SERVICE REPAIR

H1.50XM H1.75XM H2.00XMS Europe [D001]

HYSTER

INTRODUCTION

GENERAL

This section has a description and the service procedures for the parts of the brake system. The brake system includes the following parts: master cylinder, brake shoes, wheel cylinders, an inching/brake pedal and linkage, and the parking brake system. A troubleshooting section is included at the end of this section.

DESCRIPTION AND OPERATION

Service Brake

The master cylinder has a housing, a piston with two ring cups, a return spring and a check valve assembly. The reservoir for the fluid is separate from the master cylinder. When the brake pedal is pushed, the push rod moves the piston assembly. The primary cup forces the brake fluid through the check valve to the wheel cylinders. The secondary cup keeps the fluid that is above the primary cup in the master cylinder.

When the brake pedal is released, the return spring pushes the piston assembly back against the retainer washer. The return springs for the brake shoes force the fluid that is in the wheel cylinders back through the lines to the check valve. The pressure in the lines moves the check valve from its seat. The fluid flows around the check valve to the master cylinder bore.

When the brake pedal is released quickly, the return spring moves the piston faster than the brake fluid can flow around the check valve. To prevent cavitation, holes are drilled in the piston. Fluid from the inlet port flows through the holes. The fluid bends the lip of the primary cup and permits fluid to enter the pressure chamber.

The check valve assembly permits fluid from the pressure chamber to flow to the lines when the brake pedal is pushed. When the pressure in the pressure chamber is greater than pressure in the lines, the check valve will open. When the brake pedal is released, the pressure in the lines is greater than the pressure in the pressure chamber. The check valve assembly then moves against the spring pressure to permit fluid to return to the pressure chamber. The check valve assembly returns to its seat when the pressure in the lines decreases to less than the spring pressure. This action keeps a low pressure in the wheel cylinders to hold the lips of the seals against the bores. This low pressure prevents leaks, but cannot apply the brake shoes.

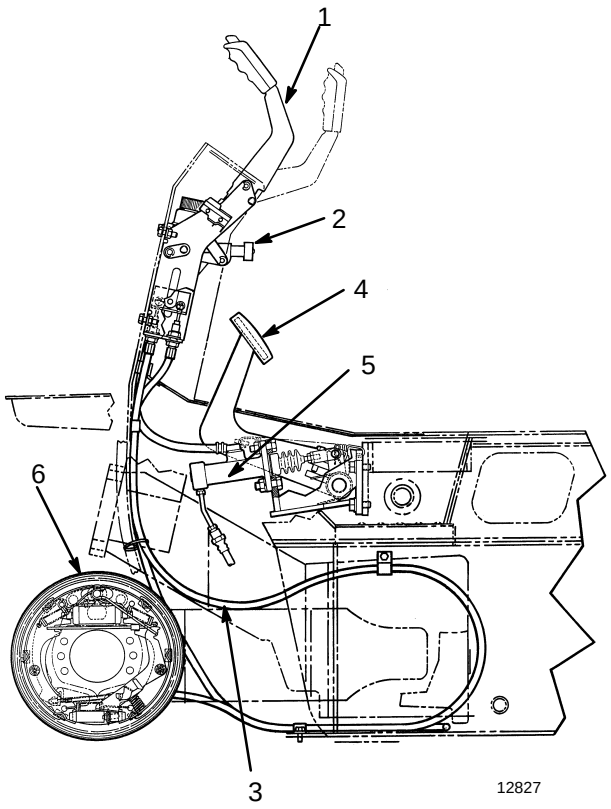
A very small hole is drilled between the inlet port and the pressure chamber. The hole is just in front of the primary cup when the piston is against the stop washer. The hole is a compensator port to permit fluid to flow between the reservoir and the pressure chamber. The fluid expands because of the heat from using the brakes. The additional volume of the expanded fluid flows through the compensator port when the pedal is fully released. If the push rod is adjusted so that there is no clearance, the compensator port can be closed by the primary cup. This condition can cause the brakes to be applied without pushing the pedal.

A service brake assembly is installed at each end of the drive axle. The parts of the brake assembly are shown in FIGURE 2. and FIGURE 3. When the brake pedal is pushed, fluid pressure from the master cylinder causes the pistons in the wheel cylinder to move out. The pistons cause the brake shoes to expand against the drum.

The clearance between the brake shoes and the brake drum is adjusted automatically. The adjuster linkage turns the adjuster wheel to adjust the clearance. The primary (front) shoe and the adjuster links move with the drum during a stop when the lift truck is moving in the REVERSE direction. The linkage permits the adjuster lever to rotate the adjuster wheel. The adjuster wheel can turn only when there is clearance between the lining and the brake drum. The adjuster wheel can also be turned manually. A hole in the back plate is used to get access to the adjuster wheel.

Parking Brake

The parking brake system uses the service brake shoes. Additional linkage activates the parking brake system. When the lever is moved to apply the parking brake, the cables and linkage expand the brake shoes against the drums. The parking brake linkage adjusts each cable so that the tension is the same when the lever is moved to apply parking brake.



1. PARKING BRAKE LEVER
2. ADJUSTMENT KNOB
3. PARKING BRAKE CABLES
4. INCHING/BRAKE PEDAL
5. MASTER CYLINDER
6. BRAKE ASSEMBLY

FIGURE 1. BRAKE SYSTEM

SERVICE BRAKES
Removal And Disassembly

DANGER

Brake linings can contain dangerous fibers. Inhaling the dust from these brake linings is a cancer or lung disease hazard. Do not make dust! Do not clean brake parts with compressed air or by brushing. Use vacuum equipment approved for brake dust or follow the cleaning procedure in this section. When the brake drums are removed, do not create dust.

Do not sand, grind, chisel, hammer, or change linings in any way that will make dust. Any changes to brake linings must be done in a restricted area with special ventilation. Protective clothing and a respirator must be used.

1. Remove the capscrews that hold the axle shaft to the hub. Remove the axle shaft. Install a plug in the axle shaft housing to prevent oil from leaking from the housing.

2. See the procedure “HOW TO PUT A LIFT TRUCK ON BLOCKS” in the service manual section, **PERIODIC MAINTENANCE, 8000 SRM 531** or the **OPERATING MANUAL**. Start the engine and tilt the mast fully backward. Put blocks under the mast. Tilt the mast fully forward until the wheels are off the floor. Put grease on the floor under the wheels so that the wheel assembly will slide easily from the axle tube. Tilt the mast backward until the wheels are just touching the floor. Stop the engine. Put blocks under the frame of the lift truck.

3. Bend the lockplate and remove the nut that holds the axle bearing. Remove the washer and the bearing cone.

4. Pull the wheel assembly from the lift truck. If the wheel assembly cannot be removed easily, use a small screwdriver to push the adjuster actuator away from the adjuster wheel. Use a brake adjuster or a screwdriver to turn the adjuster wheel to loosen the brake shoes. Remove the hub and drum assembly. Do not damage the grease seal when removing the hub.

DANGER

When the brake shoes are removed do not make dust in the air. See the cleaning procedure in this section.

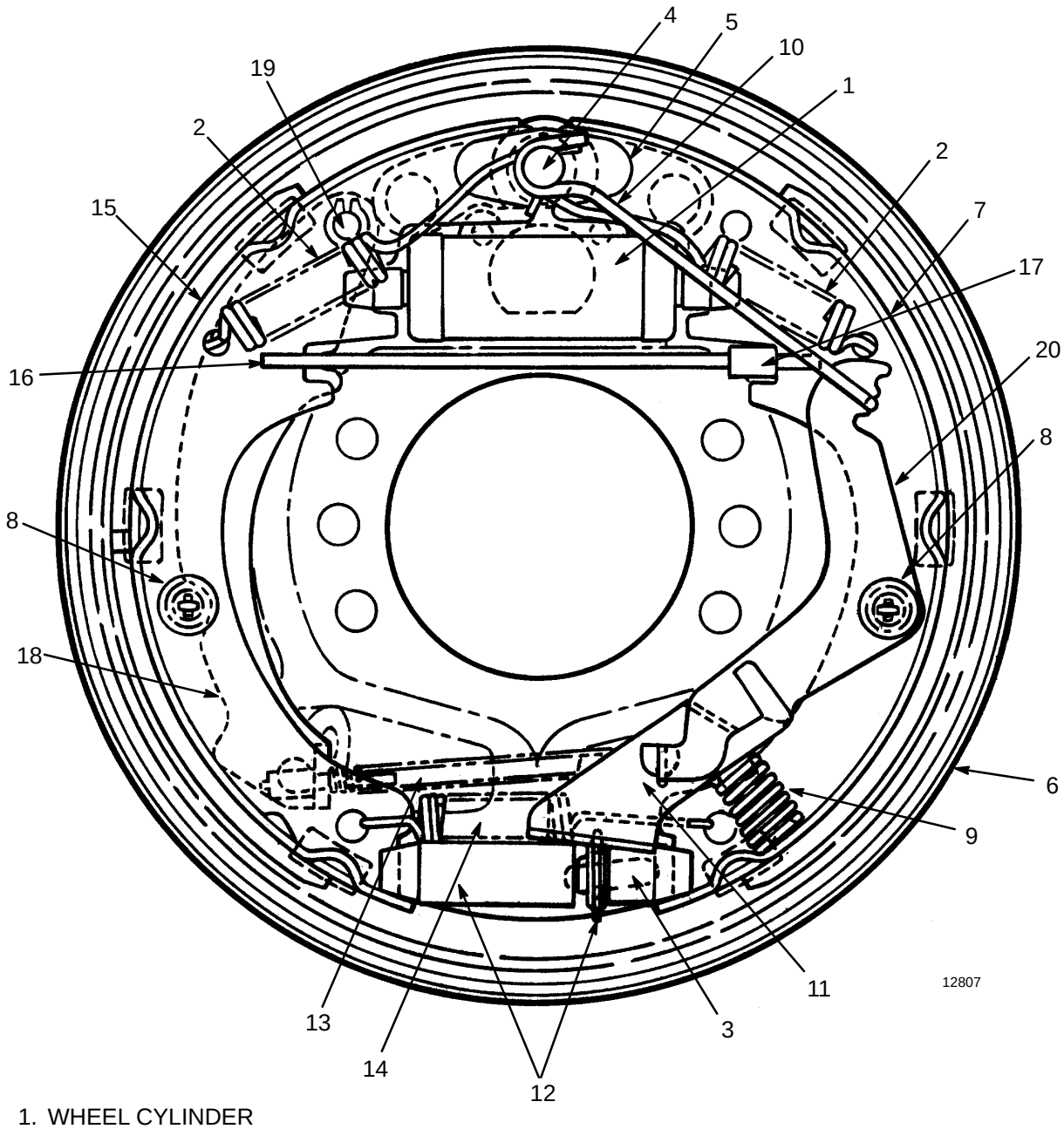
5. Make a note of the arrangement of the parts. See FIGURE 2. and FIGURE 3. Remove the return springs (2) with spring pliers.

6. Remove the retainers, springs, and anchor pins (8) that hold the brake shoes to the back plate.

7. Disengage the link (10) from the actuator (20) for the adjuster wheel. Remove the link (10) . Remove the anchor guide (5).

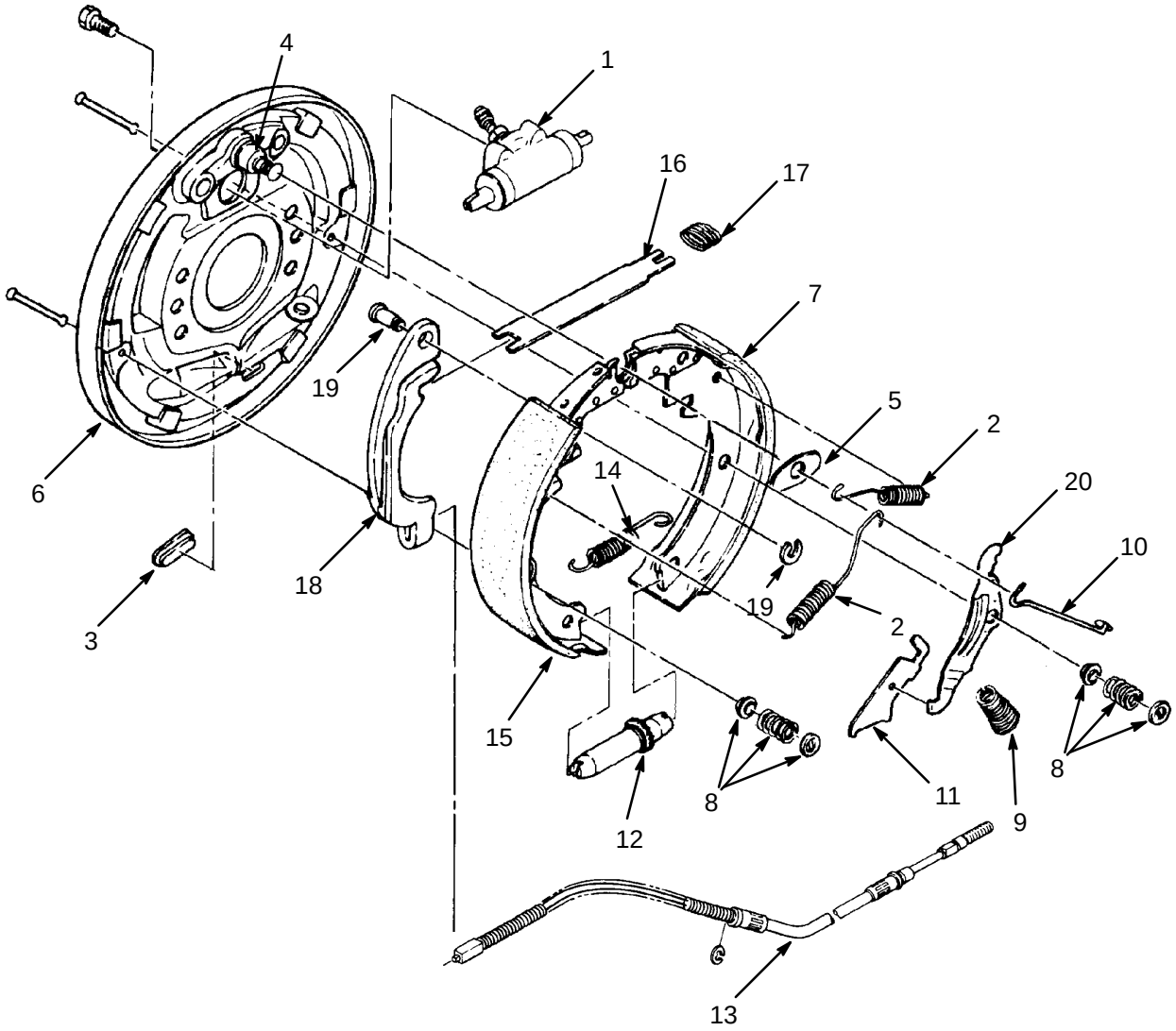
8. Move the brake shoes away from each other to disengage the brake shoes from the wheel cylinder. Disconnect the parking brake lever (18) from the parking brake cable (13) as the brake assembly is removed from the back plate. The parking brake lever has a hook that engages the parking brake cable.

NOTE: The adjuster wheel for the left brake is not the same as the adjuster wheel for the right brake. The adjuster wheel for the right brake has left–hand threads.



1. WHEEL CYLINDER
2. RETURN SPRING
3. PLUG
4. ANCHOR
5. ANCHOR GUIDE
6. BACK PLATE
7. BRAKE SHOE
8. RETAINER SPRING ASSEMBLY (4)
9. SPRING, ACTUATOR
10. LINK
11. ADJUSTER WHEEL ACTUATOR
12. ADJUSTER WHEEL ASSEMBLY
13. PARKING BRAKE CABLE
14. ADJUSTER SPRING
15. BRAKE SHOE
16. LINK, PARKING BRAKE
17. SPRING, PARKING BRAKE LEVER
18. PARKING BRAKE LEVER.
19. PIVOT PIN
20. ACTUATOR LEVER

FIGURE 2. BRAKE ASSEMBLY (LEFT BRAKE ASSEMBLY SHOWN)



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15. BRAKE SHOE
16. LINK, PARKING BRAKE
17. SPRING, PARKING BRAKE LEVER
18. PARKING BRAKE LEVER.
19. PIVOT PIN
20. ACTUATOR LEVER

FIGURE 3. PARTS OF THE SERVICE BRAKE

9. Make a note of the arrangement of parts and disassemble the brake assembly. Remove the parking brake link (16) and spring (17) if they are still engaged with brake shoes. The parking brake link and spring will frequently fall from the brake assembly when the brake assembly is removed from the back plate. The adjuster wheel (12) will also disengage from the brake shoes after the brake assembly is removed.

10. Remove the spring (14) for the adjuster wheel actuator (11). Remove the adjuster wheel actuator (11) from the brake shoe.

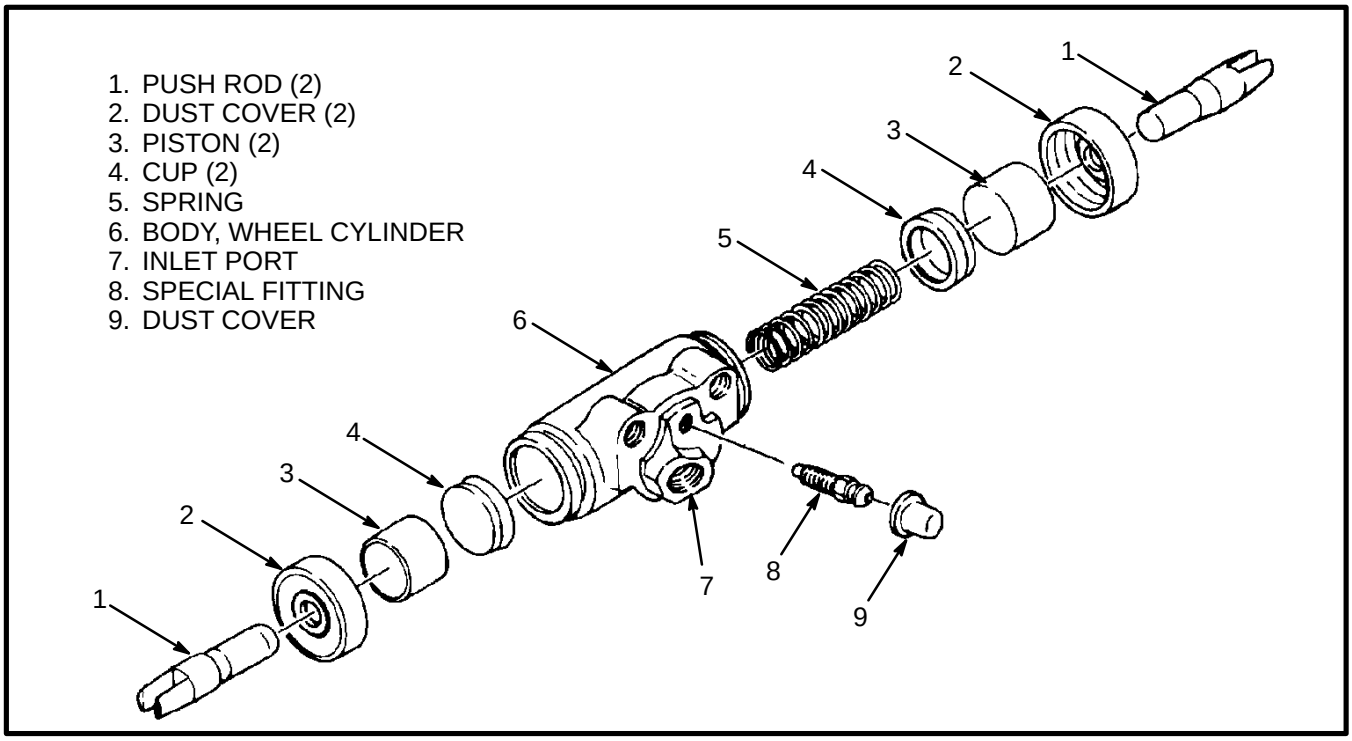


FIGURE 4. WHEEL CYLINDER

11. Use a screwdriver or small prybar to separate the ends of the retainer (19). Remove the pivot pin (19) to remove the parking brake lever (18) from the brake shoe (15).

12. Disconnect the brake line from the wheel cylinder (1). Remove the capscrews that hold the wheel cylinder to the back plate and remove the wheel cylinder.

13. See FIGURE 4. Remove the push rods, dust covers, pistons, cups, and spring from the wheel cylinder.

NOTE: The back plate is not normally removed from the axle housing for brake repairs. The back plate is fastened to the axle mount with six special nuts. The locking function of the nuts is decreased if they are removed. These nuts are tightened to 102 N.m (75 lb_f ft).

Cleaning

⚠ WARNING

DO NOT use an oil solvent to clean the master cylinder, wheel cylinder, or the brake linings. Use a solvent approved for cleaning of brake parts. Do not permit oil or grease in the brake fluid or on the brake linings. Oil and grease will cause damage and leaks in the seals of a brake system. The brakes will not operate correctly if oil, grease, or brake fluid is on the brake linings.

Cleaning solvents can be flammable and toxic, and can cause skin irritation. When using cleaning solvents, always follow the safety instructions of the solvent manufacturer.

1. Do not release brake lining dust from the brake linings into the air when the brake drum is removed.

2. Use a solvent approved for cleaning of brake parts to wet the brake lining dust. Follow the instructions and cautions of the manufacturer for the use of the solvent. If a solvent spray is used, do not make brake lining dust with the spray.

3. When the brake lining dust is wet, clean the parts. Put any rags or towels in a plastic bag or an airtight container while they are still wet. Put a "DANGEROUS FIBERS" warning label on the plastic bag or airtight container.

4. Any cleaning rags that will be washed must be cleaned so that fibers are not released into the air.

⚠ CAUTION

Do not permit oil or grease on the brake linings. Use a brake cleaning fluid as necessary to clean linings that will be used again.

Inspection

1. Inspect the bore of the wheel cylinder for holes or scratches. Install a new wheel cylinder assembly if there for any damage.

2. Inspect the return springs for wear or damage. Inspect the back plate for wear where the brake shoes touch the back plate. If the back plate is worn or damaged, remove any grooves or install a new back plate.

3. Inspect the brake shoes for cracks or damage. If the linings or shoes are worn or damaged, install new brake shoes. Maximum wear is to within 1 mm (0.025 in) of contact with the rivets, or the metal shoe on bonded linings. new brake shoes must be installed in complete sets. Inspect the brake drums for cracks or damage. If any parts are worn of damaged, install new parts.

⚠ WARNING

Install new brake shoes on both wheels if any shoe is damaged. The brake performance on both ends of an axle must be equal or the lift truck can be difficult to steer when the brakes are applied.

4. Inspect the brake drum for deep grooves or other damage.

NOTE: If grooves must be removed from the brake drums, do not grind more than 1.5 mm (0.060 in) from the inside diameter of the brake drum. The maximum limit of the inside diameter of the brake drum is 255.5 mm (9.96 in). If the inside diameter is larger than the limit, install a new brake drum.

5. The teeth of the adjuster wheel must not be worn. The adjuster wheel must turn freely. Check the adjuster links for damage.

6. Make sure the parking brake cables are in good condition.

7. Check the grease seals and the surfaces for the seals for wear or damage.

Assembly And Installation

1. If the wheel cylinder was disassembled for repair, assemble the wheel cylinder. See FIGURE 4. Use only HYSTER APPROVED parts.

2. Install the wheel cylinder on the back plate. Connect the brake line to the wheel cylinder.

3. See FIGURE 3. Install the parking brake lever (18). Use the pivot pin and retainer (19) to fasten the parking brake lever to the brake shoe (15). Close the ends of the retainer to fasten the pivot pin in position. Lubricate the back plate with a small amount of grease where the brake shoe touches the backing plate. Engage the parking brake cable (13) in the slot in the parking brake lever as the brake shoes are installed on the back plate. Mount the brake shoe assembly to the backing plate using the retainer spring assemblies (8). Put an anchor pin that holds the brake shoes through the back plate. Put a spring seat, spring and retainer (8) onto the anchor pin. Push the retainer onto the anchor pin and rotate the retainer 90 degrees. Make sure the retainer is in the correct position. Install another retainer spring assembly. Be certain that the brake shoe engages the push rod ([1] FIGURE 4.).

4. Attach the actuator (11) for the adjuster wheel to the actuator lever (20). Lubricate the back plate with a small amount of grease where the brake shoe touches the back plate. Mount the brake shoe and actuator assembly to the backing plate using the retainer spring assemblies (8). Put an anchor pin that holds the brake shoes through the back plate. Put a spring seat, spring and retainer (8) onto the anchor pin. Push the retainer on to the anchor pin and rotate the retainer 90 degrees. Make sure the retainer is in the correct position. Install another retainer spring assembly. Be sure that the brake shoe engages the push rod ([item 1] FIGURE 4.).

5. Fasten the adjuster actuator spring (14) to the adjuster wheel actuator (11) and the brake shoe (15).

6. Put an anti–seize compound on the threads of the adjuster wheel. Turn the adjuster wheel into the adjuster nut so that the adjuster assembly is in its shortest position. This action permits the brake drum to be easily installed over the brake shoes.

7. Install the adjuster wheel (12) between the two brake shoes. Make sure the adjuster wheel will be toward the rear of the lift truck. Separate brake shoes so that the adjuster wheel is held in position and the adjuster actuator spring is in tension.

⚠ WARNING

The threads of the adjuster wheel are not the same for each side. If the adjuster assemblies are installed on the wrong side, the brake shoe clearance will increase when the brakes are applied. The adjuster wheel for the right brake has left–hand threads. The

adjuster wheel for the left brake has right–hand threads.

8. Install the link (16), and the spring (17) between the parking brake lever (18) and the brake shoe (7).

9. Install the other spring retainers (8) that hold the brake shoes. Make sure the parking brake link (16) and the spring (17) are correctly engaged after the spring retainers are installed.

10.Install the anchor guide (5) on the anchor (4). Install the the link (10) onto the anchor (4) and the actuator lever (20).

11. Install the actuator spring (9).

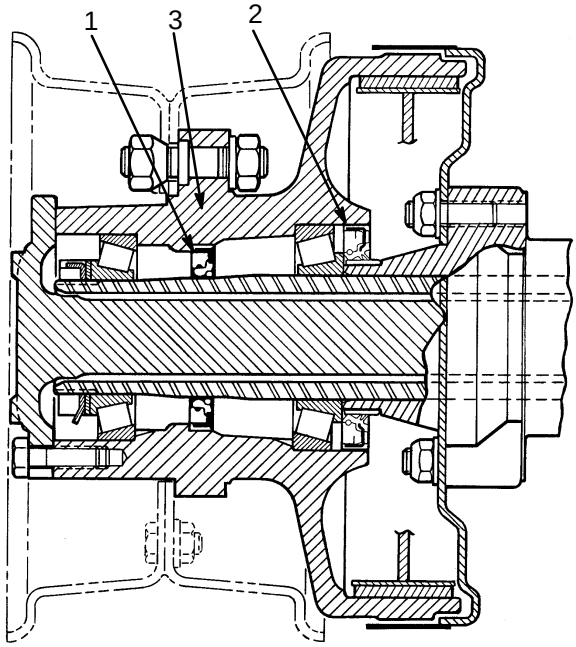
12. Use the correct tools to install the return springs (2). The shape of the return springs permits them to be installed correctly in only one position.

14. Make sure the bottom edge of the adjuster wheel actuator is just above the center of the teeth of the adjuster wheel. Check for correct installation if the alignment is not correct.

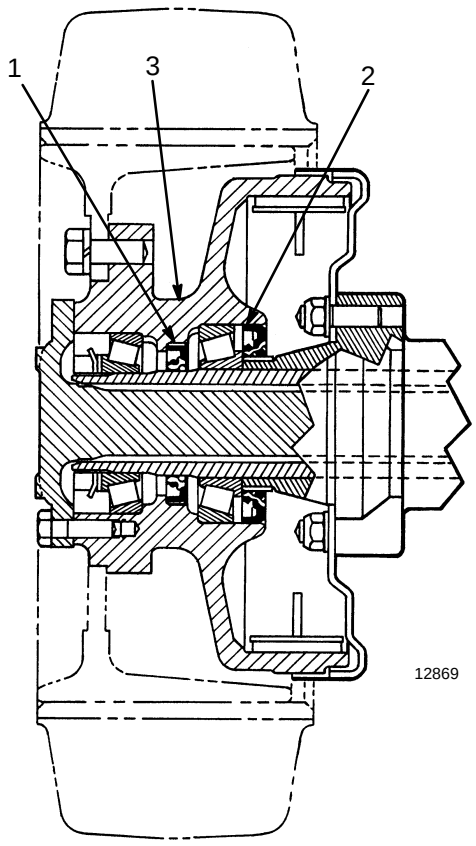
15. Clean the bearings and lubricate them with wheel bearing grease. Install the bearings and seals in the brake drum. Install the assembly on the axle housing. See FIGURE 5. and FIGURE 6.

NOTE: To prevent damage to the inner oil seal when installing the hub, the hub and drum assembly can be temporarily fastened to the wheel. Align the height of the axle housing with hub bearings. Put grease under the wheel and slide the wheel toward the axle housing. Install the outer bearing and nut.

16. Adjust the hub bearings by tightening the nut to 205 N.m (150 lb_f ft) while rotating the hub. Loosen the nut until the hub turns freely. The torque must be less than 27 N.m (20 lb_f ft). Tighten the nut to 34 N.m (25 lb_f ft) or until the first–alignment position after 34 N.m (25 lb_f ft). Bend the lockplate over the nut.



H1.50–1.75XM, H2.00XMS (H25–35XM, H40XMS)



S25–35XM, S40XMS

1. OUTER SEAL
2. INNER SEAL
3. BRAKE DRUM

FIGURE 5. LOCATION OF THE GREASE SEALS

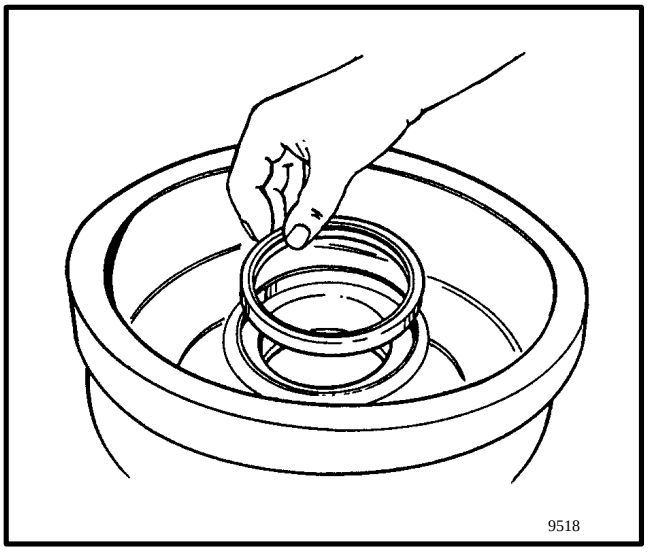


FIGURE 6. INSTALLATION OF THE INNER GREASE SEAL

17. Adjust the clearance of the brake shoes. Put a brake adjuster or a screwdriver through the slot in the back plate. Use the tool to rotate the adjuster wheel. The actuator for the adjuster wheel will only permit rotation in one direction. Turn the adjuster wheel until the brake shoes have expanded against the brake drum and the hub will not turn. Use a small screwdriver to lift the actuator away from the adjuster wheel. Turn the adjuster wheel approximately 15 teeth in the opposite direction. The brakes will adjust to the correct clearance when they are applied while the lift truck is travelling in the REVERSE direction.

⚠ CAUTION

If there is too much clearance, the automatic adjusters will not operate. If the clearance is too small, the automatic adjuster cannot turn the adjuster wheel to increase the clearance. The adjuster wheel will not turn until the brake shoes wear. If the adjuster wheel does not move for a long operating period, the adjuster link can wear a spot on the adjuster wheel so that it will not turn correctly.

18. Put liquid sealant on the flange of the axle shaft. Install the axle shaft and capscrews. Tighten the capscrews to 66 N.m (49 lb_f ft).

Adjustments

1. Remove the air from the brake system. See the procedure “Remove The Air From The Brake System”, under CHECKS AND ADJUSTMENTS.

2. Install the wheel on the hub. Tighten the nuts to 204 to 225 N.m (151 to 166 lb_f ft).

3. Start the engine and tilt the mast backward to remove the blocks. Push on the brake pedal. The pedal must not touch the floor plate. Move the lift truck in REVERSE and push on the brake pedal to permit adjuster mechanism to operate. Repeat this operation several times.

4. The service brakes must be adjusted before the parking brake can be adjusted. See FIGURE 7. and the following paragraphs in this section for the correct adjustment of the parking brake.

PARKING BRAKE

Removal And Disassembly (See FIGURE 7.)

If the lever assembly for the parking brake must be removed from the cowl, use the following procedure (See FIGURE 7.)

1. Use blocks next to the wheels to make sure the lift truck can not move. Release the parking brake lever.
2. Remove the four capscrews that fasten the bracket for the parking brake to the cowl. Remove the bracket and brake lever assembly.
3. Loosen the jam nuts that fasten the threaded ends of the brake cables to the brake lever assembly.
4. Turn the adjuster knob counterclockwise until the brake cables are loosened. Disconnect the cables from the link.
5. The service brake assembly must be removed before the parking brake cable can be removed from the back plate. A snap ring holds the outer cover of the parking brake cable in the back plate of the service brake. Remove the snap ring and remove the parking brake cable from the back plate.

Assembly And Installation (See FIGURE 7.)

The parking brake cables must be installed in the back plate before the service brake is installed. A snap ring holds the outer cover of the parking brake cable in the back plate of the service brake. Install the parking brake cable in the back plate. Install the snap ring that holds the outer cover of the parking brake cable in the back plate.

If the lever assembly for the parking brake was removed from the cowl, use the following procedure for installation:

1. Make sure the parking brake lever is in the released position. Turn the adjustment knob (2) until the link (9) is adjusted to the bottom of the adjustment slot (8).
2. Adjust the jam nuts (10) on the ends of the cable assemblies (3) so that the threads of the outer cover extend 12.5 mm (0.49 in) above their support plate in the lever assembly.
3. Install the round ends of the parking brake cables into their slots in the link (9). Tighten the upper jam nuts to hold the outer covers of the parking brake cables in their support.
4. Use the four capscrews, washers, and nuts and fasten the bracket to the inside of the cowl.

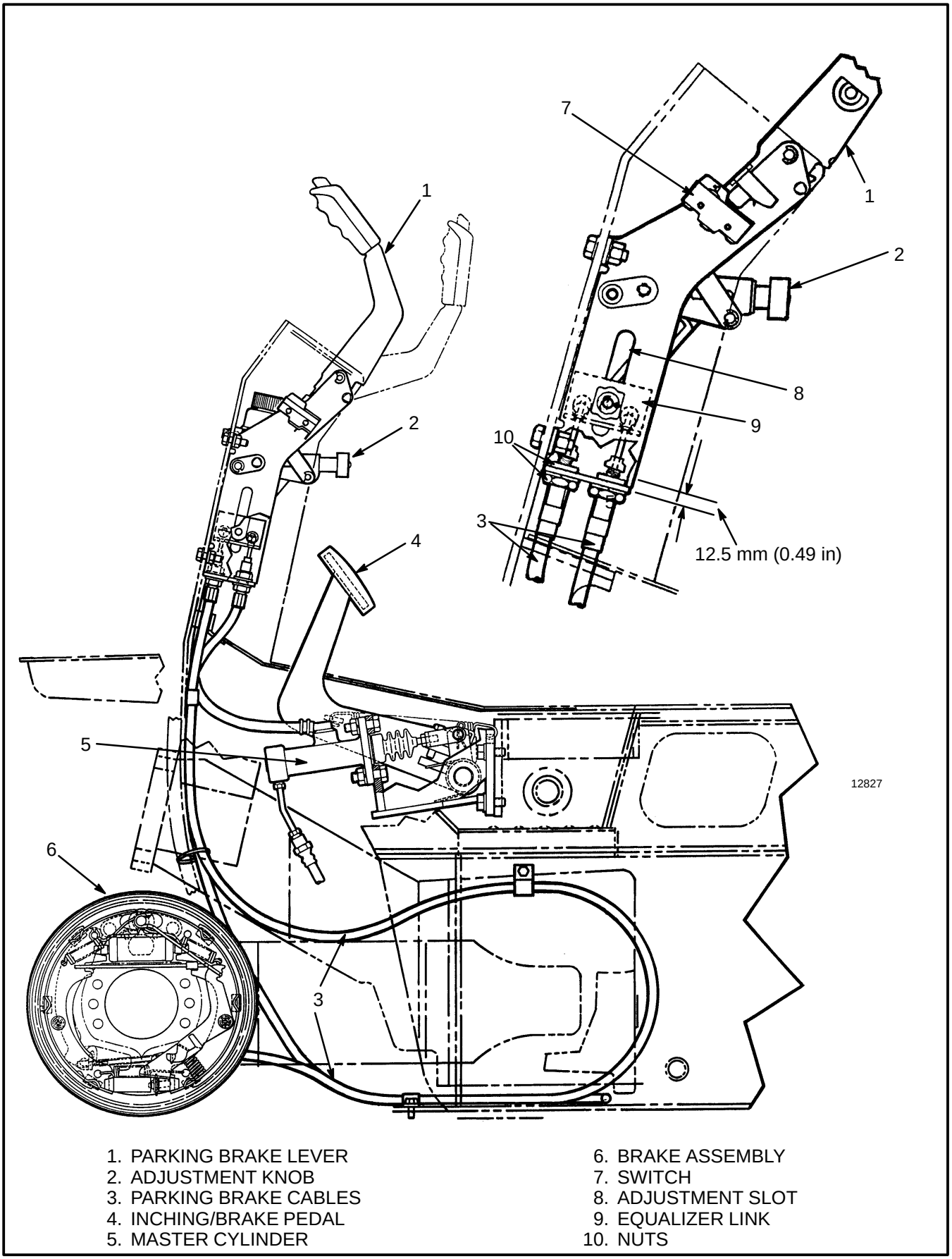
Adjust The Parking Brake (See FIGURE 7.)

Make sure that the service brakes are adjusted and the operation of the automatic adjuster mechanism is correct before the parking brake is adjusted.

1. Turn the adjustment knob (2) to raise the link (9) and tighten the parking brake cables. Turn the adjustment knob until the parking brakes are fully applied when the lever (1) is used to apply the parking brake.

2. Test the operation of the parking brake. The lift truck with a capacity load must not move when the parking brake is applied on a 15% grade, [a slope that increases 1.5 meters in 10 meters (1.5 ft in 10 ft)].

3. Check the operation of the switches on the parking brake as described in CHECKS AND ADJUSTMENTS.



1. PARKING BRAKE LEVER
2. ADJUSTMENT KNOB
3. PARKING BRAKE CABLES
4. INCHING/BRAKE PEDAL
5. MASTER CYLINDER
6. BRAKE ASSEMBLY
7. SWITCH
8. ADJUSTMENT SLOT
9. EQUALIZER LINK
10. NUTS

FIGURE 7. LEVER ADJUSTMENT OF PARKING BRAKE

MASTER CYLINDER

Removal (See FIGURE 8.)

1. Remove the floor plates from the lift truck for access to the master cylinder.

2. Loosen and remove the brake hydraulic line from the master cylinder. Disconnect the remote reservoir hose from the master cylinder. Put a plug in the hose to prevent the reservoir from draining.

3. Remove the lock pin and pin from the rod end that is attached to the push rod.

4. Remove the capscrews, washers, and nuts that hold the master cylinder to the bracket assembly. Remove the master cylinder from the lift truck.

Repair

⚠ WARNING

Keep control of the piston as it is removed so that the return spring does not suddenly release the piston from the bore with enough force to cause an injury.

⚠ CAUTION

When the piston is removed or installed, make sure the cylinder bore or piston does not have scratches or damage.

Disassembly

1. Remove the dust boot and push rod. Put the bottom of the master cylinder into a container. Push on the piston to remove the brake fluid.
2. Put the master cylinder into a vise with soft jaws (clamp on the mounting flange only). Push on the piston to release the tension on the snap ring. Remove the snap ring, washer, and piston.
3.. Remove all of the seals from the piston.
4. Remove the spring, check valve, and valve seat.

Cleaning And Inspection

⚠ CAUTION

DO NOT use an oil solvent to clean the master cylinder, wheel cylinder, or the brake linings. Use a solvent approved for cleaning of brake parts. Do not permit oil or grease in the brake fluid or on the linings.

Inspect the bore of the master cylinder for holes or scratches. Install a new master cylinder assembly if there is damage.

Assembly (See FIGURE 8.)

1. Lubricate the parts with new brake fluid. Use Hyster approved parts only.
2. Install the piston seal (9) on to the piston.
3. Install the spacer (11), piston cup (12), and retainer (13) onto the piston. The lip of the piston cup must face the spring.
4. Install a new check valve (15) and seat (16) into the cylinder bore. Install the spring and piston assembly into the bore. Use a screwdriver to push on the piston assembly until the snap ring groove is visible. Install the snap ring.
5. Install the boot and push rod.

Installation (See FIGURE 8.)

Use the reverse order of **Removal** to install the master cylinder. Check the adjustment of the brake pedal as described in CHECKS AND ADJUSTMENTS.

1. ROD END
2. NUT
3. PUSH ROD
4. BOOT
5. SNAP RING
6. CYLINDER HOUSING
7. SEAL
8. FITTING
9. PISTON SEAL
10. PISTON
11. SPACER
12. PISTON CUP
13. RETAINER
14. SPRING
15. CHECK VALVE
16. VALVE SEAT

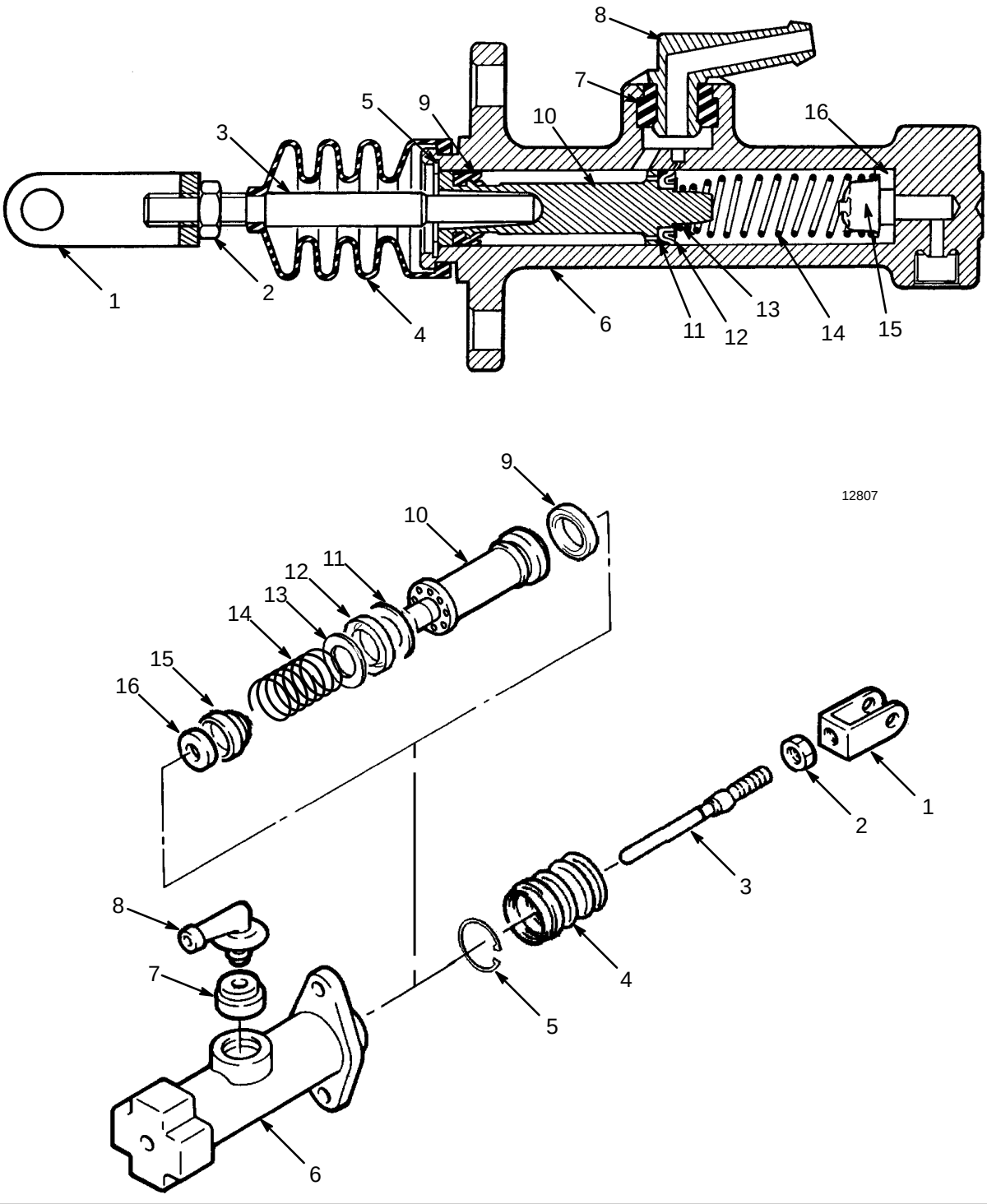


FIGURE 8. MASTER CYLINDER

CHECKS AND ADJUSTMENTS

ADJUST THE SERVICE BRAKES

The following procedure is for new brake shoes. If the lift truck has been operated for more than 25 hours and has correct pedal height, the brakes normally will not need adjustment.

1. See the procedure "HOW TO PUT A LIFT TRUCK ON BLOCKS" in the MAINTENANCE section or the **OPERATING MANUAL**. Put the lift truck on blocks so that the drive wheels can be rotated.

2. Use an adjuster tool to rotate the adjuster wheel so that the teeth of the wheel move down. This adjustment expands the brake shoes. Adjust the brake shoes so that the wheel will not rotate.

3. Push the automatic adjuster lever away from the adjuster wheel with a small screwdriver. Use the adjuster tool to loosen the adjuster wheel approximately 15 teeth (new brake shoes).

4. Remove the lift truck from the blocks. Operate the lift truck in the **FORWARD** and **REVERSE** directions. Stop the lift truck 10 times in each direction. This procedure causes the brake shoes to wear a small amount and better fit the brake drum.

REMOVE THE AIR FROM THE BRAKE SYSTEM

Adjust the service brakes before the air is removed from the brake system.

1. Fill the master cylinder reservoir with brake fluid.

2. Put one end of a rubber hose on the special fitting of the wheel cylinder. Put the other end of the hose into a clear container of brake fluid.

3. Loosen the special fitting at the wheel cylinder one turn so that the air can be removed from the brake system. Slowly push the brake pedal and hold it at the end of its stroke. Close the special fitting.

NOTE: Allow the brake pedal to completely return to the top of the stroke before repeating the procedure.

4. Repeat the procedure in steps 1 through 3 until there are no air bubbles in the container.

5. Check the level of the brake fluid in the reservoir for the master cylinder during the procedure. Make sure to keep the brake fluid at the correct level.

6. Repeat the procedure for the other wheel cylinder. If air remains in the system, the air must be removed from the master cylinder. Push on the brake pedal with a smooth stroke. Release the pedal slowly. Repeat this procedure until no air bubbles enter the reservoir.

TEST THE "PARKING BRAKE NOT APPLIED" SWITCH

The "Parking Brake Not Applied" switch is found in the operator seat. This switch actuates a buzzer on the instrument cluster. When the operator leaves the seat for more than one second without applying the parking brake, the buzzer will be on continuously for 6 seconds. The buzzer operates if the key switch is **"ON"** or **"OFF**."

TEST THE PARKING BRAKE SWITCH (MONOTROL PEDAL ONLY)

When the parking brake assembly and cables have been adjusted, the parking brake switch must be tested for correct operation.

⚠ WARNING

If the brake switch is not adjusted correctly, the engine can be started with the parking brake released. The purpose of this switch is to prevent the starter motor from being energized when the parking brake is not applied. The brake switch also deenergizes the solenoids to put the powershift transmission in NEUTRAL.

1. Put the lift truck on blocks so that the drive wheels do not touch the ground or any other object. Put blocks at each side of the steering tires to prevent movement of the lift truck.

2. Release the parking brake. The two–circuit microswitch will close the electric circuit for the Monotrol control (energize the solenoids for the powershift transmission) and deenergize the starter circuit.

3. Turn the ignition switch to the **START** position. If the parking brake switch operates correctly, the starter will not energize. Turn the ignition switch to the **OFF** position.