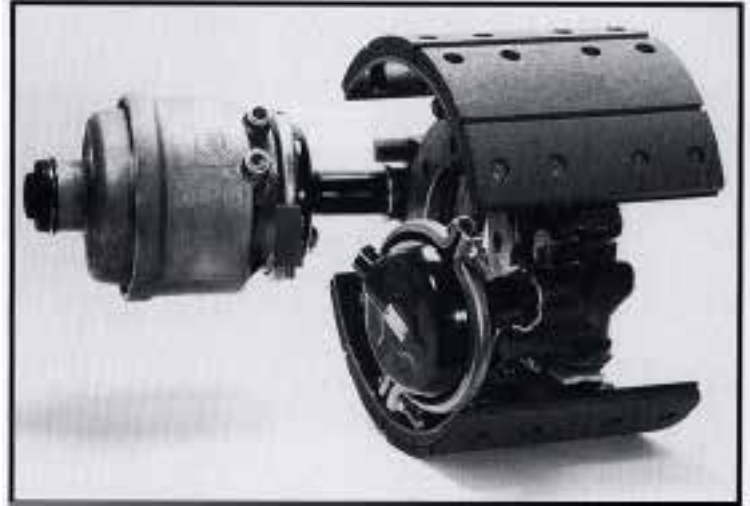




## FOR: Wedge Piston Type Service and Spring Brake Chambers

Your MGM wedge piston type spring brake chambers are an important part of your braking system. While they do not require scheduled servicing, it is good preventive maintenance to make the following routine inspections while they are in the shop for regular servicing of other components or a minimum of 50,000 miles.



### (1) RECOMMENDED INSPECTION POINTS

(A) The plastic END CAP requires no positioning or maintenance, but must be snapped tightly in place. Inspect the cap for damage and remove the END CAP (Fig. 1) and check to ensure that the RELEASE BOLT (Fig. 2) is tightened to 30-35 lbs. ft. torque. The release bolt must be properly installed for the brake to function properly. Be sure to replace the END CAP (Fig. 3).

(B) Ensure the BREATHER TUBE is securely engaged a minimum of 1/2 inch into the rubber elbows (Fig. 4) and glued together with a high quality rubber cement. These units must be mounted with the BREATHER TUBE in the upper half of the non-pressure chamber facing away from the road surface (Fig. 5). Failure to comply with these installation instructions will void the MGM warranty without remedy. Visually inspect the exterior surfaces of the unit for signs of damage from outside sources.

(C) Check to ensure the SERVICE CHAMBER CLAMP RING is evenly seated and the clamp band bolt nuts are torqued to 25-30 lbs. ft.

(D) Inspect air lines, hoses, and fittings attached to the chamber. Replace any damaged or leaking parts. MGM recommends the fittings be tightened to 25 lbs. ft. torque into the chamber air inlet ports. Check the tightness of the spanner (locking) nut. Apply 90 psi air pressure to the "Service Chamber" port and tighten the spanner nut to 130-150 lbs. ft. torque.



## (2) MANUAL RELEASE

- (A) Before releasing the brakes, chock the wheels of the vehicle to prevent a runaway. Remove the plastic end cap from the spring chamber (Fig.1 ). Manually release the spring brake by turning the release bolt counterclockwise; using a 3/4 inch deep well socket wrench, until the bolt is completely removed from the unit (Fig. 2).

**IMPORTANT:** Unlike double diaphragm spring brakes, the unscrewing or removal of the release bolt does not cage the power spring, but only removes the power spring force from the slack adjuster.

**NOTE:** For easier turning of the release bolt, apply 85-100 psi air pressure to the spring port. After removal of the release bolt, completely exhaust air from the spring chamber.



FIGURE 1

## (3) REMOVAL AND INSTALLATION INSTRUCTIONS FOR "COMBINATION CHAMBERS"

- (A) Place chocks under the wheels to prevent a runaway.
- (B) Follow procedure outlined in Section 2 to manually release parking brake.
- (C) Remove air lines.

**IMPORTANT:** Be sure to mark the air line from the inlet port marked "SPRING BRAKE" for re-installation reference.

- (D) Using a flat-end punch (Fig. 6) loosen spanner (locking) nut and unscrew the tandem brake from foundation brake housing.



FIGURE 2

**NOTE:** If available, use a spanner nut wrench (Fig. 7) in place of a punch. Spin off the tandem unit.

- (E) Before installing the new tandem brake, make sure the unit has the proper tube length and the correct replacement for a "Rockwell" or "Bendix" (Fig. 8) foundation brake.
- (F) Make sure the new tandem unit has the spring released (release bolt completely removed from unit) before installing.
- (G) Screw the tandem brake onto the brake spider until the tube bottoms out. Rotate the assembly counterclockwise to align the ports, but not more than 360 degrees.
- (H) Tighten spanner (locking) nut. (Fig. 7) Then apply 90 psi air pressure to "Service" port and tighten further to 150 lbs. ft. minimum torque.
- (I) Apply a non-hardening sealing compound to the hose fittings and



FIGURE 3

reinstall both air lines to the chamber ports. Be sure each air line is mated to the correct air inlet port per markings made when removed. MGM recommends the fittings be tightened to 25-30 lbs. ft. torque.

**IMPORTANT - When installing any MGM spring brake equipped with an external breather tube it is mandatory to position the breather tube in the upper half of the chamber facing away from the road surface (Fig. 5). Failure to comply will void the MGM warranty on these models.**

- (J) Check for air leaks. First fully charge the spring brake with full line pressure (minimum 100 psi), then, apply and hold the foot brake treadle valve down to charge the service brake chamber with 100 psi minimum air pressure. Test for air leaks around circumference of service clamp ring and at "Service" air inlet fitting. Use only soapy water, NEVER ANY TYPE OF OIL. If bubbles appear, firmly tap the circumference of the clamp ring with a hammer and re-tighten the clamp nuts (MGM recommends 25-30 lbs. ft.) until leak ceases. If bubbles appear at a fitting, tighten slightly, but not over 25 lbs. ft. torque. With the parking brake still charged with full line pressure (minimum 100 psi), check for leaks around the "Emergency" air inlet port fitting and at the "release bolt". If bubbles appear at the fitting, tighten slightly, but not over 25 lbs. ft. torque. If bubbles appear at release bolt, replace the single (piggyback) unit.

- (K) With air applied to the spring brake section (85-100 psi), install the Fig. 4 release bolt washer (aluminum) and release bolt. Screw bolt in (clockwise) until it contacts the piston insert. Tighten bolt to 30-35 lbs. ft. torque. **DO NOT USE AN IMPACT WRENCH.** Release air pressure from the spring chamber (Fig. 2).

- (L) Replace the END CAP properly (Fig. 3). Operating these units without the END CAP securely in place will void the MGM warranty without remedy.

**IMPORTANT - Release bolt must be properly installed for the correct function of the spring brake.**

**NOTE: TUBE SUPPORT - All Wedge type spring brake actuators having a tube length over 4.75 inches must be supported by an auxiliary bracket.**

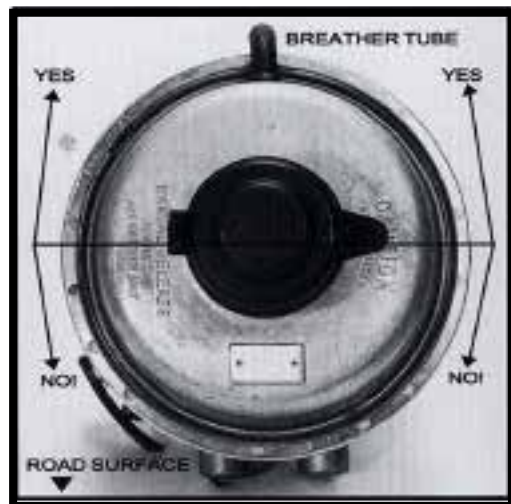
#### **(4) REMOVE AND REPLACE" SINGLE" (PIGGYBACK) UNITS**

- (A) Place chocks under wheels to prevent vehicle runaway.
- (B) Follow the procedure in Section 3 to manually release parking brake.
- (C) Remove all air lines.

**IMPORTANT - Be sure to mark air line from inlet port marked "SPRING BRAKE" for re-installation reference.**



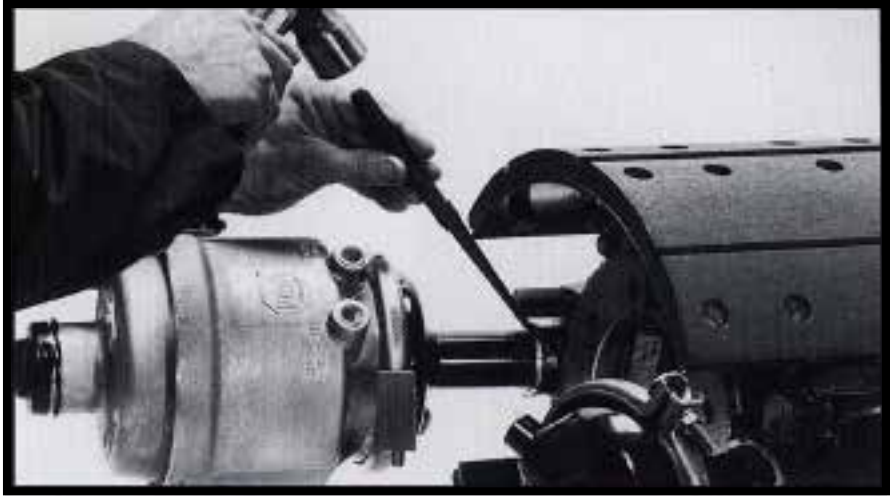
**FIGURE 4**



**FIGURE 5**

- (D) MGM models “WMG-T “ and “WMLG-T” are fitted with an external breather tube. Disconnect the tube from the elbow in the service chamber housing (Fig. 4).

- (E) Using a 9/16 inch wrench or socket, remove the clamp nuts on service clamp ring. Then, while holding the single spring brake securely in place, remove the clamp ring to allow removal of the single (piggyback) spring brake from the service chamber (Fig. 9).

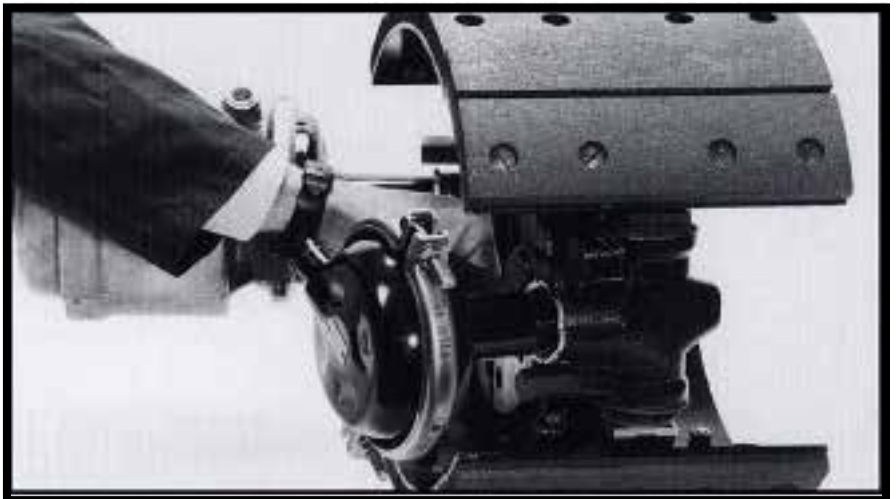


**FIGURE 6**

**IMPORTANT - At this time, take the opportunity to inspect all of the parts in the service chamber (especially the diaphragm) and replace any parts which may be damaged or worn. (See Section 5) Use only genuine MGM Engineered replacement parts!**

- (F) Make sure new single (piggyback) spring brake is fully released as outlined in Section 2 of this manual. Position unit over service chamber so diaphragm is positioned in bottom recess of chamber (Fig. 11) and, with very close attention taken to Fig. 6 assure all mating parts are aligned straight and the air lines are positioned to mate with the vehicle air supply lines (Fig. 5), replace the service clamp ring (Fig. 9).

- (G) Reinstall clamp bolts and nuts. Alternately tighten each nut in 5-10 lbs. ft. torque increments while constantly rechecking mating parts alignment. (If realignment is required, loosen clamp nuts and repeat Step (F) above. Firmly tap around circumference of clamp ring with hammer to assure full seating of clamp (Fig. 10) and tighten nuts to 25-30 lbs. ft. torque.



**FIGURE 7**

- (H) Apply a non-hardening sealing compound to the hose fittings and reinstall both air lines to the chamber ports. Be sure each is mated to the correct air inlet port per markings made when removed. MGM recommends the fittings be tightened to 25-30 lbs. ft. torque.

- (I) Check for air leaks. See Section 3, (Step J) of this manual.

- (J) Reinstall the external breather tube. Wipe the open end of the connector tube clean to be sure that no oil is present and apply a good quality rubber cement to the tube. Reinsert the tube into the flexible elbow with a minimum 1/2 inch engagement into the elbow (Fig. 4). To reinstall release bolt and end cap see Section 3, Steps (K) and (L).





**FIGURE 8**

**IMPORTANT** - When installing any MGM spring brake equipped with an external breather tube it is mandatory to position the breather tube in the upper half of the chamber facing away from the road surface (Fig. 5). Failure to comply will void the MGM warranty on these models.

**(5) REMOVAL AND INSTALLATION INSTRUCTIONS FOR “SERVICE DIAPHRAGM / PISTON ROD ASSEMBLY” AND “ROD BOOT”**

- (A) Follow all instructions given in Section 4 of this manual and remove the single (piggyback) spring brake from service chamber, Step (A) through (E).

**NOTE:** If the rod boot requires replacement, the service chamber must be removed from the vehicle.



**FIGURE 9**

- (B) Using a flat end punch (Fig. 6), loosen the spanner nut and unscrew the service chamber from the foundation brake housing; if available, use a spanner nut wrench (Fig. 7), in place of a punch. Move the unit to a workbench for replacement of the rod boot.
- (C) Remove the boot; disengaging the boot retainer ring and pulling the boot off of the groove in the piston rod.
- (D) To replace the rod boot, position boot on tube neck and push boot onto the tube neck until the retaining ridge on the boot 1.0 completely engages the groove in the tube neck. Place retaining ring over the boot and snap into place.
- (E) Reinstall the diaphragm/piston and rod assembly through the center hole in the boot and make sure the retaining ridge on the top of the boot I. D. completely engages into the retaining groove on the piston rod (Fig. 12).

**NOTE:** Diaphragm, piston, and rod are available in a kit only. The diaphragm is bonded to the piston to ensure proper alignment of the rod in the mounting tube.



**FIGURE 10**

- (F) To reassemble the service chamber to the spring brake section, first place the head-end of the spring brake (release bolt end down) on the workbench. Then position and replace the service chamber subassembly (non-pressure chamber, piston plate assembly, diaphragm, and boot) on top of the spring brake section. Align all parts. Install the service chamber clamp band and tighten clamp band nuts to 25-30 lbs. ft. torque, while tapping the band around its complete diameter to assure proper seating. The unit is now ready for installation on the vehicle, see Section 3, steps (G) through (L).

**NOTE:** If the service chamber was not removed from the vehicle, proceed as follows:



**FIGURE 11**

(G) Install the new unit; aligning air ports.

**NOTE: Do not attempt to align the air ports with the clamp band installed on the brake. Always completely remove the clamp band from the brake to position parts.**

(H) Install the clamp band. Tap the clamp band all the way around when tightening the clamp band nuts to ensure proper seating. Tighten nuts to 25-30 lbs. ft. torque.

(I) Apply a non-hardening sealing compound to the hose fittings and reinstall both air lines to the chamber ports. Be sure each is mated to the correct air inlet port per markings made when removed. MGM recommends that the fittings be tightened to 25-30 lbs. ft. torque.



**FIGURE 12**

(J) Check for air leaks. See Section 3, (Step J) of this manual for instructions.

(K) With air applied to the spring brake section (85-100 psi), install the release bolt washer (aluminum) and release bolt. Screw bolt in (clockwise) until it contacts the piston insert and tighten to 35-45 lbs. ft. torque (**DO NOT USE AN IMPACT WRENCH**). Release air pressure from the spring chamber.

(L) Replace the END CAP properly (Fig. 3). Operating these units without the END CAP securely in place will void the MGM warranty without remedy.

## **(6) RECOMMENDED SPRING BRAKE ACTUATOR DISARMING PROCEDURE**

All retired spring actuators must be safely disarmed before they are disposed of to prevent serious personal injury from accidental sudden release of the high energy spring (as much as 2700 Lbs.) in the parking chamber. To disarm the unit, remove it from the vehicle following the instructions in Section-(3), for combination chambers, or Section-(4), for single piggyback) chambers. Be sure to release the brake per Section-(2) of this manual. Never attempt to remove the head which contains the power spring. Observe all safety precautions. Place the unit in a steel container (\*) and use an acetylene torch to cut a hole through the head housing the power spring. Cut completely through at least two spring coils. The steel container must have openings to expose the head where it is to be cut with the acetylene torch and it must be strong enough to prevent parts from hurtling out should the unit suddenly separate before it is safely disarmed. It is the users responsibility to insure the steel container is safe.

\* Information concerning a suitable container is available from your MGM Brakes Representative .

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