Lucas

# SERVICE INSTRUCTIONS
## for Lucas DURAPARK™ Brake

# K427/1 PARK BRAKE CYLINDER OVERHAUL

This service instruction covers both major and minor overhaul of the park brake cylinder. Instruction begins after the brake shoes have been removed (see Service Instructions K384/3 for removal and installation of shoes).

The park brake cylinder may require removal depending on the level of overhaul to be performed. Recommended removal practice is:

- **DO NOT REMOVE** to replace only dust boot(s)
- **DO REMOVE** for all other overhaul operations

⚠ **CAUTION:** THE ABUTMENT AND HANDBRAKE PISTONS ARE LEFT AND RIGHT HANDED! USE CAUTION NOT TO MIX!

⚠ **CAUTION:** DO NOT APPLY THE PARK OR SERVICE BRAKE AFTER THE DRUM IS REMOVED.

⚠ **WARNING:** DO NOT BLOW DUST OFF BRAKE! REMOVE DUST WITH A VACUUM BRUSH OR A DAMP RAG.

1. Remove the park brake spring chamber per the vehicle manufacture's instructions.

**ALL WORK SHOULD BE PERFORMED IN A CLEAN WORK AREA**

**NOTE:** Inspect spring chamber for evidence of automatic transmission fluid (ATF) leakage. If ATF enters the park brake cylinder, damage may occur to the piston seals causing brake fluid leakage.

2. Drain the service brake system. Attach one end of a tube to the bleed screw on the park brake cylinder. Place the other end in appropriate container. Turn the bleeder screw one turn. Gently pump the brake pedal to remove all of the brake fluid.

⚠ **CAUTION:** DO NOT REUSE BRAKE FLUID! DISPOSE OF USED FLUID IN A SAFE AND PROPER MANNER!

⚠ **CAUTION:** DO NOT CLAMP BRAKE LINE HOSES. THIS MAY CAUSE INTERNAL DAMAGE!

3. Clean and disconnect the cross-over pipe from the park brake cylinder.

4. Remove the two allen head screws (7/32"), which attach the cylinder to the backing plate.

5. Remove the park brake cylinder from the vehicle by removing the three (3) mounting bolts.

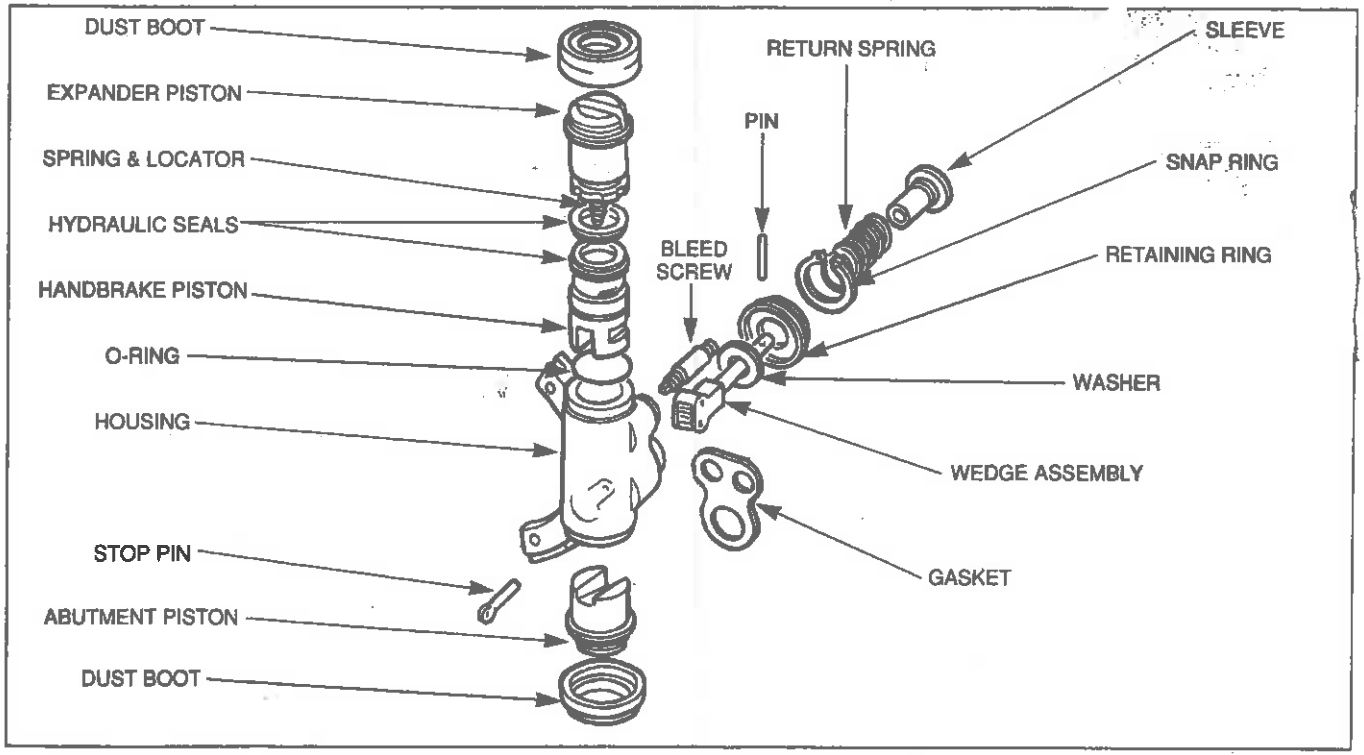



figure 1

6. Remove and discard the gasket from between the cylinder and the backing plate. Using a wire brush, clean any corrosion and repaint any bare metal on the backing plate.

***SEAL and/or PISTON REPLACEMENT***

7. Place the cylinder in a soft-jawed vice.

8. Loosen the dust boots from the housing with a screwdriver.

9. Remove the dust boots and pistons as an assembly. Then remove the dust boots from the pistons. Discard the dust boots.

10. Remove the allen head stop pin from the housing.

11. Push the hand brake piston out of the housing.

12. Remove the seals and o-rings from the pistons. Use care not to damage the seal grooves.

13. Remove the wedge assembly by first compressing the return spring then removing the pin (see figure 2). Remove the return spring and sleeve. Remove the snap ring. Remove the retaining ring, washer and wedge assembly from the housing. Inspect all pieces for wear, corrosion or damage. The rollers should turn freely and should not have any flat spots. Replace assembly if not serviceable. Do not install into the housing at this time.

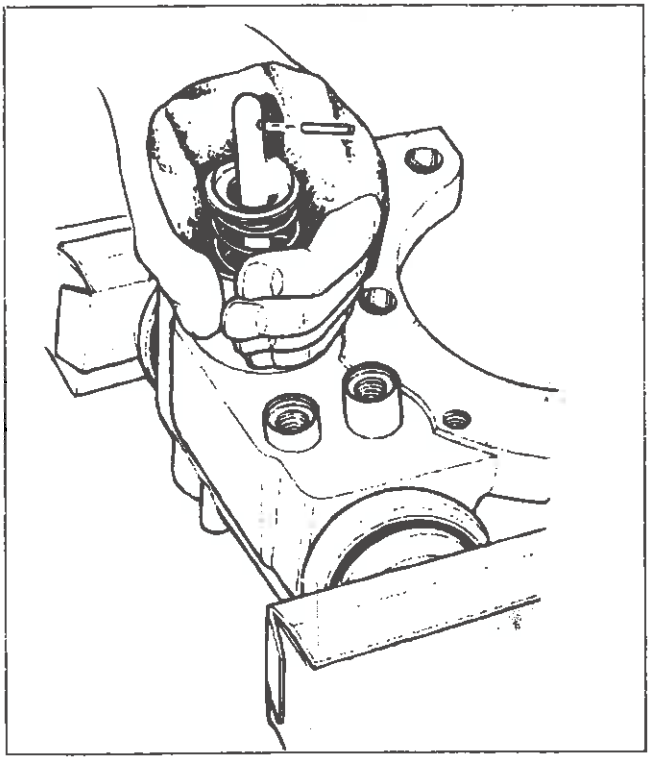


figure 2

14. Clean all parts with heavy duty DOT 3 brake fluid or equivalent.

⚠ **CAUTION:** ALL INTERNAL PARTS MUST BE FREE OF CONTAMINANTS. FAILURE TO COMPLY MAY CAUSE PARTS TO FAIL!

15. Inspect the pistons and the cylinder bores. Honing is allowed, however, the bore diameter must not exceed 1.753" (1.628" for 1.625" bores). Hone the bores using a 220 spring loaded wheel cylinder stone that gives a smooth finish. If any scoring is visible after honing the housing must be replaced. **CLEAN CYLINDER WITH ISOPROPYL ALCOHOL TO REMOVE HONING RESIDUE.**

16. Install the wedge assembly into the housing.

17. To replace the seals lube them with DOT 3 brake fluid. Carefully install them onto the pistons. Insure the lip of the seal is towards the fluid side of the pistons (see fig. 3).

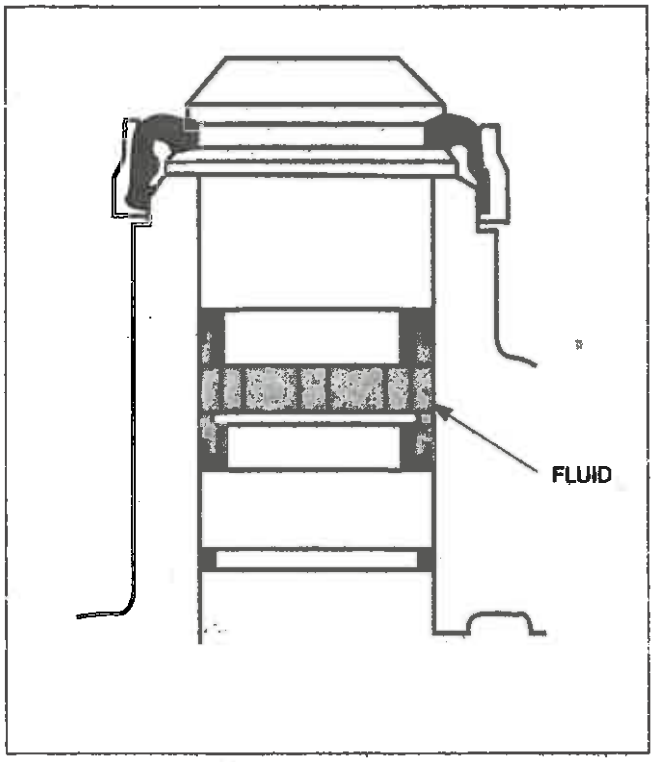



figure 3

⚠ **CAUTION:** USE ONLY THE GREASE CONTAINED IN THE SEAL KIT!

18. Install the dust boots onto the expander and abutment pistons.

19. Lube the handbrake piston o-ring with the grease from the packet in the seal kit. Install the o-ring into the groove of the handbrake piston. With the same grease, lube the handbrake wedge ramp.

20. Install the handbrake piston into the cylinder, with the stop pin slot aligned with the stop pin hole. Install the stop pin, torque to 16 ft-lbs.

⚠ **CAUTION:** IF IT BECOMES NECESSARY TO REMOVE THE HANDBRAKE PISTON FROM THE BORE AFTER THE INITIAL INSTALLATION, INSPECT THE LIP SEAL AND O-RING FOR DAMAGE BEFORE REINSTALLING.

21. Install the abutment piston into the bore with the deep cut end of the handbrake wedge ramp toward the wedge assembly (see figure 1). Using care, install the dust boot onto the housing.

22. Install the expander piston into the cylinder. Using care, install the dust boot onto the housing.

23. Using a new gasket install the cylinder onto the backing plate. Torque the mounting bolts to the vehicle manufacture's specifications. It is not necessary to reinstall the two (2) allen head screws. These were originally installed for shipping purposes only.

24. Connect the cross-over pipe. Torque 10 - 15 ft-lbs

**NOTE:** Wheel seals should be replaced each time the hub is removed.

25. Reinstall the park brake spring chamber (140-165 ft-lbs). Reinstall the brake shoes per Service Instructions K384/3 Lined Shoe Replacement. Reinstall the drum and bleed the brake systemper the vehicle manufacturer's specifications.

**NOTE:** It is best to bleed the brakes before adjustment

26. Adjust brakes.

**CAUTION:** INCORRECT BLEEDING AND/OR ADJUSTMENT WILL CAUSE IMPROPER BRAKE OPERATION!

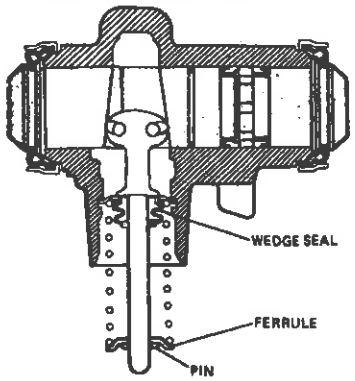
27. While driving very slowly, test the service and parking brakes.

28. Road test.

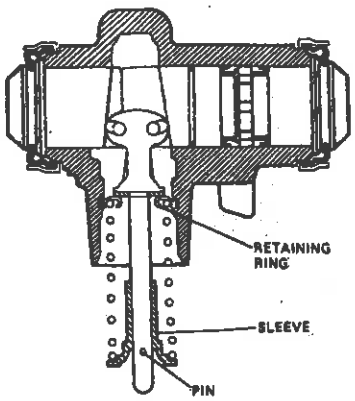
**NOTE:** Extra caution should be taken if linings have not yet been burnished.

# SUPPLEMENT 1
# EXPANDER SERVICE INSTRUCTIONS

NON-SLEEVED
(1984 & 1985 MY)




SLEEVED
(1986 - Present)

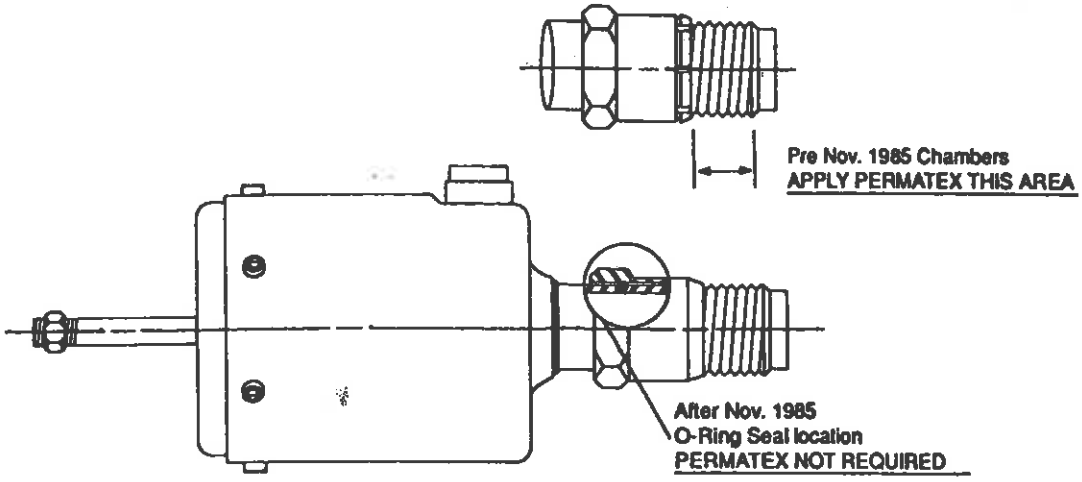



**Description of Service Part Changes:**

1) Sleeved expanders now supersede non-sleeved expanders.

2) Sleeved wedge kit now supersede non-sleeved wedge kit.

**IMPORTANT INSTALLATION NOTE:** BRAKE CHAMBER design level must be checked when the service part changes described above are being performed. The original brake chamber, pre Nov. 1985 illustrated below, is without an o-ring seal on the inside of the jam nut and is identified by the slots in the base of the jam nut. After Nov. 1985, chambers have an o-ring on the inside of the jam nut and are identified by a solid jam nut base. If the brake chamber is the original design and is matched with a sleeved expander, then the chamber to expander joint must be sealed with PERMATEX FORM-A-GASKET NO.2 around the threads, 360°, in the area shown below. Doing this will prevent the ingress of water into the expander. Brake chamber is not made by Lucas. The manufacturer is Aeroquip.

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**For further information, write, phone or FAX:**

**MERITOR - HVBS**
**2490 Arbor Blvd.**
**Dayton, Ohio 45439**

**Telephone: 937-296-3077**
**FAX: 937-296-3158**

LITHO IN U.S.A.