

BENDIX MAJOR REPAIR KIT FOR SERVICING MIDLAND HY-POWER BRAKE UNIT

PARTS IDENTIFICATION

KEY NO.	PART NAME
1	POPPET—Atmospheric
2	SEAL—Atmos. Poppet (Rubber)
3	HOUSING—Poppet Valve
4	SPRING—Atmos. Poppet
5	POPPET—Vacuum
6	SCREW & LOCKWASHER—Poppet Valve
7*	SCREEN—Air Cleaner (2)
8*	FILTER—Air Cleaner (Felt)
9	SNAP RING—Air Cleaner
10	SEAL—Vacuum Poppet (Rubber)
11	NUT—Poppet Diaph. (Tinnerman)
12	PLATE—Poppet Diaphragm
13	DIAPHRAGM—Poppet
14	PISTON—Hyd. Cont. Valve
15	CUP—Valve Piston (Rubber)
16	SCREW—Bleeder
17	HOUSING—Hyd. Cylinder
18	PISTON ASSEMBLY
19	SPRING—Poppet Diaphragm
20	POPPET VALVE ASSEMBLY
21	SCREW & LOCKWASHER—Poppet Hsg. (4)
22	SPLIT TUBE—Diaph. Vac. Passage
23	SPRING—Return (Hyd. Piston)
24	RETAINER—Spring (Hyd. Piston)
25	CUP—Hyd. Piston (Rubber)
26	PISTON—Hyd. Cylinder
27	SPRING—Piston Check Valve
28	VALVE—Check (Hyd. Piston)
29	SNAP RING—Piston Check Valve
30	GASKET—Cyl. End Cap
31	CAP—Hyd. Cyl. End
32	HOUSING AND VALVE ASSY.
33	"O" RING—Aux. Seal Passage
34	CAP & TUBE—Vacuum Valve
35	GASKET—Vacuum Valve Cap
36	SPRING—Vacuum Valve
37	DISC—Vacuum Valve
38	HOUSING—Vacuum Check Valve

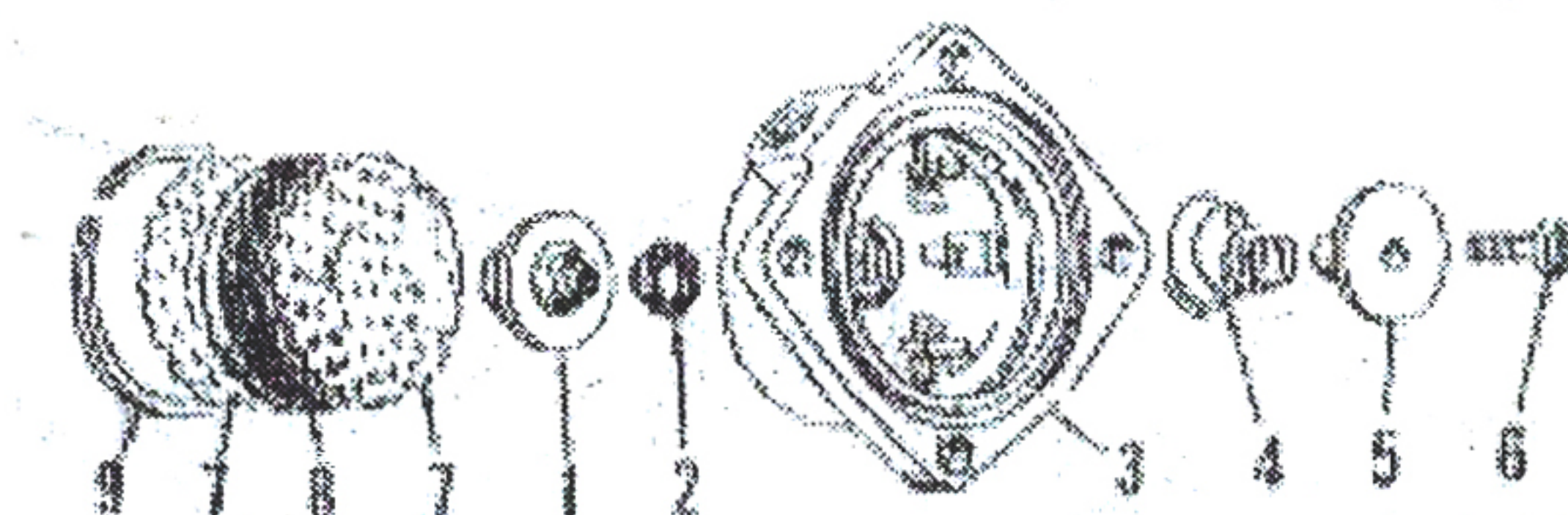
The Major Repair Kit contains the parts that are normally required for complete overhaul of a Power Brake Unit. The instructions in this sheet cover the assembly of the parts of a typical Midland Hy-Power Brake Unit illustrated in Steps 1 thru 5 for ease of assembly. For disassembly of the Power Brake Unit refer to the illustrations and use essentially the reverse order from assembly.

CLEANING AND INSPECTION

Thoroughly clean all metal parts in Bendix Metalcene or Econoclene. After cleaning, thoroughly wash all metal parts that come in contact with brake fluid in diacetone alcohol. Clean rubber parts *only* in alcohol or in brake fluid. Inspect all parts for excessive wear or damage. Replace any questionable parts.

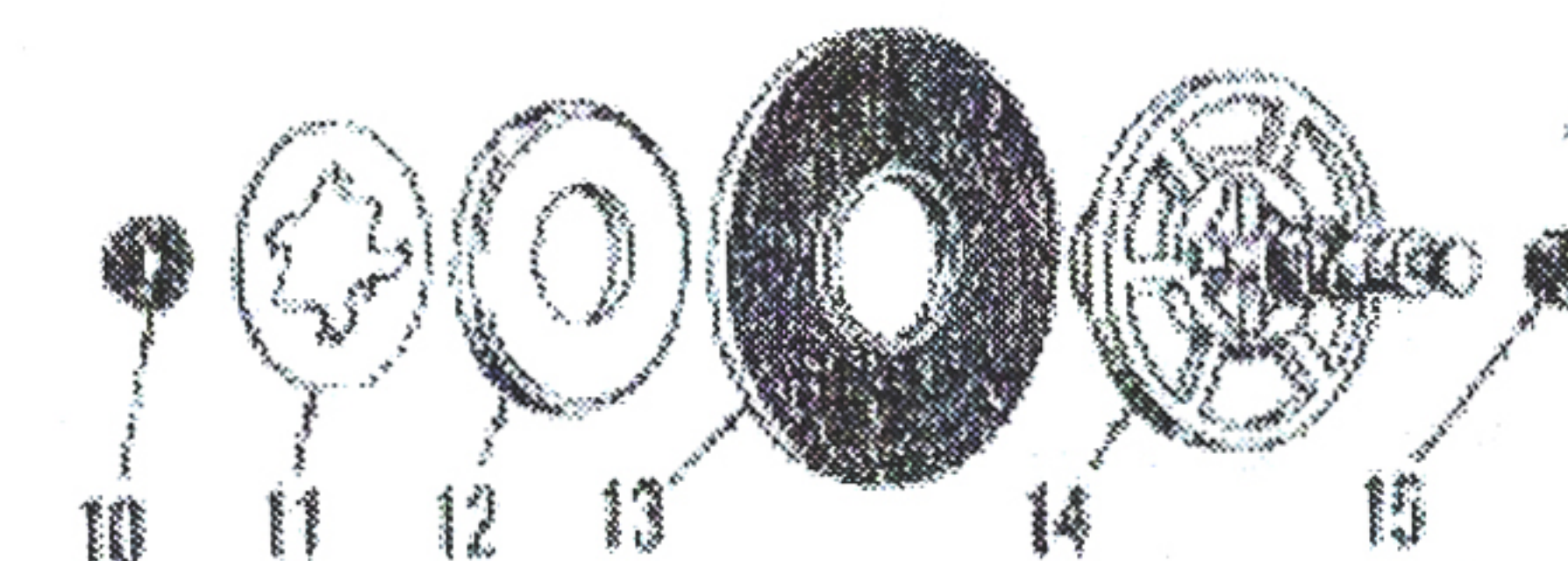
STEP 1

a. Squeeze atmospheric poppet seal (1) into an ellipse and force lip of seal into recess of valve poppet housing bore. Insert screw (6) thru valve poppet (5) with head of screw next to flat side of poppet. Place small end of poppet spring (4) over end of poppet and center parts in housing. Insert atmospheric poppet (1) in housing and thread screw into atmospheric poppet. Securely tighten. If unit includes integral air cleaner, place air cleaner felt (8) between two screens (7) and position in end of housing with concave side in and install retainer snap ring (9) in groove of housing. If unit is designed for use with remote air cleaner, install tube and cover in place of air filter.



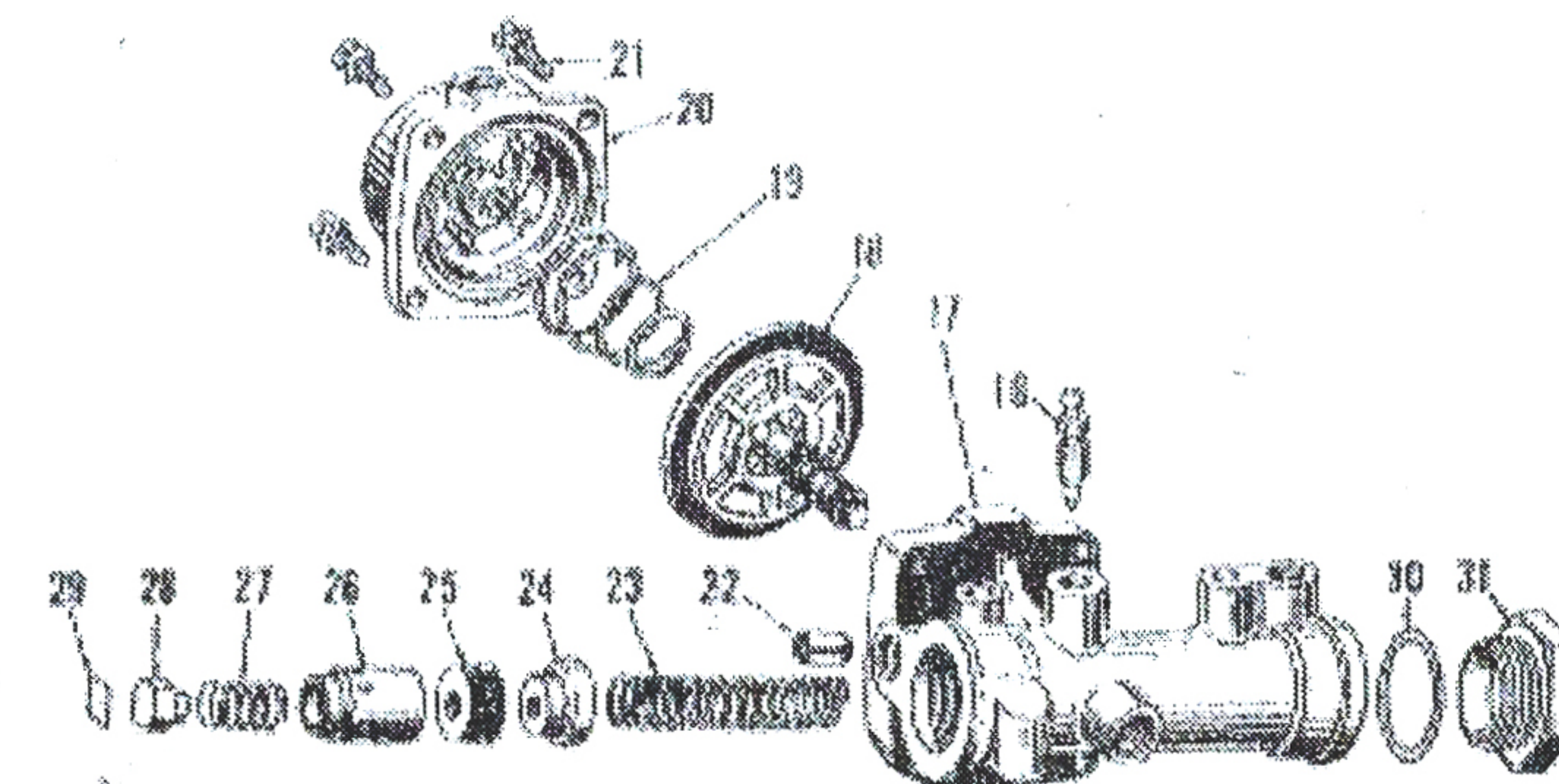
STEP 2

b. Assemble poppet diaphragm (13) over hub of control valve piston (14) with inner bead on diaphragm seated in groove on flat side of piston. Then assemble diaphragm plate (12), flat side against diaphragm and press Tinnerman nut (11), points up, tightly against plate. Squeeze vacuum poppet seal (10) into an ellipse and force lip of seal into recess at bore of control valve piston (14). At opposite end of piston assemble cup (15) in groove at OD of piston with lip of cup away from diaphragm.



STEP 3

Place hydraulic piston check valve spring (27) into end of piston (26) and insert check valve (28) rubber faced side next to spring. Press check valve in piston and assemble snap ring (29) in groove provided in piston. Wet hydraulic cylinder bores with brake fluid. Install split tube (22) into vacuum passage of hydraulic cylinder housing (17). Slide diaphragm and control valve piston assembly (18) in control valve bore of cylinder. Center small end of diaphragm spring (19) over hub of control piston. Align poppet valve housing assembly (20) on cylinder with head on diaphragm in groove of housing and assemble four housing screws and lockwashers (21). Install hydraulic cylinder internal parts in following sequence: spring (23), retainer (24), large end next to spring; cup (25), lip next to retainer; piston (26) assembled with flat end next to cup. If end cap (31) was removed, install gasket (30) on end cap and assemble end cap. Securely tighten.



(continued on reverse side)

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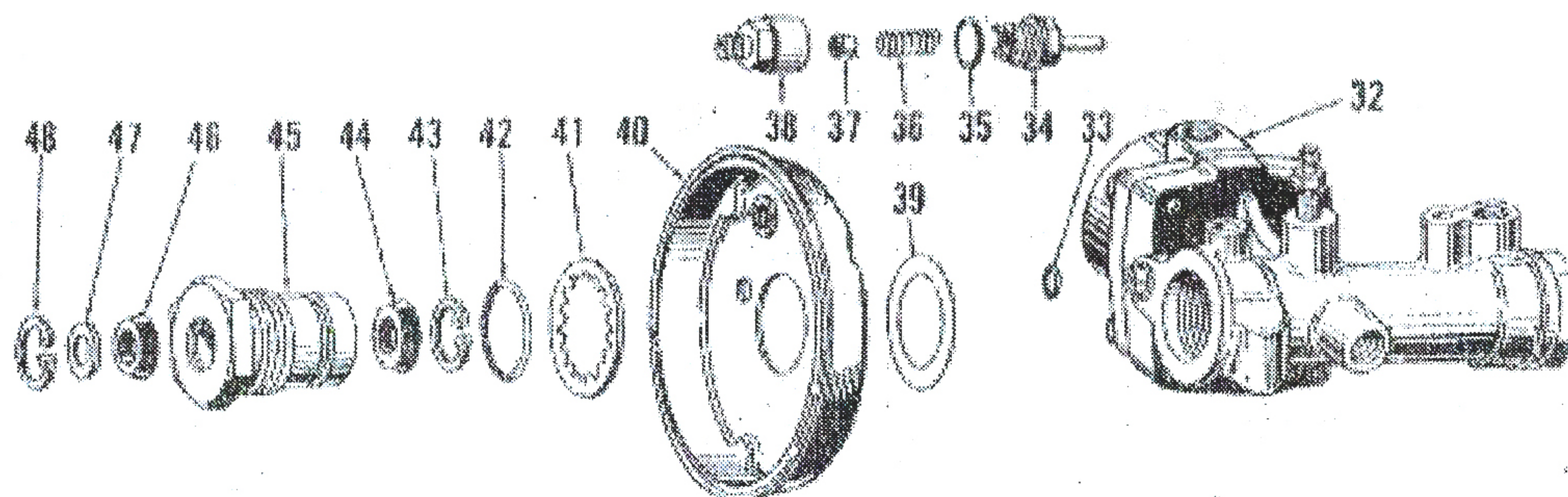
PARTS IDENTIFICATION

KEY NO.	PART NAME
39	GASKET—Hyd. Cyl. Flange
40	CHAMBER—Rear Half
41	LOCKWASHER—Push Rod Bearing
42	"O" RING—Hy. Seal Bearing
43	SNAP RING—Bearing Seal Ret.
44	SEAL—Rod Bearing (Rubber)
45	BEARING—Push Rod
46	SEAL—Rod Bearing (Rubber)
47	WASHER—Bearing Seal Ret.
48	SNAP RING—Bearing Seal Ret.
35	HOUSING, VALVE & FRONT CHAMBER ASSY.
36	SPRING—Diaph. Return
37	NUT—Clamp Band
38	SCREW—Clamp Band
39	CLAMP BAND
40	PUSH ROD—Diaphragm
41	DIAPHRAGM & PLATES—Power
42	NUT—Push Rod
43	CHAMBER—Rear Half
44	TUBE—Rear Half Chamber
45	"O" RING—Chamber Tube

*Not used on all units. Some units use tube and cover for connection to remote air cleaner.

STEP 4

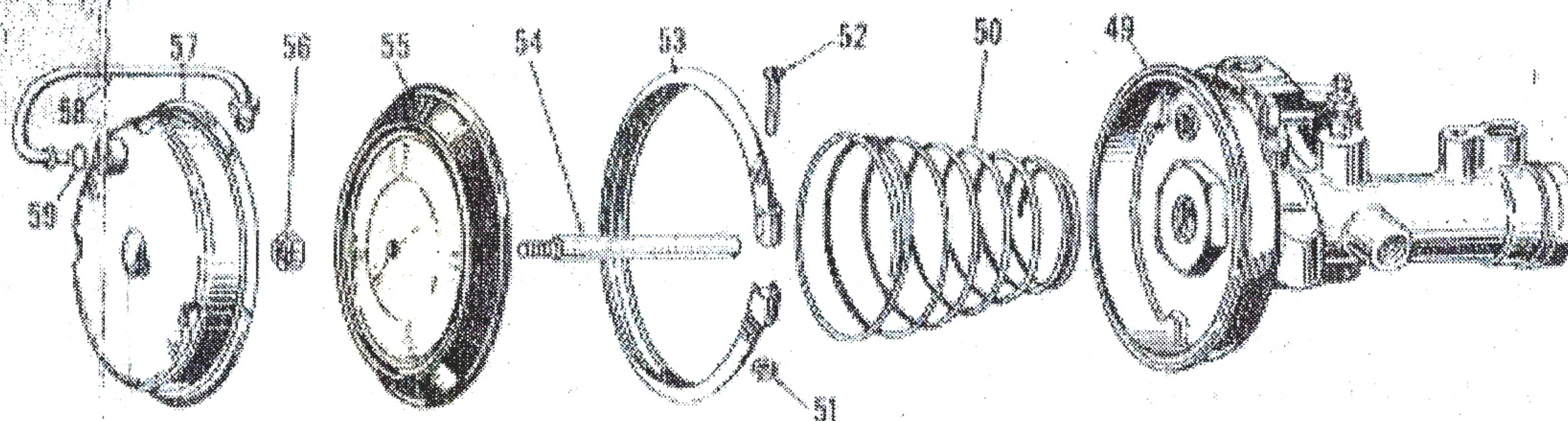
Install two seals (44) and (46) in rod bearing (45) with one seal assembled from each end of rod bearing. Lip of both seals to face toward hydraulic cylinder. Retain seal (44) with snap ring (43). Use pliers (tool 73501). Retain seal (46) with washer (47) and snap ring (48). Install "O" ring (42) in groove on OD of bearing. Install gasket (35) over threaded end of check valve cap (34). Insert vacuum check valve disc (37) in check valve housing (38) rubber faced



side first, then assemble spring (36) and cap (34). Securely tighten cap. Install vacuum check valve into tapped hole of front half chamber (40). Place "O" ring (33) over vacuum passage split tube in hydraulic cylinder. Position flange gasket (39) on hydraulic cylinder and align front half chamber (40) over split tube and center on hydraulic cylinder. Place lockwasher (41) over end of rod bearing assembly and thread bearing into hydraulic cylinder. Securely tighten.

STEP 5

If push rod (54) was removed from diaphragm (55), install rod through diaphragm plate and thread nut (56) on end of rod. Clamp rod in non-mar vice jaws and tighten nut. Center small end of diaphragm return spring (50) over hex of rod bearing. Insert push rod through spring and into bore of rod bearing. Position rear half chamber (57) on diaphragm and align to scribe marks on front half chamber. Force chambers together against spring pressure with



bead at edge of diaphragm in grooves of chambers. Assemble clamp band (53) over flanges of chambers using bolt (52) and nut (51) but do not draw nut up tight. Install "O" ring (59) against upset collar on tube and assemble end of tube into passage in rear half chamber up against "O" ring seal. Attach nut at opposite end of tube to valve poppet housing, twisting rear half chamber slightly as required to start nut in threads. Securely tighten tube nut and chamber clamp band screw and nut.

Assembly is now completed.

SERVICE SALES DEPARTMENT
BENDIX PRODUCTS DIVISION OF
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Bendix
 Aviation Corporation

