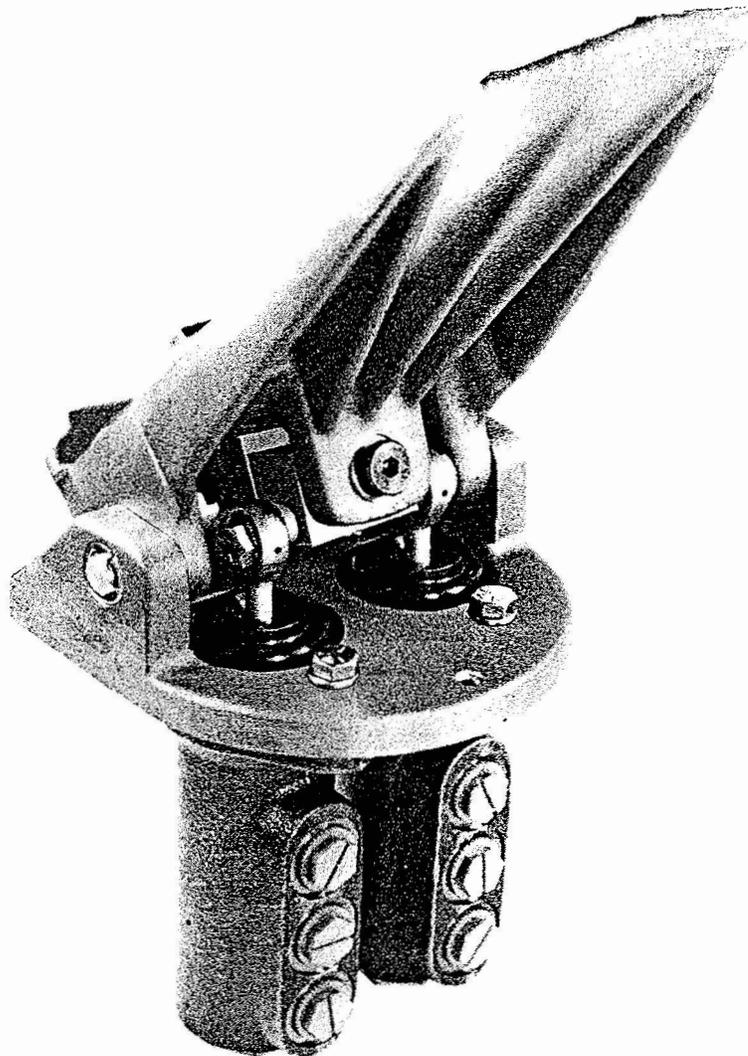


PEDAL ACTUATED - MODULATING DUAL HYDRAULIC POWER BRAKE VALVE



Service Instructions



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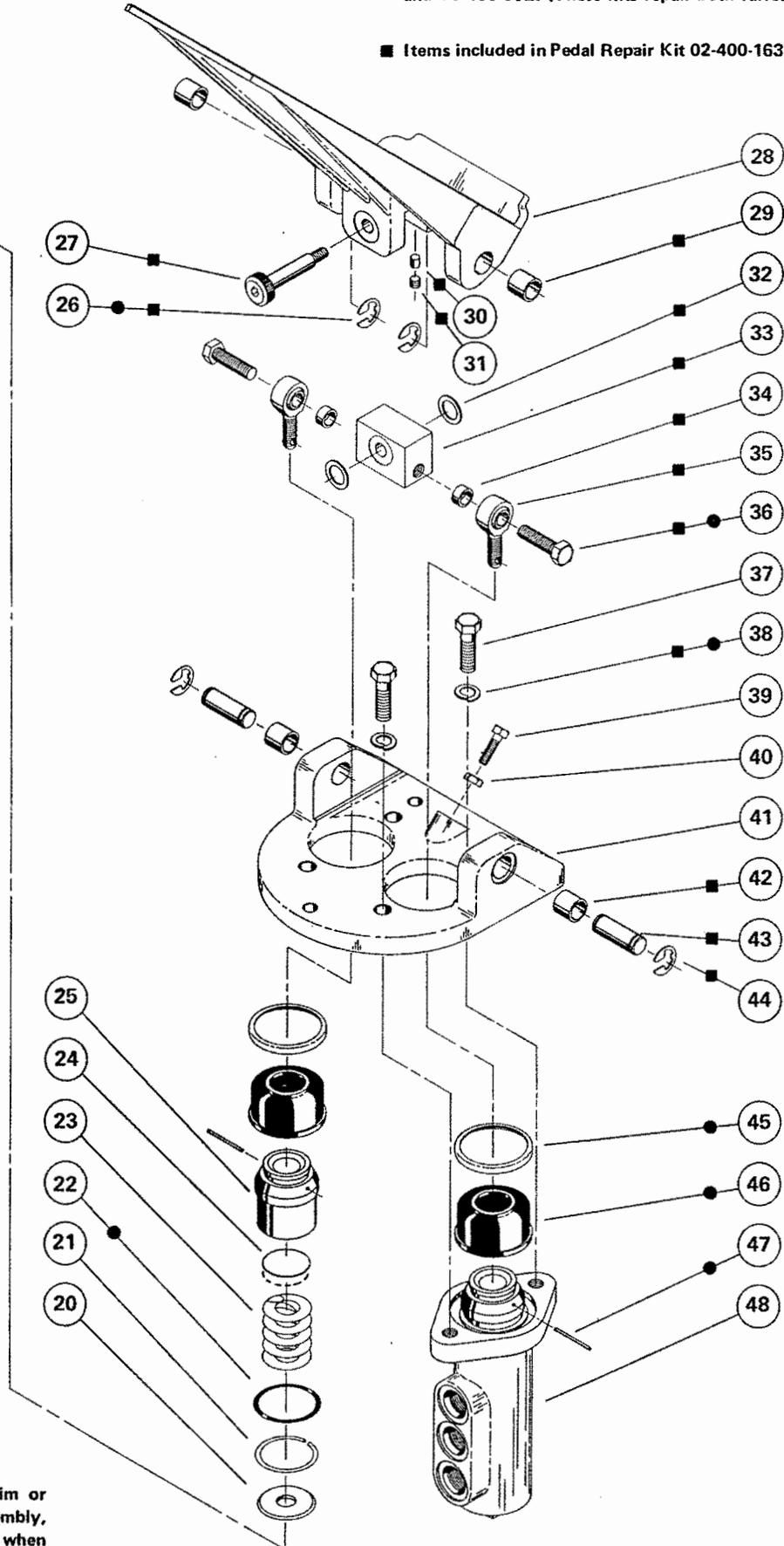
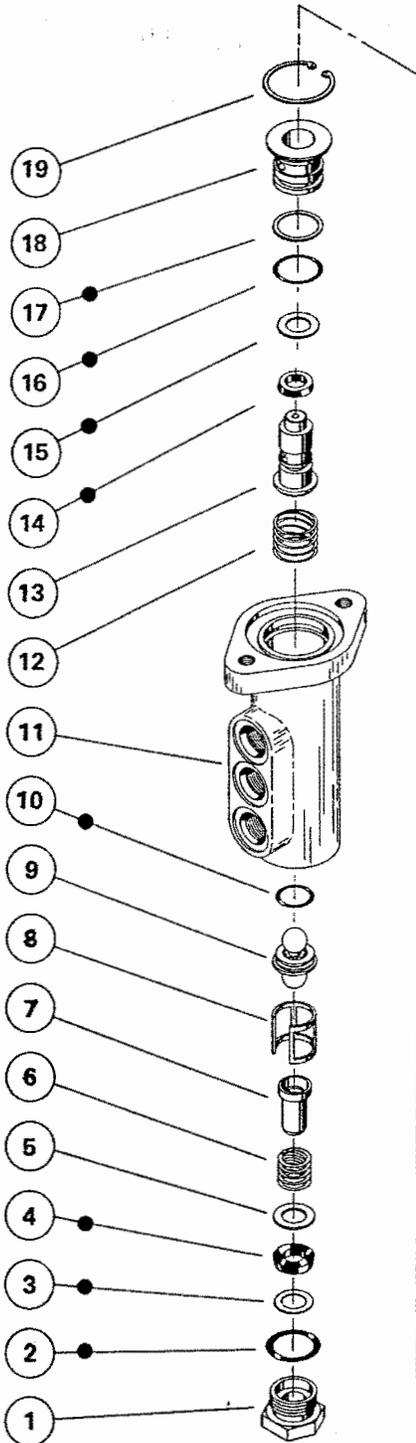


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CAUTION: DO NOT INTERMIX PARTS BETWEEN VALVES.

● Items included in Valve Repair Kits 06-400-090 and 06-400-092. (These kits repair both valves)

■ Items included in Pedal Repair Kit 02-400-163



NOTE:

The exact number and thickness of shim or shims (items 24) removed, during disassembly, must be replaced in the proper valve when reassembled.

CAUTION: DO NOT INTERMIX PARTS BETWEEN VALVES.

VALVE DISASSEMBLY

1. Mount entire valve and pedal assembly in vise — positioned upright. Clamp lightly on flat portion of one valve.
2. Remove inner e-rings (items 26) from pins (items 43). Then carefully remove both pins (items 43) from pedal and base assembly.
3. Remove trunion bolts (items 36) and spacers (items 34) from trunion (item 33). Now pedal assembly can be separated from base.

NOTE: If bearings (items 29 & 42) or pins (items 43) appear worn, they should be replaced. Refer to Pedal Repair Kit Instructions on page 4 for disassembly procedures.

4. Separate valve assemblies (items 48) from base (item 41) by removing bolts (items 37) and lockwashers (item 38).
5. Remove ring (item 45) and boot (item 46) from valve assembly (item 48).
6. If it is necessary to remove retaining pin (item 47) and ball joint (item 35), use a 3/32" drift to tap it from piston (item 25). Do this procedure while piston (item 25) is still in valve housing (item 11).
7. Remove piston (item 25), shim or shims (items 24) and spring (item 23) from housing bore.

CAUTION: It is important to remember how many and what thickness shims are removed from each valve.

8. Remove o-ring (item 22) from housing bore. NOTE: Care must be taken so as not to scratch housing bore or o-ring groove.
9. Remove retaining ring (item 21) from housing bore. Use a blunt object to force one side of ring down — now ring can be pulled out. NOTE: Care must be taken so as not to scratch housing bore or o-ring groove.
10. Remove washer (item 20) from housing bore.

11. Remove retaining ring (item 19) from housing bore.
12. Remove piston and sleeve assembly (items 13 & 18) from housing bore. Separate piston (item 13) from sleeve (item 18).
13. Remove o-ring (item 16) and back-up ring (item 17) from sleeve (item 18).
14. Remove spring (item 12) from housing bore.
15. Remove cup (item 14) and back-up ring (item 15) from piston (item 13).
16. Remove plug (item 1) from housing (item 11).
17. Remove o-ring (item 2), cup (item 4) and back-up ring (item 3) from plug (item 1).
18. Remove washer (item 5), spring (item 6) and guide (item 7) from housing bore.
19. Remove cage (item 8) from housing bore.
20. Remove valve and ball assembly (item 9) from housing bore by pushing out from push rod end using a wooden dowel.
21. Remove o-ring (item 10) from valve and ball assembly (item 9).
22. Repeat steps 5 - 21 for second valve assembly.

VALVE ASSEMBLY

CLEAN AND INSPECT ALL PARTS FOR WEAR. LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT IN CLEAN SYSTEM FLUID.

1. Install new o-ring (item 10) on valve and ball assembly (item 9) and insert into housing bore. Note direction of valve and ball assembly.
2. Install cage (item 8) into housing bore.
3. Install new o-ring (item 2) on plug (item 1).
4. Insert new back-up ring (item 3) and new cup (item 4) inside end of plug (item 1). Note order of back-up ring and cup.

NOTE: Be sure valve and ball assembly is fully seated into housing.

5. Also install washer (item 5), spring (item 6) and guide (item 7) in end of plug (item 1). Now install assembly in housing (item 11).
6. Install new cup (item 14) and new back-up ring (item 15) on piston (item 13) and insert into sleeve (item 18). Note direction of piston and sleeve.
7. Install new back-up ring (item 17) and new o-ring (item 16) on sleeve (item 18).
8. Install spring (item 12) into housing bore.
9. Install piston and sleeve assembly (items 13 & 18) in housing bore. Note direction of assembly.
10. Install retaining ring (item 19) in housing bore.
11. Install washer (item 20) in housing bore.
12. Install retaining ring (item 21) housing bore. NOTE: Care must be taken so as not to scratch housing bore.
13. Install new o-ring (item 22) in housing bore.
14. If retaining pin (item 47) and ball joint (item 35) were removed from piston (item 25), re-assemble using new retaining pin. Do this procedure with piston (item 25) installed in housing (item 11).
15. Install spring (item 23), shim or shims (items 24) and piston (item 25) in housing bore.

CAUTION: It is important to replace the same thickness and number of shims as were removed during disassembly.

16. Install boot (item 46) and ring (item 45) on piston (item 25) and valve assembly (item 48).
17. Repeat steps 1 - 16 for second valve assembly.
18. Attach both valve assemblies (item 48) to base (item 41) using bolts (items 37) and new lockwashers (items 38). Torque bolts 22 - 27 ft. lbs.

NOTE: If bearings (items 29 & 42) or pins (items 43) appeared worn during disassembly, refer to

Pedal Repair Kit Instructions on page 4 for assembly procedures.

19. Attach ball joints (items 35) to pedal assembly using new trunion bolts (items 36) and spacers (items 34). Torque 22 - 27 ft. lbs.
20. Attach pedal (item 28) to base (item 41) by carefully inserting pins (items 43) and using e-rings (items 26) to secure them.

CAUTION: If for some reason stop bolt (item 39) or jam nut (item

40) were moved during disassembly or assembly, they must be readjusted to original setting. A minimum of 1/16" travel must be available before the piston (item 13) contacts ball assembly (item 9) as pedal is applied.

PARTS LIST

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	PLUG	● 17	BACK-UP RING	■ 33	TRUNION
● 2	O-RING	18	SLEEVE	■ 34	SPACERS
● 3	BACK-UP RING	19	RETAINING RING	■ 35	BALL JOINTS
● 4	CUP	20	WASHER	■ ● 36	TRUNION BOLTS
5	WASHER	21	RETAINING RING	37	BOLTS
6	SPRING	● 22	O-RING	■ ● 38	LOCKWASHERS
7	GUIDE	23	SPRING	39	PEDAL STOP BOLT
8	CAGE	24	SHIM (OR SHIMS)	40	NUT
9	VALVE & BALL ASSEMBLY	25	PISTON	41	BASE
● 10	O-RING	■ ● 26	E-RINGS	■ 42	BEARING
11	VALVE HOUSING	■ 27	CENTER PIVOT BOLT	■ 43	PINS
12	SPRING	28	PEDAL	■ 44	E-RINGS
13	PISTON	■ 29	BEARING	● 45	RING
● 14	CUP	■ 30	PLUG	● 46	BOOT
● 15	BACK-UP RING	■ 31	SET SCREW	● 47	RETAINING PIN
● 16	O-RING	■ 32	THRUST WASHERS	48	VALVE ASSEMBLY

PEDAL REPAIR KIT 02-400-163 INSTRUCTIONS

PEDAL DISASSEMBLY

1. Follow steps 1 - 3 of Valve Disassembly Procedures on page 3.
2. Loosen set screw (item 31) and plug (item 30) found on the under side of pedal (item 28) before removing center pivot bolt (item 27).
3. Remove trunion (item 33) and two thrust washers (items 32).
4. Use a 5/8" diameter punch or drift to remove old bearings (items 29 & 42) out of pedal (item 28) and base (item 41).

CAUTION: Be sure to support the area around bearing when applying force.

5. Continue with step 4 of Valve Disassembly Procedure if more valve disassembly is necessary.

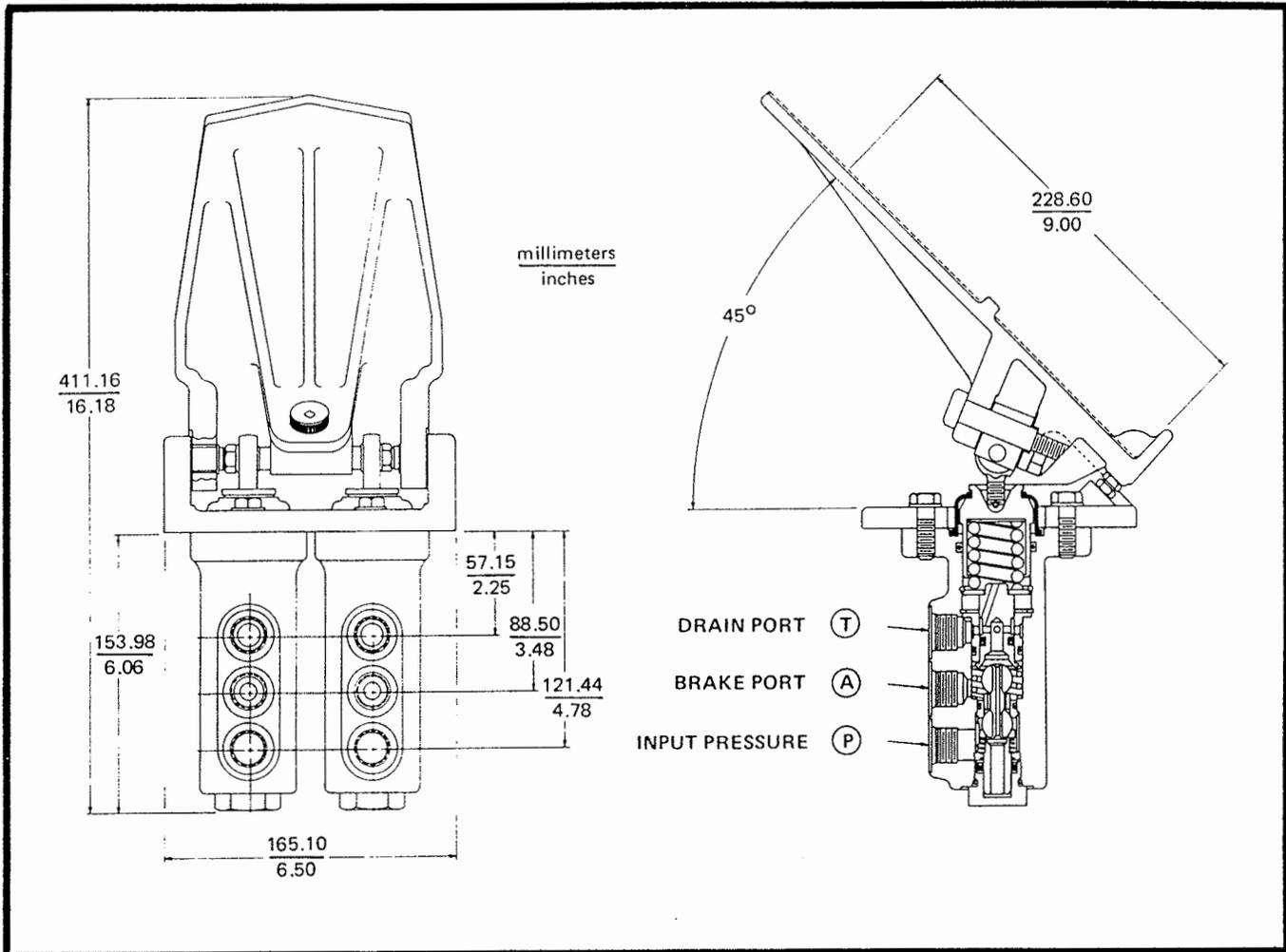
PEDAL ASSEMBLY

1. Install new bearings using a suitable arbor or other device to prevent damage to bearing. NOTE: Bearing should be pressed flush to slightly below (1/32" max.) surface of pedal or spotface on base.
2. Assemble new trunion (item 33), new thrust washers (items 32) and pedal (item 28) using new center pivot bolt (item 27). NOTE: Be sure to grease trunion, center pivot bolt and thrust washers before assembling. Use any good multi-purpose bearing grease;
3. Tighten center pivot bolt (item 27) to 10 - 12 ft. lbs. Trunion must move freely. Then tighten set screw (item 31) and plug (item 30) on underside of pedal (item 28).
4. Continue with step 19 of Valve Assembly Procedure on page 4 if more valve assembly is necessary.

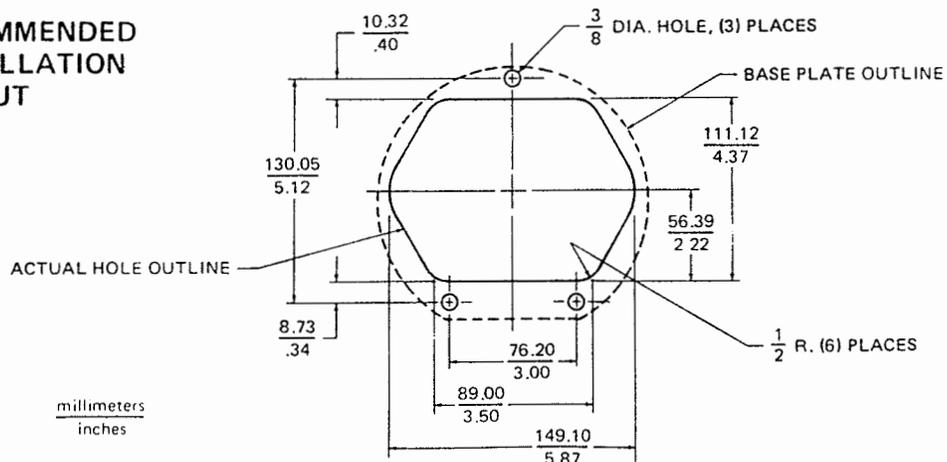
SPECIFICATIONS

Model Number	Max. Press. Out	Fluid Type	Max. Pedal Force	Valve Repair Kit
06-460-328	1000 psi	Hydraulic Oil	60 lbs.	06-400-090
06-460-330	1500 psi	Hydraulic Oil	75 lbs.	06-400-090
06-460-332	3000 psi	Hydraulic Oil	75 lbs.	06-400-092
06-460-334	1800 psi	Hydraulic Oil	85 lbs.	06-400-090

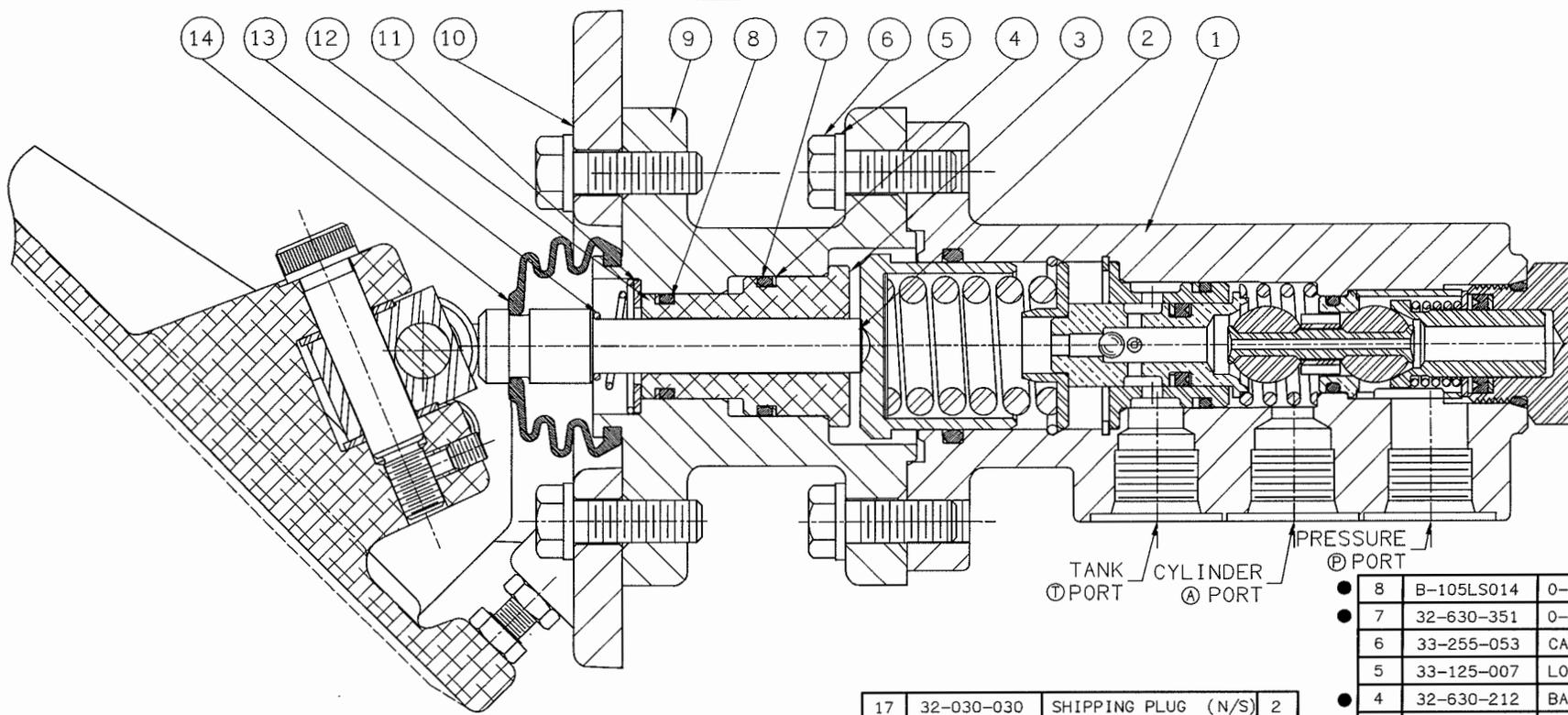
All models use 02-400-163 Pedal Repair Kit



RECOMMENDED INSTALLATION CUTOUT



DRAWING NUMBER
06-460-406
REV NPI OR ECN NO
D ECN A000384
E ECN A000523



NOTES:

- 1) FOR USE WITH MINERAL BASE HYDRAULIC OIL ONLY.
- 2) SET PER 99-950-136 SPECIFICATION.
- 3) VALVES ROTATED 180° MAKE 06-460-406-R.
- 4) VINYL PRIMER PAINT PER 99-950-374 SPECIFICATION.
- 5) ● ITEMS INCLUDED IN VALVE REPAIR KIT P/N 06-400-124.

17	32-030-030	SHIPPING PLUG (N/S)	2
16	33-200-001	SCREW (N/S)	2
15	32-830-124	LABEL (N/S)	1
● 14	32-570-086	BOOT	2
13	32-660-346	SPRING	2
12	42-630-025	BACK-UP RING	2
11	33-115-113	FLAT WASHER	2
10	28-910-013	PEDAL & BASE ASSEMBLY	1
9	30-100-518	HOUSING	2
ITEM	PART NUMBER	DESCRIPTION	QTY

● 8	B-105LS014	O-RING	2
● 7	32-630-351	O-RING	2
6	33-255-053	CAP SCREW	8
5	33-125-007	LOCK WASHER	8
● 4	32-630-212	BACK-UP RING	2
3	30-010-470	PISTON	2
2	30-020-172	ROD	2
1	20-100-255	VALVE ASSEMBLY	2
ITEM	PART NUMBER	DESCRIPTION	QTY

ITEM	QUAN	LOCTITE	TORQUE
6	8	NONE	22-27 LBFT

MICO[®]
North Mankato, Minnesota USA

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SCALE	1-1	MATERIAL	
DO NOT SCALE			
DRAWN	CL	TITLE	
6/17/03		PEDAL/PILOT	
APVD ENGRG		DUAL MODULATING VALVE	
BSW		SIZE	DRAWING NUMBER
X NO		B	06-460-406
			REV
			E