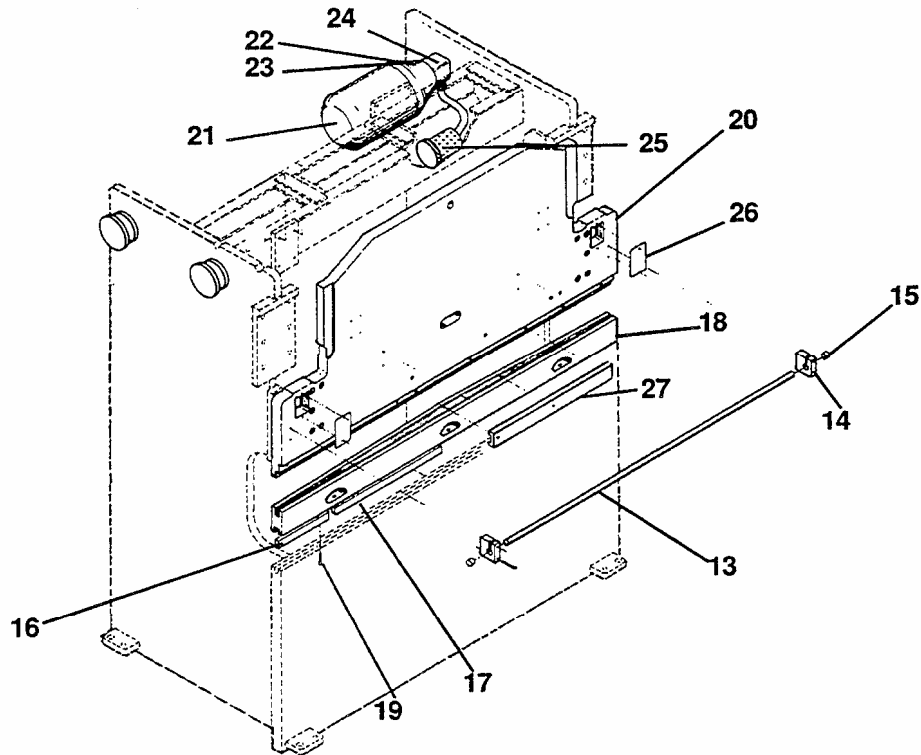


PH SERIES PRESS BRAKES

FRAME ASSEMBLY

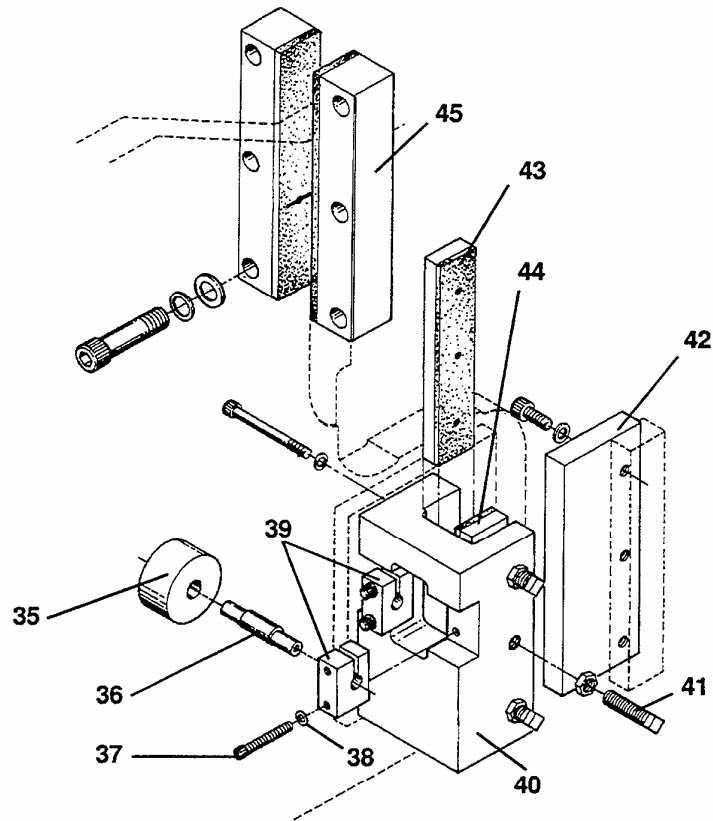


ITEM NO.	DESCRIPTION	PH 60-72	PH 60-96	PH 100-120	PH 100-144	PH 100-168	PH 140-144	PH 140-168
13	Handrail	3859-206	3859-208	3859-210	3859-212	3859-214	3859-210	3859-214
14	Bracket, Handrail Mtg.	7486-315	7486-315	7486-315	7486-315	7486-315	7486-315	7486-315
15	Cap, Plastic	4510-100	4510-100	4510-100	4510-100	4510-100	4510-100	4510-100
16	Key, Die Holder	7485-083	7485-083	7485-083	7485-083	7485-083	7485-083	7485-083
17	Key, Die Holder	7485-084	7485-084	7485-084	7485-084	7485-084	7485-084	7485-084
18	Holder, Die	7435-905	7435-906	7485-078	7485-079	7485-080	7485-078	7485-079
19	Screw, Soc. Hd. Cap	3303-082	3303-082	3303-082	3303-082	3303-082	3303-082	3303-082
20	Ram, Press Brake	7237-183	7237-185	7237-068	7437-326	7437-371	7237-315	
21	Motor	4422-013	4422-013	4424-013	4424-013	4424-013	4426-053	4426-053
22	Flange, Pump	3257-061	3257-061	3257-061	3257-061	3257-061	3257-062	3257-062
23	Coupling	3428-211	3428-211	3428-211	3428-211	3428-211	3428-218	3428-218
24	Pump	3257-128	3257-128	3257-208	3257-208	3257-208	3257-208	3257-208
25	Filter, Pump Suction	3764-313	3764-313	3764-313	3764-313	3764-313	3764-313	3764-313
26	Cover, Cyl. Rod Nut	7437-014	7437-014	7437-196	7437-196	7437-196	7437-200	7437-200
27	Bar, Clamp	7437-160	7437-160	7437-160	7437-160	7437-160	7437-160	7437-160

ITEM NO.	DESCRIPTION	PH 175-120	PH 175-144	PH 175-168	PH 250-144	PH 250-168	PH 400-168
13	Handrail	3859-210	3859-212	3859-214	3859-212	3859-214	3859-214
14	Bracket, Handrail Mtg.	7486-315	7486-315	7486-315	7486-315	7486-315	7486-315
15	Cap, Plastic	4510-100	4510-100	4510-100	4510-100	4510-100	4510-100
16	Key, Die Holder	7485-083	7485-083	7485-083	7485-083	7485-083	7485-083
17	Key, Die Holder	7485-084	7485-084	7485-084	7485-084	7485-084	7485-084
18	Holder, Die	7485-078	7485-079	7485-080	7485-079	7485-080	7485-080
19	Screw, Soc. Hd. Cap	3303-082	3303-082	3303-082	3303-082	3303-082	3303-082
20	Ram, Press Brake		7237-173	7237-363	7437-543	7437-549	7289-031
21	Motor	4426-053	4426-053	4426-053	4428-014	4428-014	4430-014
22	Flange, Pump	3257-062	3257-062	3257-062	3257-073	3257-073	3257-064
23	Coupling	3428-218	3428-218	3428-218	3428-218	3428-218	3428-220
24	Pump	3257-209	3257-209	3257-209	3257-169	3257-169	3257-127
25	Filter	3764-313	3764-313	3764-313	3764-304	3764-304	3764-315
26	Cover, Cyl. Rod Nut	7437-200	7437-200	7437-200	7437-200	7437-200	7489-017
27	Bar, Clamp	7437-160	7437-160	7437-160	7488-282	7488-282	7488-282

PH SERIES PRESS BRAKES

GIBBING CONFIGURATION

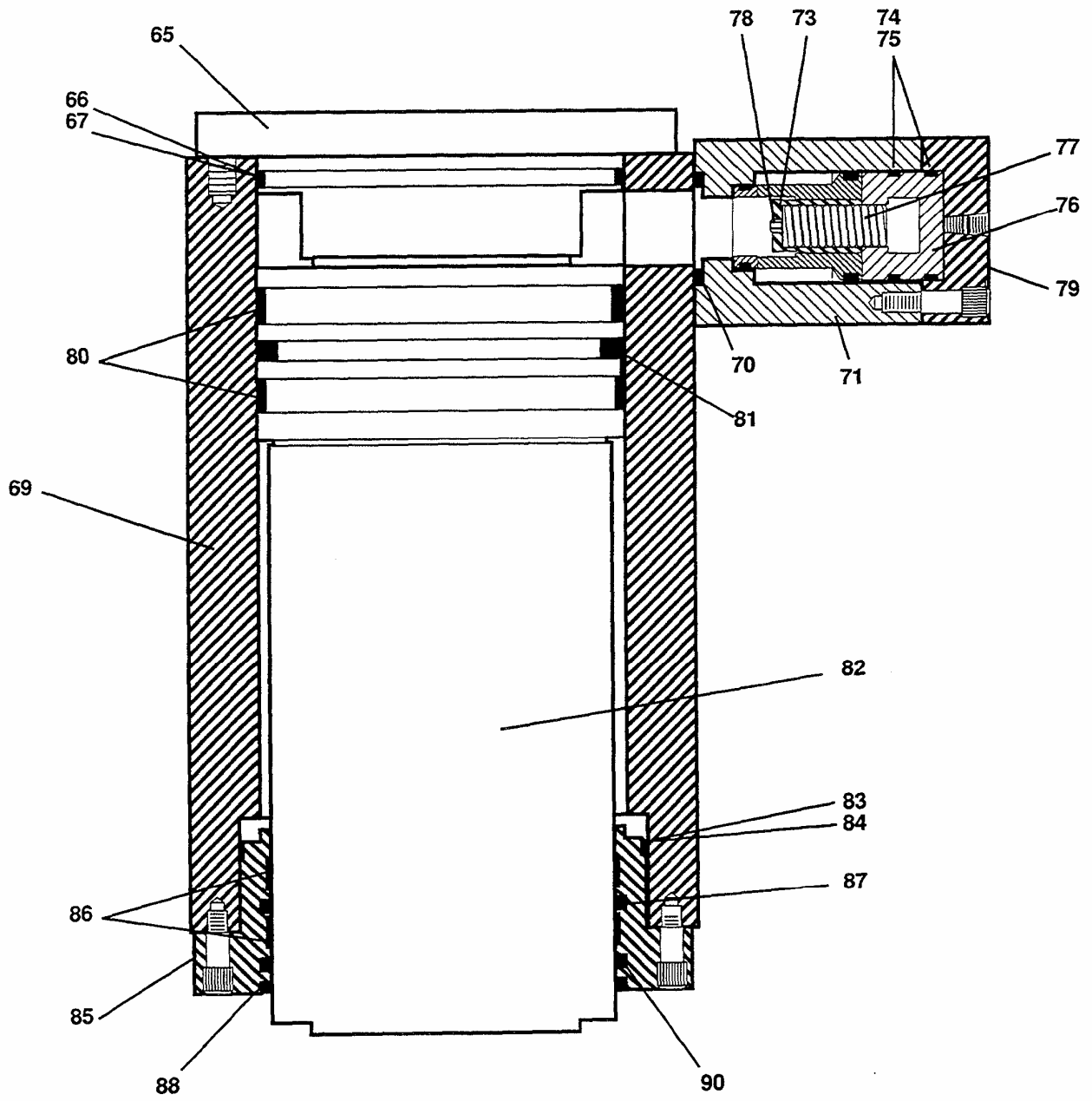


ITEM NO.	DESCRIPTION	PH 60-72	PH 60-96	PH 100-120	PH 100-144	PH 100-168	PH 140-120	PH 140-144	PH 140-168
35	Bearing, Roller	3107-214	3107-214	3107-214	3107-214	3107-214	3107-214	3107-214	3107-214
36	Shaft, Cam Follower	7437-006	7437-006	7437-006	7437-006	7437-006	7437-006	7437-006	7437-006
37	Screw, Soc. Hd. Cap	3303-115	3303-115	3303-115	3303-115	3303-115	3303-115	3303-115	3303-115
38	Washer, Lock	3327-007	3327-007	3327-007	3327-007	3327-007	3327-007	3327-007	3327-007
39	Block, Roller Mtg.	7437-007	7437-007	7437-007	7437-007	7437-007	7437-007	7437-007	7437-007
40	Bracket, Ram	7037-031	7037-031	7037-029	7037-029	7037-029	7037-029	7037-029	7037-029
41	Screw, Sq. Hd. Set	3310-036	3310-036	3310-036	3310-036	3310-036	3310-036	3310-036	3310-036
42	Way, Ram	7437-004	7437-004	7437-158	7437-158	7437-158	7437-158	7437-158	7437-158
43	Gib, Ram Front	7437-017	7437-017	7437-155	7437-155	7437-155	7437-155	7437-155	7437-155
44	Gib, Ram Rear	7437-018	7437-018	7437-156	7437-156	7437-156	7437-156	7437-156	7437-156
45	Block, Upper Gib	7437-233	7437-233	7437-190	7437-190	7437-190	7437-190	7437-190	7437-190

ITEM NO.	DESCRIPTION	PH 175-120	PH 175-144	PH 175-168	PH 250-144	PH 250-168	PH 400-168
35	Bearing, Roller	3107-214	3107-214	3107-214	3107-214	3107-214	3107-220
36	Shaft, Cam Follower	7437-006	7437-006	7437-006	7437-006	7437-006	7489-010
37	Screw, Soc. Hd. Cap	3303-115	3303-115	3303-115	3303-115	3303-115	
38	Washer, Lock	3327-007	3327-007	3327-007	3327-007	3327-007	
39	Block, Roller Mtg.	7437-007	7437-007	7437-007	7437-007	7437-007	7489-011
40	Bracket, Ram	7037-029	7037-029	7037-029	7037-029	7037-029	7089-001
41	Screw, Sq. Hd. Set	3310-036	3310-036	3310-036	3310-036	3310-036	
42	Way, Ram	7437-158	7437-158	7437-158	7437-158	7437-158	7489-009
43	Gib, Ram Front	7437-155	7437-155	7437-155	7437-155	7437-155	7489-005
44	Gib, Ram Rear	7437-156	7437-156	7437-156	7437-156	7437-156	7489-008
45	Block, Upper Gib	7437-190	7437-190	7437-190	7437-460	7437-460	7489-002

PH SERIES PRESS BRAKES

CYLINDER ASSEMBLY



CYLINDER ASSEMBLY

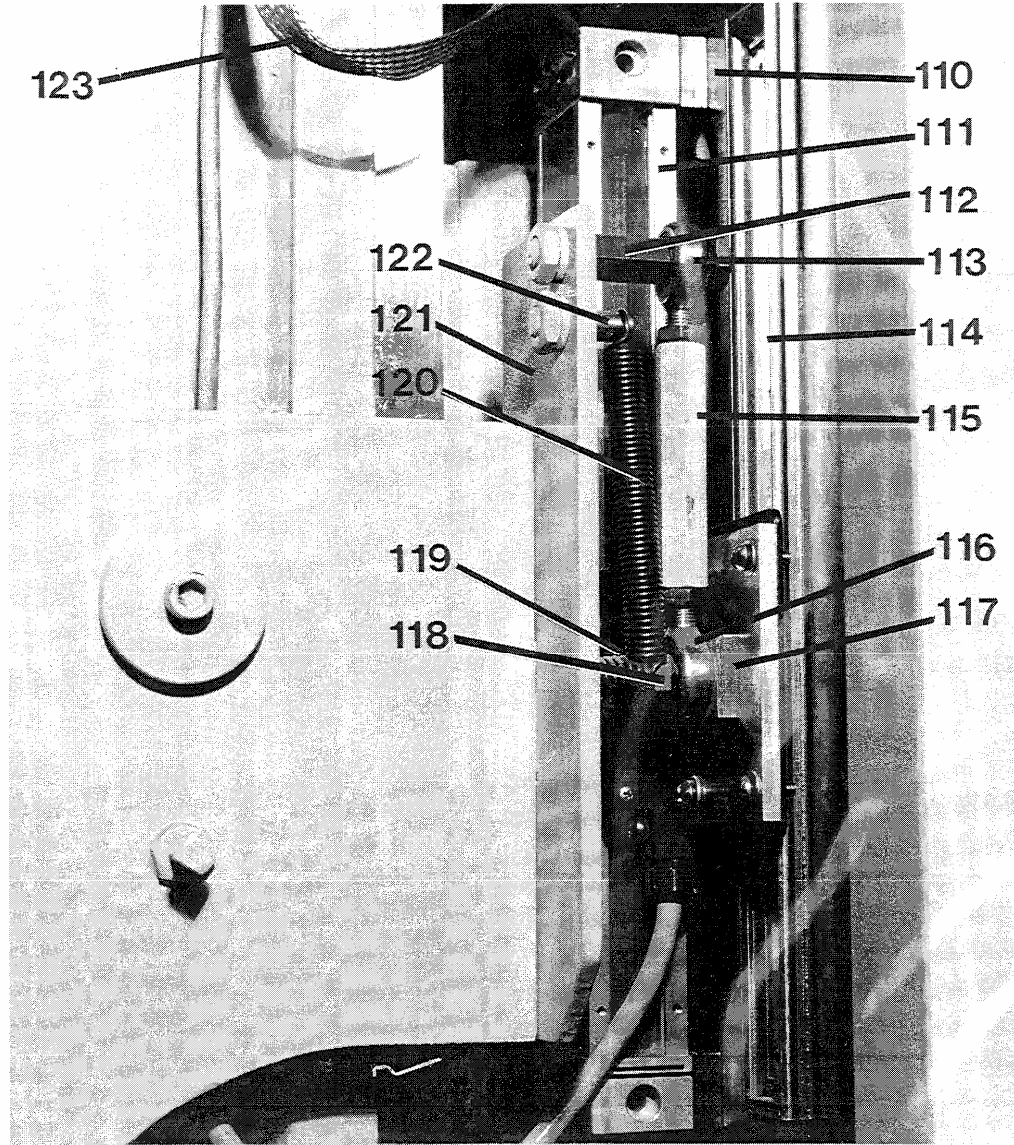
TO IDENTIFY CYLINDER COMPONENT CHANGES ON PH PRESS BRAKE INSTALLATIONS AFTER 6-1-92, REFER TO THE AMENDED PARTS LIST SECTION AT THE BACK OF THIS MANUAL.

ITEM NO.	DESCRIPTION	PH 60-72	PH 60-96	PH 100-120	PH 100-144	PH 100-168	PH 140-120	PH 140-144	PH 140-168
65	Cap, Cylinder Top	7437-242	7437-242	7437-278	7437-278	7437-278	7437-278	7437-278	7437-278
66	O-Ring, Backup	3255-418	3255-418	3255-440	3255-440	3255-440	3255-440	3255-440	3255-440
67	O-Ring	3255-199	3255-199	3255-246	3255-246	3255-246	3255-246	3255-246	3255-246
68	Cover, R.H. Cylinder	7437-247	7437-247	7437-287	7437-287	7437-287	7437-287	7437-287	7437-287
69	Housing, Cylinder	7437-140	7437-140	7437-170	7437-170	7437-170	7437-170	7437-170	7437-170
70	O-Ring	3255-112	3255-112	3255-118	3255-118	3255-118	3255-118	3255-118	3255-118
71	Manifold, Fill Valve	7237-035	7237-035	7237-142	7237-142	7237-142	7237-142	7237-142	7237-142
72	Hose, Cyl. Pre-Fill	3898-804	3898-804	3898-805	3898-805	3898-805	3898-805	3898-805	3898-805
73	Valve, Cart.	3760-040	3760-040	3760-017	3760-017	3760-017	3760-017	3760-017	3760-017
74	O-Ring	3255-112	3255-112	3255-121	3255-121	3255-121	3255-121	3255-121	3255-121
75	Back-Up, O-Ring	3255-420	3255-420	3255-322	3255-322	3255-322	3255-322	3255-322	3255-322
76	Retainer, Fill Valve Spring	7437-042	7437-042	7437-181	7437-181	7437-181	7437-181	7437-181	7437-181
77	Spring, Valve	3510-500	3510-500	3510-510	3510-510	3510-510	3510-510	3510-510	3510-510
78	Screw	3303-630	3303-630	3303-633	3303-633	3303-633	3303-633	3303-633	3303-633
79	Cap, Fill Valve	7437-086	7437-086	7437-351	7437-351	7437-351	7437-351	7437-351	7437-351
80	Bearing, Piston	3188-006	3188-006	3188-017	3188-017	3188-017	3188-017	3188-017	3188-017
81	Seal, Glyd. Ring Piston	3211-821	3211-821	3211-832	3211-832	3211-832	3211-832	3211-832	3211-832
82	Rod, Cylinder Piston	7437-385	7437-385	7437-386	7437-386	7437-386	7437-386	7437-386	7437-386
83	O-Ring	3255-210	3255-210	3255-235	3255-235	3255-235	3255-235	3255-235	3255-235
84	Back-Up, O-Ring	3255-429	3255-429	3255-435	3255-435	3255-435	3255-435	3255-435	3255-435
85	Cap, Cylinder Rod	7437-275	7437-275	7437-274	7437-274	7437-274	7437-274	7437-274	7437-274
86	Bearing, Rod	3188-006	3188-006	3188-009	3188-009	3188-009	3188-009	3188-009	3188-009
87	Stepseal, Cylinder Rod	3211-818	3211-818	3211-819	3211-819	3211-819	3211-819	3211-819	3211-819
88	Wiper, Cylinder Rod	3211-692	3211-692	3211-712	3211-712	3211-712	3211-712	3211-712	3211-712
89	Stud, Cylinder To Ram	7437-013	7437-013	7437-154	7437-154	7437-154	7437-154	7437-154	7437-154
90	Poly Pack, Rod Seal	3211-802	3211-802	3211-803	3211-803	3211-803	3211-803	3211-803	3211-803

ITEM NO.	DESCRIPTION	PH 175-120	PH 175-144	PH 175-168	PH 250-144	PH 250-168	PH 400-168
65	Cap, Cylinder Top	7437-335	7437-335	7437-335	7437-465	7437-465	
66	O-Ring, Backup	3255-444	3255-444	3255-444	3255-447	3255-447	
67	O-Ring	3255-250	3255-250	3255-250	3255-254	3255-254	
68	Cover, R.H. Cylinder	7437-337	7437-337	7437-337	7437-526	7437-526	7489-041
69	Housing, Cylinder	7437-388	7437-388	7437-388	7437-470	7437-470	7489-048
70	O-Ring	3255-118	3255-118	3255-118			3255-184
71	Manifold, Fill Valve	7237-142	7237-142	7237-142			
72	Hose, Cyl. Pre-Fill	3898-805	3898-805	3898-805			
73	Valve, Cart.	3760-017	3760-017	3760-017	3760-017	3760-017	3760-045
74	O-Ring	3255-121	3255-121	3255-121	3255-121	3255-121	3255-184
75	Back-Up, O-Ring	3255-322	3255-322	3255-322	3255-322	3255-322	3255-421
76	Retainer, Fill Valve Spring	7437-181	7437-181	7437-181	7437-468	7437-468	7489-029
77	Spring, Valve	3510-510	3510-510	3510-510	3510-510	3510-510	3510-520
78	Screw	3303-633	3303-633	3303-633	3303-633	3303-633	3303-690
79	Cap, Fill Valve	7437-351	7437-351	7437-351	7437-432	7437-432	7489-028
80	Bearing, Piston	3188-025	3188-025	3188-025	3188-032	3188-032	3188-033
81	Seal, Glyd. Ring Piston	3211-840	3211-840	3211-840	3211-844	3211-844	3211-845
82	Rod, Cylinder Piston	7437-384	7437-384	7437-384	7437-479	7437-479	7489-020
83	O-Ring	3255-252	3255-252	3255-252	3255-255	3255-255	3255-229
84	Back-Up, O-Ring	3255-446	3255-446	3255-446	3255-448	3255-448	3255-437
85	Cap, Cylinder Rod	7437-387	7437-387	7437-387	7437-466	7437-466	7489-021
86	Bearing, Rod	3188-012	3188-012	3188-012	3188-028	3188-028	3188-031
87	Stepseal, Cylinder Rod	3211-828	3211-828	3211-828	3211-841	3211-841	3211-843
88	Wiper, Cylinder Rod	3211-720	3211-720	3211-720	3211-721	3211-721	3211-723
89	Stud, Cylinder To Ram	7437-201	7437-201	7437-201	7437-201	7437-201	7489-016
90	Poly Pack, Rod Seal	3211-804	3211-804	3211-804	3211-837	3211-837	3211-842

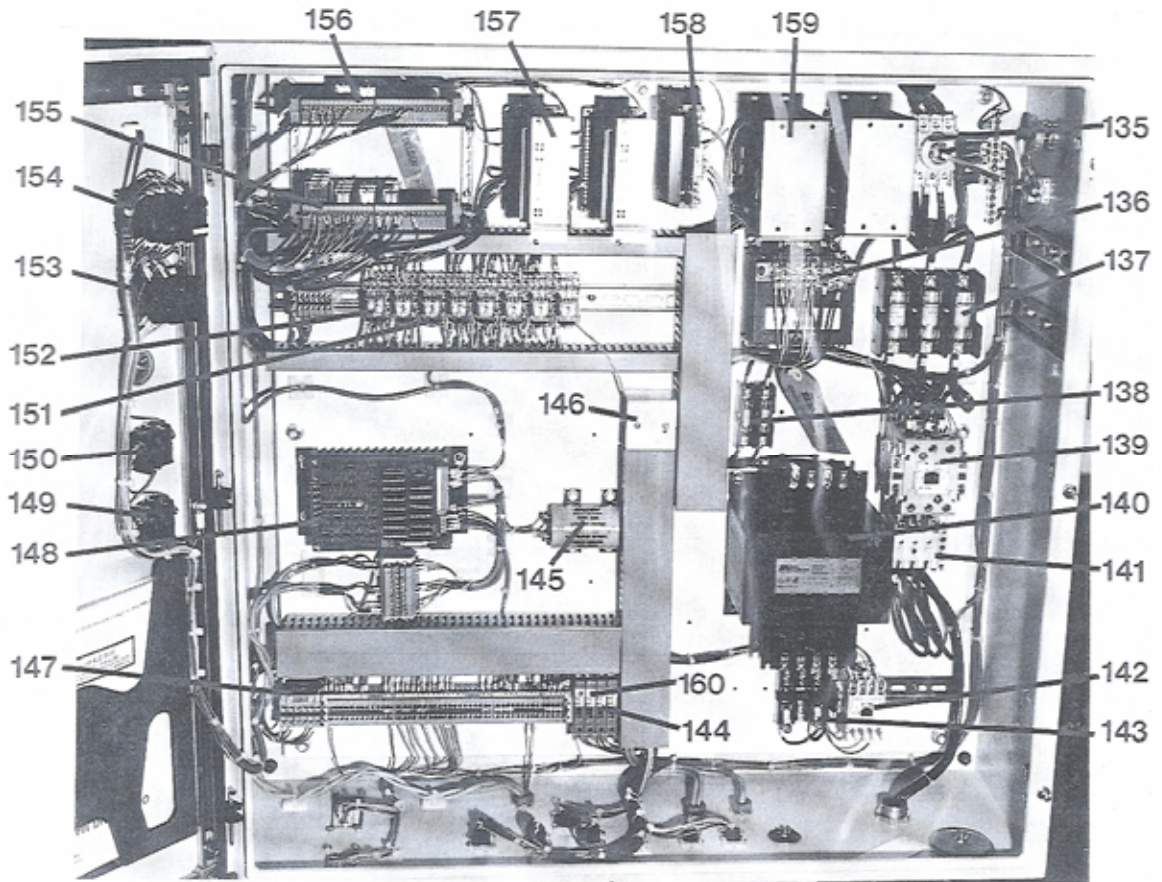
PH SERIES PRESS BRAKES

LINEAR ENCODER



PH PRESS BRAKES

ELECTRICALS



TO IDENTIFY ELECTRICAL COMPONENTS CHANGES ON INSTALLATIONS AFTER 6-1-92,
REFER TO THE AMENDED PARTS LIST SECTION AT THE BACK OF THIS MANUAL.

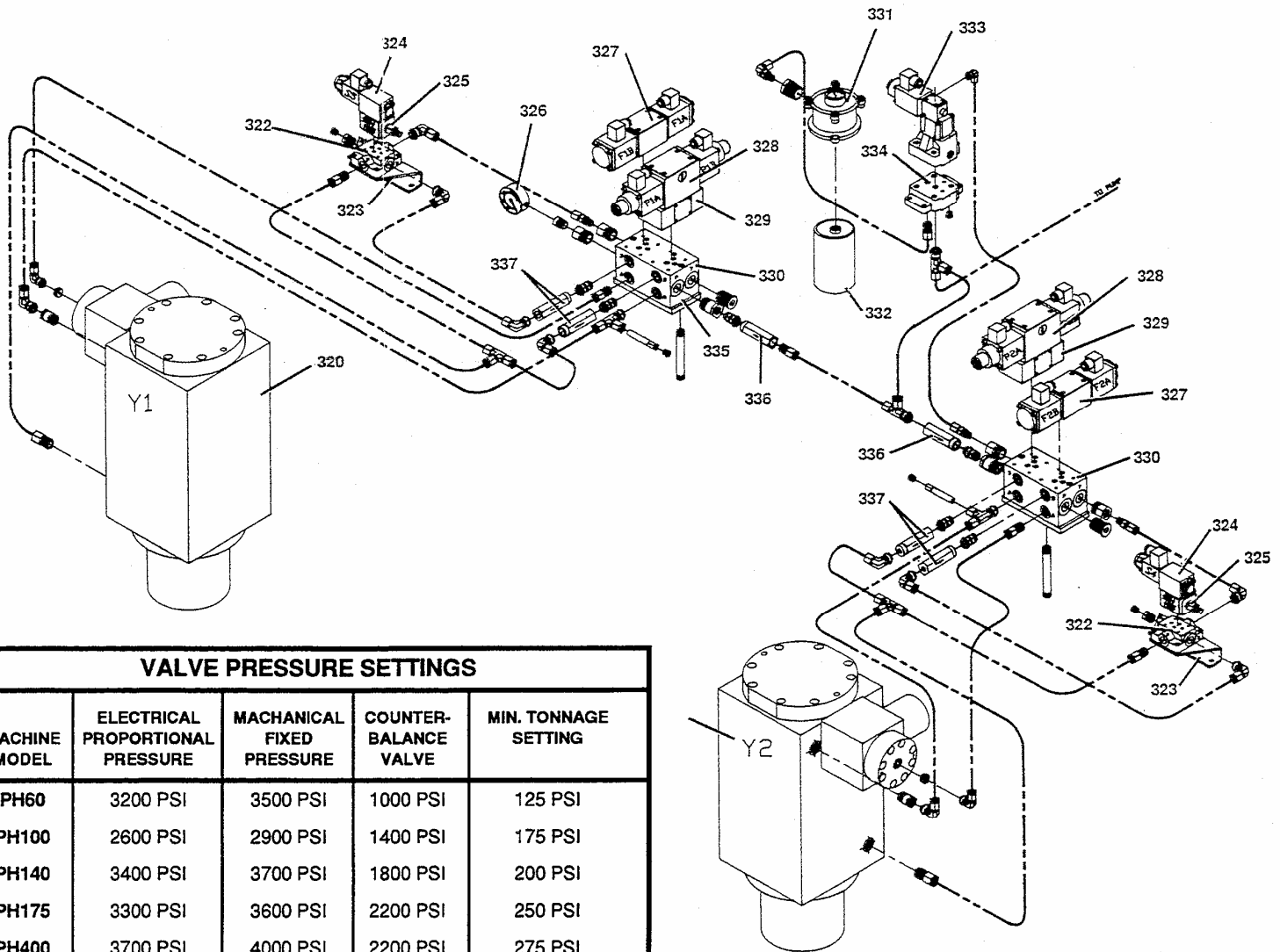
ELECTRICALS

ITEM NO.	DESCRIPTION	PH 60-72	PH 60-96	PH 100-120	PH 100-144	PH 100-168	PH 140-120	PH 140-144	PH 140-168
135	Disconnect	4171-143	4171-143	4171-143	4171-143	4171-143	4171-143	4171-143	4171-143
136	Transformer	4177-901	4177-901	4177-901	4177-901	4177-901	4177-901	4177-901	4177-901
137	Fuse @ 230 Volt	4328-730	4328-730	4328-740	4328-740	4328-740	4328-750	4328-750	4328-750
137A	Fuse @ 460 Volt	4328-715	4328-715	4328-725	4328-725	4328-725	4328-730	4328-730	4328-730
138	Fuse	4327-603	4327-603	4327-603	4327-603	4327-603	4327-603	4327-603	4327-603
139	Starter	4150-822	4150-822	4150-823	4150-823	4150-823	4150-823	4150-823	4150-823
140	Transformer	4177-033	4177-033	4177-033	4177-033	4177-033	4177-033	4177-033	4177-033
141	Heater, Overload @ 230 V.	4125-512	4125-512	4125-514	4125-514	4125-514	4125-520	4125-520	4125-520
141A	Heater, Overload @ 460 V.	4125-510	4125-510	4125-511	4125-511	4125-511	4125-512	4125-512	4125-512
142	Contacto	4106-051	4106-051	4106-051	4106-051	4106-051	4106-051	4106-051	4106-051
143	Fuse	4327-605	4327-605	4327-605	4327-605	4327-605	4327-605	4327-605	4327-605
144	Fuse	4326-060	4326-060	4326-060	4326-060	4326-060	4326-060	4326-060	4326-060
145	Capacitor	3940-125	3940-125	3940-125	3940-125	3940-125	3940-125	3940-125	3940-125
146	Rheostat	4173-240	4173-240	4173-240	4173-240	4173-240	4173-240	4173-240	4173-240
147	Resistor	4173-200	4173-200	4173-200	4173-200	4173-200	4173-200	4173-200	4173-200
148	Servo Amp	4100-106	4100-106	4100-106	4100-106	4100-106	4100-106	4100-106	4100-106
149	Push Button - Stop	STDE-031	STDE-031	STDE-031	STDE-031	STDE-031	STDE-031	STDE-031	STDE-031
150	Push Button - Start	STDE-030	STDE-030	STDE-030	STDE-030	STDE-030	STDE-030	STDE-030	STDE-030
151	Suppressor	3903-005	3903-005	3903-005	3903-005	3903-005	3903-005	3903-005	3903-005
152	Relay	4136-577	4136-577	4136-577	4136-577	4136-577	4136-577	4136-577	4136-577
153	Switch, Selector	4161-230	4161-230	4161-230	4161-230	4161-230	4161-230	4161-230	4161-230
154	Switch, Selector	4161-240	4161-240	4161-240	4161-240	4161-240	4161-240	4161-240	4161-240
155	Board, Relay	4007-001-02	4007-001-02	4007-001-02	4007-001-02	4007-001-02	4007-001-02	4007-001-02	4007-001-02
156	Board, Relay	4007-001-03	4007-001-03	4007-001-03	4007-001-03	4007-001-03	4007-001-03	4007-001-03	4007-001-03
157	Card, Driver	4008-003	4008-003	4008-003	4008-003	4008-003	4008-003	4008-003	4008-003
158	Card, Driver	4008-101	4008-101	4008-101	4008-101	4008-101	4008-101	4008-101	4008-101
159	Power Supply	3901-025	3901-025	3901-025	3901-025	3901-025	3901-025	3901-025	3901-025
160	Fuse	4326-063	4326-063	4326-063	4326-063	4326-063	4326-063	4326-063	4326-063

ITEM NO.	DESCRIPTION	PH 175-120	PH 175-144	PH 175-168	PH 250-144	PH 250-168	PH 400-168
135	Disconnect	4171-143	4171-143	4171-143	4171-144	4171-144	4171-144
136	Transformer	4177-901	4177-901	4177-901	4177-901	4177-901	4177-901
137	Fuse @ 230 Volt	4328-750	4328-750	4328-750	4328-770	4328-770	4328-770
137A	Fuse @ 460 Volt	4328-730	4328-730	4328-730	4328-740	4328-740	4328-740
138	Fuse	4327-603	4327-603	4327-603	4327-603	4327-603	4327-603
139	Starter	4150-823	4150-823	4150-823	4150-824	4150-824	4150-824
140	Transformer	4177-033	4177-033	4177-033	4177-033	4177-033	4177-033
141	Heater, Overload @ 230 V.	4125-520	4125-520	4125-520	4125-521	4125-521	4125-521
141A	Heater, Overload @ 460 V.	4125-512	4125-512	4125-512	4125-519	4125-519	4125-519
142	Contacto	4106-051	4106-051	4106-051	4106-051	4106-051	4106-051
143	Fuse	4327-605	4327-605	4327-605	4327-605	4327-605	4327-605
144	Fuse	4326-060	4326-060	4326-060	4326-060	4326-060	4326-060
145	Capacitor	3940-125	3940-125	3940-125	3940-125	3940-125	3940-125
146	Rheostat	4173-240	4173-240	4173-240	4173-240	4173-240	4173-240
147	Resistor	4173-200	4173-200	4173-200	4173-200	4173-200	4173-200
148	Servo Amp	4100-106	4100-106	4100-106	4100-106	4100-106	4100-106
149	Push Button - Stop	STDE-031	STDE-031	STDE-031	STDE-031	STDE-031	STDE-031
150	Push Button - Start	STDE-030	STDE-030	STDE-030	STDE-030	STDE-030	STDE-030
151	Suppressor	3903-005	3903-005	3903-005	3903-005	3903-005	3903-005
152	Relay	4136-577	4136-577	4136-577	4136-577	4136-577	4136-577
153	Switch, Selector	4161-230	4161-230	4161-230	4161-230	4161-230	4161-230
154	Switch, Selector	4161-240	4161-240	4161-240	4161-240	4161-240	4161-240
155	Board, Relay	4007-001-02	4007-001-02	4007-001-02	4007-001-02	4007-001-02	4007-001-02
156	Board, Relay	4007-001-03	4007-001-03	4007-001-03	4007-001-03	4007-001-03	4007-001-03
157	Card, Driver	4008-003	4008-003	4008-003	4008-003	4008-003	4008-003
158	Card, Driver	4008-101	4008-101	4008-101	4008-101	4008-101	4008-101
159	Power Supply	3901-025	3901-025	3901-025	3901-025	3901-025	3901-025
160	Fuse	4326-063	4326-063	4326-063	4326-063	4326-063	4326-063

PH PRESS BRAKES

HYDRAULIC PACKAGE
60 TON, 100 TON, 140 TON, 175 & 400 TON MODELS

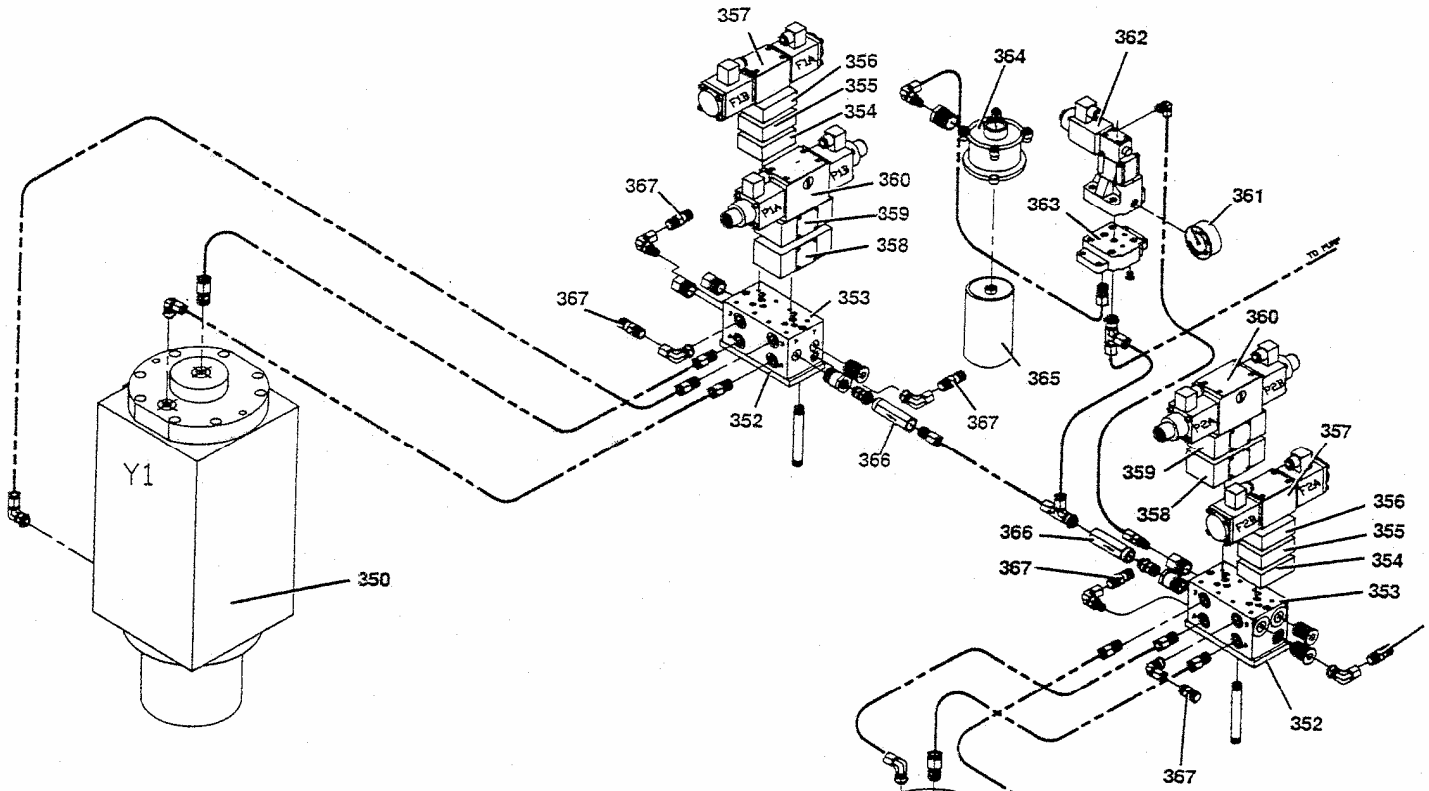


VALVE PRESSURE SETTINGS

MACHINE MODEL	ELECTRICAL PROPORTIONAL PRESSURE	MACHANICAL FIXED PRESSURE	COUNTER-BALANCE VALVE	MIN. TONNAGE SETTING
PH60	3200 PSI	3500 PSI	1000 PSI	125 PSI
PH100	2600 PSI	2900 PSI	1400 PSI	175 PSI
PH140	3400 PSI	3700 PSI	1800 PSI	200 PSI
PH175	3300 PSI	3600 PSI	2200 PSI	250 PSI
PH400	3700 PSI	4000 PSI	2200 PSI	275 PSI

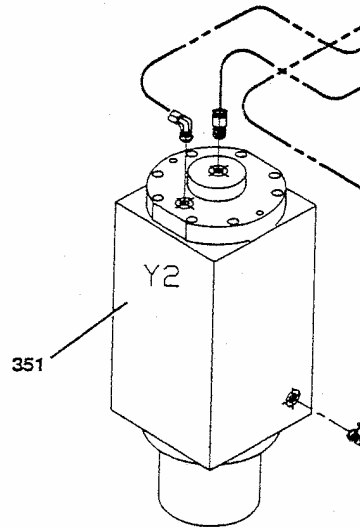
ITEM NO.	DESCRIPTION	PH	PH	PH	PH	PH
		60 TON	100 TON	140 TON	175 TON	400 TON
320	Asm., LH Cylinder (Y1)	7337-025-ND	7337-029-ND	7337-029-ND	7337-034-ND	Consult Factory
321	Asm., RH Cylinder (Y2)	7337-026-ND	7337-030-ND	7337-030-ND	7337-035-ND	
322	Subplate, Valve	3773-634	3773-634	3773-634	3773-634	
323	Bracket, C'bal. Valve	7435-921	7435-919	7435-919	7435-919	
324	Valve, 4-Way Sol.	3753-490	3753-490	3753-490	3753-490	
325	Valve, Relief	3762-289	3762-289	3762-289	3762-289	
326	Gauge, Pressure	3237-140	3237-140	3237-140	3237-140	
327	Valve, 4-Way	91.521.000.001.0	91.521.000.002.0	91.521.000.002.0	91.521.000.002.0	
328	Valve, 4-Way Prop.	3759-326	3759-330	3759-330	3759-330	
329	Valve, Check	3755-372	3755-370	3755-370	3755-370	
330	Manifold, Control	3773-652	3773-657	3773-657	3773-657	
331	Filter, Return	3764-326	3764-326	3764-326	3764-326	
332	Element, Return Filter	3764-335	3764-335	3764-335	3764-335	
333	Valve, I Proportional	3762-500	3762-500	3762-500	3762-500	
334	Subplate, Prop. Valve	3773-636	3773-636	3773-636	3773-636	
335	Plate, Manifold Mtg.	7437-285	7437-295	7437-295	7437-295	
336	Valve, Check	3755-322	3755-322	3755-322	3755-322	
337	Valve, Check	3755-321	3755-321	3755-321	3755-321	

HYDRAULIC PACKAGE FOR PH 250 TON MODELS



ITEM NO.	DESCRIPTION
350	Asm., LH Cylinder (Y1)
351	Asm., RH Cylinder
352	Plate, Manifold Mtg.
353	Manifold, Control
354	Adapter, Valve
355	Valve, Check
356	Valve, Relief
357	Valve, 4-Way
358	Valve, Check
359	Valve, Check
360	Valve, 4-Way
361	Gauge, Pressure
362	Valve, Relief
363	Subplate, Valve
364	Filter, Return
365	Element, Return
366	Valve, Check
367	Coupling, Pressure Test

PH 250 TON
7337-60
7337-060
7437-295
3773-667
3773-637
3755-374
3762-288
3759-275
3755-373
3755-370
3759-320
4327-140
3762-500
3773-636
3764-326
3764-326
3755-323
3822-030



VALVE PRESSURE SETTINGS				
MACHINE MODEL	ELECTRICAL PROPORTIONAL PRESSURE	MACHANICAL FIXED PRESSURE	COUNTERBALANCE VALVE	MIN. TONNAGE SETTING
PH250	3700 PSI	4000 PSI	1500 PSI	230 PSI