

## DIPPING INSTRUCTIONS

**WARNING!** Never use mineral oil in or on any part of the hydraulic system.

Use EIS AF106 Assembly Fluid for coating all hydraulic parts. Assembly fluid must be used if unit is to be stocked. The use of EIS Super 500 or Super 703 Brake Fluid is permissible, if unit is to be installed immediately.

Rubber parts may be washed and dipped in denatured alcohol. Do not use anti freeze, mineral spirits or thinner for this purpose. Mineral oil is a natural enemy of rubber, it is best not to use it even on oil proof compounds unless specified.

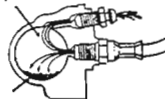
Use EIS Power Vacuum Cylinder Oil (977299 - 2 oz. Tube) for all parts in the vacuum cylinders containing leather packings. Wicks should be thoroughly moistened and the inside wall of the vacuum cylinder should be coated with a thin film of oil.

Do not use Vacuum Cylinder Oil in Diaphragm Type Hydrovacs and Bellows Type Units. See Diagrams 4 & 12-14 in our Power Brake Catalog.

**NOTE:** Never use Brake Fluid or AF106 Assembly Fluid in the Vacuum side of the Unit, and never use Vacuum Cylinder Oil in the Hydraulic side of the Unit.

## CLEANING WHEEL CYLINDERS

Clean Fluid passes out.



Dirt and sludge. Cleaning Fluid also remains in bottom of bore.

**CAUTION:** Flushing with alcohol formerly recommended and sold by car manufacturers, has been discontinued since any Alcohol left in Wheel Cylinders reduces Boiling Point of any fluid considerably (see illustration). Condensation (WATER) accumulating in Wheel Cylinders also LOWERS BOILING POINT substantially. Flush system with Brake Fluid only, however to clean Wheel Cylinders properly they should be disassembled, thoroughly cleaned, washed in alcohol, dried, and then re-assembled.

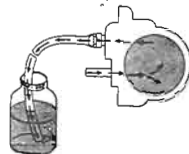
## BLEEDING INSTRUCTIONS

A car equipped with a Power Brake unit should always be bled with a pressure bleeder. This is the most satisfactory way. It does the job right, saves time, and saves brake fluid.

1. Connect pressure bleeder to tank with proper adaptor and turn fluid valve on.
2. If power unit has a bleeder screw (some have 2—bleed at upper screw first) open, and allow all air to escape and when a solid column of fluid is noticed, close bleeder screw (to avoid spilling fluid on floor, use bleeder hose and a container).
3. Repeat on right rear, left rear, then front wheels. Shut off bleeder tank and disconnect. Fluid level in reserve tank should be at least  $\frac{3}{4}$  full. Replace filler cap and tighten securely.

**PEDAL BLEEDING:** (If no pressure bleeder is available)

1. Fill reserve tank to capacity.
2. If power unit has a bleeder screw (some have 2—bleed at upper screw first) open and attach a bleeder hose and submerge open end of hose in a container partly filled with fluid to avoid air being sucked back by the return pedal stroke. Have an assistant depress and repeat pedal strokes until all air has escaped and a solid column of fluid is observed (in this procedure, the bleeder screw may be left open).
3. If no bleeder hose is used, avoid air returning into the cylinder by closing the bleeder screw before the pedal is allowed to return to its normal position. The pedal may be pushed down fairly fast, but always must be returned very slow.
4. Repeat on right rear, left rear, then front wheels.
5. Bleeding the Power Brake unit with the motor running, is usually not very satisfactory. Check the reserve tank after every wheel is bled to be sure that there is fluid in tank and no air is drawn into the lines thru the Power cylinder.



USE THIS  
**EIS BRAKE BLEEDER**  
T1200-5  
FOR SPEEDY FILLING  
AND BLEEDING

WRITE FOR LITERATURE



## PARTS DESCRIPTION

1. SNAP RING (2)		47. VACUUM CYL. & TUBE	
2. SCREEN		*47A. PLUG	
3. HAIR		48. BOLT-CYL. HOOK (4)	
4. RETAINER		49. LOCK WASHER (4)	
5. SPRING		50. NUT (4)	
6. POPPET ASS'Y. M, PO		*51. SNAP RING	
7. VALVE BODY		*52. RETAINER	
8. TUBE & ELBOW		*53. SPRING	
9. SPRING		*54. BALL-VAC. VALVE M	
10. DIAPHRAGM	MM	*55. VACUUM VALVE	
11. GASKET	MM	56. BLEEDER SCREW	
12. SNAP RING		57. CAP-HYD. CYLINDER	
13. WASHER		58. GASKET-COPPER MM	
14. FITTING		59. TUBE-HYD. CYLINDER	
15. SEAL RING	MM	60. NUT	
16. PISTON		61. SEAL RING MM	
17. CUP (2)	MM	*62. VALVE-	
*18. WASHER		RESID. CHECK M	
*19. "C" WASHER	MM	*63. SPRING	
20. CUP	MM	*64. WASHER	
21. CUP	MM	*65. SNAP RING	MM
22. PISTON		66. SPEED NUT	MM
23. PISTON		67. WASHER	
24. CUP (2)	MM	68. SNAP RING	
25. WASHER		69. RETAINER	
26. STEM		70. SPRING	
27. SPRING		71. BALL	
28. WASHER		72. CUP	MM
29. SNAP RING		73. PISTON-HYDRAULIC	
30. BLEEDER SCREW		74. PIN	
31. GASKET RING	MM	*75. CUSHION	MM
32. OIL SEAL	MM	*76. SNAP RING	
33. END PLATE		77. RETAINER	
34. SPRING		78. SPRING	
35. PUSH ROD		79. BALL	
36. WASHER		80. CUP	MM
37. PLATE-OUTER		81. PISTON	
38. SEAL RING	PI	82. SEAL RING	MM
39. PISTON PACKING	PI	83. SNAP RING	MM
40. PLATE-INNER		84. WASHER	
41. WICK	PI	85. SPRING	MM
42. EXPANSION RING	PI	86. SLEEVE	MM
43. RETAINER		87. RETAINER	MM
*44. NUT	PI	88. CUP	MM
45. CLAMPS (2)		89. WASHER	MM
46. HOSE		90. RETAINER	

\*Parts not used on all units.

### KEY

M—Parts contained in Major Kits only.  
MM—Parts contained in both, Major & Minor Kits only.  
PI—Parts contained in Piston Packing Kit.  
PO—Parts contained in Poppet Replacement Kit.

**EIS AUTOMOTIVE CORP.**  
Middletown, Conn.



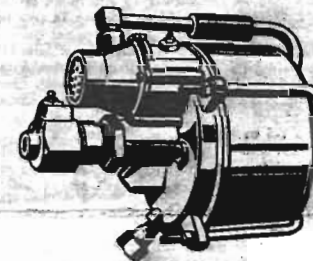
## REPAIR KIT INSTRUCTIONS

FOR

### BENDIX TYPE HYDROVACS

(SINGLE PISTON TYPE)

For Passenger Cars and Light Trucks



FOR CYLINDER NO's. 376500, 376700, 377011,  
377144, 377148, 377478, 377600,  
377800, 377868, 377869, 377870,  
378003, 378600, 378855

USE WITH EIS REPAIR KITS

Major Nos.

5977768, 5977772, 5977774, 5977777, 5977779,  
5977781, 5977783, 5978082, 5978160, 5978741

Minor Nos.

6977767, 6977769, 6977771, 6977773, 6977776,  
6977778, 6977780, 6977782, 6978081, 6978159

Piston Packing Nos. 3974515, 3976804

Printed in U.S.A.

Edited 2/59  
Form No. 406

4.23. In F.I.

**ALL METAL PARTS SHOULD BE THOROUGHLY WASHED IN A GOOD METAL CLEANER BEFORE ASSEMBLY.**

**CONTROL VALVE AND POPPET ASSEMBLY:**

Assemble single stage control valve by placing piston cups 17 onto piston 16. Separate cups by washer 18 (if used) and lock with "C" washer 19 (if used). Note: Some units use a double stage control valve; parts 20-29 instead of 16-19, in such cases assemble as illustrated. Insert control valve assembly into fitting 14. Set washer 13 into fitting and lock with snap ring 12. Place seal ring 15 onto fitting 14 and screw into end plate 33—Tighten securely. Install poppet assembly 6 as described in EIS Instruction Form #400. Screw tube and elbow 8 into valve body 7 — Secure in correct position with a good grade sealer. Thread guide pins (Tool #973648), attach valve body 7, spring 9, diaphragm 10, and gasket 11 (gasket resting on face of end plate) to end plate — Tighten securely. Insert air cleaner parts 1-5 as illustrated making sure to lock two snap rings 1 in their proper grooves. Attach vacuum valve parts 51-55 to end plate as illustrated — Lock with snap ring 51 in proper groove.

**HYDRAULIC CYLINDER ASSEMBLY:**

Clean all hydraulic parts (see dipping instructions) and set on a clean surface. Set fiber guide washer 89 (chamfered side in) and cup 88 (lip side facing out) into cylinder bore of end plate 33. Place retainer 87, cup expander ring 86 (bevel to cup), spring 85, and washer 84, into cylinder recess—Lock with snap ring 83 in its proper groove. If old type expander 90 is used, discard, replace with parts 85-87. Place seal ring 82 against shoulder in cylinder recess.

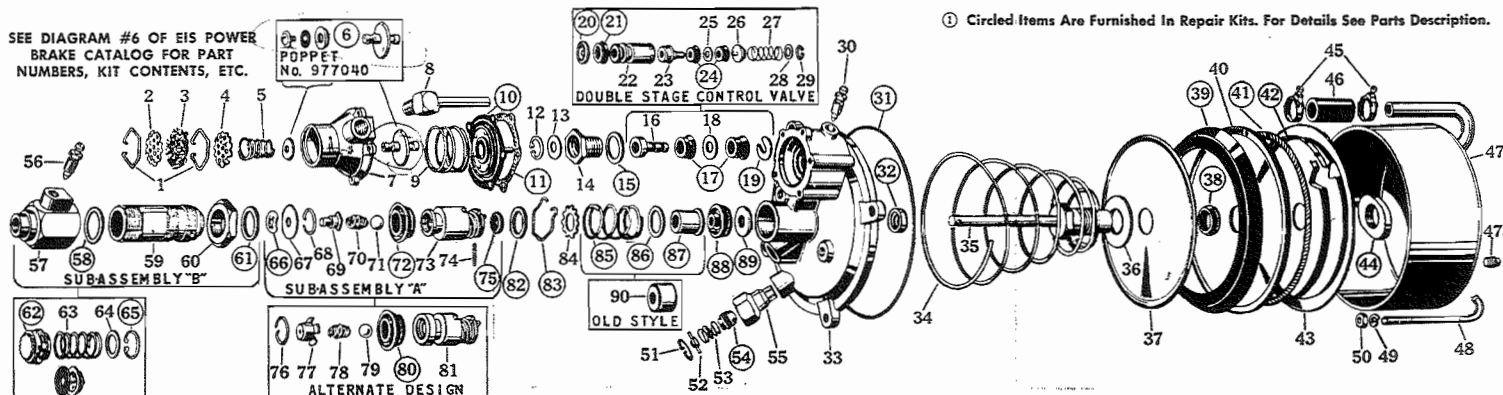
**Sub-Assembly A:** Assemble parts 66 to 73 or alternate parts 76-81 as illustrated.

**Sub-Assembly B:** Fit copper gasket 58 and screw cylinder tube 59 into cap 57 — Tighten securely. Attach lock nut 60 and seal 61. Note: If unit contains residual check valve parts 62-65, assemble in cap 51, before attaching hydraulic cylinder tube.

**VACUUM PISTON ASSEMBLY:**

1. **PISTON ROD & PACKING** — Set stop washer 36 on threaded end of piston rod 35. Attach plate 37 (chamfered side of hole away from washer) and place seal ring 38 onto

SEE DIAGRAM #6 OF EIS POWER BRAKE CATALOG FOR PART NUMBERS, KIT CONTENTS, ETC.



**NOTE: BEFORE DISASSEMBLING TAKE NOTE AND MARK PARTS FOR REASSEMBLING PURPOSES.**

rod to fit against chamfer. Position leather packing as illustrated, then attach plate 40 (chamfered side of hole facing seal ring 38). Note: Plate 37 is larger in diameter than plate 40. Cut wick 41 to required length, moisten (see dipping instructions), and position against lip of leather packing. Use chipboard ring as an assembly tool to hold leather cup in shape. Install expander ring 42 (sharp tabs secured against wick), lock ends. Position retainer plate 43 with cutout section over expander ring loop, screw nut 44 to rod—Hand tighten. Fasten hex head of rod 35 in vise, and make sure that retainer plate does not shift — Tighten nut securely, and stake at two points. Remove from vise and reclamp assembly by nut 44.

2. **PISTON TO END PLATE** — Set spring 34, small end first, over rod 35 and washer 36. Press vacuum seal 32 (lip side facing hydraulic cylinder) into bottom of end plate recess. Guide seal and end plate over rod and compress spring 34 fully so piston rod extends through end plate. Place Hydraulic Cylinder Sub-Assembly A (66-75 or 76-81) on end of rod, slide back spring on piston (73 or 81) and insert pin 74 through

holes in piston and rod. Place cushion 75 between the rod and piston, if used.

**FINAL ASSEMBLY:**

Guide Hydraulic Cylinder Sub-Assembly B (57-62 or 57-65) over piston cup 72 and screw cylinder by hand into plate — Hand tighten, align bleeder screw 56 with bleeder screw 30. Tighten lock nut 60 against end plate.

Moisten inside of vacuum cylinder with a thin film of EIS Power Brake Vacuum Cylinder Oil. Place gasket ring 31 into groove on end plate. Dip piston packing (leather cup 39) section in Vacuum Cylinder Oil and allow excess to drain off before assembly into Vacuum Cylinder. Slightly tip piston (to avoid any damage to leather packing) and insert into vacuum cylinder 47. Slide clamps 45 and hose 46 onto tube 8 — Be sure to align with tube of vacuum cylinder or your scribe marks. Attach four bolt hooks 48, fasten with lock washers 49 and nuts 50 — Tighten uniformly. Slide vacuum hose 46 into position. Secure with clamps 45.

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

① Circled Items Are Furnished In Repair Kits. For Details See Parts Description.

**LUBRICATION OF BENDIX TYPE HYDROVAC:**

**WARNING:** Do not lubricate unit before it is permanently installed on vehicle. This is to prevent the possibility of lubricating oil entering the hydraulic section of the unit where rubber cups and seals can be damaged.

**LUBRICATE THE UNIT** with EIS Power Brake Vacuum Cylinder Oil. This must be done with the motor off and the brakes released.

**REQUIREMENTS: (6 3/4" Diameter — Single Piston Hydrovac)**

1. After installation — 1 ounce in vacuum cylinder.
2. Periodically — 1 ounce every 20,000 miles, or once a year, whichever occurs first.

**METHODS OF LUBRICATION:**

1. Thorough oil lubricating plug 48A, if used.
2. Loosening vacuum hose 46 and injecting oil into tube on vacuum cylinder side only. (Use a gun type oiler for best results.)

4.23.DMP2