

SECTION 5C3

DIRECT TORQUE DRUM BRAKE ASSEMBLY

G-CARLINE

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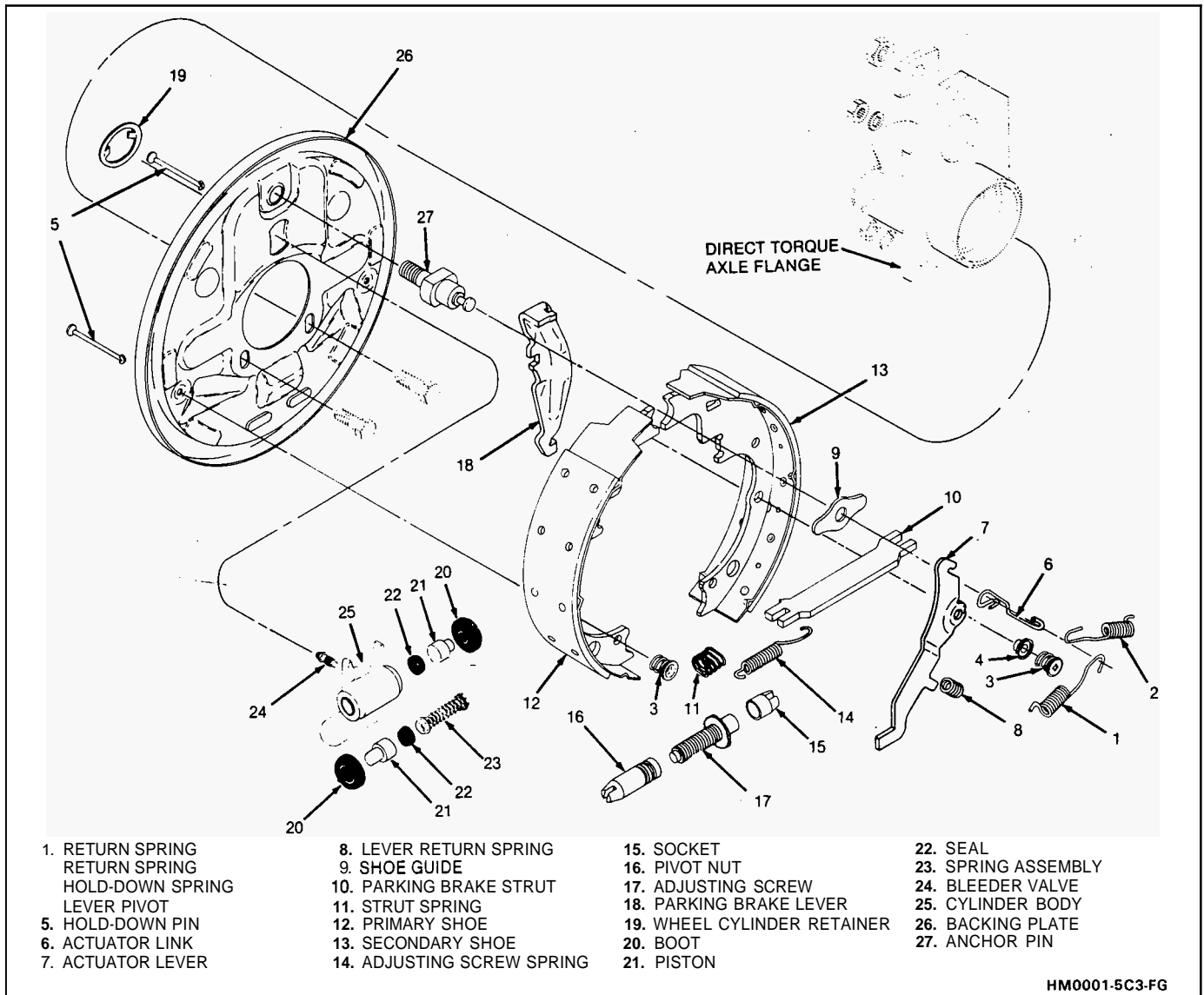


Figure 1

GENERAL DESCRIPTION

This drum brake assembly is a duo-servo, direct torque design. In the duo-servo brake, the force which the wheel cylinder applies to the primary shoe is multiplied by the primary lining friction to provide a very large force applied to the secondary shoe. With the direct torque design, torque from the brake shoes is transferred directly through the anchor pin to the axle flange. Adjustment for both the primary and secondary shoe and linings is automatic during reverse brake applications.

Important

- Replace all components included in repair kits used to service this drum brake.
- Lubricate parts as specified.
- Do not use lubricated shop air on brake parts as damage to rubber components may result.
- If any hydraulic components is removed or disconnected, it will be necessary to bleed all or part of the brake system.
- Replace shoe and linings in axle sets only.
- The torque values specified are for dry, unlubricated fasteners.
- ↷ Perform service operations on a clean bench free from all mineral oil materials.

CAUTION: When servicing brake parts, do not create dust by grinding or sanding brake linings or by cleaning wheel brake parts with a dry brush or with compressed air. A water dampened cloth should be used. Many brake parts contain asbestos fibers which can become airborne if dust is created during servicing. Breathing dust containing asbestos fibers may cause serious bodily harm.

ON-CAR SERVICE

BRAKE COMPONENTS

Tool Required:

- J 8049 Brake Spring Remover and Installer
- J 8057 Brake Spring Pliers
- J 29839 Brake Cylinder Retainer Remover

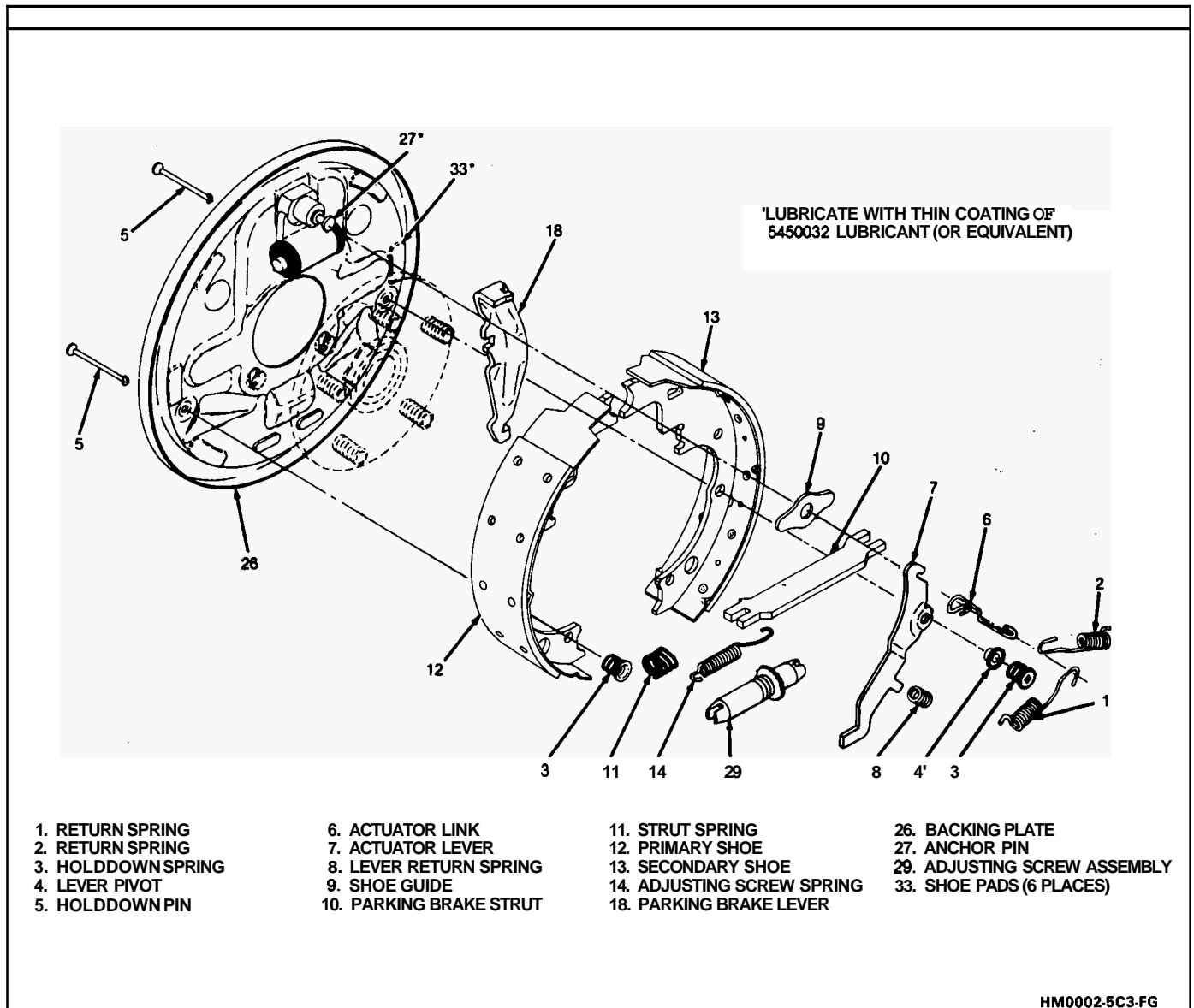
See Figures 2, 3 and 4

Remove or Disconnect

1. Raise car and suitably support, see Section OA.
 - Mark relationship of wheel to axle flange.
2. Wheel and tire.
 - Mark relationship of drum to axle flange.
3. Brake drum.
 - If difficulty is encountered in removing drum the following steps may be of assistance:
 - Make sure parking brake is released.
 - Back off parking brake cable adjustment.
 - Remove adjusting hole cover or knockout plate from backing plate and back off adjusting screw using screw driver and adjusting tool.
 - Use a rubber mallet to tap gently on outer rim of the drum and/or around inner drum diameter by spindle. Take care not to deform by excessive use of force.
4. Return springs (1 and 2) using J 8049 pliers.
5. Hold-down springs (3) and pins (5) using suitable pliers.
6. Lever pivot (4).
7. Actuator link (6) while lifting up on actuator lever (7).
8. Actuator lever (7) and lever return spring (8).
9. Shoe guide (9), parking brake strut (10) and strut spring (11).
10. Shoe and lining assemblies (12 and 13) after disconnecting parking brake cable.
11. Adjusting screw assembly (29) and spring (14).
12. Parking brake lever (18) by unhooking lever tab from secondary shoe (13) slot.
 - If any parts are of doubtful strength or quality due to discoloration from heat, over-stress, or are worn, the parts should be replaced.



Install or Connect

- See NOTICE on page 5-1.



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Figure 2 Brake Components

1. Parking brake lever (18) on secondary shoe (12) by hooking lever tab into secondary shoe (13).
-  **Inspect**
- o Threads of adjusting screw (17) for smooth rotation over full length.
-  **Clean**
- Adjusting screw assembly (29) may be cleaned in denatured alcohol.
 - o Apply brake lubricant P/N 5450032 or equivalent to the adjusting screw (17) threads, inside diameter of socket (15) and socket face.
 - o Adequate lubrication is achieved when a continuous bead of lubricant is at open end of pivot nut (16) and socket (15) when threads are fully engaged.
2. Adjusting screw assembly (29) and spring (14).
 3. Shoe and lining assemblies (12 and 13) after attaching parking brake cable. For cable adjustment see PARKING BRAKE ADJUSTMENT.
 4. Parking brake strut (10) and strut spring (11) by spreading shoes (12 and 13) apart. To be properly positioned.
 - o The end without the spring (11) should engage the parking brake lever (18) and shoe lining (12 and 13).
 - o The end with the spring should engage the opposite shoe and lining (12 or 13).
 5. Shoe guide (9), actuator lever (7) and lever return spring (8).
 6. Hold-down pins (5), lever pivot (4) and hold-down springs (3).
 7. Actuator link (6) on anchor pin (27).
 8. Actuator link (6) into actuator lever (7) while holding up on lever.
 9. Shoe return springs (1 and 2) using J 8057 pliers.
 10. Brake drum.
 11. Wheels and tires.

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- o Lower car.
- o Torque wheel nuts. See Section 3E WHEELS AND TIRES.

3. Measure drum inside diameter (ID) using J 21177-A.
4. Turning star wheel, adjust shoe and lining diameter to be **1.27 mm (0.050 in)** less than inside drum diameter for each rear wheel.
5. Install drums and wheels, aligning previous marks.
 - o Torque wheel nuts. See Section 3E WHEELS AND TIRES.
6. Make several alternate forward and reverse stops applying firm force to the brake pedal. Repeat until ample pedal reserve is built up.

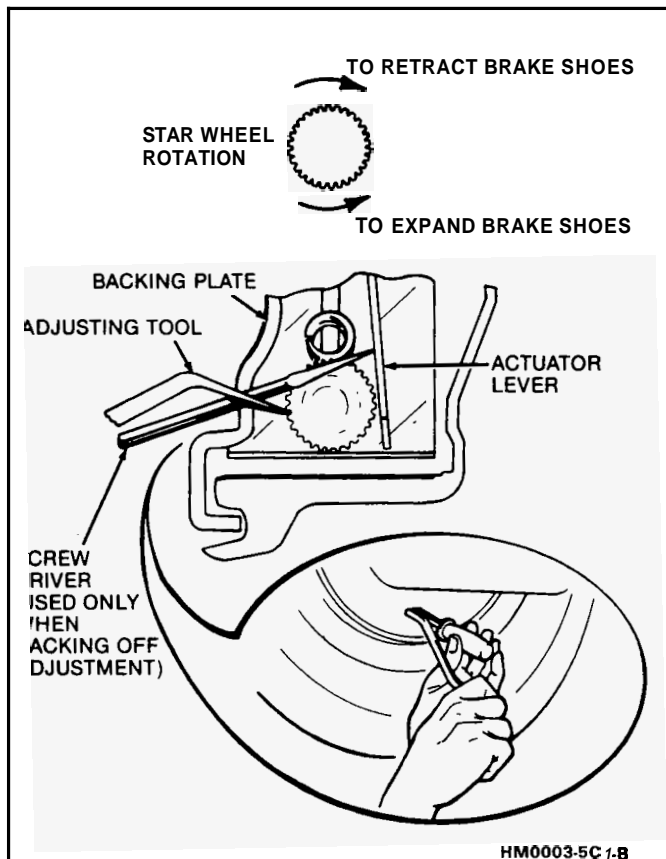


Figure 3 Backing Off Adjusting Screw

BRAKE ADJUSTMENT

See Figure 5

1. Raise car and suitably support.
 - o Mark relationship of wheel to axle flange.
2. Wheel and tire.
 - o Mark relationship of drum to axle flange.
3. Measure drum inside diameter (ID) using J 21177-A.
4. Turning star wheel, adjust shoe and lining diameter to be **1.27 mm (0.050 in)** less than inside drum diameter for each rear wheel.
5. Install drums and wheels, aligning previous marks.
 - o Torque wheel nuts. See Section 3E WHEELS AND TIRES.
6. Make several alternate forward and reverse stops applying firm force to the brake pedal. Repeat until ample pedal reserve is built up.

PARKING BRAKE ADJUSTMENT

1. Depress parking brake lever to 3 ratchet clicks.
2. Raise and suitably support car, see Section OA.
3. Tighten adjusting nut on parking brake cable until the right rear wheel parking brake can just be turned rearward with two hands but cannot be turned forward.

! Important

To prevent damage to the threaded parking brake adjusting rod when servicing the parking brake, the following is recommended.

- o Before attempting to turn the adjusting nut, clean the exposed threads on each side of the nut.
- o Lubricate the threads of the adjusting rod before turning the nut.

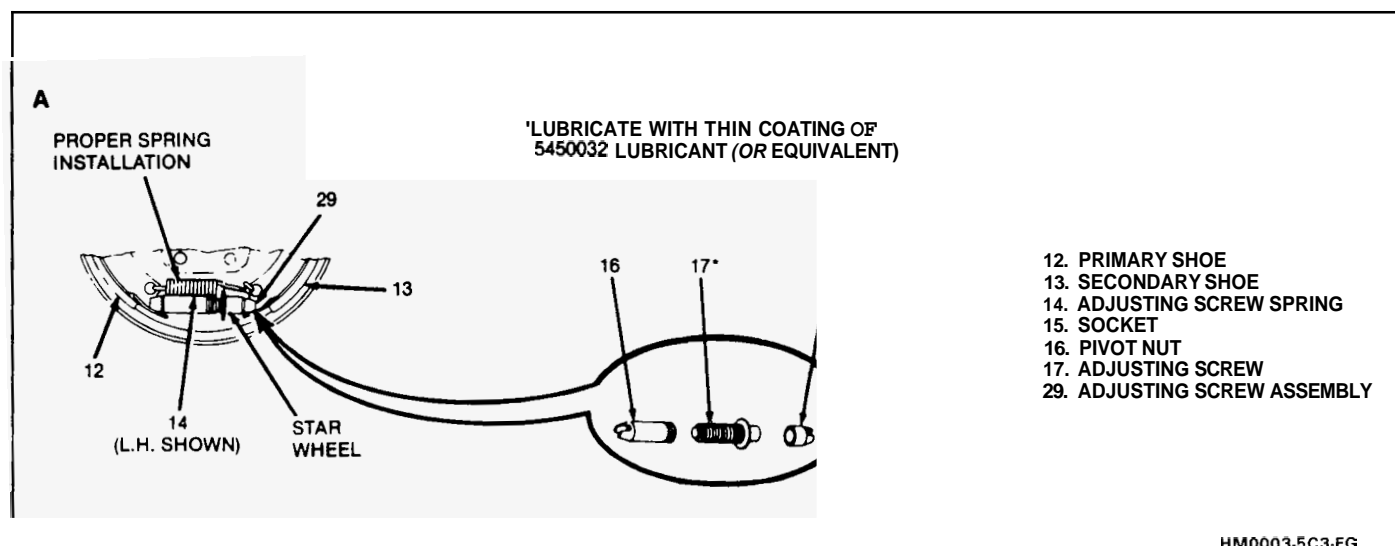
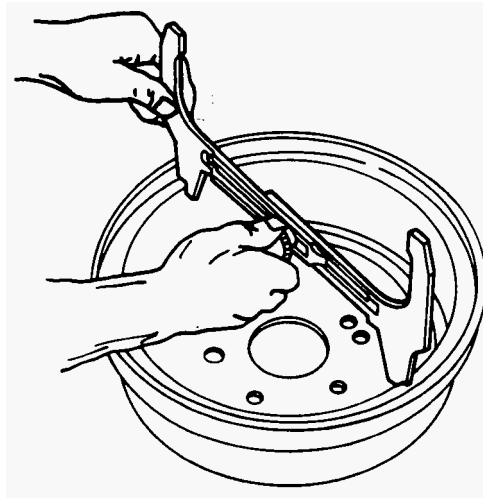
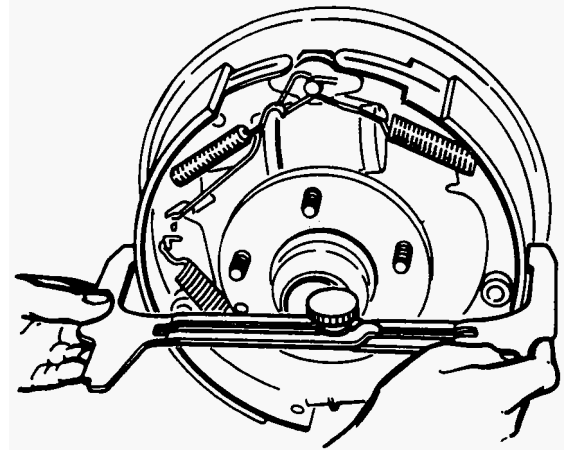


Figure 4 Adjusting Screw Assembly



A. SETTING TOOL
TO DRUM



B. SETTING BRAKE
SHOES TO TOOL

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Figure 5 Measuring Drum and Shoe for Adjustment

WHEEL CYLINDER

See Figures 6 thru 9



Clean

- o Dirt and foreign material around wheel cylinder assembly (28) inlet and pilot.



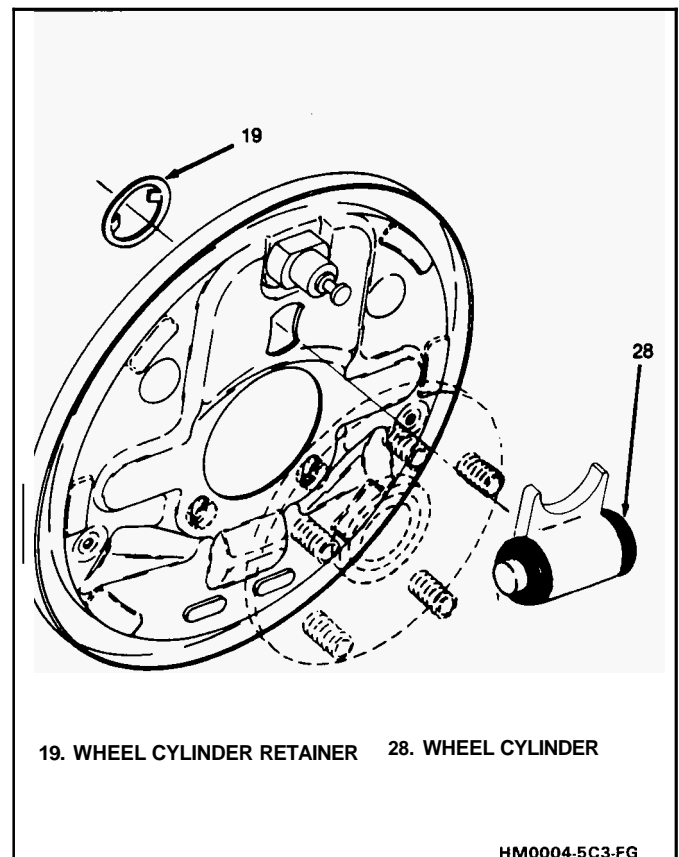
Remove or Disconnect

1. Inlet tube nut and line.
 - o Plug opening in line to prevent fluid loss and contamination.
2. Wheel cylinder retainer (19) using J 29839 Retainer Remover or two awls.
 - o Insert awls (30) into access slots between wheel cylinder (28) pilot and retainer (19) locking tabs.
 - Bend both tabs away simultaneously.
3. Wheel cylinder (28).



Install or Connect

- See NOTICE on page 5-1.
1. Position wheel cylinder assembly (28) and hold in place with wooden block between cylinder and axle flange.
 2. New retainer (19) over wheel cylinder abutment using a 1-1/8 inch 12-point socket (32) and socket extension (31) as shown in figure 6.
 3. Inlet tube nut to 17 N·m (13 lb-ft).
 4. Bleed wheel cylinder.



19. WHEEL CYLINDER RETAINER 28. WHEEL CYLINDER

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Figure 6 Wheel Cylinder

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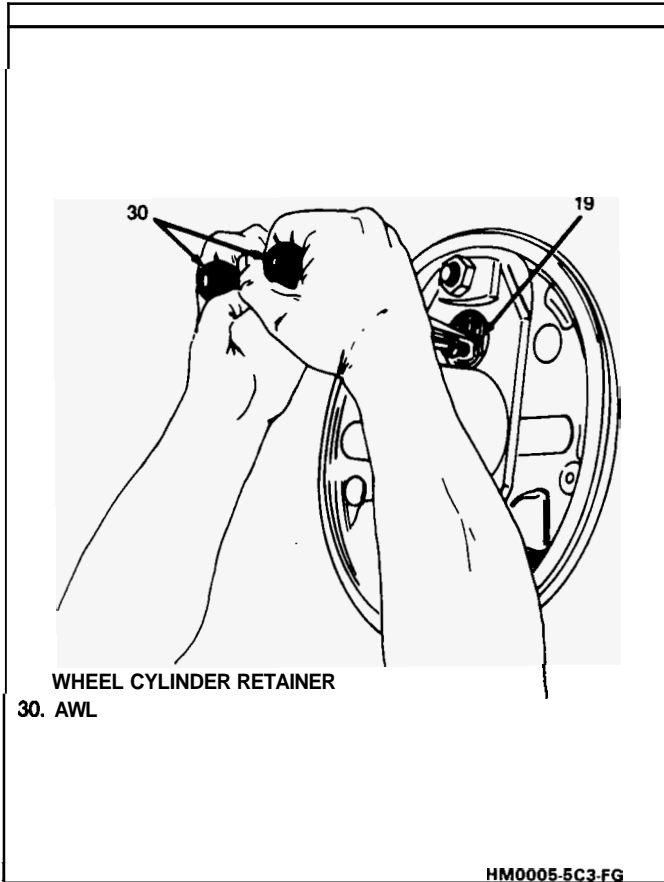


Figure 7 Removing Wheel Cylinder Retainer

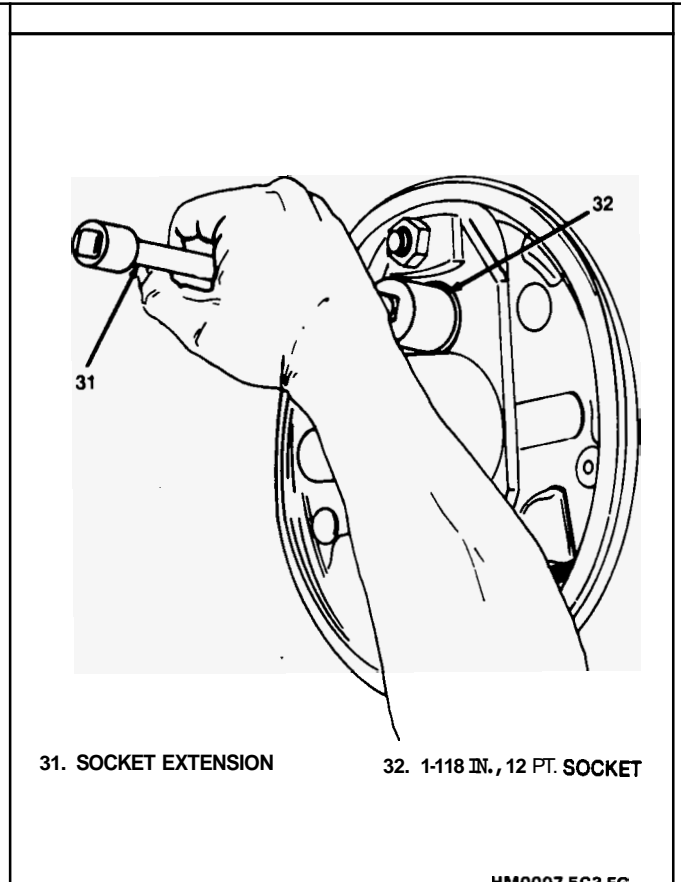


Figure 9 Installing Wheel Cylinder Retainer

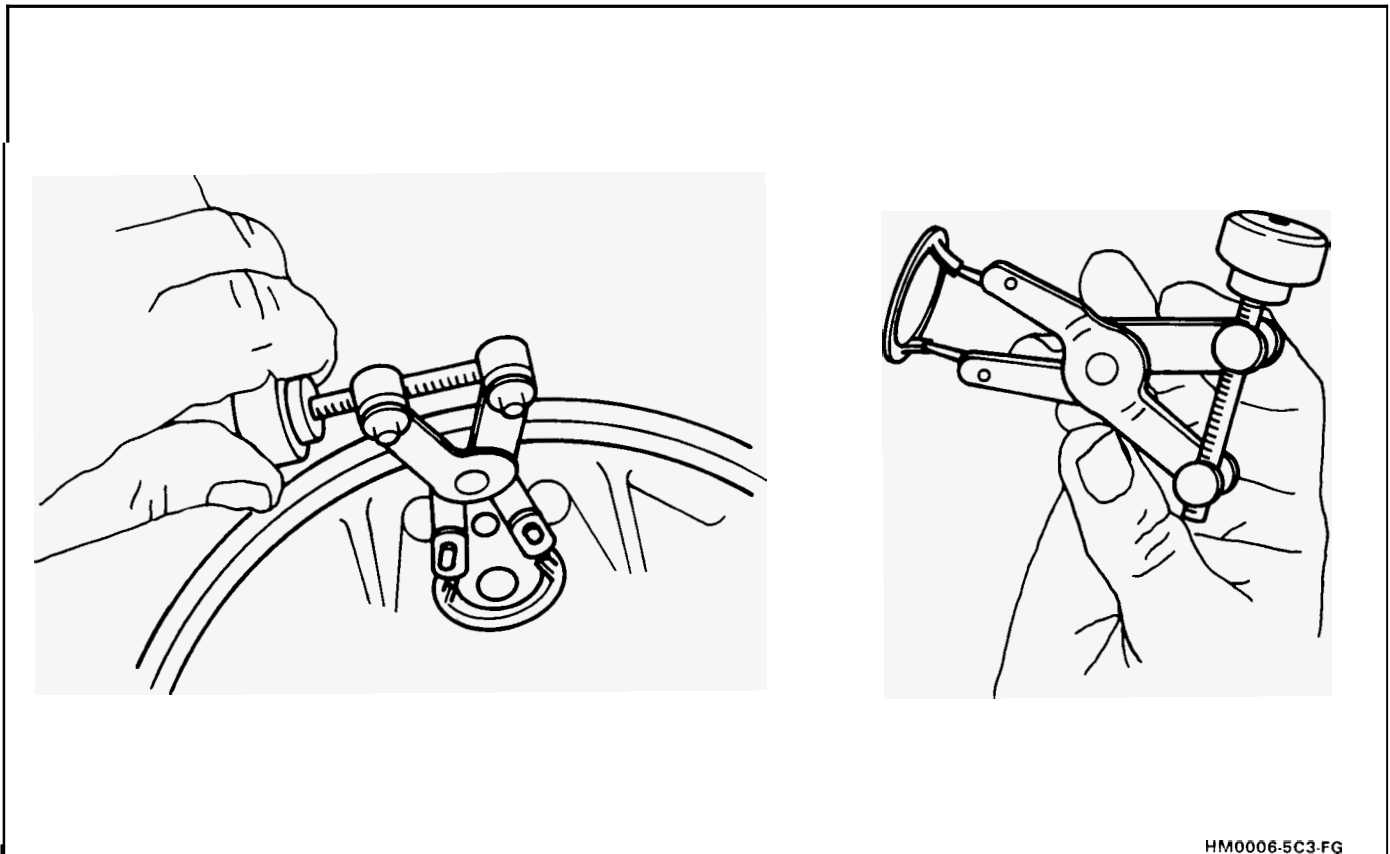


Figure 8 Removing Wheel Cylinder with J 29839

BACKING PLATE

↔ Remove or Disconnect

1. Raise car and suitably support, see Section **OA**.
2. Brake components as previously described.
3. Axle shaft, see Section **4B**.
4. Parking brake cable from backing plate
5. Brake pipe from wheel cylinder
6. Backing plate bolts and nuts
7. Anchor pin nut and anchor pin

→← Install or Connect

1. Backing plate to axle flange
2. Backing plate to axle flange nuts and bolts to **14 N·m (10 lbs. ft.)**
3. Anchor pin and nut to **140 N·m (103 lbs. ft.)**
4. Brake pipe to wheel cylinder to **24 N·m (18 lbs. ft.)**
5. Parking brake cable to backing plate
6. Axle shaft, see section **4B**
7. Brake components as previously described
8. Lower car.

UNIT REPAIR

WHEEL CYLINDER OVERHAUL

See Figure 10

⊠ Disassemble

1. Wheel cylinder completely from vehicle as previously described.
2. Boots (**20**).
3. Pistons (**21**) and seals (**22**).
4. Spring assembly (**23**).
5. Bleeder valve (**24**).

🔍 Inspect

- Cylinder bore for:
 - Scoring
 - Nicks
 - Corrosion
 - Wear
- Use crocus cloth to polish out light corrosion.
- Replace wheel cylinder assembly if bore will not clean up with crocus cloth.
- Pistons for:

- Scoring
- Nicks
- Corrosion
- Wear

🧼 Clean

- All parts in clean denatured alcohol.
- Dry with unlubricated compressed air.
- Lubricate new seals with clean brake fluid.

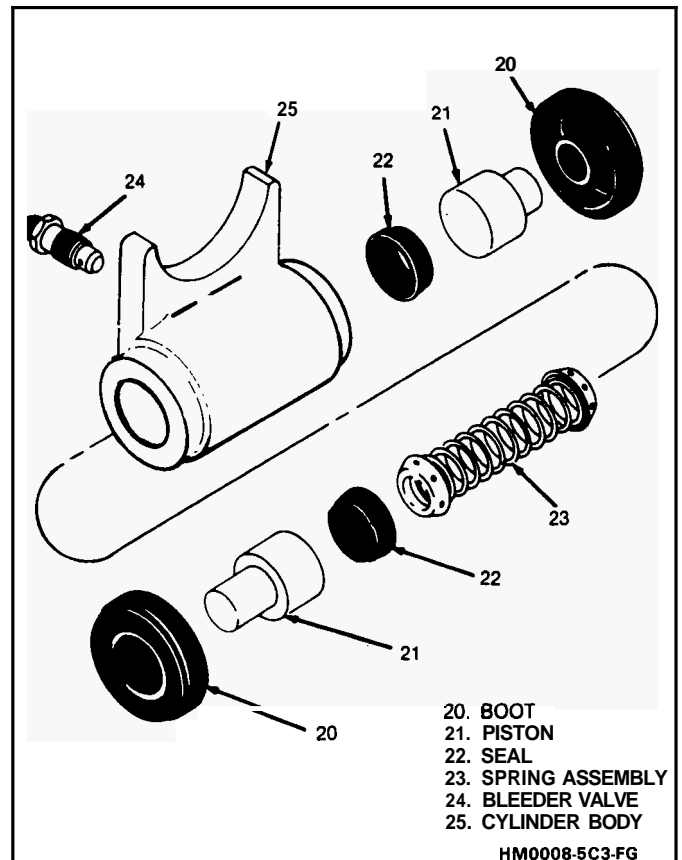


Figure 10 Wheel Cylinder Components

⊠ Assemble

- ① See NOTICE on page 5-1.
1. Bleeder valve (**24**) to **6 N·m (50 lb-in)**.
2. Spring assembly (**23**).
3. Seal (**22**), pistons (**21**) and boots (**20**).
4. Wheel cylinder as previously described.

