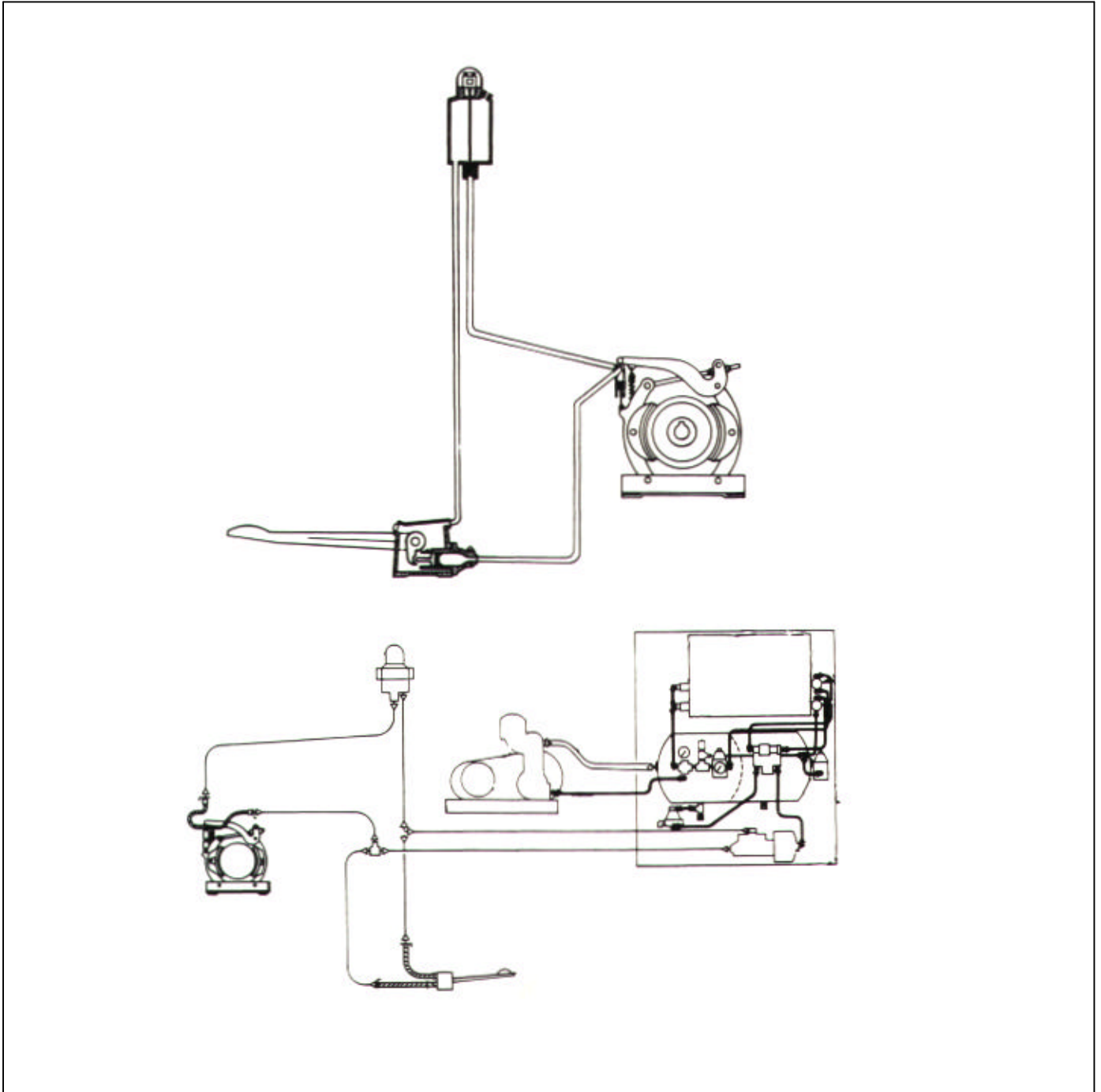




Industrial Brake Products Hydraulic Brake Systems

Replacement
Parts



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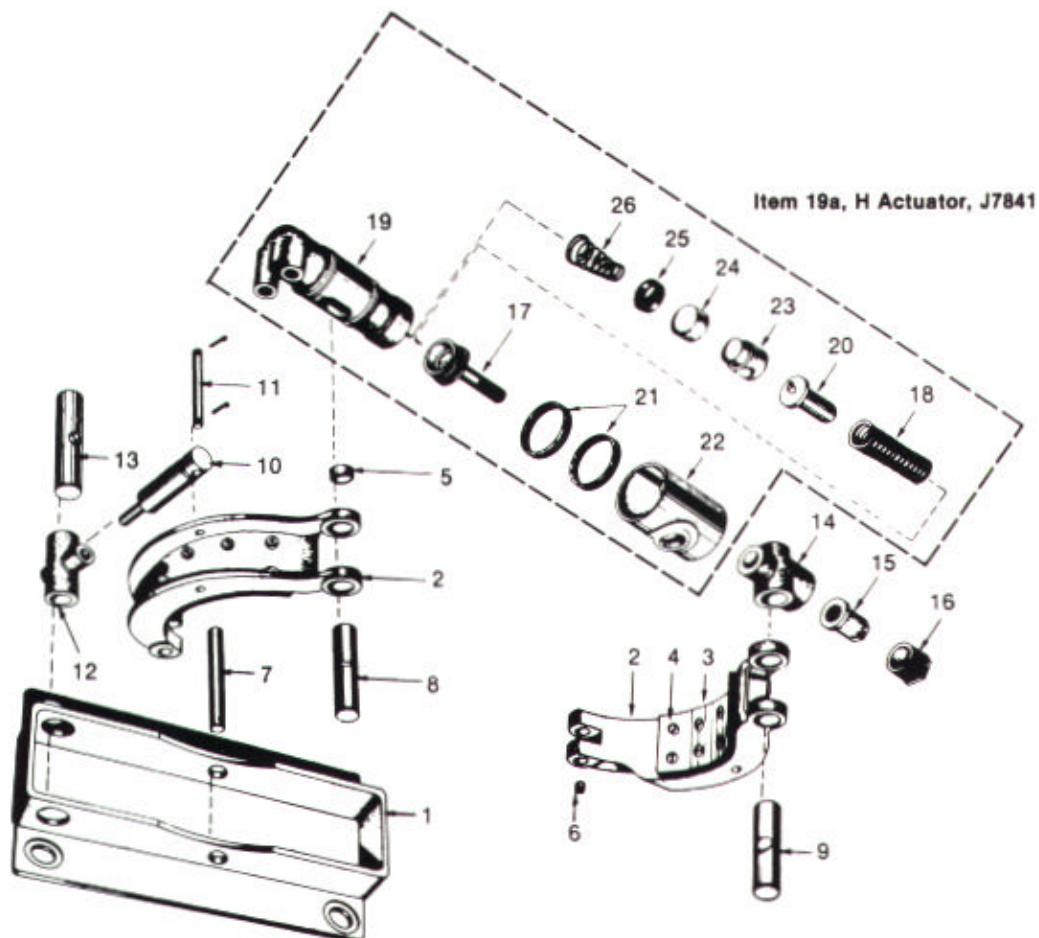
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INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS

6x3 TYPE H BRAKES, J23020; 8x3 TYPE H BRAKES, J2779



Item No.	Part Description	No. Used	Part Number	
			6x3	8x3
1	Base	1	J2398	J2398
2	23023 Shoe & Lining	2	J23021	
	2399 Shoe & Lining	2		J78844
3	567DC Drilled Lining	2	J23024	
	393DC Drilled Lining	2		J7846
4	Bolt, Nut & Lock-washer	16	J387	J387
5	9405 Bushing	4	(1)	(1)
6	1958 Bushing	4	(1)	(1)
7	9408 Pin	1	(1)	(1)
8	9412 Pin	1	(1)	(1)
9	9413 Pin	1	(1)	(1)
10	9414 Retractor Spring	1	(2)	(2)
11	9429 Pin	1	(2)	(2)
12	9428 Anti-Drag Housing	1	(2)	(2)
13	9423 Pin	1	(2)	(2)

Item No.	Part Description	No. Used	Part Number	
			6x3	8x3
14	Adjusting Sleeve	1	J9431	J9431
15	9432 Adjusting Nut	1	(3)	(3)
16	9433 Clamp Nut	1	(3)	(3)
19a	H Actuator (Includes items no. 17 through 26)	1	J7841	J7841
17	Connecting Rod	1	J9396	J9396
18	Return Spring	1	J9395	J9395
19	Cylinder Body	1	(4)	(4)
20	Spring Guide	1	J9392	J9392
21	9399 Felt Seal	2	(5)	(5)
22	Cylinder Cover	1	J9400	J9400
23	Pin Guide	1	J9391	J9391
24	9390 Piston	1	(5)	(5)
25	666 Cup	1	(5)	(5)
26	9389 Cup Spring	1	(5)	(5)

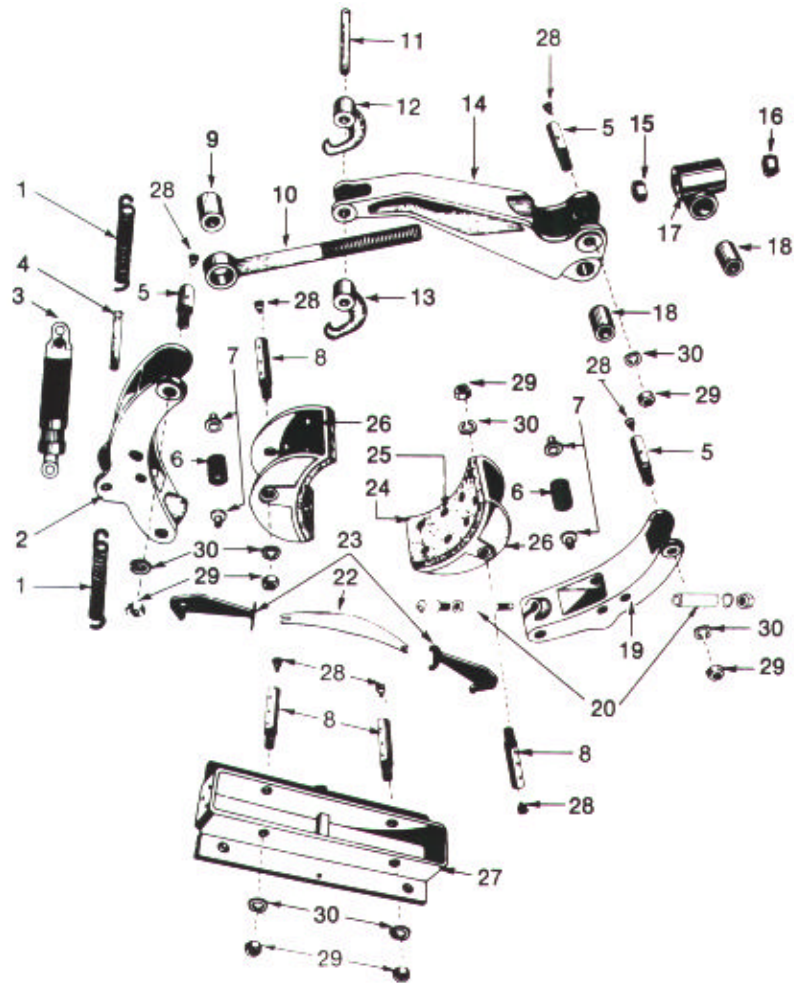
- (1) Order J73920, Pin & Bushing Kit
 (2) Order J105190, Anti Drag Kit
 (3) Order J105191, Clamp Nut Kit

- (4) Not Serviceable. Use J7841, H Actuator
 (5) Order J73918, 7841 Repair Kit

Note: As of January 1993, brake assemblies and replacement shoes will have bonded linings.

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS

10x4 TYPE H BRAKE, J2926



Item No.	Part Description	No. Used	Part No.
1	Return Spring	2	J8134
2	Shoe Arm	1	J2682
3	Actuating Cylinder	1	(1)
4	6946 Pin	1	(2)
5	6943 Pin	3	(2)
6	6528 Friction Plug Spring	2	(3)
7	6314 Friction Plug	4	(3)
8	6942 Pin	4	(2)
9	Eye Bolt Bushing	1	J6940
10	6939 Eye Bolt & Bushing	1	J10069
11	6953 Pin	1	(2)
12	Spring Hook	1	J6945
13	Spring Hook	1	J6944
14	1291 Lever & Bushing	1	J10070
15	7/8-14 Clamp Nut	1	(4)
16	8287 Adjusting Nut	1	(4)

Item No.	Part Description	No. Used	Part No.
17	6114 Knuckle & Bushing	1	J10071
18	Bushing	2	J6941
19	Shoe Arm	1	J2681
20	Shoe Centering Lock Kit	1	J87249
22	Shoe Centering Spring	1	J8122
23	Shoe Centering Spring Arm	2	J8120
24	286DC Drilled Lining	2	J4954
25	Bolt, Nut & Lock-washer	16	J233
26	6108 Shoe & Lining	2	J6110
27	Base	1	J2680
28	8280 Grease Fitting	7	(2)
29	9/16-18 Nut	7	(2)
30	9/16" Lock-washer	7	(2)

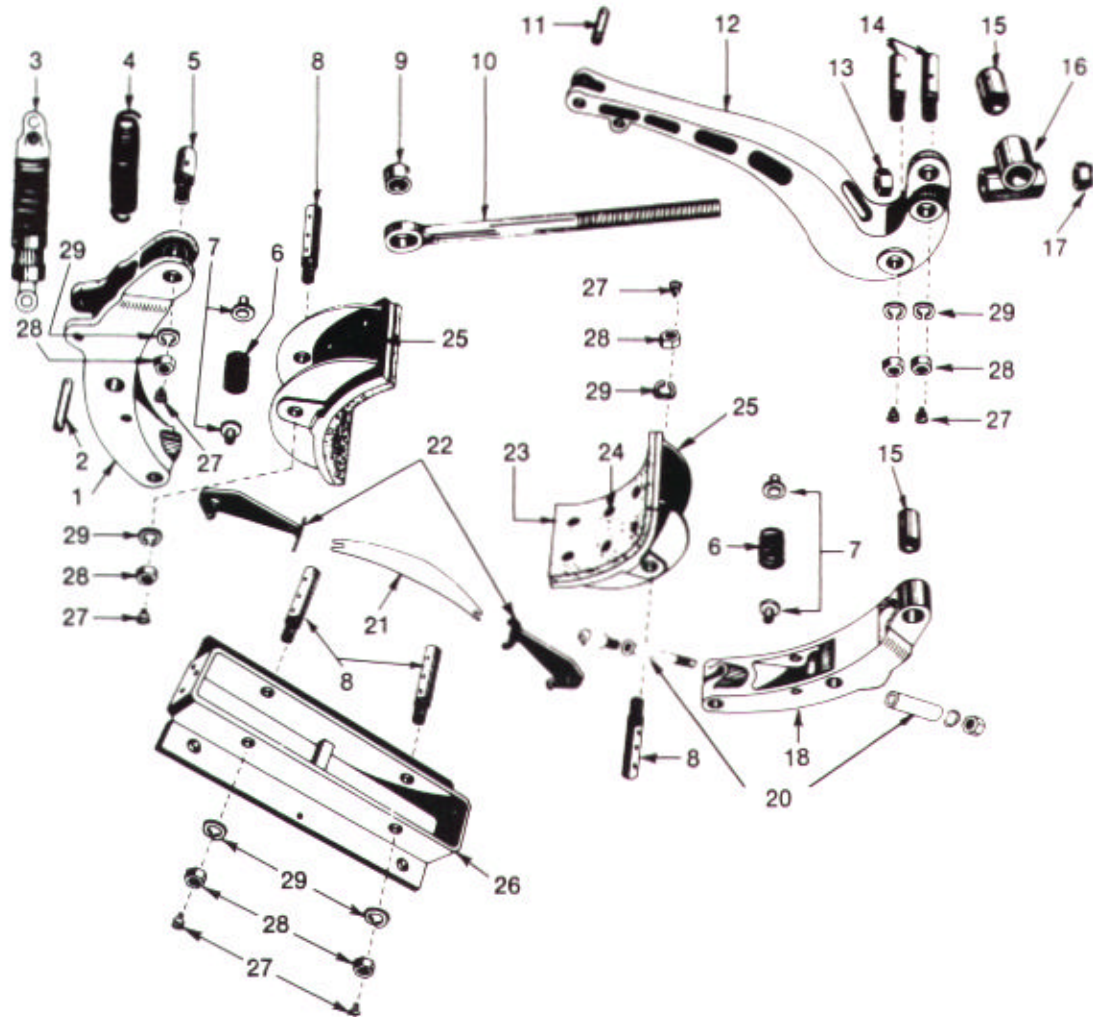
- (1) Order J7905 or J23437, Actuator, per Page 7
- (2) Order J105197, 10" Hinge Pin Kit
- (3) Order J105194, 10" Friction Plug Kit
- (4) Order J105192, 10" Clamp Nut Kit

Pin Update: In June of 1992 pin design was changed for 10", 14" & 18" brakes. When ordering new shoes, also order new pin. See pages 7 and 8.

Note: As of January 1993, brake assemblies and replacement shoes have bonded linings.

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS

14x6 TYPE H BRAKE; J2929, 18x8 TYPE H BRAKE, J2932



Item No.	Part Description	No. Used	Part Number	
			14x6	18x8
1	Shoe Arm	1	J2685	J2937
2	6873 Pin	1	(1)	(2)
3	Actuating Cylinder	1	(3)	(3)
4	Return Spring	1	J8135	J8135
5	6818 Pin	1	(1)	(2)
6	6528 Friction Plug Spring	2	(4)	(5)
7	6689 Friction Plug	4	(4)	
	6876 Friction Plug	4		(5)
8	6816 Pin	4	(1)	
	6874 Pin	4		(2)
9	Eye Bolt Bushing	1	J6694	J6694
10	9634 Eye Bolt & Bushing	1	J10068	J10068
11	6696 Pin	1	(1)	(2)
12	Lever	1	J1768	J1768
13	1"-14 Clamp Nut	1	(6)	(6)
14	6817 Pin	2	(1)	(2)

Item No.	Part Description	No. Used	Part Number	
			14x6	18x8
15	Bushing	2	J6693	J6693
16	5020 Knuckle & Bushing	1	J9637	J9637
17	9638 Adjusting Nut	1	(6)	(6)
18	Shoe Arm	1	J2684	J2936
20	Shoe Centering Lock Kit	1	J87249	J87249
21	Shoe Centering Spring	1	J8126	J2686
22	Centering Spring Arm	2	J8124	J8128
23	287DC Drilled Lining	2	J1234	
	288DC Drilled Lining	2		J1276
24	Bolt, Nut & Lock-washer	16/28	J363	J363
25	1225 Shoe & Lining	2	J1235	
	1799 Shoe & Lining	2		J1803
26	Base	1	J2683	J2935
27	Grease Fitting	7	(1)	(2)
28	Nut	7	(1)	(2)
29	Lock-washer	7	(1)	(2)

(1) Order J105198, 14" Hinge Pin Kit
 (2) Order J105199, 18" Hinge Pin Kit
 (3) Order J7905 or J23437, Actuator, per Page 7

(4) Order J105195, 14" Friction Plug Kit
 (5) Order J105196, 18" Friction Plug Kit
 (6) Order J105193, 14" & 18" Clamp Nut Kit

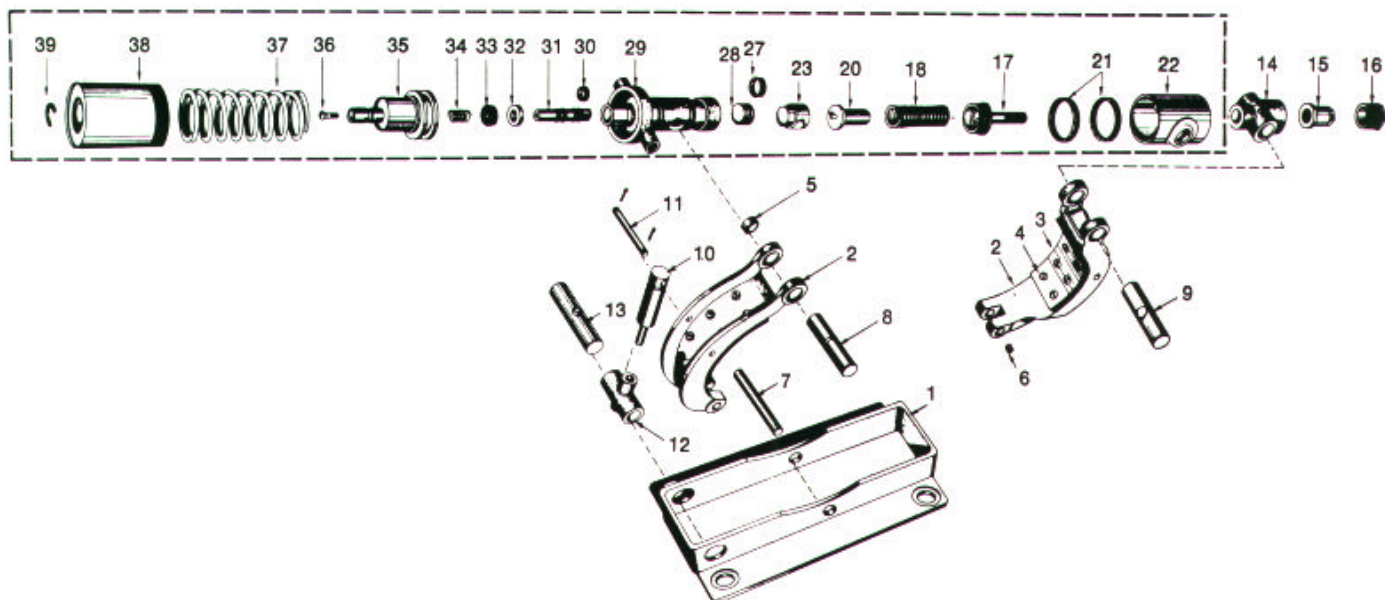
Pin Update: In June of 1992 pin design was changed for 10", 14" & 18" brakes. When ordering new shoes, also order new pin. See pages 7 and 8.

Note: As of January 1993, brake assemblies and replacement shoes have bonded linings.

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS

6x3 TYPE HM BRAKE, J24579; 8x3 TYPE HM BRAKE, J3205

Item 29a, HM Actuator, J3054



Item No.	Part Description	No. Used	Part Number	
			6x3	8x3
1	Base	1	J2398	J2398
2	23023 Shoe & Lining	2	J23021	
	2399 Shoe & Lining	2		J7844
3	567DC Drilled Lining	2	J23024	
	393DC Drilled Lining	2		J7846
4	Bolt, Nut & Lock-washer	16	J387	J387
5	9405 Bushing	4	(1)	(1)
6	9406 Bushing	4	(1)	(1)
7	9408 Pin	1	(1)	(1)
8	9412 Pin	1	(1)	(1)
9	9413 Pin	1	(1)	(1)
10	9414 Retractor Spring	1	(2)	(2)
11	9429 Pin	1	(2)	(2)
12	9428 Anti-Drag Housing	1	(2)	(2)
13	9423 Pin	1	(2)	(2)
14	Adjusting Sleeve	1	J9431	J9431
15	9432 Adjusting Nut	1	(3)	(3)
16	9433 Clamp Nut	1	(3)	(3)
29a	HM Actuator (Includes items no. 17, 18, 20 through 23, 27 through 39)	1	J3054	J3054

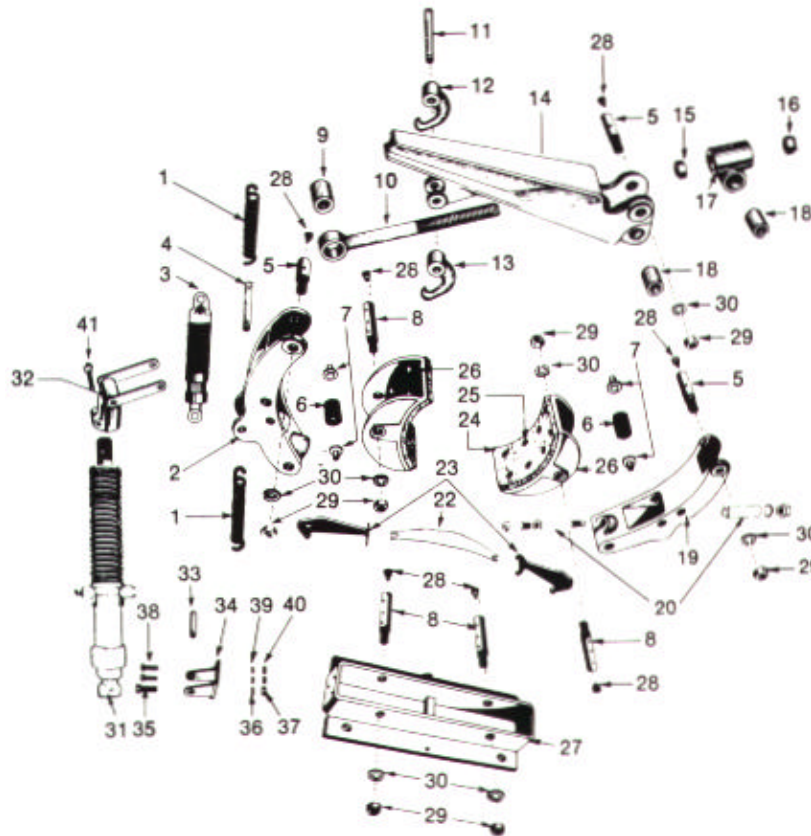
Item No.	Part Description	No. Used	Part Number	
			6x3	8x3
17	Connecting Rod	1	J9396	J9396
18	Return Spring	1	J9395	J9395
20	Spring Guide	1	J9392	J9392
21	9399 Felt Seal	2	(4)	(4)
22	Cylinder Cover	1	J9400	J9400
23	Pin Guide	1	J9391	J9391
27	9517 Cup [10680]	1	(4)	(4)
28	10681 Piston [Ass'y]	1	(4)	(4)
29	Cylinder Body	1	(5)	(5)
30	21334 Push Rod Seal	1	(4)	(4)
31	Push Rod	1	J10687	J10687
32	Piston	1	J10683	J10683
33	10684 Cup	1	(4)	(4)
34	Spring	1	J10685	J10685
35	Piston & Spring Guide	1	J10690	J10690
36	Retaining Screw	1	J10688	J10688
37	9441 Parking Spring	1	(5)	(5)
38	10693 Spring Barrel	1	(5)	(5)
39	C Washer	1	J10696	J10696

Note: As of January 1993, brake assemblies and replacement shoes will have bonded linings.

- (1) Order J73920, Pin & Bushing Kit
- (2) Order J105190, Anti-Drag Kit
- (3) Order J105191, Clamp Nut Kit
- (4) Order J73919, 3054 Repair Kit
- (5) Not Serviceable. Use J3054, HM Actuator

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS

10x4 TYPE HM BRAKE, J34780



Item No.	Part Description	No. Used	Part No.
1	Return Spring	2	J8134
2	Shoe Arm	1	J2682
3	Actuating Cylinder	1	J23437
4	6946 Pin	1	(1)
5	6943 Pin	3	(1)
6	6528 Friction Plug Spring	2	(2)
7	6314 Friction Plug	4	(2)
8	6942 Pin	4	(1)
9	Eye Bolt Bushing	1	J6940
10	6939 Eye Bolt & Bushing	1	J10069
11	6953 Pin	1	(1)
12	Spring Hook	1	J6945
13	Spring Hook	1	J6944
14	2822 Lever & Bushing	1	J8040
15	7/8-14 Clamp Nut	1	(3)
16	8287 Adjusting Nut	1	(3)
17	6114 Knuckle & Bushing	1	J10071
18	Bushing	2	J6941
19	Shoe Arm	1	J2681
20	Shoe Centering Lock Kit	1	J87249

Item No.	Part Description	No. Used	Part No.
22	Shoe Centering Spring	1	J8122
23	Shoe Centering Spring Arm	1	J8120
24	286DC Drilled Lining	2	J4954
25	Bolt, Nut & Lock-washer	16	J233
26	6108 Shoe & Lining	2	J6110
27	Base	1	J2680
28	8280 Grease Fitting	7	(1)
29	9/16-18 Nut	7	(1)
30	9/16 Lock-washer	7	(1)
31	HM Park Release Cylinder	1	J79463
32	Rod End Assembly	1	J7996
33	Pin	1	J9670
34	Bracket	1	J9665
35	1/2-20 x 1-3/8 Cap Screw	1	(4)
36	1/2" Lock-washer	1	(4)
37	1/2-20 Nut	1	(4)
38	5/16-24x1-1/8 Cap Screw	2	(4)
39	5/16" Lock-washer	2	(4)
40	5/16" Nut	2	(4)
41	5/16"-18x1 Allen Head Screw	1	(4)

- (1) Order J105197, 10" Hinge Pin Kit
 (2) Order J105194, 10" Friction Plug Kit

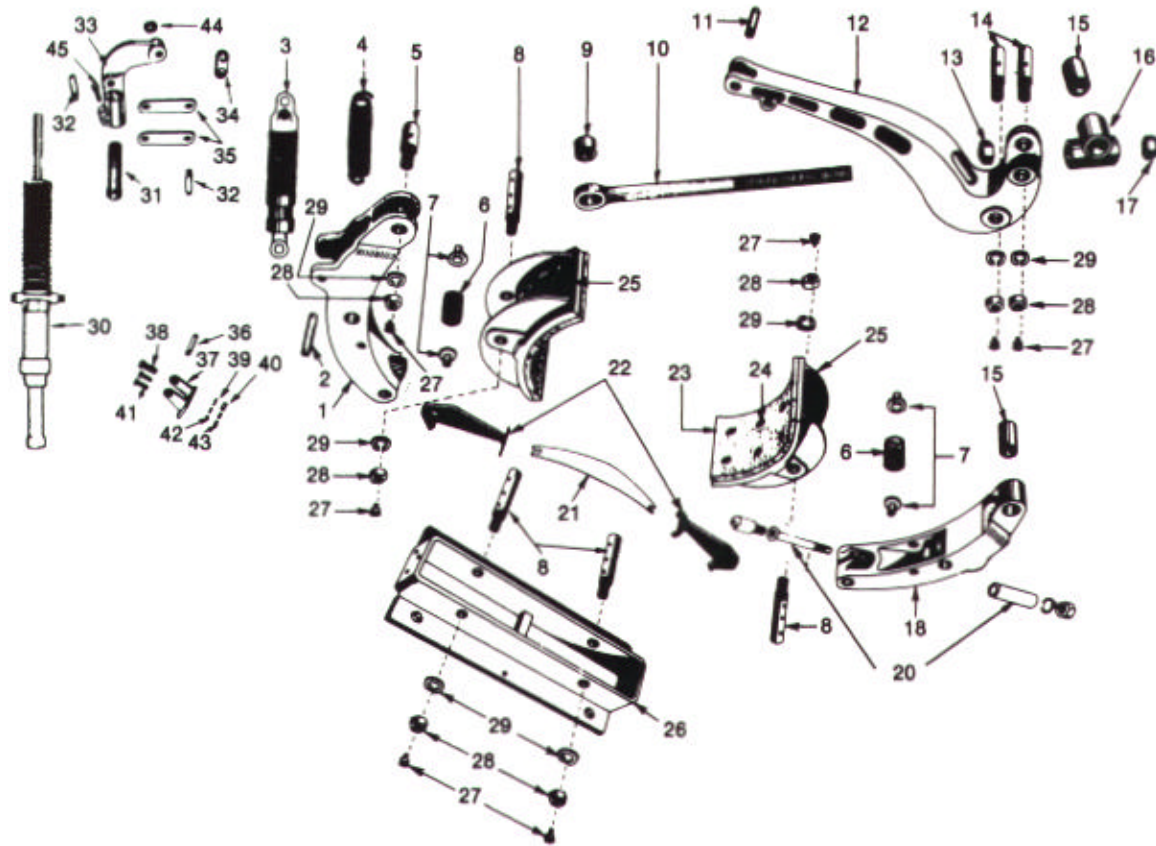
- (3) Order J105192, 10" Clamp Nut Kit
 (4) Standard hardware items. Obtain locally

Pin Update: In June of 1992 pin design was changed for 10", 14" & 18" brakes. When ordering new shoes, also order new pin. See pages 7 and 8.

Note: As of January 1993, brake assemblies and replacement shoes have bonded linings

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS

14x6 TYPE HM J34735; 18x8 TYPE HM J40065



Item No.	Part Description	No. Used	Part Number	
			14x6	18x8
1	Shoe Arm	1	J2685	J2937
2	6873 Pin	1	(1)	(2)
3	Actuating Cylinder	1	J23437	J23437
4	Return Spring	1	J8135	J8135
5	6818 Pin	1	(1)	(2)
6	6528 Friction Plug Spring	2	(3)	(4)
7	6689 Friction Plug	4	(3)	
	6876 Friction Plug	4		(4)
8	6816 Pin	4	(1)	
	6874 Pin	4		(2)
9	Eye Bolt Bushing	1	J6694	J6694
10	9634 Eye Bolt & Bushing	1	J10068	J10068
11	6696 Pin	1	(1)	(2)
12	Lever	1	J1768	J1768
13	1"-14 Clamp Nut	1	(5)	(5)
14	6817 Pin	2	(1)	(2)
15	Bushing	2	J6693	J6693
16	5020 Knuckle & Bushing	1	J9637	J9637
17	9638 Adjusting Nut	1	(5)	(5)
18	Shoe Arm	1	J2684	J2936
20	Shoe Centering Lock Kit	1	J87249	J87249
21	Shoe Centering Spring	1	J8126	J2686
22	Centering Spring Arm	2	J8124	J8128
23	287DC Drilled Lining	1	J1234	
	288DC Drilled Lining	1		J1276

Item No.	Part Description	No. Used	Part Number	
			14x6	18x8
24	Bolt, Nut & Lock-washer	16/28	J363	J363
25	1225 Shoe & Lining	2	J1235	
	1799 Shoe & Lining	2		J1803
26	Base	1	J2683	J2935
27	Grease Fitting	7	(1)	(2)
28	Nut	7	(1)	(2)
29	Lock-washer	7	(1)	(2)
30	HM Park Release Cylinder	1	J79462	J79464
31	Tubular Push Rod	1	J9668	J9668
32	8354 Pin	2	(6)	(6)
33	Yoke	1	J7268	J7268
34	9669 Tie Link	1	(6)	(6)
35	8352 Connecting Link	2	(6)	(6)
36	Pin	1	J9670	J9670
37	Bracket	1	J23434	J23434
38	1/2"-20 x 1-3/8" Cap Screw	1	(2)	(7)
39	1/2" Lock-washer	1	(7)	(7)
40	1/2"-20 Nut	1	(7)	(7)
41	5/16"-24 x 1-1/8" Cap Screw	2	(7)	(7)
42	5/16" Lock-washer	2	(7)	(7)
43	5/16"-24 Nut	2	(7)	(7)
44	Spacer	7	(6)	(6)
45	5/16"-18x1 Allen Head Screw	1	(7)	(7)

(1) Order J105196, 14" Hinge Pin Kit
 (2) Order J105199, 18" Hinge Pin kit
 (3) Order J105195, 14" Friction Plug Kit
 (4) Order J105196, 18" Friction Plug Kit

(5) Order J105193, 14' & 18' Clamp Nut Kit
 (6) Order J73922, HM Link Kit
 (7) Standard hardware items. Obtain locally.

Pin Update: In June of 1992 pin design was changed for 10W, 14" & 18" brakes. When ordering new shoes, also order new pin. See pages 7 and 8.

Note: As of January 1993, brake assemblies and replacement shoes have bonded linings.

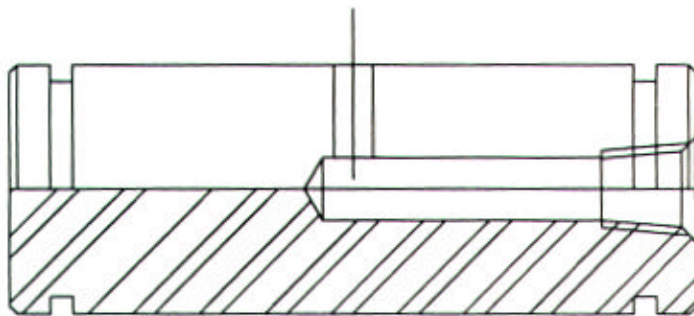
NEW PIN DESIGN FOR 10 X 4, 14 X 6, AND 18 X 8 H & HM BRAKES

The base pin, shoe pin, and arm pin designs for 10 x 4, 14 x 6, and 18 x 8 Type H and HM brake assemblies have been improved. The following brake assemblies and pin kit numbers have been affected:

	Size	Type	Brake No.	Pin Kit No.
(1)	10x4	H	J2926	J105197, J73925, J73926
	10x4	HM	J34780	J105197, J73925, J73926
(2)	14x6	H	J2929	J105198, J73927, J73928, J73929
	14x6	HM	J34735	J105198, J73927, J73928, J73929
	18x8	H	J2932	J105199, J73928, J73929, J73930
	18x8	HM	J40065	J105199, J73928, J73929, J73930

When installing these pins on existing brakes (seven total per brake assembly), it will be necessary to enlarge the present holes to allow the new pins to mount in the appropriate base, top arm, shoe, and shoe arms. Pins are provided with snap rings.

NEW PIN CONSTRUCTION (TYPICAL)



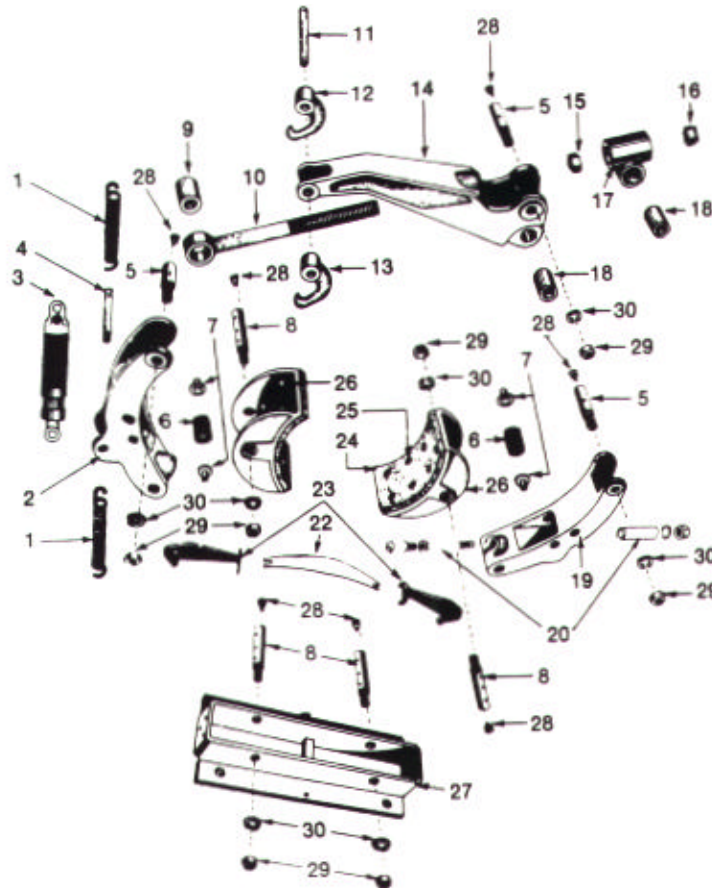
BRAKE SIZE	PIN DIA.
10x4	3/4"
14x6	1"
*18x8	1" & 1-1/4"

* 1-1/4" for base pins 1" all other pins

- (1) Also applies to J53958 and J107077 (10" H brakes with air release/spring set actuator).
 (2) Also applies to J53957 (14" H brakes with air release/spring set actuator).

NEW PIN DESIGN FOR 10X4, 14X6, AND 18X8 H & HM BRAKES

Please note items 5 and 8 on the illustration below as an example of pin locations.



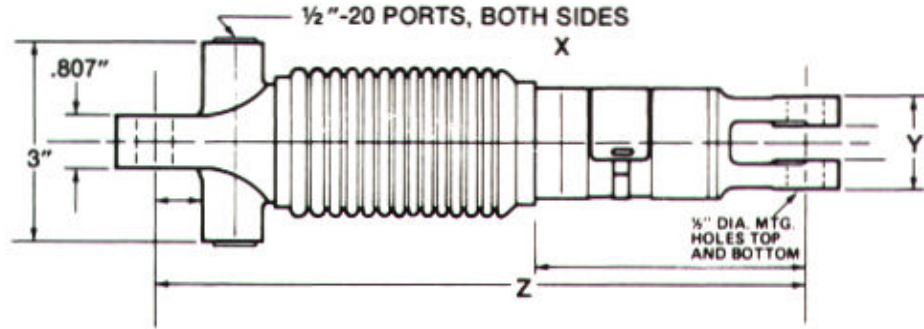
We have initiated this new pin design in June 1992. New brakes will utilize this new design. The brake base, top arm, shoe, and shoe arms will also be manufactured for this pin design. If a customer purchases a replacement brake base, top arm, shoe, or shoe arm to repair an existing brake assembly, he should also purchase a new pin kit. At that time, the brake assembly can be updated to the new pin design.

If there are any questions, please contact your local representative or distributor, or consult the factory.

INDUSTRIAL BRAKE SYSTEMS HYDRAULIC ACTUATING CYLINDERS J7905, J8765, J23437

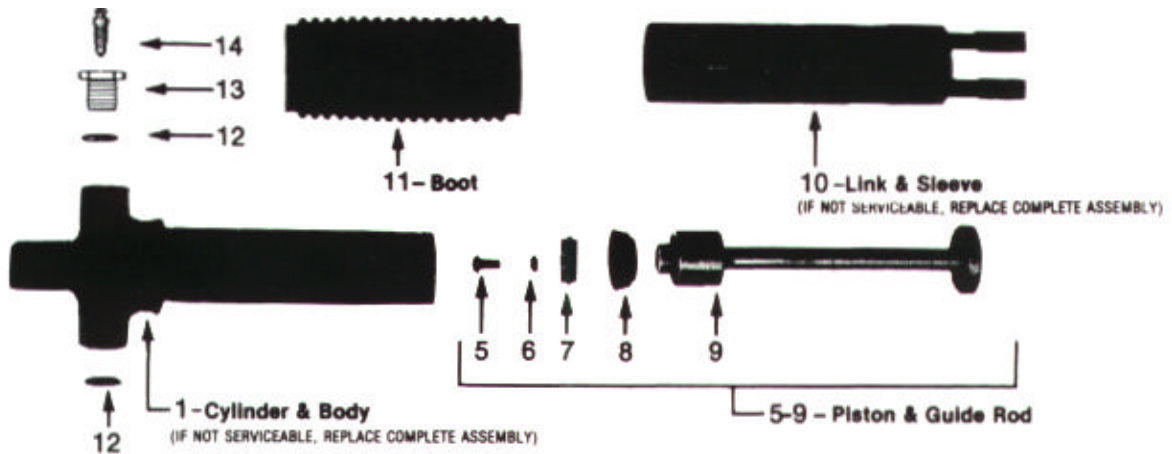
Three alternate hydraulic actuating cylinders are available J7905, 1-1/8" dia. or J23437, 7/8" dia. actuators fit all Gemco Industrial Brakes. J8765, 1-1/8" dia. "short stroke" actuators fit some other non-Gemco brakes.

Identify assembly from nameplate band on sleeve or from dimensions below. These assemblies may be substituted for some obsolete actuators, some of which include clevis mounting at both ends. Check mounting dimensions carefully.



ACTUATING CYLINDER ASSY. NO.	J23437	J7905	J8765
CYLINDER BODY CASTING NO.	JFD23438	JFD7985	JFD7985
INTERNAL CYLINDER DIA.	7/8"	1-1/8"	1-1/8"
OUTSIDE SLEEVE DIA. (X)	1-3/8"	1-5/8"	1-5/8"
CLEVIS WIDTH,(Y)	1-1/8"	1-3/8"	1-3/8"
COMPRESSED LENGTH (Z)	9-13/16"	9-13/16"	8-1/8"
MAX. WORKING STROKE	3"	3"	2-1/2"

REPLACEMENT PARTS LIST



Disassembled view of actuating cylinder.

ACTUATOR CYLINDER ASSY. NO. ITEM	J23437	J7905	J8765
5-9, 11 Repair Kit,	J73911	J73912	J73913
8 Cup (available 10 lot pack only)	J23447	J9704	J9704
11 Boot (available 10 lot pack only)	J2395	J2395	J2395
25 lot pack F17 Gasket	J105376	J105376	J105376
13 Bleeder Screw Adaptor	J7346	J7346	J7346
14 Bleeder Screw	P6446	F6446	F6446
5, 6, 7, 8 & 11 Seal Kit	J98133	J98134	J98134

Replace complete assembly if items 1 or 10 are not serviceable.

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS (FRB) FLUID RESERVOIR / BLEEDER ASSEMBLY

Assembly No.	Solenoid Voltage
PSD-0180100	110/120 VAC 50/60 Hz
PSD-O1 801 01	240 VDC
PSD-O1 80102	Manual

- Fluid Capacity 2 1/4 qts.
- Fluid Type Wagner 21B
- Max. Valve Pressure 1000 PSI
- Conduit Size 1/2"

COMPONENT PARTS LIST AND DIAGRAM

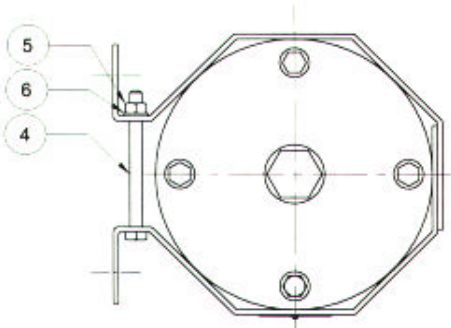
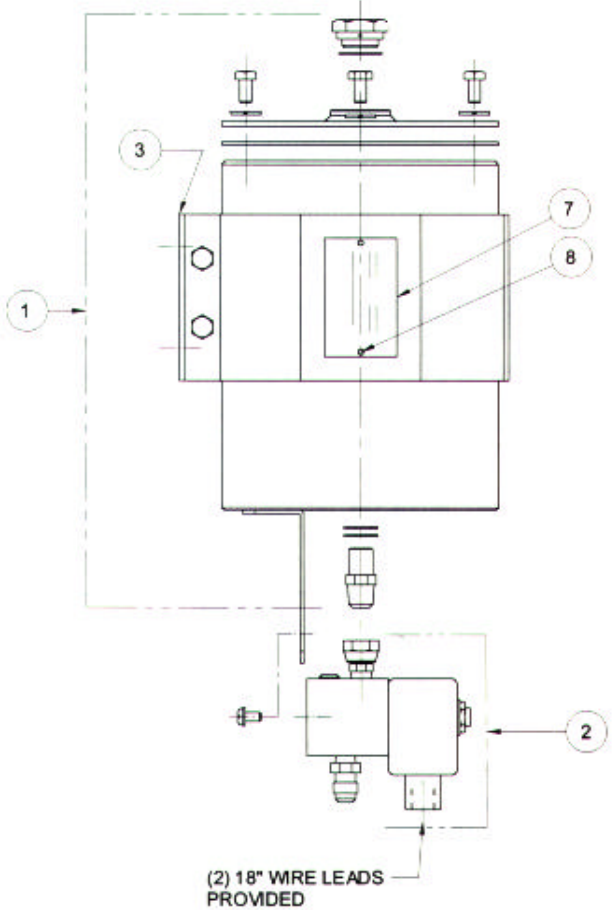


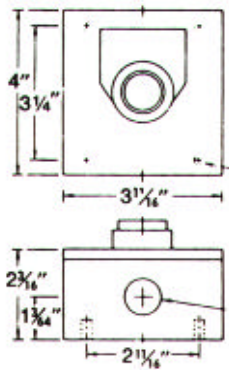
CHART 1			
ITEM	PART NO.	DESCRIPTION	QTY.
2	PSD-0179900	VALVE AND SOLENOID ASSEMBLY - 120 VAC	1
2	PSD-0179901	VALVE AND SOLENOID ASSEMBLY - 240 VDC	1
8	9990266200	SCREW DRIVE "U" SIZE 4 X 3/16" LG	2
7	J010457999	NAMEPLATE FRB UNIT	1
6	9012038000	LOCKWASHER SPLIT 1/4"	2
5	9010302400	NUT HEX FIN JAM 1/4-28	2
4	9010000800	BOLT HEX HD 1/4-28 X 3" LG	2
3	J008483006	CLAMP REMOTE BLEEDER ASSEMBLY	1
2	PSD-01799**	SEE CHART 1	1
1	PSD-0179800	RESERVOIR ASSY FRB UNIT	1



BPB Bleeder Pushbutton Operator

Part No. J10008

OIL TIGHT, surface mounted enclosure with one normally open momentary contact.



Nameplate Legend.
Hyd. Brk. Bleeder

4-MTG Holes
For 10-32 Screws

3/4-14 Conduit Entrance

NOTE:
PIPE SEALANT SWAK # MS-PTS-250 OR EQUIVALENT TO BE USED ON ALL THREAD JOINTS WHEN ASSEMBLING

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS CONTROL CYLINDERS (J16320 - J17616 - J19907) AND PEDAL (J8219)

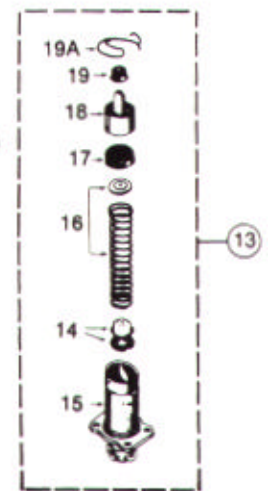
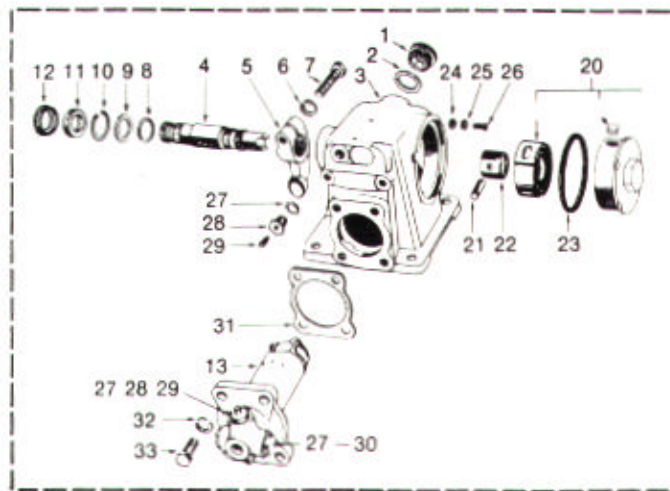
The control cylinders below replace equivalent assemblies, which are identified by the nameplate on the top of the supply tank. Similar J17617, 2" diameter control cylinders as well as 2" diameter head & barrels and repair kits are no longer manufactured and must be replaced by 1 3/4" diameter J17616 control cylinders. J17616 control cylinders must also replace obsolete 1/4 J8142 and J9337 control

cylinders. However, new 1/2" mounting holes must be drilled to match the smaller assembly. Casting numbers are included in the part name tabulation to assist in identification. The head & barrel diameter can be determined without removal from control cylinder by measuring extension of "nose."*



*1.85" = 1 1/2" diameter. Use control cyl. J16320, head & barrel J16307
2.85" = 1 3/4" or 2" diameter. (1 3/4" has X cast on side).
Use control cyl. J17616, head & barrel J6912

18" pedals replace all old assemblies, including 21" and 24" pedals as well as 13 1/4" automotive and pendulum type pedals which are no longer available.

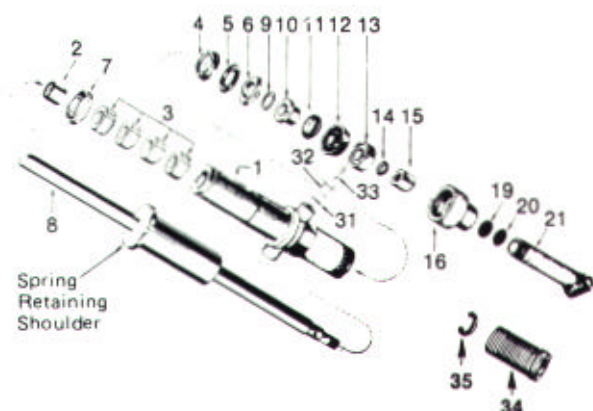


Item No.	Part Description	No. Used	Part No.
1	Filler Plug	1	(10)
2	Filler Plug Gasket	1	(10)
3	17615 Supply Tank	1	
3a	Control Cylinder Assy., less pedal	1	
	1 1/2" Diameter		J16320
	1 3/4" Diameter		J17616
	1 3/4" Diameter (Screened Breather Replaces Items 28 & 29)		J19907
4	Shaft	1	J17611
5	Lever	1	J7158
6	1/2" Lock-washer	1	(2)
7	1/2-20 x 2" Cap Screw	1	(2)
8	O Ring	1	
9	Retainer Plate	1	
10	Snap Ring	1	
11	Felt Seal	1	
12	Felt Retainer	1	
13	Head & Barrel Assy. (Items 14-19a, 27-30)	1	
	16308 1 1/2" Diameter		J16307
	6911 1 3/4" Diameter		J6912
14	Valve & Seat	1	(4)
15	Head & Barrel	1	
16	Retainer Spring	1	(4)
17	Piston Cup	1	(4)
18	Piston	1	(4)
19	Support Ring	1	(4)

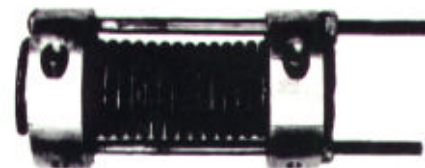
Item No.	Part Description	No. Used	Part No.
19a	Piston Stop wire	1	
20	Spring & Case Assy.	1	J17626
21	Shaft Pin	1	
22	Sleeve Arbor	1	
23	Spring Case Gasket	1	(8)
24	Case Washer	3	(8)
25	#10 Lock-washer	3	(8)
26	Stainless Allen Screw	3	(8)
27	F17 Copper Gasket	5	J105376
28	Bleeder Screw Adaptor	1	J7346
29	Bleeder Screw	1	F6446
31	1396 Head Gasket	1	(9)
32	7/16" Lock-washer	4	(2)
33	7/16"-14 x 1 1/4" Cap Screw	4	(2)
34	Ped & Assy.	1	J8219
36	1/2"-20 x 2 1/4" Bolt	1	(2)
37	1/2" Lock-washer	1	(2)
38	1/2"-20 Nut	1	(2)

- (2) Standard hardware items. Obtain locally
- (4) Use Either Kit J19039 for 1 1/2" Head and Barrel or Kit J19040 for 1 3/4" Head and Barrel (Items 14, 16-19)
- (8) Order Gasket Kit J73923
- (9) Included in Item 13, Head & Barrel Assy., or (4) or (5) Head & Barrel Repair Kits
- (10) Order J105377 Filler Plug/Gasket Kit

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS TYPE HM PARK RELEASE CYLINDERS



Exploded view of type HM releasing cylinder after spring and clamp have been removed.



Spring Clamp Tool J-391 (Illustration shows brake setting spring clamped in tool)



Expanding Drift Tool J-394



Pilot Tool J-392

REPLACEMENT PARTS LIST

Item No.	Name of Part	10" x4"	14" x6"	18" x8"
	Complete Assembly	J-79463	J-79462	J-79464
21	Mounting Lug	J-9681	J-9681	J-9688
8	Piston Rod Assembly	J-23040	J-23041	J-23041
34	Piston Rod Guide	J-9662	Not Used	Not Used
35	"C" Washer	J-9661	Not Used	Not Used

The following parts are used in all the above Releasing Cylinder Assemblies:

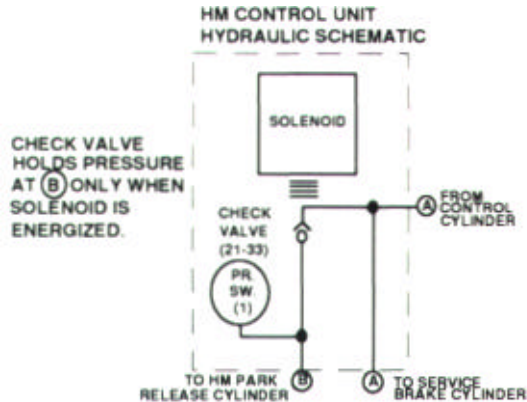
Item No.	Name of Part	Number Used	Part Number
1	Cylinder Body	1	J-14704
2	Bushing	1	J-9674
3	9691 Packing Felts	4	*
4	Bushing	1	J-9672
5	10167 "O" Ring	1	*
6	10229 "O" Ring Retainer	1	*
7	10231 Felt Washer	1	*
9	1733 Gasket	1	*
10	Piston Stop Sleeve	1	J-9697
11	9696 Cup Retainer	1	*
12	9694 Cup	1	*
13	Piston	1	J-9695
14	Shake proof Lock-washer	1	*
15	14707 Piston Rod Nut	1	*
16	Cylinder End	1	J-79467
19	9680 Filter Retainer	1	*
20	1823 Filter	1	*
31	25 lot pack F17 Gasket	1	J-105376
32	Bleeder Screw Adaptor	1	J-7346
33	Bleeder Screw	1	F-6446

* ORDER J73921 HM CYLINDER REPAIR KIT

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS

HM CONTROL UNIT, J107206

(Replaces J070930 and J107154)



The HM Control units traps pressure in the HM park release cylinder when solenoid is energized.

Brake fluid displaced by the control cylinder flows to port A. Beyond that point it divides, part flowing past port A to the service brake cylinder and part flowing past the check valve, port B and to the HM park release brake cylinder. Normal maximum force on the brake pedal will develop 400 psi to fully compress the parking spring. If the solenoid is energized the check valve traps this pressure to keep the parking cylinder released even after the pedal force is released and pressure in line A-A drops back to zero. Subsequent pedal force develops pressure at the service brake cylinder, while the parking brake cylinder remains released as long as the solenoid is energized.

The solenoid consists of 11 5V D.C. coil which is factory connected in series with a resistor for 230V DC operation. The TSRM rectifier is series connected in the DC circuit to suppress any transient voltage surges. If the system is operated at 11 5V AC, the coil must be re-connected. See wiring diagrams on the door of the control unit.

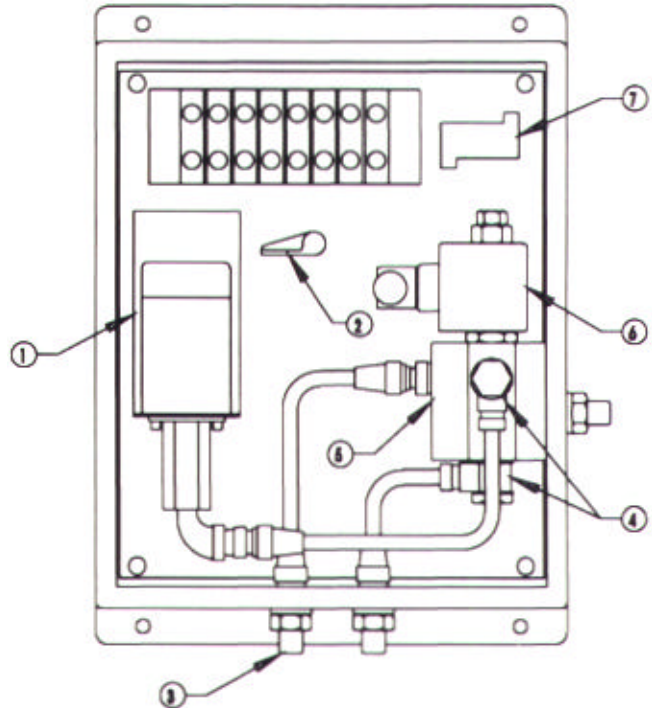
Whenever electric power is ON and the parking switch in the cab is CLOSED, the solenoid check valve holds pressure in the parking brake release cylinder. This pressure also operates the normally open hydraulic pressure switch, which closes above 400 psi, when the parking brake should be fully released. The closed pressure switch operates the green signal light in the cab and the drive motor pilot relay.

If power to the system is disconnected the solenoid check valve will release the trapped pressure. The pressure switch will open below 320 psi-turning the green light OFF and opening the motor pilot relay. The parking brake will reset below 320 psi.

For the HM brake system to function properly.

1. The HM park release hydraulic circuit as well as the service brake hydraulic circuit must be filled with brake fluid and be bled free of air. The service brake circuit is bled by operating the bleeder, however the parking brake circuit must be bled manually.

2. The HM brake must be properly adjusted. Final brake adjustment is necessary after the hydraulic circuit is operational and the parking cylinder can be fully released. When properly adjusted-one full stroke of the pedal is all that is needed to fully



release the parking brakes for normal service brake operation.

3. There can be NO external or internal leaks in the hydraulic system. Visible external leaks must be corrected.

4. The power supply must be ON and there must be 230V or 115V DC across + and - terminals at the terminal board. The solenoid must be connected for the correct voltage. Check color code of lead wires carefully. Check operation of the TSRM rectifier.

If all of the above conditions have been checked and are normal, and the park release cylinder will not stay released then the problem can only be a leaking solenoid check valve and/or a leaking HM park release cylinder.

ITEM NO.	PART DESCRIPTION	NO. USED	PART NO.
1	N.O. Pressure Switch	1	J024684
2	TSRM Rectifier Kit	1	J071053
3	1/2 20 Union	3	J049087
4	Swivel Fitting	2	F003163
5	Solenoid Check Valve Assembly	1	J107151
6	Solenoid Only	1	J107148
7	Resistor	1	J107149
+	Valve Stem with Seals	1	J107156
*	Conversion Kit	1	J107155

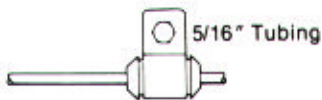
+ Value stem is located within Solenoid Check Valve Assembly.
* Conversion Kit includes resistor, washers, fittings and hose (hose from valve to H cylinder port, valve to HM cylinder port, valve to pressure switch).

NOTE: To modify existing J070930 or J107154 HM Control Unit to J107206, order J107155 Kit and J107151 Solenoid Valve Assembly.

REPLACEMENT PARTS

5/16" TUBING, 1/2"-20 SAE FITTINGS AND MISCELLANEOUS ACCESSORIES

A55980 TUBING 5/16" ODx100' Copper
J5138 CLAMP



J5137 TUBE BUSHING

Support tubing every 3 ft. with J5138 and J5137

J86 TUBE NUT mates 1/2-20 thd. with 45° chamfer and flared tubing



J9945 TUBE TEE (1/2-20 thd.*)

F996 OUTLET PLUG (1/2-20 thd.**)

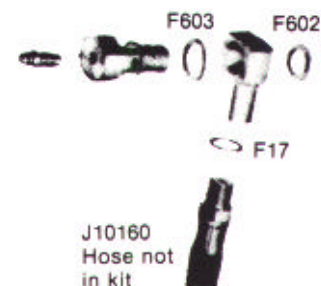


J7346 ADAPTOR PLUG 1/2-20 thd.** with 1/4-28 thd. for F6446 Bleeder Screw



J15555 RIGHT ANGLE KIT

Provides right angle swivel connection and bleeder screw port for any 1/2"-20 cylinder port. This assembly is furnished as standard on 6" and 8" type HM brake parking cylinder. Must be ordered separately if required for any other port.

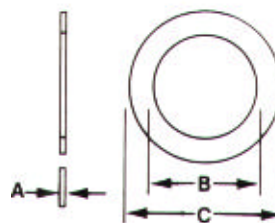


UNION AND ADAPTOR FITTINGS



	A	B
J49087 UNION (Replaces FC4080)	1/2-20*	1/2-20*
J269 ADAPTOR	1/2-20*	1/2-20**
F11955 ADAPTOR	1/2-20*	1/4-18 NPT.
J71052 ADAPTOR	1/2-20*	7/16-24

COPPER GASKETS



Part No.	A	B	C
F17	1/32"	33/64"	45/64"
F602	1/32"	1/2"	13/16"
F603	1/32"	19/32"	13/16"

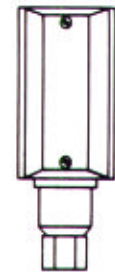
30 INCH ARMORED HOSE



J10160	HOSE ASSEMBLY - only
J5780	HOSE BRACKET - anchors hose at * long thread
J10797	HOSE KIT - includes hose, F17 gasket for seal at ** short thread, J5780 hose bracket, 1/2-20 jam nut and lock-washer

J24684 HYDRAULIC PRESSURE SWITCH

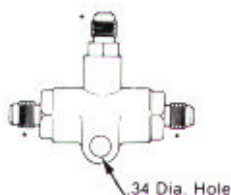
1 pole -- 2 position electric contact. Easily read dials allow field adjustment of 50-500 psi pressure range and 10-80 psi pressure differential. This replacement part for JF70930 HM control unit may also be line mounted in parking cylinder hydraulic line to replace function of obsolete JD14853 mechanical limit switch in old HM-2 system of JC9738 pressure switch in old HM system.



1/4"-18 NPT.

J18377 TWO WAY HYDRAULIC CHECK VALVE

This assembly is required for operation of brake system from more than one control station.



F9314 21B SUPER HEAVY DUTY BRAKE FLUID (6-1 GAL. CASE)

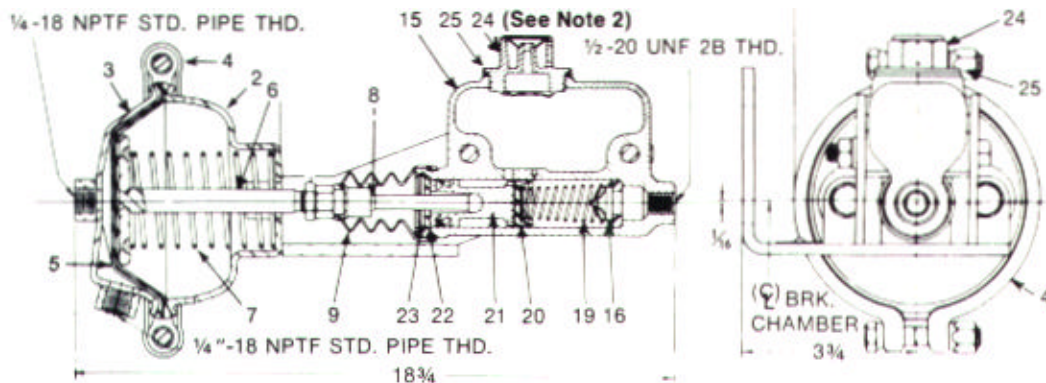


Industrial Brake Systems must be filled only with 21B Super Heavy Duty Brake Fluid meeting SAE J1703 specs. Do not use mineral oil or any other substitute. Avoid contamination. Purchase brake fluid in 1 gal. cans which can be easily carried to job site and discarded when empty.

* 45° Chamfer, mates flared tubing and J86 tube nut
 ** Requires F17 Gasket Seal at cylinder port.

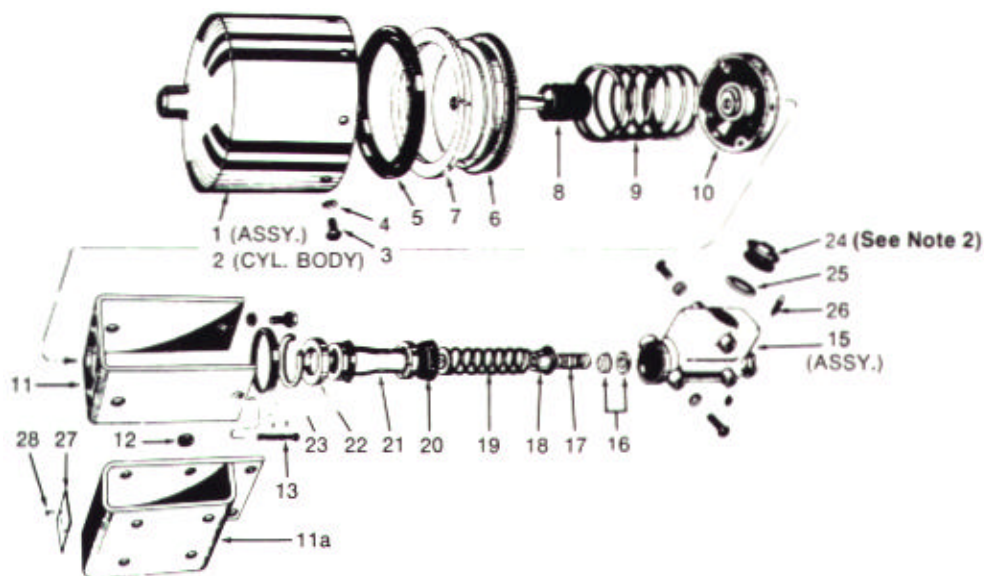
PRESSURE CLUSTER, AIR/HYDRAULIC

JC-54085 - 1X5 AIR/HYDRAULIC PRESSURE RATIO



Repair Kit - J-83714. Includes items 5, 9, 16, 20, 21, 23

JC-54086 - 1X8 AIR/HYDRAULIC PRESSURE RATIO



Repair Kit - J-83715. Includes items 5, 7, 8, 16, 20, 21

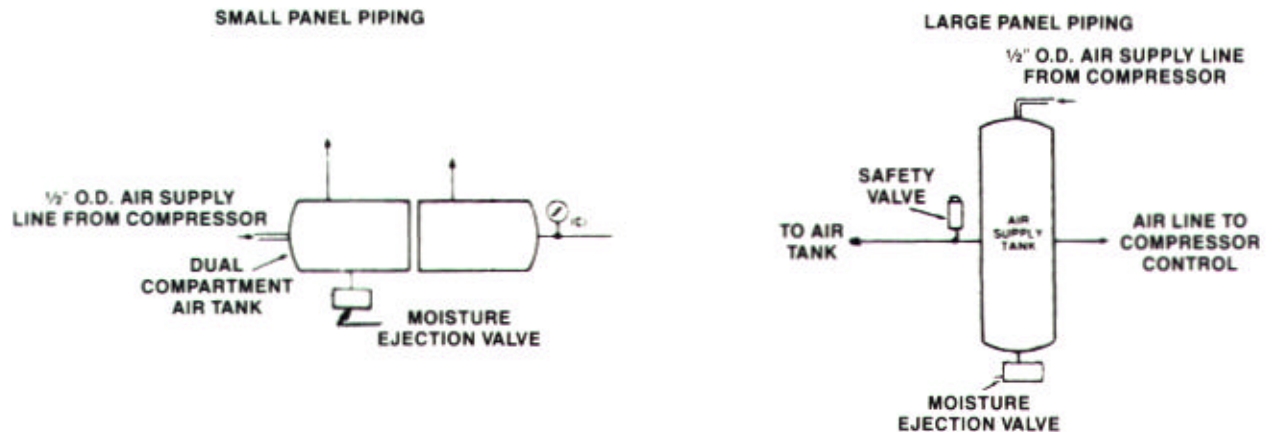
NOTE: Hydraulic master cylinders on both assemblies include:

1. FC-269 outlet adaptor fitting with 1/2-20 SAE external thread for FC-86 tube nut and 5/16" OD tubing.
2. Tapped filler cap and right angle fitting with 1/2-20 SAE external thread for FC-86 tube nut, instead of standard filler cap shown for item 24.
3. On systems which have High Return Line Pressure, a special piston will be required.

MOISTURE EJECTION VALVE J107084

This valve automatically keeps air reservoirs clean and dry. Each brake application causes a small volume of air and any accumulated moisture from the air supply tank to fill the valve chamber. This is expelled to atmosphere when application pressure is released.

TYPICAL INSTALLATION OF VALVE ON A/H ERC PANEL



VALVE SERVICE

Periodically open the air supply tank drain cock. A relatively clean discharge of air indicates that the valve is functioning properly.

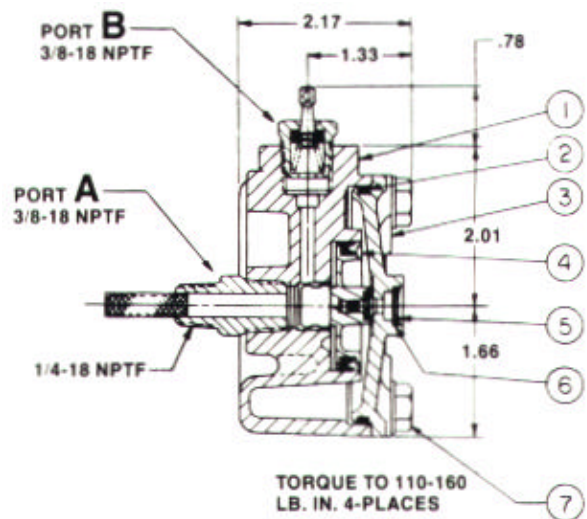
A constant air leakage from the exhaust port during application period indicates a defective seal.

To repair the valve, obtain repair kit J107085. Drain the system. To vent or drain system, pull cord attached to valve. Completely disassemble the valve, inspect and clean the valve body. Reassemble the valve using new parts Items 2, 4, 5, & 6. Tighten nuts as shown. Change filter. Reinstall valve in unit.

PARTS DESCRIPTION

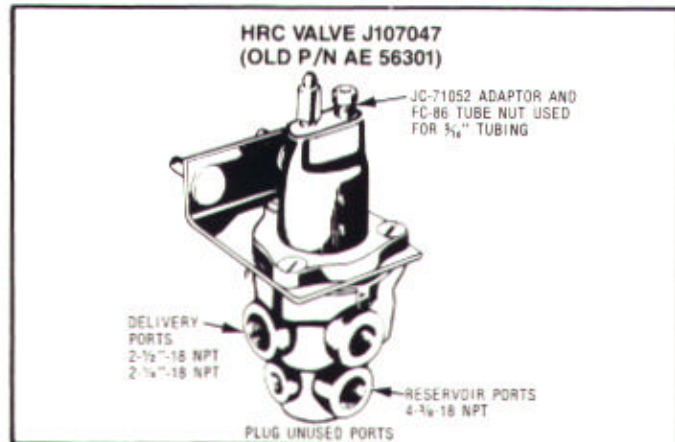
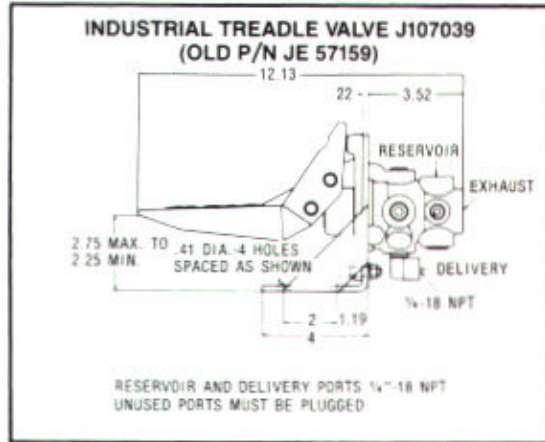
Item No.	Description	Quantity
1	Valve Body	1
2	"O" Ring	1
3	Cover	1
4	Piston Assembly	1
5	Retaining Ring	1
6	Screen	1
7	Screw	4

Repair Kit J107085 contains Items 2, 4, 5 & 6.



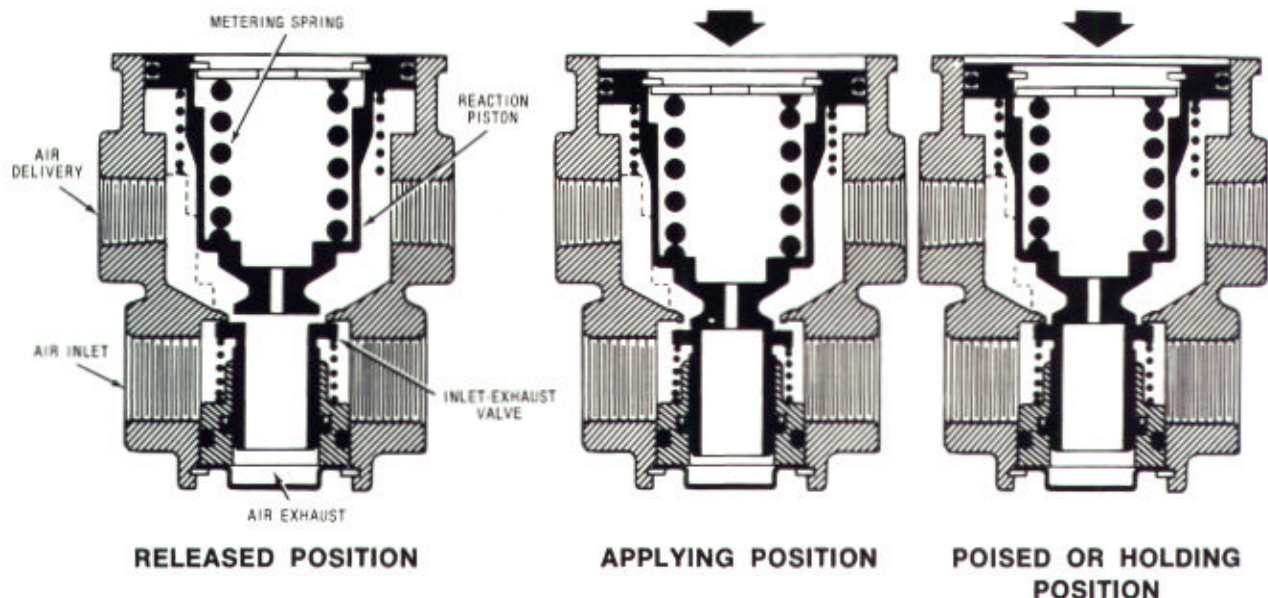
TYPE FG AIR APPLICATION VALVES

This valve meters application pressure from reservoir port to delivery port, in proportion to operating force. Operating force for the treadle valve is applied by foot. Operating force for the HRC hydraulic remote controlled valve is applied by an integral hydraulic slave cylinder. The hydraulic slave cylinder is operated from a remote industrial control cylinder in the cab.



HOW THE APPLICATION VALVE WORKS

Controlling force applied against the spring retainer is transferred to the metering spring which, in turn, strokes the reaction piston against its return spring. During this stroke, the piston picks up a spring loaded inlet-exhaust valve poppet. The exhaust port chamber is sealed off as the piston meets the poppet, and the continuing stroke then depresses the poppet, permitting compressed air to flow into the delivery port chamber. Braking pressure beneath the reaction piston forces it to lap. The reaction piston, compressing the metering spring to balance between forces, thus assumes a position which permits its spring loaded poppet valve to seat and seal the inlet while holding the exhaust closed. The unit now remains poised in holding position until a change in controlling force unbalances it, either to admit increased air pressure or to exhaust the system.



TYPE FG AIR APPLICATION VALVES

SERVICING THE VALVE

Normal operating sequences test the type FG application valve. Should an internal leak develop, it can be detected at the exhaust port and it must not be confused with normal exhaust. A leak, while released, indicates the valve poppet is not sealing its inlet; while applied, the poppet is not sealing the exhaust. Nominal leakage (slow bubbling when covered with suds) has little consequence. Should pedal feel seem erratically light, then suddenly heavy and severe acting, the large O-ring on the reaction piston may be leaking. Air leaks around the mounting, while applied, also refer to the piston O-ring.

The inlet-exhaust poppet valve can be inspected by removing the retaining ring and shield located in the exhaust port at the bottom of the valve. Guide seal friction tends to hold the parts assembled; however, the spring will gradually force the parts out.

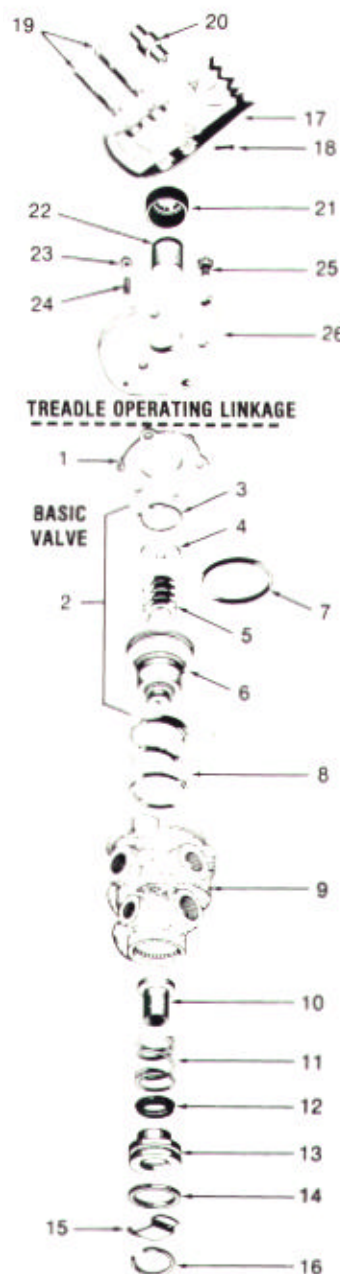
The reaction piston can be inspected by removing the spring retainer from the top of the valve body. On the treadle model, separate the body from the mounting flange by removing the three screws (3/8"-16x1" Flat Hd). Pull the treadle fulcrum pin and lift off the treadle in order to reach one mounting screw. Should the operation of the valve become slow or hesitant after prolonged service, disassemble and clean the unit. A seal kit and maintenance kit includes all parts needed for complete overhaul. When re-assembling the valve, cover all bearing surfaces with a thin film of grease (Mobilplex No. 47, or equal).

After re-assembly of the treadle valve, set screw (24) should be adjusted for minimum lash of the plunger (22) between roller (20) and retainer washer (4). No adjustment of the HRV valve is necessary.

SERVICE REPLACEMENT

Industrial Treadle Valve Assy	J107039
HRC Valve Assy	J107047
Basic Valve Only (Item 1-16)	A-45240
Seal Kit (Parts Indicated*)	
for treadle valve	J107040 (old A-39223)
for HRC valve	J107081 (old A-39222)
Maintenance Kit	
(Parts Indicated +)	No longer available

PARTS DESCRIPTION



BASIC VALVE

1. Retainer
- +2. Piston Assembly, w/flat washer
3. Retaining Ring
- Metering Spring
4. Washer, Spring Retainer flat w/ hole
5. Spring, Metering
6. Piston, Metering
- *7. "O" Ring, Piston
8. Spring, Piston Return
9. Body, Valve w/ 3/8"-18 Application Ports
- *10. Valve, Inlet
- +11. Spring, Inlet Valve
- *12. "U" Cup, Inlet Valve Guide
- +13. Guide, Inlet Valve
- *14. Seal, Inlet Valve Guide
- +15. Shield, Exhaust
- *16. Retaining Ring, Inlet Valve

OPERATING LINKAGE

Treadle Model

17. Treadle
18. Cotter Pin (3/32"x 1 1/8") (2)
19. Pin, Treadle (2)
20. Roller
- *21. Boot
22. Plunger, Treadle Type
23. Jam Nut, Treadle Stop (1/4"-20)
24. Set Screw, oval point (1/4"-20x1")
25. Screw, Flat Hd. Mtg. Flange (5/16"- 18 x 13/16") (3)
26. Flange, Mounting

Hydraulic Actuated Model

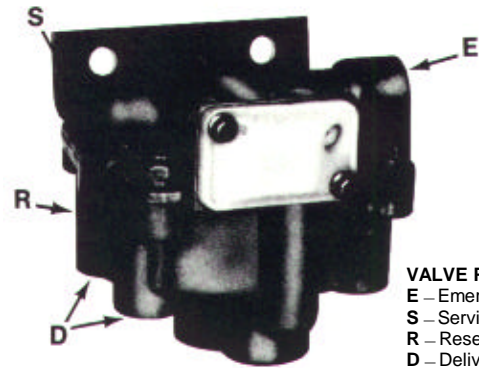
- Cylinder Housing
- Bleeder Screw-F244493
- Piston Assembly
- * Piston "O" Ring
- * Piston Cup Seal
- Fitting-J71 052

INDUSTRIAL BRAKE SYSTEMS

EE BLEED DOWN TYPE RELAY EMERGENCY VALVE J 58860

This valve controls pressure to the service brake pressure cluster on type A/H, A/H-HRC, and A/H-ERC systems. It applies pressure from the right half of the horizontal reservoir. Whenever emergency port E is pressurized above 50 psi, reservoir port R pressure is poised for application to delivery port D at whatever pressure is applied to service port S. Without pressure at the service port, no pressure is applied to the delivery port.

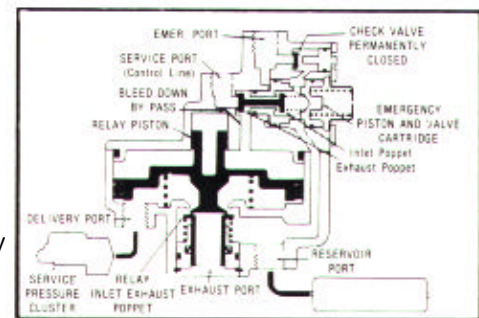
Whenever emergency port pressure drops below 40 psi, pressure at the reservoir port is applied to the delivery port. Hence the valve applies pressure to the service brake pressure cluster in "emergencies" although a tiny "bleed down by-pass" bleeds delivery port pressure through the service port. After several hours the "emergency" brake pressure is fully released.



VALVE PORTS
 E – Emerg. Air Line
 S – Service Air Line
 R – Reservoir
 D – Delivery Ports

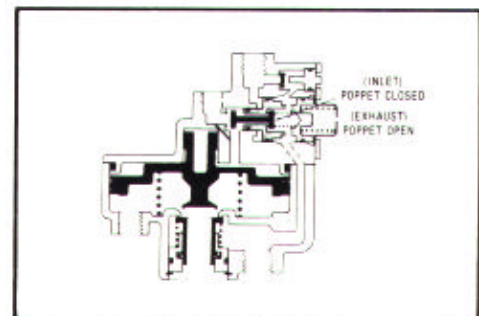
HOW THE VALVE WORKS

SYSTEM IDLE In the idle condition, emergency port pressure is off, reservoir port is open to delivery port. Service brake pressure cluster is applied if reservoir pressure is available. The check valve has no function and is closed permanently. With no emergency pressure, the emergency piston and valve cartridge is held in by spring force and the exhaust poppet closes service port while the inlet poppet opens a passage to the relay piston. Pressure on the relay piston forces it down against spring force, sealing the inlet-exhaust poppet and opening reservoir port to delivery port. A bleed down by pass slowly vents reservoir pressure to the service port to prevent service pressure cluster application for extended periods.



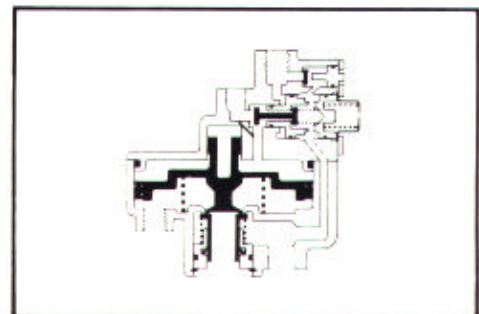
SYSTEM IDLE

SYSTEM NORMAL When emergency port is pressurized, 65-80 psi compressor pressure forces the emergency piston and valve out against spring force, pulling the exhaust poppet open and the inlet poppet closed. With no pressure at the service port, the return spring forces the relay piston up, allowing relay inlet-exhaust poppet to seal reservoir port and open delivery port to exhaust port. Service pressure cluster is released.



SYSTEM NORMAL

SERVICE STOP When service port is pressurized pressure strokes the relay piston against spring force. The piston picks up the relay inlet-exhaust poppet valve, first closing the exhaust passage and then unseating the poppet to open reservoir port to delivery port. When the force on the relay piston balances opposing spring forces, the piston is forced to lap, permitting the spring loaded relay inlet-exhaust poppet to close while holding the exhaust passage sealed. The valve remains poised in this "hold" position, relaying delivery port pressure equal to service port pressure.



SERVICE STOP

EMERGENCY STOP Reduction of emergency port pressure below 40 psi triggers the valve to apply reservoir pressure, as described in System Idle description above.

SERVICING THE EE BLEED DOWN TYPE RELAY EMERGENCY VALVE

The valve should be replaced or overhauled using both a seal and maintenance kit should any abnormal symptoms occur.

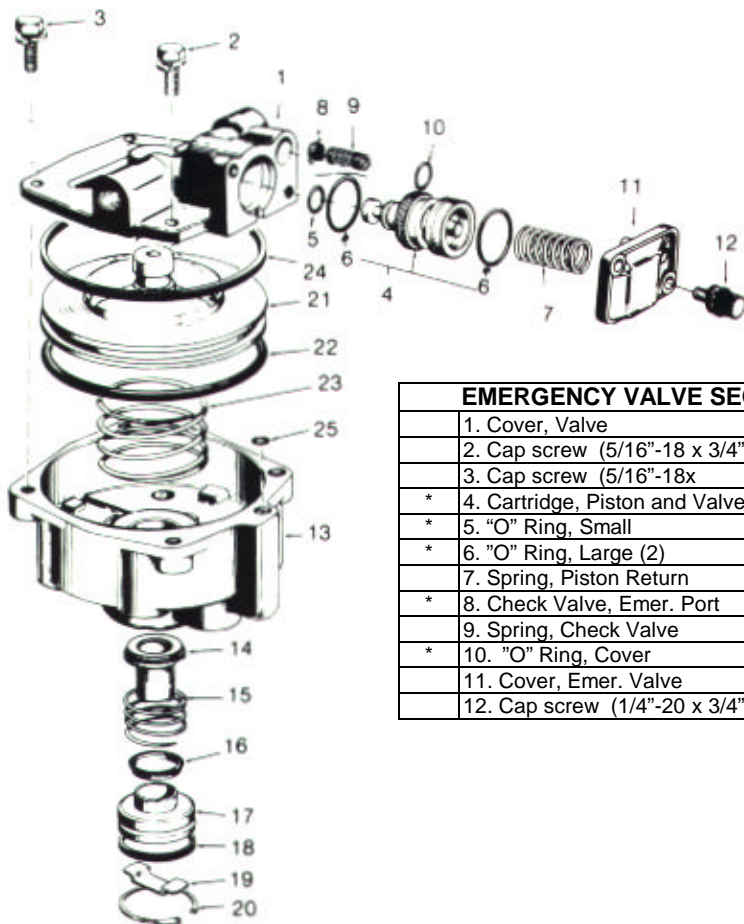
A. On A/H, A/H-HRC or A/H-ERC Systems

1. Constant leakage out of the exhaust port may indicate a defective relay poppet valve (14).
2. Slow or hesitant delivery port pressure may be caused by air leakage past the relay piston (21).

B. On A/H-HRC or A/H-ERC Systems

1. If delivery pressure is not applied with normal reservoir pressure available and with no pressure at emergency port (ESV valve de-energized), the piston and valve cartridge (4) may be defective.
2. Constant leakage out of the emergency port thru de-energized ESV valve exhaust port may be caused by a defective check valve (8).
3. If compressor pressure charges the emergency reservoir above regulated pressure, the relay may not contain the correct check valve spring (9) which seals the emergency port from the reservoir port.

During the overhaul the unit should be cleaned to remove any accumulation of foreign matter in the valve passage. Coat all seals and bearing surfaces with a thin coat of Dow Corning 33 medium consistency grease.



SERVICE PARTS INFORMATION

Replacement Assy.	J58860
Seal Kit *	A54582
Cellon Cover (11)	A75530

EMERGENCY VALVE SECTION

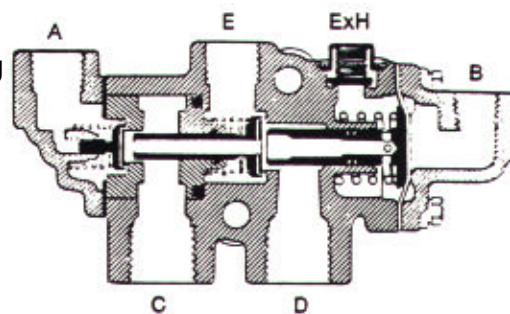
1. Cover, Valve
2. Cap screw (5/16"-18 x 3/4")
3. Cap screw (5/16"-18x)
* 4. Cartridge, Piston and Valve
* 5. "O" Ring, Small
* 6. "O" Ring, Large (2)
7. Spring, Piston Return
* 8. Check Valve, Emer. Port
9. Spring, Check Valve
* 10. "O" Ring, Cover
11. Cover, Emer. Valve
12. Cap screw (1/4"-20 x 3/4") (2)

RELAY VALVE SECTION

13. Body, Valve
* 14. Valve, Inlet-Exhaust
15. Spring, Valve Return
* 16. Seal, Valve
* 17. Guide, Valve
* 18. Seal, Valve Guide
19. Shield, Exhaust Port
* 20. Retainer Ring, Valve (Truarc)
* 21. Piston, Relay
* 22. Seal, Piston
23. Spring, Piston Return
* 24. Seal, Valve Cover-Housing
* 25. "O" Ring, Housing-Cover Air Passage

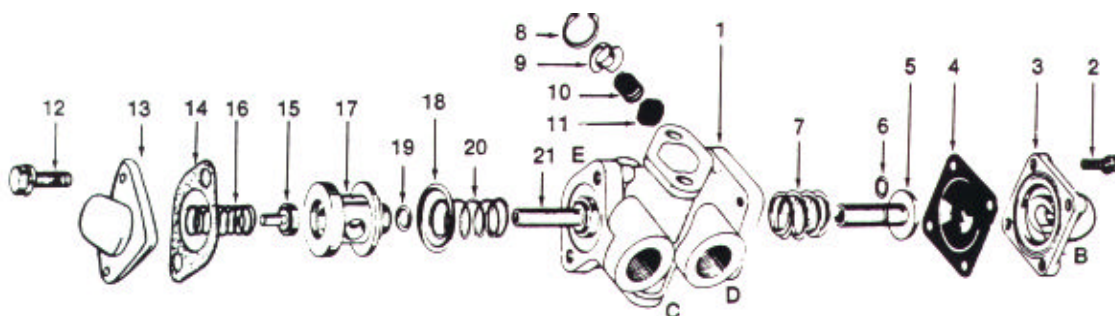
INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS PROTECTION VALVE A24912

The protection valve is a pilot operated check valve, used in conjunction with a timer valve, to coordinate application of parking brakes in type AHM-HRC and AHM-ERC system panels. With normal minimum 65 psi. pressure at control port B, service brake ports E to D and parking brake release ports A to C are open. When pressure at B drops to 40 psi., the valve closes port A to C and exhausts C. When pressure at B drops to 30 psi., the valve closes port E to D and exhausts D.



SERVICING THE VALVE

The valve must be replaced if it should fail to activate combination braking or should a consistent air leak develop at the exhaust port.



REPLACEMENT UNITS A24912

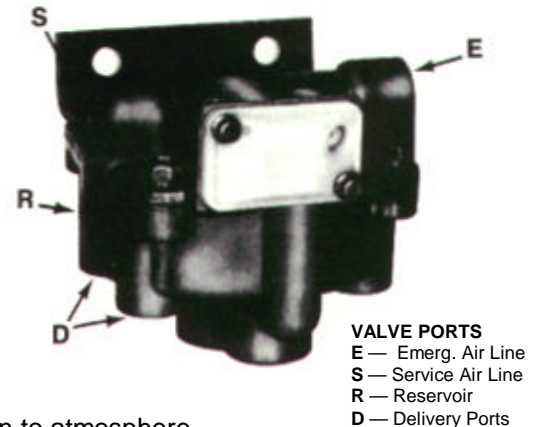
- | | |
|--|--|
| 1. Valve Body | 12. Springtite Cap Screw (2 used) (1/4-20x3/4) |
| 2. Springtite Cap Screw (4 used) (10-24x7/8) | 13. Cap, Application |
| 3. Cap, Inlet | 14. Gasket |
| 4. Diaphragm | 15. Valve Assy., Inlet |
| 5. Plunger Assy | 16. Spring |
| 6. "O" Ring | 17. Valve Guide |
| 7. Spring | 18. "O" Ring |
| 8. Clip, Retainer | 19. "O" Ring |
| 9. Retainer, Spring | 20. Spring |
| 10. Spring | 21. Valve and Seat Assy. |
| 11. Valve Assy., Exhaust | |

INDUSTRIAL BRAKE SYSTEMS EE RELAY EMERGENCY VALVE A71891

This valve controls pressure to the service brake pressure cluster on type A/HM-HRC and A/HM-ERC systems supplied after September, 1978. It applies pressure from the right half of the horizontal reservoir. Whenever emergency port is pressurized above 50 psi, reservoir port R is poised for application to delivery port D at whatever pressure is applied to service port S. Without pressure at the service port*, no pressure is applied to the delivery port.

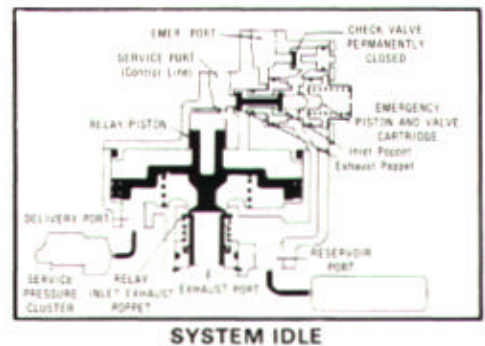
Whenever emergency port pressure drops below 40 psi, pressure at the reservoir port is applied to the delivery port. Hence the valve applies pressure to the service brake pressure cluster in "emergencies".

* Service port is not used on A/HM-HRC systems and must always be open to atmosphere.

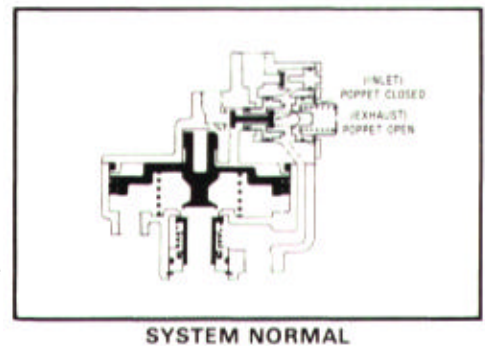


HOW THE VALVE WORKS

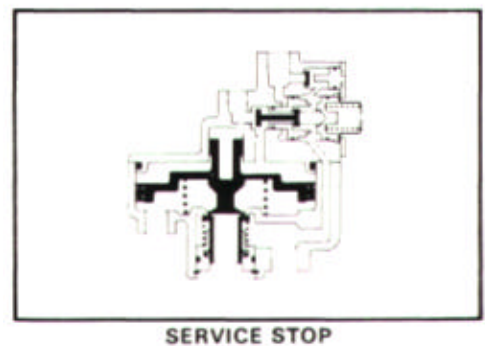
SYSTEM IDLE In the idle condition, emergency port pressure is off, reservoir port is open to delivery port. Service brake pressure cluster is applied if reservoir pressure is available. The check valve has no function and is closed permanently. With no emergency pressure, the emergency piston and valve cartridge is held in by spring force and the exhaust poppet closes service port while the inlet poppet opens a passage to the relay piston. Pressure on the relay piston forces it down against spring force, sealing the inlet-exhaust poppet and opening reservoir port to delivery port.



SYSTEM NORMAL When emergency port is pressurized, 65-80 psi compressor pressure forces the emergency piston and valve out against spring force, pulling the exhaust poppet open and the inlet poppet closed. With no pressure at the service port, the return spring forces the relay piston up, allowing relay inlet-exhaust poppet to seal reservoir port and open delivery port to exhaust port. Service pressure cluster is released.



SERVICE STOP (AHM-ERC Systems only) When service port is pressurized, pressure strokes the relay piston against spring force. The piston picks up the relay inlet-exhaust poppet valve, first closing the exhaust passage and then unseating the poppet to open reservoir port to delivery port. When the force on the relay piston balances opposing spring forces, the piston is forced to lap, permitting the spring loaded relay inlet-exhaust poppet to close while holding the exhaust passage sealed. The valve remains poised in this "hold" position, relaying delivery port pressure equal to service port pressure.



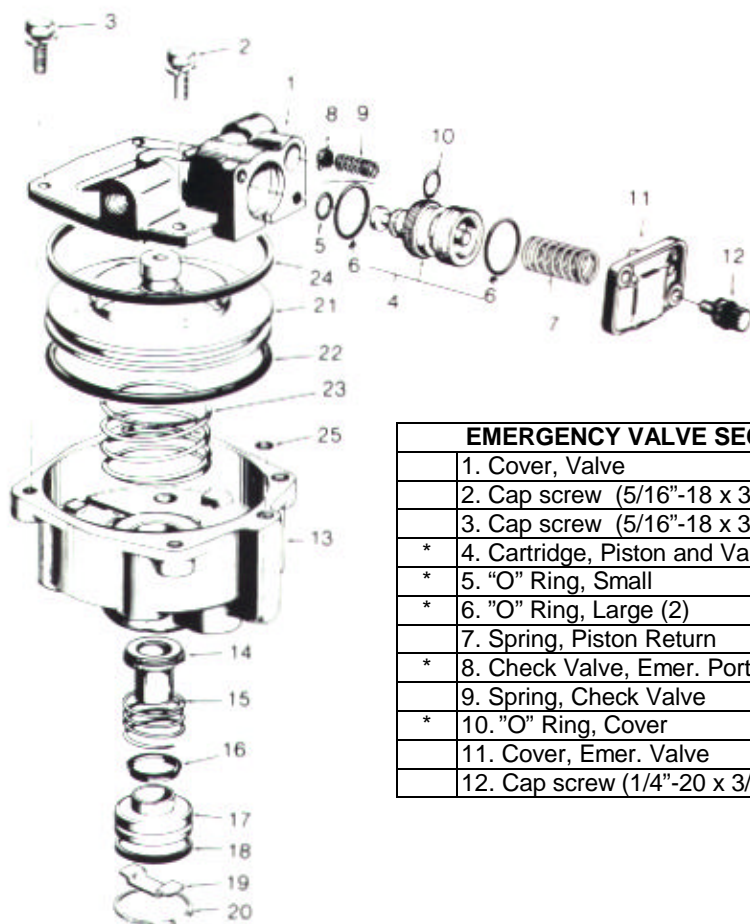
EMERGENCY STOP Reduction of emergency port pressure below 40 psi triggers the valve to apply reservoir pressure, as described in System Idle description above.

SERVICING THE EE RELAY EMERGENCY VALVE

The valve should be replaced or overhauled using both a seal and maintenance kit should any abnormal symptoms occur.

1. Constant leakage out of the exhaust port may indicate a defective relay poppet valve (14).
2. Slow or hesitant delivery port pressure may be caused by air leakage past the relay piston (21).
3. If delivery pressure is not applied with normal reservoir pressure available and with no pressure at emergency port (ESV valve de-energized), the piston and valve cartridge (4) may be defective.
4. Constant leakage out of the emergency port thru de-energized ESV valve exhaust port may be caused by a defective check valve (8).
5. If compressor pressure charges the emergency reservoir above regulated pressure, the relay may not contain the correct check valve spring (9) which seals the emergency port from the reservoir port.

During the overhaul the unit should be cleaned to remove any accumulation of foreign matter in the valve passage. Coat all seals and bearing surfaces with a thin coat of Dow Corning 33 medium consistency grease.



SERVICE PARTS INFORMATION

Replacement Assy.	A 71891
Seal Kit *	A 54582
Cellon Cover (11)	A 75530

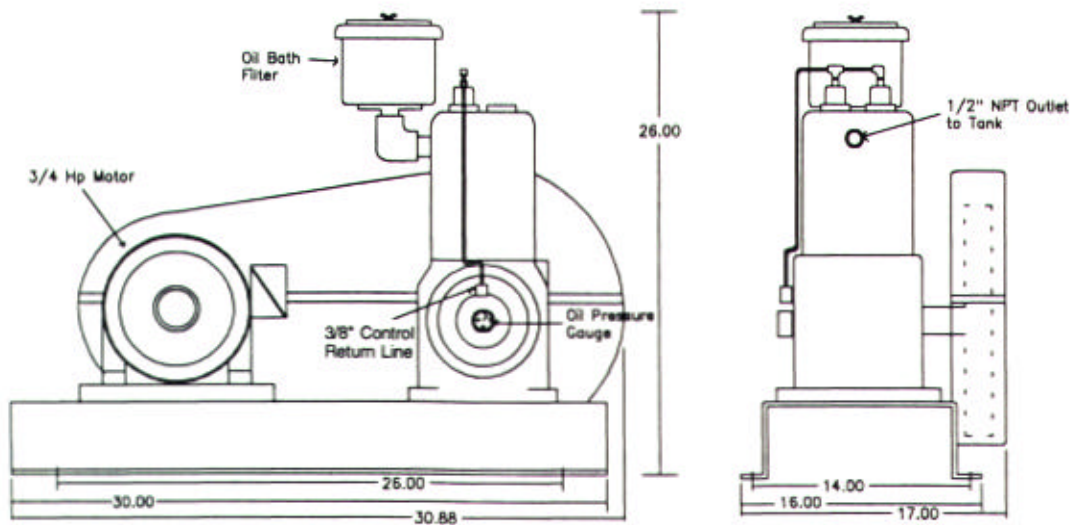
EMERGENCY VALVE SECTION

1. Cover, Valve
2. Cap screw (5/16"-18 x 3/4")
3. Cap screw (5/16"-18 x 3/4 ")
* 4. Cartridge, Piston and Valve
* 5. "O" Ring, Small
* 6. "O" Ring, Large (2)
7. Spring, Piston Return
* 8. Check Valve, Emer. Port
9. Spring, Check Valve
* 10. "O" Ring, Cover
11. Cover, Emer. Valve
12. Cap screw (1/4"-20 x 3/4") (2)

RELAY VALVE SECTION

13. Body, Valve
* 14. Valve, Inlet-Exhaust
15. Spring, Valve Return
* 16. Seal, Valve
17. Guide, Valve
* 18. Seal, Valve Guide
19. Shield, Exhaust Port
* 20. Retainer Ring, Valve (Truarc)
21. Piston, Relay
* 22. Seal, Piston
23. Spring, Piston Return
* 24. Seal, Valve Cover-Housing
* 25. "O" Ring, Housing-Cover Air Passage

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS AIR COMPRESSOR AND MOTOR ASSEMBLY



COMPRESSOR ASSY. NO.	MOTOR HP	MOTOR VOLTAGE	MOTOR PULLEY PD	BELT LENGTH
J-70941	3/4	550v, 3 ph, 60 HZ	3.9"	51"
J-70942*	3/4	460v, 3 ph, 60 HZ	3.9"	51"
J-70943	3/4	230v, D.C.	3.9"	51"

*J-70942 Is Also Suitable For Use On 380v, 3 ph, 50 HZ.

Compressor service parts should be ordered from local Quincy authorized Service Depot, indicating compressor model, record of change and serial number, from compressor nameplate. Principle Quincy parts references are as follows:

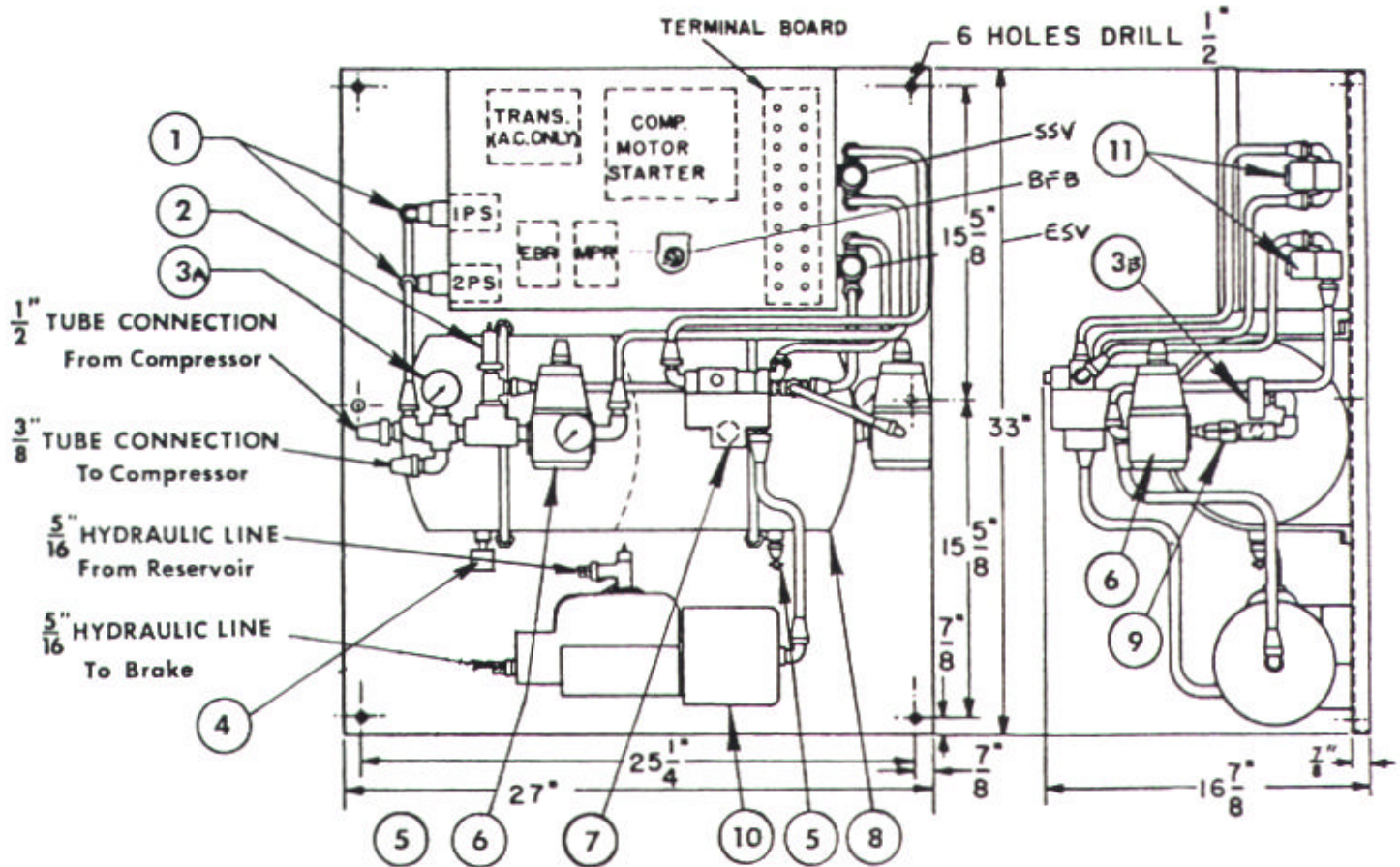
Head, Crankcase, Cylinder, & Flywheel Assy. (Includes Items 2 & 3)	206L	1
Hydraulic Unloader Valve Assembly	7970X	1
Intake Valve Unloader Assembly	6547X	2
Compressor Base	2044	1
Belt (51"-B Section)	8138	1
Belt Guard	5343x1	1
3.9" P.D. Motor Pulley (5/8" Bore - 3/16" Key Slot)	6768-58	1
Intake Filter (Oil Bath Type)	4509	1

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS TYPE A/H-ERC CONTROL PANELS

8:1 Ratio A. C. Panel -
5:1 Ratio A. C. Panel -

J-70970
J-70971

8:1 Ratio D. C. Panel - J-70972
5:1 Ratio D. C. Panel - J-70973



Item	Name of Part	Part No.
1.	Pressure Switch	J78061
2.	Safety Valve	A28
3.	Gauge 1/4" Bottom Conn. 1/8" Back Conn.	J29349 A2226
4.	Moisture Ejection Valve	J107084
5.	Drain Cock	A2091
6.	Pressure Regulator/Gauge	A64132 / A2226
7.	Relay Emergency Valve	J58860
8.	Dual Air Reservoir	A49974
9.	One Way Check Valve	A267
10.	Pressure Cluster - 5:1 Ratio	J54085
10a.	Pressure Cluster - 8:1 Ratio	J54086
11.	Solenoid Valve (115V, 60HZ)	J40194
11a.	Solenoid Valve (230V, D.C.)	J40193

Replacement electrical parts should be ordered from the manufacturers' local distributor. Electrical parts used on panels are listed for reference only as follows:

	A.C. Panels	D.C. Panels
Solenoid valve, coil (Honeywell)	71315SN2GV00N0C111P3	71315SN2GV00N0C111C8
Control relay (Allen Bradley)	700F220A1	700DCF220Z25
Motor starter (Allen Bradley)	100-A09ND3	100A12NZ253
Starter overload coil (Allen Bradley)	193BSB60	193BSB60
Control transformer (Osborne)	U57313TF	
Transformer fuse (Buss No.)	FRN 2 1/2	

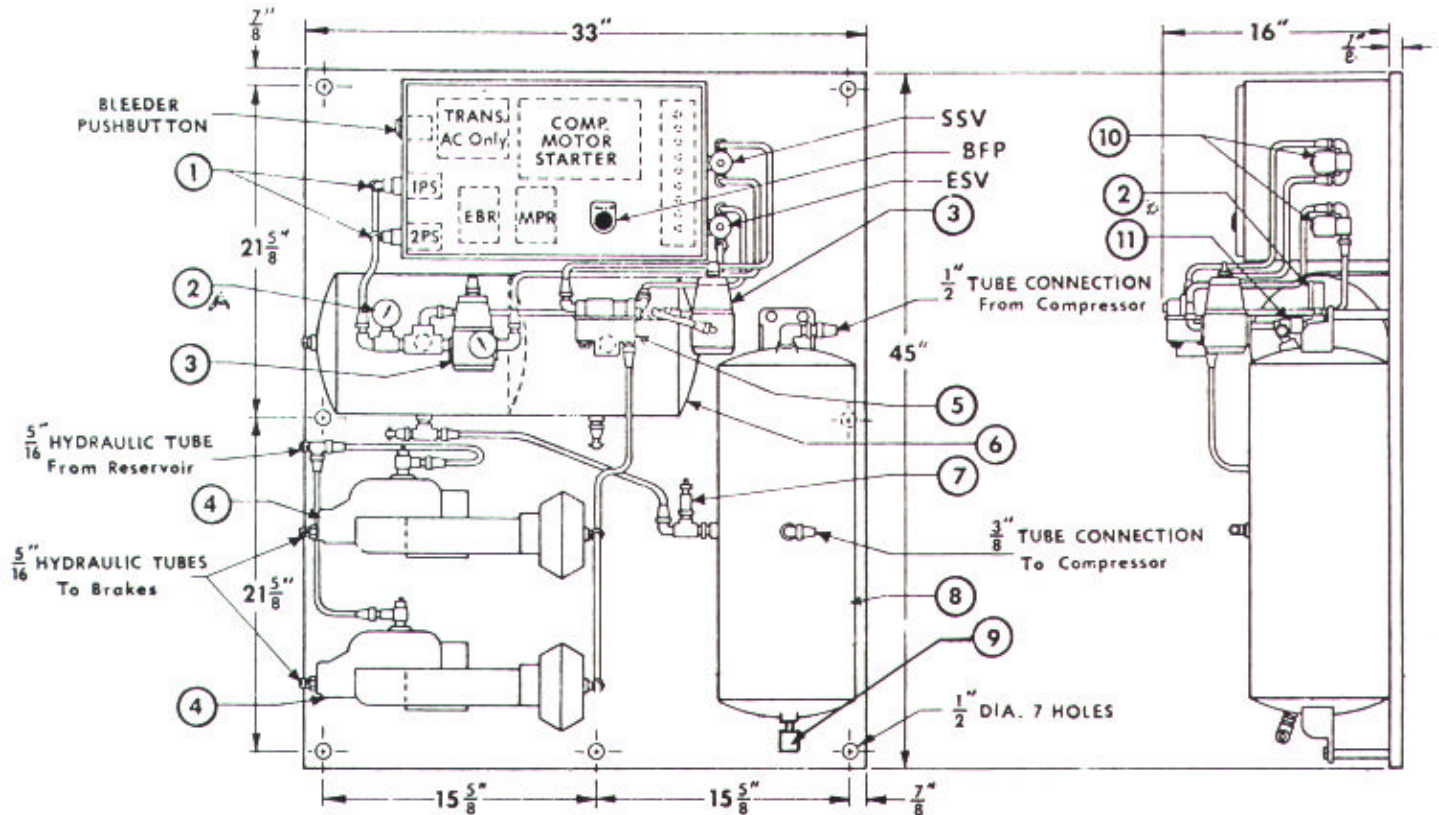
TYPE AH-ERC CONTROL PANELS

For One or Two Brake Systems

8:1 Ratio A. C. Panel -	J-70980
5:1 Ratio A. C. Panel -	J-70981
8:1 Ratio D. C. Panel -	J-70984
5:1 Ratio D. C. Panel -	J-70985

For Four Brake Systems

8:1 Ratio A. C. Panel-	J-70982
5:1 Ratio A. C. Panel -	J-70983
8:1 Ratio D. C. Panel -	J-70986
5:1 Ratio D. C. Panel -	J-70987



Item	Name of Part	Part No.
1.	Pressure Switch	J78061
2.	Gauge A - 1/4" Bottom Conn. B - 1/8" Back Conn.	J29349 A2226
3.	Pressure Regulator/Gauge	A64132 / A2226
4.	Pressure Cluster - 5:1 Ratio	J54085
4a.	Pressure Cluster - 8:1 Ratio	J54086
5.	Relay Emergency Valve	J58860
6.	Dual Air Reservoir	A49974
7.	Safety Valve	A228
8.	Single Air Reservoir	A35780
9.	Moisture Ejection Valve (Now modified)	J107084
10.	Solenoid Valve (115V, 60HZ)	J40194
10a.	Solenoid Valve (230V, D.C.)	J40193
11.	One Way Check Valve	A267

Replacement electrical parts should be ordered from the manufacturer's local distributor. Electrical parts used on panels are listed for reference only as follows:

	A.C. Panels	D.C. Panels
Solenoid valve, coil (Honeywell)	71315SN2GV00N0C111P3	71315SN2GV00N0C11108
Control relay (Allen Bradley)	700F220A1	700DCF220Z25
Motor starter (Allen Bradley)	100-A09ND3	100A12NZ253
Starter overload coil (Allen Bradley)	193BSB60	193BSB60
Control transformer (Osborne)	U57313TF	
Transformer fuse (Buss No.)	FRN 2 1/2	

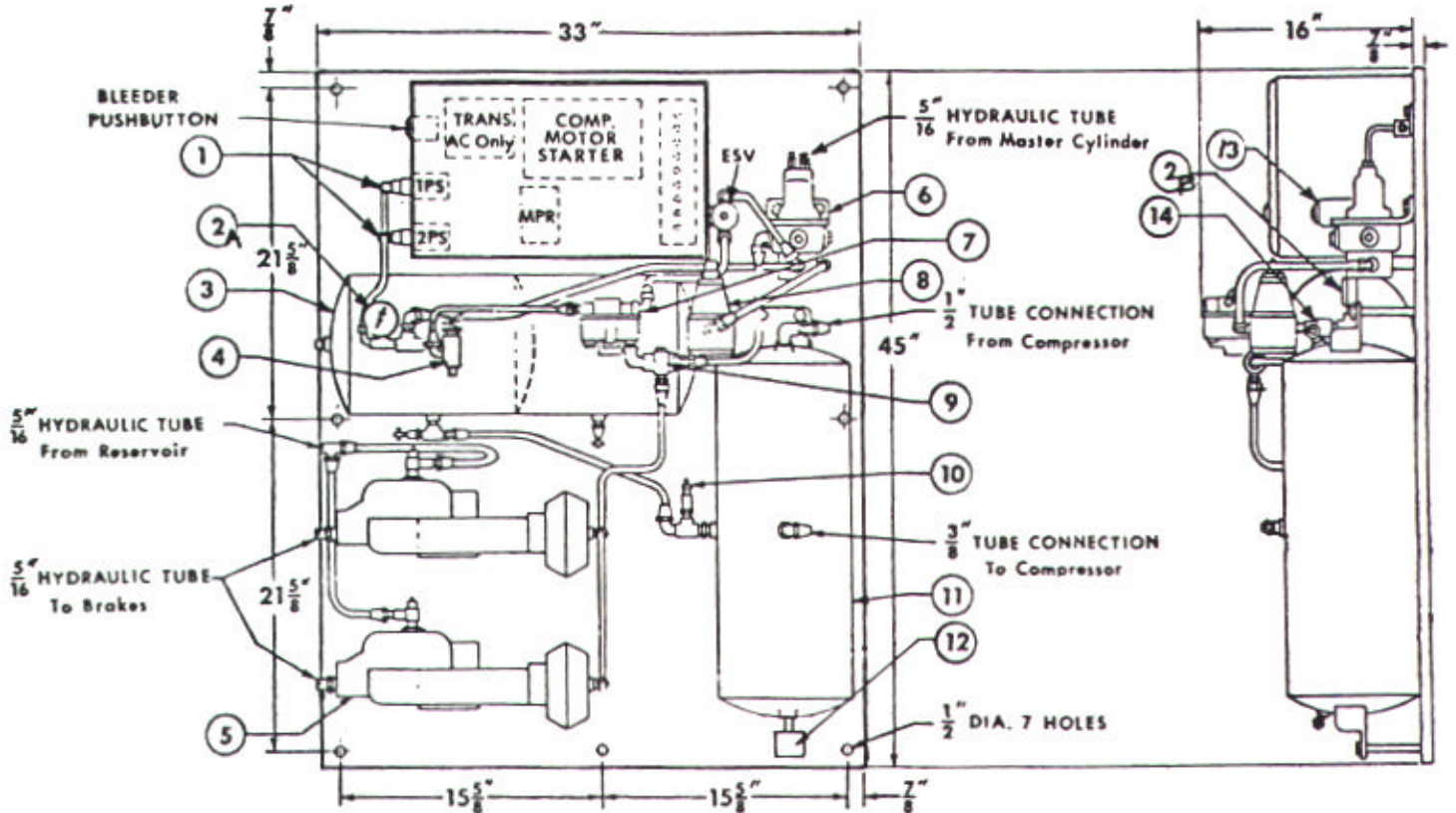
TYPE A/H-HRC CONTROL PANELS

For One or Two Brake Systems

8:1 Ratio A. C. Panel -	J-71020
5:1 Ratio A. C. Panel -	J-71021
8:1 Ratio D. C. Panel -	J-71024
5:1 Ratio D. C. Panel -	J-71025

For Four Brake Systems

8:1 Ratio A. C. Panel -	J-71022
5:1 Ratio A. C. Panel -	J-71023
8:1 Ratio D. C. Panel -	J-71026
5:1 Ratio D. C. Panel -	J-71027



Item	Name of Part	Part No.
1.	Pressure Switch	J 8061
2.	Gauge (A - 1/4" Bottom Conn., B - 1/8" Back Conn.)	J 9349 / A2226
3.	Dual Air Reservoir	A49974
4.	Bleeding Control Valve	A88740
5.	Pressure Cluster - 5:1 Ratio	J54085
5a.	Pressure Cluster - 8:1 Ratio	J54086
6.	Hydraulic Controlled Air Valve	J107047
7.	Relay Emergency Valve	J58860
8.	Pressure Regulator	A64132
9.	Two-Way Air Check Valve	A32922
10.	Safety Valve	A228
11.	Single Air Reservoir	A35780
12.	Moisture Ejection Valve (Now modified)	J107084
13.	Solenoid Valve (115V, 60HZ)	J40194
13a.	Solenoid Valve (230V, D.C.)	J40193
14.	One Way Check Valve	A267

Replacement electrical parts should be ordered from the manufacturer's local distributor. Electrical parts used on panels are listed for reference only as follows:

	A.C. Panels	D.C. Panels
Solenoid valve, coil (Honeywell)	7131 5SN2GV00N0C111 P3	71315SN2GV00N0C11108
Control relay (Allen Bradley)	700F220A1	700DCF220Z25
Motor starter (Allen Bradley)	100-A09ND3	100A12NZ253
Starter overload coil (Allen Bradley)	193BSB60	193BSB60
Control transformer (Osborne)	U57313TF	
Transformer fuse (Buss No.)	FRN 2 1/2	

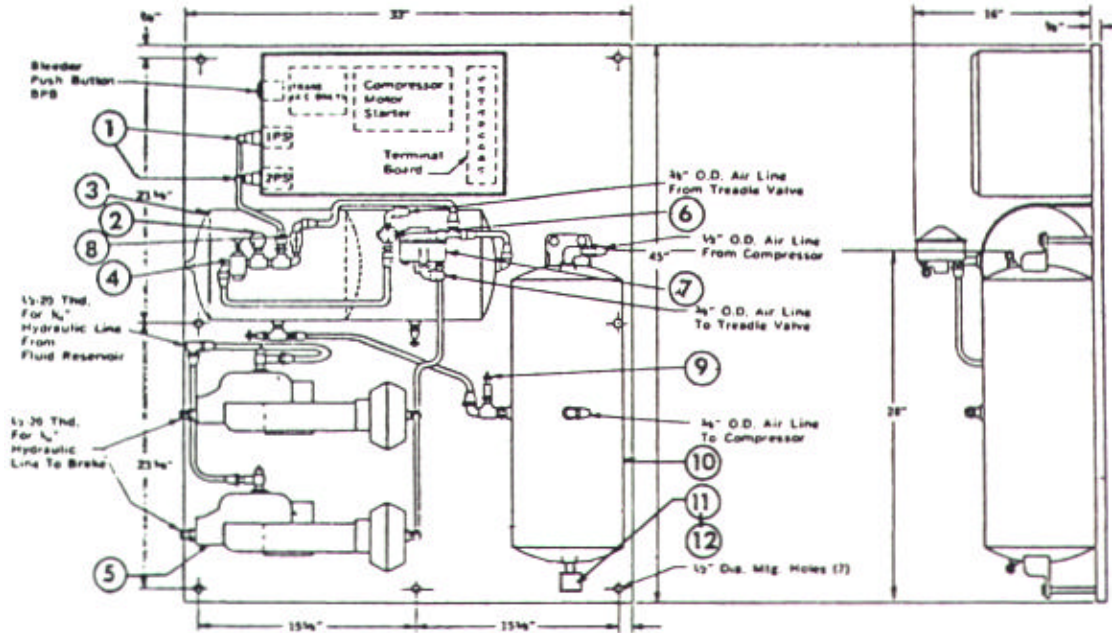
INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS DATA TYPE AH-ARC CONTROL PANELS

For One or Two Brake Systems

8:1 Ratio A. C. Panel -	J-89660
5:1 Ratio A. C. Panel -	J-89661
8:1 Ratio D. C. Panel -	J-89664
5:1 Ratio D. C. Panel -	J-89665

For Four Brake Systems

8:1 Ratio A. C. Panel -	J-89662
5:1 Ratio A. C. Panel -	J-89663
8:1 Ratio D. C. Panel -	J-89666
5:1 Ratio D. C. Panel -	J-89667



Item	Name of Part	Part No.
1.	Pressure Switch	J78061
2.	Gauge	J29349
3.	Dual Air Reservoir	A49974
4.	NC Bleed Valve	A88740
5.	Pressure Cluster - 5:1 Ratio	J54085
5a.	Pressure Cluster - 8:1 Ratio	J54086
6.	Two-Way Air Check Valve	A32922
7.	Relay Emergency Valve	J58860
8.	One Way Check Valve	A267
9.	Safety Valve	A228
10.	Single Air Reservoir	A35780
11.	Moisture Ejection Valve (Now modified)	J107084
12.	Drain Valve	A2091

Replacement electrical parts should be ordered from the manufacturer's local distributor. Electrical parts used on panels are listed for reference only as follows:

	A.C. Panels	D.C. Panels
Solenoid valve, coil (Honeywell)	71315SN2GV00N0C111P3	71315SN2GV00N0C111C8
Control relay (Allen Bradley)	700F220A1	700DCF220Z25
Motor starter (Allen Bradley)	100-A09ND3	100A12NZ253
Starter overload coil (Allen Bradley)	193BSB60	193BSB60
Control transformer (Osborne)	U57313TF	
Transformer fuse (Buss No.)	FRN 2 1/2	

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS LIST TYPE AHM-ERC CONTROL PANEL

ONE OR TWO BRAKE SYSTEMS

8:1 Ratio A.C. - J 100630 or 103650
5:1 Ratio A.C. - J 100651 or 103651
8:1 Ratio D.C. - J 100656 or 103636
5:1 Ratio D.C. - J 100637 or 103657

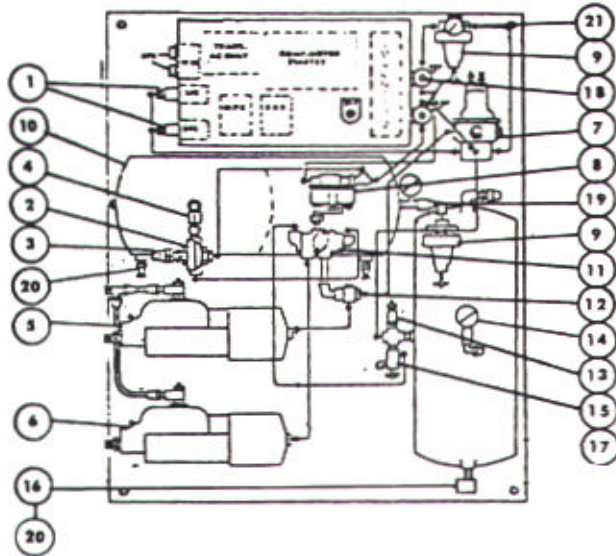
FOUR BRAKE SYSTEMS

8:1 Ratio A.C. - J 100652 or 103652
5:1 Ratio A.C. - J 100633 or 103633
8:1 Ratio D.C. - J 100658 or 103658
5:1 Ratio D.C. - J 100659 or 103659

FOUR BRAKE W/TWO BRAKE PARKING

8:1 Ratio A.C. - J 100654 or 103654
5:1 Ratio A.C. - J 100655 or 103655
8:1 Ratio D.C. - J 100660 or 103660
5:1 Ratio D.C. - J 100661 or 103661

J 100650 - 100661 are panel assemblies only
J 103650 - 103661 are *panel* assemblies in enclosure



Item	Name of Part	Part No.
1.	Pressure Switch	J78061
2.	QR Valve	J107043
3.	Restrictor Valve	J107128
4.	Check Valve	A100596
5.	Service Brake Cluster - 5:1 Ratio	J54085
5a.	Service Brake Cluster - 8:1 Ratio	J54086
6.	Park Release Cluster	J54086
7.	Hydraulic Controlled Air Valve	J107047
8.	Relay Emergency Valve	A71891
9.	Pressure Regulator	A64132
10.	Dual Air Reservoir	A49974
11.	Protection Valve	A24912
12.	Two-Way Check Valve	A32922
13.	Safety Valve	A228
14.	Gauge (1/4" Bottom Connection)	J29349
15.	Parking Bleed Valve	A88740
16.	Moisture Valve (Now modified)	J107084
17.	Single Reservoir	A35780
18.	Emergency Brake Solenoid Valve DC	J40193
18a.	Emergency Brake Solenoid Valve AC	J40194
19.	One Way Check Valve	A 267
20.	Drain Valve	A 2091
21.	Gauge (1/8" Back Connection)	A 2226

Replacement electrical parts should be ordered from the manufacturer's local distributor. Electrical parts used on panels are listed for reference only as follows:

	A.C. Panels	D.C. Panels
Solenoid valve, coil (Honeywell)	71315SN2GV00N0C111P3	71315SN2GV00N0C111C8
Control relay (Allen Bradley)	700F220A1	700DCF220Z25
Motor starter (Allen Bradley)	100-A09ND3	100A12NZ253
Starter overload coil (Allen Bradley)	193B5B60	193BSB60
Control transformer (Osborne)	U57313TF	
Transformer fuse (Buss No.)	FRN 2 1/2	

INDUSTRIAL BRAKE SYSTEMS

REPLACEMENT PARTS LIST TYPE A/HN-HRC CONTROL PANEL

ONE OR TWO BRAKE SYSTEMS

8:1 Ratio A.C. - J 100330 or 103330
 5:1 Ratio A.C. - J 100331 or 103331
 8:1 Ratio D.C. - J 100336 or 103336
 5:1 Ratio D.C. - J 100337 or 103337

FOUR BRAKE SYSTEMS

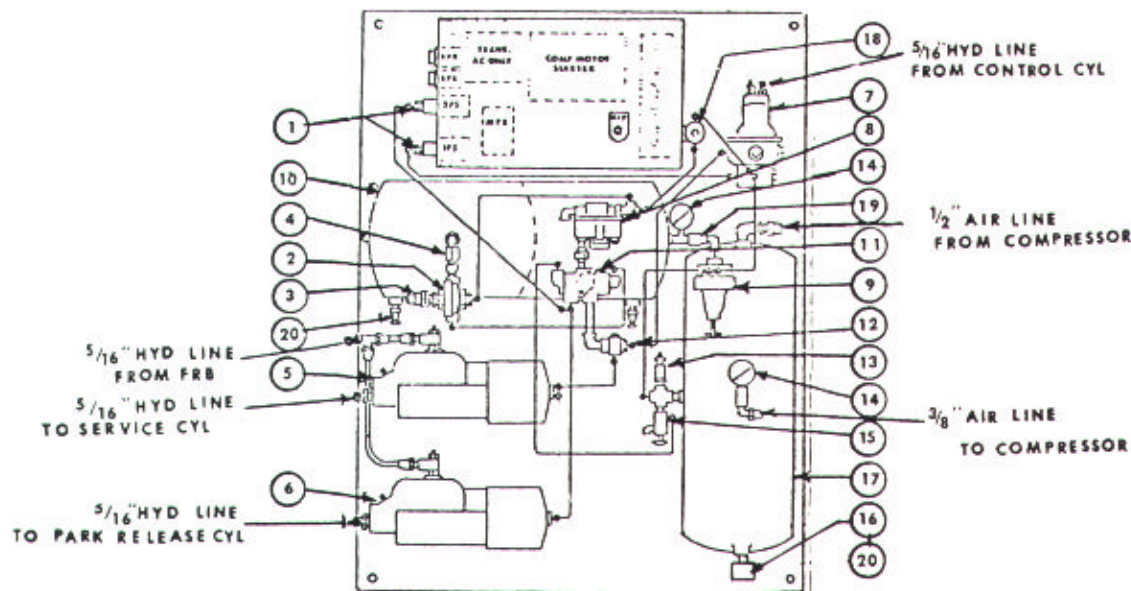
8:1 Ratio A.C. - J 100332 or 103332
 5:1 Ratio A.C. - J 100333 or 103333
 8:1 Ratio D.C. - J 103338 or 103338
 5:1 Ratio D.C. - J 100339 or 103339

FOUR BRAKE W/TWO BRAKE PARKING

8:1 Ratio A.C. - J 100334 or 103334
 5:1 Ratio A.C. - J 100335 or 103335
 8:1 Ratio D.C. - J 100340 or 103340
 5:1 Ratio D.C. - J 100341 or 103341

J 100330 - 100341 are panel assemblies

J 103330 - 103341 are panel assemblies in enclosure



Item	Name of Part	Part No.
1.	Pressure Switch	J78061
2.	OR Valve	J107043
3.	Restrictor Valve	J107128
4.	Check Valve	A100596
5.	Service Brake Cluster - 5:1 Ratio	J54085
5a.	Service Brake Cluster - 8:1 Ratio	J54086
6.	Park Release Cluster	J54086
7.	Hydraulic Controlled Air Valve	J107047
8.	Relay Emergency Valve	A71891
9.	Pressure Regulator	A64132
10.	Dual Air Reservoir	A49974
11.	Protection Valve	A24912
12.	Two-Way Check Valve	A32922
13.	Safety Valve	A228
14.	Gauge	J29349
15.	Parking Bleed Valve	A88740
16.	Moisture Valve (Now modified)	J107084
17.	Single Reservoir	A35780
18.	Emergency Brake Solenoid Valve DC	J40193
18a.	Emergency Brake Solenoid Valve AC	J40194
19.	One Way Check Valve	A267
20.	Drain Valve	A2091

Replacement electrical parts should be ordered from the manufacturer's local distributor. Electrical parts used on panels are listed for reference only as follows:

	A.C. Panels	D.C. Panels
Solenoid valve, coil (Honeywell)	71315SN2GV00N0C111P3	71315SN2GV00N0C111C8
Control relay (Allen Bradley)	700F220A1	700DCF220Z25
Motor starter (Allen Bradley)	100-A09ND3	100A12NZ253
Starter overload coil (Allen Bradley)	193BSB60	193BSB60
Control transformer (Osborne)	U57313TF	
Transformer fuse (Buss No.)	FRN 2 1/2	

INDUSTRIAL BRAKE SYSTEMS REPLACEMENT PARTS LIST TYPE A/EM ARC CONTROL PANEL

ONE OR TWO BRAKE SYSTEMS

8:1 Ratio A.C. - J 104400 or 104424
5:1 Ratio A.C. - J 104401 or 104425
8:1 Ratio D.C. - J 104406 or 104430
5:1 Ratio D.C. - J 104407 or 104431

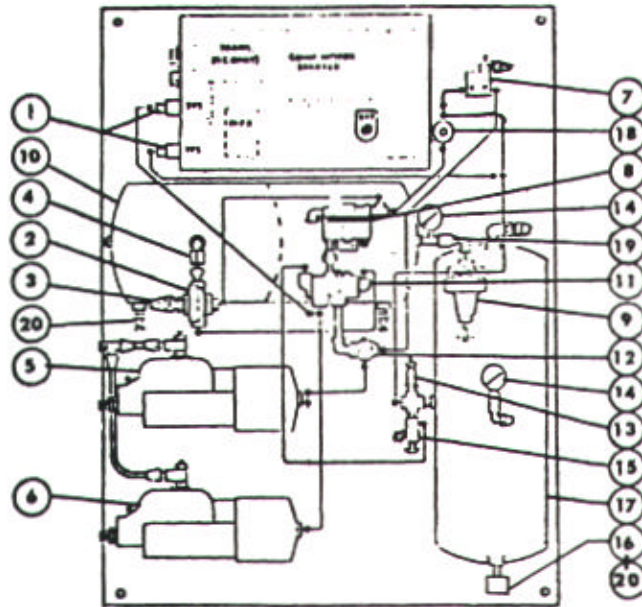
FOUR BLAKE W/TWO BRAKE PARKING

8:1 Ratio A.C. - J 104404 or 104428
5:3 Ratio A.C. - J 104405 or 104429
8:1 Ratio D.C. - J 104410 or 104434
5:1 Ratio D.C. - J 104411 or 104435

FOUR BRAKE SYSTEMS

8:1 Ratio A.C. - J 104402 or 104426
5:1 Ratio A.C. - J 104403 or 104427
8:1 Ratio D.C. - J 104408 or 104432
5:1 Ratio D.C. - J 104409 or 104433

J 104400 - 104411 are panel assemblies only
J 104424 - 104435 are panel assemblies in enclosure

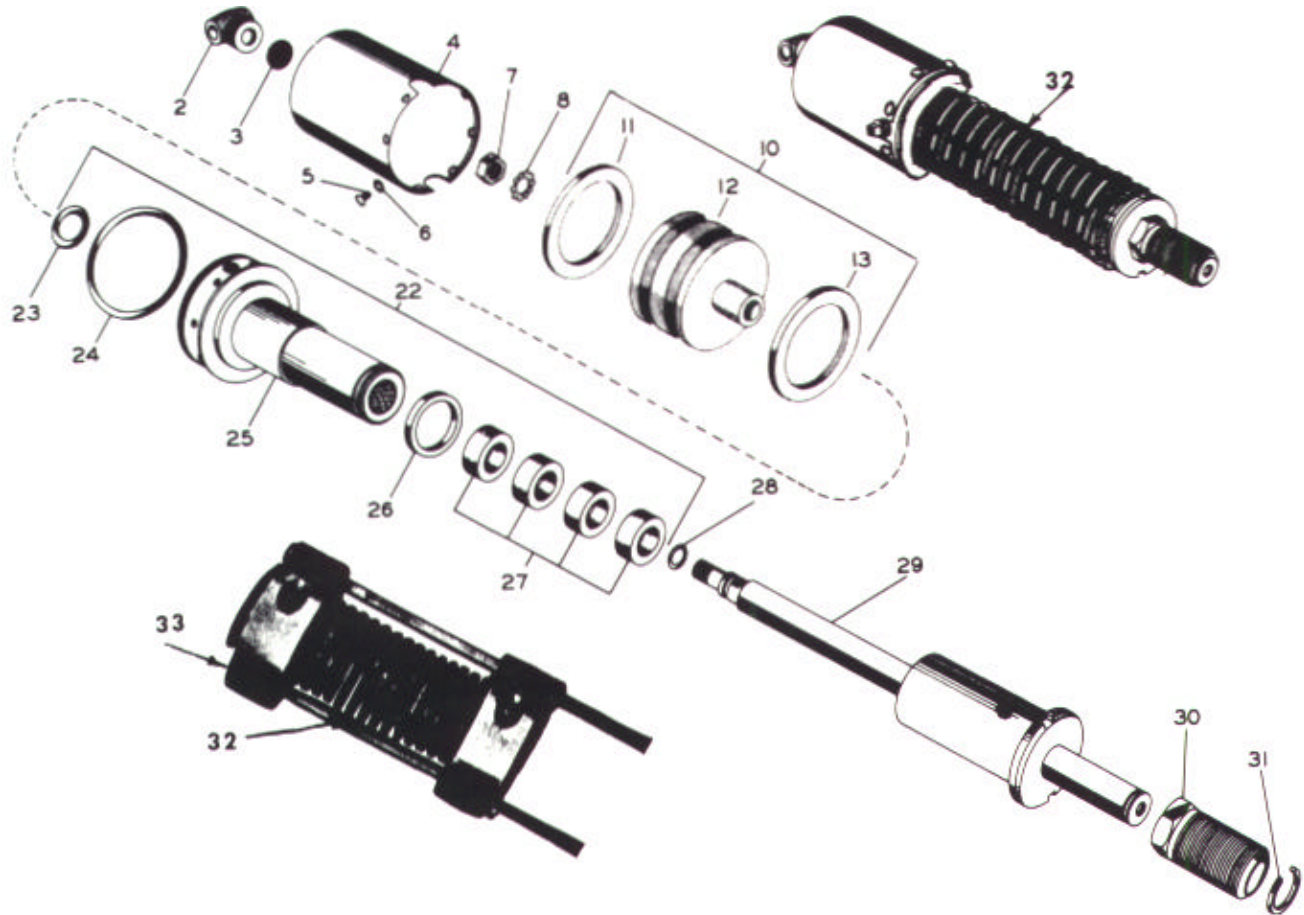


Item	Name of Part	Part No.
1.	Pressure Switch	J78061
2.	QR Valve	J107043
3.	Restrictor Valve	J107128
4.	Check Valve	A100596
5.	Service Brake Cluster - 5:1 Ratio	J54085
5a.	Service Brake Cluster - 8:1 Ratio	J54086
6.	Park Release Cluster	J54086
7.	Relay Valve	A78880
8.	Relay Emergency Valve	A71891
9.	Pressure Regulator	A64132
10.	Dual Air Reservoir	A49974
11.	Protection Valve	A24912
12.	Two-Way Check Valve	A32922
13.	Safety Valve	A228
14.	Gauge	J29349
15.	Parking Bleed Valve	A88740
16.	Moisture Valve (Now modified)	J107084
17.	Single Reservoir	A35780
18.	Emergency Brake Solenoid Valve DC	J40193
18a.	Emergency Brake Solenoid Valve AC	J40194
19.	One Way Check Valve	A267
20.	Drain Valve	A2091

Replacement electrical parts should be ordered from the manufacturer's local distributor. Electrical parts used on panels are listed for reference only as follows:

	A.C. Panels	D.C. Panels
Solenoid valve, coil (Honeywell)	71315SN2GV00N0C111P3	71315SN2GV00N0C111C8
Control relay (Allen Bradley)	700F220A1	700DCF220Z25
Motor starter (Allen Bradley)	100-A09ND3	100A12N2253
Starter overload coil (Allen Bradley)	193BSB60	193BSB60
Control transformer (Osborne)	U57313TF	
Transformer fuse (Buss No.)	FRN 2 1/2	

REPLACEMENT PARTS 10" & 14" AIR RELEASING CYLINDER



Item No.	Name of Part	Part No.
1	Releasing Cylinder	
	For 10x4 Brake	J-23033
	For 14x6 Brake	J-23034
2	Mounting Lug	J-9681
3	Filter & Retainer (1823 & 9680)	
4	Cylinder (9677)	
5	Screw #10—24 X 3/8"	
6	Lock-washer, Shakeproof #1110	
7	Nut, 1/2"—20	
8	Lock-washer, Shakeproof #1124	
10	Piston May., Items 11-13 (23036)	
11	J001846 Felt Ring	*
12	J1847 Piston	*
13	J107010 Cup	*

Item No.	Name of Part	Part No.
22	Body Assy. (7988)	
23	O Ring, Rod Seal (17026)	*
24	O Ring, Cylinder Seal (9795)	*
25	2499 Body & Bushing (22528)	
26	Felt Washer (10231)	*
27	Rod Packing Felts (9691)	*
28	O Ring, Rod Seal (23043)	*
29	Piston Rod & Sleeve	
	10"	J-23040
	14"	J-23041
30	Piston Rod Guide	J-9662
	(Used on 10x4 assy. only)	
31	C Washer	J-9661
	(Used on 10x4 assy. only)	
32	Applying Spring (99317)	
33	Spring Clamp Tool	J-391

Available in J-76346 Repair Kit. Numbers in () identify parts in repair kit. Parts not listed in "Part No." tabulation are not separately available.

AIR-OVER-HYDRAULIC DISC BRAKE POWER CLUSTERS

GENERAL DESCRIPTION

In air-over hydraulic brake systems power clusters convert moderate applied air pressure to the relatively higher pressure required for hydraulic braking. Compressed air entering the unit forces a large diameter air actuator to stroke a small diameter hydraulic brake master cylinder. Hydraulic pressure is developed in direct proportion to the amount of applied air pressure.

DISC BRAKE POWER CLUSTERS

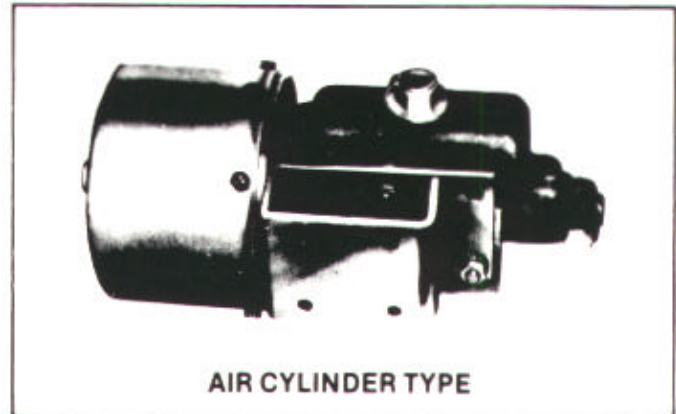
The conventional hydraulic brake master cylinder is unsuitable for systems with insufficient initial low pressure displacement. Typical low initial displacement systems are hydraulic actuated disc brake systems, hydraulic operated clutch control systems, and spring set hydraulic released brake systems.

A new non-bypass-ported master cylinder which was developed eliminates the need to add a supplementary displacement cylinder in low displacement systems.

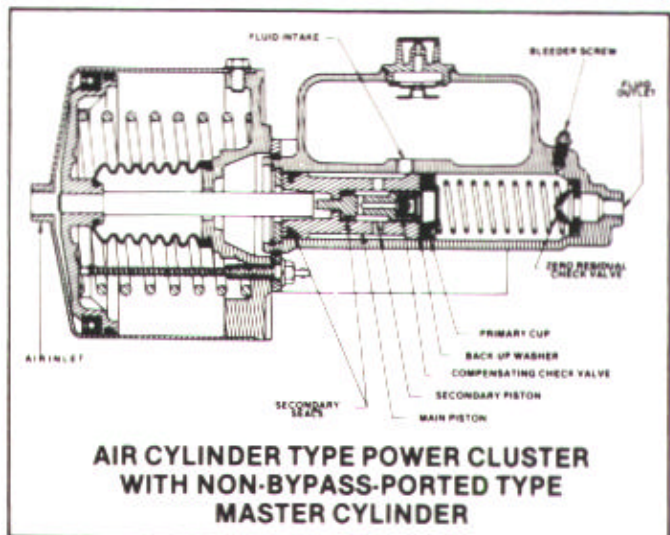
TYPE HD MASTER CYLINDER OPERATION

The Type HD master cylinder is similar to the conventional hydraulic brake master cylinder except a push rod actuated secondary piston is added inside the main piston. During an applying stroke, the actuator push rod moves the secondary piston to close the hole in the center of the primary cup. Further movement of the push rod strokes the main piston in combination with the secondary piston to displace fluid into the sealed system.

Upon release, both master cylinder pistons are returned against a piston stop by the master cylinder return spring. The pistons and primary cup are returned to the released position faster than the displaced fluid can return to the cylinder bore. The partial vacuum thus formed draws fluid from the reservoir thru the compensating check valve in the secondary piston. Excess fluid from the supercharged system forces the secondary piston thru the center hole in the primary cup to relieve residual pressure thru clearance between the secondary and main piston. A back-up washer is used between the primary cup and the main piston face to prevent extrusion of the primary cup into the clearance between the pistons and their bores.



AIR CYLINDER TYPE



AIR CYLINDER TYPE POWER CLUSTER WITH NON-BYPASS-PORTED TYPE MASTER CYLINDER

Hydraulic Cylinder Diameter (Inches)	Power Cluster Stroke (Inches)	Required Porthole Displ. (In ³)	Net Usable Displ. (In ³)
1.75	2.6	0	5.0

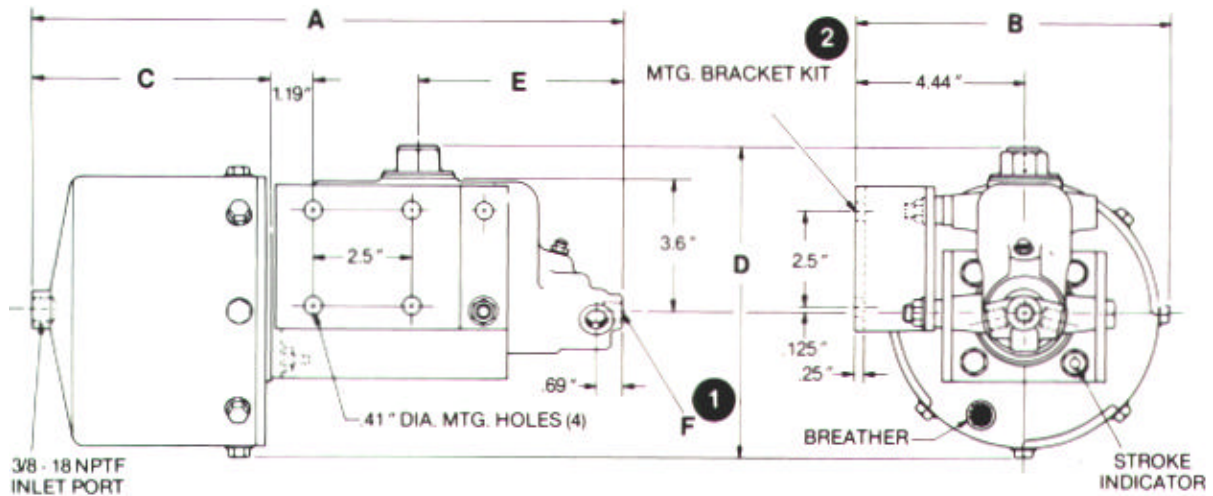
This washer increases the expected life of the primary cup in relatively high pressure disc brake systems.

PRESSURE RATIO

Power clusters with 7 inch diameter air cylinder and 1.75 inch diameter master cylinder develop 1500 psi hydraulic pressure with approximately 100 psi applied air pressure.

A power cluster with 5 inch diameter air cylinder develops 800 psi hydraulic pressure with approximately 100 psi air pressure.

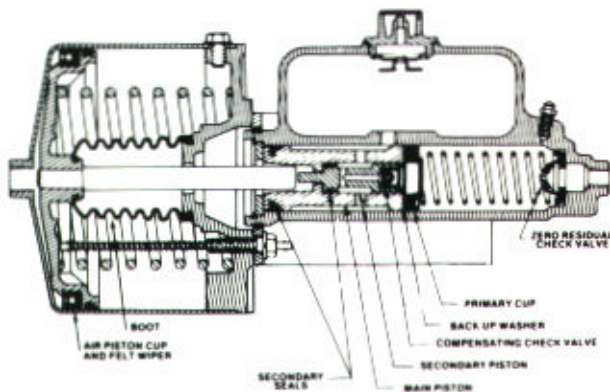
DISC BRAKE POWER CLUSTERS DIMENSIONS



- 1 F-Outlet Ports** - Three 1/2"-20-2B thd. Two ports include F-996 Plugs and F-17 Gaskets. F-4481 Adaptor Fitting and F-17 Gasket included with assembly for 1/4" female pipe thread connection at third outlet port.
- 2 A-75420** - Mounting Bracket Kit (illustrated on assembly above) is included for right or left hand field mounting.

POWER CLUSTER PART NUMBER	AIR/HYDRAULIC PRESSURE RATIO	DISPLACEMENT (CU. IN.)		POWER CLUSTER STROKE	CYLINDER I.D.		DIMENSIONS			
		PORTHOLE	USABLE		HYD.	AIR	A	B	C	D
J-98274	1 x 15	0	5.0	2.6"	1.75"	7"	15.70"	7.80"	6.03"	8.40"
J-98275	1 x 8	0	5.0	2.6"	1.75"	5"	15.60"	6.50"	5.83"	7.40"

SERVICE INFORMATION



POWER CLUSTER PART NUMBER	A/H RATIO	MAINTENANCE KIT
J-98274	1 x 15	A-75431
J-98275	1 x 8	A-75422

The above units replace JF-71882 (1 x 8 ratio) and JF-71883 (1 x 15 ratio) pressure clusters with external displacement cylinder, which are no longer manufactured. The new

assemblies function and mount identical to the old assemblies and may be used as replacement.

CAUTION:

These units are intended for use with SAE J1703 Automotive Brake Fluid **only**.

After extended service, the hydraulic and/or air seals in the unit may deteriorate, resulting in failure to develop hydraulic pressure proportional to application air pressure. The first symptom of trouble is usually increasing hydraulic pressure when the piston strokes the master cylinder but then gradual loss of pressure after piston reaches full stroke. Full 2.6" movement of the stroke indicator of the unit in a properly bled system is usually an indication of seal failure.

These units can be serviced as follows:

- Maintenance kits are available which include all air and hydraulic sub parts identified in the drawing at left.
- If both air and master cylinder is required, replace the complete assembly.