Any material through which an electrical current can be transmitted easily.

CONTINUITY: Continuous or complete circuit. Can be checked with an ohmmeter.

COUNTERSHAFT: An intermediate shaft which is rotated by a mainshaft and transmits, in turn, that rotation to a working part.

CRANKCASE: The lower part of an engine in which the crankshaft and related parts operate.

CRANKSHAFT: The main driving shaft of an engine which receives reciprocating motion from the pistons and converts it to rotary motion.

CYLINDER: In an engine, the round hole in the engine block in which the piston(s) ride.

CYLINDER BLOCK: The main structural member of an engine in which is found the cylinders, crankshaft and other principal parts.

CYLINDER HEAD: The detachable portion of the engine, fastened, usually, to the top of the cylinder block, containing all or most of the combustion chambers. On overhead valve engines, it contains the valves and their operating parts. On overhead cam engines, it contains the camshaft as well.

DEAD CENTER: The extreme top or bottom of the piston stroke.

DETONATION: An unwanted explosion of the air/fuel mixture in the combustion chamber caused by excess heat and compression, advanced timing, or an overly lean mixture. Also referred to as "ping".

DIAPHRAGM: A thin, flexible wall separating two cavities, such as in a vacuum advance unit.

DIESELING: A condition in which hot spots in the combustion chamber cause the engine to run on after the key is turned off.

DIFFERENTIAL: A geared assembly which allows the transmission of motion between drive axles, giving one axle the ability to turn faster than the other.

DIODE: An electrical device that will allow current to flow in one direction only.

DISC BRAKE: A hydraulic braking assembly consisting of a brake disc, or rotor, mounted on an axle, and a caliper assembly containing, usually two brake pads which are activated by hydraulic pressure. The pads are forced against the sides of the disc, creating friction which slows the vehicle.

DISTRIBUTOR: A mechanically driven device on an engine which is responsible for electrically firing the spark plug at a predetermined point of the piston stroke.

DOWEL PIN: A pin, inserted in mating holes in two different parts allowing those parts to maintain a fixed relationship.

DRUM BRAKE: A braking system which consists of two brake shoes and one or two wheel cylinders, mounted on a fixed backing plate, and a brake drum, mounted on an axle, which revolves around the assembly. Hydraulic action applied to the wheel cylinders forces the shoes outward against the drum, creating friction, slowing the vehicle.

DWELL: The rate, measured in degrees of shaft rotation, at which an electrical circuit cycles on and off.

ELECTRONIC CONTROL UNIT

(ECU): Ignition module, amplifier or igniter. See Module for definition.

ELECTRONIC IGNITION: A system in which the timing and firing of the spark plugs is controlled by an electronic control unit, usually called a module. These systems have no points or condenser.

ENDPLAY: The measured amount of axial movement in a shaft.

ENGINE: A device that converts heat into mechanical energy.

EXHAUST MANIFOLD: A set of cast passages or pipes which conduct exhaust gases from the engine.

FEELER GAUGE: A blade, usually metal, of precisely predetermined thickness, used to measure the clearance between two parts. These blades usually are available in sets of assorted thicknesses.

F-HEAD: An engine configuration in which the intake valves are in the cylinder head, while the camshaft and exhaust valves are located in the cylinder block. The camshaft operates the intake valves via lifters and pushrods, while it operates the exhaust valves directly.

FIRING ORDER: The order in which combustion occurs in the cylinders of an engine. Also the order in which spark is distributed to the plugs by the distributor.

FLATHEAD: An engine configuration in which the camshaft and all the valves are located in the cylinder block.

FLOODING: The presence of too much fuel in the intake manifold and combustion chamber which prevents the air/fuel mixture from firing, thereby causing a no-start situation.

FLYWHEEL: A disc shaped part bolted to the rear end of the crankshaft. Around the outer perimeter is affixed the ring gear. The starter drive engages the ring gear, turning the flywheel, which rotates the crankshaft, imparting the initial starting motion to the engine.

FOOT POUND (ft.lb. or sometimes, ft. lbs.): The amount of energy or work needed to raise an item weighing one pound, a distance of one foot.

FUSE: A protective device in a circuit which prevents circuit overload by breaking the circuit when a specific amperage is present. The device is constructed around a strip or wire of a lower amperage rating than the circuit it is designed to protect. When an amperage higher than that stamped on the fuse is present in the circuit, the strip or wire melts, opening the circuit.

GEAR RATIO: The ratio between the number of teeth on meshing gears.

GENERATOR: A device which converts mechanical energy into electrical energy.

HEAT RANGE: The measure of a spark plug's ability to dissipate heat from its firing end. The higher the heat range, the hotter the plug fires.

HUB: The center part of a wheel or gear.

HYDROCARBON (HC): Any chemical compound made up of hydrogen and carbon. A major pollutant formed by the engine as a byproduct of combustion.

HYDROMETER: An instrument used to measure the specific gravity of a solution.

INCH POUND (in.lb. or sometimes, in. lbs.): One twelfth of a foot pound.

INDUCTION: A means of transferring electrical energy in the form of a magnetic field. Principle used in the ignition coil to increase voltage.

INJECTION PUMP: A device, usually mechanically operated, which meters and delivers fuel under pressure to the fuel injector.

INJECTOR: A device which receives metered fuel under relatively low pressure and is activated to inject the fuel into the engine under relatively high pressure at a predetermined time.

INPUT SHAFT: The shaft to which torque is applied, usually carrying the driving gear or gears.

INTAKE MANIFOLD: A casting of passages or pipes used to conduct air or a fuel/air mixture to the cylinders.

JOURNAL: The bearing surface within which a shaft operates.

KEY: A small block usually fitted in a notch between a shaft and a hub to prevent slippage of the two parts.

MANIFOLD: A casting of passages or set of pipes which connect the cylinders to an inlet or outlet source.

MANIFOLD VACUUM: Low pressure in an engine intake manifold formed just below the throttle plates. Manifold vacuum is highest at idle and drops under acceleration.

MASTER CYLINDER: The primary fluid pressurizing device in a hydraulic system. In automotive use, it is found in brake and hydraulic clutch systems and is pedal activated, either directly or, in a power brake system, through the power booster.

MODULE: Electronic control unit, amplifier or igniter of solid state or integrated design which controls the current flow in the ignition primary circuit based on input from the pick-up coil. When the module opens the primary circuit, the high secondary voltage is induced in the coil.

NEEDLE BEARING: A bearing which consists of a number (usually a large number) of long, thin rollers.

OHM:(Ω) The unit used to measure the resistance of conductor to electrical flow. One ohm is the amount of resistance that limits current flow to one ampere in a circuit with one volt of pressure.

OHMMETER: An instrument used for measuring the resistance, in ohms, in an electrical circuit.

OUTPUT SHAFT: The shaft which transmits torque from a device, such as a transmission.

OVERDRIVE: A gear assembly which produces more shaft revolutions than that transmitted to it.

OVERHEAD CAMSHAFT (OHC): An engine configuration in which the camshaft is mounted on top of the cylinder head and operates the valves either directly or by means of rocker arms.

OVERHEAD VALVE (OHV): An engine configuration in which all of the valves are located in the cylinder head and the camshaft is located in the cylinder block. The camshaft operates the valves via lifters and pushrods.

OXIDES OF NITROGEN (NOx): Chemical compounds of nitrogen produced as a byproduct of combustion. They combine with hydrocarbons to produce smog.

OXYGEN SENSOR: Used with the feedback system to sense the presence of oxygen in the exhaust gas and signal the computer which can reference the voltage signal to an air/fuel ratio.

PINION: The smaller of two meshing gears.

PISTON RING: An open ended ring which fits into a groove on the outer diameter of the piston. Its chief function is to form a seal between the piston and cylinder wall. Most automotive pistons have three rings: two for compression sealing; one for oil sealing.

PRELOAD: A predetermined load placed on a bearing during assembly or by adjustment.

PRIMARY CIRCUIT: Is the low voltage side of the ignition system which consists of the ignition switch, ballast resistor or resistance wire, bypass, coil, electronic control unit and pick-up coil as well as the connecting wires and harnesses.

PRESS FIT: The mating of two parts under pressure, due to the inner diameter of one being smaller than the outer diameter of the other, or vice versa; an interference fit.

RACE: The surface on the inner or outer ring of a bearing on which the balls, needles or rollers move.

REGULATOR: A device which maintains the amperage and/or voltage levels of a circuit at predetermined values.

RELAY: A switch which automatically opens and/or closes a circuit.

RESISTANCE: The opposition to the flow of current through a circuit or electrical device, and is measured in ohms. Resistance is equal to the voltage divided by the amperage.

RESISTOR: A device, usually made of wire, which offers a preset amount of resistance in an electrical circuit.

RING GEAR: The name given to a ring-shaped gear attached to a differential case, or affixed to a flywheel or as part of a planetary gear set.

ROLLER BEARING: A bearing made up of hardened inner and outer races between which hardened steel rollers move.

ROTOR: 1. The disc-shaped part of a disc brake assembly, upon which the brake pads bear; also called, brake disc.
2. The device mounted atop the distributor shaft, which passes current to the distributor cap tower contacts.

10-36 GLOSSARY

SECONDARY CIRCUIT: The high voltage side of the ignition system, usually above 20,000 volts. The secondary includes the ignition coil, coil wire, distributor cap and rotor, spark plug wires and spark plugs.

SENDING UNIT: A mechanical, electrical, hydraulic or electromagnetic device which transmits information to a gauge.

SENSOR: Any device designed to measure engine operating conditions or ambient pressures and temperatures. Usually electronic in nature and designed to send a voltage signal to an on-board computer, some sensors may operate as a simple on/off switch or they may provide a variable voltage signal (like a potentiometer) as conditions or measured parameters change.

SHIM: Spacers of precise, predetermined thickness used between parts to establish a proper working relationship.

SLAVE CYLINDER: In automotive use, a device in the hydraulic clutch system which is activated by hydraulic force, disengaging the clutch.

SOLENOID: A coil used to produce a magnetic field, the effect of which is to produce work.

SPARK PLUG: A device screwed into the combustion chamber of a spark ignition engine. The basic construction is a conductive core inside of a ceramic insulator, mounted in an outer conductive base. An electrical charge from the spark plug wire travels along the conductive core and jumps a preset air gap to a grounding point or points at the end of the conductive base. The resultant spark ignites the fuel/air mixture in the combustion chamber.

SPLINES: Ridges machined or cast onto the outer diameter of a shaft or inner diameter of a bore to enable parts to mate without rotation.

TACHOMETER: A device used to measure the rotary speed of an engine, shaft, gear, etc., usually in rotations per minute.

THERMOSTAT: A valve, located in the cooling system of an engine, which is closed when cold and opens gradually in response to engine heating, controlling the temperature of the coolant and rate of coolant flow.

TOP DEAD CENTER (TDC): The point at which the piston reaches the top of its travel on the compression stroke.

TORQUE: The twisting force applied to an object.

TORQUE CONVERTER: A turbine used to transmit power from a driving member to a driven member via hydraulic action, providing changes in drive ratio and torque. In automotive use, it links the driveplate at the rear of the engine to the automatic transmission.

TRANSDUCER: A device used to change a force into an electrical signal.

TRANSISTOR: A semi-conductor component which can be actuated by a small voltage to perform an electrical switching function.

TUNE-UP: A regular maintenance function, usually associated with the replacement and adjustment of parts and components in the electrical and fuel systems of a vehicle for the purpose of attaining optimum performance.

TURBOCHARGER: An exhaust driven pump which compresses intake air and forces it into the combustion chambers at higher than atmospheric pressures. The increased air pressure allows more fuel to be burned and results in increased horsepower being produced.

VACUUM ADVANCE: A device which advances the ignition timing in response to increased engine vacuum.

VACUUM GAUGE: An instrument used to measure the presence of vacuum in a chamber.

VALVE: A device which control the pressure, direction of flow or rate of flow of a liquid or gas.

VALVE CLEARANCE: The measured gap between the end of the valve stem and the rocker arm, cam lobe or follower that activates the valve.

VISCOSITY: The rating of a liquid's internal resistance to flow.

VOLTMETER: An instrument used for measuring electrical force in units called volts. Voltmeters are always connected parallel with the circuit being tested.

WHEEL CYLINDER: Found in the automotive drum brake assembly, it is a device, actuated by hydraulic pressure, which, through internal pistons, pushes the brake shoes outward against the drums.

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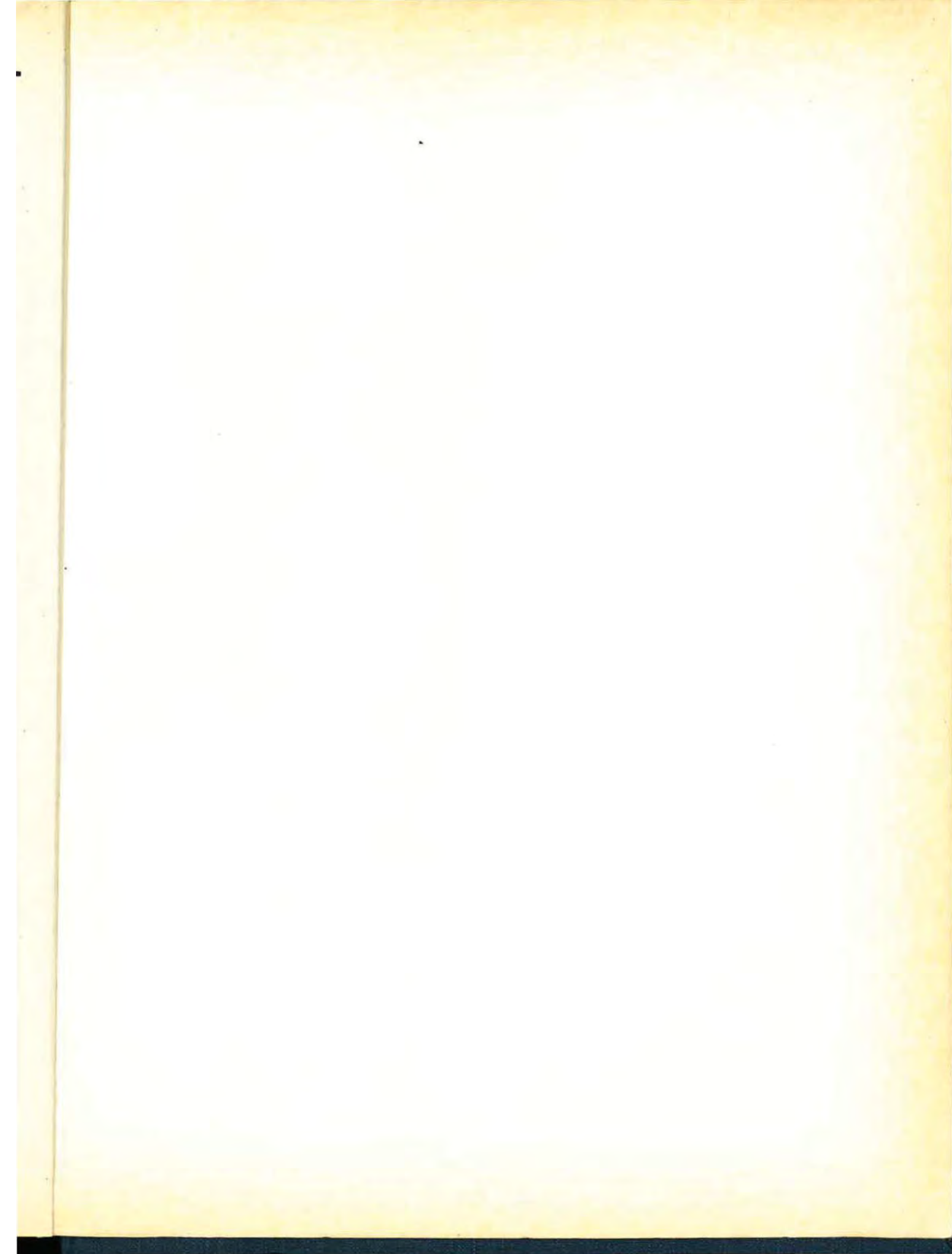
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