MULTIPLE DISC BRAKE
(trunnion)

Service Instructions

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TYPICAL TRUNNION BRAKE

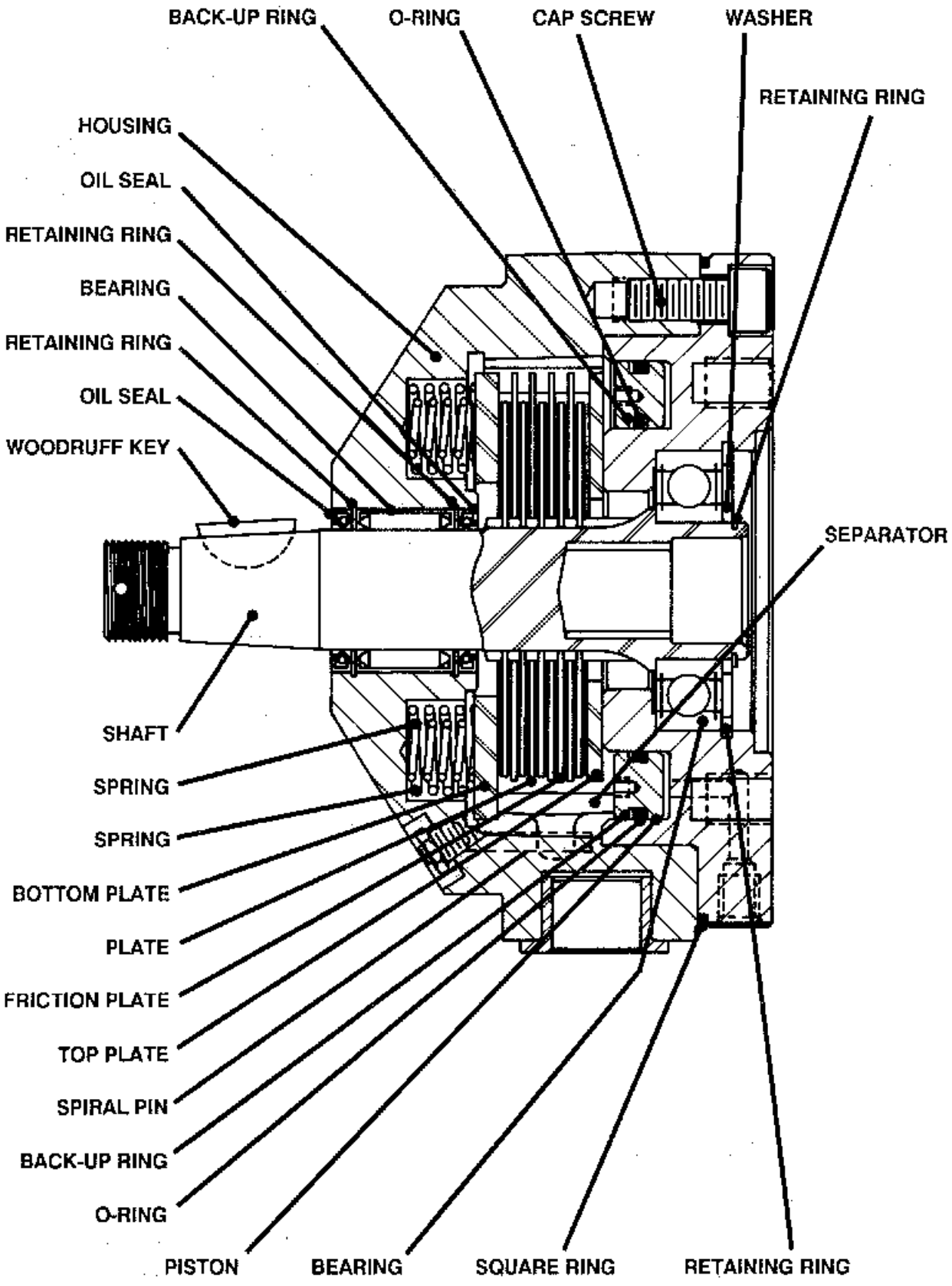

FIGURE 1

DESCRIPTION AND OPERATION OF THE MICO MULTIPLE DISC BRAKE

The Multiple Disc Trunnion Brake (dry design) is a wheel mount brake designed specifically for use with vehicles requiring parking or emergency brake capabilities on their steering axle.

This Multiple Disc Trunnion Brake provides consistent braking torque, positive hold, and long life in rugged environments.

The Brake will reduce maintenance and downtime because contaminants which cause brake lining wear are prevented from entering the brake.

Braking is provided by a pack of rotating friction discs splined to the shaft, and stationary separator plates restrained by broached slots in the housing. Force is transmitted to the disc pack through a hydraulic piston and a series of preloaded springs. The brake is released by hydraulic pressure applied to the piston to compress the springs. The brake is self-applying since any function which reduces the hydraulic system pressure of the brake will start to initiate a brake application. Zero pressure produces maximum brake torque.

REPAIR KITS

MODEL NUMBER	LINING KIT	SEAL KIT	SPRING KIT
02-550-096	20-060-073	02-500-098	02-500-140
02-550-104	20-060-073	02-500-098	02-500-140

DISASSEMBLY

1. Remove woodruff key (27) from shaft (20).
2. Remove cover (6) from housing (26) by removing four cap screws (1).

   CAUTION: Cover is under spring tension of approximately 1500 pounds. The four cap screws should be loosened evenly to relieve this force. If a hydraulic press is available (3000 lbs. max.) the cover can be held in position while removing the cap screws.
3. Tap threaded end of shaft with a soft mallet to dislodge cover and shaft assembly from housing (26).
4. Remove retaining rings (2 & 3) and washer (4) from cover (6). Then separate shaft (20) and bearing (5) from cover.
5. Separate bearing (5) and shaft (20).
6. Remove square ring (7) from cover (6).
7. Remove piston (10) from cover (6) by inserting two 1/4 - 20 UNC bolts into threaded holes in piston. By turning and pulling, piston can be removed from bore.
8. Remove o-rings (9 & 12) and back-up rings (8 & 11) from piston (10).
9. Remove separators (13) from housing (26).
10. Remove top plate (14), friction plates (15), plates (16) and bottom plate (17) from housing (26).
11. Remove springs (18 & 19) from housing (26)
12. Remove oil seals (21 & 25), retaining rings (22 & 24) and bearing (23) from housing (26).

ASSEMBLY

LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT WITH CLEAN TYPE FLUID USED IN THE SYSTEM.

1. Clean all parts thoroughly before assembly.
2. Press new bearing (23) into housing (26) and hold in place with new retaining rings (22 & 24).
3. Press new oil seals (21 & 25) into housing (26). Note direction of seals.
4. Insert new springs (18 & 19) into housing (26).
5. Install new bottom plate (17) into housing so it is resting on springs.
6. Install new friction plates (15) and new plates (16) in an alternating pattern starting with a friction plate (15).
7. Install new top plate (14) over stack of friction plates (15) and plates (16).

   NOTE: Chamfered side of tabs must face downward towards housing (26).
8. Insert separators (13) over spiral pins in housing (26).
9. Insert shaft (20) into housing (26) engaging splines of shaft with splines of friction plates (15) until shaft bottoms out against oil seal (21).
10. Install new o-rings (9 & 12) and new back-up rings (8 & 11) on piston (10). Insert piston assembly into cover (6) being careful not to shear o-rings or back-up rings. Inserting 1/4 - 20 UNC bolts in piston may simplify installation.
11. Install new square ring (7) on cover (6).
12. Position cover (6) on housing (26). Install four cap screws (1) and tighten evenly to draw cover (6) to housing (26). Torque cap screws to 1397.0 Nm (55 ft. lbs.)

NOTES:

1) **If available, a hydraulic press will simplify installation of cover on housing. Clamp cover in position while tightening the cap screws.**
2) **Top plate (14) is not engaged with broached slots in housing (26) during assembly. Therefore, alignment of tabs with broached slot is critical.**

13. Move shaft (20) upward so that bearing shoulder on shaft is slightly above bearing shoulder in cover (6). With shaft held in this position press new bearing (5) until it shoulders on shaft (20).
14. Install washer (4) and new retaining ring (2) on shaft to hold bearing (5) in place.
15. Press outer race of bearing (5) until it shoulders out in cover (6).
16. Install retaining ring (3) in cover (6) to retain bearing (5) in position.
17. Install woodruff key (27) in shaft (20).

● **Items included in Repair Kit 02-500-098.**

▲ **Items included in Repair Kit 20-060-073.**

■ **Items included in Repair Kit 02-500-140.**

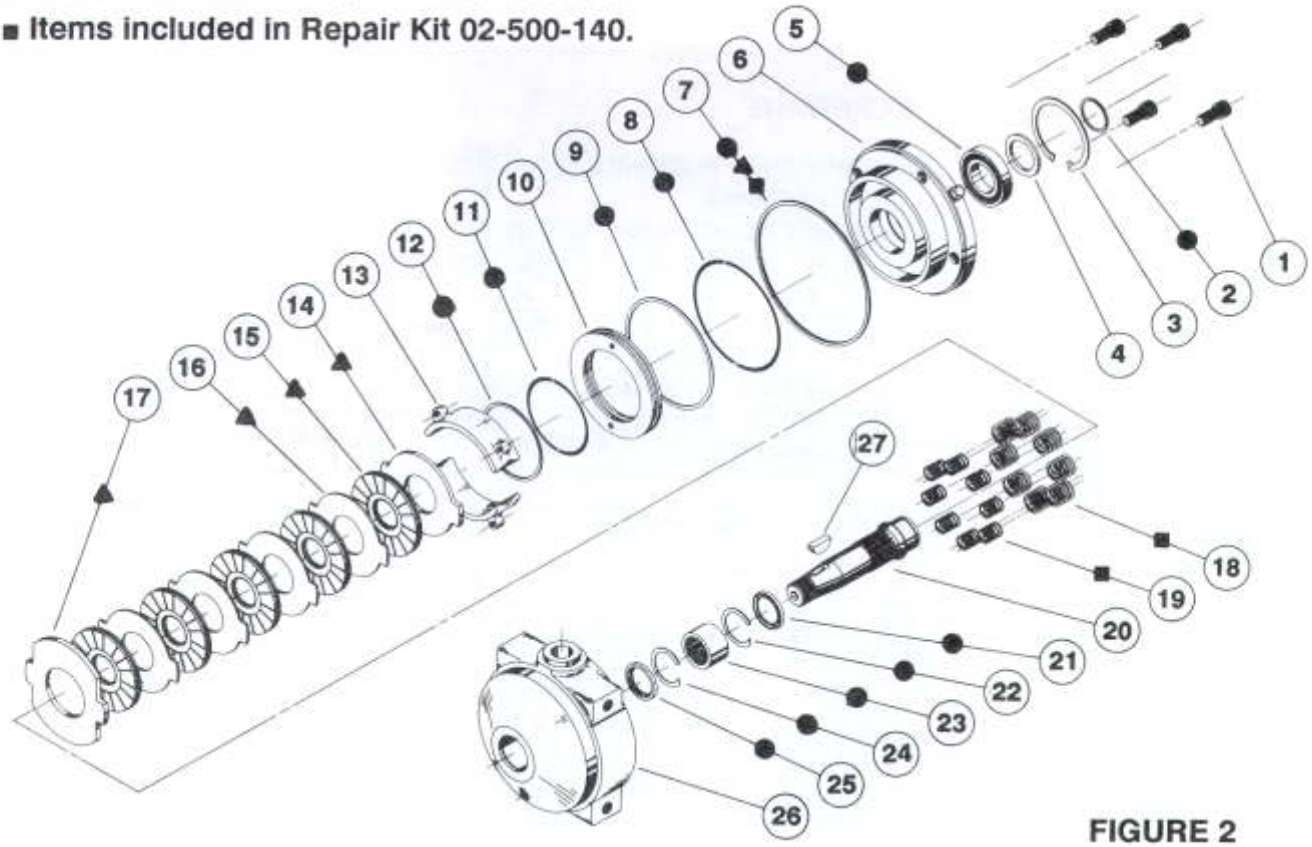

FIGURE 2

PARTS LIST

ITEM	DESCRIPTION
1	CAP SCREW (4)
● 2	RETAINING RING
3	RETAINING RING
4	WASHER
● 5	BEARING
6	COVER
■▲● 7	SQUARE RING
● 8	BACK-UP RING
● 9	O-RING
10	PISTON
● 11	BACK-UP RING
● 12	O-RING
13	SEPARATOR
▲ 14	TOP PLATE
▲ 15	FRICTION PLATE (5)
▲ 16	PLATE (4)
▲ 17	BOTTOM PLATE
■ 18	SPRING (8)
■ 19	SPRING (8)
20	SHAFT
● 21	OIL SEAL
● 22	RETAINING RING
● 23	BEARING
● 24	RETAINING RING
● 25	OIL SEAL
26	HOUSING
27	WOODRUFF KEY

■▲● MOUNTING GASKET (NOT SHOWN)

BLEEDING

1. Install brake in system and connect pressure lines.
2. Bleed pressure release section of brake by pressurizing side inlet port and allowing air to escape from top port. Pressure should not exceed 100 psi during bleeding.
3. Apply sufficient pressure to release brake and check for proper operation in system.

SERVICE DIAGNOSIS

(Numbers shown refer to Figure 2)

BRAKE WON'T RELEASE

1. Insufficient release oil pressure.
2. Damaged o-rings (items 9 or 12).
3. Damaged piston (item 10).
4. Damaged bearings (items 5 or 23).
5. Discs (items 15 & 16) warped or welded together due to excessive heat.

BRAKE WON'T APPLY

1. Residual oil pressure in release section of brake.
2. Damaged spring (items 18 & 19).
3. Damaged piston (item 10).
4. Broken cap screws (items 1) allowing cover (item 6) to move away from housing (item 26).

BRAKE APPLIES BUT TORQUE LOW

1. Residual oil pressure in release section of brake.
2. Springs (items 18 & 19) have taken permanent set due to excessive heat.
3. Friction discs (items 15) worn out.
4. Oil leakage into plate area of brake.