

Power Team®

SPX®





# ABOUT POWER TEAM

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- Electric and Air Powered
- Electric, Air, and Gas Powered
- Hand Pumps
- Valves, Hoses and Accessories

### Hydraulic Cylinders

- Rams
- Standard
- Construction
- Industrial
- High Tonnage
- Pancake
- Aluminum
- Pulling

### Jacks

- Lifting Jacks
- Inflatable Jacks
- Post-Tensioning Jacks

### Tools

- Hydraulic Presses
- Flange Spreaders
- Nut Splitters
- Gear Pushers/Pullers
- Bearing Maintenance Pushers/Pullers

### Shop Equipment

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- Floor Cranes
- Spread Tilters

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# Power Team®

## PROFESSIONAL HYDRAULIC PUMPS, CYLINDERS, JACKS, PULLERS & TOOLS



### CYLINDERS 6-39



### PUMPS 40-103



### HYDRAULIC ACCESSORIES 104-133



### SHOP EQUIPMENT 134-147



### JACKS 148-163



### HYDRAULIC & MECHANICAL TOOLS 164-189



### PULLERS 190-230



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### MEASUREMENTS & SPECIFICATIONS 231-237



# NUMERIC INDEX

BB1600,1601.....181	PG303 - PG554.....94-95	SPE556 -	208380-208382.....35	34806 - 34807...145,180	9050A.....150-151
BC212 - BC212EUR...69	PG4004,	SPE5513DS.....139	208401, 208402.....186	34808.....145	9040 - 9091.....103,111
BP12.....69	PG4004S.....96-97	SPE10010 -	208406.....39	350090.....159	9006X - 9015X.....154
C51C - C10010C...14-15	PH103C-PH103CR...216	SPE10013DS.....140	208627.....206	350094-350100.....34	9105A.....155
C55CBT -	PH53C, PH53CR...216	SPE10010R.....140	209199, 209200.....189	350144, 350145...35,180	9112A -
C2514CBT.....16	PH1002 - PH1002J...227	SPE15013DS -	209201.....187	350184.....34	9130A.....150-151
CB30 - CB100.....38	PH63C - PH113C	SPE20013DS.....141	209593.....102,130	350199.....103	9015B - 9110B.....150
CBS55 - CBS200...164	PH103C, PH103CR...214	SPH1010.....137	212377.....230	350207-350209...159	9205A - 9220A.....155
CC5 - CC25.....180	PH172 - PH503...217	SPM1010.....137	21332.....145	350320-350334...36	9190.....114
DG100, DG100B...111	PH303C.....214	SPM256.....138	213895, 213896...133	350376.....35	9500, 9501.....125
FC2200 - FC4400...146	PH553C -	SPM256C.....136	215315.....209	350431.....103,132	9502.....124
FK59 - FK159B...47-48	PH553CL13.....226	SPM2514.....138	216209.....130	350549, 350550...178	9504.....123
FLS15.....176-177	PH82K.....214	SPM556.....139	21669 - 21873...39	350593-350594...226	9506, 9507.....125
HFS3A - HFS6A.....178	PHP Series.....225	SPM5513.....139	22041-22044.....186	350637.....226	9508, 9509.....117
HB443, HB444.....98	PHPHB106-	SPM10010.....140	22185.....206	350722.....49	9510.....131
HNS150 - HNS225...175	PHPHB216.....198	SPX256C.....136	22274, 22275...39	350723-350724...34	9511.....125
HP20 - HP35SP...182-183	PLA6014.....161	SS2.....206	24196, 24197...39	350822, 350823...178	9512, 9513.....128
HS2000 - HS3000...179	PLE6014K.....161	TBP1622.....144	24813, 24814...36	350895-350898...35	9514.....117
HST11.....215	PMA, PUA.....64-67	TPP1-TPP200...144	24832-24833...204	350984.....36	9515.....102,131
HST11S.....214	PMA55 - PME55S...163	TPS6.....144	25017.....103,130	351075.....23	9516.....97,128
HT50A - HT200.....184	PPH17 -	TWSD1-TWSD25...166	250175.....132	351106.....23	9517.....71,123
HTS50.....188	PPH50R.....218-219	TWD1-063-	250341-250343...159	351324, 351325...36	9519.....128
IM10E, IM10H...156	PQ603-PQ604S...86-87	TWD25-275.....167	250353.....159	351334.....36	9520.....124
IJ13 - IJ7320...158-159	PQ1203-PQ1204S...86-89	TWH15-TWH50...168	250459.....182	351574 - 351576...35	9521.....131
IPS10B,	PR102 - PR104...68-69	TWS Series.....167	250682.....159	351985.....175	9522, 9523.....128
IPS10HB.....209	PR2100J Thru	TWLC Series...168-169	251002.....226	36161.....233	9524.....116
IPS10M,	PR3100S.....228-229	X1A1.....171	251468.....226	36469.....145	9525, 9526.....117
IPS17M.....212	PT102 -PT216...196-197	X1E1, X1E2.....170	251646, 251647...213	36578.....206,209	9531.....131
IPS17 - IPS17H...220	PTPHA106-	0100 - 0600.....187	251660.....69,130	37045.....111,185	9552.....127
IPS30H.....221	PTPHA216.....196-197	1020 - 1050...200-201	251970-251999...183	37368.....144-145	9553.....128
IPS3017-IPS3017B...222	PTPHC106-	1057 - 1060...216	252000.....183	38597.....144,180	9554.....116
IPSS0H.....221	PTPHC216.....198	1062.....218	252001-252002...183	38855, 38904...39	9555, 9556, 9559...117
IPSS017 - IPSS017B...223	PTPHD106-	1064, 1066.....217	252215.....39	38908, 38909...35	9560.....69
IPSS517.....224	PTPH216.....198	1070.....219	252511, 252512...85,132	38953.....144-145	9561-9563.....68
J24T - J259T...152-153	PTPH100T-	1074.....217	252542 - 253391...157	38954.....144-145	9569, 9570, 9572...127
JAM10033 -	PTPH200T.....199	1076.....219	25388 - 25750...34-35	39811.....188	9575.....119
JEM15026.....165	R552C - R56510C...26	1080.....217	25931.....36	41331.....206	9576.....102,124
K82, K83.....215	R1002D - R56510D...28	10461.....103,130	26068 - 26666...186	420059 - 420064...35	9579.....127
LR2000 - LR6000...147	R552L - R56510L...32	10494.....103,132	27198.....36	420496BK2.....39	9580, 9581.....119
MB5 - MB16.....213	RA202 - RA1006...17	1100 - 1111...203	27241.....206	420496OR9-.....39	9582, 9584.....123
P12 - P59F.....46-47	RA556L, RA1006L...30	1020-1050...200-201	27287.....186	420498OR9.....39	9589, 9590.....128
P19, P59.....47	RB8013S -	1120.....187	27315.....206	420655OR9.....39	9592.....81,82,127
P157 - P460D...48	RB20013S.....143	1121 - 1124...205	27487-27555.....230	420778.....111	9593.....116
PA172-PA174.....60-61	RC0552P-RC6202P...31	1125.....187	27737.....186	420866-420871...36	9594.....102,127
PA6 - PA6DM-2...50-53	RC12V.....69	1126-1128...205	27793 - 27797...230	421056, 421057...23	9595.....116
PA7.....210	RC2GAL, RC5.....133	1130.....205	27876, 27877...103	421312OR9.....39	9596, 9597.....118
PA9, PA9H.....54-55	RC7402C-RC122010C27-33	1131.....187	28228-28229...136,180	43562, 43563...144-145	9599, 9605.....126
PA50 - PA50RM...58-59	RC7402D-RC122010D29	1150 - 1154...204	28230.....36	44148, 44195...206,208	9608.....118
PA60, PA64.....56-57	RC7402L-RC122010L...33	1155 - 1158...207	28250 - 28256...206	44457, 44458...144-145	9609.....102,126
PA462-PA554...62-63	RD106 - RD50013...24	1165, 1166...204	28323GY8.....206	44745, 44766...227	9610, 9610A.....123
PB1230C -	RH102 -	1170, 1171...206-207	28612 - 28644...39	45329.....188	9615.....128
PB51156C.....213	RH2008.....20	1172 - 1178...206-207	28984, 28985...186	45589.....38	9616.....112
PC200, PC200RC...133	RH306D.....21	1180 - 1182...208	29595.....36	46070.....144-145	9617.....113
PD313 - PD812...183	RHA306.....20	1188.....215	3-3932-3-3959...107	47997.....216	9620.....131
PE-NUT.....92	RHA604D.....21	1266.....189	302482, 302483...36	518, 522.....210	9623.....119
PE102 -	RH121T.....20	1320 - 1349...187	303045.....227	58943 - 58945...162	9625.....103,131
PE104.....68-69	RJ Series.....160-161	13449.....186	303785.....36	60846.....136	9626, 9627...102,113,129
PE120M.....100	RLS50 - RLS1500S...18	15235.....159	304718.....102,130	679, 680.....205	9628.....83,85,102,129
PE172 - PE174M...70-71	RP20 - RP104...103,133	15702.....187	307159.....159	7053K.....187	9631.....119
PE182 -	RP25, RP55.....23	16339.....132	307281.....185	7103.....188	9632.....103,129
PE184C.....72-73	RPS55 - RPS556A...49	16954.....186	308022.....175	7123K, 7125K...187	9633.....103,119
PE213 - PE214S...74-75	RSS101 - RSS2503...19	17627.....130	308435OR9 Thru	7136.....207	9634, 9635.....113
PE302 -	RT172 - RT1004...22	1890-1893...144,145	308440OR9.....220-224	714.....187	9636-9640.....103,112
PE304R-2.....78-79	RV21278 -	24832-24833...204	308840.....175	7162-7168.....189	9641.....103,131
PE30TWP.....78,172	RV21278-90.....119	201362 - 201412...233	309652, 309653...102,130	7180.....230	9642.....113
PE55TWP-	RWP55.....174	201454, 201923...36,145	309874-309875...216	7300, 7301.....187	9643.....103,131
PE55TWP4.....173	SF50.....139, 142	202178 - 202180...34	31772, 31776...35	7307-7309.....189	9644.....113
PE462 - PE464S...80-81	SF150.....140-142	202777, 202778...130	32054.....206	7312.....188	9645-9647...103,112
PE552 - PE554W...82-83	SJ2010 - SJ3010P...157	202817.....188	32118.....36	7313.....187	9648.....113
PE604T -	SP1010A.....137	203003 - 203156...186	32325.....35	7392, 7393...210	9670-9690.....114
PE604PT.....84-85	SPA10 - SPA200...145	203225.....103,130	32698 - 33439...36	7395.....188	9691.....113
PE4004,	SPA256, SPA2514...138	203264.....185	3344.....188	7400, 7401...189	9692 - 9705...114
PE4004S.....90-91	SPA556.....139	204666.....188	33856-33865...206	7402.....188	9720, 9721.....118
PE84.....70-71	SPE1010,	204928.....189	34136.....36	7406K.....187	9733-9783...106-107,221
PED253 -	SPE1010D.....137	204990.....185	34251.....39	7420, 7421...189	9785-9788.....185
PED254S.....76-77	SPE256 -	206753.....186	34331.....206	8000 - 8076...210-211	9792 - 9800...108
PG120HM.....96-97	SPE2514DS.....138	206767.....132	34510, 34511...36,145,189	8110 - 8148...210	981.....206
PG1203-CP.....93, 96-97		207395.....144,145	34698.....206	927 - 939.....203	
PG1200M-4 -		207762.....132	34755, 34756...36,145	9002A -	
PG1204S.....96-97			34758.....36		



# ALPHABETICAL INDEX

- A**  
Adapters, Step Plate ..... 211  
Adapters, Threaded (Puller) ..... 210-211  
Air/Hydraulic Pumps ..... 50-67  
Aluminum Cylinders ..... 17, 20-23  
Assemble to Order?  
Pumps ..... 100-103  
Attachments, Pulling ..... 204-205  
Axle Journal Roller Bearing Service Equipment ..... 228
- B**  
Bead Breaker ..... 181  
Bearing Cup Installer ..... 228-229  
Bearing Cup Remover ..... 207  
Bearing Pulling Attachments ..... 204-205  
Bench Presses ..... 137  
Bi-Directional Pullers ..... 214  
Blankets, Protective ..... 213  
Blind Hole Puller Set ..... 206  
Bushing and Bearing Drivers ..... 230
- C**  
Casters ..... 132  
Center-Hole Cylinders ..... 20-22  
Accessories ..... 39  
Center-Hole Twin Cylinders ..... 24  
C-Clamps ..... 180  
C-Frame Press ..... 136  
Chain Wrenches ..... 189  
Chaser, Thread ..... 188  
Check Valves ..... 119  
Counter-balance Valve ..... 118  
Couplers, Hydraulic ..... 108, 114  
Crane Accessories ..... 147  
Cranes, Mobile ..... 146  
Cribbing Block Sets ..... 38, 161-162  
Cylinder-Pump-Hose Sets, Hydraulic ..... 49  
Cylinders, Hydraulic ..... 12-39
- D**  
Digital Pressure Gauge ..... 110-111  
Double-Acting Cylinders ..... 19-29
- E**  
Electric/Hydraulic Pumps ..... 68-91  
“Enforcer 55” Hydraulic Puller ..... 226  
“Enforcer 100” Hydraulic Puller ..... 227
- F**  
Filter/Regulator/Lubricator, Air ..... 131  
Fixtures, Straightening ..... 139-142  
Flange Spreaders ..... 178  
Floor Cranes, Mobile ..... 146  
Flow Characteristics, Valves ..... 48-50, 120-122
- Fluid Level & Temperature Gauge ..... 132  
Foot Pump Conversion Kit ..... 47-48  
Forcing Presses ..... 134-143
- G**  
Gauges, Hydraulic Pressure ..... 110-111  
Gear and Pulley Pullers ..... 200-224  
Gland Nut Wrench, Adjustable ..... 189
- H**  
Head Inserts, Cylinder ..... 39  
High Pressure Air Operated Pump ..... 64-67  
Horseshoe Lock Ring Plier ..... 187  
Hose, Hydraulic ..... 106-107  
Hydraulic Accessories ..... 104-133  
Hydraulic Couplers ..... 108, 114  
Hydraulic Cranes ..... 146  
Hydraulic Cylinders ..... 12-39  
Hydraulic Fittings ..... 114  
Hydraulic Gauges ..... 110-111  
Hydraulic Hose ..... 106-107  
Hydraulic Jacks ..... 148-163  
Hydraulic Oil ..... 112  
Hydraulic Presses, Shop ..... 134-147  
Hyd. Puller Sets ..... 220  
Hydraulic Pumps ..... 40-103  
Hydraulic Pump-Cylinder-Hose Sets ..... 49  
Hydraulic Punches ..... 182-183  
Hydraulic Spreaders ..... 178-179  
Hydraulic System Testers ..... 184  
Hydraulic Tester Accessories ..... 185  
Hydraulic Tools ..... 164-185  
Hydraulic Valves ..... Pump Mounted ..... 122-129  
In-Line ..... 118-119  
Remote ..... 115-117
- I**  
Industrial Maintenance Sets ..... 156  
Industrial Maintenance Puller Sets ..... 212-213, 220-221  
In-Line Valves ..... 118-119  
Inflatable Jacks ..... 158-159  
Intensifier, Hydraulic ..... 98  
Internal Pulling Attachments ..... 204
- J**  
Jack Modules ..... 161-162  
Jacks, High-Tonnage ..... 160-163  
Jacks, Hydraulic ..... 148-163  
Jacks, Hydraulic Toe ..... 152-153  
Jacks, Inflatable ..... 158-159  
Jacks, Stressing ..... 157  
Jimmy Bars ..... 189
- L**  
Lightweight Handpump ..... 47  
Load-Lowering Valve ..... 118  
Load-Positioning Slings ..... 147  
Low Profile Cylinders ..... 18  
Low Clearance ..... 168-169
- M**  
Magnetic Pick-Up Tool ..... 188  
Magnetic Strip ..... 132  
Maintenance Sets ..... 156  
Manifolds ..... 113  
Metering Valve ..... 119  
Metric Conversion Charts ..... 234  
Mini Jack ..... 155  
Motion Control System ..... 238  
Motor Controls ..... 130
- N**  
Nut Splitters ..... 175
- O**  
Oil, Hydraulic ..... 112  
“O” Ring Seal Pick ..... 188
- P**  
Pancake Cylinders ..... 31  
Photo Tachometer, Digital ..... 188  
Pipe Flange Spreaders ..... 178  
Pliers, Retaining Ring ..... 187  
Positioning Slings ..... 147  
Post Tensioning Valves ..... 129  
Press Accessories ..... 144-145  
Presses, Hydraulic Roll-Bed ..... 142-143  
Presses, Hydraulic Shop ..... 134-143  
Pressure Gauges, Hydraulic ..... 110-111  
Pressure Switches ..... 131  
Pressure Reducing Valve ..... 118  
Protective Blankets ..... 213  
Pry Bars ..... 189  
Puller Adapters ..... 210-211  
Puller Attachments ..... 204-205  
Puller, Blind Hole ..... 206  
Pullers, Bearing ..... 200-230  
Pullers, Bearing Cup ..... 207  
Pullers, Gear ..... 200-230  
Pullers, Hydraulic ..... 214-230  
Pullers, Internal ..... 204-209  
Pullers, Jaw-Type ..... 200-201, 212-213, 220-224  
Pullers, Pulley ..... 205  
Pullers, Sets ..... 208-209, 212  
Pullers, Slide Hammer ..... 207-208  
Pulley Pullers ..... 205  
Pull Cylinders ..... 23  
Pump Cart ..... 133  
Pump Accessories, Hydraulic ..... 130-133  
Pump-Cylinder-Hose Sets, Hydraulic ..... 49  
Pump Mounted Valves ..... 123-129  
Pump Reservoirs ..... 133  
Pumps, Hydraulic ..... 40-103  
Pumps, Hydraulic, Air ..... 50-67  
Pumps, Hydraulic, Electric ..... 68-91  
Pumps, Hydraulic, Gas ..... 93-97  
Pumps, Hydraulic, Hand ..... 46-49  
Pumps, Torque Wrench ..... 170-176  
Punches, Hydraulic ..... 182-183  
Push-Pullers, Hydraulic ..... 225  
Push-Pullers, Mechanical ..... 218-219
- Q**  
Quality Standards, Industry ..... 235  
Quarter Horse Pumps ..... 68-69  
“Quiet” Pumps ..... 86-89
- R**  
Railroad Axle Journal Bearing Service Equipment ..... 228-229  
Ratcheting Chain Wrenches ..... 189  
Remote Controls ..... 130  
Remote Mounted Valves ..... 116-117  
Reservoir ..... 133  
Reservoir Breather Kit ..... 132  
Retaining Ring Pliers ..... 187  
Rethreading Tools ..... 188  
Roll-Bed® Presses ..... 142-143  
Roll Cage Pump ..... 133
- S**  
Safety Training ..... 239  
Sequence Valve ..... 118  
Shaft Protectors ..... 211  
Shop Press Accessories ..... 144-145  
Shop Presses ..... 134-143  
Shorty Cylinders ..... 19  
Shut-off Valves ..... 119  
Slide Hammer Pullers ..... 206-207  
Slings, Load-Positioning ..... 147  
Solenoid-Operated Valves ..... 127-128  
Spanner Wrenches ..... 189  
Spreaders, Hydraulic ..... 178-179  
Square Drive ..... 166-167  
Standards, Quality ..... 235  
Step Plate Adapters ..... 211  
Storage Boxes, Puller Sets ..... 208-209  
Straightening Fixtures ..... 139-140, 142  
Straightening Tool ..... 215  
Stressing Jacks and Pumps ..... 84-85, 157  
“Strong Box” Puller Sets ..... 209  
Subplates, Pump ..... 131  
Switches, Hand and Foot ..... 130-131
- T**  
Testers, Hydraulic System ..... 184-185  
Temperature & Fluid Level Gauge ..... 132  
Thread Chaser ..... 188  
Threaded Adapters, Puller ..... 210-211  
Tire Pressing Set ..... 144  
Toe Jacks, Hydraulic ..... 152-153  
Tools, Hydraulic ..... 164-189  
Torque Wrench Pumps ..... 170-174  
Torque Wrench ..... 166-169  
Torque Wrench Links ..... 168  
Torque Wrench Sockets ..... 167  
Torque Wrench, Low Clearance ..... 168  
Torque Wrench Reducers ..... 169
- V**  
V-Belt Pulley Pulling Attachments ..... 205  
Valves, Hydraulic Pump Mounted ..... 122-129  
In-Line ..... 118-119  
Viton Seal Kits ..... 37, 132
- W**  
Warranty ..... 237  
Wrenches, Industrial ..... 189  
Wrenches, Ratcheting Chain ..... 189  
Wrenches, Spanner ..... 189  
Wrenches, Torque ..... 166-169





# CYLINDER SELECTION

Choosing The Right Pump and Cylinder

The Following guidelines are for general lifting and construction applications. Hydraulic tools, pullers and presses may fall outside these

recommendations. Always check to see that the pump's "usable reservoir capacity" exceeds the cylinder(s) oil Capacity.

Generally Recommended ■ Marginal Check Requirements ■ Not Recommended for most applications ■

		10,000 psi Maximum Working Pressure															
Page	PRESSURE STAGE	CYLINDER CAPACITY (Tons)															
		5	10	15	20	25	30	55	75	100	150	200	300	400	500		
	46	P12‡	Single	14	32	44	65	72	93								
	46	P55‡	Single	6	14	19	28	31	40	71							
	47	P19/ P19L	Low	4	8	10	15	17	21								
			High	13	30	42	59	68	86								
	47	P59F	Low	1.8	4.1	5.7	8	9	12	20	29						
			High	8	17	24	34	48	50	85	122						
	47	P59(L)‡	Low	1.5	3.2	4.7	7	7.7	9.7	16.7	23.9						
	48	P157‡	High	6	14	19	28	31	40	71	101						
	48	P159‡	Low	0.5	1	1.3	1.9	2.2	2.8	5	7	9	13	18			
	48	P300‡	High	7	15	21	30	34	43	77	110	143	200	250			
48	P460‡	Low	0.1	0.3	0.6	0.6	0.7	0.9	1.5	2.2	2.8	4.2	5.6	8.4	11.2		
		High	3.3	7.7	9	14	17.5	22	37	55	71	105	143	213	284		
	68	PE10	Low	0.5	1.2	1.6	2.2	2.6	3.2	5.5							
	High		6	13.4	18.9	27	31	39	66.2								
	70	PE17‡	Low	0.2	0.5	0.7	0.9	1.1	1.4	2.3	3.3	4.3	6.5	8.7			
			High	3.5	7.9	10.9	16	18	23	39	56.3	73	109	146			
	72-73	PE18	Low	0.4	0.8	1.2	1.6	1.8	2.3	3.9	5.7	7.3	10.8	14.6	21.9	29.2	
			High	3.3	7.5	10.3	15	17	21	37	53	69	102	136	207	276	
	74-75	PE21‡	Low	0.2	0.5	0.7	1.0	1.1	1.4	2.5	3.6	4.6	6.8	9.2	13.8	18.4	
			High	2.8	6.4	9	13	15	19	32	45.5	59	88	118	177	236	
	76-77	PED25	Low	0.2	0.4	0.6	0.9	1.0	1.3	2.2	3.2	4.1	6.1	8.3	12.0	15.7	19.9
			High	2.4	5.4	7.5	10.6	12.4	15.6	26.5	38.2	49.5	73.6	99.1	144.3	188.5	238.6
	78-79	PE30‡	Low	0.2	0.45	0.6	0.9	1	1.3	2.2	3.2	4.1	6				
			High	2	4.5	6	9	10	13	22	32	41	60				
	80-81	PE46‡	Low	0.1	0.3	0.4	0.5	0.6	0.7	1.3	1.8	2.4	3.5	4.7	7.2	9.6	
			High	1.3	2.9	4.1	5.9	6.8	8.6	14	22	28	42	56	84	112	
	82-83	PE55‡	Low	0.1	0.2	0.3	0.4	0.4	0.6	0.9	1.4	1.8	2.6	3.5	5.4	7.2	
	84-85	PE60‡	High	1.1	2.4	3.4	4.8	5.6	7.1	12	17.8	23	34	45	69	92	
86-87	PQ60	Low	0.1	0.2	0.3	0.4	0.4	0.5	0.9	1.3	1.7	2.5	3.4	5.1	6.8	8.5	
		High	1	2.2	3.3	4.4	5.2	6.5	11	16.2	21	31	41	63	84	105	
88-89	PQ120	Low	0.1	0.2	0.3	0.4	0.4	0.5	0.9	1.3	1.7	2.5	3.4	5.1	6.8	8.5	
		High	0.5	1.1	1.6	2.2	2.6	3.2	5.5	7.7	10	15	21	30	40	50	
90-91	PE400	Low	0.1	0.1	0.2	0.2	0.3	0.3	0.6	8	1	1.5	2.1	3	4	5	
		High	0.1	0.3	0.4	0.6	0.7	0.9	1.6	2.2	2.9	4.4	5.9	8.7	11.6	14.5	
	50-51	PA6‡	Single	10	22.4	31	44.4	51.3	65.2	-	-	-	-	-	-	-	
	54-55	PA9‡	Single	10	22.4	31	44.4	51.3	65.2	-	-	-	-	-	-	-	
	60-61	PA17‡	Low	0.2	0.5	0.7	0.9	1.1	1.4	2.3	3.3	4.3	6.5	8.7	-	-	
			High	3.5	7.9	10.9	16	18	23	39	56	73	109	146	-	-	
	62-63	PA46‡	Low	0.1	0.3	0.4	0.5	0.6	0.7	1.3	2	2.4	3.5	4.7	7.2	9.6	
			High	1.3	2.9	4.1	5.9	6.8	8.6	14	22	28	56	42	84	112	
62-63	PA55‡	Low	0.1	0.3	0.4	0.6	0.7	0.9	1.5	2.2	2.8	4.1	5.5	8.4	11.2		
		High	1.1	2.4	3.4	4.8	5.6	7.1	12	18	23	34	45	69	92		
	94-95	PG30	Low	0.3	0.7	1	1.3	1.6	2	3.3	4.8	6.2	9.3	12.4	18.1	-	
			High	2	4.5	6.3	8.9	10.3	13	22	31.8	41.3	61.4	83	121	-	
	94-95	PG55‡	Low	0.1	0.3	0.4	0.6	0.7	0.8	1.4	2	2.6	3.9	5.2	7.6	9.9	12.5
			High	1.1	2.5	3.5	4.9	5.6	7.1	12.1	17.3	22.5	33.5	45	66	86	109
	96-97	PG120‡	Low	0.1	0.3	0.4	0.6	0.7	0.8	1.4	2	2.6	3.9	5.2	7.6	9.9	12.5
			High	0.5	1.0	1.5	2.0	2.4	3.0	5.1	7.3	9.5	14.2	19.1	27.8	36.3	46.0
96-97	PG400	Low	0.1	0.1	0.2	0.2	0.3	0.3	0.6	0.8	1.0	1.5	2.0	3.0	3.8	4.9	
		High	0.2	0.3	0.5	0.7	0.8	1.0	1.7	2.4	3.1	4.6	6.2	9.0	11.8	15.0	

‡ Some Power Team pumps are available in special configurations not listed in this catalog. Power Team can "Assemble to order" pumps with special seals, voltages, valves, relief valve settings, etc. For your special requirements please consult your local distributor or the Power Team factory.  
 \* Hand Pumps = Number of strokes required to move piston 1". † Air, Electric and Gasoline Engine/Hydraulic pumps = Number of seconds required to move piston 1".

Retracted				Retracted			
Stroke Height (in.)	Order No.	Page No.	Stroke Height (in.)	Order No.	Page No.	Stroke Height (in.)	Order No.

2 Ton Pull	5	9 <sup>3</sup> / <sub>16</sub>	RP25	23
	5 <sup>1</sup> / <sub>2</sub>	11 <sup>7</sup> / <sub>8</sub>	RP55	23
5 Ton	9 <sup>1</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>	RLS50	18
	1	4 <sup>3</sup> / <sub>8</sub>	C51C	15
	3 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	C53C	15
	5 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	C55C	15
	5 <sup>1</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>2</sub>	C55CBT	16
	7 <sup>1</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>4</sub>	C57C	15
	9 <sup>1</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>	C59C	15

10 Ton	7 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	RLS100	18
	1	3 <sup>5</sup> / <sub>8</sub>	C101C	15
	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	RSS101	19
	2 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>4</sub>	C102C	15
	2 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub>	RH102	18
	4 <sup>1</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	C104C	15
	6 <sup>1</sup> / <sub>8</sub>	9 <sup>3</sup> / <sub>4</sub>	C106C	15
	6 <sup>1</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>2</sub>	C106CBT	16
	6 <sup>1</sup> / <sub>4</sub>	11 <sup>11</sup> / <sub>16</sub>	RD106	25
	8	11 <sup>5</sup> / <sub>16</sub>	RH108	20
	8 <sup>1</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	C108C	15
	10	15 <sup>11</sup> / <sub>16</sub>	RD1010	25
	10 <sup>1</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>4</sub>	C1010C	15
	10 <sup>1</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>2</sub>	C1010CBT	16
	12 <sup>1</sup> / <sub>8</sub>	15 <sup>3</sup> / <sub>4</sub>	C1012C	15
	14 <sup>1</sup> / <sub>8</sub>	17 <sup>3</sup> / <sub>4</sub>	C1014C	15

12 Ton	5 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	RH120	20
	1 <sup>5</sup> / <sub>8</sub>	4 <sup>13</sup> / <sub>16</sub>	RH121	20
	1 <sup>5</sup> / <sub>8</sub>	4 <sup>13</sup> / <sub>16</sub>	RH121T	20
	3	7 <sup>1</sup> / <sub>4</sub>	RH123	20

15 Ton	1	4 <sup>7</sup> / <sub>8</sub>	C151C	15
	2 <sup>1</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	C152C	15
	4 <sup>1</sup> / <sub>8</sub>	7 <sup>7</sup> / <sub>8</sub>	C154C	15
	6 <sup>1</sup> / <sub>8</sub>	10 <sup>11</sup> / <sub>16</sub>	C156C	15
	8 <sup>1</sup> / <sub>8</sub>	12 <sup>11</sup> / <sub>16</sub>	C158C	15
	10 <sup>1</sup> / <sub>8</sub>	14 <sup>11</sup> / <sub>16</sub>	C1510C	15
	12 <sup>1</sup> / <sub>8</sub>	16 <sup>11</sup> / <sub>16</sub>	C1512C	15
	14 <sup>1</sup> / <sub>8</sub>	18 <sup>11</sup> / <sub>16</sub>	C1514C	15
	16	20 <sup>9</sup> / <sub>16</sub>	C1516C	15

17.5 Ton	2	6 <sup>7</sup> / <sub>8</sub>	RT172	22
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20 Ton	7 <sup>1</sup> / <sub>16</sub>	2	RLS200	18
	1 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	RSS202	19
	2	6 <sup>1</sup> / <sub>8</sub>	RH202	20
	2 <sup>1</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>8</sub>	RA202	17
	3	6 <sup>1</sup> / <sub>16</sub>	RH203	20
	4 <sup>1</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	RA204	17
	6	12 <sup>1</sup> / <sub>8</sub>	RH206	20
	6 <sup>1</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	RA206	17

25 Ton	1	5 <sup>1</sup> / <sub>2</sub>	C251C	15
	2	6 <sup>1</sup> / <sub>2</sub>	C252C	15
	4	8 <sup>1</sup> / <sub>2</sub>	C254C	15
	6 <sup>1</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>4</sub>	C256C	15
	6 <sup>1</sup> / <sub>4</sub>	13 <sup>3</sup> / <sub>8</sub>	C256CBT	16
	6 <sup>1</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>8</sub>	RD256	25
	8 <sup>1</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>	C258C	15

25 Ton	10 <sup>1</sup> / <sub>4</sub>	14 <sup>3</sup> / <sub>4</sub>	C2510C	15
	12 <sup>1</sup> / <sub>4</sub>	16 <sup>3</sup> / <sub>4</sub>	C2512C	15
	14 <sup>1</sup> / <sub>8</sub>	18 <sup>3</sup> / <sub>4</sub>	C2514C	15
	14 <sup>1</sup> / <sub>8</sub>	21 <sup>3</sup> / <sub>8</sub>	C2514CBT	16
	14 <sup>1</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>8</sub>	RD2514	25

30 Ton	1 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>16</sub>	RLS300	18
	2 <sup>1</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>8</sub>	RA302	17
	2 <sup>7</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>8</sub>	RSS302	19
	2 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>4</sub>	RH302	20
	2 <sup>1</sup> / <sub>2</sub>	8 <sup>7</sup> / <sub>16</sub>	RT302	22
	3	7 <sup>1</sup> / <sub>16</sub>	RH303	21
	4 <sup>1</sup> / <sub>8</sub>	9 <sup>3</sup> / <sub>8</sub>	RA304	17
	5 <sup>7</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>8</sub>	RHA306	20
	6	9 <sup>3</sup> / <sub>4</sub>	RH306	20
	6	11 <sup>1</sup> / <sub>16</sub>	RH306D	21
	6 <sup>1</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>8</sub>	RA306	17
10 <sup>1</sup> / <sub>8</sub>	17 <sup>1</sup> / <sub>4</sub>	RH3010	21	

50 Ton	5 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	RLS500S	18
	2 <sup>3</sup> / <sub>8</sub>	5	RSS502	19
	3	7 <sup>1</sup> / <sub>8</sub>	RH503	20
	3	10 <sup>9</sup> / <sub>16</sub>	RT503	22

55 Ton	2	4 <sup>15</sup> / <sub>16</sub>	R552C	26
	2	6 <sup>3</sup> / <sub>8</sub>	R552L	32
	2	6 <sup>7</sup> / <sub>8</sub>	C552C	15
	2 <sup>1</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	RA552	17
	4 <sup>1</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>4</sub>	RA554	17
	4 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>8</sub>	C554C	15
	6	8 <sup>15</sup> / <sub>16</sub>	R556C	26
	6	10 <sup>3</sup> / <sub>8</sub>	R556L	32
	6 <sup>1</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>4</sub>	RA556	17
	6 <sup>1</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>2</sub>	RA556L	30
	6 <sup>1</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>8</sub>	C556C	15
	6 <sup>1</sup> / <sub>4</sub>	12 <sup>31</sup> / <sub>32</sub>	RD556	25
	10	12 <sup>15</sup> / <sub>16</sub>	R5510C	26
	10	14 <sup>3</sup> / <sub>8</sub>	R5510L	32
	10	15 <sup>1</sup> / <sub>8</sub>	RA5510	17
	10 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>8</sub>	C5510C	15
13 <sup>1</sup> / <sub>8</sub>	19 <sup>27</sup> / <sub>32</sub>	RD5513	25	
13 <sup>1</sup> / <sub>4</sub>	18 <sup>1</sup> / <sub>8</sub>	C5513C	15	
18 <sup>1</sup> / <sub>8</sub>	25 <sup>7</sup> / <sub>8</sub>	RD5518	25	

60 Ton	3	9 <sup>1</sup> / <sub>4</sub>	RH603	20
	4	9 <sup>1</sup> / <sub>2</sub>	RHA604D	21
	5	9 <sup>1</sup> / <sub>2</sub>	RH605	21
	6	12 <sup>1</sup> / <sub>2</sub>	RH606	20
	10 <sup>1</sup> / <sub>8</sub>	18 <sup>1</sup> / <sub>16</sub>	RH6010	21

75 Ton	5 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	RLS750S	18
	6 <sup>1</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>8</sub>	C756C	15
	13 <sup>1</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>8</sub>	C7513C	15

80 Ton	13 <sup>1</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>8</sub>	RD8013	25
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100 Ton	5 <sup>5</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	RLS1000S	18
	1 <sup>1</sup> / <sub>2</sub>	5 <sup>11</sup> / <sub>16</sub>	RSS1002D	19
	1 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	RH1001	21
	2	5 <sup>1</sup> / <sub>2</sub>	R1002C	26
	2	6 <sup>41</sup> / <sub>64</sub>	R1002D	28
	2	7 <sup>1</sup> / <sub>4</sub>	R1002L	32
	2	8 <sup>5</sup> / <sub>8</sub>	C1002C	15
	2 <sup>1</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>	RA1002	17

Retracted				Retracted			
Stroke Height (in.)	Order No.	Page No.	Stroke Height (in.)	Order No.	Page No.	Stroke Height (in.)	Order No.

100 Ton	2 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	RSS1002	19
	3	10	RH1003	20
	4 <sup>7</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>8</sub>	RT1004	22
	6	9 <sup>1</sup> / <sub>2</sub>	R1006C	26
	6	10 <sup>41</sup> / <sub>64</sub>	R1006D	28
	6	11 <sup>1</sup> / <sub>4</sub>	R1006L	32
	6	12 <sup>3</sup> / <sub>8</sub>	RH1006	21
	6 <sup>1</sup> / <sub>4</sub>	11 <sup>3</sup> / <sub>4</sub>	RA1006	17
	6 <sup>1</sup> / <sub>4</sub>	13 <sup>3</sup> / <sub>8</sub>	RA1006L	30
	6 <sup>5</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>4</sub>	C1006C	15
	6 <sup>5</sup> / <sub>8</sub>	13 <sup>25</sup> / <sub>32</sub>	RD1006	25
	10	13 <sup>1</sup> / <sub>2</sub>	R10010C	32
	10	14 <sup>41</sup> / <sub>64</sub>	R10010D	28
	10	15 <sup>1</sup> / <sub>4</sub>	R10010L	32
	10 <sup>1</sup> / <sub>8</sub>	19 <sup>13</sup> / <sub>16</sub>	RH10010	21
	10 <sup>1</sup> / <sub>4</sub>	16 <sup>7</sup> / <sub>8</sub>	C10010C	15
13 <sup>1</sup> / <sub>8</sub>	20 <sup>9</sup> / <sub>32</sub>	RD10013	25	
20 <sup>1</sup> / <sub>8</sub>	28 <sup>9</sup> / <sub>32</sub>	RD10020	25	

150 Ton	9 <sup>1</sup> / <sub>16</sub>	4	RLS1500S	18
	2	6 <sup>3</sup> / <sub>8</sub>	R1502C	26
	2	7 <sup>7</sup> / <sub>16</sub>	R1502D	28
	2	8 <sup>1</sup> / <sub>8</sub>	R1502L	32
	5	12 <sup>1</sup> / <sub>8</sub>	RH1505	21
	6	10 <sup>3</sup> / <sub>8</sub>	R1506C	26
	6	11 <sup>7</sup> / <sub>16</sub>	R1506D	28
	6	12 <sup>1</sup> / <sub>8</sub>	R1506L	32
	6 <sup>5</sup> / <sub>8</sub>	14 <sup>7</sup> / <sub>8</sub>	RD1506	25
	8	13 <sup>3</sup> / <sub>4</sub>	RH1508	21
	10	14 <sup>3</sup> / <sub>8</sub>	R15010C	26
	10	15 <sup>7</sup> / <sub>16</sub>	R15010D	28
	10	16 <sup>1</sup> / <sub>8</sub>	R15010L	32
	13 <sup>1</sup> / <sub>8</sub>	21 <sup>3</sup> / <sub>8</sub>	RD15013	25
	18 <sup>1</sup> / <sub>8</sub>	26 <sup>17</sup> / <sub>32</sub>	RD15018	25

200 Ton	2	7 <sup>1</sup> / <sub>2</sub>	R2002C	26
	2	8 <sup>9</sup> / <sub>64</sub>	R2002D	28
	2	9 <sup>1</sup> / <sub>2</sub>	R2002L	32
	6	11 <sup>1</sup> / <sub>2</sub>	R2006C	26
	6	12 <sup>9</sup> / <sub>64</sub>	R2006D	28
	6	13 <sup>1</sup> / <sub>2</sub>	R2006L	32
	6 <sup>5</sup> / <sub>8</sub>	16	RD2006	25
	8	16 <sup>1</sup> / <sub>16</sub>	RH2008	21
	10	15 <sup>1</sup> / <sub>2</sub>	R20010C	26
	10	16 <sup>9</sup> / <sub>64</sub>	R20010D	28
	10	17 <sup>1</sup> / <sub>2</sub>	R20010L	32
	13 <sup>1</sup> / <sub>8</sub>	22 <sup>1</sup> / <sub>2</sub>	RD20013	25
	18 <sup>1</sup> / <sub>8</sub>	28 <sup>1</sup> / <sub>2</sub>	RD20018	25

250 Ton	3	11 <sup>7</sup> / <sub>16</sub>	RSS2503	19
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280 Ton	2	7 <sup>1</sup> / <sub>2</sub>	R2802C	26
	2	9 <sup>13</sup> / <sub>64</sub>	R2802D	28
	2	9 <sup>3</sup> / <sub>4</sub>	R2802L	32
	6	11 <sup>1</sup> / <sub>2</sub>	R2806C	26
	6	13 <sup>13</sup> / <sub>64</sub>	R2806D	28
	6	13 <sup>3</sup> / <sub>4</sub>	R2806L	32
	10	15 <sup>1</sup> / <sub>2</sub>	R28010C	26
	10	17 <sup>13</sup> / <sub>64</sub>	R28010D	28
	10	17 <sup>3</sup> / <sub>4</sub>	R28010L	32

300 Ton	6	17 <sup>9</sup> / <sub>32</sub>	RD3006	25
	13	24 <sup>9</sup> / <sub>32</sub>	RD30013	25

355 Ton	2	9 <sup>1</sup> / <sub>8</sub>	R3552C	26
	2	11 <sup>1</sup> / <sub>2</sub>	R3552L	32
	2	15 <sup>3</sup> / <sub>8</sub>	R3552D	26
	6	12 <sup>5</sup> / <sub>8</sub>	R3556C	26
	6	15 <sup>1</sup> / <sub>2</sub>	R3556L	32
	6	17 <sup>21</sup> / <sub>32</sub>	R3556D	28
	10	17 <sup>1</sup> / <sub>8</sub>	R35510C	26
	10	19 <sup>1</sup> / <sub>2</sub>	R35510L	32
	10	21 <sup>21</sup> / <sub>32</sub>	R35510D	28

400 Ton	6	18 <sup>5</sup> / <sub>8</sub>	RD4006	25
	13	25 <sup>5</sup> / <sub>8</sub>	RD40013	25

430 Ton	2	10 <sup>3</sup> / <sub>8</sub>	R4302C	26
	2	12 <sup>5</sup> / <sub>16</sub>	R4302D	28
	6	14 <sup>3</sup> / <sub>8</sub>	R4306C	26
	6			

# CYLINDER SELECTION

Choosing The Right Cylinder

**Step 1** Select the hydraulic cylinder that best suits the application.

See page 7, 12-13.

**Step 2** Select the hydraulic pump, with valve option, that best matches the cylinder and application. See pages 6, 42-45, 120-121.

**Step 3** Select the hydraulic accessories you need. See pages 34-39.

## WHAT TYPE OF CYLINDER DO YOU NEED?

1. To determine a cylinder's force capacity:

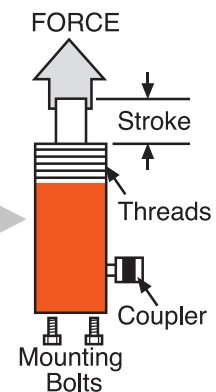
Force pounds  $\times$  Cylinder Effective Area (sq. in.) = PSI from Pump

2. To determine oil capacity of a cylinder:

Oil Capacity (cu. in.)  $\times$  Cylinder Effective Area (sq. in.) = Cylinder Stroke (in.)

3. To determine reservoir capacity needed for a multiple cylinder system:

Usable Oil  $\times$  Oil Cap. of Cyl. (cu. in.) = Number of Cyl. in System



## CONSIDERATIONS:

1. What push or pull tonnage is required per cylinder in your application? (Rule of thumb; Always choose a cylinder with a tonnage rating of 20% or more than what is required to lift the load.)
2. What is the push or pull stroke length required?
3. Does the cylinder need to push, pull or both? (Single-acting cylinders extend the piston under hydraulic pressure; double-acting cylinders extend and retract the piston under pressure.)
4. Does the application require multiple cylinders?
5. Is the application stationary, or must the components be light in weight for easy portability?
6. Do you need to extend a rod or cable through the center of the cylinder for the application, as in a tensioning operation?
7. Does the application require that the cylinder fit within limited-clearance work areas?
8. Does the application require that the cylinder be "dead-ended" at the end of its work stroke?
9. Will the cylinder need to withstand off-center loads? Cylinders with swivel caps are available.
10. Does the application require that the lifted load be supported for extended periods of time? Locking collars are ideal for such jobs, as are cribbing blocks.
11. Is corrosion resistance required? Our unique "Power Tech" surface treatment is standard on many Power Team cylinders, and optional on many of our cylinders which feature steel construction.
12. Will the application involve high cycles (over 2,500 in the cylinder's lifetime)? Our "RD," "RH," "RP" and "C" series cylinders are ideal choices. Please refer to pages 12-13 for the capabilities of each cylinder.





## ONLY POWER TEAM PROVIDES THE *POWER TECH* SURFACE TREATMENT:

- High corrosion and wear resistance, anti-galling properties.
- Significantly increases the life expectancy of a cylinder.
- Retains lubricants, prevents bronze and other materials from sticking to surface.
- Increases fatigue and impact strength.
- Increases surface yield and tensile strength.
- Provides improved abrasion and scratch resistance.
- Causes no appreciable dimensional change.
- 56 RC minimum surface hardness.
- Passes ASTM B117-85 100 hour salt spray corrosion resistance tests.

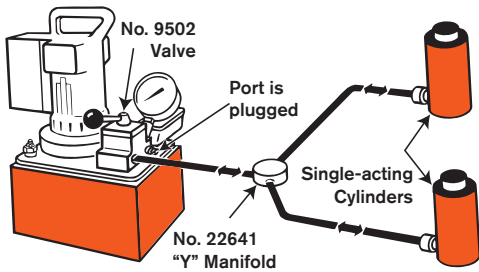
The “**Power Tech**” surface treatment is standard on the gland nut, cylinder body and piston/piston rod of the following cylinders: RLS50, RLS100, RLS200, RLS300, RLS500S, RLS750S, RLS1000S, RLS1500S, and RSS1002. NOTE: Bronze plating may be used in place of the “Power Tech” surface finish for the piston/piston rod of any of the above cylinders. The “**Power Tech**” surface treatment is standard on the standpipe of all “RH” series single and double-acting cylinders. The “**Power Tech**” surface treatment is standard on the piston/piston rod of the RT172, RT302 and RT503 cylinders.

# HYDRAULIC CIRCUITS

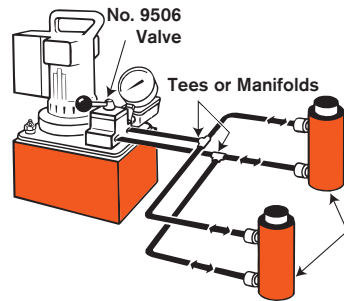
Pumps, Cylinders,  
Controls

Countless applications are possible with Power Team hydraulic components. For presses, lifting, jacking applications, production or maintenance setups. The pump shown is a typical electric/hydraulic unit. Electric, air or gas-driven pumps are available.

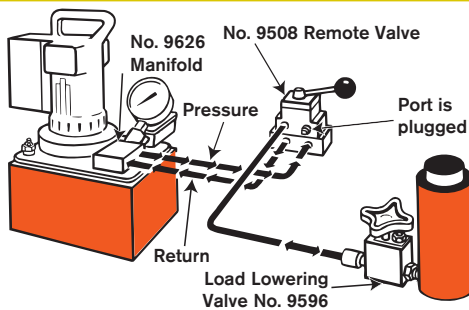
**1** Single-acting cylinder or cylinders in the circuit, controlled by a pump mounted valve.



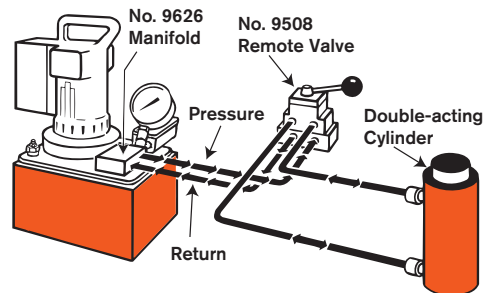
**2** Double-acting cylinder or cylinders in the circuit, controlled by a pump mounted valve.



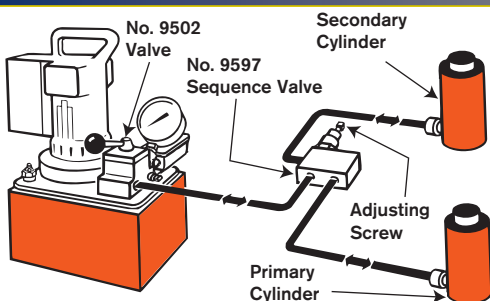
**3** Single-acting cylinder controlled by a remote mounted valve.



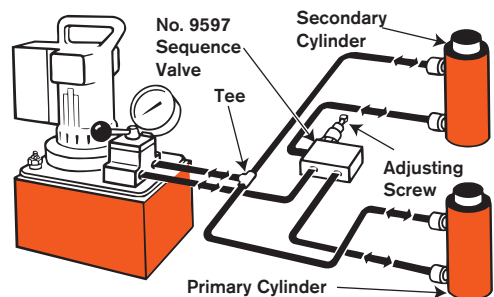
**4** Double-acting cylinders controlled by a remote mounted valve.



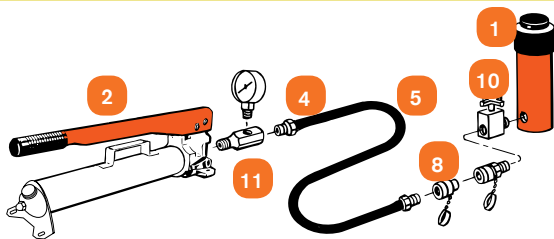
**5** Single-acting cylinders with a sequence valve which controls the primary and secondary cylinder circuits.



**6** Double-acting cylinder with a sequence valve which controls the primary and secondary cylinder circuits.

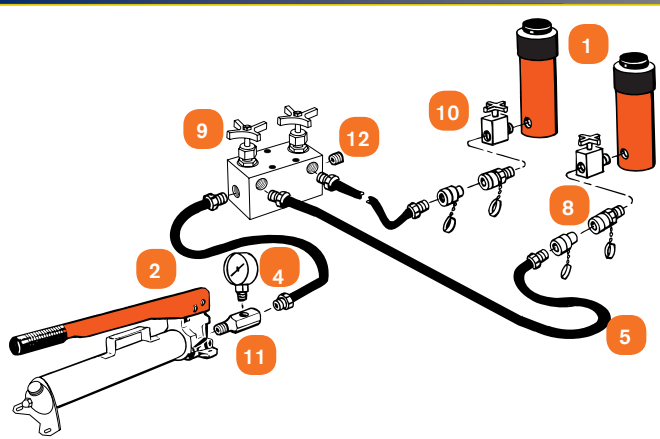


Basic single-acting system with a hand pump, gauge, hose and single-acting cylinder.

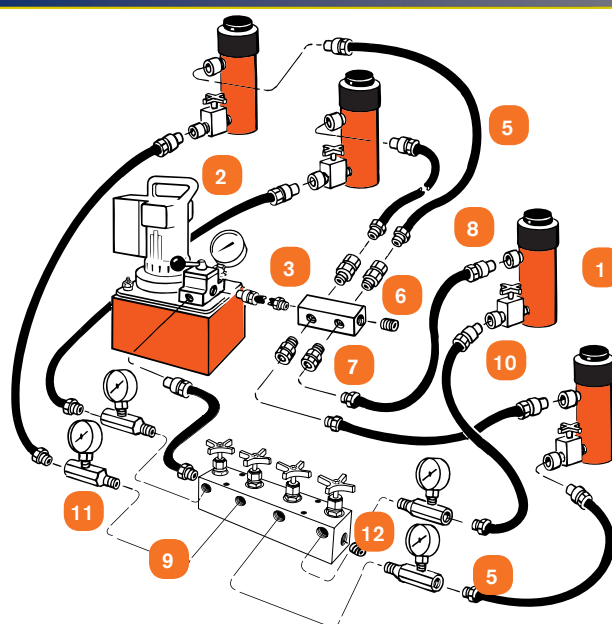


- 1 Cylinder – applies hydraulic force.
- 2 Pump – a device for converting mechanical energy to fluid energy.
- 3 Directional valve – controls the direction of hydraulic fluid in the system.
- 4 Gauge – measures P.S.I. pressure (Pounds per Square Inch) and/or force.
- 5 Hose – transports hydraulic fluid.
- 6 Manifold – allows distribution of hydraulic fluid from one source to several cylinders. (No. 9617)
- 7 Swivel Connector – allows proper alignment of valves and/or gauges. Used when units being connected cannot be rotated. (No. 10469)
- 8 Quick Coupling – “hose half” and “cylinder half” couplings are used for quick connection and fluid flow check when separated. (No. 9797 and 9798)
- 9 Shut-Off Valve – regulates the flow of hydraulic fluid to or from cylinders. (No. 9642 or 9644)
- 10 Load-Lowering Valve – allows metered lowering of cylinder and provides safety when prolonged load holding is required. (No. 9596)
- 11 T-Gauge Adapter – allows for installation of pressure/tonnage gauge anywhere in the hydraulic system. (No. 9670)
- 12 Pipe Plug – for blocking unused ports within the system. (No. 10909)

Basic single-acting system with a hand pump, gauge, hose, multiple shut-off valves, load-lowering valves and multiple cylinders.



Basic double-acting system with an electric/hydraulic pump, shut-off valves, load-lowering valves and multiple double-acting cylinders.



FROM  
2  
TO  
1220  
TONS!

# CYLINDERS

## SUPERIOR FEATURES OF POWER TEAM HYDRAULIC CYLINDERS:

We build our own cylinders in our ISO 9001 registered manufacturing facility. All Power Team cylinders are date coded, and stamped with a maximum pressure rating and capacity. Each cylinder we make complies with the demanding ASME B30.1 standard and are pressure tested to 125% of capacity before leaving our factory. Some other features included:

- Cylinder bores are roller burnished to harden and smooth the surface, improving seal life by 30%.
- Base mounting holes withstand full cylinder capacity.
- Typical cylinder burst pressure range is from 25,000 to 35,000 psi, well-beyond extreme usage.
- Cylinders with gland nuts may be “dead-ended” at 10,000 psi and

are assembled/tested by certified assemblers.


- Eddy current and mag particle inspections detect flaws in the steel.
- Cylinder bodies are solid steel or aluminum, not welded like some competitive cylinders.
- Material is removed from surface to assure that any flaws are removed.




Series	Description	Page	Action	TONNAGE										
				2	5	10	12	15	17.5	20	25	30	50	
C	General Purpose	14-15	Single/Spring		X	X		X			X			
CBT	Threaded End Cylinders	16	Single/Spring		X	X					X			
RA	Aluminum Cylinders	17	Single/Spring							X		X		
RD	Industrial Cylinders	18	Double Acting		4	9	16				X			
RLS	Low Profile Cylinders	18	Single/Spring		X	X				X		X	X	
RSS	Shorty Cylinders	19	Single/Spring/Double Act			X				X		X	X	
RH	Center Hole Cylinders	20-21	Single/Spring/Double Act			X	X			X		X	X	
RT	Center Hole Power Twin Cylinders	22	Single/Spring/Double Act						X			X	X	
RP	Pull Cylinders	23	Single/Spring	X	X									
RD	Double Acting Cylinders	24-25	Double Acting			X					X			
R	High Tonnage Cylinder	26, 28	Single Acting/Load Return/ Double Acting											
RL	Locking Collar Cylinders	30, 32-33	Single Acting/Load Return											
RC	Pancake Cylinders	31	Single Acting/Load Return											




Page  
**C SERIES...14**  
General Purpose Cylinders




Page  
**CBT SERIES... 16**  
Threaded End Cylinders



Page  
**RA SERIES...17**  
Aluminum Cylinders



Page  
**RLS SERIES...18**  
Low Profile Cylinders



Page  
**RSS SERIES...19**  
Shorty Cylinders



Page  
**RH SERIES...20**  
Center Hole Cylinders




Page  
**RT SERIES...22**  
Center Hole Power-twin® Cylinders




Page  
**RP SERIES...23**  
Pull Cylinders



Page  
**RD SERIES...24**  
Double-Acting, Hydraulic-Return



Page  
**R SERIES...26, 28**  
Single Acting, Load Return  
Double-Acting,  
Hydraulic Return




Page  
**RL ALUMINUM ...30**  
Locking Collar Aluminum




Page  
**RC SERIES...31**  
Pancake cylinders



Page  
**RL STEEL...32**  
Locking Collar Steel



Page  
**ACCESSORIES ...34-39**




	TONNAGE														740 TO 1220		
	55	60	75	80	100	150	200	250	280	300	355	400	430	500	565	620	
<b>C</b>	X		X		X												
<b>CBT</b>																	
<b>RA</b>	X				X												
<b>RLS</b>			X		X	X											
<b>RSS</b>					X			X									
<b>RH</b>		X			X	X	X										
<b>RT</b>					X												
<b>RP</b>																	
<b>RD</b>	X			X	X	X	X			X		X		X			
<b>R</b>	X				X	X	X		X		X		X			X	X
<b>RL</b>	X†				X†	X	X		X		X		X			X	X
<b>RC</b>	X				X	X		240		X					620		

† LOCKING COLLAR AVAILABLE IN ALUMINUM.

# GENERAL PURPOSE

C Series

5-100 TONS

Single Acting, Spring Return

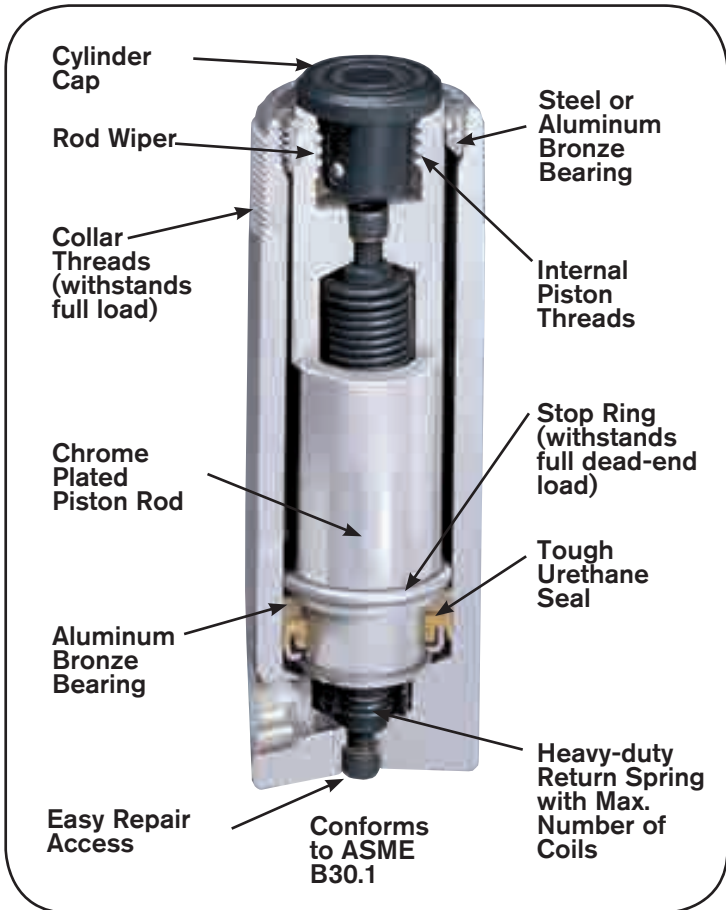


## RUGGED, HIGH QUALITY CYLINDER USED FOR LIFTING AND PRESSING

- Aluminum bronze bearing reduces wear caused by off-center loads.
- Maximum sized springs speed piston return and increase spring life.
- Solid steel cylinder body for durability.
- Chrome plated piston rod resists wear and corrosion.
- Wide range of accessories available to thread onto piston rod, collar, or onto cylinder base.
- Base mounting holes standard on 5 through 55 ton cylinders; optional on 75 and 100 ton cylinders.
- A 3/8" NPTF female half coupler is standard.

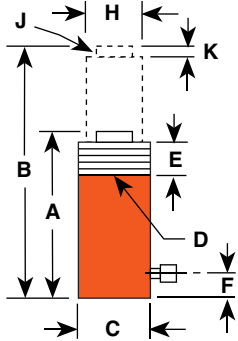
Cylinder Tonnage	No. Holes	Thread Size	Thread Depth	Bolt Circle Diameter (in.)
5	2†	1/4-20	0.38	1.00
10		5/16-18	0.50	1.56
15		3/8-16		1.88
25		1/2-13	0.75	2.31
55		3/4-10	1.00	3.75
*Optional 75	4	3/4-10	1.00	4.50
*Optional 100		1-8		4.75

\* Consult Factory (45° from coupler) † 90° from coupler.



C756C

"C" Series Cyl. Caps,  
see page 233.



Cyl Cap	Stroke (in.)	Order No.	Oil Cap. (cu.in.)	A	B	C	D	E	F	H	J	K	Bore Dia. (in.)	Cylinder Effective Area (sq. in.)	Internal Press. at Cap. (psi)	Tons at 10,000 (psi)	Prod. Wt. (lbs.)
				Re- tracted Height (in.)	Ex- tended Height (in.)	Outside Dia. (in.)	Collar Thread (in.)	Piston Collar Thread (in.)	Base to Port (in.)	Piston Rod Dia. (in.)	Piston Rod Int. Thread and Depth (in.)	Rod Protru- sion (in.)					
5	1	C51C	1.1	4 <sup>11</sup> / <sub>32</sub>	5 <sup>7</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1	3 <sup>4</sup> / <sub>4</sub> -16 x 5 <sup>8</sup> / <sub>8</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	.994	10,061	4.97	2.25
	3 <sup>1</sup> / <sub>4</sub>	C53C	3.2	6 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1	3 <sup>4</sup> / <sub>4</sub> -16 x 5 <sup>8</sup> / <sub>8</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	.994	10,061	4.97	3.26
	5 <sup>1</sup> / <sub>4</sub>	C55C	5.2	8 <sup>1</sup> / <sub>2</sub>	13 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1	3 <sup>4</sup> / <sub>4</sub> -16 x 5 <sup>8</sup> / <sub>8</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	.994	10,061	4.97	4
	7 <sup>1</sup> / <sub>4</sub>	C57C	7.2	10 <sup>3</sup> / <sub>4</sub>	18	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1	3 <sup>4</sup> / <sub>4</sub> -16 x 5 <sup>8</sup> / <sub>8</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	.994	10,061	4.97	5
	9 <sup>1</sup> / <sub>4</sub>	C59C	9.2	12 <sup>3</sup> / <sub>4</sub>	22	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1	3 <sup>4</sup> / <sub>4</sub> -16 x 5 <sup>8</sup> / <sub>8</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	.994	10,061	4.97	5.8
10	1	C101C	2.2	3 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	4
	2 <sup>1</sup> / <sub>8</sub>	C102C	4.8	4 <sup>3</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	5
	4 <sup>1</sup> / <sub>8</sub>	C104C	9.2	6 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	6.7
	6 <sup>1</sup> / <sub>8</sub>	C106C	13.7	9 <sup>3</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	9.4
	8 <sup>1</sup> / <sub>8</sub>	C108C	19.9	11 <sup>3</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	11
	10 <sup>1</sup> / <sub>8</sub>	C1010C	22.6	13 <sup>3</sup> / <sub>4</sub>	23 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	13
	12 <sup>1</sup> / <sub>8</sub>	C1012C	27.1	15 <sup>3</sup> / <sub>4</sub>	27 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	14.6
	14 <sup>1</sup> / <sub>8</sub>	C1014C	31.6	17 <sup>3</sup> / <sub>4</sub>	31 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	16.2
16	C1016C	36.1	20 <sup>1</sup> / <sub>2</sub>	36 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	1 <sup>11</sup> / <sub>16</sub>	2.236	8,948	11.2	18.5	
15	1	C151C	3.1	4 <sup>7</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	7.5
	2 <sup>1</sup> / <sub>8</sub>	C152C	6.7	5 <sup>7</sup> / <sub>8</sub>	8	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	8.9
	4 <sup>1</sup> / <sub>8</sub>	C154C	12.9	7 <sup>7</sup> / <sub>8</sub>	12	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	11.5
	6 <sup>1</sup> / <sub>8</sub>	C156C	19.2	10 <sup>11</sup> / <sub>16</sub>	16 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	15.3
	8 <sup>1</sup> / <sub>8</sub>	C158C	25.5	12 <sup>11</sup> / <sub>16</sub>	20 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	17.9
	10 <sup>1</sup> / <sub>8</sub>	C1510C	31.8	14 <sup>11</sup> / <sub>16</sub>	24 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	20.7
	12 <sup>1</sup> / <sub>8</sub>	C1512C	38.1	16 <sup>11</sup> / <sub>16</sub>	28 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	23.2
	14 <sup>1</sup> / <sub>8</sub>	C1514C	44.4	18 <sup>11</sup> / <sub>16</sub>	32 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	26
16	C1516C	50.3	20 <sup>3</sup> / <sub>16</sub>	36 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> -16	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1-8 x 3 <sup>4</sup> / <sub>4</sub>	1 <sup>4</sup> / <sub>4</sub>	2	3.142	9,549	15.7	28.2	
25	1	C251C	5.1	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub> -12	1 <sup>15</sup> / <sub>16</sub>	1	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16 x 7 <sup>8</sup> / <sub>8</sub>	3 <sup>8</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	5.15	9,699	25.8	11.9
	2	C252C	10.3	6 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub> -12	1 <sup>15</sup> / <sub>16</sub>	1	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16 x 7 <sup>8</sup> / <sub>8</sub>	3 <sup>8</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	5.15	9,699	25.8	13.9
	4	C254C	20.6	8 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub> -12	1 <sup>15</sup> / <sub>16</sub>	1	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16 x 7 <sup>8</sup> / <sub>8</sub>	3 <sup>8</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	5.15	9,699	25.8	17.6
	6 <sup>1</sup> / <sub>4</sub>	C256C	32.2	10 <sup>3</sup> / <sub>4</sub>	17	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub> -12	1 <sup>15</sup> / <sub>16</sub>	1	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16 x 7 <sup>8</sup> / <sub>8</sub>	3 <sup>8</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	5.15	9,699	25.8	21.7
	8 <sup>1</sup> / <sub>4</sub>	C258C	42.5	12 <sup>3</sup> / <sub>4</sub>	21	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub> -12	1 <sup>15</sup> / <sub>16</sub>	1	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16 x 7 <sup>8</sup> / <sub>8</sub>	3 <sup>8</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	5.15	9,699	25.8	25.6
	10 <sup>1</sup> / <sub>4</sub>	C2510C	52.8	14 <sup>3</sup> / <sub>4</sub>	25	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub> -12	1 <sup>15</sup> / <sub>16</sub>	1	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16 x 7 <sup>8</sup> / <sub>8</sub>	3 <sup>8</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	5.15	9,699	25.8	29.3
	12 <sup>1</sup> / <sub>4</sub>	C2512C	63.2	16 <sup>3</sup> / <sub>4</sub>	29	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub> -12	1 <sup>15</sup> / <sub>16</sub>	1	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16 x 7 <sup>8</sup> / <sub>8</sub>	3 <sup>8</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	5.15	9,699	25.8	33.1
	14 <sup>1</sup> / <sub>4</sub>	C2514C	73.5	18 <sup>3</sup> / <sub>4</sub>	33	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub> -12	1 <sup>15</sup> / <sub>16</sub>	1	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16 x 7 <sup>8</sup> / <sub>8</sub>	3 <sup>8</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	5.15	9,699	25.8	36.8
55	2	C552C	22.1	6 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	5	5-12	2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	None	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	11.04	9,959	55.2	32.5
	4 <sup>1</sup> / <sub>4</sub>	C554C	46.9	9 <sup>1</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>8</sub>	5	5-12	2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	None	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	11.04	9,959	55.2	41.3
	6 <sup>1</sup> / <sub>4</sub>	C556C	69.0	11 <sup>1</sup> / <sub>8</sub>	17 <sup>3</sup> / <sub>8</sub>	5	5-12	2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	None	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	11.04	9,959	55.2	51
	10 <sup>1</sup> / <sub>4</sub>	C5510C	113.2	15 <sup>1</sup> / <sub>8</sub>	25 <sup>3</sup> / <sub>8</sub>	5	5-12	2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	None	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	11.04	9,959	55.2	67
	13 <sup>1</sup> / <sub>4</sub>	C5513C	146.3	18 <sup>1</sup> / <sub>8</sub>	31 <sup>3</sup> / <sub>8</sub>	5	5-12	2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	None	1 <sup>1</sup> / <sub>8</sub>	3 <sup>4</sup> / <sub>4</sub>	11.04	9,959	55.2	78
75	6 <sup>1</sup> / <sub>8</sub>	C756C	97.4	12 <sup>1</sup> / <sub>8</sub>	18 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub> -12	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	None	1 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	15.90	9,434	79.5	73.5
	13 <sup>1</sup> / <sub>8</sub>	C7513C	208.7	19 <sup>1</sup> / <sub>8</sub>	32 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub> -12	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	None	1 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	15.90	9,434	79.5	109.5
100	2	C1002C	41.2	8 <sup>3</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	None	1 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	20.62	9,695	103.1	63
	6 <sup>3</sup> / <sub>8</sub>	C1006C	137.0	13 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	None	1 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	20.62	9,695	103.1	91
	10 <sup>1</sup> / <sub>4</sub>	C10010C	211.5	16 <sup>1</sup> / <sub>8</sub>	27 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	None	1 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	20.62	9,695	103.1	113

# THREADED END

## CBT Series

5-25 TONS Single Acting,  
Spring Return



### THREADED PISTON ROD END AND BASE THREADS ACCOMMODATE ACCESSORIES AND ADAPTERS.

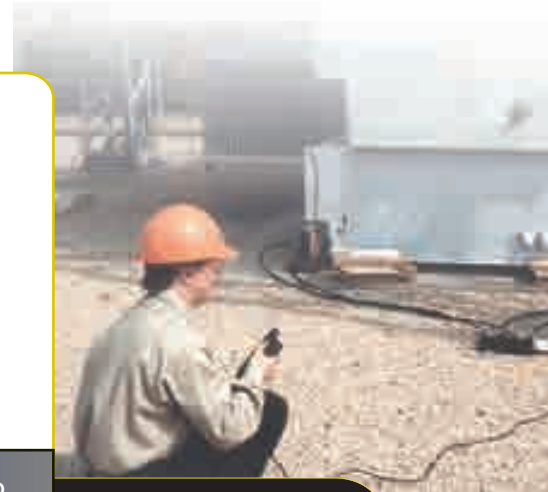
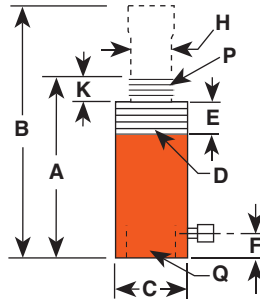
- Threaded cylinder collars, piston rod ends, and internal base threads simplify mounting.
- A 9796 3/8" NPTF female half coupler is standard with each cylinder; oil port threads are 3/8" NPTF.

ASME B30.1  
10,000 PSI



C55CBT

C2514CBT



Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A Re-tracted Height (in.)	B Ex-tended Height (in.)	C Outside Dia. (in.)	D Collar Thread (in.)	E Collar Length (in.)	F Base to Port (in.)	H Piston Rod Dia. (in.)	K Piston Rod Protrusion (in.)	P Piston Rod Thread* (NPT)	Q Internal Base Thread (NPSM) (in.)	Bore Dia. (in.)	Cyl. Eff. Area (sq. in.)	Internal Press. at Cap. (psi)	Tons at 10,000 (psi)	Prod. Wt. (lbs.)
5	5 1/4	C55CBT	5.2	10 1/2	15 3/4	1 1/2	1 1/2-16	1 1/8	1 7/8	1	1 1/8	3/4-14	3/4-14	1 1/8	.994	10,061	4.97	4.4
10	6 1/8	C106CBT	13.9	11 1/2	17 5/8	2 1/4	2 1/4-14	1 1/8	1 11/16	1 1/2	1 1/16	1 1/4-11 1/2	1 1/4-11 1/2	1 11/16	2,236	8,948	11.2	10.3
	10 1/8	C1010CBT	22.9	15 1/2	25 5/8	2 1/4	2 1/4-14	1 1/8	1 11/16	1 1/2	1 1/16	1 1/4-11 1/2	1 1/4-11 1/2	1 11/16	2,236	8,948	11.2	13.9
25	6 1/4	C256CBT	32.2	13 3/8	19 5/8	3 3/8	3 5/16-12	1 5/16	1 7/8	2 1/4	1 7/8	2-11 1/2	2-11 1/2	2 9/16	5,157	9,699	25.8	24.6
	14 1/4	C2514CBT	73.5	21 3/8	35 5/8	3 3/8	3 5/16-12	1 5/16	1 7/8	2 1/4	1 7/8	2-11 1/2	2-11 1/2	2 9/16	5,157	9,699	25.8	40.2



# ALUMINUM

## RA-SERIES

20-100 TONS

Single Acting, Spring Return

### HALF THE WEIGHT OF EQUAL CAPACITY STEEL CYLINDERS.

- Aluminum body resists sparking in explosive environments.
- Hard coated aluminum piston rod and cylinder bore resist wear and corrosion.
- Grooved piston top helps keep the load from sliding on top of piston.
- Designed for jacking and other non- production operations.

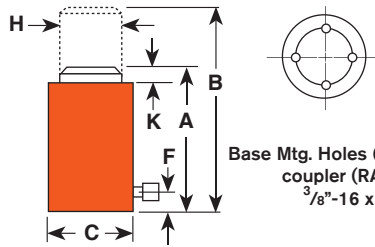


ASME B30.1  
10,000 PSI

RA552



RA1006



Base Mtg. Holes (4) at 45° from coupler (RA556, RA5510)  
3/8"-16 x 4 1/2" Dia. B.C.

Cyl. Cap. (tons)	Order No.	Oil Cap. (cu. in.)	Retracted Ht. (in.)	Extended Ht. (in.)	Outside Dia. (in.)	Base to Port (in.)	Piston Rod Dia. (in.)	Piston Rod Protrusion (in.)	Bore Dia. (in.)	Cylinder Effective Area (sq. in.)	Internal Pressure at Cap. (psi)	Tons at 10,000 psi	Product Wt. (lbs.)
20	2 1/8 RA202	9.41	6 3/8	8 1/2	3 3/4	1 1/4	2	5/16	2 3/8	4.43	9,030	22.15	7.7
	4 1/8 RA204	18.27	8 3/8	12 1/2	3 3/4	1 1/4	2	5/16	2 3/8	4.43	9,030	22.15	9.3
	6 1/8 RA206	27.13	10 3/8	16 1/2	3 3/4	1 1/4	2	5/16	2 3/8	4.43	9,030	22.15	11.3
30	2 1/8 RA302	13.79	7 3/8	9 1/2	4 1/4	1 1/4	2 1/2	3/8	2 7/8	6.49	9,250	32.45	11.1
	4 1/8 RA304	26.77	9 3/8	13 1/2	4 1/4	1 1/4	2 1/2	3/8	2 7/8	6.49	9,250	32.45	13.1
	6 1/8 RA306	39.75	11 3/8	17 1/2	4 1/4	1 1/4	2 1/2	3/8	2 7/8	6.49	9,250	32.45	15.1
55	2 1/8 RA552	23.50	6 3/4	8 7/8	5 1/4	1 3/8	3 1/8	1/4	3 3/4	11.04	9,960	55.2	16.2
	4 1/8 RA554	45.50	8 3/4	12 7/8	5 1/4	1 3/8	3 1/8	1/4	3 3/4	11.04	9,960	55.2	19.6
	6 1/8 RA556*	67.60	10 3/4	16 7/8	5 1/4	1 3/8	3 1/8	1/4	3 3/4	11.04	9,960	55.2	24.0
100	10 RA5510*	110.40	15 1/8	25 1/8	5 1/4	1 3/8	3 1/8	1/4	3 3/4	11.04	9,960	55.2	31.8
	2 1/8 RA1002	43.80	7 3/4	9 7/8	7 3/8	1 3/16	4 1/8	1/8	5 1/8	20.62	9,696	103.1	33.4
	6 1/4 RA1006*	129.00	11 3/4	18	7 3/8	1 3/16	4 1/8	1/8	5 1/8	20.62	9,696	103.1	49.9

\* Equipped with carrying handles.



# LOW PROFILE

RLS Series

5-150 Ton

Single-Acting, Spring Return



CYLINDERS

## IDEAL FOR CONFINED AREAS FROM 1-5/8" TO 4" CLEARANCE.

- Cylinder body, piston and gland nut "Power Tech" treated for corrosion and abrasion resistance (see page 8).
- Standard domed piston rod (5-30 ton) or swivel cap (50-150 ton) minimize effects of off-center loading.
- Unique heavy duty spring provides fast piston return.
- A 9796 3/8" NPTF female half coupler is standard with each cylinder (the RLS50 has a 3/8" coupler which is not angled). Oil ports are 3/8" NPTF.
- Couplers on all cylinders, except RLS50, are angled upward for extra clearance.



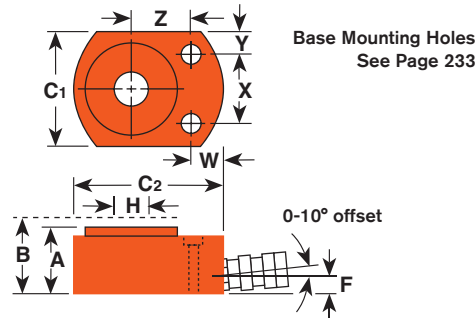
RLS100



ASME B30.1  
10,000 PSI



RLS1000S



Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A	B	C1 & C2	F	H	W	X	Y	Z	Bore Dia. (in.)	Cyl. Area (sq. in.)	Eff. at Cap. (psi)	Int. 10,000 psi	Tons at 10,000 psi	Prod. Wt. (lbs.)
				Re-tracted Height (in.)	Ex-tended Height (in.)	Outside Dia. (in.)	Base Port (in.)	Piston Rod Dia. (in.)	Mounting Hole Location (in.)									
5	9/16	RLS50	.62	1 5/8	2 3/16	1 5/8 x 2 9/16	3/4	5/8	3/4	1 1/8	1/4	1	1 1/8	.994	10,061	4.97	2.2	
10	7/16	RLS100	1.0	1 3/4	2 3/16	2 3/16 x 3 1/4	5/8	3/4	1 1/16	1 7/16	3/8	1 5/16	1 11/16	2.236	8,943	11.18	3.3	
20	7/16	RLS200	2.0	2	2 7/16	3 x 4	2 1/32	1 1/8	2 3/32	1 15/16	1 7/32	1 9/16	2 3/8	4.430	9,029	22.15	5.6	
30	1/2	RLS300	3.2	2 5/16	2 13/16	3 3/4 x 4 1/2	2 3/32	1 3/8	1 3/16	2 1/16	2 7/32	1 3/4	2 7/8	6.492	9,242	32.46	8.6	
50	5/8	RLS500S	6.0	2 5/8	3 1/4	4 1/2 x 5 1/2	2 7/32	1 3/4	1 5/16	2 5/8	1 5/16	2 1/8	3 1/2	9.621	10,394	48.10	14.0	
75	5/8	RLS750S	9.9	3 1/8	3 3/4	5 17/32 x 6 1/2	1	2 1/8	1 5/16	3	1 17/64	2 19/32	4 1/2	15.904	9,431	79.52	23.3	
100	5/8	RLS1000S	12.3	3 3/8	4	6 x 7	1	2 1/2	1 3/16	3	1 1/2	2 13/16	5	19.635	10,186	98.17	30.0	
150	9/16	RLS1500S	17.2	4	4 9/16	7 1/2 x 8 1/2	1 5/16	3	1 5/16	4 5/8	1 7/16	3 1/8	6 1/4	30.680	9,778	153.39	52.0	

# SHORTY

RSS Series

10-250 Ton

Single-Acting, Spring Return  
& Double-Acting

## IDEAL FOR CONFINED AREAS FROM 3-1/2" TO 11-7/16" CLEARANCE.

- Power Tech plated piston rods and gland nuts resist scoring and corrosion.
- Heavy duty return spring (except for double-acting models) provides fast piston return & low collapsed height.
- Coupler on 10 thru 50 ton models is angled upward 5° for added clearance.
- Grooved piston top keeps load from sliding.
- Cylinders can be "dead-ended" at full capacity.
- Removable carrying handles on 100 ton and 250 ton models.



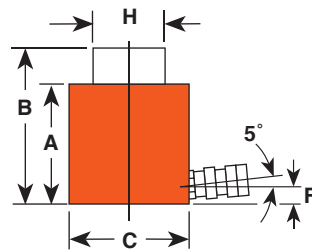
RSS2503



RSS302



Cribbing blocks are shown in a 30 ton RSS302 "Shorty" cylinder. For more information see pg 38.



ASME B30.1  
10,000 PSI



Cyl Capacity (Tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)		A Retracted Height (in.)	B Extended Height (in.)	C Outside Dia. (in.)	F Base to Port (in.)	H Piston Rod Dia. (in.)	Bore Dia. (in.)	Cylinder Effective Area (sq. in.)	Internal Press. at Cap. (psi)	Tons at Prod.	
			Push	Return									10,000 psi	Wt. (lbs.)
10	1 1/2	RSS101	3.4	-	3 1/2	5	2 3/4	5/8	1 1/2	1 11/16	2.24	8,943	11.2	6.0
20	1 3/4	RSS202	7.7	-	3 3/4	5 1/2	3 9/16	5/8	2 5/32	2 3/8	4.43	9,029	22.1	9.9
30	2 7/16	RSS302	15.8	-	4 5/8	7 1/16	4	5/8	2 1/2	2 7/8	6.49	9,243	32.5	14.7
50	2 3/8	RSS502	22.8	-	5	7 3/8	4 7/8	3/4	3 1/8	3 1/2	9.62	10,393	48.1	23.2
100	2 1/4	RSS1002	44.2	-	5 1/2	7 3/4	6 5/8	15/16	4 3/8	5	19.63	10,186	98.2	47.3
100	1 1/2	RSS1002D	29.4	12.9	5 11/16	7 3/16	6 7/8	15/16*	3 3/4	5	19.63	10,186	98.2	54.6
250	3	RSS2503	150.6	-	11 7/16	14 7/16	9 7/8	1 13/16	5 1/2	8	50.22	9,956	251.1	220.0

\*Cylinder top to port is 1 9/16

See pages 28-33 & 124-133 for hydraulic accessories.

# CENTER HOLE

RH Series

10-100 Ton

Single-Acting, Spring Return



CYLINDERS

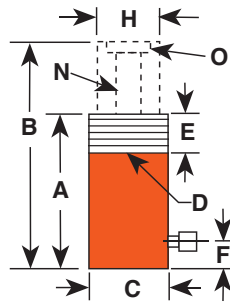


ASME B30.1  
10,000 PSI

10, 20, 100 Ton  
Single-Acting Models  
Feature Plain Collar

## IDEAL FOR PULLING AND TENSIONING OF CABLES, ANCHOR BOLTS, FORCING SCREWS, ETC.

- Interchangeable piston head inserts (see page 39) provide versatility of application.
  - 12, 20\*, 30\*, 50, 60 Ton Single-Acting Models Feature Threaded Collar
  - Withstands full “dead-end” loads.
  - Corrosion resistant standpipe has “Power Tech” treatment.
  - All cylinders except RH120 are furnished with a 9796 3/8” NPT female half coupler.
  - Aluminum cylinder body and piston are featured on the RHA306 cylinder.
- \* Model RH203 and RHA306 do not feature the collar thread. See the chart below.



Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A Re-tracted Height (in.)	B Ex-tended Height (in.)	C Outside Dia. (in.)	D Collar Thread (in.)	E Collar Thread Length (in.)	F Base to Port (in.)	H Piston Rod Dia. (in.)	N Center Hole Dia. (in.)	O Insert and Size	Mounting Bolt Circle (in.)	Cylinder Effective Area (sq. in.)	Internal Press. at Cap. (psi)	Tons at 10,000 psi	Prod. Wt. (lbs.)
10	2 1/2	RH102	5.52	5 5/16	7 13/16	3	None	None	1	2 1/16	49/64	1 3/4-12	1/4-20 x 2 3/8	2.21	9,054	11	9
10	8	RH108	17.68	11 5/16	19 9/16	3	None	None	1	2 1/16	49/64	1 3/4-12	1/4-20 x 2 3/8	2.21	9,054	11	18.7
12	5/16	RH120**	.87	2 3/16	2 1/2	2 3/4	2 3/4-16	1 1/4	3/8	1 3/8	1 1/16	3/4-16	5/16-18 x 2	2.76	8,692	13.8	3
12	1 5/8	RH121	4.49	4 13/16	6 7/16	2 3/4	2 3/4-16	1 1/4	1	1 3/8	5 1/64	None	None	2.76	8,692	13.8	6.6
12	1 5/8	RH121T**	4.49	4 13/16	6 7/16	2 3/4	2 3/4-16	1 1/4	1	1 3/8	1 1/16	3/4-16	None	2.76	8,692	13.8	6.6
12	3	RH123	8.29	7 1/4	10 1/4	2 3/4	2 3/4-16	1 3/16	1	1 3/8	1 3/16	None	None	2.76	8,692	13.8	8.9
20	2	RH202	9.45	6 1/8	8 1/8	3 7/8	3 7/8-12	1 1/2	1	2 1/8	1 5/64	1 9/16-16	3/8-16 x 3 1/4	4.72	8,466	23.6	16.1
20	3	RH203	11.76	6 1/16	9 1/16	4	None	None	1	2 3/4	1 3/64	2 1/4-12	3/8-16 x 3 1/4	3.92	10,186	19.6	20
20	6	RH206	28.35	12 1/8	18 1/8	3 7/8	3 7/8-12	1 1/2	1	2 1/8	1 5/64	1 9/16-16	3/8-16 x 3 1/4	4.72	8,466	23.6	30.2
30	2 1/2	RH302	15.85	6 1/4	8 3/4	4 3/4	4 3/4-12	1 1/2	1 5/32	3 1/4	1 19/64	2 3/4-12	7/16-20 x 3 5/8	6.34	9,457	31.7	25.6
30	5 7/8	RHA306	38.1	11 5/32	17 1/32	5 1/8	None	None	1 1/4	3 1/4	1 9/32	2 5/8-8	None	6.34	9,457	31.7	21.9
30	6	RH306	38.1	9 3/4	15 3/4	4 3/4	4 3/4-12	1 1/2	1 5/32	3 1/4	1 9/32	2 3/4-12	7/16-20 x 3 5/8	6.34	9,457	31.7	39
50	3	RH503	32.58	7 1/8	10 1/8	6	6-12	2	1 1/4	4 1/8	1 43/64	3 1/4-12	5/8-18 x 4 3/4	10.86	9,208	54.3	46.6
60	3	RH603*	37	9 1/4	12 1/4	6 1/4	6 1/4-12	2 1/2	1	3 19/32	2 1/8	3-12	1/2-13 x 5 1/8	12.31	9,750	61.6	60
60	6	RH606*	73.86	12 1/4	18 1/4	6 1/4	6 1/4-12	2 1/2	1	3 19/32	2 1/8	3-12	1/2-13 x 5 1/8	12.31	9,750	61.6	78
100	3	RH1003*	61.8	10	13	8 3/8	None	None	1 1/4	5	3 1/8	4 1/8-12	None	20.62	9,700	103.1	115

\*Supplied with carrying handles.

Aluminum

\*\*RH120 and RH121T do not have an internal threaded insert, but do have a 3/4-16 internal thread. The RH120 inlet port is 1/4" NPTF.



# CENTER HOLE

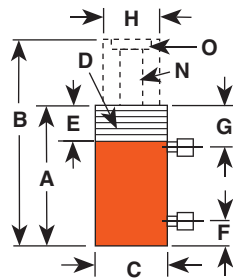
RH Series  
30-200 Ton  
Double-Acting

## FOR PULLING AND TENSIONING OF CABLES, ANCHOR BOLTS, FORCING SCREWS.

- Interchangeable piston head inserts (see page 39) provide versatility of application.
- Built-in safety feature prevents over-pressurization of the retraction circuit.
- Plated piston rod resists wear; superior packings provide high cycle life without leakage.
- Corrosion-resistant standpipe has "Power Tech" treatment (see page 8).
- Each cylinder has 9796 3/8" NPTF female half couplers. The 60 ton thru 200 ton steel models are equipped with removable carrying handles.



ASME B30.1  
10,000 PSI



30, 60, 100 Ton  
Double-Acting Models  
Feature Threaded Collar

Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu.in.)		A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	N (in.)	O (in.)	Mounting Bolt Circle (in.)	Cylinder Effective Area (sq.in.)		Internal Pressure at Cap. (psi)		Tons at 10,000 psi		Prod. Wt (lbs.)	
			Push	Pull												Push	Pull	Push	Pull	Push	Pull		
30	15	3	RH303	17.6	10.2	7 <sup>1</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	None	None	1	1 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>9</sup> / <sub>32</sub>	2-12	3 <sup>9</sup> / <sub>8</sub> -16x3 <sup>5</sup> / <sub>8</sub>	5.89	3.38	10,200	8,876	29.5	16.9	29.8
30	15	6	RH306D	35.34	20.28	11 <sup>1</sup> / <sub>16</sub>	17 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	None	None	1	1 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>17</sup> / <sub>64</sub>	2-12	7 <sup>1</sup> / <sub>16</sub> -20x3 <sup>5</sup> / <sub>8</sub>	5.89	3.38	10,200	8,876	29.5	16.9	45
30	20	10 <sup>1</sup> / <sub>8</sub>	RH3010	66	41	17 <sup>1</sup> / <sub>4</sub>	27 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub> -12	1 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>8</sub> -16	None	6.54	4.04	9,174	9,901	32.7	20.2	61
60	25	4	RHA604D	49.2	20.6	9 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub>	7	None	None	1 <sup>9</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	4	2 <sup>1</sup> / <sub>8</sub>	3-12	1 <sup>1</sup> / <sub>2</sub> -13x5 <sup>1</sup> / <sub>8</sub>	12.31	5.15	9,750	9,709	61.5	27.7	35.6
60	25	5	RH605*	61.55	25.77	9 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	6 <sup>17</sup> / <sub>32</sub>	None	None	1	1 <sup>3</sup> / <sub>4</sub>	4	2 <sup>1</sup> / <sub>8</sub>	3-12	1 <sup>1</sup> / <sub>2</sub> -13x5 <sup>1</sup> / <sub>8</sub>	12.31	5.15	9,750	9,709	61.5	27.7	73
60	40	10 <sup>1</sup> / <sub>8</sub>	RH6010*	133	87	18 <sup>1</sup> / <sub>16</sub>	28 <sup>3</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	3-16	None	13.14	8.59	9,132	9,313	65.7	42.9	120
100	45	1 <sup>1</sup> / <sub>2</sub>	RH1001	32.1	14.2	6 <sup>1</sup> / <sub>2</sub>	8	8 <sup>3</sup> / <sub>8</sub>	None	None	1 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>16</sub>	5	3 <sup>9</sup> / <sub>64</sub>	4-16	5 <sup>8</sup> / <sub>8</sub> -11x7	21.39	9.43	9,350	9,544	106.9	47.1	85
100	50	6	RH1006*	120.2	65.6	12 <sup>3</sup> / <sub>8</sub>	18 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	None	None	1 <sup>15</sup> / <sub>32</sub>	2 <sup>21</sup> / <sub>64</sub>	4 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>16</sub>	None	1 <sup>1</sup> / <sub>2</sub> -13x5 <sup>1</sup> / <sub>2</sub>	20.03	10.93	9,986	9,150	100.1	54.7	95
100	45	10 <sup>1</sup> / <sub>8</sub>	RH10010†	216.6	95.5	19 <sup>1</sup> / <sub>2</sub>	29 <sup>5</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	3 <sup>39</sup> / <sub>64</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>9</sup> / <sub>64</sub>	4 <sup>1</sup> / <sub>2</sub> -12	None	21.39	9.43	9,350	9,544	106.9	47.1	240
150	70	5	RH1505*	150.9	73.6	12 <sup>1</sup> / <sub>4</sub> †	17 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	None	None	1 <sup>15</sup> / <sub>32</sub>	2 <sup>11</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>9</sup> / <sub>16</sub>	None	None	30.1	14.7	9,937	9,524	150.9	73.6	148
150	75	8	RH1508*	239.6	127.2	13 <sup>3</sup> / <sub>4</sub>	21 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>	None	None	1 <sup>35</sup> / <sub>64</sub>	2 <sup>13</sup> / <sub>32</sub>	6	3 <sup>5</sup> / <sub>32</sub>	5-12	None	29.95	15.9	10,015	9,434	149.8	79.5	227
200	75	8	RH2008*	323.6	127.6	16 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>16</sub>	10 <sup>3</sup> / <sub>4</sub>	None	None	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>32</sub>	7 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>16</sub>	6-12	1 <sup>1</sup> / <sub>4</sub> -7 x 7 <sup>3</sup> / <sub>4</sub>	40.45	15.95	9,888	9,404	202.3	79.8	311

\* Supplied with carrying handles.

† Measured with 3/4" high serrated insert installed.

See pages 34-39 & 104-133 for hydraulic accessories.

Aluminum

# CENTER HOLE

RT Series

17-1/2-100 Ton

Single- Acting, Spring  
Return & Double-Acting



CYLINDERS



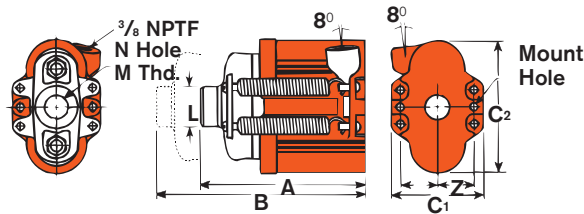
RT 302

ASME B30.1  
10,000 PSI

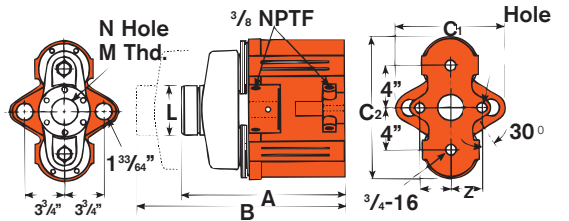
## IDEAL FOR PULLING AND PRESSING.

- A proven design; used throughout the industry for over 45 years.
- Cylinders withstand full “dead-end” loads.
- Compact design: ideal for applications in which space is limited.
- Basic head can be changed from a tapped hole to plain hole by simply changing insert. (See page 39)
- Pistons have “Power Tech” treatment for corrosion and abrasion resistance.

Dimensions for reference only.  
Single-Acting, Spring-Return Cylinders



Double-Acting Cylinder (RT1004)



RT 1004



Cyl. Cap. (Tons)	Stroke (in.)	Order No.	Oil Cap. (cu.in.)		A (in.)	B (in.)	C1 (in.)	C2 (in.)	L (in.)	M (in.)	N (in.)	Z (in.)	Cyl. Mount Hole (in.)	Int. Press. at Cap. (psi)	Tons at 10,000 psi	Prod. Wt. (lbs.)	
			Push	Return													
17 1/2	2	RT172	7.06	-	6 7/8	8 7/8	3 3/4	5 3/4	1 3/4	1 1/8	1 1/32	1 1/2	1 1/32	3.53	9,915	17.7	14.6
30	2 1/2	RT302	15.7	-	8 7/16	10 15/16	4 1/4	7 1/2	2 1/4	1 1/4	1 19/64	1 13/16	1 5/32	6.28	9,554	31.4	28.2
50	3	RT503	29.4	-	10 9/16	13 9/16	5 7/8	9 3/8	2 7/8	1 5/8	1 51/64	2 3/8	2 1/32	9.81	10,193	49.1	56.0
100	4 7/8**	RT1004	96.5	63.2	15 1/8	20	10 1/2	13 1/4	4 3/4	2 1/2	2 9/16	2 7/8	2 5/32	19.24*	10,395	96.2	160

\*\* The RT1004 has a bypass when full stroke is reached, preventing over-pressurization of the cylinder.

NOTE: Each cylinder complete with threaded cylinder head insert, cylinder half coupler and cylinder attaching screws.

# PULLING

RP Series

2 & 5 Ton

Single-Acting, Spring Return

## DESIGNED FOR PULLING AND TENSIONING.

- Heavy duty compression spring provides long cycle life and rapid extension of piston.
- Spring automatically extends piston rod when pump pressure is released.



CYLINDERS

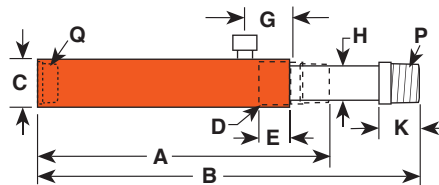


RP55

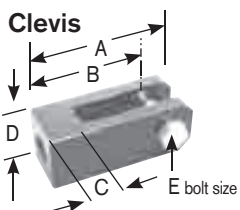
ASME B30.1  
10,000 PSI



RP25



Cyl. Cap. (Tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A	B	C	D	E	G	H	K	P	Q	Bore Dia. (in.)	Cyl. Eff. (sq. in.)	Internal Pressure at Cap. (psi)	Tons at 10,000 psi Pull	Prod. Wt. (lbs.)
				Re-tracted Height (in.)	Ex-tended Height (in.)	Outside Dia. (in.)	Collar Thread (in.)	Thread Length (in.)	Collar Top Port (in.)	to Cylinder Rod Dia. (in.)	Piston Rod Protrusion (in.)	Piston Rod Thread (NPT)	Piston Base Thread (NPT)					
2	5	RP25	2.76	9 <sup>9</sup> / <sub>16</sub>	14 <sup>9</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16	1	1 <sup>11</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	1	3 <sup>3</sup> / <sub>4</sub> -14	3 <sup>3</sup> / <sub>4</sub> -14	1 <sup>1</sup> / <sub>8</sub>	0.55	7,250	2.75	4
5	5 <sup>1</sup> / <sub>2</sub>	RP55	6.22	11 <sup>7</sup> / <sub>8</sub>	17 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> -14	1	1 <sup>11</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -11 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub> -11 <sup>1</sup> / <sub>2</sub>	1 <sup>11</sup> / <sub>16</sub>	1.13	8,850	5.65	11



### Clevis ORDERING INFORMATION

Use with Cyl No.	Order No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)
RP25	421057*	5 <sup>1</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	2	3 <sup>3</sup> / <sub>4</sub>
RP55	421056**	6	5	1 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	7 <sup>7</sup> / <sub>8</sub>

\* For base mounting, extension rod 351106 is required.

\*\* For base mounting, extension rod 351075 is required.

# DOUBLE ACTING

RD Series

10-500 Ton

Double Acting, Hydraulic Return



CYLINDERS

## HIGH TONNAGE PREMIUM DESIGN FOR HIGH CYCLE LIFE.

- Perfect for bridge lifting, building reconstruction, shipyard, utility and mining equipment maintenance.
- Aluminum bronze overlay bearings provide long life.
- Chrome plated piston rod resists corrosion.
- Load cap snaps out to expose internal piston rod threads for pulling applications; threads withstand full tonnage.
- Grooved ring pattern in load cap helps guard against load slippage.
- Each cylinder has two 9796 3/8" NPTF female half couplers.
- Built-in safety relief valve prevents over-pressurization of the retract circuit.
- Feature mounting holes and collar threads.



Four special order 500 ton, 24" stroke cylinders used in a swaging press for crimping 3 1/2" wire rope.



RD10013

ASME B30.1  
10,000 PSI

RD Series Performance,  
see page 233.



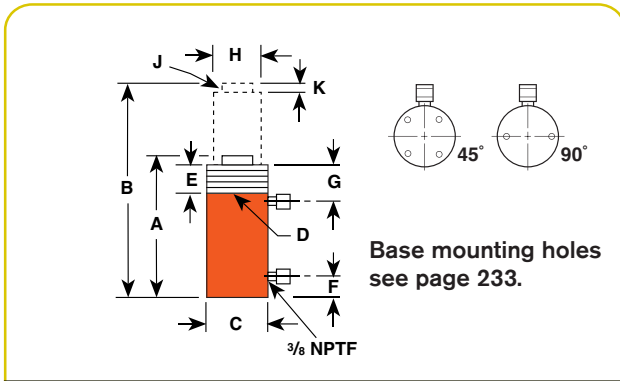
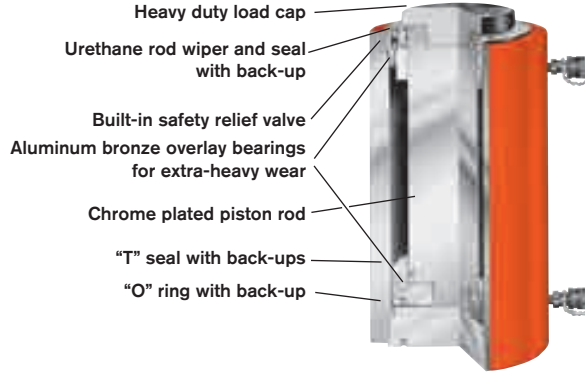
RD300



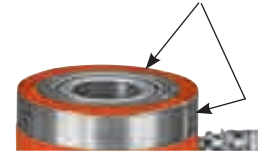
RD556



## Features of RD Series Cylinders



Threads withstand full load.



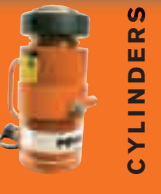
Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Capacity (cu.in.)		A	B	C	D	E	F	G	H	J	K	Load Cap Dia. (in.)	Bore Dia. (in.)	Cyl. Eff. Area (sq.in.)		Int. Press. at Cap.		Tons at 10,000 psi		Prod. Wt. (lbs)	
			Push	Pull													Push	Pull	Push	Pull	Push	Pull		
10	4	6 1/4	<b>RD106</b>	139	5.5	11 11/16	17 15/16	3	2 3/4-12	1 5/8	1	2 1/2	1 5/16	1-8x1	1/4	1 3/8	1 11/16	223	0.88	8,943	9,055	11.2	4.4	22
10	4	10	<b>RD1010</b>	223	8.8	15 11/16	25 11/16	3	2 3/4-12	1 5/8	1	2 1/2	1 5/16	1-8x1	1/4	1 3/8	1 11/16	223	0.88	8,943	9,055	11.2	4.4	28
25	8	6 1/4	<b>RD256</b>	322	10.1	12 3/8	18 5/8	4	4-12	1 5/8	1	2 1/2	2 1/8	1 1/2-16x1	3/8	2 1/8	2 9/16	5.15	1.61	9,695	9,934	25.8	8.0	39.8
25	8	14 1/4	<b>RD2514</b>	735	22.9	20 3/8	34 3/8	4	4-12	1 5/8	1	2 1/2	2 1/8	1 1/2-16x1	3/8	2 1/8	2 9/16	5.15	1.61	9,695	9,934	25.8	8.0	65
55	28	6 1/4	<b>RD556</b>	690	35.2	12 31/32	19 7/32	5	5-12	1 5/8	1 5/16	2 1/2	2 5/8	1 11/16-8X1 3/16	5/8	2 5/8	3 3/4	11.04	5.63	9,959	9,941	55.2	28.2	61.4
55	28	13 1/8	<b>RD5513</b>	1449	73.9	19 27/32	32 21/32	5	5-12	1 5/8	1 5/16	2 1/2	2 5/8	1 11/16-8X1 3/16	5/8	2 5/8	3 3/4	11.04	5.63	9,959	9,941	55.2	28.2	90
55	28	18 1/8	<b>RD5518</b>	2000	102.0	25 7/8	44	5	5-12	1 5/8	1 5/16	2 1/2	2 5/8	1 11/16-8X1 3/16	5/8	2 5/8	3 3/4	11.04	5.63	9,959	9,941	55.2	28.2	142
80	44	13 1/8	<b>RD8013</b>	2086	115.9	20 3/8	33 1/2	5 3/4	5 3/4-12	1 5/8	1 1/2	2 1/2	3	2-4 1/2x1 1/2	9/16	2 7/8	4 1/2	15.90	8.84	10,060	9,954	79.5	44.2	118
100	44	6 5/8	<b>RD1006</b>	1367	58.5	12 29/32	20 13/32	6 7/8	6 7/8-12	1 5/8	1 1/2	2 1/2	3 7/8	2 3/4-12x1 5/32	5/8	3 7/8	5 1/8	20.63	8.84	9,695	9,959	103.1	44.2	126
100	44	13 1/8	<b>RD10013</b>	2707	116.0	20 9/32	33 13/32	6 7/8	6 7/8-12	1 5/8	1 1/2	2 1/2	3 7/8	2 3/4-12x1 5/32	5/8	3 7/8	5 1/8	20.63	8.84	9,695	9,959	103.1	44.2	181
100	44	20 1/8	<b>RD10020</b>	4152	178.0	30 1/2	50 5/8	6 7/8	6 7/8-12	1 5/8	2 26/32	2 1/2	3 7/8	2 3/4-12x1 5/32	5/8	3 7/8	5 1/8	20.63	8.84	9,695	9,959	103.1	44.2	260
150	73	6 5/8	<b>RD1506</b>	2033	97.9	14 7/8	21 1/2	8 1/4	8 1/4-12	1 5/8	2	2 1/2	4 1/2	3 1/4-8x1 1/2	13/16	4 1/2	6 1/4	30.68	14.78	9,779	9,880	153.4	73.8	188
150	73	13 1/8	<b>RD15013</b>	4027	193.9	21 3/8	34 1/2	8 1/4	8 1/4-12	1 5/8	2	2 1/2	4 1/2	3 1/4-8x1 1/2	13/16	4 1/2	6 1/4	30.68	14.78	9,779	9,880	153.4	73.8	272
150	73	18 1/8	<b>RD15018</b>	5568	267.8	26 17/32	44 21/32	8 1/4	8 1/4-12	1 5/8	2	2 1/2	4 1/2	3 1/4-8x1 1/2	3/4	4 1/2	6 1/4	30.68	14.78	9,779	9,880	153.4	73.8	376
200	113	6 5/8	<b>RD2006</b>	2735	149.8	16	22 5/8	9 1/2	9 1/2-12	1 5/8	2 1/2	2 11/16	4 7/8	3 1/4-8x2 1/4	1 1/16	4 1/2	7 1/4	41.28	22.62	9,689	9,992	206.4	113.1	262
200	113	13 1/8	<b>RD20013</b>	5418	296.9	22 1/2	35 5/8	9 1/2	9 1/2-12	1 5/8	2 1/2	2 11/16	4 7/8	3 1/4-8x2 1/4	1 1/16	4 1/2	7 1/4	41.28	22.62	9,689	9,992	206.4	113.1	356
200	113	18 1/8	<b>RD20018</b>	7482	409.9	28 1/2	46 5/8	9 1/2	9 1/2-12	1 5/8	2 1/2	2 11/16	4 7/8	3 1/4-8x2 1/4	1 1/16	4 1/2	7 1/4	41.28	22.62	9,689	9,992	206.4	113.1	442
300	147	6	<b>RD3006</b>	3610	177.0	17 9/32	23 9/32	10 3/4	10 1/2-12	2 3/8	3 3/8	3 3/8	6 1/4	2 1/2-12x3 1/4	1 1/8	6 7/8	8 3/4	60.13	29.45	9,978	10,000	300.7	147.3	380
300	147	13	<b>RD30013</b>	7820	383.0	24 13/16	37 13/16	10 3/4	10 1/2-12	2 3/8	3 3/8	3 3/8	6 1/4	2 1/2-12x3 1/4	1 1/8	6 7/8	8 3/4	60.13	29.45	9,978	10,000	300.7	147.3	654
400	186	6	<b>RD4006</b>	4710	247.0	19 9/32	25 9/32	12 5/8	12 1/2-8	2 3/4	3 27/32	3 27/32	7 1/4	3-12x3 3/4	1 1/4	7 13/16	10	78.54	37.26	10,185	10,000	392.7	186.3	585
400	186	13	<b>RD40013</b>	10210	536.0	26 9/32	33 9/32	12 5/8	12 1/2-8	2 3/4	3 27/32	3 27/32	7 1/4	3-12x3 3/4	1 1/4	7 13/16	10	78.54	37.26	10,185	10,000	392.7	186.3	770
500	245	6	<b>RD5006</b>	5960	295.0	20 9/16	26 9/16	14 3/4	14 3/4-8	3 1/8	4 9/32	4 5/32	8	3 1/4-12x4 1/4	1 1/2	8 1/2	11 1/4	99.40	49.14	10,060	10,000	497.0	245.6	819
500	245	13	<b>RD50013</b>	12920	639.0	27 9/16	40 9/16	14 3/4	14 3/4-8	3 1/8	4 9/32	4 5/32	8	3 1/4-12x4 1/4	1 1/2	8 1/2	11 1/4	99.40	49.14	10,060	10,000	497.0	245.6	1092

# HIGH TONNAGE

R Series

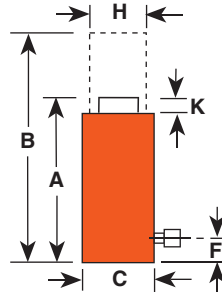
55-565 Ton

Single-Acting Load Return



CYLINDERS

HIGH-TONNAGE, LOW CYCLE,  
GRAVITY RETURN.



R2802C

ASME B30.1  
10,000 PSI

- Visible indicator band alerts when stroke limit is reached; overflow port ("weep hole") stroke limiter prevents piston from being overextended.
- Alloy heat treated piston and body for reliability and strength.
- Plated piston rod increases corrosion resistance and gives superior bearing support.

Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A	B	C	F	H	K	Bore Dia. (in.)	Cylinder Effective Area (sq. in.)	Internal Pressure at Cap. (psi)	Tons at 10,000 psi	Product Wt. (lbs.)
				Retracted Height (in.)	Extended Height (in.)	Outside Dia. (in.)	Base Port (in.)	Piston Rod Dia. (in.)	Piston Rod Protrusion (in.)					
55	2	R552C	22.1	4 <sup>15</sup> / <sub>16</sub>	6 <sup>15</sup> / <sub>16</sub>	5	1	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	11.04	9,960	55.2	27
55	6	R556C	66.3	8 <sup>15</sup> / <sub>16</sub>	14 <sup>15</sup> / <sub>16</sub>	5	1	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	11.04	9,960	55.2	50
55	10	R5510C	110.4	12 <sup>15</sup> / <sub>16</sub>	22 <sup>15</sup> / <sub>16</sub>	5	1	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	11.04	9,960	55.2	72
100	2	R1002C	41.3	5 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	1	5 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	20.63	9,695	103.2	52
100	6	R1006C	123.8	9 <sup>1</sup> / <sub>2</sub>	15 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	1	5 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	20.63	9,695	103.2	89
150	2	R1502C	61.4	6 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	30.68	9,778	153.4	92
150	6	R1506C	184.1	10 <sup>3</sup> / <sub>8</sub>	16 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	30.68	9,778	153.4	151
150	10	R15010C	306.8	14 <sup>3</sup> / <sub>8</sub>	24 <sup>3</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	30.68	9,778	153.4	210
200	2	R2002C	82.6	7 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	41.28	9,690	206.4	145
200	6	R2006C	247.7	11 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	41.28	9,690	206.4	221
280	2	R2802C	113.5	7 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	56.74	9,870	283.7	201
280	6	R2806C	340.4	11 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	56.74	9,870	283.7	300
355	2	R3552C	141.8	9 <sup>1</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	70.88	10,017	354.4	302
355	6	R3556C	425.3	13 <sup>1</sup> / <sub>8</sub>	19 <sup>1</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	70.88	10,017	354.4	434
355	10	R35510C	708.8	17 <sup>1</sup> / <sub>8</sub>	27 <sup>1</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	70.88	10,017	354.4	565
430	2	R4302C	173.2	10 <sup>3</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>8</sub>	13	2 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>2</sub>	86.59	9,932	433.0	440
430	6	R4306C	519.5	14 <sup>3</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>8</sub>	13	2 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>2</sub>	86.59	9,932	433.0	609
565	2	R5652C	226.2	11 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	12	1 <sup>1</sup> / <sub>8</sub>	12	113.10	9,991	565.5	638
565	6	R5656C	678.6	15 <sup>1</sup> / <sub>2</sub>	21 <sup>1</sup> / <sub>2</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	12	1 <sup>1</sup> / <sub>8</sub>	12	113.10	9,991	565.5	858
565	10	R56510C	1131.0	19 <sup>1</sup> / <sub>2</sub>	29 <sup>1</sup> / <sub>2</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	12	1 <sup>1</sup> / <sub>8</sub>	12	113.10	9,991	565.5	1078

For use with "RC" cylinders			SWIVEL CAPS		
Use with Cyl. No.	Swivel Cap Order No.	Wt. (lbs.)	A (in.)	B (in.)	
150-200 ton	420867	8.8	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub>	
280 ton	420868	13.5	1 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	
355 ton	420869	37	2 <sup>3</sup> / <sub>4</sub>	7 <sup>11</sup> / <sub>16</sub>	
430 ton	420870	52	3 <sup>1</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	
565 ton	420871	78	3 <sup>5</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>	

Reduce the effects of off center loading. Tilts up to 5 degrees. Radial grooves on top of cap reduce load slippage.

Reduce the effects of off-center loading. Tilts up to 5 degrees. Radial grooves on top of cap reduce load slippage. Notch across face of each cap helps keep loads having a protruding or round shaped centered.

# HIGH TONNAGE

RC Series

740 - 1220 Ton

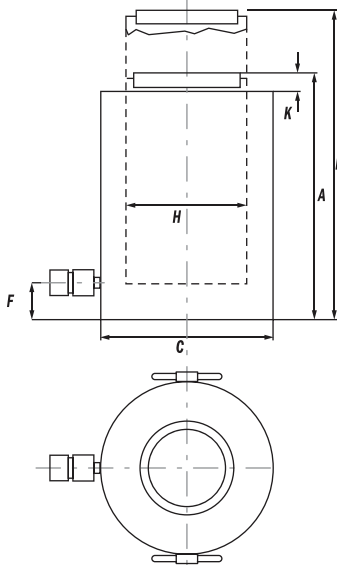
Single-Acting, Load Return

## HIGH-TONNAGE, LOW CYCLE, GRAVITY RETURN.

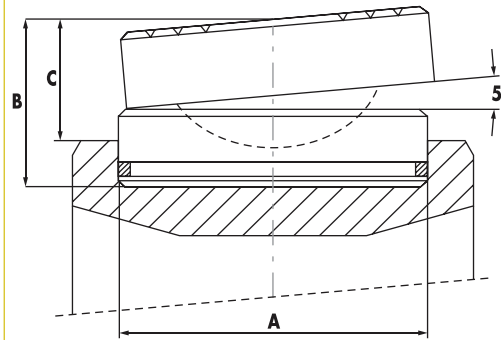
- Overflow port (“weep hole”) prevents piston from being overextended under load.
- Alloy heat treated piston and body for reliability and strength.
- Plated piston rod increases corrosion resistance and gives superior bearing support.



Single-Acting High Tonnage Cylinders



Swivel Cap



Order Used with No.	Cyl. Order No.	A (in.)	B (in.)	C (in.)	Product Wt (lbs.)
2000824	RC740*C, RC965*C,	11.4	5.5	3.9	158.7
2000825	RC1220*C	12.7	6.9	4.9	249.1

Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A Retracted Height (in.)	B Extended Height (in.)	C Outside Dia. (in.)	F Base to Port (in.)	H Piston Rod Dia. (in.)	K Piston Rod Protrusion (in.)	Bore Dia. (in.)	Cyl. Eff. Area (cu. in.)	Tons @ 10,000 psi	Product Wt. (lbs.)
740	2.0	RC7402C	293.6	10.4	12.4	16.9	2.6	13.8	0.4	13.8	149.1	742	661
740	6.0	RC7406C	880.7	14.4	20.3	16.9	2.6	13.8	0.4	13.8	149.1	742	917
740	10	RC74010C	1,467.8	18.3	28.1	16.9	2.6	13.8	0.4	13.8	149.1	742	1,168
965	2.0	RC9652C	383.2	11.4	13.4	19.3	2.8	15.7	0.4	15.7	194.8	970	933
965	6.0	RC9656C	1,150.2	15.4	21.3	19.3	2.8	15.7	0.4	15.7	194.8	970	1,272
965	10	RC96510C	1,916.2	19.3	29.1	19.3	2.8	15.7	0.4	15.7	194.8	970	1,598
1220	2.0	RC12202C	485.1	16.3	18.1	21.7	3.1	17.7	0.4	17.7	246.5	1227	1,689
1220	6.0	RC12206C	1,455.8	20.2	26.1	21.7	3.1	17.7	0.4	17.7	246.5	1227	2,116
1220	10	RC122010C	2,452.2	24.4	34.2	21.7	3.1	17.7	0.4	17.7	246.5	1227	2,529

# HIGH TONNAGE

R Series

100-565 Ton

Double-Acting, Hydraulic Return



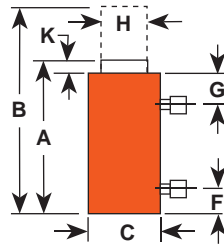
CYLINDERS

## HIGH-TONNAGE, LOW CYCLE, HYDRAULIC RETURN.

- Cylinders come standard with swivel caps to reduce the effects of off-center loading.
- Cylinders may be “dead-ended” without damage.
- Hard chrome plated, heat treated piston rod reduces wear on piston and gland nut.
- Built-in safety relief valve prevents over-pressurization of the retraction circuit.
- Each cylinder has two 9796 3/8” NPTF female half couplers.



R2806D



R1502D

Cyl. Cap. (tons)	Order Stroke (in.)	Order No.	Oil Capacity (cu. in.)		A Re-tracted Height (in.)	B Ex-tended Height (in.)	C Outside Dia. (in.)	F to Port (in.)	G Top to Dia. (in.)	H Rod Dia. (in.)	K Piston Rod Protrusion (in.)	Cylinder Bore Dia. (in.)	Internal Effective Area (sq. in.)	Internal Press. at Cap. (psi)	Tons at 10,000 psi	Prod. Wt. (lbs.)
			Push	Return												
100	2	R1002D	41.2	19.2	6 <sup>41</sup> / <sub>64</sub>	8 <sup>41</sup> / <sub>64</sub>	6 <sup>1</sup> / <sub>2</sub>	1	2 <sup>13</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>9</sup> / <sub>32</sub>	5 <sup>1</sup> / <sub>8</sub>	20.60	9,695	103.0	54
100	6	R1006D	123.6	57.6	10 <sup>41</sup> / <sub>64</sub>	16 <sup>41</sup> / <sub>64</sub>	6 <sup>1</sup> / <sub>2</sub>	1	2 <sup>13</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>9</sup> / <sub>32</sub>	5 <sup>1</sup> / <sub>8</sub>	20.60	9,695	103.0	81
100	10	R10010D	206.0	96.0	14 <sup>41</sup> / <sub>64</sub>	24 <sup>41</sup> / <sub>64</sub>	6 <sup>1</sup> / <sub>2</sub>	1	2 <sup>13</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>9</sup> / <sub>32</sub>	5 <sup>1</sup> / <sub>8</sub>	20.60	9,695	103.0	108
150	2	R1502D	61.4	29.6	7 <sup>7</sup> / <sub>16</sub>	9 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub>	19 <sup>19</sup> / <sub>64</sub>	6 <sup>1</sup> / <sub>4</sub>	30.70	9,778	153.4	95
150	6	R1506D	184.2	88.8	11 <sup>7</sup> / <sub>16</sub>	17 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub>	19 <sup>19</sup> / <sub>64</sub>	6 <sup>1</sup> / <sub>4</sub>	30.70	9,778	153.4	136
200	2	R2002D	82.6	39.2	8 <sup>9</sup> / <sub>64</sub>	10 <sup>9</sup> / <sub>64</sub>	9 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>4</sub>	11 <sup>11</sup> / <sub>32</sub>	7 <sup>1</sup> / <sub>4</sub>	41.30	9,690	206.4	136
200	6	R2006D	247.8	117.6	12 <sup>9</sup> / <sub>64</sub>	18 <sup>9</sup> / <sub>64</sub>	9 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>4</sub>	11 <sup>11</sup> / <sub>32</sub>	7 <sup>1</sup> / <sub>4</sub>	41.30	9,690	206.4	187
200	10	R20010D	413.0	196.0	16 <sup>9</sup> / <sub>64</sub>	26 <sup>9</sup> / <sub>64</sub>	9 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>4</sub>	11 <sup>11</sup> / <sub>32</sub>	7 <sup>1</sup> / <sub>4</sub>	41.30	9,690	206.4	239
280	2	R2802D	113.4	47.2	9 <sup>13</sup> / <sub>64</sub>	11 <sup>13</sup> / <sub>64</sub>	10 <sup>7</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>8</sub>	2 <sup>37</sup> / <sub>64</sub>	6 <sup>1</sup> / <sub>2</sub>	13 <sup>13</sup> / <sub>32</sub>	8 <sup>1</sup> / <sub>2</sub>	56.70	9,870	283.7	219
280	6	R2806D	340.2	141.6	13 <sup>13</sup> / <sub>64</sub>	19 <sup>13</sup> / <sub>64</sub>	10 <sup>7</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>8</sub>	2 <sup>37</sup> / <sub>64</sub>	6 <sup>1</sup> / <sub>2</sub>	13 <sup>13</sup> / <sub>32</sub>	8 <sup>1</sup> / <sub>2</sub>	56.70	9,870	283.7	297
280	10	R28010D	567.0	236.0	17 <sup>13</sup> / <sub>64</sub>	27 <sup>13</sup> / <sub>64</sub>	10 <sup>7</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>8</sub>	2 <sup>37</sup> / <sub>64</sub>	6 <sup>1</sup> / <sub>2</sub>	13 <sup>13</sup> / <sub>32</sub>	8 <sup>1</sup> / <sub>2</sub>	56.70	9,870	283.7	376
355	2	R3552D	141.8	47.4	11 <sup>3</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	7 <sup>3</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>2</sub>	70.90	10,017	354.4	324
355	6	R3556D	425.4	142.2	15 <sup>3</sup> / <sub>8</sub>	21 <sup>3</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	7 <sup>3</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>2</sub>	70.90	10,017	354.4	421
430	2	R4302D	173.2	59.6	12 <sup>5</sup> / <sub>16</sub>	14 <sup>5</sup> / <sub>16</sub>	13	2 <sup>1</sup> / <sub>2</sub>	2 <sup>61</sup> / <sub>64</sub>	8 <sup>1</sup> / <sub>2</sub>	15 <sup>15</sup> / <sub>32</sub>	10 <sup>1</sup> / <sub>2</sub>	86.60	9,932	433.0	439
430	6	R4306D	519.6	178.8	16 <sup>5</sup> / <sub>16</sub>	22 <sup>5</sup> / <sub>16</sub>	13	2 <sup>1</sup> / <sub>2</sub>	2 <sup>61</sup> / <sub>64</sub>	8 <sup>1</sup> / <sub>2</sub>	15 <sup>15</sup> / <sub>32</sub>	10 <sup>1</sup> / <sub>2</sub>	86.60	9,932	433.0	558
430	10	R43010D	866.0	298.0	20 <sup>5</sup> / <sub>16</sub>	30 <sup>5</sup> / <sub>16</sub>	13	2 <sup>1</sup> / <sub>2</sub>	2 <sup>61</sup> / <sub>64</sub>	8 <sup>1</sup> / <sub>2</sub>	15 <sup>15</sup> / <sub>32</sub>	10 <sup>1</sup> / <sub>2</sub>	86.60	9,932	433.0	673
565	2	R5652D	226.2	76.8	13 <sup>19</sup> / <sub>32</sub>	15 <sup>19</sup> / <sub>32</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	3 <sup>13</sup> / <sub>64</sub>	9 <sup>3</sup> / <sub>4</sub>	35 <sup>35</sup> / <sub>64</sub>	12	113.10	9,991	565.5	619
565	6	R5656D	678.6	230.4	17 <sup>19</sup> / <sub>32</sub>	23 <sup>19</sup> / <sub>32</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	3 <sup>13</sup> / <sub>64</sub>	9 <sup>3</sup> / <sub>4</sub>	35 <sup>35</sup> / <sub>64</sub>	12	113.10	9,991	565.5	772
565	10	R56510D	1131.0	384.0	21 <sup>19</sup> / <sub>32</sub>	31 <sup>19</sup> / <sub>32</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	3 <sup>13</sup> / <sub>64</sub>	9 <sup>3</sup> / <sub>4</sub>	35 <sup>35</sup> / <sub>64</sub>	12	113.10	9,991	565.5	926



# HIGH TONNAGE

RC Series

740 & 1220

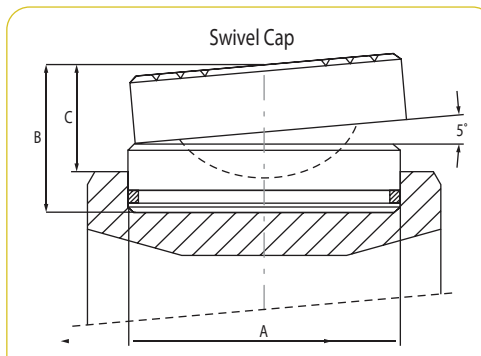
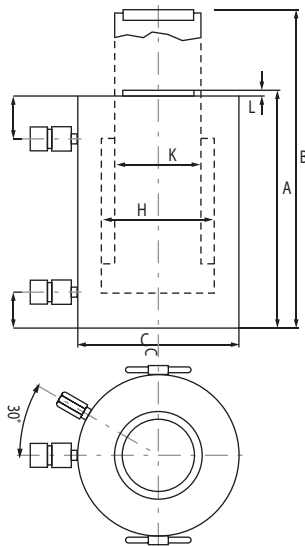
Double-Acting, Hydraulic Return

## HIGH TONNAGE CYLINDERS RUGGED AND RELIABLE

- Cylinders come standard with hardened caps.
- Cylinders may be “dead-ended” without damage.
- Safety relief valve prevents over-pressurization of the retract circuit.
- Each cylinder has two 9796 3/8” NPTF female half couplers.



Double-Acting High Tonnage Cylinders



▪ **OPTIONAL SWIVEL CAPS  
REDUCE THE EFFECTS  
OF OFF-CENTER LOADING.**

Order No.	Used with Cyl. Order No.	A (in.)	B (in.)	C (in.)	Product Wt (lbs.)
2000822	<b>RC740*D</b>	7.9	3.1	2.2	42.5
2000823	<b>RC965*D</b>	9.8	4.1	3.0	88.2
2000825	<b>RC1220*D</b>	12.7	6.9	4.9	249.1

In mm	Cyl. Cap.	Stroke	Order No.	Oil Cap. (cu. in.)	Retracted Height (in.)	Extended Height (in.)	A Outside Dia. (in.)	B Base to Port (in.)	C Cyl. Top to Port (in.)	F Bore Dia. (in.)	G Piston Rod Dia. (in.)	H Piston Protusion (in.)	K Piston Rod Dia. (in.)	L Cyl. Eff. Area (cu. in.)	Tons @ 10,000 psi	Product Wt. (lbs.)
740	2.0	<b>RC7402D</b>	293.6	11.1	13.1	16.9	2.6	3.9	13.8	11.01	0.4	149.1	742	670		
740	6.0	<b>RC7406D</b>	880.7	15.7	21.6	16.9	2.6	3.9	13.8	11.01	0.4	149.1	742	877		
740	10	<b>RC74010D</b>	1,467.8	20.0	29.8	16.9	2.6	3.9	13.8	11.01	0.4	149.1	742	1,080		
965	2.0	<b>RC9652D</b>	383.2	12.2	14.2	19.3	2.8	4.5	15.7	12.75	0.4	194.8	970	957		
965	6.0	<b>RC9656D</b>	1,150.2	16.5	22.4	19.3	2.8	4.5	15.7	12.75	0.4	194.8	970	1,215		
965	9.8	<b>RC96510D</b>	1,916.2	20.9	30.7	19.3	2.8	4.5	15.7	12.75	0.4	194.8	970	1,473		
1220	2.0	<b>RC12202D</b>	485.1	13.0	15.0	21.7	3.1	5.3	17.7	14.17	0.4	246.5	1227	1,287		
1220	6.0	<b>RC12206D</b>	1,455.8	17.6	23.2	21.7	3.1	5.3	17.7	14.17	0.4	246.5	1227	1,612		
1220	10	<b>RC122010D</b>	2,452.2	21.7	31.5	21.7	3.1	5.3	17.7	14.17	0.4	246.5	1227	1,936		

# LOCKING COLLAR

RL Series- Aluminum  
55 & 100 Ton Single-Acting,  
Spring Return



CYLINDERS

## POSITIVE MECHANICAL LOCK TO SUPPORT LOAD.

- Supports lifted load for extended periods of time with hydraulic pressure released.
- At half the weight of steel cylinders of comparable capacity, aluminum cylinders are ideal when portability is a key factor.
- Features carrying handle.



Locking collar feature permits non-hydraulic support of load.

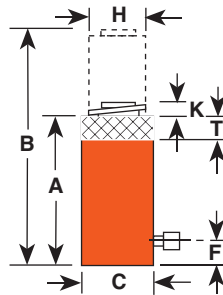


RA1006L



RA556L

ASME B30.1  
10,000 PSI



Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A	B	C	F	H	K	T	Cylinder Bore Dia. (in.)	Internal Effective Area (sq. in.)	Internal Pressure at Cap. (psi)	Tons at 10,000 psi	Product Wt. (lbs.)
				Retracted Height (in.)	Extended Height (in.)	Outside Dia. (in.)	Base to Port (in.)	Piston Rod Dia. (in.)	Piston Rod Protrusion (in.)	Nut Thickness (in.)					
55	6 <sup>1</sup> / <sub>8</sub>	RA556L	67.6	12 <sup>1</sup> / <sub>2</sub>	18 <sup>5</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	1/2	1 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	11.04	9,960	55.2	29.6
100	6 <sup>1</sup> / <sub>4</sub>	RA1006L	129	13 <sup>3</sup> / <sub>8</sub>	19 <sup>5</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	1/4	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub>	20.62	9,696	103.1	64.0

Note: Supported loads not to exceed the rated capacity of the cylinders. Not intended to support additional dynamic loads, such as those applied by moving vehicles.

# PANCAKE CYLINDERS

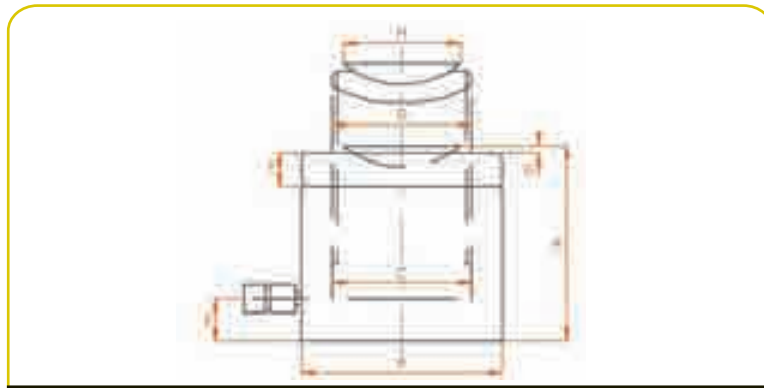
Locking Collar

RC Series 55 & 620 Ton

Single- Acting, Load Return

## POSITIVE MECHANICAL LOCK TO SUPPORT LOAD.

- Compact design - for use where space is limited.
- Locking collar designed to support lifted load for extended periods of time with hydraulic pressure released.
- Integral tilt saddle standard improves performance under side load.
- Overflow port (“weep hole”) prevents piston from being overextended under load.
- Special coating improves corrosion and abrasion resistance.
- Cylinders come standard with hardened swivel caps reducing the effects of off-center loading Single-Acting Locking Collar Cylinders.
- Equipped with 3/8” NPTF female half couplers.



Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A Retracted Height (in.)	B Extended Height (in.)	C Piston Rod Dia. (in.)	D Bore Dia. (in.)	E Base to Port (in.)	F Nut Thickness (in.)	G Swivel Cap Protusion (in.)	H Swivel Cap Dia (in.)	Product Wt. (lbs.)
55	2	RC0552P	21.66	4.92	4.72	3.74	3.74	0.75	0.83	0.24	3.62	24.25
100	1.75	RC1002P	36.43	5.39	6.5	5.12	5.12	0.83	1.22	0.31	4.96	48.50
155	1.75	RC1552P	55.23	5.83	8.07	6.30	6.30	1.06	1.50	0.35	5.83	85.98
240	1.75	RC2402P	86.23	6.10	10.04	7.87	8.87	1.10	1.57	0.39	6.18	130.07
380	1.75	RC3802P	134.74	7.01	12.60	9.84	9.94	1.38	1.97	0.43	9.45	242.51
620	1.75	RC6202P	220.78	7.56	15.94	12.60	12.60	1.50	2.36	0.39	11.61	425.49

# LOCKING COLLAR

RL Series STEEL

55 -565 Ton

Single- Acting, Load Return



R556L



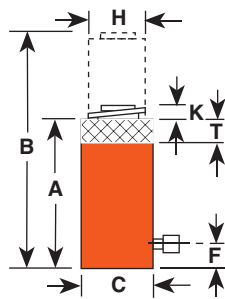
CYLINDERS

## POSITIVE MECHANICAL LOCK TO SUPPORT LOAD.

- Supports lifted load for extended periods of time with hydraulic pressure released.
- Visible indicator band alerts when stroke limit is reached; overflow port ("weep hole") stroke limiter prevents piston from being overextended.
- All cylinders feature coated pistons to resist corrosion and abrasion.

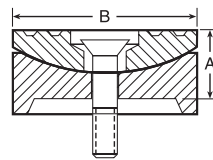


Locking collar feature permits non-hydraulic support of load.



## SWIVEL CAPS For use with "RL" cylinders reduce the effects of off center loading.

Tilts up to 5 degrees. Radial grooves on top of cap reduce load slippage.



A (in.)	B (in.)	Use with Cyl. No.	Swivel Cap Order No.	Wt. (lbs.)
1	2 <sup>13</sup> / <sub>16</sub>	55-100 ton	<b>420866</b>	1.8
1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub>	150-200 ton	<b>420867</b>	8.8
1 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	280 ton	<b>420868</b>	13.5
2 <sup>3</sup> / <sub>4</sub>	7 <sup>11</sup> / <sub>16</sub>	355 ton	<b>420869</b>	37
3 <sup>1</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	430 ton	<b>420870</b>	52
3 <sup>5</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>	565 ton	<b>420871</b>	78

Cyl. Cap. (tons)	Order No.	Oil Cap. (cu. in.)	A Retracted Height (in.)	B Extended Height (in.)	C Outside Dia. (in.)	F Base Port (in.)	H Piston Rod Dia. (in.)	K Piston Rod Protrusion (in.)	T Nut Thickness (in.)	Cylinder Bore Dia. (in.)	Internal Effective Area (sq. in.)	Pressure at Cap. (psi)	Tons at 10,000 psi	Product Wt. (lbs.)
55	2	R552L	22.10	6 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>8</sub>	4 <sup>15</sup> / <sub>16</sub>	1	3 <sup>3</sup> / <sub>4</sub>	1 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	11.04	9,964	55.2	33.7
55	6	R556L	66.30	10 <sup>3</sup> / <sub>8</sub>	16 <sup>3</sup> / <sub>8</sub>	4 <sup>15</sup> / <sub>16</sub>	1	3 <sup>3</sup> / <sub>4</sub>	1 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	11.04	9,964	55.2	58.0
55	10	R5510L	110.40	14 <sup>3</sup> / <sub>8</sub>	24 <sup>3</sup> / <sub>8</sub>	4 <sup>15</sup> / <sub>16</sub>	1	3 <sup>3</sup> / <sub>4</sub>	1 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	11.04	9,964	55.2	80.0
100	2	R1002L	41.30	7 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	1	5 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>8</sub>	20.63	9,695	103.0	66.0
100	6	R1006L	123.80	11 <sup>1</sup> / <sub>4</sub>	17 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	1	5 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>8</sub>	20.63	9,695	103.0	103.0
100	10	R10010L	206.30	15 <sup>1</sup> / <sub>4</sub>	25 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	1	5 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>8</sub>	20.63	9,695	103.0	142.0
150	2	R1502L	61.40	8 <sup>1</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	30.68	9,778	153.4	117.0
150	6	R1506L	184.10	12 <sup>1</sup> / <sub>8</sub>	18 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	30.68	9,778	153.4	177.0
200	2	R2002L	82.60	9 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	2	7 <sup>1</sup> / <sub>4</sub>	41.28	9,690	206.4	183.0
200	6	R2006L	247.70	13 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	2	7 <sup>1</sup> / <sub>4</sub>	41.28	9,690	206.4	259.0
280	2	R2802L	113.50	9 <sup>3</sup> / <sub>4</sub>	11 <sup>3</sup> / <sub>4</sub>	10 <sup>7</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	56.74	9,870	283.7	261.0
280	6	R2806L	340.40	13 <sup>3</sup> / <sub>4</sub>	19 <sup>3</sup> / <sub>4</sub>	10 <sup>7</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	56.74	9,870	283.7	359.0
280	10	R28010L	567.40	17 <sup>3</sup> / <sub>4</sub>	27 <sup>3</sup> / <sub>4</sub>	10 <sup>7</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	56.74	9,870	283.7	459.0
355	2	R3552L	141.80	11 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	70.88	10,017	354.4	381.0
355	6	R3556L	425.30	15 <sup>1</sup> / <sub>2</sub>	21 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	70.88	10,017	354.4	512.0
430	2	R4302L	173.20	13 <sup>1</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>8</sub>	13	2 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>2</sub>	86.59	9,932	433.0	556.0
430	6	R4306L	519.50	17 <sup>1</sup> / <sub>8</sub>	23 <sup>1</sup> / <sub>8</sub>	13	2 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>2</sub>	86.59	9,932	433.0	725.0
430	10	R43010L	865.90	21 <sup>1</sup> / <sub>8</sub>	31 <sup>1</sup> / <sub>8</sub>	13	2 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>2</sub>	86.59	9,932	433.0	894.0
565	2	R5652L	226.20	14 <sup>5</sup> / <sub>8</sub>	16 <sup>5</sup> / <sub>8</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	12	1 <sup>3</sup> / <sub>8</sub>	12	113.10	9,991	565.5	811.0
565	6	R5656L	678.60	18 <sup>5</sup> / <sub>8</sub>	24 <sup>5</sup> / <sub>8</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	12	1 <sup>3</sup> / <sub>8</sub>	12	113.10	9,991	565.5	1031.0
565	10	R56510L	1131.0	22 <sup>5</sup> / <sub>8</sub>	32 <sup>5</sup> / <sub>8</sub>	14 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	12	1 <sup>3</sup> / <sub>8</sub>	12	113.10	9,991	565.5	1251.0

\*NOTE: Supported loads not to exceed the rated capacity of the cylinders. Not intended to support additional dynamic loads, such as those applied by moving vehicles.



# LOCKING COLLAR

RC Series

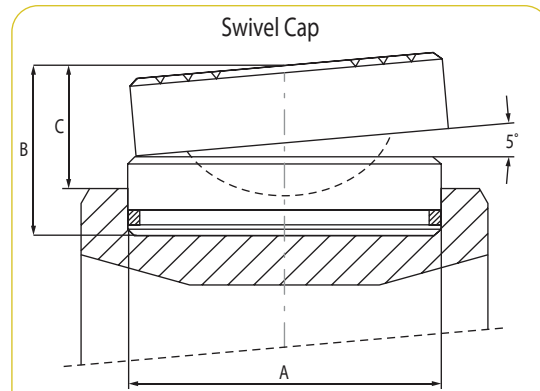
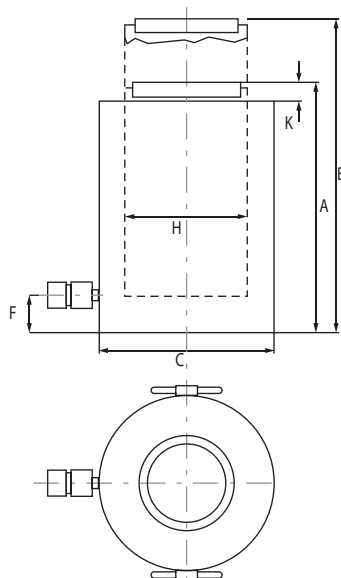
740 & 1220

Single-Acting, Load Return

**POSITIVE MECHANICAL LOCK TO SUPPORT LOAD.**



Single-Acting Locking Collar Cylinders



Order No.	Used with Cyl. Order No.	A (in.)	B (in.)	C (in.)	Product Wt (lbs.)
2000824	<b>RC740*L, RC965*L,</b>	11.4	5.5	3.9	158.7
2000825	<b>RC1220*L</b>	12.7	6.9	4.9	249.1

Cyl. Cap. (tons)	Stroke (in.)	Order No.	Oil Cap. (cu. in.)	A Retracted Height (in.)	B Extended Height (in.)	C Outside Dia. (in.)	F Base to Port (in.)	H Piston Thread Dia. (in.)	K Piston Rod Protrusion (in.)	Bore Dia. (in.)	Cyl. Eff. Area (cu. in.)	Tons @ 10,000 psi	Product Wt. (lbs.)
740	2.0	<b>RC7402C</b>	293.6	15.6	17.6	18.7	3.5	TR13.8x6	0.2	13.8	149.1	742	1,202
740	6.0	<b>RC7406C</b>	880.7	19.5	25.4	18.7	3.5	TR13.8x6	0.2	13.8	149.1	742	1506
740	10.0	<b>RC74010C</b>	1,467.8	23.4	33.0	18.7	3.5	TR13.8x6	0.2	13.8	149.1	742	1,810
965	2.0	<b>RC9652C</b>	383.2	17.9	19.9	21.3	3.9	TR15.7x6	0.2	15.7	194.8	970	1,574
965	6.0	<b>RC9656C</b>	1,150.2	21.9	27.8	21.3	3.9	TR15.7x6	0.2	15.7	194.8	970	2,183
965	10.0	<b>RC96510C</b>	1,916.2	25.8	35.6	21.3	3.9	TR15.7x6	0.2	15.7	194.8	970	2,579
1220	2.0	<b>RC12202C</b>	485.1	17.4	19.4	23.6	4.3	TR17.7x6	0.2	17.7	246.5	1227	2,136
1220	6.0	<b>RC12206C</b>	1,455.8	23.5	29.4	23.6	4.3	TR17.7x6	0.2	17.7	246.5	1227	2,888
1220	10.0	<b>RC122010C</b>	2,452.2	27.5	37.3	23.6	4.3	TR17.7x6	0.2	17.7	246.5	1227	3,373

# ACCESSORIES

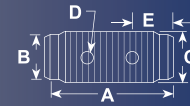
## C Series Mounting Accessories



CYLINDERS



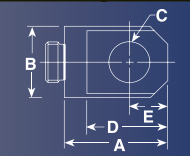
Threaded Connector



Cylinder Tons	Part No.	A	B	C	D	E
5	<b>25748</b>	1 <sup>3</sup> / <sub>4</sub>	7/8 Dia.	3/4 — 14 NPSM	3/16 Dia.	1/2
10	<b>25664</b>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>16</sub> Dia.	1 <sup>1</sup> / <sub>4</sub> — 11 <sup>1</sup> / <sub>2</sub> NPSM	5/16 Dia.	9/16
25	<b>25654</b>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub> Dia.	2 — 11 <sup>1</sup> / <sub>2</sub> NPSM	3/8 Dia.	5/8



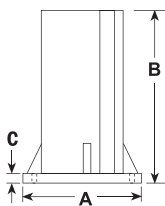
Piston Clevis



Cylinder Tons	Part No.	A	B	C	D	E	F
5	<b>350095</b>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	5/8	1 <sup>7</sup> / <sub>16</sub>	5/8	3/4-16
10 or 15*	<b>350094</b>	2 <sup>9</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>16</sub>	7/8	2 <sup>5</sup> / <sub>16</sub>	1	1-8
25**	<b>420059</b>	2 <sup>15</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	2 <sup>11</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -16

\* Can be used with RD106, RD1010 Cylinder.

\*\* RD256 & RD2514

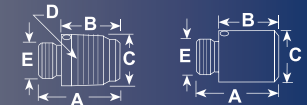


Support Base

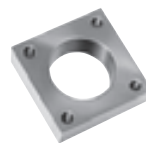
Cylinder	Order	A	B	C
10	<b>420062</b>	7	5	7/16
25	<b>420063</b>	7	5	7/16



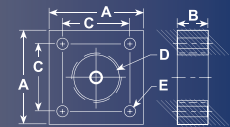
Threaded Adapter Plain Adapter



Cylinder Tons	Part No.	A	B	C	D	E
5	<b>202178 (threaded)</b>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub> Dia.	3/4 — 14 NPT	3/4 — 16 UNF-2A
10 or 15	<b>202179 (threaded)</b>	1 <sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub> Dia.	1 <sup>1</sup> / <sub>4</sub> — 11 <sup>1</sup> / <sub>2</sub> NPT	1 — 8 UNC-2A
25	<b>202180 (threaded)</b>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub> Dia.	2 — 11 <sup>1</sup> / <sub>2</sub> NPT	1 <sup>1</sup> / <sub>2</sub> — 16 UN-2A
10 or 15	<b>350724 (plain)</b>	2	1 <sup>1</sup> / <sub>4</sub>	1 <sup>31</sup> / <sub>64</sub> Dia.	—	1 — 8 UNC-2A
25	<b>350723 (plain)</b>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> Dia.	—	1 <sup>1</sup> / <sub>2</sub> — 16 UN-2A



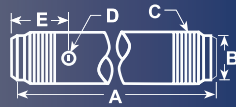
Cylinder Mounting Plate



Cylinder Tons	Part No.	A	B	C	D	E
5	<b>350099</b>	3	1	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub> — 16 UN-2B	1 <sup>11</sup> / <sub>32</sub>
10	<b>350100</b>	3 <sup>1</sup> / <sub>2</sub>	1	2 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub> — 14 UNS-2B	1 <sup>11</sup> / <sub>32</sub>
15	<b>350184</b>	3 <sup>1</sup> / <sub>2</sub>	1	2 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub> — 16 UN-2B	1 <sup>11</sup> / <sub>32</sub>
25	<b>420064</b>	5	2	3 <sup>21</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>16</sub> — 12 UN-2B	2 <sup>1</sup> / <sub>32</sub>

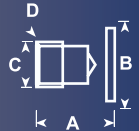


Extension Rod

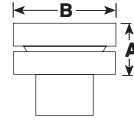


Cylinder Tons	Part No.	A	B	C	D	E
5	<b>350895</b>	5	7/8 Dia.	3/4 - 14 NPT	2 1/64 Dia.	2
5	<b>38908</b>	10	7/8 Dia.	3/4 - 14 NPT	2 1/64 Dia.	2
5	<b>350896</b>	18	7/8 Dia.	3/4 - 14 NPT	2 1/64 Dia.	2
10	<b>350897</b>	5	1 7/16 Dia.	1 1/4 - 11 1/2 NPT	2 1/64 Dia.	2
10	<b>38909</b>	10	1 7/16 Dia.	1 1/4 - 11 1/2 NPT	2 1/64 Dia.	2
10	<b>350898</b>	18	1 7/16 Dia.	1 1/4 - 11 1/2 NPT	2 1/64 Dia.	2

Cylinder Base Attachment



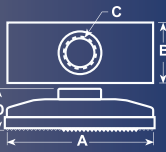
Cylinder Tons	Part No.	A	B	C	D
5	<b>208380</b>	1 5/8	1 3/4 Dia.	3/4 14 NPSM	9/32 Dia. (2) 1/4 - 20 UNC x 3/4 Lg. Socket Head Cap Screws
10	<b>208381</b>	1 7/8	2 1/2 Dia.	1 1/4 - 11 1/2 NPSM	11/32 Dia. (2) 5/16 - 18 UNC x 3/4 Lg. Socket Head Cap Screws
25	<b>208382</b>	2 3/8	3 3/8 Dia.	2 - 11 1/2 NPSM	17/32 Dia. (2) 1/2 - 13 UNC x 1 Lg. Socket Head Cap Screws



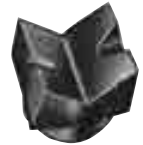
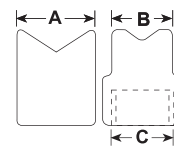
Swivel Cap

Cylinder Tons	Part No.	A	B
10 or 15	<b>350144</b>	7/8	1 3/8
25	<b>350145</b>	1 1/8	2
55 or 75	<b>350376</b>	1 1/4	2 13/16
100	<b>351574</b>	1 29/32	3 15/32

Cylinder Flat Base



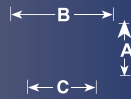
Cylinder Tons	Part No.	A	B	C	D
5	<b>25750*</b>	4 1/2	2 1/2	3/4 - 14 NPSM	1 11/32
10	<b>32325*</b>	6 9/16	3 1/2	1 1/4 - 11 1/2 NPSM	1 7/16



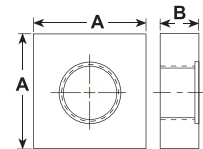
90° "V" Base

Cylinder Tons	Part No.	A	B	C
5	<b>25388*</b>	1 3/8	1 1/16	3/4 - 14 NPSM
10	<b>25395*</b>	2 1/8	2 1/8	1 1/4 - 11 1/2 NPSM

Smooth Saddle Serrated Saddle



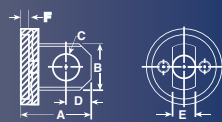
Cylinder Tons	Part No.	A	B	C
5	<b>25746*(serrated)</b>	1 1/8	1 5/16 Dia.	3/4 - 14 NPSM
10 or 15	<b>31772*(serrated)</b>	1 1/8	2 Dia.	1 1/4 - 11 1/2 NPSM
25	<b>31776*(serrated)</b>	1 5/16	3 Dia.	2 - 11 1/2 NPSM
5	<b>351575*(plain)</b>	1 1/8	1 5/16 Dia.	3/4 - 14 NPSM
10	<b>24016*(plain)</b>	1 1/8	2 Dia.	1 1/4 - 11 1/2 NPSM
25	<b>351576*(plain)</b>	1 5/16	3 Dia.	2 - 11 1/2 NPSM



Plunger Base

Cylinder Tons	Part No.	A	B	C
25	<b>25652</b>	6	1 1/4	2 - 11 1/2 NPSM

Body Clevis†



Cylinder Tons	Part No.	A	B	C	D	E	F
5	<b>350096</b>	2 1/16	1 1/8	5/8	5/8	9/16	1/4
10	<b>350097</b>	3	1 11/16	7/8	1	1	1/4
15	<b>350098</b>	3 1/16	1 11/16	7/8	1	1	1/4
25	<b>420061</b>	3 9/16	2 1/4	1 1/4	1 1/4	1 1/2	1/4

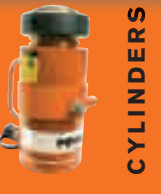
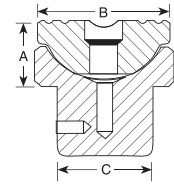
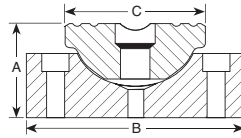
\* Items require threaded adapter (Page 36) when used with "C" series cylinders. They may be used on threaded "CBT" cylinders without the use of an adapter.

† Mounting screws are included.



# ACCESSORIES

## Swivel Caps Center Hole Accessories



CYLINDERS

Use with Cyl. No.		Swivel Cap Order No.	Wt. (lbs.)	A (in.)	B (in.)	C (in.)
RSS101		<b>350320</b>	0.5	1	1 <sup>7</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>16</sub>
RSS202		<b>350321</b>	1.3	1 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>
RSS302		<b>350322</b>	1.6	1 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>8</sub>
RSS502		<b>350331</b>	2.7	1 <sup>7</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>
RSS1002		<b>350332</b>	6.6	1 <sup>13</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
Tonnage		"RA" CYLINDERS				
55		<b>350376</b>	2	1 <sup>1</sup> / <sub>4</sub>	2 <sup>13</sup> / <sub>16</sub>	2 <sup>13</sup> / <sub>16</sub>
100		<b>350984</b>	5.6	1 <sup>15</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>

Cylinder Tonnage	Swivel Cap Order No.	Prod. Wt. (lbs.)	A (in.)	B (in.)	C (in.)
10	<b>350144</b>	0.8	7/8	1 <sup>7</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>
25	<b>350145</b>	1.3	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>16</sub>
55	<b>351325</b>	4.2	2 <sup>7</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>35</sup> / <sub>64</sub>
100	<b>351324</b>	11.2	2 <sup>61</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>4</sub>	2 <sup>21</sup> / <sub>32</sub>
150/200	<b>351334</b>	12.8	2 <sup>5</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>

For use with "RC" cylinders			SWIVEL CAPS Reduce the effects of off center loading. Tilts up to 5 degrees. Radial grooves on top of cap reduce load slippage.			For use with "RL" cylinders			
Use with Cyl. No.	Swivel Cap Order No.	Wt. (lbs.)	A (in.)	B (in.)	A (in.)	B (in.)	Use with Cyl. No.	Swivel Cap Order No.	Wt. (lbs.)
150-200 ton	<b>420867</b>	8.8	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub>	1	2 <sup>13</sup> / <sub>16</sub>	55-100 ton	<b>420866</b>	1.8
280 ton	<b>420868</b>	13.5	1 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub>	150-200 ton	<b>420867</b>	8.8
355 ton	<b>420869</b>	37	2 <sup>3</sup> / <sub>4</sub>	7 <sup>11</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	280 ton	<b>420868</b>	13.5
430 ton	<b>420870</b>	52	3 <sup>1</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	7 <sup>11</sup> / <sub>16</sub>	355 ton	<b>420869</b>	37
565 ton	<b>420871</b>	78	3 <sup>5</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	430 ton	<b>420870</b>	52
					3 <sup>5</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>	565 ton	<b>420871</b>	78

A notch across the face of each cap helps to keep protruding or round shaped loads centered.

		"CENTER-HOLE" CYLINDER ACCESSORIES				
To use with Cyl. No.		RT172, RH203	RT302, RH302, RH303, RH306	RT503, RH503, RH603, RH605, RH606	RT1004	
Order Set No.		RHA20	RHA30	RHA50	RHA100	
	<b>1</b> Speed Crank	<b>1</b>	<b>27198</b>	<b>29595</b>	<b>303785</b>	
	<b>2</b> Speed Nut	<b>2</b>	<b>302482</b>	<b>302483</b>	<b>34136</b>	
	<b>3</b> Adjusting Screw	<b>3</b>	<b>32118</b>	<b>34758</b>	<b>32698</b>	
	<b>4</b> Threaded Insert	<b>4</b>	Order threaded insert for RH series cylinders with the accessory set (See page 39). Threaded insert supplied with RT series cylinders.			
	<b>5</b> Pushing Adapter	<b>5</b>	<b>201923</b>	<b>34510</b>	<b>34755</b>	--
	<b>6</b> Pushing Adapter	<b>6</b>	<b>201454</b>	<b>34511</b>	<b>34756</b>	--
	<b>7</b> Jack Screw	<b>7</b>	<b>24813</b>	<b>25931</b>	<b>32701</b>	<b>32702</b>
	<b>8</b> Screw Cap	<b>8</b>	<b>28228</b>	<b>28229</b>	<b>28230</b>	--



# ACCESSORIES

## Seal Kits



CYLINDERS

Cylinder Order No.	Seal Kit*	Viton Seal Kit
C51C	300404	300210
C53C	300404	300210
C55C	300404	300210
C57C	300404	300210
C59C	300404	300210
C101C	300116	300211
C102C	300116	300211
C104C	300116	300211
C106C	300116	300211
C108C	300116	300211
C1010C	300116	300211
C1012C	300116	300211
C1014C	300116	300211
C1016C	300116	300211
C151C	300453	300471
C152C	300453	300471
C154C	300453	300471
C156C	300453	300471
C158C	300453	300471
C1510C	300453	300471
C1512C	300453	300471
C1514C	300453	300471
C1516C	300453	300471
C251C	300147	300213
C252C	300147	300213
C254C	300147	300213
C256C	300147	300213
C258C	300147	300213
C2510C	300147	300213
C2512C	300147	300213
C2514C	300147	300213
C552C	300114	300215
C554C	300114	300215
C556C	300114	300215
C5510C	300114	300215
C5513C	300114	300215
C756C	300647	300846
C7513C	300647	300846
C1002C	300112	300216
C1006C	300112	300216
C10010C	300112	300216
C55CBT	300404	300210
C106CBT	300116	300211
C1010CBT	300116	300211
C256CBT	300147	300213
C2514CBT	300147	300213
R1502C	300676	—
R1506C	300676	—
R15010C	300676	—
R2002C	300677	—
R2006C	300677	—

Cylinder Order No.	Seal Kit*	Viton Seal Kit
R20010C	300677	—
R2802C	300678	—
R2806C	300678	—
R28010C	300678	—
R3552C	300679	—
R3556C	300679	—
R35510C	300679	—
R4302C	300680	—
R4306C	300680	—
R43010C	300680	—
R5652C	300681	—
R5656C	300681	—
R56510C	300681	—
R1002D	300928	—
R1006D	300928	—
R10010D	300928	—
R1502D	300929	—
R1506D	300929	—
R15010D	300929	—
R2002D	300930	—
R2006D	300930	—
R20010D	300930	—
R2802D	300931	—
R2806D	300931	—
R28010D	300931	—
R3552D	300932	—
R3556D	300932	—
R35510D	300932	—
R4302D	301047	—
R4306D	301047	—
R43010D	301047	—
R5652D	300934	—
R5656D	300934	—
R56510D	300934	—
R552L	300674	—
R556L	300674	—
R5510L	300674	—
R1002L	300675	—
R1006L	300675	—
R10010L	300675	—
R1502L	300676	—
R1506L	300676	—
R15010L	300676	—
R2002L	300677	—
R2006L	300677	—
R20010L	300677	—
R2802L	300678	—
R2806L	300678	—
R28010L	300678	—
R3552L	300679	—
R3556L	300679	—

Cylinder Order No.	Seal Kit*	Viton Seal Kit
R35510L	300679	—
R4302L	300680	—
R4306L	300680	—
R43010L	300680	—
R5652L	300681	—
R5656L	300681	—
R56510L	300681	—
RA202	300631	—
RA204	300631	—
RA206	300631	—
RA302	300632	—
RA304	300632	—
RA306	300632	—
RA552	300391	—
RA554	300391	—
RA556	300391	—
RA5510	300391	—
RA1002	300444	—
RA1006	300444	—
RA556L	300395	—
RA1006L	300396	—
RD106	300017	—
RD1010	300017	—
RD256	300018	—
RD2514	300018	—
RD556	300005	—
RD5513	300005	—
RD5518	300005	—
RD8013	300410	—
RD1006	300120	—
RD10013	300120	—
RD10020	300120	—
RD1506	300007	—
RD15013	300007	—
RD15018	300007	—
RD2006	300008	—
RD20013	300008	—
RD3006	300466	—
RD30013	300466	—
RD4006	300467	—
RD40013	300467	—
RD5006	300468	—
RD50013	300468	—
RH102	300071	300221
RH108	300071	300221
RH120	300657	—

Cylinder Order No.	Seal Kit*	Viton Seal Kit
RH121	300576	—
RH121T	300576	—
RH123	300576	—
RH202	300615	—
RH203	300069	300222
RH206	300615	—
RH302	300037	300223
RH306	300037	300223
RH503	300059	300225
RH603	300477	300476
RH606	300477	300476
RH1003	300485	300585
RH303	300077	300224
RH306D	300822	300224
RH3010	300625	—
RH605	300269	300226
RH6010	300626	—
RH1001	300927	—
RH1006	300295	300227
RH10010	300629	—
RH1505	300154	300228
RH1508	300583	—
RH2008	300582	—
RHA306	300867	300868
RHA604D	300269	300226
RLS50	300454	—
RLS100	300455	—
RLS200	300456	—
RLS300	300457	—
RLS500S	300458	—
RLS750S	300459	—
RLS1000S	300460	—
RLS1500S	300461	—
RP25	300628	—
RP55	300627	—
RSS101	300010	—
RSS202	300011	—
RSS302	300297	—
RSS502	300292	—
RSS1002	300293	—
RSS2503	—	—
RSS1002D	300578	—
RT172	300358	—
RT302	300359	—
RT503	300360	—
RT1004	300024	—

\* Nitrile seals comes standard on all cylinders.

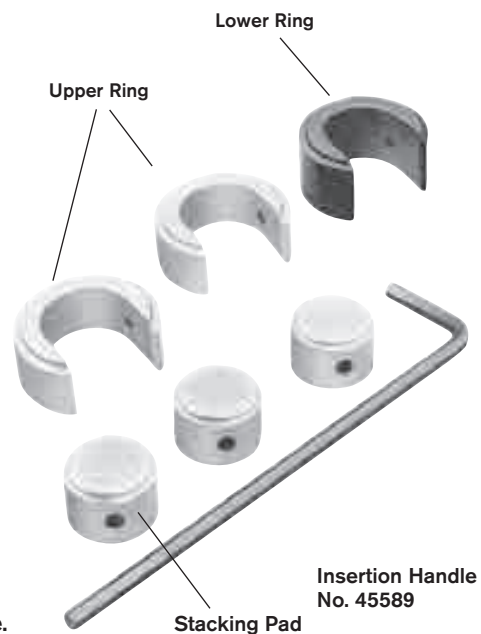
# ACCESSORIES

## Cribbing Blocks



Convert Power Team “Shorty” cylinders to mechanical cribbing devices; more stable and safe than timber or other awkward, makeshift methods. Ideal for lifting applications such as structure moving. Reduces cribbing time dramatically. In effect, increases the stroke of the cylinder; stacking pads act as cylinder extensions:

1. Extend cylinder and insert lower supporting ring.
2. Retract cylinder, insert a stacking pad.
3. Extend cylinder again; pad increases cylinder stroke.
4. Repeat process until all rings and pads are used.



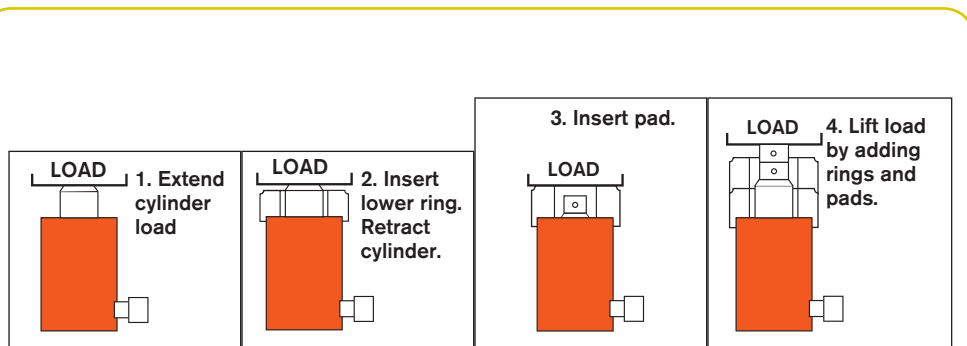
Each cribbing block set includes rings, pads and insertion handle.

**No. CB30** – Cribbing block set for use with No. RSS302; 30 ton cylinder.

**No. CB50** – Cribbing block set for use with No. RSS502; 50 ton cylinder.

**No. CB100** – Cribbing block set for use with No. RSS1002; 100 ton cylinder.

**No. 45589** – Insertion handle is used for inserting rings and pads.



FOR USE WITH ORDER NUMBER	30 TON CYLINDER NO. RSS302 30 TON SET NO. CB30			50 TON CYLINDER NO. RSS502 50 TON SET NO. CB50			100 TON CYLINDER NO. RSS1002 100 TON SET NO. CB100		
	Lower Ring	Upper Ring	Stacking Pad	Lower Ring	Upper Ring	Stacking Pad	Lower Ring	Upper Ring	Stacking Pad
No. included in set	1	2	3	1	2	3	1	3	4
Outside Diameter (in.)	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	7 <sup>25</sup> / <sub>64</sub>	7 <sup>25</sup> / <sub>64</sub>	4 <sup>3</sup> / <sub>4</sub>
Inside Diameter (in.)	2 <sup>13</sup> / <sub>16</sub>	2 <sup>13</sup> / <sub>16</sub>	—	3 <sup>29</sup> / <sub>64</sub>	3 <sup>29</sup> / <sub>64</sub>	—	4 <sup>13</sup> / <sub>16</sub>	4 <sup>13</sup> / <sub>16</sub>	—
Height, each (in.)	2 <sup>9</sup> / <sub>32</sub>	1 <sup>51</sup> / <sub>64</sub>	1 <sup>25</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>	1 <sup>23</sup> / <sub>32</sub>	1 <sup>11</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>23</sup> / <sub>32</sub>
Diameter (in.) rings in Set (in.)		4 <sup>1</sup> / <sub>2</sub>			4 <sup>3</sup> / <sub>16</sub>			6 <sup>7</sup> / <sub>8</sub>	
Weight of Set (lbs.)		20			28			64	

Each set includes one Insertion Handle No. 45589 - 1/2" Hex. x 18" Long, 4" Bend

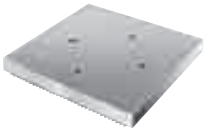


### CYLINDER LIFTING HANDLE

<b>No. 420655OR9</b>	—	Lifting handle for "C" series, 25 ton cylinders.
<b>No. 4213120R9</b>	—	Lifting handle for RH302, RH303, RH306 and RH306D cylinders.
<b>No. 252215</b>	—	Lifting handle RHA306, 30 ton cylinder.
<b>No. 420496BK2</b>	—	Lifting handle RA552 and RA554, 55 ton cylinders.
<b>No. 420498BK2</b>	—	Lifting handle RA1002, 100 ton cylinder.



### ALUMINUM CYLINDER BASE



**Aluminum Cylinder Base** – For use when an enlarged cylinder base is needed or advantageous. Attaches to bottom of RA556, RA556L and RA5510 with four 3/8"–16 screws (included). Serrated base for extra stability.

**No. 208406** – Aluminum cylinder base, 7" square. For use with RA556, RA556L and RA5510 cylinders.



### HEAD INSERTS FOR RH SERIES CYLINDERS

For Use With:	Threaded Insert Order No.
RH102, RH108	28632 3/4"–16
RH203	28612 1"–8
RH302, RH306	38904 1 1/4"–7
RH303	28644 1 1/4"–7
RH503	38855 1 5/8"–5 1/2
RH603, RH605 RH606	34251 1 5/8"–5 1/2



Quick-Change Inserts

### "QUICK CHANGE" HEAD INSERTS FOR RT SERIES CYLINDERS

For Use With:	Threaded Order No.*	Plain Order No.
RT172	21669	21714
RT302	21873	21872
RT503	22274	22275
RT1004	24197	24196

Switch from a tapped hole to a plain hole quickly with these cylinder head inserts. They are held in place with a socket screw. Plain hole permits use of a speed nut for re-adjusting cylinder after extension.

\* Provided with cylinder

# PUMPS


HIGH PERFORMANCE HIGH FORCE HYDRAULICS




Page  
**PUMP BASICS...42**



Page  
**P SERIES...46-48**  
Hand Pumps



Page  
**RPS SERIES...49**  
Cylinder and Pump Sets



Page  
**PA6...50-51**  
Air Hydraulic




Page  
**PA6D...52-53**  
Air Hydraulic




Page  
**PA9...54-55**  
Air Hydraulic




Page  
**PA60...56-57**  
Air Hydraulic




Page  
**PA50...58-59**  
Air Hydraulic




Page  
**PA17...60-61**  
Air Hydraulic




Page  
**PA46/55...62-63**  
Air Hydraulic




Page  
**PUA, PMA...64-67**  
Air Operated Pump




Page  
**PE10...68-69**  
Electric Battery




Page  
**PE17...70-71**  
Electric Hydraulic




Page  
**PE18...72-73**  
Vanguard Jr.<sup>®</sup>  
Electric Hydraulic




Page  
**PE21...74-75**  
Electric Hydraulic




Page  
**PED...76-77**  
Electric Hydraulic




Page  
**PE30...78-79**  
Vanguard<sup>®</sup>  
Electric Hydraulic




Page  
**PE46...80-81**  
Electric Hydraulic




Page  
**PE55 VANGUARD**  
...82-83  
Electric Hydraulic




Page  
**PE60...84-85**  
Electric Hydraulic




Page  
**PQ60...86-87**  
Quiet Electric Hydraulic



Page  
**PQ120...88-89**  
Quiet Electric Hydraulic




Page  
**PE400...90-91**  
Electric Hydraulic




Page  
**PE-NUT...92**  
Electric Hydraulic




Page  
**PG30/55...94-95**  
Gasoline Driven



Page  
**PG120-PG400...96-97**  
Gasoline Driven



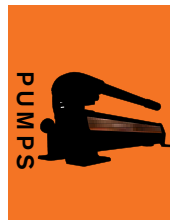

Page  
**INTENSIFIER...98**



Page  
**X1A1-PT...99**



Page  
**ASSEMBLE ...100**  
TO ORDER PUMPS





# PUMP SELECTION

Choose the Right Pump



**Step 1** — Select the hydraulic cylinder that best suits the application. See pages 6-8.

**Step 2** — Select the series of hydraulic pump with adequate oil output and reservoir capacity to power cylinder. See page 45. Check speed/selection chart on page 6.

**Step 3** — Select pump within series with the valve option that is best suited to the cylinder and application. See pages 120-121.

## CONSIDERATIONS:

- What maximum system operating pressure (psi) is required?
- What volume of oil delivery is required? (For manual pumps, cu. in. of oil per handle stroke; for powered pumps, cu. in./min. of oil).
- Is a single or 2-speed pump required? (2-speed pumps deliver high oil volume at low pressure for rapid cylinder piston advance, then shift to high pressure, low volume stage under load).
- What is the preferred source of power?
  - a) Manual (hand or foot operated). Provides portability, can be used where electricity or shop air are not available.
  - b) Air/Hydraulic. Uses shop air or a portable air compressor.
  - c) Electric/Hydraulic. What voltage is available? Is a battery operated pump preferred?
  - d) Gasoline Engine/Hydraulic. Powers high-output pumps at remote job sites where air or electricity are unavailable.
- Is portability of the pump a factor to consider?
- Will the pump be used intermittently, or will it need to provide high-cycle operation? Does the application require that the pump be capable of starting under load?
- Is fluid heat build-up a factor in your application? High cycle applications may require a larger capacity oil reservoir for cooling. Also, if you are using large displacement

cylinders, the reservoir capacity must be sufficient to fully extend the piston of the cylinder.

- Will the application require large displacement or multiple cylinders? Reservoir size and pump output levels will be factors to consider.
- Does the working environment require a pump having a low operating noise (dBA) level?
- Must the pump operate in a spark-free environment?

## MANUALLY-OPERATED HYDRAULIC PUMPS:

**P12, P23, P55** — These single-speed pumps are for use with single-acting cylinders. See page 46.

**P19, P59, P59F, P157, P159, P300, P460** — These 2-speed pumps are used with single-acting cylinders. The 2-speed feature provides high oil volume for fast cylinder piston approach to the work; pump automatically shifts to the high pressure stage. This reduces the number of pump handle strokes required. See pages 47-48.

**P157D, P159D, P300D, P460D** — These 2-speed pumps are used with double-acting cylinders. See page 48.



## AIR/HYDRAULIC PUMPS

Used where air is the preferred energy source or where electricity is not available. Ideal for use in petrochemical, mines or other flammable or explosive environments.

**PA6 Series** – These single-speed pumps drive single or double-acting cylinders. See pages 50-51.

**PA9 Series** – These new single-speed pumps drive single-acting cylinders and are ideal for powering portable hydraulic tools. See pages 54-55.

**PA50 Series** – These single-speed pumps drive single or double-acting low pressure (3,200 psi) cylinders. See pages 58, 59.

**PA60** – This 2-speed pump is equipped with a manifold to operate multiple cylinders, and provides a 2-gallon reservoir. See pages 56-57.

**PA64** – Similar to PA60, this 2-speed pump drives single or double-acting cylinders. See pages 56-57.

**PA172 and PA174** – These “economy” 2-speed pumps drive single or double-acting cylinders, depending on the model chosen. Provide a low weight-to-output ratio. See pages 60-61.

**PA462 and PA464 Series** – These 2-speed pumps drive single or double-acting cylinders, depending on the model selected. They offer high speed cylinder piston advance. See pages 62-63.

**PA554** – This 2-speed pump drives single or double-acting cylinders, delivering a high volume of oil. See pages 62-63.

## ELECTRIC/HYDRAULIC PUMPS

All of the following pumps are 2-speed models, and can be used to drive single or double-acting cylinders.

**“Quarter Horse” Series** – As their name implies, these pumps feature a 1/4 hp electric motor. A battery-powered version is available. Having a low noise level and weighing just 20 lbs., they are ideal for powering portable hydraulic spreaders, nut splitters, pipe flange spreaders and other tools. See pages 68-69.

**PE17 Series** – CSA rated for intermittent duty, these feature a 1/2 hp, single phase induction motor with a low noise level (67-81 dBA). Smaller generators and low amperage circuits can be used as a power source. See pages 70-71.

**PE46 Series** – Powered by a 1 1/2 hp, single phase induction motor, operates at a moderate noise level of 77-81 dBA. CSA rated for intermittent duty. See pages 80-81.

**PE18 Series** – CSA rated for intermittent duty, these feature a 1/2 hp, single phase universal motor with a noise level of 85-90 dBA. Provide high performance at a low price. Has low amperage draw. See pages 72-73.

**PE30 Series** – Equipped with a 1 hp, single phase permanent magnet motor, have a noise level of only 82-87 dBA. CSA rated for intermittent duty, and requires a relatively low voltage; ideal for use in general construction applications. Roll cage/handle protects the motor and controls. See pages 78-79.

**PE55 and PED25 Series** – The famous Vanguard® pumps have been continually upgraded for 40 years; some of the originals are still in service! Equipped with a 1 1/8 hp, single phase universal motor, have a 90-95 dBA noise level. Offer the best weight to performance ratio of any Power Team electric/hydraulic pump. CSA rated for intermittent duty. The PED25 versions are “dual flow” pumps which deliver the same low and high pressures to both valves, and have a noise level of 80-85 dBA. They have a 1 1/2 hp induction motor. See pages 76-77, 82-83.

# PUMP SELECTION

Choose The  
Right Pump



**PE60 Series** – These Vanguard® Supreme® pumps provide trouble-free service in the most severe working environments. Powered by a 1 1/8 hp, single phase motor, has a moderate noise level of 80-85 dBA. Starts under load even at the reduced voltages encountered on construction sites. High-output pumps, ideal for use with post-tensioning/pre-stressing jacks and other high-pressure hydraulic tools. See pages 84-85.

**“Custom-Built” Pumps** – Power Team offers you “assemble to order” electric/hydraulic pumps to suit unique applications. You can choose from pre-engineered, off the-shelf components to customize your pump. See pages 100-103.

**PE21 Series** – Ideal for heavy-duty, extended-cycle applications. Powered by a 1 hp, single phase motor, pump operates at a very low noise level of 70 dBA. Pump automatically shuts down in the event of a power failure. CSA rated for intermittent duty. See pages 86-87.

**“Quiet” Pumps** – Our PQ60 and PQ120 series operate at a very low noise level of between 73-78 dBA. The PQ60 has a 2 hp (single phase) motor; the PQ120 has a 3 hp (3-phase) motor. These pumps are designed for heavy-duty, extended cycle operations. CSA rated for intermittent duty. See page 74.

**PE400 Series** – High-flow units deliver a large volume of high pressure oil for heavy construction and maintenance operations employing high tonnage cylinders. The PE400 is powered by a 10 hp, 3-phase motor. Low noise rating of 73-80 dBA. See pages 90-91.



## GASOLINE-DRIVEN HYDRAULIC PUMPS

These two-speed pumps are ideal for use in remote applications, such as construction sites. May be used with single or double-acting cylinders.

**PG30 Series** – Powered by a 2-cycle, 2 hp Honda engine, these have an integral, protective “roll cage” and adequate reservoir capacity for cylinders up to 100 tons capacity or more. Readily portable; popular in the railroad, rescue and construction markets. See pages 94-95.

**PG55 Series** – With a 4-cycle, 4 hp Briggs & Stratton engine, this pump is based on our popular Vanguard® Series hydraulic system. It has a generous five gallon reservoir capacity. See pages 94-95.

**PG120 Series** – Powered by a 4-cycle, 5.5 hp Honda engine. Has a five gallon reservoir; capable of handling multiple-cylinder lifting tasks. Ideal for the structure moving, pier setting, bridge lifting and concrete contracting industries. See pages 96-97.

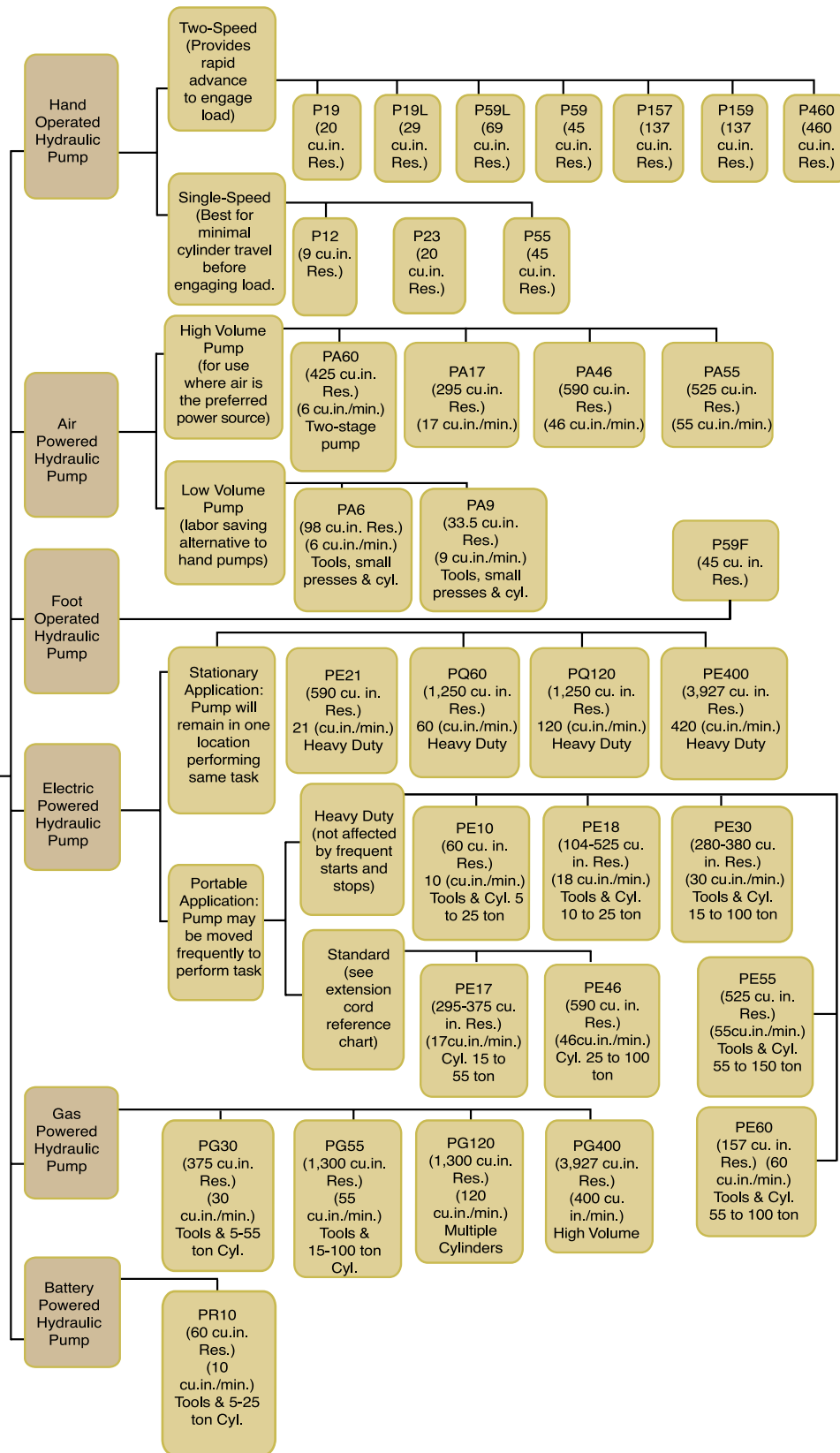
**PG4004** – Featuring a 4-cycle, 18 hp Honda engine, this unit has a big 20 gallon reservoir. Rugged steel “roll cage” has a hook on top and swivel casters for ease of mobility. Popular for concrete stressing applications. See pages 96-97.

## HYDRAULIC INTENSIFIER

**HB Series** – Turns low pressure hydraulic pumps into high pressure power sources to operate single or double-acting cylinders and tools such as crimpers, spreaders, cutters, etc. Compact and portable for use inside a utility vehicle aerial bucket or stowing in a vehicle. See page 98.



**HYDRAULIC  
PUMP  
OPTIONS**



# HAND PUMP

## Hydraulic P Series

12 to 55 cu. in.

Single-Speed Single-Acting

**BEST SUITED FOR APPLICATIONS WHERE THERE IS LITTLE OR NO FREE TRAVEL.**

- All metal construction, won't burn through in welding environments.
- Formed metal handle provides less flex, and reduces operator fatigue.
- Convenient fill port on P23 and P55 allows pumps to be filled in a horizontal or vertical position.
- Fill cap seal acts as safety valve preventing over-pressurizing of reservoir.
- Relief valve inboard of check valve prevents loads from drifting down.
- Large valve knob gives added control for slowly metering loads down.



P23

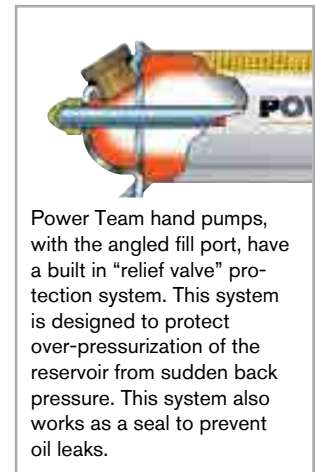
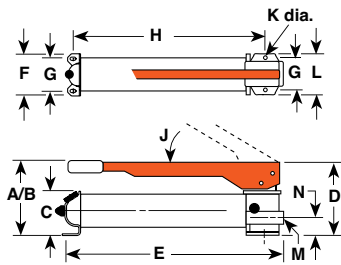


P12



P55

10,000 psi



Power Team hand pumps, with the angled fill port, have a built in "relief valve" protection system. This system is designed to protect over-pressurization of the reservoir from sudden back pressure. This system also works as a seal to prevent oil leaks.

Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (deg.)	K (in.)	L (in.)	M (in.)	N (in.)	P (in.)
P12	4	13	2 <sup>1</sup> / <sub>16</sub>	4	13 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>2</sub>	45	3 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub> NPTF	1 <sup>1</sup> / <sub>8</sub>	—
* P23	6 <sup>1</sup> / <sub>4</sub>	13	3 <sup>1</sup> / <sub>2</sub>	5 <sup>9</sup> / <sub>16</sub>	13 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	10 <sup>9</sup> / <sub>16</sub>	38	5 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>8</sub> NPTF	1 <sup>5</sup> / <sub>8</sub>	—
*The P23 pump maximum pressure is 3000 psi only.														
P55	6 <sup>1</sup> / <sub>2</sub>	21	3 <sup>1</sup> / <sub>2</sub>	5 <sup>9</sup> / <sub>16</sub>	23	4 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	19 <sup>3</sup> / <sub>4</sub>	38	5 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>8</sub> NPTF	1 <sup>5</sup> / <sub>8</sub>	—

For Use With	Order No.	Volume & Pressure Reservoir					Handle Effort (lbs.)	Oil Capacity (cu.in.)	Usable Oil Capacity (cu. in.)	Oil Port (in.)	Product Weight (lbs.)
		Speed	Volume per Stroke (cu. in.) LP	Volume per Stroke (cu. in.) HP	Maximum Pressure (psi) LP	Maximum Pressure (psi) HP					
Single Acting	P12	1	—	.069	—	10,000	75	12	9	3/8 NPTF	5.7
	P23	1	—	.160	—	3,000	70	23.8	20.3	3/8 NPTF	12
Cylinders*	P55	1	—	.160	—	10,000	145	55	45	3/8 NPTF	15.8

LP = Low Pressure  
HP = High Pressure

\* Pump includes 2-Way Valve





P59L

# HAND PUMP

## Hydraulic P Series

24.4 to 55 cu. in.  
Two-Speed Single-Acting

10,000 psi

### PUMP AUTOMATICALLY SHIFTS INTO THE HIGH PRESSURE LIFT STAGE UPON CONTACT WITH THE LOAD.

- All metal construction won't burn through in welding environments.
- Two-speed reduces handle strokes so you work faster and easier.
- Formed metal handle provides less flex, and reduces operator fatigue.
- Convenient fill port allows pumps to be filled in a horizontal or vertical position.
- Relief valve inboard of check valve prevents loads from drifting down.
- Large valve knob gives added control for slowly metering loads down.

### P19L/P59L

- More usable oil volume — use with larger or longer stroke cylinders.
- True unloading valve set for 850 PSI (59 Bar) provides more efficiency and lower handle force.
- Link design reduces handle effort by 40%.

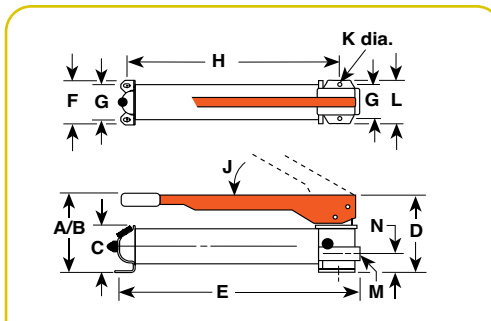
- Durable aluminum reservoir, manifold, and end cap.
- Ergonomic non-slip handle grip provides more comfort.
- Spring loaded handle lock incorporated into handle.

### P59F

- Replaces hand control with foot control.



P19



### Foot pump conversion kit

**No. FK59** - Foot pump conversion kit for use on P55/P59 pumps. Wt., 6 lbs.

**No. FK159B** - Foot pump conversion kit for use on P157/P159 and P300/P300D pumps. Wt., 6 lbs.

Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (deg.)	K (in.)	L (in.)	M (in.)	N (in.)
<b>P19</b>	5 1/2	14 5/8	2 7/8	4 9/16	13 11/16	4	3 1/4	11 1/16	53°	5/16	4	3/8 NPTF	1 13/32
<b>P19L</b>	5 1/2	—	—	—	13 11/16	4 1/8	3 1/4	11 1/16	40°	5/16	—	3/8 NPTF	—
<b>P59</b>	7	21	3 1/2	5	23	4 1/4	3 1/4	19 3/4	38°	5/16	4 3/4	3/8 NPTF	1 5/8
<b>P59L</b>	7	—	—	—	21	5	3 1/4	19 3/4	50°	5/16	—	3/8 NPTF	—
<b>P59F</b>	3 1/2	16 3/4	3 1/2	6	23 1/4	4 1/4	3 1/4	20 1/4	—	5/16	4 1/2	3/8 NPTF	1 11/16

For Use With	Order No.	Volume & Pressure					Reservoir Handle Effort (lbs.)	Oil Capacity (cu.in.)	Usable Oil Capacity (cu. in.)	Oil Port (in.)	Product Weight (lbs.)
		Speed	Volume per Stroke (cu. in.)		Maximum Pressure (psi)						
Single Acting	<b>P19</b>	2	.305	.076	325	10,000	99	24.4	20	3/8 NPTF	6.6
	<b>P19L</b>	2	.250	.050	850	10,000	78	29	27	3/8 NPTF	5.1
	<b>P59</b>	2	.662	.160	325	10,000	145	55	45	3/8 NPTF	17.2
Cylinders*	<b>P59L</b>	2	.720	.150	850	10,000	104	69	66	3/8 NPTF	8.9
	<b>P59F</b>	2	.550	.130	325	10,000	120	55	45	3/8 NPTF	14

LP = Low Pressure  
HP = High Pressure

\*Pump includes 2-Way Valve



# HAND PUMP

## Hydraulic P Series

152 cu. in.

Two-Speed Single-  
and Double-Acting



**P300 hand pump and 10 ton cylinders used for a vehicle lift.**

### BEST SUITED FOR APPLICATIONS WHERE THERE IS LITTLE OR NO FREE TRAVEL.

- Rugged all metal construction for strength and durability that won't burn through in welding environments.
- Heavy-duty, formed metal handle provides less flex, and less operator fatigue than round or composite handles.
- Convenient fill port on P23 and P55 allows pumps to be filled in a horizontal or vertical position.
- Fill cap seal acts as safety valve to prevent over-pressurizing of reservoir.
- Relief valve inboard of check valve prevents loads from drifting down.
- Large valve knob gives added control for slowly metering loads down.



**P157/P159**



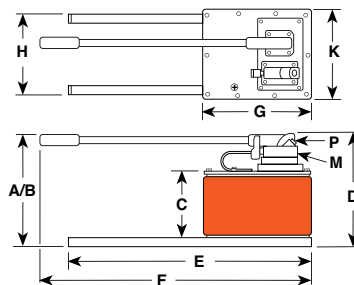
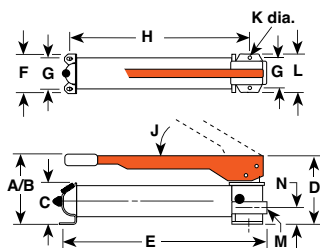
**P300**



**P460**



**P159D**



**FK59  
FK159B**

**Foot pump conversion kit No. FK59** - Foot pump conversion kit for use on P55/P59 pumps. Wt., 6 lbs.

**No. FK159B** - Foot pump conversion kit for use on P157/P159 and P300/P300D pumps. Wt., 6 lbs.

Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (deg.)	K (in.)	L (in.)	M (in.)	N (in.)	P (in.)
<b>P157/</b>														
<b>P159</b>	7 <sup>3</sup> / <sub>4</sub>	20 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	6 <sup>7</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>8</sub>	3	19 <sup>3</sup> / <sub>4</sub>	39	5 <sup>5</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub> NPTF	2 <sup>1</sup> / <sub>4</sub>	—
<b>P300</b>	8 <sup>1</sup> / <sub>4</sub>	21	4 <sup>1</sup> / <sub>2</sub>	6 <sup>7</sup> / <sub>8</sub>	22 <sup>5</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub> /3	20 <sup>23</sup> / <sub>32</sub>	39	5 <sup>5</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub> NPTF	2 <sup>1</sup> / <sub>4</sub>	—
<b>P460</b>	11 <sup>1</sup> / <sub>8</sub>	31	6 <sup>3</sup> / <sub>4</sub>	11 <sup>3</sup> / <sub>8</sub>	24	29 <sup>1</sup> / <sub>4</sub>	11	9	80	9 <sup>1</sup> / <sub>2</sub>	—	3 <sup>3</sup> / <sub>8</sub> NPTF	—	1 <sup>1</sup> / <sub>4</sub>

For Use With	Order No.	Speed	Volume & Pressure		Maximum Pressure (psi)		Reservoir Handle Effort (lbs.)	Oil Capacity (cu. in.)	Usable Oil Capacity (cu. in.)	Oil Port (in.)	Product Weight (lbs.)
			Volume per Stroke (cu. in.)	Stroke (cu. in.)	LP	HP					
Single-Acting	<b>P157</b>	2	.650	.160	1,400	10,000	140	152	137	3 <sup>3</sup> / <sub>8</sub> NPTF	26.7
Acting	<b>P159</b>	2	2.6	.160	325	10,000	140	152	137	3 <sup>3</sup> / <sub>8</sub> NPTF	26.2
Cylinders*	<b>P300</b>	2	2.6	.160	325	10,000	140	1.5 gal.	310	3 <sup>3</sup> / <sub>8</sub> NPTF	55.3
	<b>P460</b>	2	7.35	.294	325	10,000	90	2.5 gal.	460	3 <sup>3</sup> / <sub>8</sub> NPTF	54.9
Double-Acting	<b>P157D</b>	2	.650	.160	1,400	10,000	140	152	137	3 <sup>3</sup> / <sub>8</sub> NPTF	28.8
Acting	<b>P159D</b>	2	2.6	.160	325	10,000	140	152	137	3 <sup>3</sup> / <sub>8</sub> NPTF	27.9
Cylinders**	<b>P300D</b>	2	2.6	.160	325	10,000	140	1.5 gal.	310	3 <sup>3</sup> / <sub>8</sub> NPTF	57.0
	<b>P460D</b>	2	7.35	.294	325	10,000	90	2.5 gal.	460	3 <sup>3</sup> / <sub>8</sub> NPTF	57.9

LP = Low Pressure  
HP = High Pressure

\* Pump includes 2-Way Valve  
\*\* Pump includes 4-Way Valve

**PRECISION-MATCHED CYLINDER AND PUMP SET FOR WIDE RANGE OF APPLICATIONS.**

- Four styles of cylinders to choose from.
- Sets feature single or two-speed hydraulic hand pumps.
- Cylinders of various tonnages with long, medium or short stroke.
- Includes necessary fittings, couplers and 6 foot hose.
- Gauge and gauge mounting adapter is recommended.
- Gauge and gauge mounting adapter is recommended. (See pages 110-111)



RPS1006



RPS55



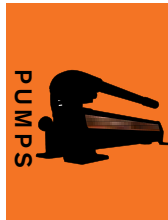
RPS203H

10,000 psi  
ASMEB30-1

**CYLINDER/PUMP**

**RPS Series**

Cylinder and pump Set



**Optional Storage Box** Storage box for hydraulic cylinder and pump sets. Rugged industrial strength material, strong as steel, never needs painting, won't rust, dent or chip. Weatherproof lid is self sealing and lockable. Molded-in handles, water-tight, one piece bottom and side construction. Strong enough to stand on. **Note: Actual product may differ from photo.**

**No. 350722** – 35”L x 14”H x 13 1/2”W, storage box. Wt. 23 lbs.

Style of Cyl.	Cyl. Cap. (tons)	Stroke (in.)	Order No.	Handle Strokes		Cyl. No.	Pump No.	Hose No.	Coupler No.	Pump Speed	Prod. Wt. (lbs.)
				Retracted Height (in.)	Required to Fully Extended Cylinder						
	5	5 1/4	<b>RPS55</b>	8 1/2	75	C55C	P12	9756	9798	Single	12
	10	2 7/8	<b>RPS102**</b>	4 3/4	32	C102C	P55	9756	9798	Single	26
	10	6 1/8	<b>RPS106**</b>	9 3/4	93	C106C	P55	9756	9798	Single	32.1
	10	10 1/8	<b>RPS1010**</b>	13 3/4	154	C1010C	P55	9756	9798	Single	35.6
“C” Series	15	4 1/8	<b>RPS154**</b>	7 7/8	81	C154C	P55	9756	9798	Single	29
	15	6 1/8	<b>RPS156**</b>	10 11/16	118	C156C	P55	9756	9798	Single	34
	25	6 1/4	<b>RPS256**</b>	10 3/4	219	C256C	P55	9756	9798	Single	42.7
	25	14 1/4	<b>RPS2514**</b>	18 3/4	285*	C2514C	P159	9756	9798	Two	62.7
	55	6 1/4	<b>RPS556**</b>	11 1/8	268*	C556C	P159	9756	9798	Two	82.7
	100	6 5/8	<b>RPS1006</b>	13 1/4	428*	C1006C	P460	9756	9798	Two	128.7
“Shorty”	30	2 7/16	<b>RPS302**</b>	4 5/8	61*	RSS302	P59	9756	9798	Two	40
	50	2 3/8	<b>RPS552**</b>	5	89*	RSS502	P59	9756	9798	Two	50
	100	2 1/4	<b>RPS1002**</b>	5 1/2	172*	RSS1002	P59	9756	9798	Two	81
“Center-Hole”	20	3	<b>RPS203H**</b>	6 1/16	80	RH203	P55	9756	9798	Single	40.5
Alum.	55	6 1/8	<b>RPS556A**</b>	10 3/4	262*	RA556	P159	9756	9798	Two	47

\* Base on 50% if the stroke being made at low-pressure and 50% of the strokes at high pressure.

\*\* Add suffix “B” (example: RPS102B, RPS203HB, etc.) to order set with optional storage box shown above.

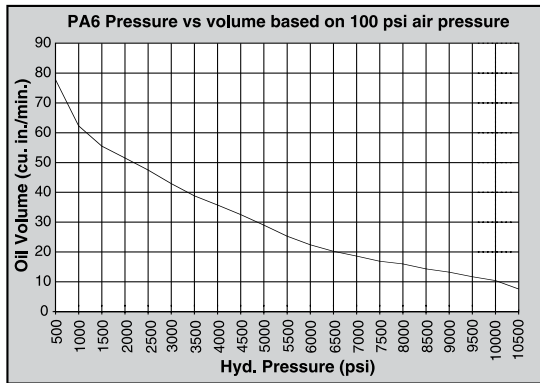
# AIR PUMP

## Hydraulic PA6 Series

### Single-Acting

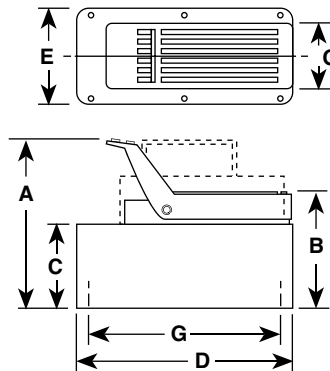
**COMPACT, LIGHTWEIGHT AND PORTABLE. SINGLE-SPEED PUMPS DESIGNED TO DRIVE SINGLE-ACTING CYLINDERS.**

- The power unit of choice for major manufacturers of auto body, frame straighteners and other equipment.
- Operate at 40-100 psi shop air pressure at the pump.
- dBA 85 at 10,000 psi.
- Serviceable pump motor is not a “throw away,” providing economical repair.
- Permanently vented reservoir cap.
- Internal relief valve protects circuit components, air inlet filter protects motor.



10,000 psi

PA6



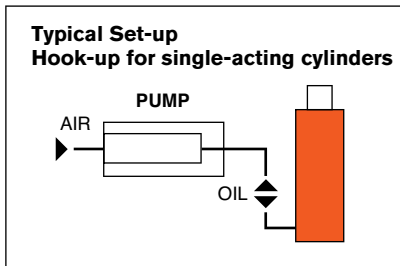
Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)
PA6	7 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	4 x 9
PA6A	7 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	4 x 9
PA6AM	7 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	4 x 9
PA6M	7 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	4 x 9
PA6R	7 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	4 x 9
PA6RM	7 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	4 x 9
PA6M-1	7 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	12 <sup>5</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>8</sub>	—
PA6-2	10 <sup>1</sup> / <sub>4</sub>	8	7	11 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>8</sub>
PA6M-2	10	7 <sup>3</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	8 x 10



PA6M-1



PA6-2



Description	Order No.	Air Supply	Reservoir			Prod. Wt. (lbs.)
		Req'd (psi)	Cap. (cu. in.)	Usable (cu. in.)	Oil Port (in)	
Base model pump with high density polyethylene reservoir.	<b>PA6</b>	40-120	105	98	$\frac{3}{8}$ NPTF	14
PA6 with externally adjustable relief valve.	<b>PA6A</b>	40-120	105	98	$\frac{3}{8}$ NPTF	15
PA6A with metal reservoir.	<b>PA6AM</b>	40-120	105	98	$\frac{3}{8}$ NPTF	17
PA6, except has metal reservoir.	<b>PA6M</b>	40-120	105	98	$\frac{3}{8}$ NPTF	18
PA6 with 12 foot remote control.	<b>PA6R</b>	40-120	105	98	$\frac{3}{8}$ NPTF	20.58
PA6R, except has metal reservoir.	<b>PA6RM</b>	40-120	105	98	$\frac{3}{8}$ NPTF	21.58
PA6, except has 1 gallon metal reservoir.	<b>PA6M-1</b>	40-120	1 gal.	185	$\frac{3}{8}$ NPTF	23.7
PA6, except has 2 gallon, high density polyethylene reservoir.	<b>PA6-2</b>	40-120	2 gal.	454	$\frac{3}{8}$ NPTF	24.5
PA6, except has 2 1/2 gallon metal reservoir.	<b>PA6M-2</b>	40-120	2 1/2 gal.	570	$\frac{3}{8}$ NPTF	32.1



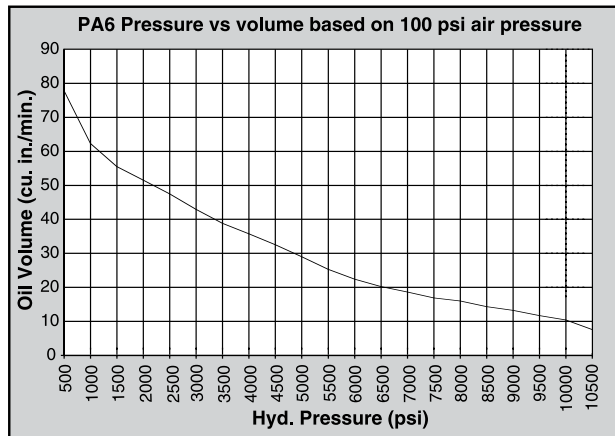
# AIR PUMP

## Hydraulic PA6D Series

6 cu. in./min.  
Double-Acting

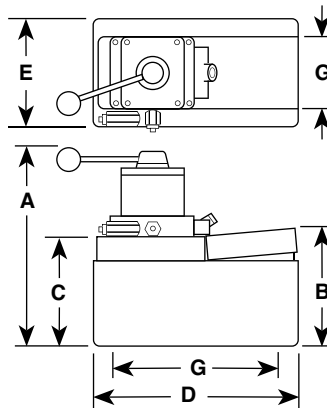
- Operate at 40-100 psi shop air pressure at the pump.
- Internal relief valve protects circuit components, air inlet filter protects motor.
- Serviceable pump motor is not a “throw away,” providing economical repair.
- Permanently vented reservoir cap.
- dBA 85 at 10,000 psi for all PA6 pumps.

**COMPACT, LIGHTWEIGHT AND PORTABLE SINGLE-SPEED PUMP FOR DRIVING DOUBLE-ACTING CYLINDERS.**



10,000 psi

PA6D



Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)
PA6D	10 <sup>3</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	4 x 9
PA6DM	10 <sup>3</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	4 x 9
PA6DM-1	11	5 <sup>3</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>8</sub>	12 <sup>7</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>8</sub>	—
PA6D2	12 <sup>3</sup> / <sub>4</sub>	8	7	11 <sup>9</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>8</sub>
PA6DM-2	12 <sup>1</sup> / <sub>2</sub>	7 <sup>3</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	8 x 10



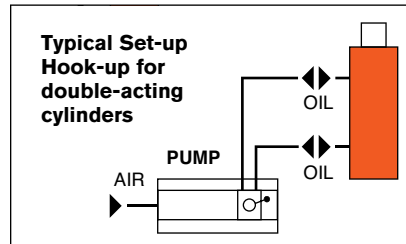
PA6DM-1



PA6D2



PA6D pump, DG100 digital pressure gauge and 25 ton cylinder used in a test fixture.



Description	Order No.	Valve No.	Air Supply		Reservoir			Prod. Wt (lbs.)
			Req'd (psi)	Cap. (cu. in.)	Usable (cu. in.)	Oil Port (in.)		
Base model pump with high density polyethylene reservoir.	<b>PA6D</b>	9504, 3-way/4-way	40-120	105	98	3/8 NPTF	18.4	
PA6D, except has metal reservoir.	<b>PA6DM</b>	9504, 3-way/4-way	40-120	105	98	3/8 NPTF	20.4	
PA6D, except has 1 gallon metal reservoir.	<b>PA6DM-1</b>	9504, 3-way/4-way	40-120	1 gal.	185	3/8 NPTF	28.1	
PA6D, except has 2 gallon, high density polyethylene reservoir.	<b>PA6D2</b>	9504, 3-way/4-way	40-120	2 gal.	454	3/8 NPTF	28.6	
PA6D, except has 2 1/2 gallon metal reservoir.	<b>PA6DM-2</b>	9504, 3-way/4-way	40-120	2 1/2 gal.	570	3/8 NPTF	36.2	

# AIR PUMP

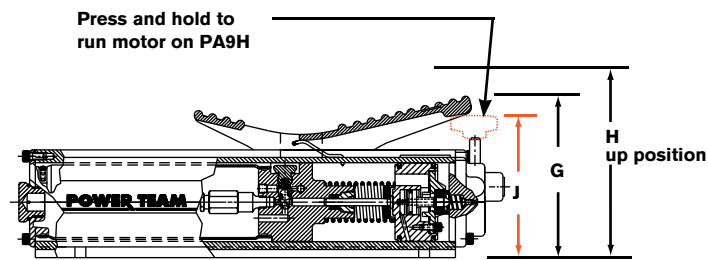
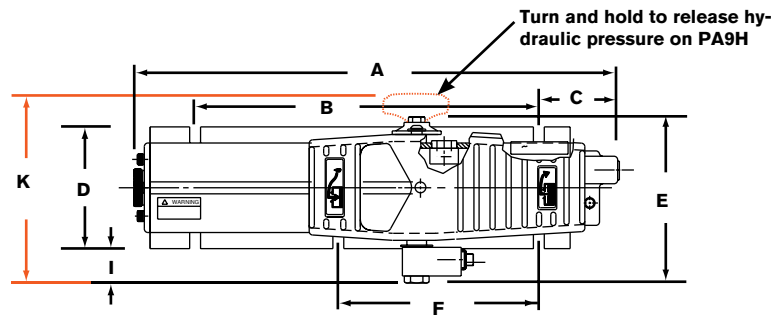
## Hydraulic PA9 Series

9 cu. in./min.  
Single-Acting

**IDEAL FOR POWER-  
ING SINGLE-ACTING  
CYLINDERS AND PORTA-  
BLE HYDRAULIC TOOLS.**

- Easier to operate than a hand pump, giving you the speed you need at an affordable price.
- Easy and economical to service; not a “throw away” unit.
- Unique bladder design for all-position operation and storage.
- Operates on 40-120 psi shop air, at 20 cfm.
- Hard-coat anodized aluminum housing.
- Oil filler with integral safety relief minimizes chance of damage to reservoir bladder if overfilling occurs.

### PA9 Foot Control

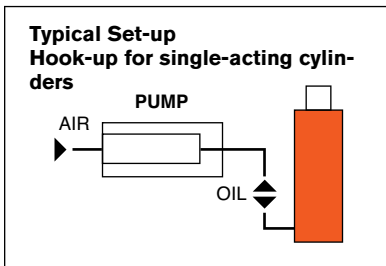
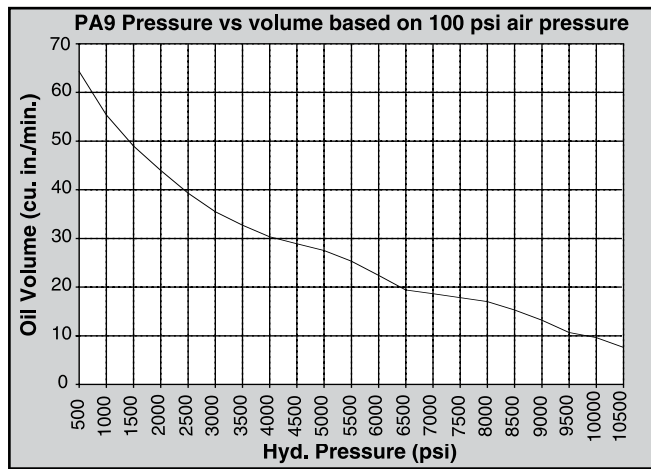


Relief valve settings: up to 10,000 psi  
Mounting holes (standard):  $\frac{3}{8}$ " slots

Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	I (in.)	J (in.)	K (in.)
<b>PA9</b>	$16\frac{15}{16}$	12	$2\frac{13}{16}$	$4\frac{1}{4}$	$5\frac{5}{16}$	7	$5\frac{5}{8}$	7	$1\frac{1}{8}$	—	—
<b>PA9H</b>	$16\frac{15}{16}$	12	$2\frac{13}{16}$	$4\frac{1}{4}$	—	7	—	7	$1\frac{1}{8}$	$4\frac{13}{16}$	$6\frac{11}{16}$



**PA9H Hand Control Pump as used in a straightening press.**



For Use with Cyl. Type	Order No.	Air Supply	Reservoir		Oil Port (in.)	Max. Pressure	Prod. Wt. (lbs.)
		Req'd (psi)	Cap. (cu. in.)	Usable (cu. in.)		Output (psi)	
Single-Acting	<b>PA9</b>	40-120	35	33.5	$\frac{3}{8}$ NPTF	10,000	15
Single-Acting	<b>PA9H</b>	40-120	35	33.5	$\frac{3}{8}$ NPTF	10,000	15

# AIR PUMP

## Hydraulic PA60 Series

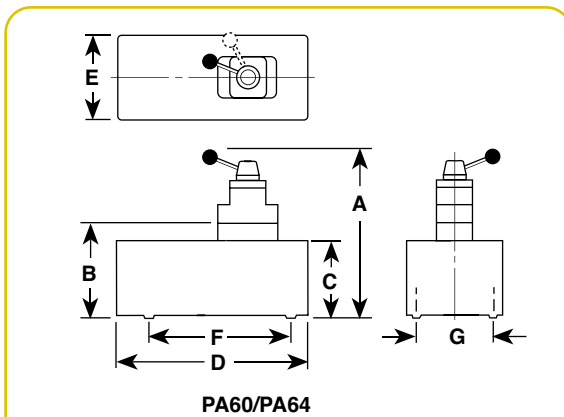
6 cu. in./min.  
Two-Speed

**TWO-SPEED PUMP FOR RAPID OIL DELIVERY AT LOW PRESSURE QUICKLY ADVANCES CYLINDER OR TOOL.**

- Equipped with air pressure regulator, air filter and lubricator.
- Serviceable air motor for economical repair.
- Internal relief valve protects circuit components.
- Permanently vented reservoir cap.



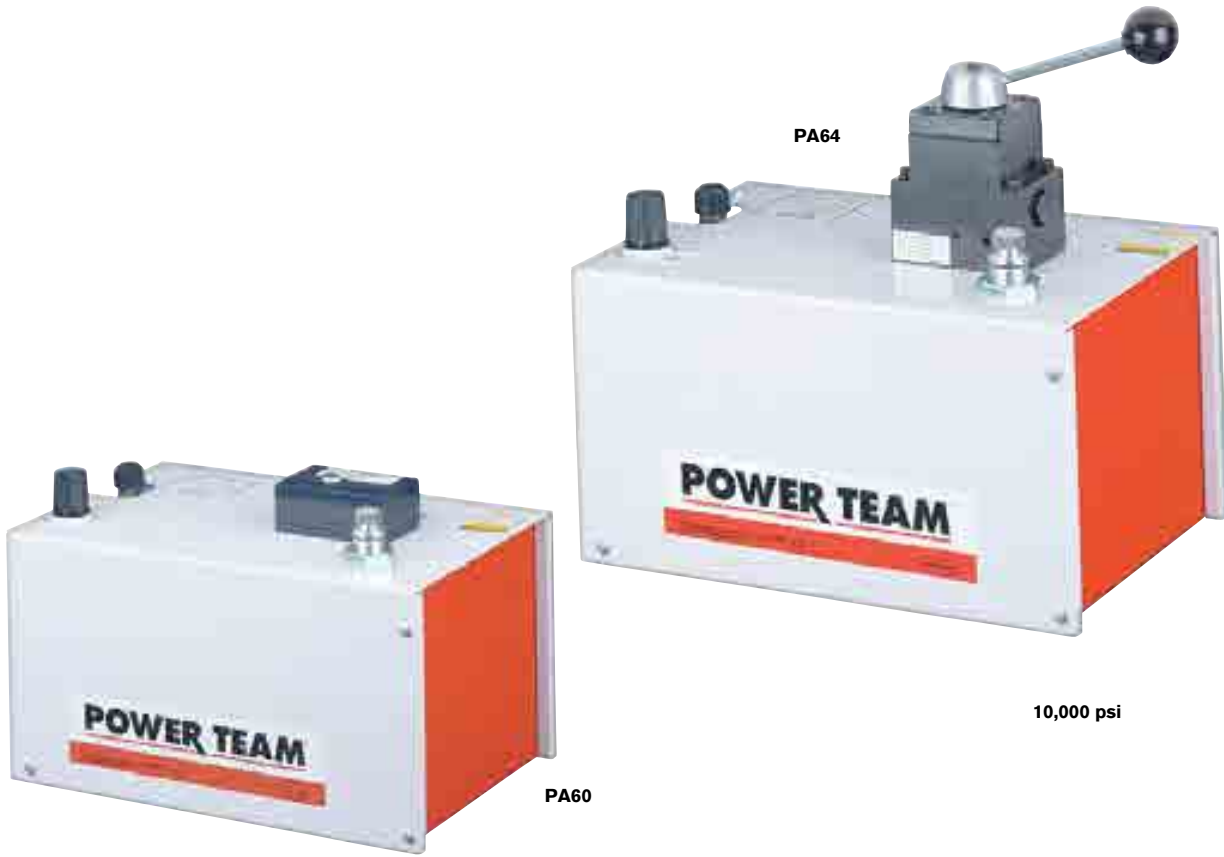
The PA60 used in a workholding environment.



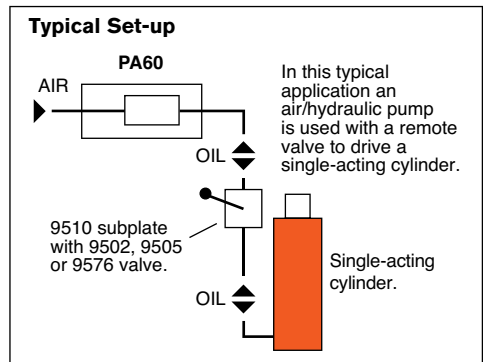
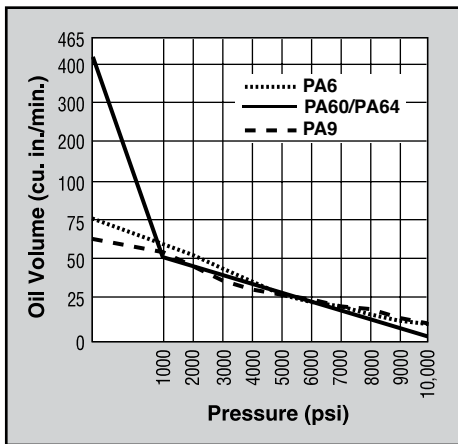
Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	Max. Pressure Output (psi)	Oil Del. * (cu. in./min. @)				
									0 (psi)	100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)
<b>PA60</b>	—	9 <sup>7</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>8</sub>	14 <sup>1</sup> / <sub>4</sub>	9 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	10,000	390	350	50	12	6
<b>PA64</b>	14 <sup>1</sup> / <sub>4</sub>	—	8 <sup>1</sup> / <sub>8</sub>	14 <sup>1</sup> / <sub>4</sub>	9 <sup>5</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	10,000	390	350	50	12	6

\* Typical delivery. Actual flow will vary with field conditions.





10,000 psi



Description	Order No.	Valve No.	Valve Function	Air Supply	Reservoir		Oil Port (in.)	Prod. Wt (lbs.)
				Req'd (psi)	Cap. (gal.)	Usable (cu. in.)		
For use with remote valves.	<b>PA60</b>	Manifold	—	40-120	2	425	$\frac{3}{8}$ NPTF	54
For use with single- or double-acting cylinders.	<b>PA64</b>	9507, 3-way/ 4-way	Advance Hold Return	40-120	2	425	$\frac{3}{8}$ NPTF	56

**Notes:** Air inlet port  $\frac{1}{4}$ " NPTF. Requires 20 cfm at 100 psi shop air pressure at the pump.

# AIR PUMP

## Hydraulic PA50 Series

28 cu. in./min.

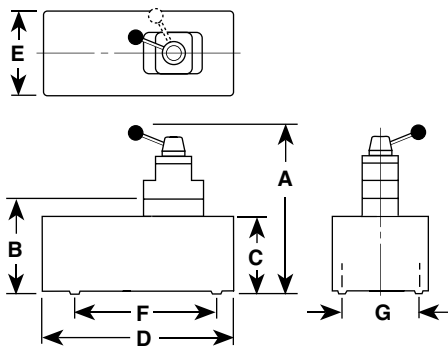
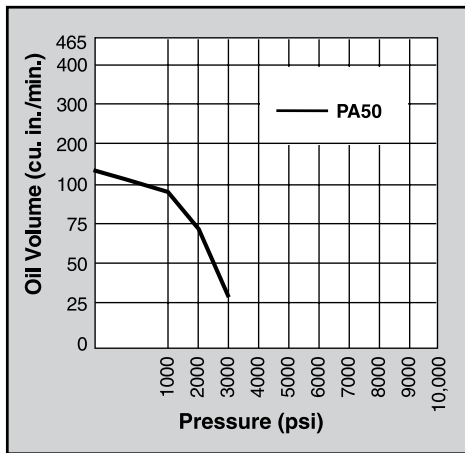
Low Pressure

**SINGLE-SPEED, LOW PRESSURE  
(3,200 PSI) OUTPUT PUMPS.**

PA50D



PA50M

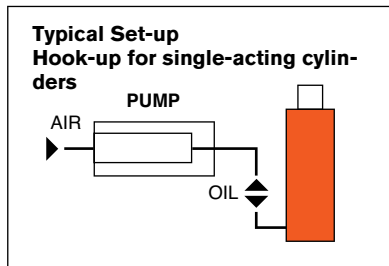


Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	Max. Pressure		Oil Del. * (cu. in./min. @)					
								Output (psi)	0 (psi)	100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)		
<b>PA50, PA50R</b>															
<b>PA50M, PA50RM</b>	7 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	—	4 X 9	3,200	128	110	88	28 †	—		
<b>PA50R2</b>	10 <sup>1</sup> / <sub>4</sub>	8	7	11 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	—	5 <sup>1</sup> / <sub>8</sub> X 7 <sup>1</sup> / <sub>8</sub>	3,200	128	110	88	28 †	—		
<b>PA50D</b>	10 <sup>3</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	5	9	4	3,200	128	110	88	28 †	—		

\* Typical delivery. Actual flow will vary with field conditions.

† PA50 Series measured at 3,200 psi.

- Serviceable air motor for economical repair.
- Air inlet filter protects motor. Filter in outlet port protects against contaminated systems.
- Assorted reservoirs to suit your application's requirements.



For use with Cyl. Type	Description	Order No.	Valve No.	Air Supply	Reservoir			Prod. Wt (lbs.)
				Req'd (psi)	Cap. (cu. in.)	Usable (cu. in.)	Oil Port (in.)	
Single-Acting	Base model pump with high density polyethylene reservoir.	<b>PA50</b>	—	40-120	105	98	$\frac{3}{8}$ NPTF	14.2
Single-Acting	PA50, except has metal reservoir.	<b>PA50M</b>	—	40-120	105	98	$\frac{3}{8}$ NPTF	16.2
Single-Acting	PA50, except has 12 foot remote control.	<b>PA50R</b>	—	40-120	105	98	$\frac{3}{8}$ NPTF	18.5
Single-Acting	PA50, except has metal reservoir.	<b>PA50RM</b>	—	40-120	105	98	$\frac{3}{8}$ NPTF	20.5
Single-Acting	PA50R, except has 2 gallon reservoir.	<b>PA50R2</b>	—	40-120	2 gal.	454	$\frac{3}{8}$ NPTF	28.5
Single- and Double-Acting	PA50, except designed to operate either single or double-acting systems. Valve function: Advance / Return.	<b>PA50D</b>	9504, 3-way/ 4-way	40-120	105	98	$\frac{3}{8}$ NPTF	18.4

**Notes:** Air inlet port  $\frac{1}{4}$ " NPTF. Requires 20 cfm at 100 psi shop air pressure at the pump.

# AIR PUMP

## Hydraulic PA17 Series

17 cu. in./min.  
Two Speed

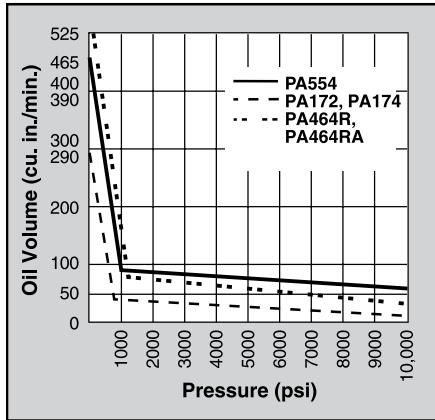


**ROTARY-STYLE AIR MOTOR. USE WHERE AIR IS THE PREFERRED SOURCE OF ENERGY, WHERE ELECTRICITY IS UNAVAILABLE OR SPARKS ARE A CONCERN.**

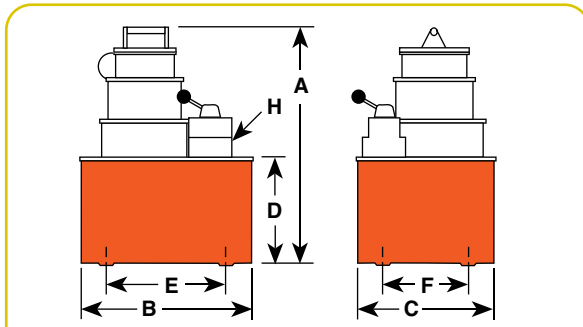
- Two-speed operation for high speed cylinder advance.
- Durable two gallon thermoplastic reservoir. (Metal reservoir conversion kits are available.)
- Features air motor capable of starting under full load.



The PA17 used with a flange spreader

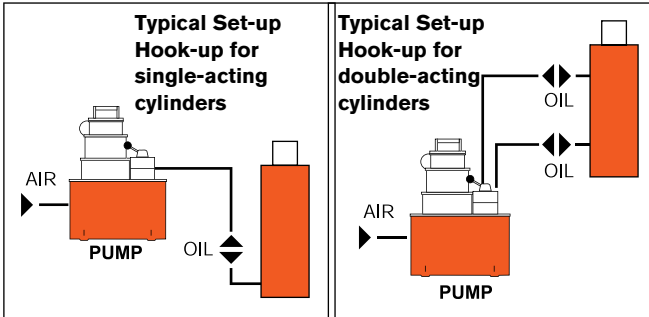


PA172



Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	H (in.)	Max. Pressure Output (psi)	Oil Del. * (cu. in./min. @)				
									0 (psi)	100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)
PA172	14 1/8	11 3/8	9 1/4	7	7 1/8	5 1/8	3/8 NPTF	10,000	290	240	24	23	17
PA174	14 1/8	11 3/8	9 1/4	7	7 1/8	5 1/8	3/8 NPTF	10,000	290	240	24	23	17

\* Typical delivery. Actual flow will vary with field conditions.



10,000 psi



PA174



For use with Cyl. Type	Description	Order No.	Valve No.	Valve Function	Air Supply	Reservoir		Prod. Wt (lbs.)
					Req'd (psi)	Cap. (gal.)	Usable (cu. in.)	
Single-Acting	Base model pump with 2 gallon thermoplastic reservoir.	<b>PA172</b>	9517, 2-way	Advance/Return*	40-120	2	295	40
Single- and Double-Acting	PA172, except has 9500 valve for use with single or double-acting cylinders.	<b>PA174</b>	9500, 4-way	Advance Hold Return*	40-120	2	295	41

**Note:** Requires 20 cfm at 80 psi shop air pressure at the pump.  
dBA 85/90 at 10,000 psi.

\* Holds pressure in advance position when valve motor is shut off or in return position with motor running. Pump will build pressure when motor is shut off and oil returns to reservoir.



# AIR PUMP

## PA46/55 Series

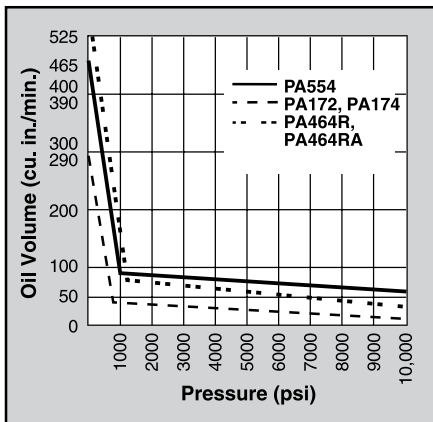
Up to 150 ton  
46-55 cu. in./min.  
Two Speed

**ROTARY-STYLE AIR MOTOR.  
USE WHERE AIR IS THE PRE-  
FERRED SOURCE OF ENERGY.**

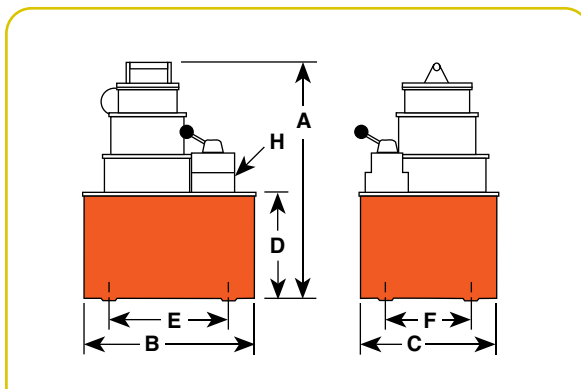
- 3 hp motor starting under full load.
- Two-speed operation for rapid cylinder advance.
- Models available with full remote control over advance and return, (except PA554).
- Tandem center valve holds the load when pump is shut off.



PA462



PA554 pump and RH2008 Center Hole cylinder used to tension cables.



Pump No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	H (in.)	Max. Pressure Output (psi)	Oil Del. * (cu. in./min. @)				
									0 (psi)	100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)
PA462	15	11 1/2	9 1/2	7	10	8	3/8 NPTF	10,000	465	450	53	51	46
PA464	15	11 1/2	9 1/2	7	10	8	3/8 NPTF	10,000	465	450	53	51	46
PA464R	15	11 1/2	9 1/2	7	10	8	3/8 NPTF	10,000	465	450	53	51	46
PA464RA	15	11 1/2	9 1/2	7	10	8	3/8 NPTF	10,000	465	450	53	51	46
PA554	19	11 1/2	9 1/2	7	10	8	3/8 NPTF	10,000	465	450	80	70	55

\* Typical flow delivery. Actual flow will vary with field conditions.

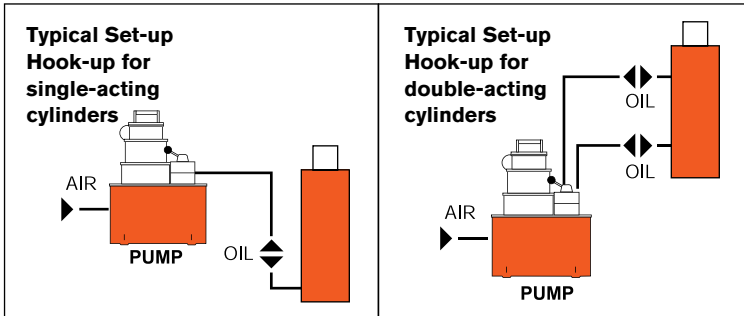
**Note:** Four mounting holes 1/2" - 20



PA464R



PA554



For use with Cyl. Type	Description	Order No.	Valve No.	Valve Function	Air Supply	Reservoir		Prod. Wt (lbs.)
					Req'd (psi)	Cap. (gal.)	Usable (cu. in.)	
Single-Acting	Base model pump with 2 1/2 gallon steel reservoir.	<b>PA462</b>	9584,	Advance/ Hold/Return	40-120	2 1/2	590	60
Single and Double-Acting	PA462, except has 9500 valve capable of running 2 single-acting cylinders or one double-acting cylinder.	<b>PA464</b>	9500,	Advance/ Hold/Return*	40-120	2 1/2	590	61
Single and Double-Acting	PA462 with air actuated valve for full remote control over advance and return. Includes 12 ft. remote control.	<b>PA464R†</b>	9594,	Advance/ Hold/Return	40-120	2 1/2	590	78
Single and Double-Acting	PA464R except, has automatic dump feature. 25 ft. remote control.	<b>PA464RA**†</b>	9594,	Advance/ Hold/Return*	40-120	2 1/2	590	79
Single and Double-Acting	High performance pump with 2 1/2 gallon steel reservoir.	<b>PA554</b>	9500,	Advance/ Hold/Return*	40-120	2 1/2	525	72

**Note:** Requires 50 cfm at 80 psi shop air pressure at the pump. dBA 85/90 at 10,000 psi.

\* Holds when motor is shut-off and valve is in "advance" position.

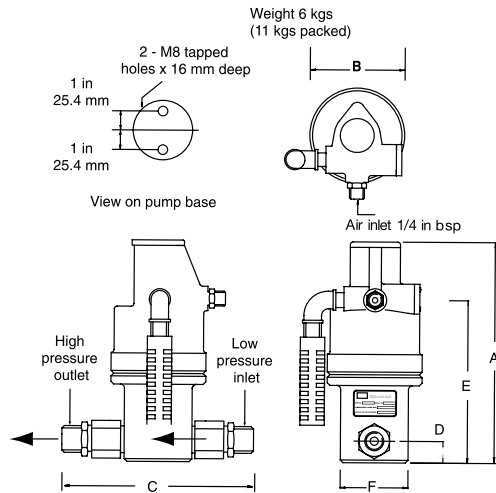
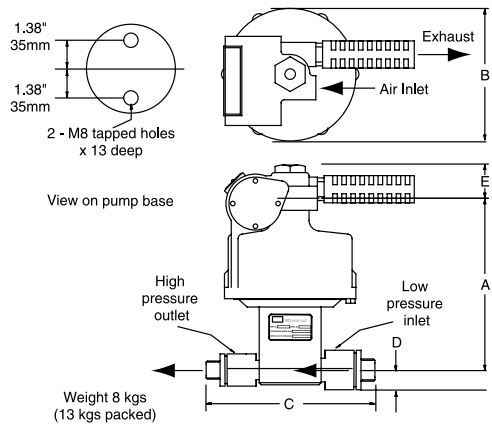
† The PA464RA has an "automatic dump" feature. Pressure is not held when operator releases "advance" or "return" button. PA464R will "hold" only in the "advance" position with the motor shut off.

\*\* Not to be used for lifting.

# AIR OPERATED

## PUA & PMA Series

35,000 psi



CAT #	RAM/DIAMETER (mm) (in)	A	B	C	D	E	F	
PUA26(B/U)	31.75 1 1/4	in	9.17	4.02	6.61	.87	6.69	2.87
		mm	233	102	168	22.2	170	73
PUA70(B/U)	19 3/4	in	8.74	4.02	6.61	.87	6.22	2.87
		mm	222	102	168	22.2	158	73
PUA157(B/U)	12.7 1/2	in	8.74	4.02	6.61	.87	6.22	2.87
		mm	222	102	168	22.2	158	73
PUA275(B/U)	9.53 3/8	in	8.74	4.02	6.61	.87	6.22	2.87
		mm	222	102	168	22.2	158	73
PUA430(B/U)	7.94 5/16	in	8.74	4.02	6.61	.87	6.22	2.87
		mm	222	102	168	22.2	158	73
PUA655(B/U)	6.35 1/4	in	8.74	4.02	6.61	.87	6.22	2.87
		mm	222	102	168	22.2	158	73
PUA982(B/U)	5.13 .202	in	8.74	4.02	6.61	.87	6.22	2.87
		mm	222	102	168	22.2	158	73
PMA27(B/U)	76.2 3	in	8.66	7.01	9.06	1.5	1.89	
		mm	220	178	230	38	48	
PMA60(B/U)	50.8 2	in	8.27	7.01	9.06	1.5	1.89	
		mm	210	178	230	38	48	
PMA90(B/U)	41.3 1 5/8	in	8.27	7.01	9.06	1.5	1.89	
		mm	210	178	230	38	48	

CAT #	RAM/DIAMETER (mm) (in)	A	B	C	D	E	F	
PMA130(B/U)	35 1 3/8	in	7.99	7.01	7.68	.87	1.89	
		mm	203	178	195	22	48	
PMA190(B/U)	28.5 1 1/8	in	7.99	7.01	7.68	.87	1.89	
		mm	203	178	195	22	48	
PMA240(B/U)	25.4 1	in	7.99	7.01	7.68	.87	1.89	
		mm	203	178	195	22	48	
PMA370(B/U)	20.6 13/16	in	7.99	7.01	7.01	.87	1.89	
		mm	203	178	178	22	48	
PMA520(B/U)	17.5 11/16	in	7.99	7.01	7.01	.87	1.89	
		mm	203	178	178	22	48	
PMA770(B/U)	14.3 9/16	in	7.99	7.01	7.01	.87	1.89	
		mm	203	178	178	22	48	
PMA980(B/U)	12.7 1/2	in	7.99	7.01	7.01	.87	1.89	
		mm	203	178	178	22	48	
PMA1740(B/U)	9.5 3/8	in	7.99	7.01	10.08	.87	1.89	
		mm	203	178	256	22	48	
PMA2410(B/U)	8 5/16	in	7.99	7.01	10.08	.87	1.89	
		mm	203	178	256	22	48	

- Provides infinitely variable capacity and discharge pressure
- Suitable for continuous start/stop applications
- Pumps oil, water, and other fluids
- Stainless steel pump and check valves standard
- Maintains pressure with minimal power consumption (Non-load holding)
- Usable in hazardous areas: per ATEX II, CAT. 2 GDcT5
- Quiet operation
- Can operate on gases other than air
- Simple to install and maintain
- Compact, rugged design
- Only 15 psi (1 bar) air pressure required to start pump
- Requires flooded inlet
- Vertical mount

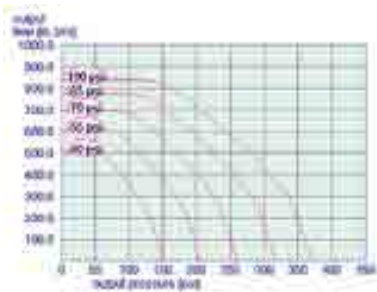


BSP FITTINGS	NPT FITTINGS	RATIO 1:	OUTLET PRESSURE		OUTPUT PER CYCLE		MAXIMUM FLOW AT ZERO PRESSURE		INLET	OUTLET
			(BAR)	(PSI)	(LITERS)	(IN <sup>3</sup> )	(LITRES/MIN)	(IN <sup>3</sup> /MIN)		
<b>PUA26B</b>	<b>PUA26U</b>	4.3	26	380	0.028	1.68	14	850	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA70B</b>	<b>PUA70U</b>	11.9	70	1,010	0.01	0.607	5	305	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA157B</b>	<b>PUA157U</b>	26.7	157	2,280	0.004	0.27	2.4	146	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA275B</b>	<b>PUA275U</b>	47.5	275	3,990	0.0025	0.151	1.4	85	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA430B</b>	<b>PUA430U</b>	68.4	430	6,230	0.0017	0.105	0.9	55	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA655B</b>	<b>PUA655U</b>	107	655	9,500	0.0011	0.67	0.6	36	1/2" BSP/NPT	1/2" BSP/NPT
<b>PUA982B</b>	<b>PUA982U</b>	163.8	982	14,250	0.0007	0.044	0.4	24	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA27B</b>	<b>PMA27U</b>	4	27	390	0.16	9.72	37	2260	1" BSP/NPT	3/4" BSP/NPT
<b>PMA60B</b>	<b>PMA60U</b>	9	60	870	0.07	4.32	23	1400	1" BSP/NPT	3/4" BSP/NPT
<b>PMA90B</b>	<b>PMA90U</b>	13.6	90	1,300	0.05	2.85	15	915	1" BSP/NPT	3/4" BSP/NPT
<b>PMA130B</b>	<b>PMA130U</b>	19	130	1,880	0.034	2.04	11	670	3/4" BSP/NPT	1/2" BSP/NPT
<b>PMA190B</b>	<b>PMA190U</b>	28.4	190	2,750	0.023	1.37	7.3	455	3/4" BSP/NPT	1/2" BSP/NPT
<b>PMA240B</b>	<b>PMA240U</b>	36	240	3,480	0.018	1.08	5.8	354	3/4" BSP/NPT	1/2" BSP/NPT
<b>PMA370B</b>	<b>PMA370U</b>	54.5	370	5,360	0.012	0.71	3.8	230	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA520B</b>	<b>PMA520U</b>	76.5	520	7,540	0.008	.51	2.8	170	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA770B</b>	<b>PMA770U</b>	113	770	11,160	0.006	0.34	1.8	110	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA980B</b>	<b>PMA980U</b>	145	980	14,210	0.004	0.27	1.5	91	1/2" BSP/NPT	1/2" BSP/NPT
<b>PMA1740B</b>	<b>PMA1740U</b>	256	1,740	25,230	0.0025	0.15	0.84	51	1/2" BSP/NPT	3/8" HP
<b>PMA2410B</b>	<b>PMA2410U</b>	368	2,410	35,000	0.0017	0.104	0.58	35	1/2" BSP/NPT	3/8" HP

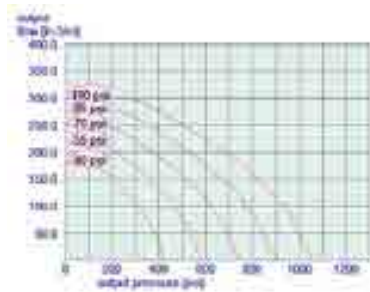
# AIR OPERATED

## PUA & PMA Series

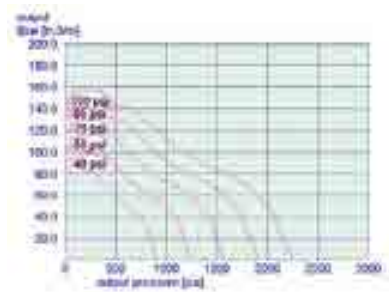
Performance charts



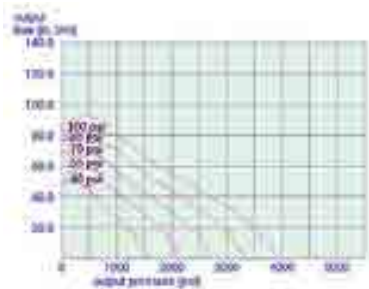
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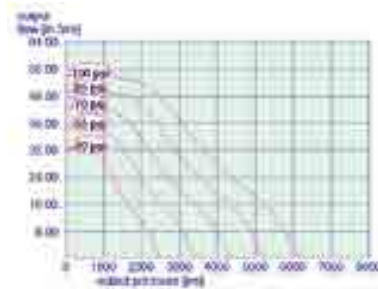
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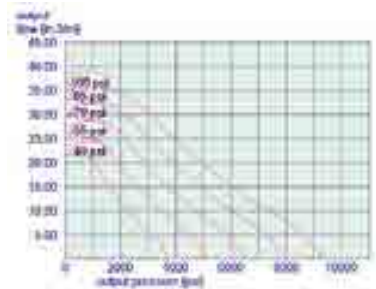
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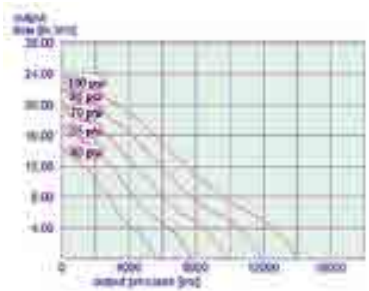
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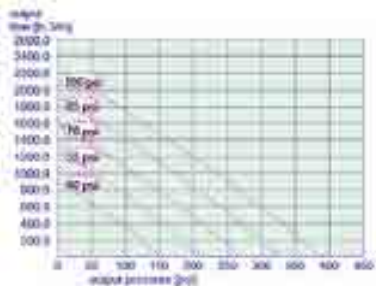


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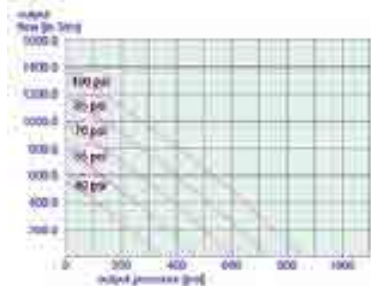


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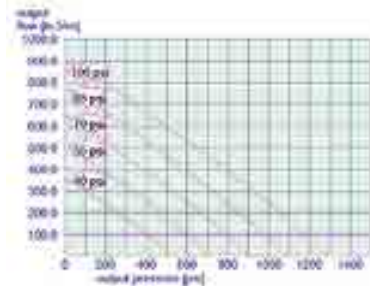




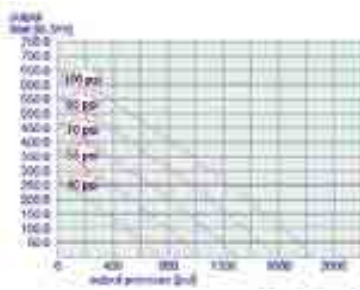
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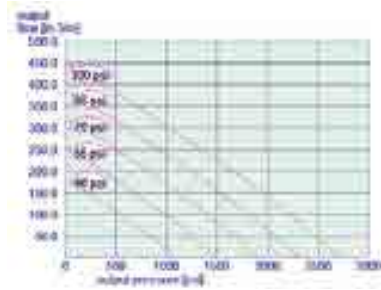
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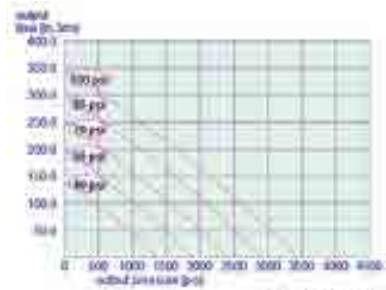
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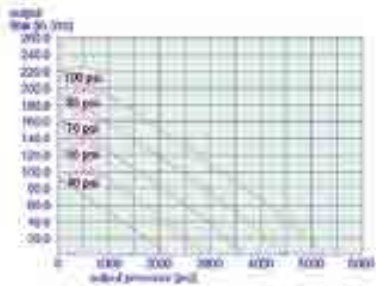
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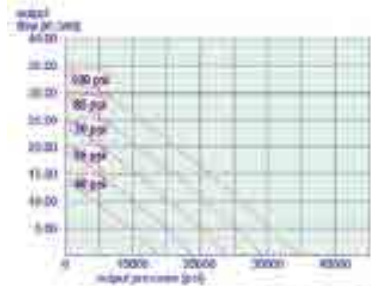
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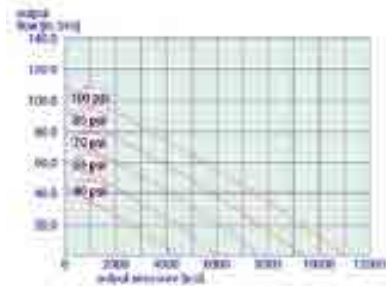
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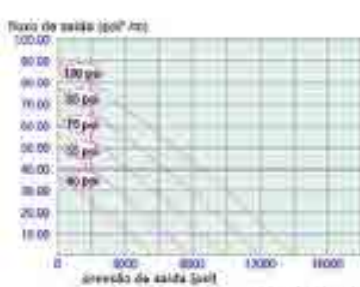
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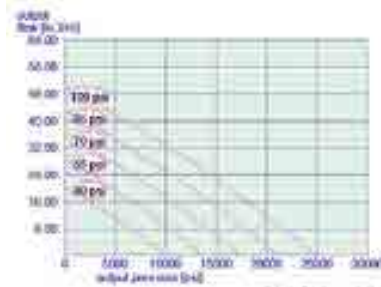
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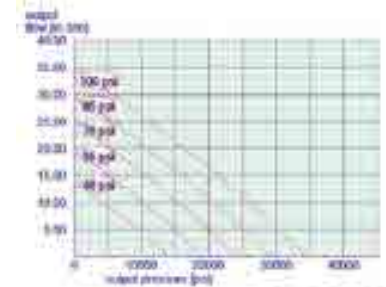
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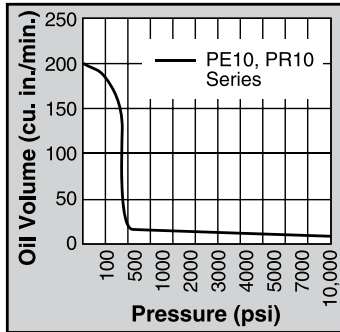


# ELECTRIC/BATTERY

## PE10 Series Pump

Up to 25 Ton Quarter Horse®

Two Speed



### HIGH PERFORMANCE IN COMPACT PACKAGE. ELECTRIC AND BATTERY POWERED MODELS FOR POWERING TOOLS AND CYLINDERS UP TO 25 TON.

- Portable power source for hydraulic cylinders and tools.
- Permanent magnet motor starts easily under load, even with reduced voltage conditions.
- Battery-operated models have 8 foot power cord with alligator clips to connect to any 12 volt battery.

- Optional rechargeable battery pack with shoulder strap for maximum portability.
- Pump typically delivers 15 minutes of continuous operation at 10,000 psi on a single battery.
- Pump can be operated in any position.
- 24 volt hand and foot switches available for all AC powered models.
- High-impact housing with flame-retardant construction.
- Base mounting holes for fixed installations.

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch	Motor	Reservoir Usable Cap. (cu. in.)
Single-Acting	Base model pump with 1/4 hp motor. Bladder type reservoir, 110 volt power required.	<b>PE102</b>	2-Way/ Auto. Dump	9561	Advance Return (Auto.)*	Rocker Type off, Momentary on	1/4 hp, 110/115V 50/60 Hz, Single Phase	60
Single-Acting	PE102, except has automatic dump valve.	<b>PE102A</b>	Auto. Dump	9562	Advance Return**	Rocker Type off, Momentary on	1/4 hp, 110/115V 50/60 Hz, Single Phase	60
Single-Acting	PE102, except requires 220 volt.	<b>PE102-220</b>	2-Way/ Auto. Dump	9561	Advance Return (Auto.)*	Rocker Type off, Momentary on	1/4 hp, 220/230V 50/60 Hz, Single Phase	60
Single-Acting	PE102A, except requires 220 volt.	<b>PE102A-220</b>	Auto. Dump	9562	Advance Return**	Rocker Type off, Momentary on	1/4 hp, 220/230V 50/60 Hz, Single Phase	60
Single-Acting	PE102, except requires 12 volt DC.	<b>PR102</b>	2-Way/ Auto. Dump	9561	Advance Return (Auto.)*	Rocker Type off, Momentary on	1/4 hp, 12V†	60
Single-Acting	PE102A, except requires 12 volt DC.	<b>PR102A</b>	Auto. Dump	9562	Advance Returnc	Rocker Type off, Momentary on	1/4 hp, 12V†	60
Single-Acting/ Double-Acting	Base model pump has 4-way valve for operating double-acting systems. 110 volt power required.	<b>PE104</b>	4-Way	9563	Advance Hold Return	Rocker Type off, Momentary on	1/4 hp, 110/115V 50/60 Hz, Single Phase	60
Single-Acting/ Double-Acting	PE104, except requires 220 volt.	<b>PE104-220</b>	4-Way Hold Return	9563	Advance Momentary on	Rocker Type off, Momentary on	1/4 hp, 220/230V 50/60 Hz, Single Phase	60
Single-Acting/ Double-Acting	PE104, except requires 12 volt DC.	<b>PR104</b>	4-Way Hold Return	9563	Advance Hold Return	Rocker Type off, Momentary on	1/4 hp, 12V†	60

\* "Advance" position holds pressure with motor shut off. "Return" position advances cylinder with motor running and returns cylinder with motor shut off.

\*\* Cylinder advances with motor running and automatically returns with motor shut off.

† Comes with an 8 ft. alligator clip cord for 12 volt DC use.



PE104

10,000 psi



The Quarter Horse pump has a maximum operating pressure of 10,000 psi, which handles a wide variety of handheld hydraulic tools.

## Accessories



BP212VQ

**BP212VQ** – Optional 12 volt battery pack. Includes sealed lead acid battery, 115V charger, 4 ft. cord, carrying case and shoulder strap. Wt., 17.7 lbs.

**RB12V** – Battery only.

**BP12INT** – Battery with cord and carrying case. Wt., 11.1 lbs.

**RC12V** – Replacement 4 ft. battery cord only. Wt., .5 lbs.



BC 212

**BC212** – Battery charger for U.S.A. Wt., 6.6 lbs.

**BC212EUR** – Battery charger for Europe. Wt., 6.6 lbs.

**25017** – Remote hand control with 10 ft. cord. Wt., 0.8 lb.

Max. Pump No.	dBa @ Pressure Output (psi)	Idle and 10,000 (psi)	Oil Del. (cu. in./min. @) 0-40 (psi)	10,000 (psi)	Overall Dimensions	Prod. Wt. with Oil (lbs.)
PE10 Series	10,000	68-74*	120	10	13"L x 7 <sup>3</sup> / <sub>4</sub> "W x 8"H	20
PR10 Series						

\* Measured at 3 ft. distance, all sides.

**NOTE:** PR10 rechargeable model is equipped with 8 ft. cord with alligator clips. Order optional battery pack (No. BP212VQ) or use with any 12 volt battery.

**NOTE:** Amp draw at 10,000 psi – 6 amp at 115 volt, 3 amp at 230 volt, and 35 amp at 12 volt.



**9560** – Pressure regulator. Adjustable from 1,000 to 10,000 psi. All mounting hardware included. Wt., 3 lbs.



**251660** – Foot switch with 10 ft. cord. Single pole, double throw, 15 amp @ 125-250 VAC. Wt., 1 lb.

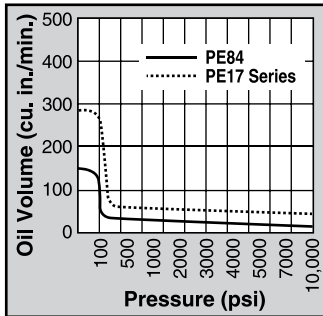


# ELECTRIC PUMP

## Hydraulic PE17 Series

Up to 55 Ton

17 cu. in./min. 2 Speed

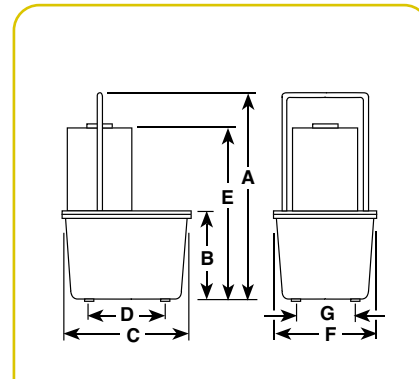


### FOR MAINTENANCE AND CONSTRUCTION APPLICATIONS.

- For use with single or double-acting cylinders at operating pressures up to 10,000 psi.
- For intermittent duty; starts under full load.
- Equipped with ½ hp, 3,450 rpm, single-phase, thermal protected induction motor; 10 ft. remote control cord (PE172S has 25 ft. cord)
- Low amperage draw; small generators and low amperage circuits can be used as power source.
- Extremely quiet noise level (67-81 dBA).



10,000 psi



Pump No.	Max. dBa at Amp Draw		Idle and 10,000 (psi)	115 V - at 10,000 (psi)	Oil Del. (cu. in./min. @) †				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	Prod. Wt. with Oil (lbs.)
	Pressure Output (psi)	rpm			0 (psi)	100 (psi)	5,000 (psi)	10,000 (psi)								
PE17 Series	10,000	3,450	67/81**	10	290	190	20	16	18½	7	11¾	7½	14¾	9¼	5⅛	45
PE17M Series	10,000	3,450	67/81**	10	290	190	20	16	18½	6⅝	11½	—	14½	9½	—	53
PE84* Series	10,000	1,750	67/81**	10	145	120	12	8	18½	7	11⅛	7½	15⅜	9¼	5⅛	47

\* PE84 is the same as the PE174, except has continuous duty with 2 gallon thermoplastic reservoir and features 1,750 RPM

\*\* Measured at 3 ft. distance, all sides.

† Typical delivery. Actual flow will vary with field conditions.



For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Reservoir Control Switch ††	Motor	Usable (cu. in)
Single-Acting	Base model pump with 1/2 hp pump with 2 gal. thermoplastic reservoir.	<b>PE172</b>	2-Way	9517	Advance Return (Autot)	Remote Motor Control (10ft.) on/off	1/2 hp, 110/115V* 50/60 Hz, Single Phase	295
Single-Acting	PE172, except has 2 1/2 gal. aluminum reservoir.	<b>PE172M</b>	2-Way	9517	Advance Return (Autot)	Remote Motor Control (10ft.) on/off	1/2 hp, 110/115V* 50/60 Hz, Single Phase	375
Single-Acting	PE172, has solenoid operated valve.	<b>PE172S</b>	3-Way	9579	Advance Hold Return	Remote Motor & Valve (25 ft.)	1/2 hp, 110/115 VAC 50/60 Hz, Single Phase	295
Single-Acting	PE172S, except has aluminum reservoir.	<b>PE172SM</b>	3-Way	9579	Advance Hold Return	Remote Motor & Valve (25 ft.)	1/2 hp, 110/115 VAC 50/60 Hz, Single Phase	375
Single-Acting	Best suited for crimping, punching, pressing. Not for lifting. Thermoplastic reservoir.	<b>PE172A</b> ∞	Auto./Dump Manifold	45554	Advance Return	Remote Motor Control (10ft.) on/off	1/2 hp, 110/115V* 50/60 Hz, Single Phase	295
Single-Acting	PE172A, except has aluminum reservoir.	<b>PE172AM</b> ∞	Auto./Dump Manifold	45554	Advance Return	Remote Motor Control (10ft.) on/off	1/2 hp, 110/115V* 50/60 Hz, Single Phase	375
Single/Double-Acting	PE172, except has 9500 double-acting valve.	<b>PE174</b>	4-Way	9500	Advance Hold Return**	Remote Motor Control (10ft.) on/off	1/2 hp, 110/115V* 50/60 Hz, Single Phase	295
Single/Double-Acting	Same as PE174, except has aluminum reservoir.	<b>PE174M</b>	4-Way	9500	Advance Hold Return**	Remote Motor Control (10ft.) on/off	1/2 hp, 110/115V* 50/60 Hz, Single Phase	375

\* Available with 220V 50Hz motor (to order, place suffix "50-220" behind pump order number).

\*\* "Advance" position holds pressure with motor shut off.

† "Advance" position holds pressure with motor shut off. "Return" position advances cylinder with motor running and returns cylinder with motor shut off.

†† Control switch on PE17 series wired with line voltage.

∞ Not to be used for lifting.

**NOTE:** The remote motor control switch on 220V 50Hz cycle PE17 series pumps is 24 volt.

**NOTE:** Usable oil is calculated with the oil fill at the recommended level of 1 1/2" below reservoir cover plate.

‡ **Some Power Team pumps are available in special configurations not listed in this catalog. For your special requirements please consult your local distributor or the Power Team factory.**

Contact Factory for special 12V DC version for service vehicles

**POWERTEAM.COM**

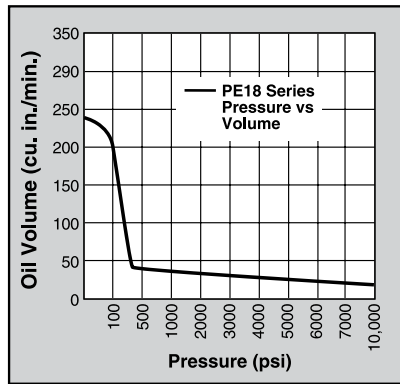


# ELECTRIC PUMP

## Hydraulic PE18 Series

Up to 55 Ton 18 cu. in./min.

Vanguard Jr.® Series



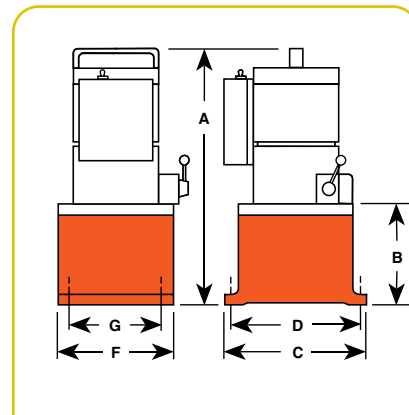
### IDEAL FOR USE WITH SMALL HYDRAULIC POWER TOOLS.

- Vanguard Jr.® pumps provide two-speed high performance in a light-weight, compact package.
- Gauge port provided on pump. Metal reservoir on all models.
- Equipped with a ½ hp, 115 volt, 60/50 Hz single phase motor that starts under load, even at reduced voltage.
- Low amperage draw permits use with smaller generators and low amperage circuits.
- All pumps have a 10 foot remote control (PE183C has 25 foot remote control).
- CSA rated for intermittent duty. Noise level of 85-90 dBA.



For operating hydraulic crimping, cutting or other tools:

- **No. PE183C** - For crimping or pressing applications. Has special electrical circuitry to pulse/advance, hold at full pressure, build to a predetermined pressure, release and reset circuit. Features separate emergency return switch.
- **No. PE184C** - Allows operator to alternately operate a spring-return cutting and/or crimping tool without disconnecting either tool. Select port connection with manual 4-way valve, start pump with remote control hand switch and extend connected tool. When hand switch is switched to off, pump stops and automatic valve opens, allowing tool to return. In center (neutral) position, manual control valve holds tool in position at time valve is shifted.



Order No.	Max. Pressure Output (psi)	rpm	dBa at Idle and 10,000 (psi)	Amp Draw 115 V at 10,000 (psi)	Oil Del. (cu. in./min. @)†				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	Prod. Wt. with Oil (lbs.)
					0 (psi)	100 (psi)	5,000 (psi)	10,000 (psi)								
PE182	10,000	12,000	85/90**	10.2 Amps	230	190	25	18	16	4 <sup>3</sup> / <sub>4</sub>	8	7 <sup>1</sup> / <sub>8</sub>	6	5 <sup>1</sup> / <sub>8</sub>	30	
PE183	10,000	12,000	85/90**	10.2 Amps	230	190	25	18	16	4 <sup>3</sup> / <sub>4</sub>	8	7 <sup>1</sup> / <sub>8</sub>	6	5 <sup>1</sup> / <sub>8</sub>	30	
PE183A	10,000	12,000	85/90**	10.2 Amps	230	190	25	18	16	4 <sup>3</sup> / <sub>4</sub>	8	7 <sup>1</sup> / <sub>8</sub>	6	5 <sup>1</sup> / <sub>8</sub>	30	
PE184	10,000	12,000	85/90**	10.2 Amps	230	190	25	18	16	4 <sup>3</sup> / <sub>4</sub>	8	7 <sup>1</sup> / <sub>8</sub>	6	5 <sup>1</sup> / <sub>8</sub>	30	
PE183-2*	10,000	12,000	85/90**	10.2 Amps	230	190	25	18	18 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	10	9 <sup>1</sup> / <sub>2</sub>	8	42	
PE184-2*	10,000	12,000	85/90**	10.2 Amps	230	190	25	18	18 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	10	9 <sup>1</sup> / <sub>2</sub>	8	42	
PE183C ††	10,000	12,000	85/90**	10.2 Amps	230	190	25	18	16	4 <sup>3</sup> / <sub>4</sub>	12 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>8</sub>	7	5 <sup>1</sup> / <sub>8</sub>	30	
PE184C ††	10,000	12,000	85/90**	10.2 Amps	230	190	25	18	16	4 <sup>3</sup> / <sub>4</sub>	8	7 <sup>1</sup> / <sub>8</sub>	6	5 <sup>1</sup> / <sub>8</sub>	30	

\* 2½ gal. reservoir.

\*\* Measured at 3 ft. distance, all sides.

† Typical delivery. Actual flow will vary with field conditions.

†† Special application pumps for cutting, crimping or pressing.



PE183-2



PE183C



For use with Cyl. Type	Description	Order No.	Valve Type	Valve Function	Control Switch <sup>††</sup>	Motor	Reservoir Usable (cu. in.)
Single-Acting	Base model pump has 1/2 hp pump with 2-Way valve and 1/2 gal. reservoir.	<b>PE182</b>	2-Way	Advance Return <sup>†</sup>	Remote Motor Control (10 ft.) on/off	1/2 hp, 110/115VAC** 50/60 Hz, A.C., Single Phase	104
Single-Acting	PE182, except has 3-way valve.	<b>PE183</b>	3-Way	Advance Hold Return	Remote Motor Control (10 ft.) on/off	1/2 hp, 110/115VAC** 50/60 Hz, A.C., Single Phase	104
Single-Acting	PE183, except has 2 gal. reservoir.	<b>PE183-2</b>	3-Way	Advance Hold Return	Remote Control (10 ft.)	1/2 hp, 110/115VAC** 50/60 Hz, A.C., Single Phase	525 <sup>††</sup>
Single-Acting	PE183, except has "dump valve".	<b>PE183A<sup>∞</sup></b>	Auto./Dump Pump	Advance Return	Remote (10 ft.)	1/2 hp, 110/115VAC** 50/60 Hz, A.C., Single Phase	104
Single-Acting	Special crimping pump.	<b>PE183C<sup>∞</sup></b>	Special, for crimping only	Advance Hold Return	Remote Motor Control (25 ft.) on/off	1/2 hp, 110/115VAC** 50/60 Hz, A.C., Single Phase	104
Single-Acting/ Double-Acting	Base model pump has 1/2 hp pump for double-acting systems with 1/2 gal. reservoir.	<b>PE184</b>	4-Way	Advance Hold Return <sup>†</sup>	Remote Motor Control (10 ft.) on/off	1/2 hp, 110/115VAC** 50/60 Hz, A.C., Single Phase	104
Single-Acting/ Double-Acting	PE184, except with 2 gal. reservoir.	<b>PE184-2</b>	4-Way	Advance Hold Return <sup>†</sup>	Remote Motor Control (10 ft.) on/off	1/2 hp, 110/115VAC** 50/60 Hz, A.C., Single Phase	525 <sup>††</sup>
Single-Acting/ Double-Acting	Special crimping pump.	<b>PE184C*</b>	4-Way	Advance Return	Remote Control (10 ft.) on/off	1/2 hp, 110/115VAC** 50/60 Hz, A.C., Single Phase	104

\* Also for use with special single-acting cylinder applications.

\*\* Available with 220 Volt, 60/50 Hz motor (to order, place suffix "50-220" behind pump order number). Specify voltage when ordering.

† Holds when motor is shut off and valve is in "advance" position.

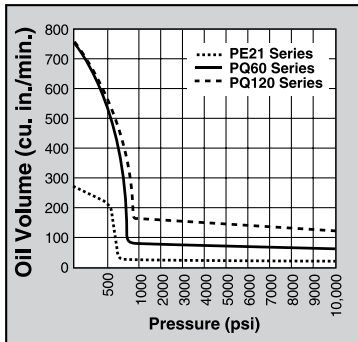
†† Pumps supplied with 2 gal. oil (usable oil is 355 cu. in.), will hold 2 1/2 gal. when filled to within 1 1/2" below reservoir cover plate.

∞ Not to be used for lifting.

# ELECTRIC PUMP

## PE21 Series

Up to 75 Ton 22 cu. in./min.  
Two-Speed



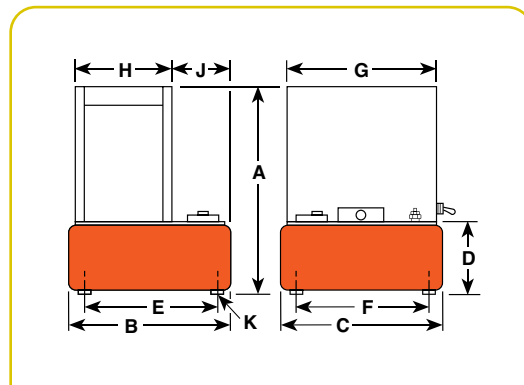
- Totally enclosed, fan cooled induction motor: 1 hp, 1,725 rpm, 60 Hz, single phase. Thermal overload protection.
- Remote control, with 10 foot cord is standard on pumps with solenoid valves. Manual valve pumps have “Stop”, “Start” and “Run/Off/Pulse” switches.
- Pump controls are moisture and dust resistant.
- Motor drip cover with carrying handles and lifting lug.
- Low noise level of 70 dBA@10,000 psi.
- In the event of electrical interruption, pump shuts off and will not start up until operator presses the pump start button.
- Units with remote have a 24V control circuit that provides additional user/operator safety.



PE213



PE21 series pump and RD5513 cylinder used in a special press that produces pharmaceutical-grade extracts for herbal medicines.



Pump No.	Max. Pressure Output (psi)	rpm	dBa at Idle and 10,000 (psi)	Oil Del. (cu. in./min. @)†				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	K*** (in.)	Prod. Wt. w/Oil (lbs.)
				100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)											
PE21 Series	10,000	1,725	70*	270	29	27	22	21 <sup>3</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	10	8	14 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -20 UNF	98†

\* Measured at a 3 ft. distance, all sides.

\*\*\* For 2" dia. swivel casters, order (4) No. 10494.

† Shipping weight with manual valve; add 14 lbs. for pump with solenoid valve.



PE214

10,000 psi



PE214S



For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Max. Amp Draw @ 10,000 (psi)	Motor	Reservoir Usable (cu. in.)
Single-Acting	1 hp pump with 2 1/2 gal. reservoir and manual valve.	<b>PE213</b>	3-Way	9520*	Advance Hold Return	115V - 15 amps 230 V - 7.5 amps	1 hp, 115/230 Volt 60 Hz††, Single Phase	590
Single-Acting	PE213, except has solenoid operated remote valve.	<b>PE213S</b>	3-Way	9599†	Advance Hold Return	115V - 15 amps 230 V - 7.5 amps	1 hp, 115/230 Volt 60 Hz††, Single Phase	590
Double-Acting	1 hp pump with 2 1/2 gal. reservoir and manual valve.	<b>PE214</b>	4-Way	9506*	Advance Hold Return	115V - 15 amps 230 V - 7.5 amps	1 hp, 115/230 Volt 60 Hz††, Single Phase	590
Double-Acting	PE214, except has solenoid operated remote valve.	<b>PE214S</b>	4-Way	9512†	Advance Hold Return	115V - 15 amps 230 V - 7.5 amps	1 hp, 115/230 Volt 60 Hz††, Single Phase	590

\* Manual valve. Pump is equipped with RUN/OFF/PULSE switch for control of motor.

† Solenoid valve. Pump is equipped with a remote control switch with 10 ft. cord.

†† Pre-wired at factory for this voltage. PE21 series available in 230V 60Hz or 220V 50Hz. Please specify when ordering. Example: for 60Hz order PE213-230; for 50Hz order PE213-50-220.

Some Power Team pumps are available in special configurations not listed in this catalog. For your special requirements please consult your local distributor or the Power Team Customer Service.

# ELECTRIC PUMP

## Hydraulic PED Series

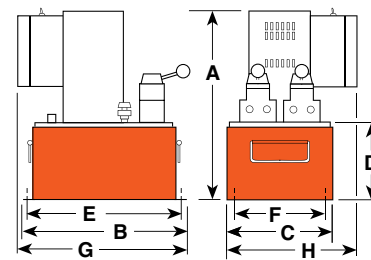
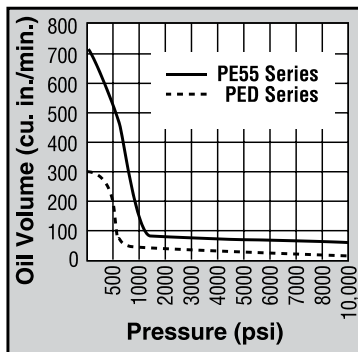
25 cu. in./min. Two-Speed

**IDEAL FOR RUNNING MULTIPLE TOOLS OR CYLINDERS FROM ONE POWER UNIT. RECOMMENDED FOR CYLINDERS UP TO 75 TONS.**

- Two-speed pumps have the same low pressure and high pressure flows from both valves.
- Flows and pressures of each pump are independent.
- Delivers 300 cu. in./min. of oil @ 100 psi and 25 cu. in./min. @ 10,000 psi from each pump.
- 1½ hp, 110/115 volt, 60 Hz induction motor, 10 foot remote control and 5 gallon steel reservoir.
- Models available for operating single-acting or double-acting cylinders.
- Each power unit contains two separate pumps and two separate valves allowing operator to control multiple processes with one power unit.
- Both pumps on each power unit are equipped with an externally adjustable pressure relief valve.
- Not recommended for frequent starting and stopping.



PED253



Pump No.	Max. Pressure Output (psi)	rpm	dBa at 10,000 (psi)	(115v)** Amp Draw at 10,000 (psi)	Oil Del. (cu. in./min. @)				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	Prod. Wt. w/Oil (lbs.)
					100 (psi)	700 (psi)	5,000 (psi)	10,000 (psi)									
<b>PED Series</b>	10,000	3,450	87/85*	22	300	40	35	25	20¾/4	18	11½/2	8½/2	16½/2	9	18	13	170

\* Noise level reading (dBA) measured at a 3 ft. distance, all sides.

\*\* Amp draw at 10,000 psi, 230 Volts 50/60 Hz is 15 Amps.





10,000 psi



PED254



PED254S



For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch	Motor	Reservoir Usable (cu. in.)
Single-Acting	1½ hp pump with 5 gal. reservoir. Valve has <i>Posi-Check</i> ® feature.	<b>PED253</b>	3-Way	9520	Advance Hold Return	Remote Motor	1½ hp, 115/230 VAC 60 Hz, Single Phase	1,000
Double-Acting	1½ hp pump with 5 gal. reservoir. Valve has <i>Posi-Check</i> ® feature.	<b>PED254</b>	4-Way	9506	Advance Hold Return	Remote Motor	1½ hp, 115/230 VAC 60 Hz, Single Phase	1,000
Double-Acting	PED254, except has solenoid operated remote valve.	<b>PED254S</b>	4-Way	9513	Advance Hold Return	Remote Valve	1½ hp, 115/230 VAC 60 Hz, Single Phase	1,000

All remotes are 10 ft. long.

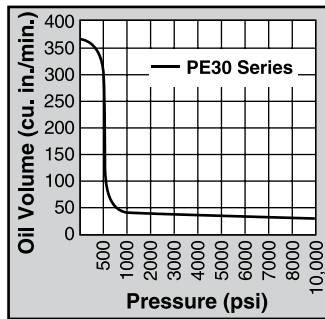
# ELECTRIC PUMP

## PE30 Series

30 cu. in./min. Two-Speed  
Vanguard® Series

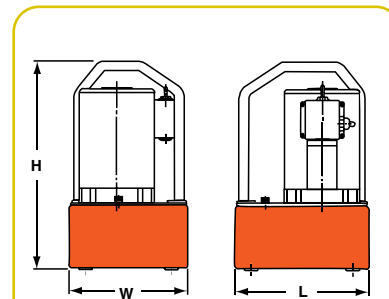
### IDEAL FOR MAINTENANCE AND CONSTRUCTION APPLICATIONS

- Deliver a powerful punch to operate single-acting or double-acting cylinders.
- Integral roll cage protects pump from abuse.
- 1 hp, single phase, permanent magnet motor.
- High performance-to-weight ratio.
- sStarts under full load even when voltage is reduced to 50% of nominal rating.
- Quiet operation: 82 dBA @ 10,000 psi and 87 dBA @ 0 psi. CSA rated for intermittent duty.
- Remote controls and/or solenoid valves feature 24 volt controls.



PE302S

PE30TWP  
Torque Wrench  
Applications  
See page 172



Pump No.	Max. Pressure Output (psi)	dBA at Idle & 10,000 (psi)	Amp Draw 115V at 10,000 (psi)	Oil Del. (cu. in./min. @)					Overall Dimensions	Prod. Wt. With Oil (lbs.)
				100 (psi)	500 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)		
PE30 Series w/1 1/4 gal. res.	10,000	87/82	13	300	200	44	38	30	10"L x 9"W x 16"H	41
PE30 Series w/1 3/4 gal. res.	10,000	87/82	13	300	200	44	38	30	13 1/2"L x 9 1/2"W x 16 1/2"H	49



10,000 psi



PE302

See current price list for shipping weights.

For Use with		Order No.	Valve Type	Valve No.	Valve Function	Control Switch	Motor (4,000 rpm)	Reservoir
Cyl. Type	Description							Usable (cu. in.)
Single-Acting	Base model 1 hp pump with 1 1/4 gal. reservoir & 2 position valve.	<b>PE302</b>	3-Way, 2 Pos.	9584	Hold Advance Return	On/Off/ Pulse Switch	1 hp 110/115 VAC, 50/60 Hz, Single Phase	280**
Single-Acting	PE302, except has 1 3/4 gal. reservoir.	<b>PE302-2</b>	3-Way, 2 Pos.	9584	Hold Advance Return	On/Off/ Pulse Switch	1 hp 110/115 VAC, 50/60 Hz, Single Phase	380***
Single-Acting	PE302, except has remote motor control.	<b>PE302R</b>	3-Way, 2 Pos.	9584	Hold Advance Return	Remote Motor Control (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	280**
Single-Acting	PE302R, except has 1 3/4 gal. reservoir.	<b>PE302R-2</b>	3-Way, 2 Pos.	9584	Hold Advance Return	Remote Motor Control (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	380***
Single-Acting	PE302R, except also has solenoid operated remote valve.	<b>PE302S†</b>	3-Way, 2 Pos.	9579	Hold Advance Return	Remote Motor & Valve (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	280**
Single-Acting	PE302S, except has 1 3/4 gal. reservoir.	<b>PE302S-2†</b>	3-Way, 2 Pos.	9579	Hold Advance Return	Remote Motor & Valve (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	380***
Single-Acting	PE302, except has "Auto Dump" valve	<b>PE302A∞</b>	Auto Dump	9610	Automatic Pilot Operation	Remote Motor Control (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	280**
Single-Acting	Base model 1 hp pump with 1 1/4 gal. reservoir & 3 position valve.	<b>PE303</b>	3-Way, 3 Pos.	9520*	Advance Hold Return	On/Off/ Pulse Switch	1 hp 110/115 VAC, 50/60 Hz, Single Phase	280**
Single-Acting	PE303, except has 1 3/4 gal. reservoir.	<b>PE303-2</b>	3-Way, 3 Pos.	9520*	Advance Hold Return	On/Off/ Pulse Switch	1 hp 110/115 VAC, 50/60 Hz, Single Phase	380***
Single-Acting	PE303, except has remote motor control.	<b>PE303R</b>	3-Way, 3 Pos.	9520*	Advance Hold Return	Remote Motor Control (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	280**
Single-Acting	PE303R, except has 1 3/4 gal. reservoir.	<b>PE303R-2</b>	3-Way, 3 Pos.	9520*	Advance Hold Return	Remote Motor Control (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	380***
Double-Acting	Base model 1 hp pump with 1 1/4 gal. reservoir & 4-way valve for double-acting systems	<b>PE304</b>	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	On/Off/ Pulse Switch	1 hp 110/115 VAC, 50/60 Hz, Single Phase	280**
Double-Acting	PE304, except has 1 3/4 gal. reservoir.	<b>PE304-2</b>	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	On/Off/ Pulse Switch	1 hp 110/115 VAC, 50/60 Hz, Single Phase	380***
Double-Acting	PE304, except has remote motor control.	<b>PE304R</b>	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	Remote Motor Control (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	280**
Double-Acting	PE304R, except has 1 3/4 gal. reservoir.	<b>PE304R-2</b>	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	Remote Motor Control (10 ft.)	1 hp 110/115 VAC, 50/60 Hz, Single Phase	380***

\* Posi-Check® valve design, Posi-Check® guards against pressure loss when valve is shifted from "advance" to "hold" position.

\*\* Shipped with 1 gal. of oil (231 cu. in., 210 usable).

\*\*\* Shipped with 2 gal. of oil.

∞ Not to be used for lifting applications. Best suited for crimping, pressing & punching applications.

† 115 volt, 60 Hz.

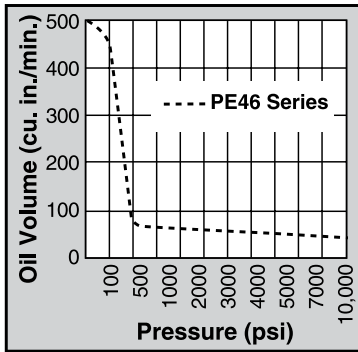
†† For 220/230 volt, 50/60 Hz. add suffix "- 220" (example PE302-220).



# ELECTRIC PUMP

## PE46 Series

46 cu. in./min.  
Two-speed



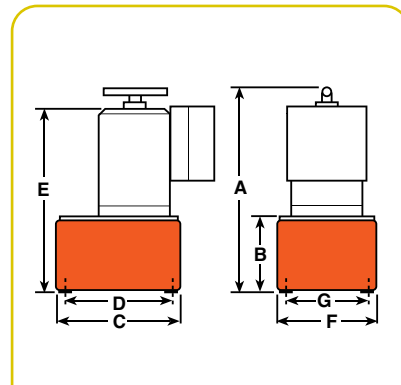
### BEST SUITED FOR UNDER-THE- ROOF MAINTENANCE AND PRODUCTION APPLICATIONS.

- Two-speed high performance pump.
- For use with single or double-acting cylinders at operating pressures up to 10,000 psi.
- Equipped with a 1½ hp, 3,450 rpm single-phase, 60 Hz thermal protected induction motor that starts under full load. Noise level of 77-81 dBA.
- All equipped with a 10 foot remote control except PE462S which has a 25 foot remote control.
- 24 volt control circuit on all units with remote control.
- CSA rated for intermittent duty.



PE462A

10,000 psi



Pump No.	Max. Pressure Output (psi)	rpm	dBa at Idle and 10,000 (psi)	Amp Draw 115 V - at 10,000 (psi)	Oil Del. (cu. in./min. @)†				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	Prod. Wt. w/Oil (lbs.)
					0 (psi)	100 (psi)	5,000 (psi)	10,000 (psi)								
<b>PE46 Series</b>	10,000	3,450	77/81*	25**	500	450	51	46	19 <sup>5</sup> / <sub>8</sub>	6 <sup>13</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>2</sub>	10	18 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	8	79

\* Measured at 3 ft. distance, all sides.

\*\* Requires 20 amp circuit.

† Typical delivery. Actual flow will vary with field conditions.



PE462S



PE464



For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch	Motor	Reservoir Usable (cu. in.)
Single-Acting	Base model 1 1/2 hp pump with 2 1/2 gal. metal reservoir.	<b>PE462</b>	3-Way	<b>9584</b>	Advance Return†	Remote Motor Control (10 ft.) on/off	1 1/2 hp, 115/230 VAC* 60 Hz, Single Phase	590
Single-Acting	PE462, except has solenoid valve.	<b>PE462S††</b>	3-Way	<b>9579</b>	Advance Return**	Remote Motor Valve (25 ft.)	1 1/2 hp, 115/230 VAC* 60 Hz, Single Phase	590
Single-Acting	PE462, except has "dump valve"	<b>PE462A∞</b>	Auto/Dump 3-Way	<b>9610</b>	Advance Return	Remote Motor Control (10 ft.) on/off	1 1/2 hp, 115/230 VAC* 60 Hz, Single Phase	590
Double-Acting/ Multi-Single Acting	PE462, except has 9500 double-acting valve.	<b>PE464</b>	4-Way	<b>9500</b>	Advance Hold Return†	Remote Motor Control (10 ft.) on/off	1 1/2 hp, 115/230 VAC* 60 Hz, Single Phase	590
Double-Acting/ Multi-Single Acting	PE462S, except has 9592 double-acting valve.	<b>PE464S††</b>	3/4-Way	<b>9592</b>	Advance Return**	Remote Motor/Valve (10 ft.)	1 1/2 hp, 115/230 VAC* 60 Hz, Single Phase	590

\* Available with 220V 50 Hz motor (to order, place suffix "50-220" behind pump order number). Specify voltage when ordering.

\*\* "Advance" position holds pressure with motor shut off.

\*\*\* Usable oil is calculated with the oil fill at the recommended level of 1 1/2" below reservoir cover plate.

† "Advance" position holds pressure with motor shut off. "Return" position returns cylinder.

†† 115 volt, 60 Hz.

††† The remote motor control switch on PE46 series pumps is 24 volt.

∞ Not to be used for lifting. When pump is shut off, oil returns to reservoir.



# ELECTRIC PUMP

## PE55 Vanguard®

55 cu. in./min.

For cylinders up to 200 tons.



### A HEAVY DUTY PUMP FOR MULTIPLE APPLICATIONS: HEAVY CONSTRUCTION, CONCRETE STRESSING WITH LOW VOLTAGE STARTING POTENTIAL.

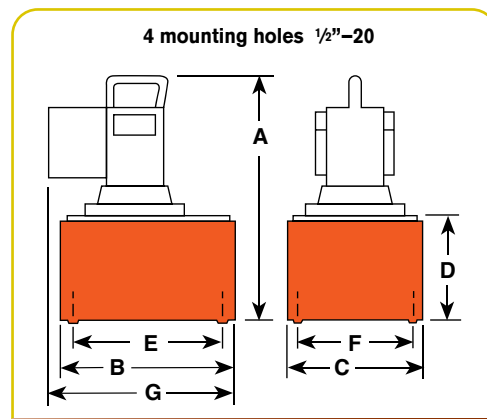
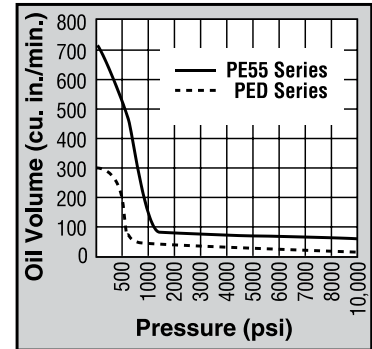
- 1<sup>1</sup>/<sub>8</sub> hp, 12,000 rpm, 110/115 volt, 50/60 Hz universal motor; draws 25 amps at full load, starts at reduced voltage. CSA rated for intermittent duty.
- 10 foot remote motor control (except PE552S which has a 25 foot remote motor and valve control).
- True unloading valve achieves greater pump efficiency, allowing higher flow at maximum pressure.
- Reservoirs available in sizes up to 10 gallons. See accessories page 133.

- Light weight and portable. Best weight-to-performance ratio of all Power Team pumps.
- “Assemble-to-Order” System: There are times when a custom pump is required. Power Team’s “Assemble to Order” system allows you to choose from a wide range of pre-engineered, off-the-shelf components to build a customized pump to fit specific requirements. By selecting standard components you get a “customized” pump without “customized” prices. All pumps come fully assembled, add oil and ready for work. See pages 100-103.

PE55TWP  
Torque  
Wrench  
Applications  
See page 173



PE554W  
Weather-resistant model



Pump No.	Max. Pressure Output (psi)	rpm	dBa at Idle and 10,000 (psi)	Amp Draw at 10,000 psi (115 V.)**	Oil Del. (cu. in./min. @)				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	Prod. Wt. w/Oil (lbs.)
					0	700	5,000	10,000									
PE55 Series	10,000	12,000	90/89*	25	704	440	74	56	18 <sup>1</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	7	10	8	14	-	65

\*Noise level reading (dBA) measured at a 3 ft. distance, all sides.

\*\* Amp draw at 10,000 psi, 230 Volts 50/60 Hz is 15 Amps.



10,000 psi



For use with Cyl. Type	Description	Order No.***	Valve Type	Valve No.	Valve Function	Control Switch††	Motor	Reservoir Usable (cu. in.)
Single-Acting	Base model 1 1/8 hp pump with 2 1/2 gal. reservoir, remote motor control & 3-way valve.	<b>PE552</b>	3-Way	9582	Advance Return**	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Single-Acting	PE552, except also has solenoid operated remote valve.	<b>PE552S</b>	3-Way	9579	Advance Hold Return	Remote Motor & Valve	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Single-Acting	PE552, except has "Auto Dump" valve.	<b>PE552A</b> ∞	Auto/Dump	9610	Advance Return	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Single-Acting	1 1/8 hp pump with 2 1/2 gal. reservoir. Valve has "Posi-check" feature.	<b>PE553</b>	3-Way†	9520	Advance Hold Return	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Double-Acting	Base model 1 1/8 hp pump with 2 1/2 gal. res. and 4-way valve for double-acting systems.	<b>PE554</b>	4-Way†	9506	Advance Hold Return	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Double-Acting	Weather-resistant model 1 1/8 hp pump with 2 1/2 gal. res. and 4-way valve for double-acting systems.	<b>PE554W</b>	4-Way†	9506	Advance Hold Return	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Double-Acting	PE554, except has 9500 tandem center valve.	<b>PE554T</b>	4-Way	9500	Advance Hold Return	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Double-Acting	For use with single-acting Spring Seat, Stressing Jack or double-acting cylinder.	<b>PE554P</b>	4-Way	9500	Advance Hold Return	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Double-Acting	For use with single-acting or double-acting Power Seat, Stressing Jacks ONLY.	<b>PE554PT</b>	4-Way	9628	Advance Hold Sequenced Return	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Double-Acting	Pump suitable to run multiple spring return tools.	<b>PE554C</b>	4-Way	9511†††	Advance Hold Return	Remote Motor	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525
Double-Acting	Pump equipped with 3/4-way solenoid valve.	<b>PE554S</b>	3/4-Way	9592	Advance Hold Return**	Remote Motor & Valve	1 1/8 hp*, 110/115 VAC 50/60 Hz, Single Phase	525

\* Pumps available with 230 volt, 60/50 Hz motors. Specify voltage when ordering. See "Assemble to Order" pump options on pp 100-103.

\*\* Holds with motor shut off.

\*\*\* To order PE55 series pumps with CSA approval, add "-C" to the Order No.

† Valves have Posi-Check® feature.

†† All remotes are 10 ft. long except for PE552S which is 25 ft. long.

††† Valving allows alternate and independent operation of two different spring return tools. Valve holds pressure only while valve is in "A" or "B" port position with pump motor shut off.

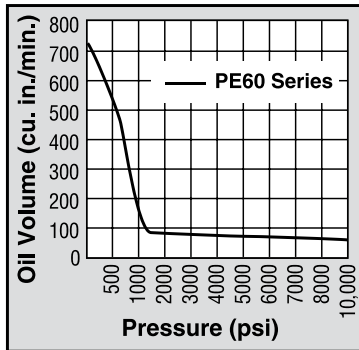
∞ Not to be used for lifting applications.

# ELECTRIC PUMP

## PE60 Series

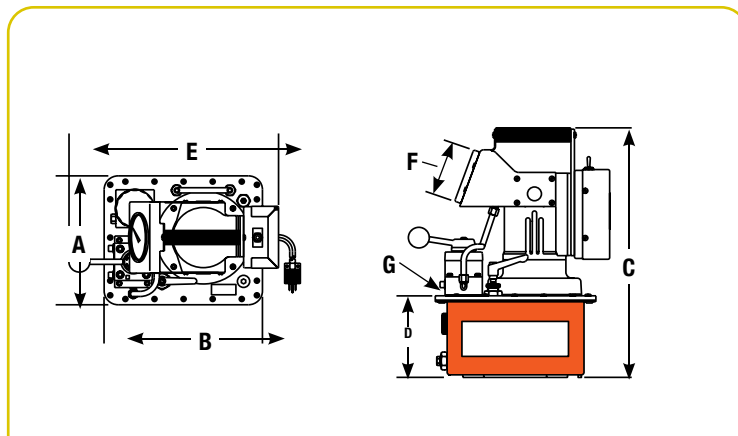
Post Tensioning

56 cu. in./min. Two-Speed



**COMPACT, LIGHT WEIGHT PUMP. EXCELLENT CHOICE FOR RUGGED APPLICATIONS AND LOW VOLTAGE STARTING.**

- Long, trouble free life in the most demanding work environments. For operating single or double-acting cylinders, or stressing jacks.
- Powered by 1½ hp, 115 volt, 50/60 Hz single phase motor. Starts under load, even at reduced voltages at construction sites.
- Optional fan-driven external oil cooler includes rollover guard.
- Insulated carrying handle.
- Integral 4" dia. fluid-filled pressure gauge with steel bezel complies with ASME B40.1 Grade A. 0 to 10,000 psi pressure range in 100 psi increments.
- Sealed ¾ gallon (usable) reservoir. Reservoir drain port is standard.
- Standard oil level sight gauge for accurate oil level monitoring.
- External spin-on filter removes contaminants from circulating oil to maximize pump, valve and cylinder/tool life.



Pump No.	Max. Pressure Output (psi)	rpm	dBa at Idle and 10,000 (psi)	Amp Draw at 10,000 (psi)	Oil Del. (cu. in./min. @)				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	Prod. Wt. w/Oil (lbs.)
					100 (psi)	700 (psi)	5,000 (psi)	10,000 (psi)								
PE604T	10,000	12,000	80/85*	25	704	440	74	56	9 <sup>5</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>4</sub>	6	15	4	3 <sup>3</sup> / <sub>8</sub> NPTF	50
PE604PT	10,000	12,000	80/85*	25	704	440	74	56	9 <sup>5</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>4</sub>	6	15	4	3 <sup>3</sup> / <sub>8</sub> NPTF	51

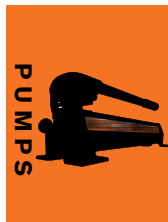
**NOTE:** Unloading pressure is 1,000 psi.

For 220/230 volt, 50/60 Hz, single-phase models, add -220 suffix.

Consult factory for PE60 pump models with other control and valve options.



10,000 psi



The PE60 used for pre-stressing.

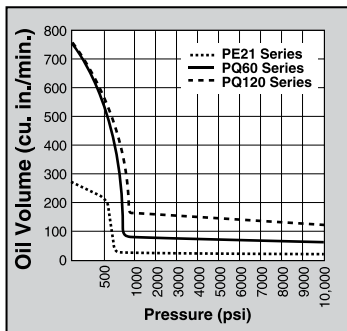


For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch	Motor	Reservoir Usable (cu. in.)
Single-Acting, Spring Seat, Stressing Jack or Double-Acting	1 1/8 hp pump with 3/4 gal. reservoir & valve for double-acting systems.	<b>PE604T</b>	4-Way 3-position	9500HD	Advance Hold Return	On/Off/Pulse	1 1/8 hp, 115 VAC 50/60 Hz, Single Phase	157
Single-Acting or Double-Acting Power Seat, Stressing Jacks Only	PE604T, except has special valve for post tensioning application only.	<b>PE604PT</b>	4-Way 3-position	9628 Model C	Advance Hold Sequenced Return	On/Off/Pulse	1 1/8 hp, 115 VAC 50/60 Hz, Single Phase	157
<b>OPTIONAL</b>								
<b>252511:</b> Oil cooler kit for PE604T or PE604PT, 115V AC. Weight 5 lbs.				<b>252512:</b> Oil cooler kit for PE604T or PE604PT, 220V AC. Weight 5 lbs.				

# ELECTRIC PUMP

## Hydraulic PQ60 Series

Up to 200 ton  
60 cu. in./min.



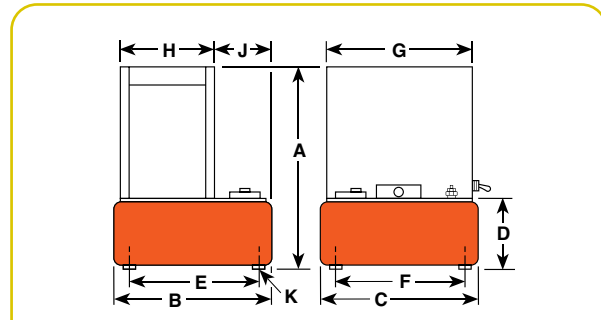
### PUMP DESIGNED SPECIFICALLY FOR HEAVY DUTY, EXTENDED CYCLE OPERATION.

- For operating single or double-acting cylinders.
- Metal shroud keeps dirt and moisture out of motor and electrical components.
- Electrical shut-down feature prevents unintentional restarting of motor following an electrical service interruption.
- Internal relief valve limits pressure to 10,000 psi. External relief valve is adjustable from 1,000 to 10,000 psi.
- Pumps operate below maximum OSHA noise limitation (74-76 dBA).
- Start and operate under full load, even with voltage reduced by 10%.



PQ603

### Hydraulic Machine Press Operation.



Pump No.	Max. Pressure Output (psi)	rpm	dBa at Idle and (psi)	Amp Draw at 10,000 psi (115 V.)**	Oil Del. (cu. in./min. @)				Dimensions						Prod. Wt. w/Oil (lbs.)				
					100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)		G (in.)	H (in.)	J (in.)	K (in.)
<b>PQ60 Series</b>	10,000	1,725	74/76*	See Chart (following page)	730	70	65	60	25 <sup>11</sup> / <sub>8</sub>	14 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>4</sub>	12 <sup>1</sup> / <sub>8</sub>	13 <sup>9</sup> / <sub>16</sub>	14 <sup>11</sup> / <sub>16</sub>	9 <sup>5</sup> / <sub>16</sub>	4 <sup>13</sup> / <sub>16</sub>	1/2-20 UNF	169**

\* Measured at a 3 ft. distance, all sides.  
 \*\* Total weight with oil and 3-way solenoid valve. Subtract 10 lbs. to obtain weight of pump with manual valve.  
 \*\*\* For 2" dia. swivel casters, order (4) No. 10494.





PQ604



PQ604S



For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Max. Amp Draw @		Reservoir Usable (cu. in.)
						10,000 (psi)	Motor	
Single-Acting	2 hp pump with 5.7 gal. reservoir and manual valve,	<b>PQ603</b>	3-Way	9520*	Advance Hold Return	115V - 22 amps 230V - 11 amps	2 hp, 230 Volt 60 Hz††, Single Phase	1,250
Single-Acting	PQ603, except has solenoid operated remote valve.	<b>PQ603S</b>	3-Way	9599†	Advance Hold Return	115V - 22 amps 230V - 11 amps	2 hp, 230 Volt 60 Hz††, Single Phase	1,250
Double-Acting	2 hp pump with 5.7 gal. reservoir and manual valve.	<b>PQ604</b>	4-Way	9506*	Advance Hold Return	115V - 22 amps 230V - 11 amps	2 hp, 230 Volt 60 Hz††, Single Phase	1,250
Double-Acting	PQ604, except has solenoid operated remote valve.	<b>PQ604S</b>	4-Way	9512†	Advance Hold Return	115V - 22 amps 230V - 11 amps	2 hp, 230 Volt 60 Hz††, Single Phase	1,250

\* Manual valve. Pump is equipped with RUN/OFF/PULSE switch for control of motor.

† Solenoid valve. Pump is equipped with a remote control switch with 10 ft. cord.

†† PQ60 series also available in 115V, 60 Hz or 220V, 50 Hz. Please specify when ordering. Example: for 60 Hz order PQ603-115; for 50 Hz order PQ603-50-220.

‡ Some Power Team pumps are available in special configurations not listed in this catalog. For your special requirements please consult your local distributor or the Power Team factory.

# ELECTRIC PUMP

## PQ120 Series

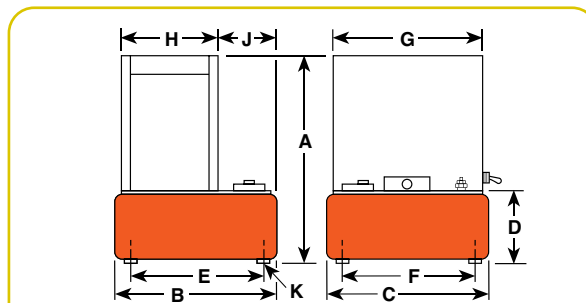
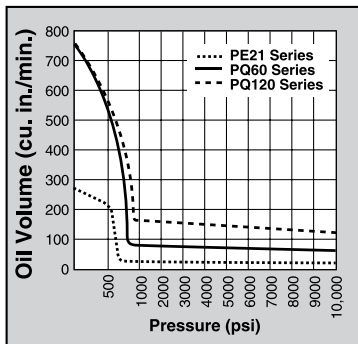
Up to 400 Ton  
120 cu. in./min.



- Start and operate under full load, even with voltage reduced by 10%.
- Electrical shut-down feature prevents unintentional restarting of motor following an electrical service interruption.
- Internal relief valve limits pressure to 10,000 psi. External relief valve is adjustable from 1,000 to 10,000 psi.
- Pump prewired at factory with a 3 hp, 460 volt, 60 Hz, 3 Phase motor. Other electrical configurations are available. See ordering information on the following page.
- 24 volt control circuits on units with remote controls for added user/operator safety.
- 3 hp (3 phase) motor with thermal overload protection. Motor starter and heater element supplied as standard equipment: no hidden charges!
- Metal shroud keeps dirt and moisture out of motor and electrical components.
- Pumps operate below maximum OSHA noise limitation.



PQ1203



Pump No.	Max. Pressure (psi)	rpm	dBa at Idle and (psi)	Amp Draw at 10,000 (psi)	Oil Del. (cu. in./min. @)				Dimensions (in.)						Prod. Wt. w/Oil (lbs.)				
					100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)	A	B	C	D	E	F		G	H	J	K
<b>PQ120 Series</b>	10,000	1,725	73/78	See Chart On page 89	730	160	130	120	25 <sup>1/8</sup>	14 <sup>1/4</sup>	15 <sup>1/2</sup>	7 <sup>1/4</sup>	12 <sup>1/8</sup>	13 <sup>5/16</sup>	14 <sup>11/16</sup>	9 <sup>5/16</sup>	4 <sup>13/16</sup>	1/2-20 UNF	164

\* Measured at a 3 ft. distance, all sides.  
 \*\* Total weight with oil and 3-way solenoid valve. Subtract 10 lbs. to obtain weight of pump with manual valve.  
 \*\*\* For 2" dia. swivel casters, order (4) No. 10494.



PQ1204



PQ1204S

10,000 psi



PQ- series pump used to drive piers to lift and stabilize building foundation.

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Max. Amp Draw @ 10,000 (psi)	Motor	Reservoir Usable (cu. in.)
Single-Acting	3 hp pump with 5.7 gal. reservoir and manual valve.	<b>PQ1203</b>	3-Way	9520*	Advance Hold Return	230V - 10.5 amps 460V - 5.3 amps	3 hp, 460 Volt 60 Hz††, 3 Phase	1,250
Single-Acting	PQ1203, except has solenoid operated remote valve.	<b>PQ1203S</b>	3-Way	9599†	Advance Hold Return	230V - 10.5 amps 460V - 5.3 amps	3 hp, 460 Volt 60 Hz††, 3 Phase	1,250
Double-Acting	3 hp pump with 5.7 gal. reservoir and manual valve.	<b>PQ1204</b>	4-Way	9506*	Advance Hold Return	230V - 10.5 amps 460V - 5.3 amps	3 hp, 460 Volt 60 Hz††, 3 Phase	1,250
Double-Acting	PQ1204, except has solenoid operated remote valve.	<b>PQ1204S</b>	4-Way	9512†	Advance Hold Return	230V - 10.5 amps 460V - 5.3 amps	3 hp, 460 Volt 60 Hz††, 3 Phase	1,250

\* Manual valve. Pump is equipped with RUN/OFF/PULSE switch for control of motor.

† Solenoid valve. Pump is equipped with a remote control switch with 10 ft. cord.

†† PQ120 series also available in 230V 60 Hz or 220/380V 50 Hz. Please specify when ordering. Example: for 60 Hz order PQ1204S-230; for 50 Hz. order PQ1204S-50-220 or PQ1204S-50-380.

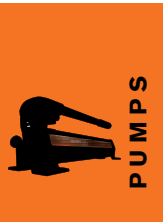
PQ120 Series also available in 575V 60 Hz. Consult the factory.

‡ Some Power Team pumps are available in special configurations not listed in this catalog. For your special requirements please consult your local distributor or the Power Team factory.

# ELECTRIC PUMP

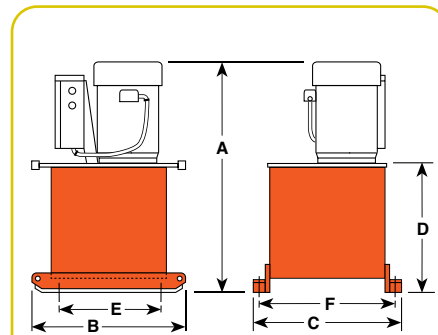
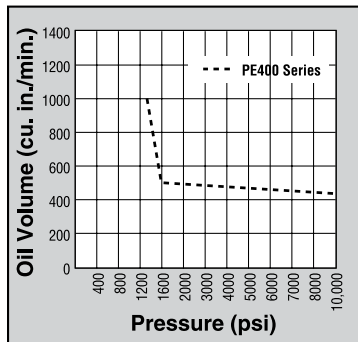
## PE400 Series

Up to 1,000 Ton  
420 cu. in./min.



### HIGH TONNAGE DOUBLE-ACTING CYLINDERS – SINGLE OR MULTIPLE CYLINDER APPLICATIONS. UP TO 1,000 TONS

- Two-speed high output pump delivers up to 5 gpm of oil.
- Low noise level of 73-80 dBA.
- Integral electrical shut-down feature prevents unintentional restarting of motor following an electrical service interruption. Over-current protection prevents damage to motor as a result of overheating.
- “Stop” and “Start” control buttons are 24 volt. PE4004 has a 4-way/3-position manual valve. The PE4004S has a 4-way/3-position solenoid valve with a 24 volt remote hand switch.
- External pressure relief valve is adjustable from 1,500 to 10,000 psi.
- Heavy duty 4” dia. casters assure easy maneuvering.
- 20 gallon (3,927 cu. in. usable) reservoir has a low oil level sight gauge.
- Powered by a dual voltage 10 hp, 3 phase, 1,725 rpm motor.
- 3 phase motor has all the electrical components necessary to operate the pump. The customer has no hidden charges when making a purchase.
- Deliver 1,200 cu. in./min. of oil @ 200 psi, 420 cu. in./min. of oil @ 10,000 psi.



Pump No.	Max. Pressure Output (psi)	rpm	dBA at Idle and 10,000 (psi)	Amp Draw at 10,000 (psi)	Oil Del. (cu. in./min. @)				A* (in.)	B (in.)	C (in.)	D (in.)	E Caster Mfg. (in.)	F Caster Mfg. (in.)	Prod. Wt. w/Oil (lbs.)
					200 (psi)	1,200 (psi)	5,000 (psi)	10,000 (psi)							
PE4004	10,000	1,725	73/80	34 @230 V.	1,200	1,050	450	420	36 <sup>3</sup> / <sub>8</sub>	25	24	21 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>	21 <sup>1</sup> / <sub>2</sub>	492
PE4004S	10,000	1,725	73/80	17 @460 V.	1,200	1,050	450	420	36 <sup>3</sup> / <sub>8</sub>	25	24	21 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>	21 <sup>1</sup> / <sub>2</sub>	506

\* Add 5" and 8 lbs. when casters are mounted. (Units are supplied with four 4" dia. swivel casters.)



**PE4004S pump and RD3006 cylinder used in a special press which repairs damaged chain links for the shipping industry.**



**PE4004S**

**10,000 psi**



For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Motor ††	Reservoir Usable (cu. in.)
Double-Acting	10 hp pump with 20 gal. reservoir and manual valve.	<b>PE4004</b>	4-Way	9506	Advance Hold Return	10 hp, 208/230/460 volt* 60 Hz, 3 Phase	3,927†
Double-Acting	PE4004, except has solenoid operated remote valve.	<b>PE4004S</b>	4-Way	9512**	Advance Hold Return	10 hp, 208/230/460 volt* 60 Hz, 3 Phase	3,927†

\* Factory wired for this voltage. For 230V, 60Hz order PE4004S-230.

\*\* Solenoid valve with remote control.

† Usable oil is calculated with oil fill at recommended level at 2 1/4" below cover plate.

NOTE: Valves for spring return cylinders are available upon request. Consult the factory.



# CRIMPING PUMP

## Electric PE-Nut

30 cu. in./min Two-Speed

**EXTREMELY DURABLE YET LIGHT-WEIGHT AND OPERATE UNDER LOW-LINE VOLTAGE CONDITIONS.**

### PE-NUT PUMP — 115V

- 5/8 hp universal electric motor (50/60 Hz cycle).
- Two-stage pump for rapid ram advance.
- Operational under low-line voltage conditions.
- Optional operating pressures available; consult Power Team for details.

- Designed for use with spring-returned remote tools.
- High-pressure safety relief valve.
- Remote hand control with 10-foot cord.
- Carrying handle.
- Factory filled oil reservoir.
- Pressure matched quick-coupler supplied.
- Optional carrying case.
- Unique, intermittent duty pump.
- Piston-type high-pressure pump super-charged by a low-pressure pump.



**⚠ CAUTION: DESIGNED FOR CRIMPING APPLICATIONS ONLY!** This system should not be used for lifting.

Order No.	Oil Deliver (cu. in./min.)	Oil Reservoir (cu. in.)	Usable Oil (cu. in.)	Overall Width (in.)	Overall Length (in.)	Overall Depth (in.)	Pump Weight w/Oil (lbs.)
PE-NUT PE-NUTC*	( 160 in <sup>3</sup> @ 100 psi 30 in <sup>3</sup> @ 10,000 psi )	93 in <sup>3</sup>	43 in <sup>3</sup>	6.5	14.38	8.25	28

\*Includes Case

Electrical Data	
<b>Electric Motor</b>	<b>Electrical Control</b>
5/8 hp, 10,000 rpm 115V AC, 50/60 Hz 11 amp current draw (115V @ 10,000 PSI)	Remote control with 10-foot cord

# CRIMPING PUMP

## Gas Hydraulic PG120

Crimping Pump

130 cu. in./min Two-Speed

### TWO-STAGE PUMP FOR RAPID ADVANCE GASOLINE POWER PUMPS

#### PG1203-CP

- 6 hp Briggs & Stratton engine.
- Manual control valve.
- High-pressure safety relief valve.
- Protective roll cage.
- For use with single acting tools.

#### PG1203/4S-CP

- 5.5 hp Honda OHV-type engine.
- Remote hand control with 10' cord.
- Two-stage pump for rapid advance.
- High-pressure safety relief valve.
- Protective roll cage.
- For use with either single or double-acting tools.



**CAUTION: DESIGNED FOR CRIMPING APPLICATIONS ONLY!** This system should not be used for lifting.



Order No.	Oil Delivery (cu. in./min.)	Oil Reservoir (gal.)	Usable Oil (cu. in.)	Overall Width (in.)	Overall Length (in.)	Overall Height (in.)	Pump Weight w/Oil (lbs.)
PG1203-CP	480 in <sup>3</sup> @ 100 psi	3	700	19.75	21.75	24.5	154
PG1203/4S-CP							

# GASOLINE PUMP

## PG30/55 Series

30-55 cu. in./min.  
Gasoline driven

- A logical choice at work sites where electricity or compressed air are unavailable. For single or double-acting cylinders at operating pressures up to 10,000 psi.
- All gasoline engine/hydraulic pumps feature Posi-Check® valve to guard against pressure loss when valve is shifted from “advance” to “hold.”

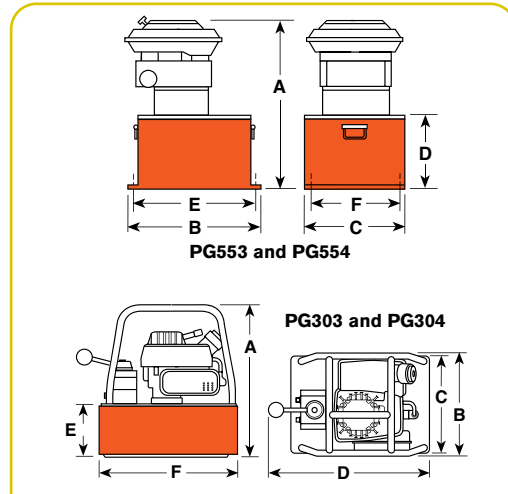
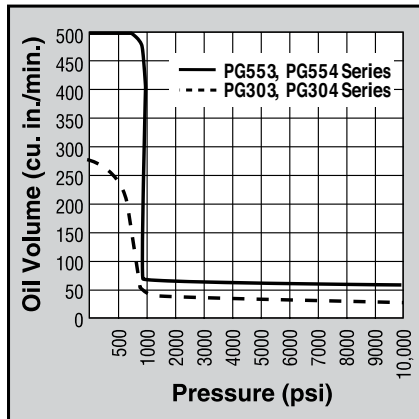
### PG303 and PG304

- Powered by a 4-cycle, 2 hp Honda engine giving it the lowest weight to horsepower ratio of all gasoline driven pumps. Has an aluminum reservoir with 375 cu. in. of usable oil.
- Same basic pump as PE30 series electric operated pumps.
- PG30 series pumps are equipped with roll cages to protect pump from damage.
- PG30 series pumps weighs only 35 lbs with oil.
- PG303 is for single-acting cylinders, has a 9520 valve with separate internal return line which allows oil from running pump to return to reservoir, independently of cylinder return oil, when valve is in “return” position.
- PG304 is for double-acting cylinders, has a 9506 4-way (tandem center) valve.



### GASOLINE POWER SUPPLY IDEAL FOR REMOTE LOCATIONS.

- PG30 SERIES: FOR UP TO 75 TON CYLINDERS.
- PG55 SERIES: FOR UP TO 150 TON CYLINDERS.



Pump No.	Max. Pressure Output (psi)	rpm	Oil Del. (cu. in./min. @)				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Prod. Wt. w/Oil (lbs.)
			100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)							
PG303, PG304	10,000	8,000	275*	30	33	28	14 <sup>7</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>2</sub>	16	5 <sup>1</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>2</sub>	32
PG553, PG554	10,000	3,600	480	75	70	55	22	18	12 <sup>1</sup> / <sub>2</sub>	8 <sup>5</sup> / <sub>8</sub>	16 <sup>5</sup> / <sub>8</sub>	20 <sup>1</sup> / <sub>4</sub>	120

\* First stage oil delivery from 0-400 psi @ 230 cu. in. per minute minimum.

**PG553 and PG554**

- 6 hp Intek “Diamond Edge” 4-cycle, by Briggs & Stratton. 5 gallon reservoir.
- Same basic pump as PE55 series electrical Vanguard® pumps.
- PG553 has a 9520 3-way valve for single-acting cylinders.
- PG554 has a 9506 4-way valve for double-acting cylinders.

**PG554**



10,000 psi



**Gasoline Powered Hydraulic Pumps like this PG303 help provide hydraulic force at remote locations.**

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Reservoir Usable (cu. in.)	Horsepower	Cycle
Single-Acting	2 hp pump with 2 gal. reservoir and single-acting valve.	<b>PG303</b>	3-Way	9520	Advance Hold Return	375	2	2
Single-Acting	6 hp pump with 5.7 gal. reservoir and single-acting valve.	<b>PG553</b>	3-Way	9520	Advance Hold Return	1,300**	6	4
Double-Acting	PG303, except has double-acting valve.	<b>PG304</b>	4-Way	9506	Advance Hold Return	375	2	2
Double-Acting	PG553, except has double-acting valve.	<b>PG554</b>	4-Way	9506	Advance Hold Return	1,300**	6	4

\*\* Usable oil is calculated with oil fill at recommended level at 1/2" below cover plate

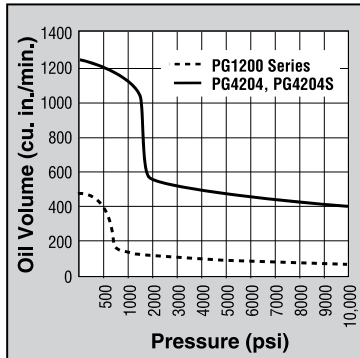
# GASOLINE PUMP

## PG120-PG420 Series

130-420 cu. in./min.

Maximum Output

Gas-Powered Pumps



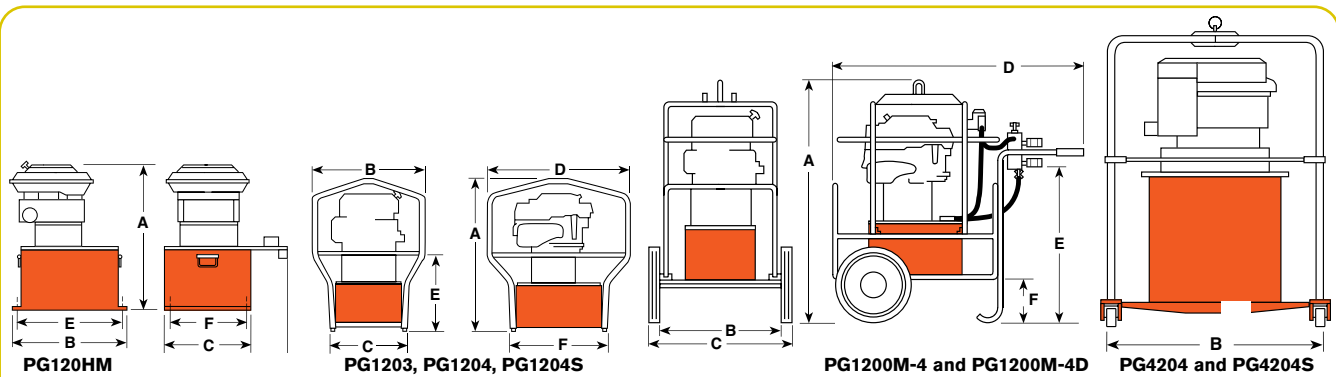
10,000 psi

- Two-speed high performance pumps ideal for construction, structure moving and rigging applications.
- A logical choice at work sites where electricity or compressed air are unavailable. For single or double-acting cylinders at operating pressures to 10,000 psi.
- All gasoline engine/hydraulic pumps feature Posi-Check® valve to guard against pressure loss when valve is shifted from “advance” to “hold.”
- PG1200 Series pumps powered by a Honda 4-cycle, 5.5 hp engine with automatic decompression and electronic ignition. Deliver over ½ gallon (130 cu. in.) of oil per minute at 10,000 psi.
- A 5 gallon reservoir means adequate capacity for multi-cylinder applications. Dual element air cleaner protects engine from dusty environments.



PG4204S

- Heavy duty “roll cage” provides pick-up points for lifting. Horizontal bars on PG1203, PG1204 and PG1204S protect unit, provide hand holds for carrying.
- Rubber anti-skid insulation on bottom of reservoir resists skidding and dampens vibration. PG1200M-4 and PG1200M-4D include a pump cart with 12” wheels.
- Adjustable external pressure regulator.



Pump No.	Max. Pressure Output (psi)	rpm	Oil Del. (cu. in./min. @)				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Prod. Wt. w/Oil (lbs.)
			100 (psi)	1,000 (psi)	5,000 (psi)	10,000 (psi)							
PG120HM	10,000	3,600	480	175	150	130	23	15 1/2	14 1/4	19	13 5/16	12 1/8	150
PG1203	10,000	3,600	480	175	150	130	27 7/8	20 1/4	14 1/4	26 1/4	13 1/2	18 1/4	154
PG1204	10,000	3,600	480	175	150	130	27 7/8	20 1/4	14 1/4	26 1/4	13 1/2	18 1/4	154
PG1204S	10,000	3,600	480	175	150	130	27 7/8	20 1/4	14 1/4	26 1/4	13 1/2	18 1/4	161
PG1200M-4	10,000	3,600	480	175	150	130	42 1/8	18	25	42 1/2	26 1/4	7 1/4	260
PG1200M-4D	10,000	3,600	480	175	150	130	42 1/8	18	25	42 1/2	26 1/4	7 1/4	280
PG4204	10,000	3,600	1,240	1,120	475	420	50 1/4	52	52	—	—	—	435
PG4204S	10,000	3,600	1,240	1,120	475	420	50 1/4	52	52	—	—	—	440



**PG1204S**



**PG1200M-4**

- For single-acting cylinders. Has 9520 3-way/3-position (tandem center) valve, 9596 load lowering valve and 9644 4-port manifold with individual needle valves at each port.
- Has a 9796 coupler and 9797 dust cap at each port. Valving permits precise individual control of up to four cylinders.
- A 9052 heavy duty, fluid filled pressure gauge (0-10,000 psi) is included.

(tandem center) valve, and second 4-port manifold without needle valves mounted beneath 9644 manifold for operating double-acting cylinders.

**PG420 Series Maximum output Hydraulic Power Package**

- Ideal for single or multiple cylinder applications. Has a 4-cycle, 20 hp Honda engine and 20 gallon hydraulic reservoir (17 gallons usable) with low oil level sight gauge.
- Steel “roll cage” protects pump, has a lifting hook; 4” dia. swivel casters provide mobility.

**PG1200M-4D**



**PG1200M-4D**

- For single or double-acting cylinders with precise individual control of up to four cylinders possible.
- Equipped same as PG1200M-4, except has 9506 4-way/3-position

- Delivers 400 cu. in. of oil at maximum operating pressure.
- Has a 9506 4-way valve. On/off switch and speed control are protected by a panel. Sturdy molded case protects battery (not included).
- USA EPA Clean Air Act EVAP Certified Product.



For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Usable (cu. in.)	Horsepower	Cycle
Single-Acting	Base model 5½ hp gasoline pump with 5.7 gal. reservoir.	<b>PG1203</b>	3-Way	9520	Advance Hold Return	1,300	5.5	4
Single-Acting	PG1203 with cart, rollcage, load lowering valve, 4 port manifold & gauge.	<b>PG1200M-4</b>	3-Way Manifold	9520 9644	Advance Hold Return**	1,300	5.5	4
Single-Acting/ Double-Acting	PG1200M-4D, except without “Roll Cage” and cart. Ideal for house moving industry.	<b>PG120HM</b>	4-Way Manifold	9506 9642	Advance Hold Return**	1,300	5.5	4
Double-Acting	Base model 5½ hp gasoline pump, with 5.7 gal. reservoir, roll cage and double-acting valve.	<b>PG1204</b>	4-Way	9506	Advance Hold Return	1,300	5.5	4
Double-Acting	PG1204, except has roll cage, solenoid valve and 25 ft. cord.	<b>PG1204S</b>	4-Way Solenoid***	9516	Advance Hold Return	1,300	5.5	4
Double-Acting	PG1200M-4, except for double-acting systems.	<b>PG1200M-4D</b>	4-Way Manifold	9506 9644	Advance Hold Return**	1,300	5.5	4
Double-Acting	Base model 20 hp pump with 20 gal. reservoir.	<b>PG4204</b>	4-Way	9506	Advance Hold Return	3,927	20	4
Double-Acting	PG4204, except has solenoid operated remote valve.	<b>PG4204S</b>	4-Way Solenoid***	9516	Advance Hold Return	3,927	20	4

\* Usable oil is calculated with oil fill at recommended level at 2¼" below cover plate.

\*\* Control up to 4 cylinders independently.

\*\*\* Has 25 ft. remote control cord.

# INTENSIFIER

## Hydraulic

Pressure Ratio 5:1

HB443



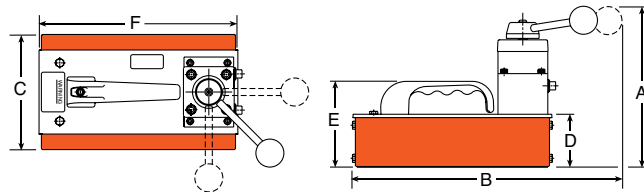
10,000 psi

CONVERTS LOW-PRESSURE PORTABLE HYDRAULIC PUMPS OR ON-BOARD HYDRAULIC SYSTEMS, INTO HIGH PRESSURE POWER SOURCES.

- Applications include utilities, railroads, construction, riggers and others.
- Operates single or double-acting cylinders, jacks, and tools such as crimpers, spreaders, cable cutters, or tire tools. Version for use with double-acting torque wrenches available.

- May be used to operate two separate, single-acting tools (with integral valves) independently, without need for additional manifold.
- Control valve included. Other Power Team valves available as an option to suit your specific application, if needed; consult factory.

- Compact and rugged for use inside a utility vehicle aerial bucket or stowing in a vehicle.
- No reservoir level to maintain; uses low pressure system as oil supply.
- Has  $\frac{3}{8}$ " NPTF ports; compatible with standard fittings for low and high pressure systems.



Pump No.	Output Flow @ 10,000 (psi)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Prod. Wt. (lbs.)
HB44 Series	44 cu. in./min.	8 $\frac{5}{8}$	14 $\frac{1}{2}$	6 $\frac{1}{8}$	2 $\frac{3}{4}$	4 $\frac{1}{2}$	10 $\frac{1}{2}$	16

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Output Flow Valve Function	Input Flow Range (gpm)	Input Flow Pressure (psi)	Output Flow Range (gpm)
Single-Acting	Hydraulic intensifier for single-acting systems	HB443	3-Way 3-Position	9520*	Advance Hold Return	0 - 10†	300 - 2,000†	0 - 2.5
Single-Acting/ Double-Acting	Hydraulic intensifier for double-acting systems	HB444	4-Way 3-Position	9506*	Advance Hold Return	0 - 10†	300 - 2,000†	0 - 2.5
Double-Acting	Hydraulic intensifier for double-acting torque wrench tools	HB445-RR	4-Way 3-Position	-	Advance Hold Return	0 - 10†	300 - 2,000†	0 - 2.5

† For maximum efficiency, recommended input flow is 5 gpm at a maximum pressure of 2,000 psi. Higher flows and/or pressures must be compensated for at the system pump (e.g., relief valve, variable flow devices, etc.)

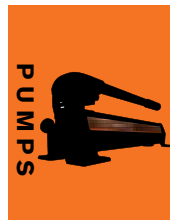
\* Posi-Check® valve design, Posi-Check® guards against pressure loss when valve is shifted from "advance" position to "hold" position.

# TORQUE WRENCH PUMPS

Hydraulic  
700 Bar



**⚠ CAUTION:** This system should not be used for lifting applications.



**For Torque Wrench Pumps,  
see page 170-174**



# ASSEMBLE TO ORDER PUMPS

Custom Built Hydraulic Pump

CHOOSE YOUR BASIC PUMP, SELECT YOUR ACCESSORIES, AND WE WILL ASSEMBLE, TEST AND SHIP YOUR PUMP.



**1**  
PE55A  
PE55B  
PE90A  
PE90B



**2**  
PE55C  
PE55D  
PE55F  
PE90C  
PE90D  
PE90F



**3**  
PE120M

10,000 psi



**4**  
PA55A  
PA90A



**5**  
PG55A

## ORDER A "CUSTOM BUILT" HYDRAULIC PUMP

"Assemble to Order" means you can choose a basic pump with gas, air or electric motor. Then select the proper valve, gauge, pressure control, motor control and reservoir. You get a two-stage pump that gives high oil volume for fast cylinder approach (and return with double-acting cylinders) in the first stage and high pressure in the second stage.

### **1** 1½ HP UNIVERSAL MOTOR

These motors start under full load and are suitable for operation up to 5,000 or 10,000 psi. The motor is 1½ hp, 12,000 rpm, 115 or 230 volt (specify), 50/60 cycle AC single phase (25 amp draw at 115V). With proper valve they can be used with single or double-acting cylinders. Remote control available.

### **2** 1½ HP JET MOTOR, SINGLE & THREE-PHASE

Feature low noise level, moderate speed for long service and are ideal for fixed applications. Motor is 1½ hp, 3,450 rpm, 115 or 230 volt, 50 or 60 cycle (specify), AC single phase with thermal overload switch. Can be used with single or double-acting cylinders and equipped with remote control. Also available in 230/460 volt, three-phase (specify).

**NOTE:** These do not start under full load unless valve is in "neutral" (requires open or tandem center valve) and are not recommended for frequent starting and stopping.

### **3** 3 HP JET MOTOR, THREE-PHASE

Gives low noise level and long life due to its moderate operating speed. Ideal for fixed installations. Consists of basic 10,000 psi pump, jet pump motor: 3 hp, 3,450 rpm, 230/460 volt, 60 or 50 cycle (specify). AC three-phase, with thermal overload switch. Equipped with internal and external relief valve. Will start under load.

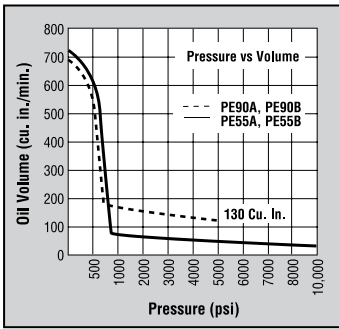
### **4** 3 HP AIR MOTOR

This pump is ideal for use where electricity is unavailable or cannot be used. The 5,000 or 10,000 psi pump has a 3 hp air driven motor at 3,000 rpm (optimum performance based on 80 psi air pressure and 50 cfm at the pump). You can drive single or double-acting cylinders with the correct valve.

**NOTE:** 80 psi air supply required to start under full load.

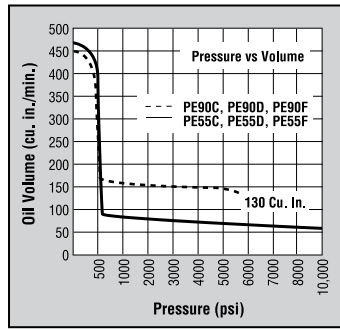
### **5** GASOLINE ENGINE

This version is perfect when electricity and air are unavailable. It is capable of continuous operation at full pressure. Consists of basic 10,000 psi pump, 4-cycle Briggs & Stratton "Diamond Edge" gasoline engine, developing 6 hp. As with all these pumps, this unit can be valved for use with either single or double-acting cylinders.



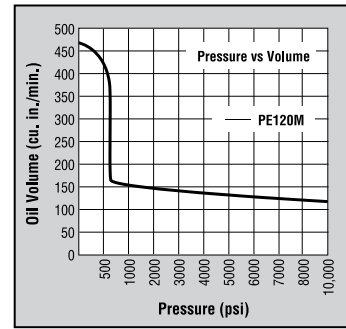
dBA @ idle and 10,000 psi – 90/95  
dBA @ idle and 5,000 psi – 90/95

2



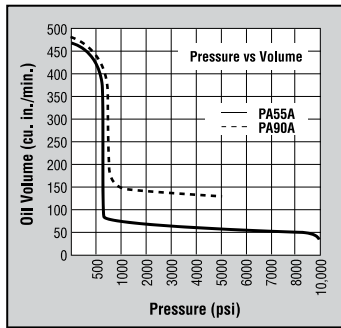
dBA @ idle and 10,000 psi – 80/85

3



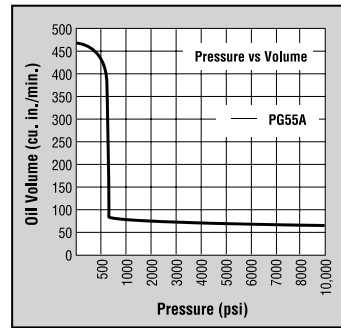
dBA @ idle and 10,000 psi – 80/85

4



dBA @ idle and 10,000 psi – 83/88  
dBA @ idle and 5,000 psi – 83/88

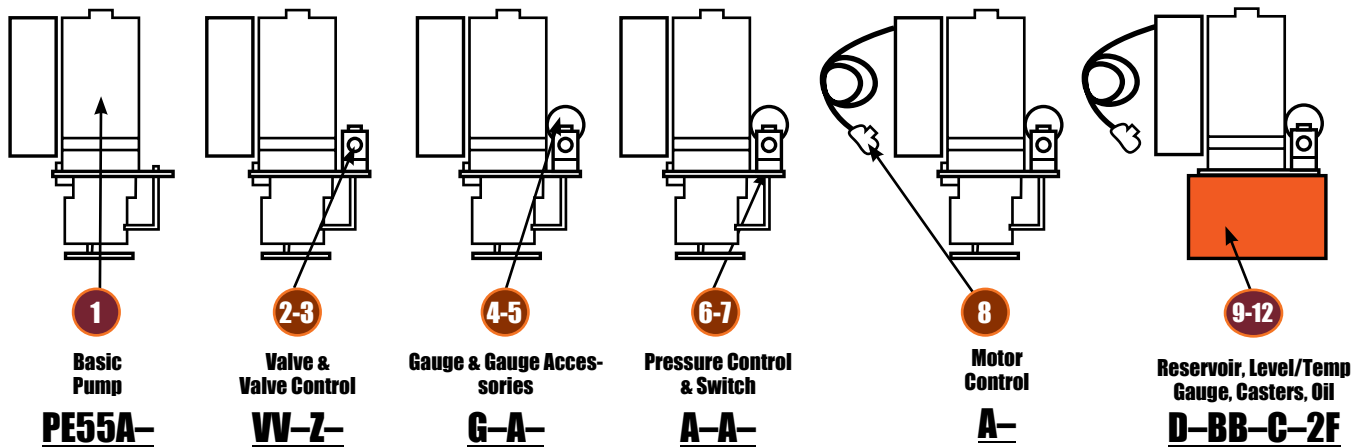
5



## “ASSEMBLE TO ORDER” PUMP HOW TO ORDER YOUR “CUSTOM” HYDRAULIC PUMP...

You can choose from pre-engineered, off-the-shelf components to customize your pump. All the components are listed in table form, with key letters or numbers on pages

102-103. Complete instructions guide you so you can determine what is needed to complete a pump assembly. Shown below is an example of a custom-built pump.



**Pump No. PE55A-VV-Z-G-A-A-A-D-BB-C-2F** is a 10,000 psi two-speed pump with a 115 volt, 50-60Hz, single phase, 1 $\frac{1}{8}$  hp, 12,000 rpm motor; a 9512 4-way solenoid valve with a 202778 remote hand control, a 9041 pressure gauge, no

gauge accessories, standard pressure control, standard On-Off-Pulse motor control, 400630R9 2-gallon reservoir, a 350431 oil level/temperature gauge, 10494 casters, and 2 gallons of standard hydraulic oil.

See next two pages for pump components





# ASSEMBLE TO ORDER PUMPS

## Component Specification Chart

### TO BUILD YOUR PUMP, FILL IN KEY LETTERS FROM CHARTS

<b>1</b> Basic Pump	<b>2</b> Select Valve	<b>3</b> Select Valve Control	<b>4</b> Select Gauge	<b>5</b> Select Gauge Accessories	<b>6</b> Pressure Control
<b>7</b> Pressure Switch	<b>8</b> Motor Control	<b>9</b> Reservoir	<b>10</b> Level/Tem Gauge	<b>11</b> Choose Casters	<b>12</b> Select Oil

Use the charts numbered from 1-12 below to select the pump, valve, gauge and other accessories to suit your needs. For the pump, fill in the basic number plus key letter in block 1 above and the key letter only in the blocks 2-12 above for any of the other items. Refer to the appropriate pages in this catalog for more specific information on the products you need.

### 1 BASIC PUMP (See pages 82-95)

BASIC PUMP NUMBERS						SPECIFICATIONS		
PE55 (10,000 psi)	PE90 (5,000 psi)	PE120 (10,000 psi)	PA55 (10,000 psi)	PA90 (5,000 psi)	PG55 (10,000 psi)	Power Source	rpm	hp
A or AC*	A or AC*					115V-60 Hz, 1Ø	12,000	1½
						110V-50 Hz, 1Ø	12,000	1½
B or BC*	B or BC*					230V-60 Hz, 1Ø	12,000	1½
						220V-50 Hz, 1Ø	12,000	1½
† C or CC*	† C or CC*					115V-60 Hz, 1Ø	3,450	1½
† C50	† C50					110V-50 Hz, 1Ø	2,850	1½
† D or DC*	† D or DC*					230V-60 Hz, 1Ø	3,450	1½
† D50	† D50					220V-50 Hz, 1Ø	2,850	1½
† F60 **	† F60**					208, 230/460V-60 Hz, 3Ø	3,450	1½
† F50 **	† F50**					220/380V-50 Hz, 3Ø	2,850	1½
		M60 **				208, 230/460V-60 Hz, 3Ø	3,450	3
		M50 **				220/380V-50 Hz, 3Ø	2,850	3
			A	A		Air Motor	3,000	3
					A	Gas Engine	3,600	6

\*Suffixes AC, BC, CC & DC indicate pumps for Canadian orders only.  
**NOTE:** All electric units have 24 volt secondary circuit.  
 \*\*Voltage Specification Required.

† These pumps do not start under full load unless valve is in "neutral" position (requires open or tandem center valve) and are not recommended for frequent starting and stopping.

### 2 VALVE (See pages 122-129)

Manifold/Manual/Air Operated Directional Valves			Function	Manifold/Manual/Air Operated Directional Valves			Function
AB	9628 manual, tandem center		4-way, 3 pos. valves	O	9609 manual, pressure compensated flow control		3-way, 4 pos.
AC	9632 manual "twin" tandem and open center			R	9506 manual, tandem center <i>Posi-Check®</i>		
A	None		—	RR	9511 manual, open center		4-way, 3 pos. valves
B	9626 manifold		Manifold	S	9500 manual, tandem center		
C	9584 manual		3-way,	T	9507 manual, closed center <i>Posi-Check®</i>		
D	9582 manual		2 pos. valves	U	9501 manual, closed center		
E	9610 automatic, pilot operated			<b>Solenoid Operated Directional Valves</b>			<b>Function</b>
G	9504 manual		3/4-way,	FF	9569 solenoid operated - 24 volt		3-way, 2 pos.
JJ	9594 air operated		2 pos. valves	HH	9572 solenoid operated - 24 volt		3/4-way, 2 pos.
L	9502 manual, closed center "non-interflow"		3-way,	PP	9599 solenoid operated - 24 volt		3-way, 3 pos.
M	9520 manual, tandem center <i>Posi-Check®</i>		3 pos. valves	VV	9512 solenoid operated - 24 volt		4-way,
N	9576 manual, metering tandem center			WW	9615 solenoid operated - 24 volt		3 pos. valves

### 3 VALVE CONTROL (See page 130)

Valve Remote Control		Use with Valve	Valve Remote Control		Use with Valve
A	None	—	Z	202778 remote hand control, 10 ft.	9512 or 9615
X	304718 remote hand control, 10 ft.	9572	ZF	309653 remote foot control, 10 ft.	9512, 9615, 9569 or 9599
XF	309652 remote foot control, 10 ft.	9572			
Y	202777 remote hand control, 10 ft.	9569 or 9599	ZZ	209593 remote hand control, 12 ft.	9594

#### 4 GAUGE (See page 110-111)

Pressure Gauges	
A	None
B	Other – Specify
G	9041 0-10,000 psi – 0-689 Bar (2½" dia.)
H	9040 0-10,000 psi – 0-689 Bar (Liquid) (2½" dia.)
J	9051 0-10,000 psi – 0-689 Bar (4" dia.)
M	9052 0-10,000 psi – 0-689 Bar (Liquid) (4" dia.)

#### 6 PRESSURE CONTROL (See page 119)

Pressure Controls	
A	With standard external pressure regulator
C	Other – specify
D	350199 premium external pressure regulator. See Power Team Catalog product No. 9633 for details.

**NOTE:** Pressure controls are factory pre-set at 10,000 psi unless otherwise specified.

#### 8 MOTOR CONTROL (See page 130)

Electric Motor Controls	
A	Standard On/Off/Pulse control (does not include remote switch) for A, B, C, D, F and M electric pumps. Also used for remote controlled solenoid valves.
B	None
C	25017 remote motor hand switch, 10 ft.
D	203225 remote motor hand switch, 10 ft. (heavy duty)
E	10461 remote motor foot switch, 10 ft.
Air Motor Controls	
AA	Other
B	None
P	27876 hand motor control (for PA55 & PA90 series)
Q	27877 foot motor control (for PA55 & PA90 series)

#### 10 OIL LEVEL/TEMP. GAUGE (SEE PAGE 132)

Oil Level/Temperature Gauge	
A	None
BB	350431 oil level/temperature gauge

#### 11 CASTERS (See page 132)

Casters	
A	None
C	10494 caster for use with 40063OR9 reservoir (Specify quantity of four)

#### 5 GAUGE ACCESSORY (See page 111)

Gauge Accessories	
A	None
N	9049 pulsation dampener – All dry gauges

#### 7 PRESSURE SWITCH (See page 131)

Pressure Switch	
A	None
B	9625 electric pressure switch (500-10,000 psi) <b>NOTE:</b> Pressure switch is factory pre-set at 10,000 psi unless otherwise specified.
C	9641 pilot operated air control valve – N.C.
D	9643 pilot operated air control valve – N.O.

#### 9 RESERVOIR (See page 133)

Reservoirs	Capacity	
A	None	
B	Other – Specify	
D	40063OR9 – PE55, PE90, PE120, PA55 and PA90 series	2½ gal.
E	61165† – PE55, PE90, PE120, PA55 and PA90 series (Oil temperatures in excess of 150° F. may cause permanent failure of the thermoplastic reservoir)	2 gal.
F	RP22‡ – PE55, PE90, PE120, PA55 and PA90 series	2½ gal.
H	61799OR9 Same as D except with drain port	2½ gal.
J	RP50 – PE55, PE90, PE120, PA55 and PA90 series	5 gal.
K	40137OR9 – PG55 series	5 gal.
P	209124 – PE55, PE90, PE120, PA55 and PA90 series	7 gal.
V	RP100 – PE55, PE90, PE120, PA55 and PA90 series	10 gal.
W	RP101 – PG55 series	10 gal.

**NOTE:** Includes cover adapter and misc. accessories when applicable.  
†High density polyethylene.  
‡Aluminum.

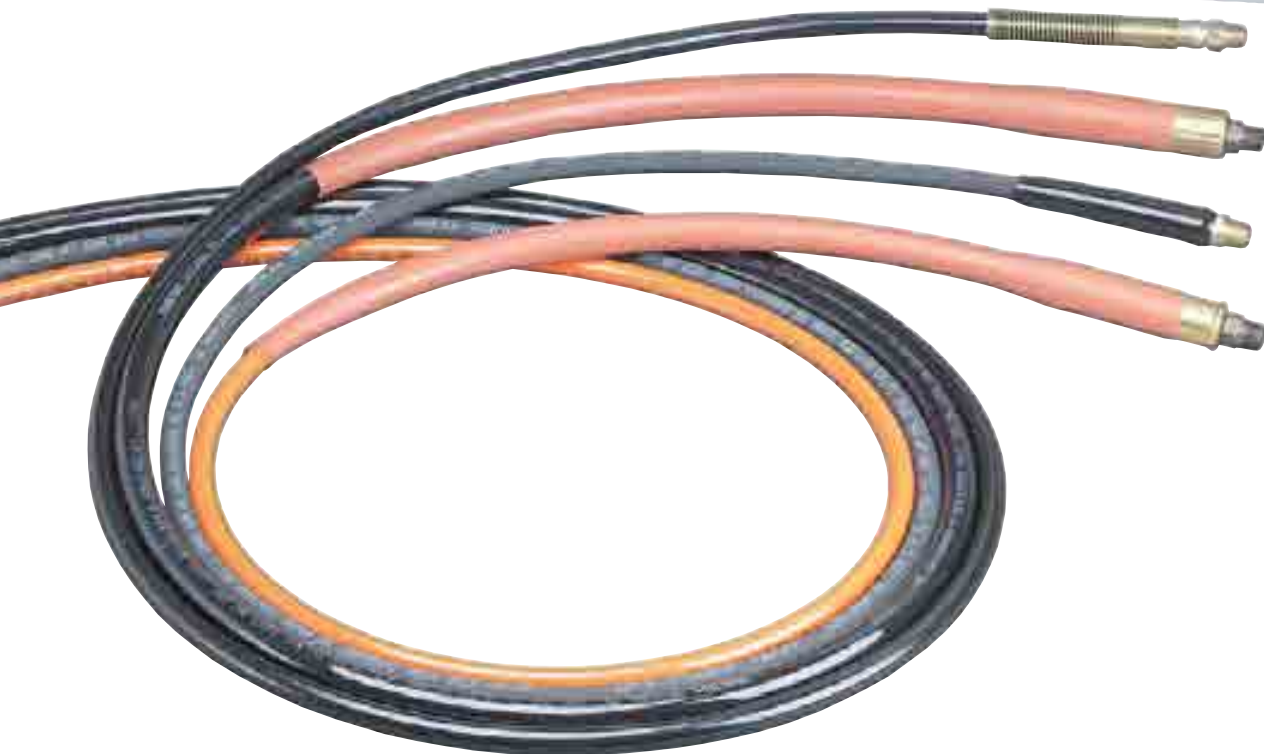
#### 12 OIL (See page 112)

Oil	
E	Ship pump without oil
F	9637 1 gal. standard hydraulic oil
G	9638 2½ gal. standard hydraulic oil
Q	9639 1 gal. Flame-Out hydraulic oil
R	9640 2½ gal. Flame-Out hydraulic oil
U	9645 1 gal. biodegradable hydraulic oil
V	9646 2½ gal. biodegradable hydraulic oil

**NOTE:** Select type of hydraulic oil and specify quantity.



# HYDRAULIC ACCESSORIES





Page  
**HOSES...106**

- Rubber
- Urethane
- Non-Conducting



Page  
**COUPLERS...108**

- Quick Connect
- Flush Face



Page  
**GAUGES...110-111**

- Heavy Duty Hydraulic Pressure Gauges
- Digital and Analog



Page  
**FLUIDS...112**

- Standard Oil Quart, Gallon,
- 2 1/2 Gallon, 55 Gallon
- Flame Out Gallon, 2 1/2,Gallon
- Bio Degradable Gallon, 2 1/2,Gallon
- Low Temperature Gallon



Page  
**MANIFOLDS...113**

- Standard Blocks
- Blocks with Valves



Page  
**10,000 PSI FITTINGS...114**

- Connectors
- Couplings
- Crosses
- Elbows
- Tees
- Swivels
- Special Adapters



Page  
**VALVES...115-129**

- In-Line
- Remote



Page  
**PUMP ACCESSORIES**  
**...130-133**

- Motor Controls
- Oil Cooler Kits
- Carts/Roll Cages



# HOSES

## Polyurethane Rubber Non-Conductive

- All have plastic hose guards except for the 1/4" I.D. polyurethane hoses which have spring guards.
- 3/8" NPTF fittings on both ends.
- Operating pressure is 10,000 psi. All comply with MHI standard IJ100.

### Non-conductive hose

For applications requiring electrical isolation by the hose, non-conductive hose has a leakage factor of less than 50 microamperes, considered a safe level of conductivity by SAE standards. The covering is polyurethane and colored orange for easy identification as non-conductive hose. The covering is not perforated, preventing moisture from entering the hose and affecting its overall conductivity. All non-conductive hoses have a minimum burst pressure of 40,000 psi.

### Rubber hose

2-ply rated hose reinforced with two braids of high tensile steel wire. The rubber covering is oil and weather resistant. These hoses are MSHA approved.

### Polyurethane hose

Made up of nylon core tube with polyester fiber reinforcement which will withstand the minimum SAE bend radius without shortening service life. These hoses last up to seven times longer than rubber hose, and are suitable for continuous service at temperatures from -40° to 150° F.

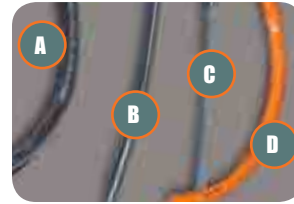
### Hydraulic hose assembly

**No. 9764** – Hose assembly consisting of 9767 (6' hose), 1/4" I.D. polyurethane with 9798 hose half coupler and 9800 dust cap assembly.

**No. 9754** – Hose assembly consisting of 9756 (6' hose), 1/4" I.D. rubber with 9798 hose half coupler and 9800 dust cap assembly.

### BE SAFE!

- INSPECT BEFORE AND AFTER EACH USE.
- REPLACE IF ANY SIGNS OF DEGRADATION OR WEAR THAT MAY AFFECT SAFETY OR PERFORMANCE.
- KEEP THE PRODUCT CLEAN.
- STORE PROPERLY.



A = 3/8" I.D. Polyurethane  
B = 1/4" I.D. Polyurethane  
C = 1/4" & 3/8" I.D. Rubber  
D = 1/4" I.D. Non-Conductive



ACCESSORIES



### CYLINDER RETURN TIME

Cylinder	No. 9769	No. 9781
	10 Ft. Hose 1/4" I.D.	10 Ft. Hose 3/8" I.D.
<b>C2514C</b>	51 sec.	14 sec.
<b>C556C</b>	1 min., 30 sec.	24 sec.
<b>C5513C</b>	4 min., 12 sec.	59 sec.
<b>C10010C</b>	6 min., 56 sec.	1 min., 3 sec.

The figures show the relative effect two styles of hose can have on return time. Actual times may vary.

### ORDERING INFORMATION

Hose Type	Hose I.D.	Hose Length	Burst Rating	Order No.	Hose Type	Hose I.D.	Hose Length	Burst Rating	Order No.
Polyurethane	1/4"	2 ft.	20,000 psi	<b>9765</b>	Rubber, Wire-braid	1/4"	8 ft.	20,000 psi	<b>9757</b>
Polyurethane	1/4"	3 ft.	20,000 psi	<b>9766</b>	Rubber, Wire-braid	1/4"	10 ft.	20,000 psi	<b>9758</b>
Polyurethane	1/4"	6 ft.	20,000 psi	<b>9767</b>	Rubber, Wire-braid	1/4"	12 ft.	20,000 psi	<b>9759</b>
Polyurethane	1/4"	6 ft.	20,000 psi	<b>9764*</b>	Rubber, Wire-braid	1/4"	20 ft.	20,000 psi	<b>9760</b>
Polyurethane	1/4"	8 ft.	20,000 psi	<b>9768</b>	Rubber, Wire-braid	1/4"	30 ft.	20,000 psi	<b>9761</b>
Polyurethane	1/4"	10 ft.	20,000 psi	<b>9769</b>	Rubber, Wire-braid	1/4"	50 ft.	20,000 psi	<b>9762</b>
Polyurethane	1/4"	12 ft.	20,000 psi	<b>9770</b>	Rubber, Wire-braid	3/8" High Flow	3 ft.	20,000 psi	<b>9733</b>
Polyurethane	1/4"	20 ft.	20,000 psi	<b>9771</b>	Rubber, Wire-braid	3/8" High Flow	6 ft.	20,000 psi	<b>9776</b>
Polyurethane	1/4"	50 ft.	20,000 psi	<b>9772</b>	Rubber, Wire-braid	3/8" High Flow	10 ft.	20,000 psi	<b>9777</b>
Polyurethane	1/4"	75 ft.	20,000 psi	<b>9750</b>	Rubber, Wire-braid	3/8" High Flow	15 ft.	20,000 psi	<b>9734</b>
Polyurethane	1/4"	100 ft.	20,000 psi	<b>9751</b>	Rubber, Wire-braid	3/8" High Flow	20 ft.	20,000 psi	<b>9778</b>
Polyurethane	3/8" High Flow	6 ft.	30,000 psi	<b>9780</b>	Rubber, Wire-braid	3/8" High Flow	30 ft.	20,000 psi	<b>9735</b>
Polyurethane	3/8" High Flow	10 ft.	30,000 psi	<b>9781</b>	Rubber, Wire-braid	3/8" High Flow	40 ft.	20,000 psi	<b>9736</b>
Polyurethane	3/8" High Flow	20 ft.	30,000 psi	<b>9782</b>	Rubber, Wire-braid	3/8" High Flow	50 ft.	20,000 psi	<b>9779</b>
Polyurethane	3/8" High Flow	50 ft.	30,000 psi	<b>9783</b>	Non-Conductive	1/4"	6 ft.	40,000 psi	<b>9773</b>
Rubber, Wire-braid	1/4"	3 ft.	20,000 psi	<b>9755</b>	Non-Conductive	1/4"	10 ft.	40,000 psi	<b>9774</b>
Rubber, Wire-braid	1/4"	6 ft.	20,000 psi	<b>9756</b>	Non-Conductive	1/4"	20 ft.	40,000 psi	<b>9775</b>
Rubber, Wire-braid	1/4"	6 ft.	20,000 psi	<b>9754*</b>					

For torque wrench tools refer to page 166-169

NOTE: Polyurethane hoses not recommended for use where heat or weld splatter conditions exist.

\*Furnished with 9798 hose half coupler and 9800 dust cap.



# HOSE

## Non-Conductive

1/4 In I. D.

10,000 PSI

### NON-CONDUCTIVE HOSES

- For applications requiring electrical isolation.
- 3/8" NPTF fittings on both ends
- Leakage factor of less than 50 microampere.
- Orange polyurethane for easy identification.
- Covering is not perforated, preventing moisture from entering the hose and affecting its overall conductivity.
- Hoses feature a minimum 40,000 psi burst pressure.



TWH

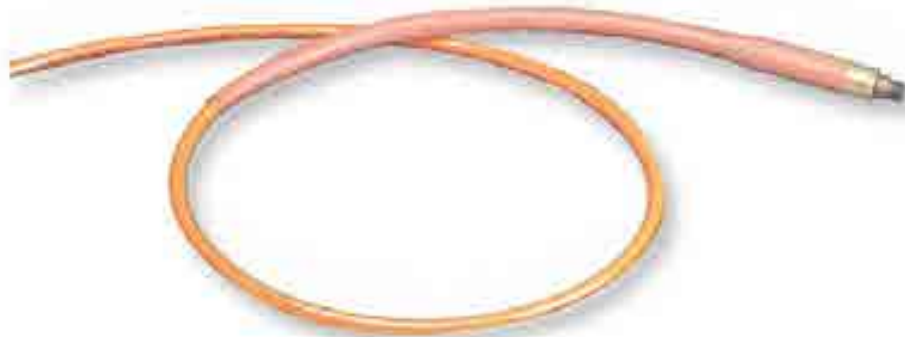
#### BE SAFE!

- INSPECT BEFORE AND AFTER EACH USE.
- REPLACE IF ANY SIGNS OF DEGRADATION OR WEAR THAT MAY AFFECT SAFETY OR PERFORMANCE.
- KEEP THE PRODUCT CLEAN.
- STORE PROPERLY.

#### HOSES - DUAL LINE

<b>TWH15</b>	15', 1/4" I.D. non-conductive
<b>TWH20</b>	20', 1/4" I.D. non-conductive
<b>TWH50</b>	50', 1/4" I.D. non-conductive

ACCESSORIES



Hose No.	Couplers/ Fitting	Inner Diameter in.	Length ft.
<b>9773</b>	3/8" fitting NPTF	1/4	6
<b>9774</b>	3/8" fitting NPTF	1/4	10
<b>9775</b>	3/8" fitting NPTF	1/4	20
<b>2000351</b>	3/8" fitting NPTF	1/4	15
<b>2000350</b>	3/8" fitting NPTF	1/4	25
<b>3-3944*</b>	Male/Male Coupler†	1/4	6
<b>3-3945*</b>	Male/Male Coupler†	1/4	10
<b>3-3946*</b>	Male/Male Coupler†	1/4	15
<b>3-3947*</b>	Male/Male Coupler†	1/4	25
<b>3-3956*</b>	Male/Female Coupler†	1/4	6
<b>3-3957*</b>	Male/Female Coupler†	1/4	10
<b>3-3958*</b>	Male/Female Coupler†	1/4	15
<b>3-3959*</b>	Male/Female Coupler†	1/4	25

\* Hoses are prefilled with hydraulic fluid.

† Dust caps are included with coupler.

# COUPLERS

## Standard And Flush-Face



9795 Cylinder and  
Hose Couplers



9796



9798



9794 No-Spill  
Hose Couplers



9792

9793



9797

9799



9800

### CYLINDER AND HOSE COUPLERS

Designed for use up to 10,000 psi with hydraulic jacks, cylinders, etc. They are the threaded union type for interchanging cylinders in seconds. Each half is valved with a precision ball for a tight shutoff when disconnected. These couplers also permit the separation of cylinders or hose from pump when at 0 psi with minimal oil loss.

**No. 9795** – Complete quick coupler,  $\frac{3}{8}$ " NPTF. (Includes two 9800 dust caps).

**No. 9798** – Male (hose) half coupler (less hose half dust cap),  $\frac{3}{8}$ " NPTF.

**No. 9796** – Female (cylinder) half coupler with No. 9800 dust cap,  $\frac{3}{8}$ " NPTF.

**No. 9796-V** – Same as 9796, but with Viton seals.

**No. 9796-E** – Same as 9796, but with EPR seals.

**No. 9799** – Optional metal dust cap (hose half).

**No. 9797** – Optional metal dust cap (cylinder half).

### NO-SPILL, PUSH-TO-CONNECT HYDRAULIC HOSE COUPLERS

Designed to permit high oil flow, the no-spill, push-to-connect couplers with locking collar and flush face design are for high pressure applications. The flush-face concept makes it easy to clean both coupler ends before connecting. Our unique push-to-connect, "dry-break" design eliminates oil spillage. The locking collar makes accidental disconnects a thing of the past. For 10,000 psi operation.

**No. 9792** – Female (cylinder) half quick coupler only. Wt., 0.3 lb.

**No. 9793** – Male (hose) half quick coupler only. Wt., 0.3 lb.

**No. 9794** – Complete quick coupler (male and female). Dust caps not included. Wt., 0.5 lb.

### HYDRAULIC COUPLER DUST CAP

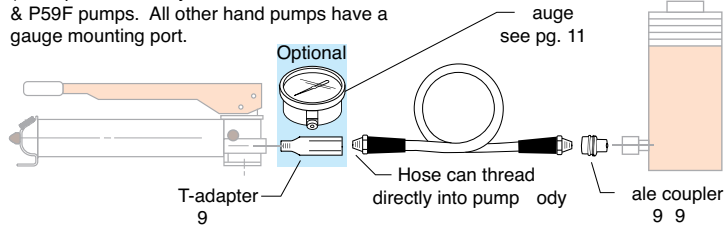
Dust cap fits either male or female half couplers.

**No. 9800** – Dust cap. For male or female  $\frac{3}{8}$ " NPTF half couplers. Wt., 0.3 lb.

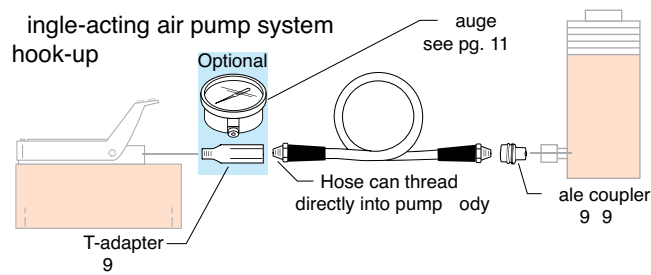


# HAND PUMP System With Connections

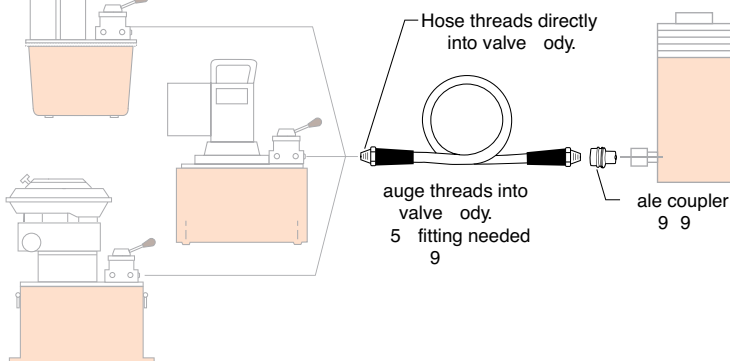
**Hand pump system hook-up**  
(T-adapter necessary for P12, P19, P23, P59 & P59F pumps. All other hand pumps have a gauge mounting port.)



**Single-acting air pump system hook-up**



**Air, Electric & Gas Pumps with valve system hook-up**



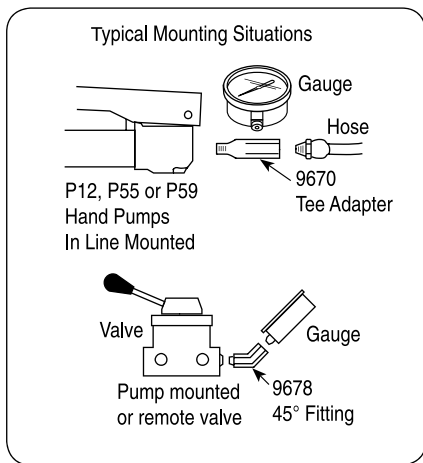
ACCESSORIES



# GAUGES

## Analog And Digital

ASME B40.1  
GRADE B



### Heavy-duty Hydraulic Pressure Gauges

- Gauges feature an easily readable and highly visible, red Day-glo® needle.
- High strength steel bourdon tube ensures high cycle life.
- Stainless steel cases and lens locking rings.
- 4" and 6" dry gauges can be filled with silicone (Kit #9046).
- Have 1/4" NPT connections.
- Calibratable gauge

### Digital Pressure Gauges

- Accurate to within 1%.
- Larger display characters than ordinary digital gauges.
- Long-life pressure transducer.
- 1/4" NPTF male threads for the pressure connection.
- 6-foot input signal cable connects to back of display unit.

### Features

- Pressure values are displayed on large red LEDs in 10 psi or bar increments.
- "Peak" hold feature with reset toggle switch and "Peak On" indicator; Hi/Low set point feature with relay outputs for Hi/Low alarms and/or control signals.

- A slow flashing display indicates pressure below the low limit; fast blinking display alerts if limit is exceeded.
- High and low limit relays are rated to 5 amps at 115 volts.
- Operating temperature of 0-140°F for the electronic display and -20 to 180°F for the transducer. Gauge housings are extruded aluminum 1/8" DIN enclosures (NEMA 1 rating).
- When power cable is connected to gauge, display will scroll all characters, performing a self-diagnostic routine.

### Digital Pressure Gauge

**No. DG100** – Digital pressure gauge, pressure range 0-10,000 psi. Note: Serviced only at factory. Wt., 2.3 lbs.

**No. DG100B** – Digital pressure gauge, pressure range 0-700 bar. Note: Serviced only at factory. Wt., 2.3 lbs.

### Digital Pressure Gauge Accessories

**No. 420778** – Gauge stand for DG100. Has angled base mounting to hold gauge at a convenient viewing angle. Wt., 1.2 lbs.

**No. 37045** – Auxiliary power cord for use with any 12 or 24V battery. Wt., 0.2 lb. Caution: For use on negative ground systems only.

### Standard Pressure Gauge Accessories

**No. 9046** – Silicone fill kit. 7.5 fl. oz. Requires one bottle to fill 4" gauge; four bottles to fill 6" gauge.

**No. 9049** – High performance pulsation dampener. 1/4" NPTF male x 1/4" NPTF female.



ACCESSORIES



### STANDARD PRESSURE GAUGE ORDERING INFORMATION

Face Dia.	psi/Bar	Tons	Major Graduations	Minor Graduations	Silicone Filled	Use With Cylinder Series	Gauge No.
2 1/2"	0-10,000/0-690	–	2500 psi, 100 Bar	500 psi, 20 Bar	No	All	<b>9041</b>
2 1/2"	0-10,000/0-690	–	2500 psi, 100 Bar	500 psi, 20 Bar	Yes	All	<b>9040</b>
4"	0-10,000/0-690	–	1000 psi, 100 Bar	200 psi, 10 Bar	No*	All	<b>9051</b>
4"	0-10,000/0-690	–	1000 psi, 100 Bar	200 psi, 10 Bar	Yes	All	<b>9052</b>
4"	0-10,000/0-690	0-17.5, 0-30 and 0-50	2000 psi, 5 Ton	200 psi, .5 Ton on 30, 50 Ton Scales; .2 Ton on 17.5 Ton Scale	No*	RT172, RT302, RT503	<b>9059</b>
4"	0-10,000/0-690	0-5	2000 psi, 1 Ton	200 psi, .1 Ton	No	C & RLS	<b>9053</b>
4"	0-10,000/0-690	0-10	2000 psi, 1 Ton	200 psi, .1 Ton	No*	C, RD, RH, RLS & RSS	<b>9055</b>
4"	0-10,000/0-690	0-25	2000 psi, 5 Ton	200 psi, .5 Ton	No*	C & RD	<b>9063</b>
4"	0-10,000/0-690	0-30	2000 psi, 5 Ton	200 psi, .5 Ton	No*	RHt, RLS & RSS	<b>9065</b>
4"	0-10,000/0-690	0-50	2000 psi, 5 Ton	200 psi, .5 Ton	No*	RHt, RLS & RSS	<b>9067</b>
4"	0-10,000/0-690	0-55	2000 psi, 5 Ton	200 psi, .5 Ton	No*	C, R, RA & RD	<b>9069</b>
4"	0-10,000/0-690	0-60	2000 psi, 5 Ton	200 psi, 1 Ton	No*	RH	<b>9071</b>
4"	0-10,000/0-690	0-100	2000 psi, 10 Ton	200 psi, 1 Ton	No*	C, R, RA, RD, RH, RLSt, RSS† & RT1004†	<b>9075</b>
4"	0-10,000/0-690	0-150	2000 psi, Initial 10 Then 20 Ton	200 psi, 2 Ton	No*	C, R, RD & RLS	<b>9077</b>
4"	0-10,000/0-690	0-200	2000 psi, 20 Ton 10 Then 20 Ton	200 psi, 2 Ton	No*	R, RD & RHt	<b>9079</b>
6"	0-10,000/0-690		1000 psi, 100 Bar	100 psi, 10 Bar	No*	All	<b>9089</b>

\* Shipped "dry." User can convert to "wet" using liquid silicone No. 9046.

† The tonnage scale on the gauge may vary slightly among different series cylinders due to different effective area.



# Hydraulic Fluids

Standard, Flame Out®,  
Biodegradable And Low Temp.



Oil Description	Qty.	Order No.
Standard Oil	1 qt. (57 cu. in.)	<b>9636</b>
Standard Oil	1 gal. (231 cu. in.)	<b>9637</b>
Standard Oil	2½ gal. (577 cu. in.)	<b>9638</b>
Standard Oil	55 gal.	<b>9616</b>
Flame-Out®	1 gal. (231 cu. in.)	<b>9639</b>
Flame-Out®	2½ gal. (577 cu. in.)	<b>9640</b>
Biodegradable	1 gal. (231 cu. in.)	<b>9645</b>
Biodegradable	2½ gal. (577 cu. in.)	<b>9646</b>
Low Temp.	1 gal. (231 cu. in.)	<b>9647</b>



Description	Grade (ASTM)	Specific Gravity @ 60°F (16°C)	Color (ASTM)	Flash Point	Fire Point	Pour Point	Viscosity		Foam Test (ASTM)
							SUS @ 100°F (38°C)	SUS @ 210°F (99°C)	
Standard Oil	215	.88	2.0	400°F (204°C)	430°F (221°C)	-30°F (-34°C)	215	48	100 min. Pass
Flame-Out®	220	.91	Light Amber	500°F (260°C)	550°F (288°C)	-15°F (-26°C)	220	55	140 min. Pass
Biodegradable	—	.92	2.0	432°F (224°C)	NA*	-22°F (-30°C)	183	53	213 min. Pass
Low Temp.	—	.87	6.5 (Red)	356°F (180°C)	399°F (204°C)	-48°F (-45°C)	183	52	190 min. Pass

### Standard Hydraulic Oil

- For dependable performance of all your hydraulic pumps and cylinders.
- Contains foam suppressant additives and has a high viscosity index.

### Flame-Out® 220 fire resistant hydraulic fluid\*

- Contains anti-rust, anti-foam and anti-sludge additives.
- Provides fire resistant protection.  
**(Note: Will burn if heat source is extreme enough. Will not, however, propagate the flame and is self-extinguishing when there is no ignition source.)**
- Provides maximum lubrication and heat transfer.
- Offers a wider operating temperature range.
- No need to change seals in your Power Team equipment. Just drain the standard oil and replace it with Flame-Out® 220.

### Biodegradable Hydraulic Fluid

- Biodegradable, non-toxic fluid withstands moderate to severe operating conditions; provides excellent protection against rust.
- Offers superior anti-wear properties, has excellent multi-metal compatibility.

Developed to meet stringent performance requirements and satisfy growing environmental needs for hydraulic fluids which are readily biodegradable and non-toxic. Can be used with all Power Team pumps, cylinders, valves and other accessories using standard seals. Depending on the contamination or degradation levels which might be present in used fluid, small amounts of this substance, if spilled, will not affect ground water or the environment. Acceptable methods of disposal include use as a fuel supplement. Since this fluid will not typically be hazardous waste, additional

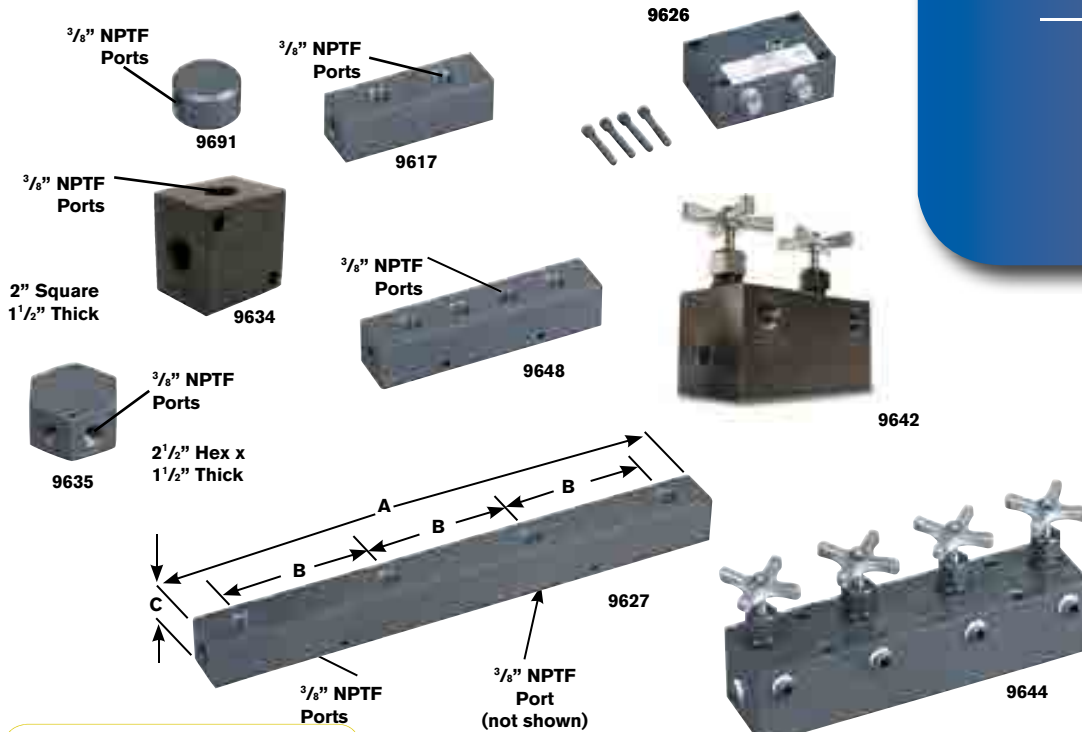
disposal options may be available, including land farming or processing through sewage treatment facilities, if necessary approvals are obtained from appropriate regulatory authorities. This fluid has been tested against EPA 560/6-82-003 and OECD 301 for biodegradability, and toxicity has been tested against EPA 560/6-82-002 and OECD 203: 1-12. Not recommended for operation in temperatures below 20°F (-7°C) or above 160°F (71°C). Recommended storage temperatures not below -10°F (-23°C) or above 170°F (77°C). For additional technical information or to order a **MATERIAL SAFETY DATA SHEET** call 1-800-477-8326 or go to [www.powerteam.com](http://www.powerteam.com).

### Low Temperature Oil

Provides smooth, reliable operation in the coldest climate conditions.

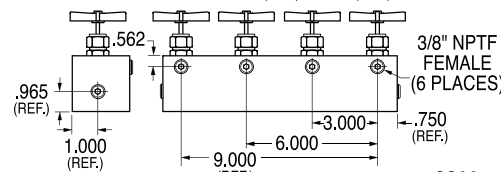
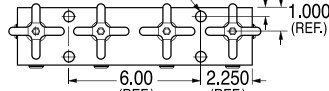
# MANIFOLDS

Remote And  
Pump-Mounted

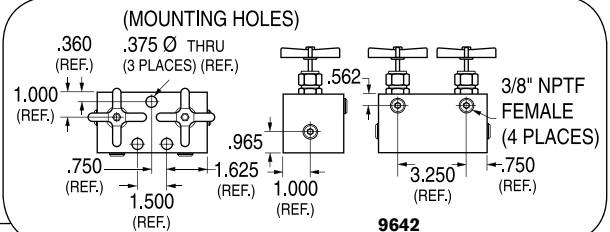


Manifold No.	A (In.)	B (In.)	C (In.)
9627	16	4 1/2	1 1/2
9648	7	1 1/2	1 1/2

.375 Ø THRU (MOUNTING HOLES) (4 PLACES) (REF.) .360 (REF.) 1.000 (REF.)



9644



9642

### No. 9691 – “Y” Manifold

Extremely useful when connecting two hydraulic cylinders to a single line. Has three 3/8" NPTF ports. Wt. 1 lb.

### No. 9634 – Manifold block

This manifold is for multiple-cylinder installations, has four 3/8" NPTF ports and two 1/4" mounting holes. Wt. 1.5 lbs.

### No. 9635 – Manifold block

This hex-shaped manifold offers extra versatility with six 3/8" NPTF ports and two 1/4" mounting holes. Wt. 2 lbs.

### No. 9617 – Manifold block

When a multiple-cylinder installation is required, this manifold is invaluable. Has six 3/8" NPTF ports to handle larger multiple-cylinder systems. Wt. 3 lbs.

### No. 9648 – Manifold block

This 7" long manifold block has seven 3/8" NPTF ports and two 1/4" mounting holes. Wt. 2.7 lbs.

### No. 9627 – Manifold block

This 16" long manifold block allows you to mount the 9575 or 9596 valves without interference. Has seven 3/8" NPTF ports and two 1/4" mounting holes. Wt. 6 lbs.

### No. 9626 – Pump mounted manifold block

Converts pumps with pump mounted valves for use with remote mounted valves. This manifold block is subplate mounted on the pump cover plate and provides 3/8" NPTF pressure and return ports. Maximum recommended flow rate is 5 gpm. Note: If used on PE30 or PG30 series pump, 1/2" longer mounting screws are required. Order four (4) No. 11956 screws separately.

### 9642 AND 9644 MANIFOLD BLOCKS WITH NEEDLE VALVES

For independent multiple-cylinder operation, feature needle valves for precise manual control. Designed for remote-mounted applications. Can be used with all Power Team pumps.

**No. 9642** – Manifold with two needle valves for control of two cylinders. Has four 3/8" NPTF ports. Wt. 8.2 lbs.

**No. 9644** – Manifold with four needle valves for control of four cylinders. Has six 3/8" NPTF ports. Wt. 16.2 lbs.

ACCESSORIES



# FITTINGS

10,000 PSI

Hydraulic Fittings:  
All Applications.



	<b>9190</b>	Hyd. tubing. $\frac{3}{8}$ " O.D. x .065" wall, 50 ft. (10 pieces 5 feet long.) Wt. 12 lbs.
	<b>9670</b>	Tee adapter. For installing gauge between pump and hose coupling. Has $\frac{1}{4}$ " and $\frac{3}{8}$ " NPTF female and $\frac{3}{8}$ " NPTF male ports. Wt. 0.5 lb.
	<b>9671</b>	Double tee adapter. Permits use of more than one cylinder in series with one pump. Three $\frac{3}{8}$ " NPTF female ports. Wt. 1 lb.
	<b>9672</b>	Service tee. Two $\frac{3}{8}$ " NPTF female internal, one $\frac{3}{8}$ " NPTF male external. Wt. 0.6 lb.
	<b>9673*</b>	Swivel connector. $\frac{3}{8}$ " NPSM male, $\frac{1}{4}$ " NPSM female. Wt. 0.2 lb.
	<b>9674</b>	Male connector. $1\frac{11}{16}$ " long, $\frac{1}{4}$ " x $\frac{3}{8}$ " NPTF. Wt. 0.2 lb.
	<b>9675*</b>	Swivel connector. $\frac{3}{8}$ " NPTF male, $\frac{3}{8}$ " NPSM female. Wt. 0.2 lb.
	<b>9676*</b>	Swivel connector. $\frac{1}{4}$ " NPTF male, $\frac{3}{8}$ " NPSM female. Wt. 0.2 lb.
	<b>9677*</b>	45° swivel connector. $\frac{3}{8}$ " NPTF male, $\frac{3}{8}$ " NPSM female. Wt. 0.3 lb.
	<b>9678</b>	45° fitting. Used when mounting gauge at an angle on connection such as 9670. Male and female $\frac{1}{4}$ " NPTF ends. Wt. 0.3 lb.
	<b>9679</b>	Connector. $\frac{1}{4}$ " NPTF female and $\frac{3}{8}$ " NPTF male. Wt. 0.1 lb.
	<b>9680</b>	Coupling. Both ends $\frac{3}{8}$ " NPTF female. Wt. 0.2 lb.
	<b>9681</b>	Street elbow. Male and female $\frac{3}{8}$ " NPTF ends. Wt. 0.3 lb.
	<b>9682</b>	Male connector. $1\frac{11}{16}$ " long, $\frac{3}{8}$ " NPTF male ends. Wt. 0.1 lb.

	<b>9683</b>	Male connector. $2\frac{1}{4}$ " long, $\frac{3}{8}$ " NPTF male ends. Wt. 0.2 lb.
	<b>9684</b>	Male connector. $2\frac{1}{4}$ " long, $\frac{1}{4}$ " NPTF male ends. Wt. 0.2 lb.
	<b>9685</b>	Coupling. $\frac{1}{4}$ " NPTF female and $\frac{3}{8}$ " NPTF female. Wt. 0.2 lb.
	<b>9686</b>	90° elbow. $\frac{3}{8}$ " NPTF female ends. Wt. 0.4 lb.
	<b>9687</b>	Pipe plug. Heat-treated, $\frac{3}{8}$ " NPTF. Wt. 0.1 lb.
	<b>9688</b>	Pipe plug. Heat-treated, $\frac{1}{4}$ " NPTF. Wt. 0.1 lb.
	<b>9689</b>	Connector. $\frac{1}{4}$ " NPTF male and $\frac{3}{8}$ " NPTF female. Wt. 0.2 lb.
	<b>9690</b>	Male connector. $1\frac{11}{16}$ " long, $\frac{1}{4}$ " NPTF male ends. Wt. 0.1 lb.
	<b>9692</b>	Straight connector. $\frac{3}{8}$ " tube x $\frac{3}{8}$ " male NPTF. Wt. 0.2 lb.
	<b>9693</b>	90° elbow. $\frac{3}{8}$ " tube x $\frac{3}{8}$ " male NPTF. Wt. 0.2 lb.
	<b>9694</b>	45° elbow. $\frac{3}{8}$ " tube x $\frac{1}{4}$ " male NPTF. Wt. 0.2 lb.
	<b>9695</b>	Tee. $\frac{3}{8}$ " tube. Wt. 0.3 lb.
	<b>9696</b>	Male run tee. $\frac{3}{8}$ " tube x $\frac{1}{4}$ " male NPTF. Wt. 0.3 lb.
	<b>9697</b>	Male branch tee. $\frac{3}{8}$ " tube x $\frac{1}{4}$ " male NPTF. Wt. 0.3 lb.
	<b>9698</b>	Cross. $\frac{3}{8}$ " tube. Wt. 0.4 lb.
	<b>9699</b>	45° gauge fitting. $\frac{3}{8}$ " NPTF male and female, and $\frac{1}{4}$ " NPTF female at 45°. Wt. 0.6 lb.
	<b>9705</b>	Fitting, swivel. $\frac{3}{8}$ " NPTF male to $\frac{3}{8}$ " NPTF female. 90° fitting with internal 370 micron screen. May be rotated 360° about male thread axis.

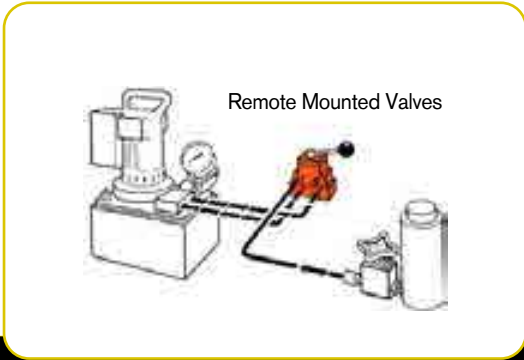
NOTE: Power Team hydraulic fittings are intended for use with our high pressure hydraulic products and are suitable for use at max. working pressures of 10,000 psi unless otherwise noted.

**CAUTION:** On part numbers 9673, 9675, 9676 and 9677 the female swivel end of these adapters is a straight pipe thread (NPSM) with a 30° seat. All male pipe fittings that are used with these female swivel adapters must have an internal 30° seat in order to effect a proper seal. All Power Team male fittings are manufactured with a 30° seat except 9687 and 9688.

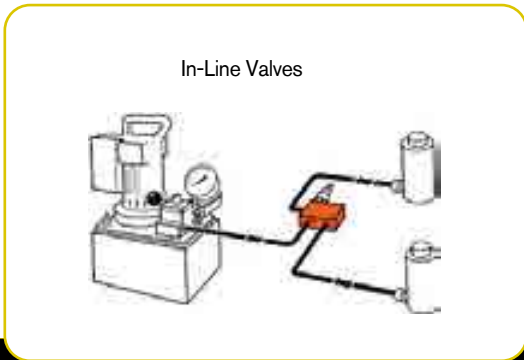


# VALVES

## Remote/In-Line Valve Selection Chart



Order No.	Page No.	*Cylinder Application	Operation	Valve Type	Volt	Advance/Return	Advance/ Hold Return	Posi-Check® Feature
9508	117	S.A. & D.A.	Manual	4-way, 3 Pos. Closed Center	—	no	yes	yes
9509	117	S.A. & D.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	yes
9514	117	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	115	no	yes	yes
9524	116	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	230	no	yes	no
9525	117	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	230	no	yes	yes
9526	117	S.A.	Solenoid	3-way, 2 Pos.	230	no	yes	no
9554	116	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	24	no	yes	no
9555	117	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	24	no	yes	yes
9556	117	S.A.	Solenoid	3-way, 2 Pos.	24	no	yes	no
9559	117	S.A.	Solenoid	3-way, 2 Pos.	115	no	yes	no
9593	116	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	115	no	yes	no
9595	116	S.A. & D.A.	Air	3/4-way, 2 Pos.	—	no	yes	no



Order No.	Page No.	*Cylinder Application	Operation	Valve Type	Volt	Advance/Return	Advance/ Hold Return	Posi-Check® Feature
9575	119	S.A.	Manual	Shut-Off Valve	—	—	—	—
9580	119	S.A.	Automatic	One-way Check Valve	—	—	—	—
9581	119	S.A. & D.A.	Automatic	Pilot Op. Check Valve	—	—	—	—
9596	118	S.A.	Manual	Load Lowering Valve	—	—	—	—
9597	118	S.A. & D.A.	Automatic	Sequence Valve	—	—	—	—
9608	118	S.A. & D.A.	Automatic	Pressure Reducing Valve	—	—	—	—
9623	119	S.A. & D.A.	Automatic	Pressure Relief Valve	—	—	—	—
9631	119	S.A. & D.A.	Automatic	Metering Valve	—	—	—	—
9633	119	S.A. & D.A.	Automatic	Pressure Regulator Valve	—	—	—	—
9720	118	S.A. & D.A.	Automatic	Counter Balance Valve	—	special	—	—
9721	118	S.A. & D.A.	Automatic	Counter Balance Valve	—	special	—	—
RV21278	119	—	Automatic	Relief Valve	—	—	—	—

"S.A." represents single-acting cylinders, "D.A." represents double-acting cylinders.  
For pump-mounted valves, see pages 122–129.



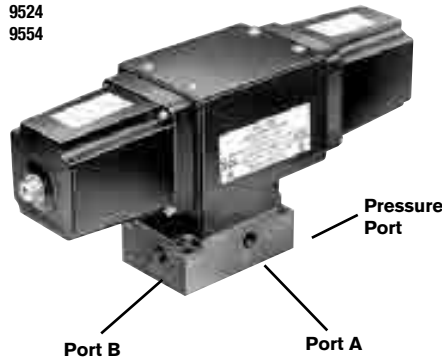
# VALVES

## Remote Mounted

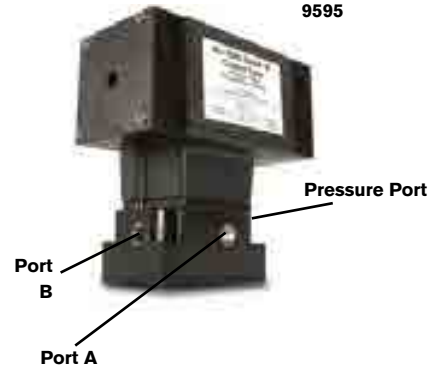
10,000 PSI,

1/4" Ports 5 GPM Max Flow

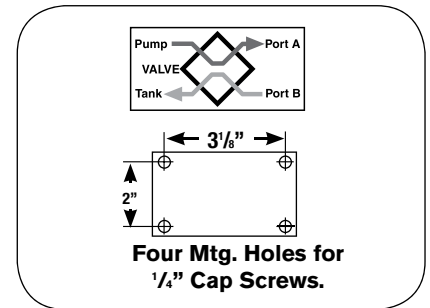
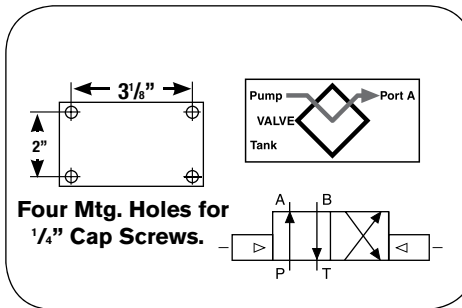
9593  
9524  
9554



9595



### 3/4-WAY/2-POSITION SOLENOID AND AIR ACTUATED VALVES



#### Application: Single or double-acting cylinders.

**Actuation:** 9593, 9524 and 9554 are solenoid operated, 9595 is air operated.

**Operation with single-acting cylinder:** Either oil port "A" or "B" must be plugged on valve. With port "B" plugged, solenoid is energized to position "A," oil port "A" becomes pressurized. When solenoid is energized to position "B," oil port "A" becomes the return port.

**Operation with multiple single-acting cylinders:** A pressure line from one bank can be connected to oil port "A" and the other to oil port "B" on the valve. Sequence: When energized to position "A," oil port "A" becomes pressurized and clamps the fixture connected to oil port "A"; oil port "B" becomes a "return" port for cylinder connected to oil port "B," and retracts it. The opposite happens when solenoid "B" is energized.

#### Operation with double-acting cylinder:

Port "A" is connected to "advance" port of cylinder, oil port "B" connects to cylinder "return" port. Solenoid is energized to position "A," oil port "A" becomes pressurized to extend cylinder piston. The opposite happens when solenoid "B" is energized. Valve does not hold in "retract" position.

**NOTE:** When using more than one valve on a pump, the tank port may require a check valve to permit inadvertent, momentary extension of a retracted cylinder.

**NOTE:** If pump is equipped with an internal outlet check, a "hold" position can be maintained with the pump shut off.

**No. 9593** – 3/4-way 2-position, remote mounted solenoid valve, 115 volt, 50/60 Hz. Wt., 15.4 lbs.

**No. 9524** – Same as 9593 except with 230 volt, 50/60 Hz.

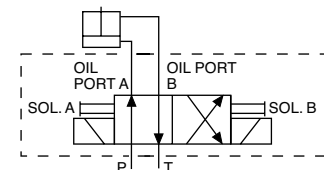
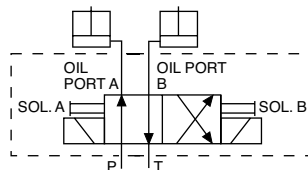
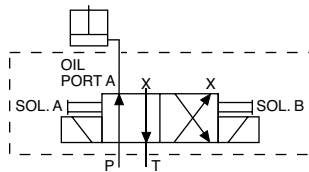
**No. 9554** – Same as 9593 except with 24 volt, 50/60 Hz.

**No. 9595** – Same as 9593 except is air operated (minimum of 50 psi air pressure required). Wt., 11.4 lbs.

**NOTE:** Valves above are shipped without controls. The 9524, 9554 and 9593 can be used with the 304718 remote hand control (see page 130). The 9595 can be used with the 209593 remote hand control (see page 130).

**NOTE:** Valves have 1/4" NPTF ports. 3/8" to 1/4" adapters are included.

**NOTE:** Maximum tank line pressure for remote mounted valves is 500 psi.



1. To actuate one single-acting cylinder.
2. To actuate two single-acting cylinders.
3. To actuate one double-acting cylinder.

**NOTE:** Valves above are shipped without control switch. Use 202777 remote hand switch (see page 130).

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 118) in conjunction with the directional valve used in your application.

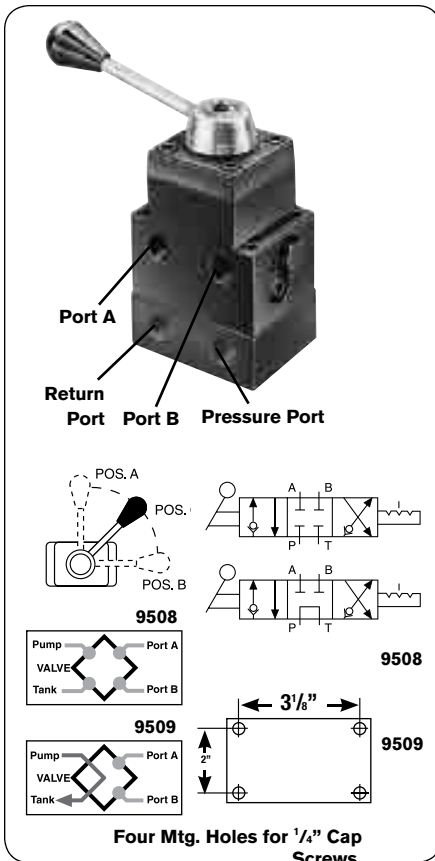




# VALVES

## Remote Mounted

10,000 PSI,  
3/8" Ports 5 GPM Max Flow



### 4-way 3-position (closed center) and (tandem center) manual valves with Posi-Check®

**Application:** Single or double-acting cylinders. When used with single-acting cylinders, one port must be plugged. For double-acting cylinders, either port can be used to “advance” or “return.”

**Actuation:** Lever-operated, detent positioned.

**Functions:** The 9508 provides “advance,” “hold” and “return” positions with all ports blocked (closed center) in the “hold” position. The 9509 has “advance,” “hold” and “return” with tandem center (cylinder ports are blocked, pump remains running). Both valves have **Posi-Check®** feature to guard against pressure loss when shifting from “advance” to “hold.”

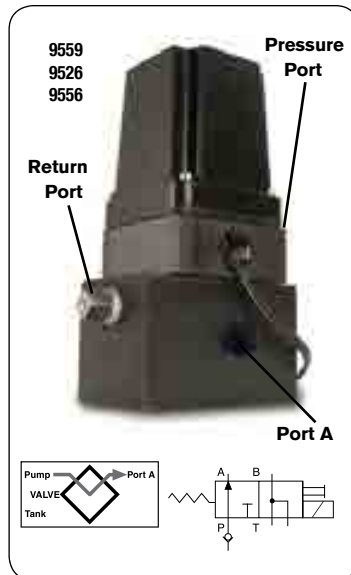
**No. 9508** – 4-way 3-position (closed center) manual valve, including subplate for remote mounting. Wt., 6.3 lbs.

**No. 9509** – Same as 9508, except is tandem center.

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a **No. 9596 Load Lowering Valve** or **No. 9720 Counter Balance Valve** (see page 118) in conjunction with the directional valve used in your application.

**CAUTION:** The **Posi-Check®** feature will not hold the load when shifted directly A to B-B to A or from hold to A or B.

NOTE: Maximum tank line pressure for remote mounted valves is 500 psi.



### 3-WAY 2-POSITION SOLENOID VALVE

**Application:** Single-acting cylinders.

**Actuation:** Solenoid operated, 115/230/24 volt, 50/60 Hz.

**Function:** Advances cylinder piston when solenoid is de-energized, and pump is running. When solenoid is energized, oil is directed back through valve “return” port and cylinder piston returns. To place cylinder in “hold” position, pump must be stopped or its flow held at the valve “pressure” port with the solenoid de-energized.

NOTE: Valve is equipped with a 9631 snubber valve in port “A.” The line from the “return” port of the valve must be unrestricted (100 psi back pressure maximum) back to the reservoir.

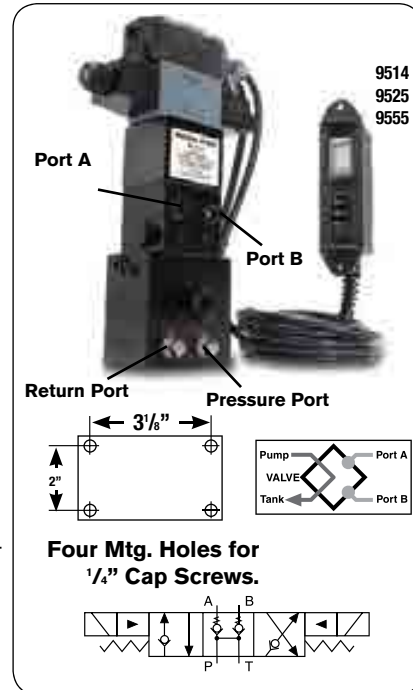
IMPORTANT: A 9580 in-line check valve (see page 119) must be installed in the “pressure” port if the supply pump is not equipped with an outlet check valve.

**No. 9559** – 3-way 2-position solenoid valve, 115 volt 50/60 Hz. Includes a remote mounting subplate. Wt., 9.7 lbs.

**No. 9526** – Same as 9559 except for 230 volt, 50/60 Hz.

**No. 9556** – Same as 9559 except for 24 volt, 50/60 Hz.

NOTE: Valves above are shipped without control switch. Use 202777 remote hand switch (see page 130).



### 4-way 3-position (tandem center) solenoid valve with Posi-Check®

**Application:** Double-acting cylinders.

**Actuation:** Solenoid operated, 115/230/24 volt, 50/60 Hz.

**Functions:** Push button control of “advance,” “hold” and “return.” The **Posi-Check®** feature guards against pressure loss when shifting from “advance” to “hold.” With valve in “hold” position, cylinder ports are blocked and oil is directed from pump to reservoir.

NOTE: Do not allow return tank pressure to exceed 500 psi at the valve.

**No. 9514** – 4-way 3-position (tandem center) solenoid valve, 115 volt, 50/60 Hz. Remote hand control included. Wt., 10.1 lbs.

**No. 9525** – Same as 9514 except for 230 volt, 50/60 Hz.

**No. 9555** – Same as 9514 except for 24 volt, 50/60 Hz.

NOTE: Consult factory before installing a pressure switch on any of these valves.

ACCESSORIES

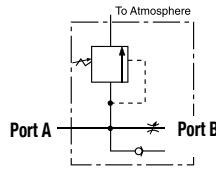


# VALVES

## HYDRAULIC IN-LINE

### 10,000 PSI

#### 5 GPM Max Flow Rate



9596



### LOAD LOWERING VALVE

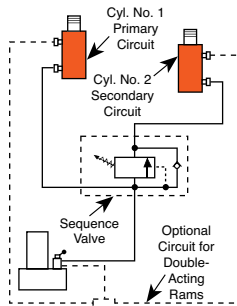
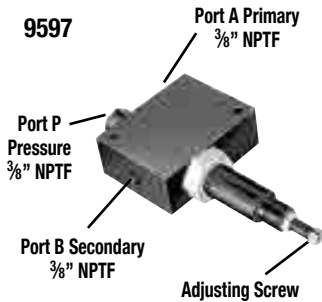
**Application:** Precision metering for controlled cylinder piston return.

**Operation:** Permits free flow when extending cylinder, built-in pressure relief and **Posi-Check®** locks and holds load in raised position until operator opens valve. May be pre-set to provide consistent metered return, or operator may select rate of return with each actuation. Has 3/8" NPTF ports.

NOTE: Pressure relief valve setting is 12,000 psi. Operating pressure is 10,000 psi and max. flow rate is 5 gpm.

**No. 9596** – Load lowering valve. Wt., 2.1 lbs.

9597



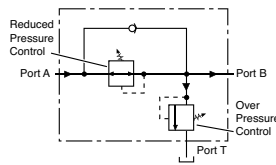
### SEQUENCE VALVE

**Application:** Used when one cylinder in a multi-cylinder application must advance before any other.

**Operation:** Pump is connected to port "P" and separate cylinders to ports "A" and "B." When pressure is applied to port "P," cylinder "A" advances. Cylinder "B" will not advance until a predetermined pressure setting is reached in cylinder "A." Pressure setting is adjustable from 500 to 8,000 psi with adjustment screw; factory preset at 1,000 psi. Has 3/8" NPTF ports.

**No. 9597** – Pressure control sequencing valve. Wt., 5.6 lbs.

9608



### PRESSURE REDUCING VALVE

**Application:** Provides complete, independent pressure control to two or more clamping systems operated by a single power source.

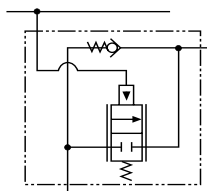
**Operation:** Can be used to provide different pressures in various stages of a single system. Virtually zero leakage across valve means each system can be operated by a single continuous pressure source. Adjustable from 1,000 to 5,000 psi at outlet port "B" (secondary). Has 1/4" NPTF ports.

**No. 9608** – Pressure reducing valve. Wt., 5.8 lbs.

**CAUTION:** Over Pressure control must be set at a higher value than operating pressure.

9720

9721



### COUNTER BALANCE VALVE

**Application:** Double-acting cylinders. Provides positive holding and controlled, "chatter-free" lowering of a load.

**Operation:** Load is raised at flow rate of pump, and held when pump is shut off. When the pump is shifted to "retract," the counter balance valve will continue to hold the load until system pressure exceeds pressure caused by load. The load can then be lowered smoothly to the flow rate of the pump. The counter balance valve is designed

to operate with pumps having a high pressure flow rate of up to 120 cu. in./min. and cylinder ratios of 3 to 1.

**No. 9720** – Counter balance valve, including two pairs of fittings (male and female), hydraulic hoses, and dust caps. Wt., 10 lbs.

**No. 9721** – Same as 9720, but does not include couplers, hoses, fittings and dust caps. Wt., 9.2 lbs.

**CAUTION:** The 9720 patented counter balance valve has a pilot pressure as high as 3,000 psi. Because this pressure is applied to the rod end of the cylinder while it is already under load, the system should not be sized for loads greater than 80% of cylinder rated capacity.

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve in conjunction with the directional valve used in your application. See above, this page.

### Shut-off valve

**Application:** This needle valve permits fine metering of hydraulic oil.  
**Operation:** Can be used for controlling multiple single-acting cylinders.  
**No. 9575** – Shut off valve with 3/8" NPTF ports. Wt., 1.4 lbs.



9575

### Check valve

**Application:** Permits flow of hydraulic oil in one direction only.  
**Operation:** Installs right in hydraulic line.  
**No. 9580** – Check valve with 3/8" NPTF male ends. Wt., .4 lb.



9580



### Pilot operated check valve

**Application:** For use with open or tandem center valves. Permits free flow of fluid in one direction.  
**Operation:** Flow is blocked in opposite direction until pilot oil pressure is applied. This prevents the loss of pressure if the valve is inadvertently shifted or the pump line is broken. Minimum cracking pressure is 60 psi. Required pilot pressure is approximately 16% of checked system pressure.  
**No. 9581** – Pilot operated check valve with 3/8" NPTF ports. Wt., 3.8 lbs.



9581



### "In-line" pressure relief valve

**Application:** Single or double-acting cylinders. For remote locations in a hydraulic circuit where maximum pressure requirements are less than basic overload valve setting in pump.  
**Operation:** Adjustable from 1,000 to 10,000 psi. Valve is spring-loaded and direct-acting.  
**No. 9623** – Pressure relief valve with 3/8" NPTF ports. Wt., 2 lbs.



9623



### Metering valve

**Application:** For systems using large cylinders or extended lengths of hydraulic hose.  
**Operation:** Controls surges by restricting flow if it exceeds 7 gpm. When flow subsides, valve reopens automatically. Has 3/8" NPTF male end to thread into return port of system control valve, and a 3/8" NPTF female end, permitting return hose to be directly connected.  
**No. 9631** – Metering valve. Wt., 0.2 lb.



9631

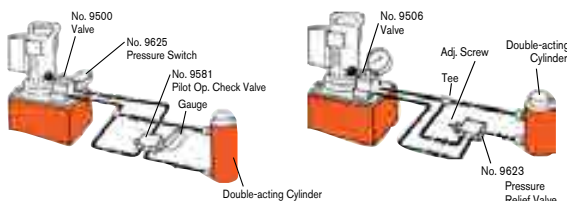
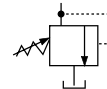


### "In-line" pressure regulator valve

**Application:** Single or double-acting cylinders. Permits adjusting operating pressures at various values below relief valve setting of pump.  
**Operation:** Regulator valve is easily adjusted to maintain pressures between 300 and 10,000 psi. Maintains a given pressure setting within 3% over repeated cycles. Flow range is 17 cu. in./minute to 6 gpm.  
**No. 9633** – In-line pressure regulator valve with two 3/8" NPTF inlet ports, one 1/8" NPTF tank port and 3 foot drain line kit. Wt., 1.9 lbs.  
**Simply turn the handle clockwise to increase the pressure setting, counter-clockwise to reduce pressure.**  
**Note: 3' Drain Line Kit is included.**



9633



Provide an economical means of protecting an hydraulic circuit against over pressurization.

**Operation:** These factory preset valves are designed for maximum flow rate of 5 gpm. Furnished with 1/8" NPTF male port. All valves weigh 0.2 lb. See chart to the right for ordering information.



**RV21278 Series**

Valve Order No.	Pressure Setting (psi)	Valve Order No.	Pressure Setting (psi)
RV21278	10,100 / 10,700	RV21278-50	5,100 / 5,700
RV21278-6	600 / 640	RV21278-52	5,300 / 5,900
RV21278-10	900 / 1,000	RV21278-55	5,600 / 6,200
RV21278-15	1,500 / 1,700	RV21278-57	5,800 / 6,400
RV21278-17	1,600 / 1,800	RV21278-60	6,100 / 6,700
RV21278-20	1,900 / 2,200	RV21278-65	6,600 / 7,200
RV21278-25	2,300 / 2,700	RV21278-70	7,100 / 7,700
RV21278-27	2,600 / 2,800	RV21278-75	7,600 / 8,200
RV21278-28	2,700 / 3,000	RV21278-80	8,100 / 8,700
RV21278-30	3,000 / 3,400	RV21278-83	8,400 / 9,000
RV21278-32	3,100 / 3,300	RV21278-86	8,700 / 9,300
RV21278-35	3,500 / 3,800	RV21278-88	8,900 / 9,600
RV21278-38	3,750 / 3,950	RV21278-90	9,100 / 9,700
RV21278-40	4,100 / 4,500	RV21278-114	11,500 / 12,100
RV21278-43	4,400 / 4,800	RV21278-6280	6,380 / 6,900
RV21278-48	4,900 / 5,300		

Preset — Non-Serviceable

**NOTE:** Care should be exercised to protect workers from hot, pressurized hydraulic oil. Install these valves only in an enclosed or shielded area.



# VALVE SELECTION

## Choosing The Right Valve

- Step 1-** Select the hydraulic cylinder that best suits the application. See pages 6-8.
- Step 2-** Select the series of hydraulic pump with adequate oil output and reservoir capacity to power cylinder. See pages 42-45. Check speed chart on page 6.
- Step 3-** Select pump within series with the valve option that best matches cylinder, pump and application. See pages 122-127.

### CONSIDERATIONS:

- Will the valve be used with single or double-acting cylinders?
- Will the valve be mounted on the pump, away from the pump or directly into the hydraulic lines?



- Will the valve be manually operated or is remote control preferred?
- Is independent control of multiple cylinders, or hydraulic tools preferred?
- What directional control and pressure control valve functions are needed for the application?

Basic valve types include manually operated, air or solenoid operated and pilot operated. Special application valves for pre-stressing and post-tensioning are also offered. Consult selection chart on page 50 for listings of all Power Team valves.

## DIRECTIONAL CONTROL VALVES



### 2-WAY, 2-POSITION

(FOR CONTROL OF SINGLE-ACTING CYLINDERS):

POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes from pump to cylinder; pressure is held from valve to cylinder when pump is shut off.</p>	None	 <p>Oil goes from cylinder to pump; pressure is released to reservoir when motor is turned off.</p>




### 3-WAY, 2-POSITION

(FOR CONTROL OF SINGLE-ACTING CYLINDERS)

POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes from pump to cylinder and holds when pump is shut off. Return line to reservoir is blocked.</p>	None	 <p>Cylinder retracts, oil returns to reservoir.</p>

### 3-WAY, 3-POSITION

(FOR CONTROL OF SINGLE-ACTING CYLINDERS)

POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes from pump to cylinder and holds when pump is shut off. Return line to reservoir is blocked.</p>	 <p>Cylinder pressure is held; pump can remain running and oil returns to reservoir.</p>	 <p>All oil is open to reservoir through return line.</p>



## IN-LINE HYDRAULIC VALVES

**Load Lowering Valve** – Provides precision metering for controlled return of the cylinder piston.

**Sequence Valve** – Used when a cylinder in a multiple cylinder application must advance before any other.

**Pressure Reducing Valve** – Permits independent pressure control to two or more clamping systems operated by a single power source.

**Shut-off Valve** – For fine metering of hydraulic oil. Several may be used to control multiple single-acting cylinders.

**Check Valve** – Permits flow of hydraulic oil in one direction only.

**Pressure Relief Valve** – Used at remote locations in a hydraulic circuit where maximum pressure requirements are less than the setting of the basic overload valve in the pump. Protects a hydraulic system against over pressurization.



**Metering Valve** – Restricts surges by restricting flow to a certain level; when flow subsides, valve reopens automatically. For systems using large cylinders or extended lengths of hose.

**Pressure Regulator Valve** – Permits external adjustment of operating pressures at various values below the internal relief valve setting of the pump.

## DIRECTIONAL CONTROL VALVES




### 4-WAY, 2-POSITION

(FOR CONTROL OF SINGLE OR DOUBLE-ACTING CYLINDERS):




POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes to the “extend” side of the cylinder. The oil from the “retract” side returns to reservoir. Cylinder holds with pump shut off.</p>	<p>None</p>	 <p>Oil goes to the “retract” side of the cylinder, oil from the “extend” side returns to reservoir.</p>

### 4-WAY, 3-POSITION

(FOR CONTROL OF DOUBLE-ACTING CYLINDERS)

POSITION 1	CENTER POSITION	POSITION 2
 <p>Oil goes to the “extend” side of the cylinder, oil from the “retract” side returns to reservoir. Cylinder holds with pump shut off.</p>	 <p>Holds pressure even if pump is running. Oil from pump goes through valve, back to reservoir.</p>	 <p>Oil goes to “retract” side of cylinder. Oil from “extend” side returns to the reservoir.</p>

## TYPICAL CENTERS

TANDEM CENTER	CLOSED CENTER	OPEN CENTER
 <p>Cylinder ports are blocked, oil from pump goes to reservoir. Used when pump remains running. Example: gasoline-driven pumps.</p>	 <p>Generally used when running multiple valves in series from one pump.</p>	 <p>Open Center used when holding is not a requirement, as when running two separate hydraulic tools such as cutters and crimpers.</p>

ACCESSORIES

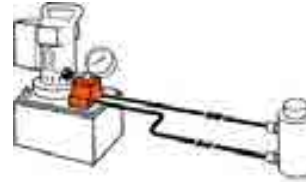




# VALVES

## Selection Information

### Pump Mounted Valves



#### PUMP MOUNTED VALVES

Order No.	Page No.	*Cylinder Application	Operation	Valve Type	Volt	Advance/Return	Advance/ Hold Return	Posi Check® Feature
9500	125	S.A. & D.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	no
9501	125	S.A. & D.A.	Manual	4-way, 3 Pos. Closed Center	—	no	yes	no
9502	124	S.A.	Manual	3-way, 3 Pos. Closed Ctr.	—	no	yes	yes
9504	123	S.A. & D.A.	Manual	3/4-way, 2 Pos.	—	yes	yes	no
9506	125	D.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	yes
9507	125	D.A.	Manual	4-way, 3 Pos. Closed Center	—	no	yes	yes
9511	125	S.A. & D.A.	Manual	4-way, 3 Pos. Open Center	—	yes	yes	no
9512	128	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	24	no	yes	yes
9513	128	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	115	no	yes	yes
9516	128	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	12DC	no	yes	yes
9517	123	S.A.	Manual	2-way, 2 Pos.	—	no	yes	no
9519	128	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	230	no	yes	yes
9520	124	S.A.	Manual	4-way, 3 Pos. Tandem Center	—	no	yes	yes
9522	128	D.A.	Solenoid	4-way, 3 Pos. Open Center	230	yes	no	no
9523	128	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	230	yes	no	no
9552	127	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	230	yes	no	no
9553	128	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	24	yes	no	no
9569	127	S.A.	Solenoid	3-way, 2 Pos.	24	no	yes	no
9570	127	S.A.	Solenoid	3-way, 2 Pos.	230	no	yes	no
9572	127	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	24	yes	no	no
9576	124	S.A.	Manual	3-way, 3 Pos. Metering Tandem Ctr.	—	no	yes	no
9579	127	S.A.	Solenoid	3-way, 2 Pos.	115	no	yes	no
9582	123	S.A.	Manual	3-way, 2 Pos.	—	no	yes	no
9584	123	S.A.	Manual	3-way, 2 Pos.	—	no	yes	no
9589	128	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	115	yes	no	no
9590	128	D.A.	Solenoid	4-way, 3 Pos. Open Center	115	yes	no	no
9592	127	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	115	yes	no	no
9594	127	S.A. & D.A.	Air	3/4-way, 2 Pos.	—	no	yes	yes
9599	126	S.A.	Pilot Operated Solenoid	3-way, 3 Pos. Tandem Center	24	no	yes	yes
9605	126	S.A.	Pilot Operated Solenoid	3-way, 3 Pos. Tandem Center	115	no	yes	yes
9609	126	S.A.	Manual	3-way, 3 Pos. Tandem Center	—	no	yes	no
9610	123	S.A.	Auto Pilot Operated	3-way, 2 Pos.	—	yes	no	no
9610A	123	S.A.	Manual	2/3-way, 2 Pos.	—	no	yes	no
9615	128	D.A.	Solenoid	4-way, 3 Pos. Open Center	24	yes	no	no
9628	129	S.A. & D.A.	Manual	Post Tensioning	—	special	no	no
9632	129	S.A. & D.A.	Manual	Post Tensioning	—	special	no	no

\* "S.A." represents single-acting cylinders, "D.A." represents double-acting cylinders

ACCESSORIES



### 3-WAY/2-POSITION MANUAL VALVES

**Applications** – Single-acting cylinders.

**Actuation** – Lever operated.

**Functions** – Cylinder piston “advance,” “hold” and “return.”

**Used on these pumps** – P460, PE17, PE21, PE30, PE46, PE55, PE84, PE90, and PE120 series.

**No. 9582** – 3-way/2-position manual valve. Wt., 2.5 lbs.

**No. 9584** – Same as 9582, but has “flipper” control. Wt., 1.8 lbs.

### 3-WAY/2-POSITION, PILOT OPERATED AUTOMATIC VALVE

**Application** – Single-acting cylinders.

**Actuation** – Pilot oil.

**Functions** – When pump is started, pilot oil automatically closes valve and directs oil to cylinder; when pump is stopped, valve automatically opens and oil returns to reservoir.

**Used on these pumps** – Furnished with pilot lines and adapters for PA55, PA90, PE30, PE55, PE90 and PE120 series.

**No. 9610** – 3-way/2-position pilot operated automatic valve. Wt., 4.2 lbs.

### 2/3-WAY/2-POSITION MANUAL/PILOT OPERATED AUTOMATIC VALVE

**Application** – Manual operation for load lifting and holding with single-acting cylinders; automatic “dump” for operating hydraulic tools.

**Actuation** – Flipper lever/pilot oil.

**Functions** – With lever in closed position, valve will hold the load. When lever is “open,” valve functions as a true automatic “dump” valve.

**Used on these pumps** – Furnished with pilot lines and adapters for PA55, PA90, PE30, PE55, PE90 and PE120 series. For application on other pumps, consult factory.

**No. 9610A** – 2/3-way/2-position manual/pilot operated automatic valve. Wt., 4.4 lbs.

### 2-WAY/2-POSITION MANUAL VALVE

**Application** – Single-acting cylinders.

**Actuation** – Flipper lever operated.

**Functions** – Cylinder piston “advance,” “hold” and “retract.”

**Used on these pumps** – PE172, PA172 and PE84 series.

**No. 9517** – 2-way/2-position manual valve. Wt., 3.2 lbs.

### 3/4-WAY/2-POSITION MANUAL VALVE

**Application** – Single or double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – Pos. 1 – Oil is directed to “advance” side of cylinder, oil from “retract” side goes to reservoir; cylinder “holds” with pump shut off. Pos. 2 – Oil goes to “retract” side of cylinder; cylinder “holds” with pump shut off. When using as a 3-way valve for single-acting cylinders, port “A” or “B” is plugged. See note on page 124 regarding plugging of ports and resulting heat build-up.

**Used on these pumps** – P460, PA6D, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.

**No. 9504** – 3/4-way/2-position manual valve. Wt., 4.2 lbs.

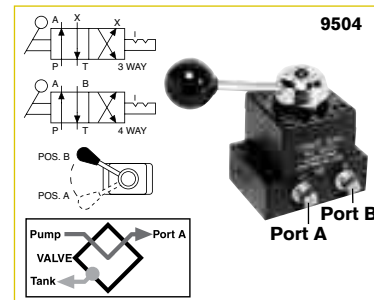
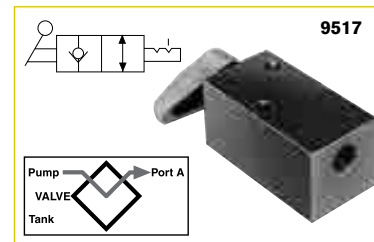
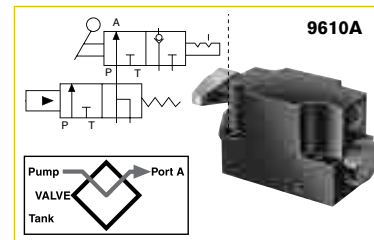
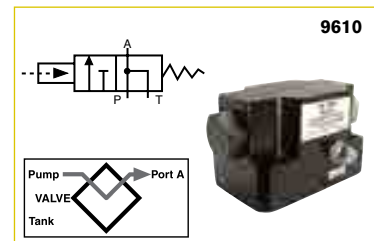
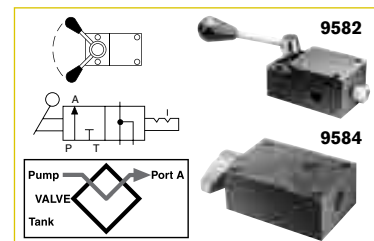
**NOTE:** 9504 can be remote mounted with a 9510 subplate (see page 131).

**NOTE:** A pressure switch and/or gauge may be attached to any valve on this page (refer to pages 131, 110-111).

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 118) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

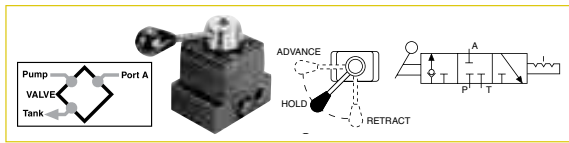
**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2” longer mounting screws are required. For valves 9504, 9584, 9610 and 9610A, order four 12001 cap screws. For valve 9582, order two 12001 and two 10856 cap screws.



# VALVES

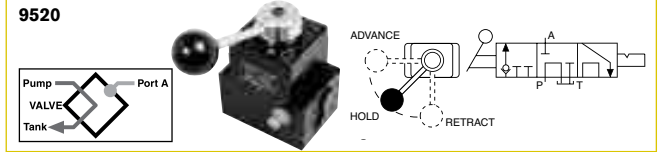
## Pump Mounted 3 Way/3 Position Manual

**10,000 PSI., 3/8" PORTS, 5  
GPM MAX FLOW RATE.**



### 3-WAY/3-POSITION (CLOSED CENTER) NON-INTERFLOW MANUAL VALVE WITH PO- SI-CHECK®

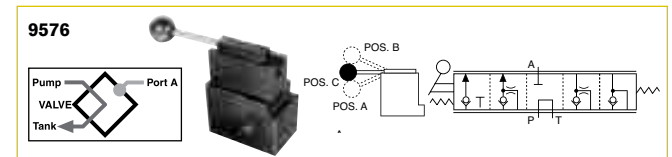
**Application** – Single-acting cylinders.  
**Actuation** – Lever operated, detent positioned.  
**Functions** – Pos. 1 – Oil is directed from pump to cylinder and “holds” with pump shut off; line to reservoir is blocked. Pos. 2 – All oil is open to reservoir through tank line.  
**Center pos.** – Cylinder pressure is held; pump should be shut off.  
**Used on these pumps** – P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.  
**NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 110-111, 131). Also, the 9502 can be remote mounted if a 9510 subplate is used (see page 131).  
**No. 9502** – 3-way/3-position (closed center) manual valve. Wt., 4.2 lbs.



### 3-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE WITH POSI-CHECK® VALVE

**Application** – Single-acting cylinders.  
**Actuation** – Lever operated, detent positioned.  
**Functions** – “Advance,” “hold” and “return.” When shifted to “return” position, pump and cylinder return oil through their own separate return lines, allowing faster retraction of piston. The Posi-Check feature guards against pressure loss when shifting from “advance” to “hold” position.  
**Used on these pumps** – P460, PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PQ60, PQ120, PE200, PE400, PG30, PG55, PG120 and PG400 series.  
**No. 9520** – 3-way/3-position (tandem center) manual valve. Wt., 5.1 lbs.

### 3-WAY/3-POSITION (TANDEM CENTER) METERING



### VALVE

**Application** – Single-acting cylinders.  
**Actuation** – Lever operated.  
**Functions** – Cylinder piston metered “advance,” “hold” and metered “return.”  
**Used on these pumps** – PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PQ60, PQ120, PE200, PE400, PG30, PG55, PG120 and PG400 series.  
**NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 110-111, 131). Also, the 9576 can be remote mounted with a 9510 subplate (see page 131).  
**No. 9576** – 3-way/3-position (tandem center) metering valve. Wt., 8.5 lbs.

**⚠ CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 118) in conjunction with the directional valve used in your application.

**NOTE:** Valves 9501, 9502, 9504 and 9507 can have a port blocked or have a closed center position. When a port is blocked and the valve is shifted to the blocked port, the pump will generate excessive heat. An electric or rotary air pump can either be turned off manually or with a pressure switch. Reciprocating air pumps may be adjusted to stall out and stop.

**NOTE:** Gauge ports monitor pump pressure only, not pressure to the hydraulic cylinder(s).

**IMPORTANT:** Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valves 9502 and 9520, order four 12001 cap screws. For valve 9576, order four 17428 cap screws.

#### 4-WAY/3-POSITION (TANDEM CENTER) VALVE WITH POSI-CHECK®

**Application** – Single or double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – “Advance,” “hold” and “return.” The Posi-Check feature guards against pressure loss when shifting from “advance” to “hold” position.

**Used on these pumps** – P460, PA6D, PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PED, PG30, PG55, PG120, PG400, PQ60 and PQ120 series.

**No. 9506** – 4-way/3-position (tandem center) manual valve. Wt., 5.1 lbs.

#### 4-WAY/3-POSITION (TANDEM CENTER) AND (OPEN-CENTER) MANUAL VALVES

**Application** – Single or double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – The 9500 provides “advance,” “hold” and “return.” The 9511 (open center) valve can be used if holding is not a requirement, as when running two separate hydraulic tools. Provides “advance” and “return” only.

**Used on these pumps** – P460, PA17, PA46, PA55, PE17\*, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PG30, PG55, PG120, PG400, PQ60 and PQ120 series. *\*Does not mount without 251528*

**No. 9500** – 4-way/3-position (tandem center) manual valve. Wt., 4.2 lbs.

**No. 9511** – Same as 9500, except has an open center.

#### 4-WAY/3-POSITION (CLOSED CENTER) MANUAL VALVE WITH POSI-CHECK®

**Application** – Single or double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

**Functions** – Similar to 9506, but is a closed center valve with Posi-Check. Generally used to operate multiple cylinders with a single pump. Provides “advance,” “hold” and “return.” The Posi-Check feature guards against pressure loss when shifting from the “advance” to “hold” position. See note on page 124 regarding plugging of ports and resulting heat build-up.

**Used on these pumps** – P460, PA17, PA46, PA55, PA60, PA6D, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.

**No. 9507** – 4-way/3-position (closed center) manual valve. Wt., 5 lbs.

#### 4-WAY/3-POSITION (CLOSED CENTER) MANUAL VALVE

**Application** – Single or double-acting cylinders.

**Actuation** – Lever operated, detent positioned.

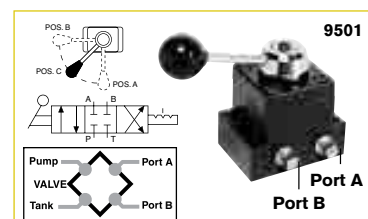
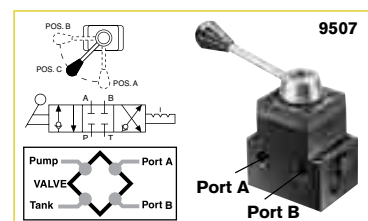
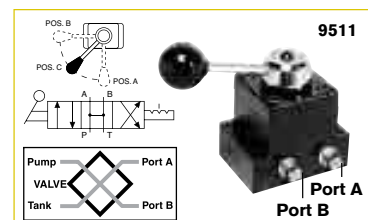
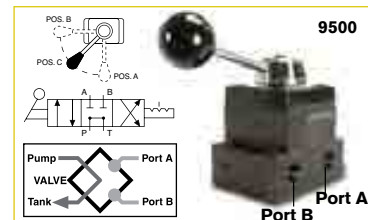
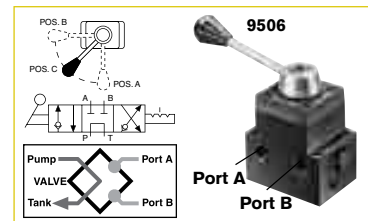
**Functions** – “Advance,” “hold” and “return.” Closed center design makes valve suitable for operating multiple cylinders from a single pump. See note on page 124 regarding plugging of ports and resulting heat build-up.

**Used on these pumps** – P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and P120 series.

**No. 9501** – 4-way/3-position (closed center) valve. Wt., 4.2 lbs.

**NOTE:** A pressure switch and/or gauge may be attached to valves 9500, 9501, 9506, 9511 if desired (see pages 110-111, 131). Also, all valves on this page may be remote mounted with a 9510 subplate (see page 131).

**10,000 PSI., 3/8" PORTS, 5 GPM MAX FLOW RATE.**

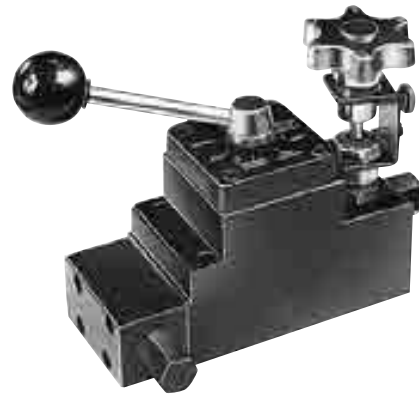


# VALVES

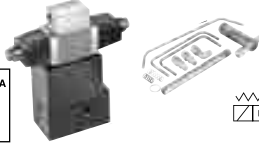
## Pump Mounted

Manual and Pilot Operated

**10,000 PSI., 3/8" PORTS, 5 GPM MAX FLOW RATE.**



**9605, 9599**



### 3-WAY/3-POSITION (TANDEM CENTER) SOLENOID VALVES WITH POSI-CHECK®

**Application** – Single-acting cylinders.

**Actuation** – Solenoid operated: 9605 is 115 volt, 50/60 Hz; 9599 is 24 volt, 50/60 Hz.

**Functions** – “Advance,” “hold” and “return” positions. When in “advance,” solenoid “B” is energized and oil goes from pump to cylinder through pressure port. In “return” position, solenoid “A” is energized and oil is directed from cylinder and pump to reservoir. With both solenoids de-energized, in “hold” position, oil from pump is directed back to reservoir while oil is checked in cylinder. The **Posi-Check®** feature holds load when shifting from “advance” to “hold” position.

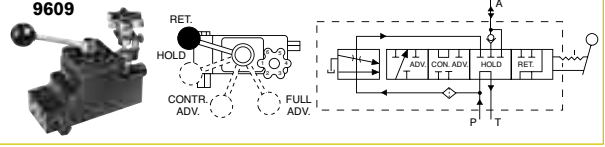
**Used on these pumps** – Furnished with pilot lines and adapters for PE55, PE30 (carrying handles must be removed) and PE120 series. For application on other models, consult factory.

**No. 9605** – 3-way/3-position (tandem center) solenoid valve, 115 volt, 50/60 Hz. Wt., 14.0 lbs.

**No. 9599** – Same as 9605 except for 24 volt, 50/60 Hz circuits. Wt. 14.0 lbs.

**NOTE:** Valves above are shipped without controls. Use 202777 remote hand control (see page 130). Consult factory for field installation.

**9609**



### 3-WAY/4-POSITION MANUAL PRESSURE COMPENSATED VALVE

**Application** – Single-acting cylinders. Primarily for use in testing soil, rock, concrete, asphalt and related engineering materials.

**Actuation** – Lever and adjustable, pressure compensated flow control valve.

**Functions** – Cylinder piston “return,” “hold,” “controlled advance” (pressure compensated) and “advance” (full flow). Will deliver a relatively constant flow regardless of pressure between 1,000 and 10,000 psi.

**Used on these pumps** – PA17, PA46, PA55, PE17, PE21, PE30\*, PE46, PE55, PE90, PE200, PE400, PG30\*, PG55, PG120, PG400, PQ60 and PQ120 series. \* **NOTE:** Adapter kit 252161 is required for mounting this valve to a PE30 or PG30 series pump.

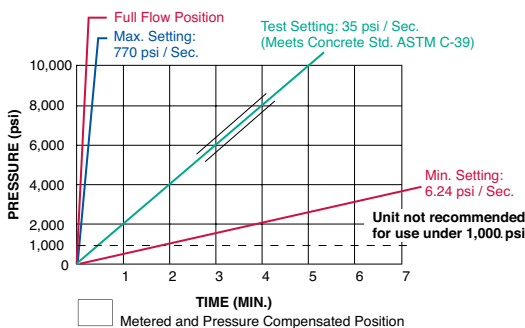
**NOTE:** This valve can be remote mounted with a 9510 subplate (see page 131).

**No. 9609** – 3-way/4-position manual pressure compensated valve. Wt., 8.7 lbs.

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 118) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting the 9609 valve on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valves 9500, 9501 and 9511, order four 12001 cap screws. For valve 9552, 9506, and 9507, order four 11956 cap screws. For valves 9599 and 9605, order four 251078 cap screws. For valve 9609, order four 10855 cap screws.



### FLOW

Full flow position - 5 gpm (Ref.)  
Metered advance position  
65 cu. in./min. (Max.)

### PRESSURE

Min. working pressure - 1,000 psi.  
Max. working pressure - 10,000 psi.  
Max. valve case pressure - 500 psi.

ACCESSORIES



# VALVES

## Pump Mounted Solenoid or Air Operated

### 3-WAY/2-POSITION SOLENOID VALVE

**Application** – Single-acting cylinders.

**Actuation** – Solenoid operated,  
115 volt, 50/60 Hz.

**Functions** – Cylinder piston advances when solenoid is de-energized and pump is running. When solenoid is energized, oil is directed to reservoir, and piston returns. For “hold” position, pump is stopped with solenoid de-energized.

**Used on these pumps** – PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series.

**No. 9579** – 3-way/2-position solenoid valve, 115 volt, 50/60 Hz. Wt., 9.6 lbs.

**No. 9569** – Same as 9579, except with 24 volt, 50/60 Hz solenoid.

**No. 9570** – Same as 9579 except with 230 volt, 50/60 Hz solenoid.

**NOTES:** Valves above are shipped without control switch. Use 202777 remote hand switch (see page 130). When this valve is mounted, the pump must be equipped with an outlet check valve.

### 3/4-WAY/2-POSITION SOLENOID VALVES

**Application** – Single or double-acting cylinders. When used with single-acting cylinders, one port should be plugged.

**Actuation** – Solenoid operated.

**Functions** – Oil is directed to “extend” side of cylinder, oil from “retract” side goes to reservoir; cylinder “holds” with pump shut off. Oil is directed to “retract” side of cylinder; oil from “extend” side goes to reservoir.

**NOTE:** Cylinder will not “hold” in the “return” position with motor running or shut off.

**Used on these pumps** – 9552, 9572 and 9592 are used with PE17, PE30 (with carrying handles removed), PE46, PE55, PE84, PE90, PE200, PE400, PQ60 and PQ120 series.

**No. 9592** – 3/4-way/2-position solenoid valve, 115 volt, 50/60 Hz. Wt., 14.6 lbs.

**No. 9552** – Same as 9592, except with 230 volt, 50/60 Hz solenoid.

**No. 9572** – Same as 9592, except with 24 volt, 50/60 Hz solenoid.

**NOTE:** Valves above are shipped without controls. The 9552, 9572 and 9592 can be used with the 304718 remote hand control (see page 130).

**NOTE:** Ports are 1/4" NPTF.

### AIR ACTUATED VALVE

**Application** – Single or double-acting cylinders. When used with single-acting cylinders, one port should be plugged.

**Actuation** – Air operated.

**Functions** – Oil is directed to “extend” side of cylinder, oil from “retract” side goes to reservoir; cylinder “holds” with pump shut off. Oil is directed to “retract” side of cylinder; oil from “extend” side goes to reservoir.

**NOTE:** Cylinder will not “hold” in the “return” position with motor running or shut off.

**Used on these pumps** – PA17, PA46 and PA55 series.

**No. 9594** – 3/4-way/2-position solenoid valve, air operated (minimum of 50 psi air pressure required). Wt., 11 lbs.

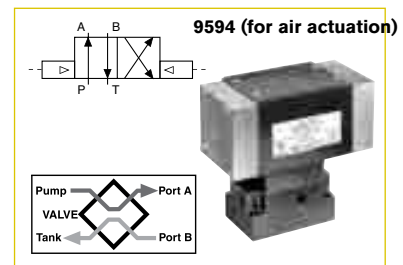
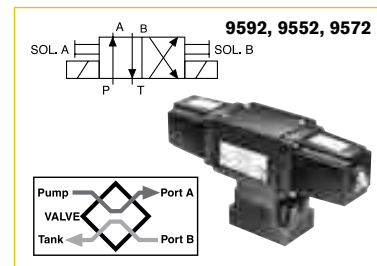
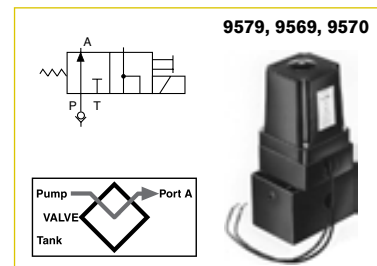
**NOTES:** Valve above is shipped without controls. 9594 can be used with the 209593 remote hand control (see page 130). See page 118 for remote mounted models of this valve.

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 118) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valves 9569, 9570 and 9579, order four 10856 cap screws. For valves 9552, 9572 and 9592, order four 12001 cap screws.

**10,000 PSI., 3/8" PORTS, 5  
GPM MAX FLOW RATE.**



ACCESSORIES

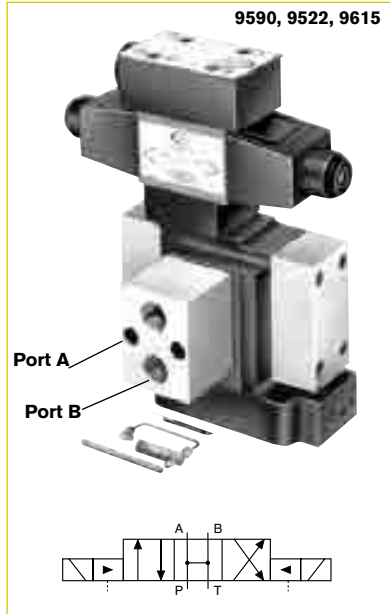


# VALVES

## Pump Mounted Solenoid or Air Operated



ACCESSORIES



### 4-WAY/3-POSITION (OPEN CENTER) SOLENOID VALVE

**Application** – Double-acting cylinders.

**Actuation** – Solenoid operated, 115 volt, 50/60 Hz.

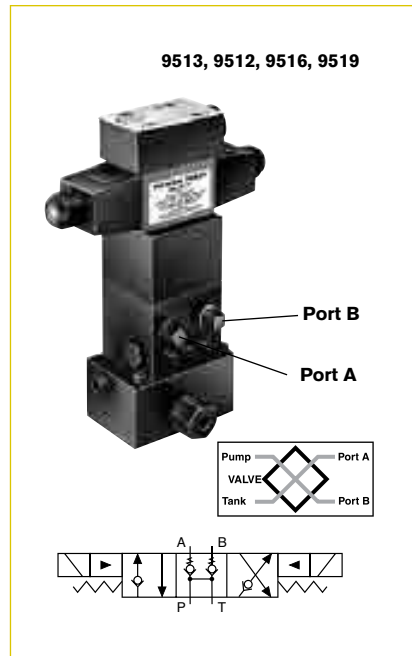
**Functions** – “Advance,” open center and “return” positions. Cylinder ports and pump port are open to reservoir in “neutral.”

**Used on these pumps** – Furnished with pilot lines and adapters for PE30 (with carrying handles removed), PE55, PE90 and PE120 series. For other pump models, consult factory. **NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 110-111, 131).

**No. 9590** – 4-way/3-position (open center) solenoid valve, 115 volt, 50/60 Hz. Wt., 15.5 lbs.

**No. 9522** – Same as 9590 except for 230 volt, 50/60 Hz.

**No. 9615** – Same as 9590 except for 24 volt, 50/60 Hz.



### 4-WAY/3-POSITION (TANDEM CENTER) PILOT OPERATED SOLENOID VALVE

**Application** – Double-acting cylinders.

**Actuation** – Solenoid operated, 115 volt, 50/60 Hz.

**Functions** – “Advance,” “hold” and “return.” The *Posi-Check*® feature holds the load when shifting from the “advance” to the “hold” position.

**Used on these pumps** – PE17, PE21, PE30 (with carrying handles removed), PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series. **NOTE:** A gauge may be attached if desired (see pages 110-111).

**No. 9513** – 4-way/3-position (tandem center) solenoid valve, 115 volt, 50/60 Hz. Wt., 18.1 lbs.

**No. 9512** – Same as 9513 except for 24 volt, 50/60 Hz circuits.

**No. 9516** – Same as 9513 except for 12 volt DC. For use on the PG1204S and PG400 series pumps only.

**No. 9519** – Same as 9513 except for 230 volt, 50/60 Hz circuits. Consult factory for field installation.

**NOTE:** Valves above are shipped without control switch.

**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 118) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting the 9609 valve on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valves 9513 and 9519, order four 11956 cap screws. For valves 9523, 9553 and 9589, order four 10855 cap screws. For valves 9522, 9590 and 9615, order four 10854 cap screws.



### 3-WAY/2-POSITION (PILOT OPERATED, NORMALLY OPEN) SOLENOID VALVE

**Application:** Single-acting cylinders.

**Actuation:** Solenoid operated, 115 volt, 50/60 Hz.

**Function:** “Advance” and “return.”

**Used on these pumps:** Furnished with pilot lines and adapters for PE30 (with carrying handles removed), PE55, PE90 and PE120 series. For other pump models, consult factory. **NOTE:** A pressure switch and/or gauge may be attached if desired (see pages 110-111, 131).

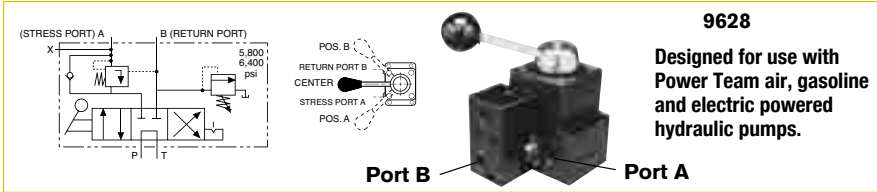
**No. 9589** – 3-way/2-position (pilot operated) solenoid valve, 115 volt, 50/60 Hz. Wt., 8.2 lbs.

**No. 9523** – Same as 9589 except for 230 volt, 50/60 Hz.

**No. 9553** – Same as 9589 except for 24 volt, 50/60 Hz.

# VALVES

## Pump Mounted Manual



9628

Designed for use with Power Team air, gasoline and electric powered hydraulic pumps.

### 4-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE

**Application** – Single strand, double-acting stressing jacks with Power Wedge seater.

**Actuation** – Lever operated, detent positioned.

**Operation** –

1. With valve in center position, pump is started.
2. Cable is inserted into stressing tool, valve is placed in “A” position. “Pull” portion of stressing tool is pressurized to specified level for proper cable tensioning (“A” port is checked internally,

- can only be released by building pressure in “B” position).
3. Valve is placed in “B” position, which is pressure controlled and will not exceed 6,400 psi. “Return” portion of stressing tool is pressurized and will release “A” port when pressure reaches approximately one-half the “A” port pressure. “A” port remains open as long as this pressure differential is maintained.
4. Pump is stopped, valve is placed in “A” position, releasing “B” port pressure.

**Used on these pumps:** PA17\*, PA46\*, PA55, PE17\*, PE21\*, PE30, PE46\*, PE55, PE60, PE84, PE120, PE200, PE400, PG30\*, PG55, PG120, PG400, PQ60 and PQ120 series.

\* These pumps may have reduced first flow stage characteristics due to internal valve restrictions.

**No. 9628** – Post tensioning valve for 10,000 psi (max.) single-acting/Power Wedge seater.  
Wt., 5.4 lbs.

### “TWIN” 4-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE

**Application** – Multi-strand, double-acting stressing jacks with an auxiliary seating cylinder.

**Actuation** – Dual lever operated, detent positioned.

**Operation** –

1. With valves “A” and “B” in center position, pump is started; cable is inserted into stressing tool.
2. Valve “A” is placed in “Stress” position; cylinder extends to tension cable. Pump pressure controls force exerted by tensioning cylinder in this position. “Stress” port is checked internally, and can only be released by building pressure in the valve “B” return position.
3. When desired cable tension is achieved, valve “A” is placed in valve “B” position and valve “B” in “Seat” position. Seating portion of cylinder will be pressurized to seating pressure con-

trolled by “Seat” relief valve (factory set to 3,900 psi).

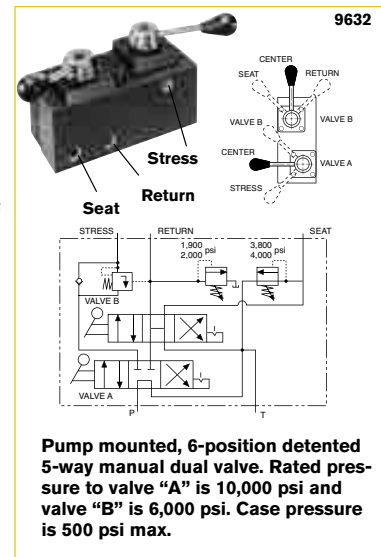
4. Valve “B” is shifted to “Return” position, which is pressure controlled and will not exceed 2,200 psi. “Return” portion of stressing tool should be pressurized and will release “Stress” port when pressure reaches 15% of “Stress” port pressure.
5. “Stress” port will remain open and cylinder will return as long as pressure differential is maintained. “Stress” and “Seat” ports are open to reservoir.
6. When cylinder has fully returned, both valves are shifted to “Center” position and oil will be directed to reservoir. Maximum pressure setting for the “Seat” relief valve is 6,000 psi.

**Used on these pumps:** PA17\*, PA46\*, PA55, PE17\*, PE21\*, PE30, PE46\*, PE55, PE84, PE120, PE200, PE400, PG30\*, PG55, PG120, PG400, PQ60 and PQ120 series.\*

\* These pumps may have reduced first flow stage characteristics due to internal

valve restrictions.

**No. 9632** – Post tensioning valve for 10,000 psi (max.) double-acting systems.  
Wt., 13.6 lbs.



**Pump mounted, 6-position detented 5-way manual dual valve. Rated pressure to valve “A” is 10,000 psi and valve “B” is 6,000 psi. Case pressure is 500 psi max.**



**CAUTION:** To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 118) in conjunction with the directional valve used in your application.

**IMPORTANT:** Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

**IMPORTANT:** When ordering any valve for a PE30 or PG30 series pump, 1/2” longer mounting screws are required. For valves 9569, 9570 and 9579, order four 10856 cap screws. For valves 9552, 9572 and 9592, order four 12001 cap screws.

# HYDRAULIC PUMP

## Accessories



ACCESSORIES

25017  
202777  
202778  
304718



203225



10461



251660



309652  
309653



209593



17627  
216209



### ON/OFF MOTOR CONTROL

The following remote control switches will give you momentary "ON" control of your hydraulic pump. These switches are deadman type, spring loaded to the "OFF" position. They can be used with any Power Team electric hydraulic pump.

**No. 25017** – Remote hand control. Has a push button switch, with a 10 foot cord. Wt., 0.8 lb.

**No. 203225** – Remote hand control. Heavy-duty with single push button switch in a neoprene housing with 10 foot cord. Housing seals out dust, lint and liquids (unit is not submersible). Wt., 0.8 lb.

**No. 10461** – Remote foot control, with 10 foot cord. Wt., 3 lbs.

**No. 251660** – Remote foot control, with 10 foot cord. For use with the PE10 style pumps. Wt., 1 lb.

### SOLENOID & MOTOR CONTROL

For use on solenoid valves that are used on single-acting cylinders:

**No. 202777** – Remote hand control. Has rocker-style switch that is momentary advance, spring center hold and detented retract. It comes with a 10 foot cord, for use with 3-way/2 or 3-position valves. Wt., 0.9 lb.

For use on solenoid valves that are used on double-acting cylinders:

**No. 202778** – Remote hand control. Has rocker-style switch that is momentary advance, spring center hold and momentary retract. It comes with a 10 foot cord, for use with 4-way/3-position valves. Wt., 0.9 lb.

**No. 309653** – Remote foot control. Can be used in place of either of the above hand controls to control the same type of valves. The switch is momentary on, both advance and retract position, and is spring centered to the hold position. This foot switch comes with 10 foot cord. Wt., 4 lbs.

**No. 17627** – Remote foot control. Same as the No. 309653 but without a cord. Wt., 2 lbs.

**No. 304718** – Remote hand control. Has a rocker style switch that is momentary advance, spring center hold and momentary retract. The switch is wired to start and stop the motor when the valve is energized. It comes with a 10 foot cord. To be used with 4-way/2-position valves. Wt., 0.9 lb.

**No. 309652** – Remote foot control. Has same functions as No. 304718. Supplied with a 10 foot cord. To be used with 4-way/2-position valves. Wt., 4 lbs.

**No. 216209** – Remote foot control. Same as the No. 309652, but without a cord. Wt., 2 lbs.

NOTE: See valves listing to determine which remote to use. Page 122-129.

### REMOTE AIR MOTOR CONTROLS

This remote hand control has two momentary push buttons, one for advance and one for retract with spring offset to hold. To be used with 4-way/2-position air pilot valves.

**No. 209593** – Remote hand control with 12 foot cord. Wt., 2 lbs.



## SUBPLATES

For remote mounting of control valves. Subplates convert pump mounted valves to remote mounted valves quickly and easily.

**No. 9510** – Subplate for remote mounting the following valves; 9500, 9501, 9502, 9504, 9506, 9507, 9511, 9552, 9572, 9575, 9576, 9592, 9594 and 9609. Wt., 1.5 lbs.

**No. 9620** – For use with 9500, 9501, 9502, 9552, 9572, 9592 and 9594. Same as No. 9510 but has integral pressure regulating valve. Wt., 3.8 lbs.

## PUMP-MOUNTED SUBPLATES

**No. 9515** – Subplate, Wt., 1.3 lbs.

When fitted between pump cover plate valve mounting flange and control valve, provides a separate  $\frac{3}{8}$ " NPTF female port, open to "return" regardless of position of valve. Also provides a separate  $\frac{3}{8}$ " NPTF female pressure port. This subplate can be useful when you desire to use one pump with a deck-mounted control valve, plus a separate remote-mounted valve to control another function.

For use with the following valves: 9500, 9501, 9502, 9504, 9506, 9507, 9511, 9520, 9552, 9572, 9575, 9576, 9592, 9594, and 9609.

**No. 9521** – Subplate for use under most pump mounted valves to provide adjustable pressure control on units not equipped with an external pressure regulator. Wt., 3.8 lbs.

## AIR FILTER/REGULATOR/LUBRICATOR

Recommended for use with single-speed air/hydraulic pumps found on pages 49-67.

**No. 9531** – Filter/regulator.  $\frac{1}{4}$ " NPTF inlet and outlet. Wt., 0.8 lb.

## PRESSURE SWITCH

**Application:** Used in a hydraulic circuit where system pressure must be "held." Automatically (electrically) turns off pump motor when predetermined system pressure is reached.

Attaches directly to control valve manifold or can be mounted "in-line" to read system pressure. Has a  $\frac{1}{4}$ " NPTF male thread, and a  $\frac{1}{4}$ " NPTF fitting for gauge mounting if required. Adjustable from 1,000 to 10,000 psi. Can also be used to actuate other electrical devices in the system. Wired "normally open" and held closed by spring pressure.

**IMPORTANT: Electrical rating of switch is 5 amps at 250 volts max. To prevent permanent damage to switch, a control relay must be installed to handle currents or voltage exceeding these limits. Pressure switch should never be used to directly actuate the electrical motor.**

**No. 9625** – In-line pressure switch with  $\frac{1}{4}$ " NPTF gauge port. Wt., 1.1 lbs.

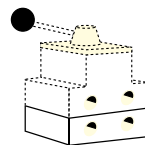
## PILOT OPERATED AIR CONTROL VALVES

**Application:** For use when an air pilot signal is required at a set hydraulic pressure. Can be used to shift valves, and start or stop pneumatic pumps.

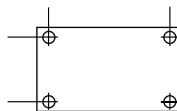
Attaches directly to control manifold or can be mounted "in-line" to read system hydraulic pressure. Automatically turns on an air pilot signal when a predetermined system pressure is reached. Has  $\frac{1}{4}$ " NPTF male thread and  $\frac{1}{4}$ " NPTF fitting for gauge mounting if required. Adjustable from 500-10,000 psi. Maximum rating of 25 scfm at 100 psi.

**No. 9641** – Pilot operated control valve, normally closed, with  $\frac{1}{4}$ " NPTF male thread. Wt., 1 lb.

**No. 9643** – Same as 9641 except normally open. Wt., 1 lb.



9510 and 9620 attach to the bottom of valve for remote mounting. The 9515 and 9521 mount between the pump cover plate and valve.



9510

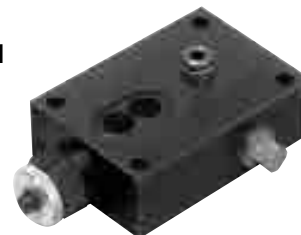
9515



9620



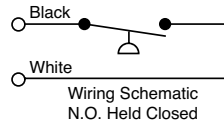
9521



9531



9625

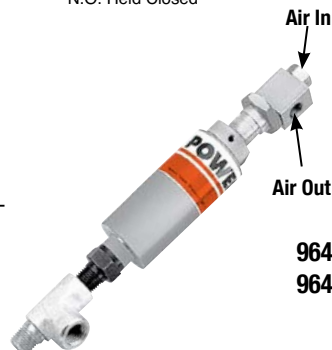


Air In

Air Out

9641

9643



ACCESSORIES





# HYDRAULIC PUMP

## Accessories

252511  
252512



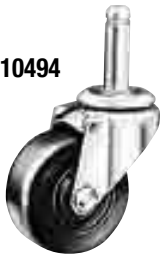
206767  
250175



350431



10494



207762



16339



### OIL COOLER KITS

**No. 252511** – Oil cooler kit designed for use with PE604T or PE604PT pumps with 115 VAC. Wt., 5 lbs.

**No. 252512** – Oil cooler kit designed for use with PE604T or PE604PT pumps with 220 VAC. Wt., 5 lbs.

### RESERVOIR BREATHER KITS

**No. 206767** – Reservoir breather kit designed for use on PA17, PA55, PE17, PE55, PE84, PE90, PE120, PG55, PG120, PQ60 and PQ120 series pumps. Wt., 1.3 lbs.

**No. 250175** – Reservoir breather kit designed for use on PE21 and PE46 series pumps. These kits replace the reservoir filler cap when the pump is used in dusty and dirty environments. Wt., 1.3 lbs.

### CASTERS

2" diameter casters attach to the bottom of large reservoir for portability. Sold individually; order the amount you need.

**No. 10494** – Single caster wheel. Wt., 0.3 lb.

### FLUID LEVEL/TEMPERATURE GAUGE

Displays fluid level and temperature of hydraulic oil in reservoir. 32°-212°F, 0°-100°C. 1 1/4" wide and 6 3/8" high.

**No. 350431** – Fluid level/temperature gauge.

### FOOT CONTROL GUARD

Guard for use with 10461 and 251660 foot controls.

**No. 16339** – Wt., 4.5 lbs.

### MAGNETIC STRIP

Magnetic strip with adhesive back can be added to No. 25017, 202777, 202778 and 304718 hand controls. Provides 6 lbs. of holding force.

**No. 207762** – Wt., 0.1 lb.

### VITON\* SEAL KITS

(SEE PAGE 33)



Viton\* seal kits

Order Number	Use With	Model
300507	P12	All
300472	P23, P55	All
300510	P59	All
300508	P157, P159, P300	A
300690	P157, P159	B
300696	P300	B
300508	P157D, P159D, P300D	A
300693	P157D, P159D	B
300699	P300D	B

**VITON\* SEAL KITS** Can be used in all "C" and "RH" series cylinders (see pages 14-15 and 20-21), as well as the P12, P55, P59, P157/P159, P157D/P159D and P300/P300D series of hand pumps. These seals are required when fire resistant hydraulic fluids are used. Not required with Flame-Out® fluid.

\* Viton is an E.I. duPont De Nemours & Co., Inc., trade name.

## UNIVERSAL PUMP CART

Mobilize your hydraulic pumps with the PC200. The rugged tubular frame can easily handle pumps weighing up to 200 lbs. With 12" wheels, the cart rolls easily. Just load the pump onto the cart and wheel it right to the job. The universal mounting hole pattern lets you handle a wide variety of Power Team pumps.

**No. PC200** – Universal pump cart with 12" wheels. Cart can be used with the following pumps: PA60, PA64 and PA554 air/hydraulic pumps; PE55 series, PE183-2 and PE184-2 electric/hydraulic pumps; PE21, PQ60 and PQ120 series "Quiet" pumps; PG55 series gas engine/hydraulic pumps; and pumps with optional 5- and 10-gallon reservoirs; Nos. RP50, RP51, RP101 and RP103. Wt., 27 (Shown with pump, pump not included)



## PROTECTIVE PUMP ROLL CAGE

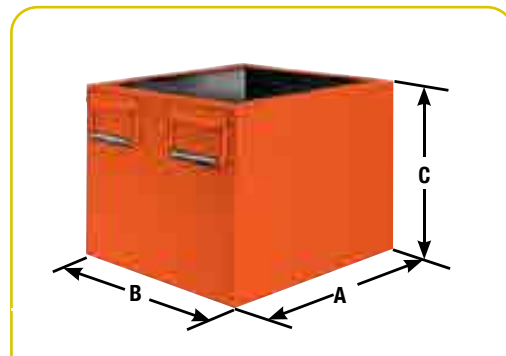
Safeguards pump, gas engine and valves on the job site. Horizontal bars provide convenient hand holds for carrying pump, a pick-up point permits lifting unit with an overhead crane or other device. Standard equipment on PG1203 and PG1204. Can be ordered as an option with any other gas, air, or electrically driven hydraulic pump equipped with a 5-gallon reservoir.

**Note: Refer to PG1203/PG1204 specification chart (pp 96-97) for dimensions of roll cage.**

**No. PC200RC** – Roll cage for use with PC200. (Cannot be used on pumps with 10 gallon reservoirs.) Wt., 36 lbs.

**No. RC2GAL** – Roll cage. for use with PA46, PA55, PE46, PE55 pumps with 2½-gallon reservoirs.

**No. RC5** – Roll cage. Wt., 19.5 lbs for PG55 & PG120. For use with PG120 and PG 55 series pumps



## LARGE CAPACITY RESERVOIRS

Capacity (gal.)	Order Number	Usable Oil (cu. in.)	Use With	Size (in.)		
				A	B	C
2	<b>RP20**</b>	442	PA6, PA50 series (models A-E)	11½	9½	6½
2	<b>RP20-F**</b>	442	PA6 series (model F), PA 50 series (model F & G)	11½	9½	6½
2½	<b>RP20M*</b>	450	PA6, PA50 series (models A-E)	11½	9½	6½
2½	<b>RP20M-F*</b>	450	PA6 series (model F), PA50 series (model F & G)	11½	9½	6½
2½	<b>RP21*</b>	450	PE18 series	11½	9½	6½
2½	<b>RP22†</b>	442	PE55, PE90, PE120, PA55	11½	9½	6½
5	<b>RP50</b>	1150	PE55, PE90, PE120, PA55	18	12½	8½
5	<b>RP51</b>	1150	PA46, PE46, PE21	18	12½	8½
10	<b>RP100</b>	2194	PE55, PE90, PE120, PA55	18	12½	14½
10	<b>RP101</b>	2194	PG55, PG120	18	12½	14½
10	<b>RP103*</b>	2310	PQ60, PQ120	15 <sup>7</sup> / <sub>16</sub>	14¼	12 <sup>5</sup> / <sub>16</sub>
10	<b>RP104</b>	2194	PA46, PE46, PE21	18	12½	14

\* Four mounting holes: ½"-20, for 2" diameter swivel casters (No. 10494)

\*\* High density polyethylene reservoir.

† Aluminum reservoir.

Reservoirs are equipped with drain plugs and all necessary conversion items.

Hydraulic oil is not included with reservoir kits. Please order separately. See page 112.

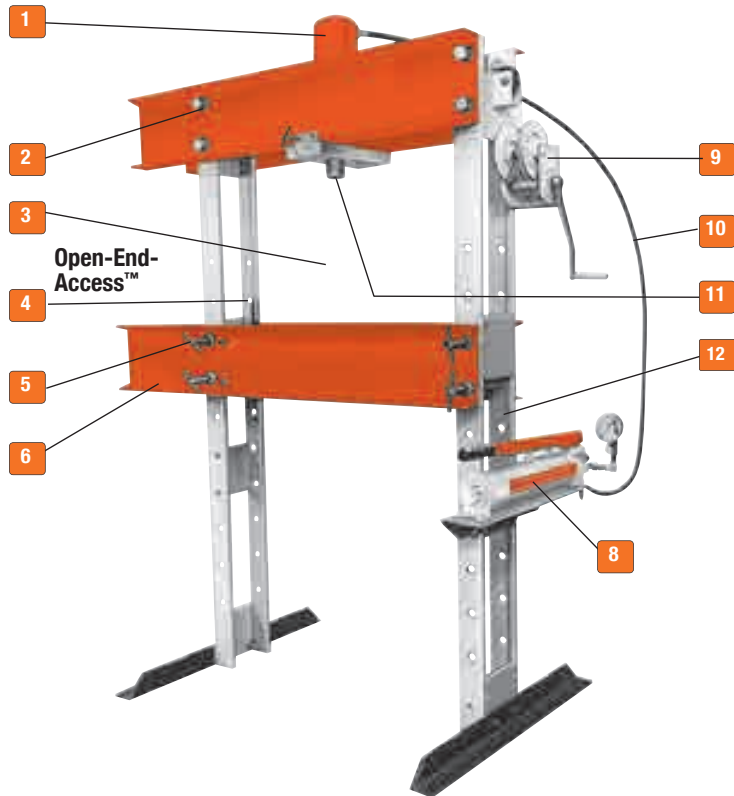
## METAL RESERVOIR CONVERSION KITS FOR PUMPS \*INCLUDES GASKETS AND FASTENERS.

Pump Number	Metal Reservoir Order Number	Metal Reservoir Capacity	Reservoir Weight (lbs.)	Pump Number	Metal Reservoir Order Number	Metal Reservoir Capacity	Reservoir Weight (lbs.)	Pump Number	Metal Reservoir Order Number	Metal Reservoir Capacity	Reservoir Weight (lbs.)
PA6	<b>213896</b>	105 cu. in.	3	PA50	<b>213896</b>	105 cu. in.	3	PA174	<b>213895</b>	578 cu. in.	9
PA6A	<b>213896</b>	105 cu. in.	3	PA50R	<b>213896</b>	105 cu. in.	3	PE172	<b>213895</b>	578 cu. in.	9
PA6D	<b>213896</b>	105 cu. in.	3	PA6R	<b>213896</b>	105 cu. in.	3	PE172A	<b>213895</b>	578 cu. in.	9
PA6-2	<b>213895</b>	578 cu. in.	9	PA50R2	<b>213895</b>	578 cu. in.	9	PE172S	<b>213895</b>	578 cu. in.	9
PA6D2	<b>213895</b>	578 cu. in.	9	PA172	<b>213895</b>	578 cu. in.	9	PE174	<b>213895</b>	578 cu. in.	9

ACCESSORIES



# SHOP EQUIPMENT



## THE UNIQUE BENEFITS OF THE POWER TEAM PRESS

### 1 2 TO 1 SAFETY FACTOR

on hydraulic cylinders and they meet ASME B30.1 standards. Cylinders are easily removed for other applications. Single or double-acting cylinders are available; built-in relief valve on double-acting cylinders.

**2 FULL RATED CAPACITY** across width of upper frame, even with workhead moved to one side. (Heavy-duty presses only).

### 3 LARGER WORK AREA

than most competitors' models.

**4 ALIGNMENT LEVER** for simple pin replacement after raising or lowering the bed.

**5 CLOSE MANUFACTURING TOLERANCE** allows even load distribution over four alloy steel pins; not two, like some competitors. (Heavy-duty presses only).

**6 OPEN-END-ACCESS™ FEATURE** on 25 ton press provides additional work area by mounting cylinder on

outside for C-frame advantage.

**7 FRAMES CAN BE USED HORIZONTALLY** for pressing jobs on extra-long shafts (see photo on next page).

**8 ELECTRIC, AIR OR HAND HYDRAULIC PUMPS** are available. All are standard Power Team pumps.

**CSA approved electric pumps are standard on all presses. Externally adjustable relief valve** for precise operator control of working pressure is standard on all electric

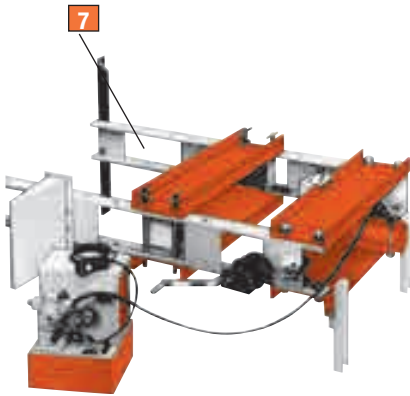
pumps except PE10 and PE17 series.

**24 volt hand switch** for remote control on pumps equipped with solenoid valves.

**9 ONE-MAN OPERATION** for bed adjustment. Winch unit quickly raises or lowers bed to desired height. Self-locking winch mechanism prevents bed from dropping when handle is released.



Horizontal pressing capabilities



Page  
**C FRAME ...136**

Page  
**H FRAME ...137-139**  
**25-55 TON**

Page  
**H FRAME ...140-141**  
**100-200 TON**

Page  
**H FRAME ...142-143**  
**80-200 TON**  
**ROLL BED**

Page  
**ACCESSORIES ...144-145**



Page  
**FLOOR CRANES ...146**



Page  
**SPREAD-TILTER...147**

**10 3/8" I.D. HOSE** on spring return cylinders on heavy-duty presses provides up to six times faster cylinder return than standard 1/4" I.D. hose.

**11 FAST CYLINDER APPROACH** to work provided by 2-speed hand, air or electric pumps.

**12 RUGGED UPRIGHTS**, 50 percent stronger than channel iron. Four post design means open side for easy loading of long material.

**NOTE:** Certain features do not apply to Power Team 10 ton, Roll-Bed, or economy presses.

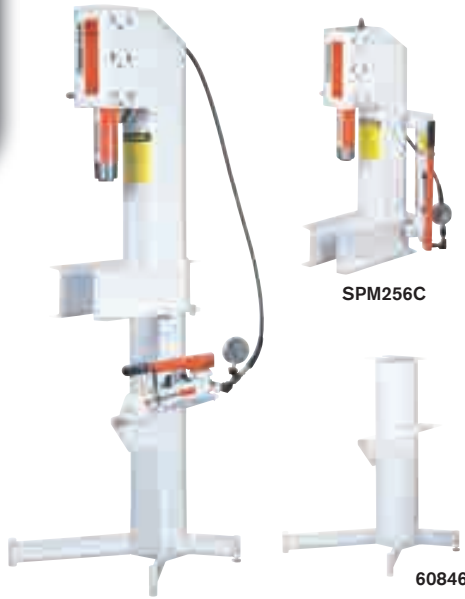
**NOTE:** Certain press applications may require guarding. Because of the multitude of possible press uses, it is impossible to design a guard that will meet every customer need. The end-user must provide their own guarding where the situations dictate.

**IMPORTANT SAFETY INFORMATION:**

Power Team has protective blankets available which may afford protection from injury to users and others should part breakage occur. Power Team recommends the use of these blankets for all pushing, pulling, pressing, and lifting applications. See page 213 for additional information.

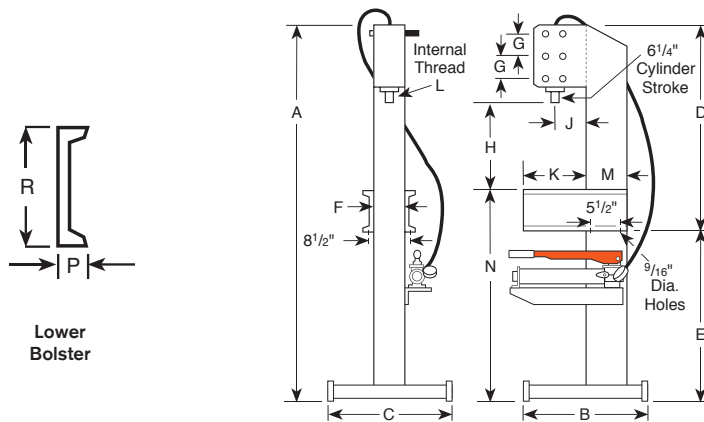
# SHOP PRESS

## C Frame 25 Tons Press



- Can be bench mounted or on optional pedestal base.
- Bench mount requires less than 1.5 sq. ft. of space; on optional pedestal, only 4 sq. ft. of floor space is needed.
- Open-End-Access™ design makes loading and unloading of work easy.
- Cylinder head adjusts to three convenient working positions, providing up to 20 1/4" of "daylight."
- Hydraulic cylinder delivers a 6 1/4" stroke and is driven by a P59 two-speed hand pump.

**Pedestal Base No. 60846** – Provides a stable base for SPM256C. Includes a bracket for mounting the pump on the side of pedestal press. Wt., 76 lbs.



### DIMENSIONS

A	B	C	D	E	F	G	H (Cyl. Retracted)	J	K	L	M	N	P	R	Floor Space
(in)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
77 5/8	24 1/2	24	41 5/8	36	6	5	10 1/4, 15 1/4, 20 1/4	6 1/2	12 1/2	1 1/2 - 16	8	43	2	7	24 x 24 1/2

### ORDERING INFORMATION

Capacity (tons)	Type Cyl. Used	Stroke	Cyl. Model	Order No.	Speed** Advance	Pressing	Type Pump	Pump Model	Prod.Wt. (lbs.)
25	Single-Acting	6 1/4"	C256C	<b>SPM256C*</b>	.129 in./stroke	.03 in./stroke	Hand	P59	240
25	Single-Acting	6 1/4"	C256C	<b>SPX256C*</b>	.129 in./stroke	.03 in./stroke	—	—	240

\* SPM256C does not include No. 60846 pedestal base.

\*\* Typical performance based on pump specifications. Actual speeds may vary with operating conditions.



# SHOP PRESS

## H Frame

### 10 Tons Bench/Floor Press

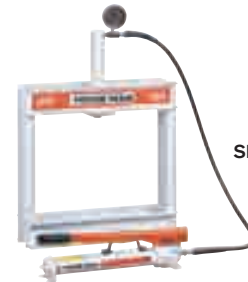
- Ideal for small pressing jobs: repairing small motors, armatures, removing and installing gears, bearings, other press-fit parts.
- Bench press has 15<sup>3</sup>/<sub>8</sub>" x 18" work area: floor press bed height is adjustable from 5" to 41" with horizontal "daylight" of 21."
- Choices of power sources: single-speed hand pump, electric/hydraulic or air/hydraulic.
- Hydraulic gauges, hoses and fittings included.

#### PUMP ELECTRICAL SPECIFICATIONS

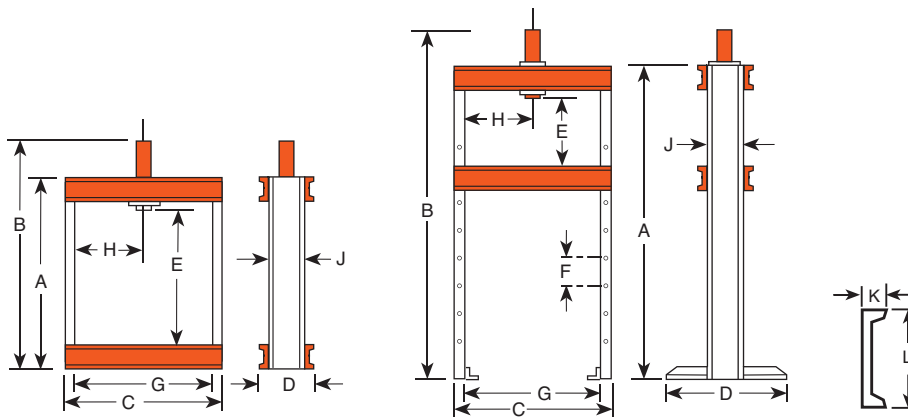
**PE10 Series** – 1/4 hp, 115 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle (add suffix "-220" to order number).



SP1010A



SPM1010



#### DIMENSIONS

Frame	A (in)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	K (in.)	L (in.)	Bench Space (in.)	Floor Space (in.)
Bench	24 <sup>1</sup> / <sub>2</sub>	33 <sup>3</sup> / <sub>8</sub>	25 <sup>1</sup> / <sub>4</sub>	7 <sup>3</sup> / <sub>16</sub>	15 <sup>3</sup> / <sub>8</sub>	--	22	11	4	1 <sup>9</sup> / <sub>16</sub>	4	7 <sup>3</sup> / <sub>16</sub> x 25 <sup>1</sup> / <sub>4</sub>	--
Floor	59	67 <sup>5</sup> / <sub>8</sub>	25 <sup>1</sup> / <sub>4</sub>	28	5-41	6	22	2 <sup>1</sup> / <sub>2</sub> -18 <sup>1</sup> / <sub>2</sub> *	4	1 <sup>9</sup> / <sub>16</sub>	4	--	28 x 28 <sup>1</sup> / <sub>4</sub>

\*Lateral head movement

#### ORDERING INFORMATION

Frame	Cap. (tons)	Type of Cyl. Used	Stroke	Cylinder Model	Order No.	Speed (in./min).†††	Type Pump	Pump Model †	Prod. Wt. (lbs.)
222481 Bench	10	Single-Acting	10 <sup>1</sup> / <sub>8</sub> "	C1010C	<b>SPM1010</b>	.06 in./stroke	Hand	P55	91
222480 Floor	10	Single-Acting	10 <sup>1</sup> / <sub>8</sub> "	C1010C	<b>SPH1010</b>	.06 in./stroke	Hand	P55	171
222480 Floor	10	Single-Acting	10 <sup>1</sup> / <sub>8</sub> "	C1010C	<b>SPE1010</b>	0.2      2.2	Elec. ††	PE102	175
222480 Floor	10	Single-Acting	10 <sup>1</sup> / <sub>8</sub> "	C1010C	<b>SP1010A</b>	0.3      3.7	Air	PA9H	162
222480 Floor	10	Double-Acting	10"	RD1010	<b>SPE1010D</b>	0.2      2.2	Elec. ††	PE104	192

† Optional air/hydraulic pumps available on request.

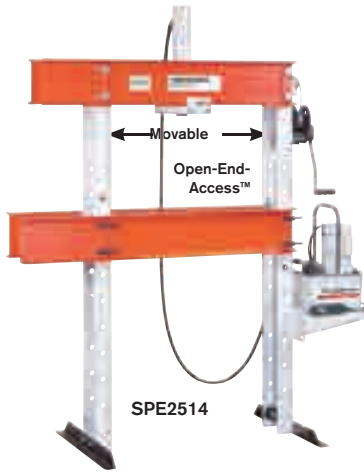
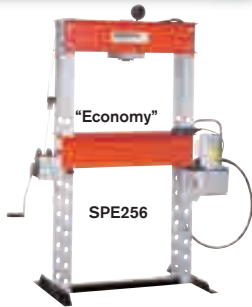
†† "Advance" position holds pressure with motor shut off. "Return" position advances cylinder with motor running and returns cylinder with motor shut off.

††† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary with operating conditions.



# PRESS

## H Frame Open-End-Access™ & Economy Press 25 Ton Presses



Hydraulic gauge and hydraulic fittings are included with presses.

### OPEN-END-ACCESS™ PRESSES

- Design permits use as both "H" frame and "C" frame press; cylinder can be mounted on frame extension to handle jobs which won't fit between uprights.
- Open-end-Access™ press models are also available with remote control to enable the operator to view work from all sides with fingertip control of cylinder piston travel.
- Off-center pressing loads of full capacity can be applied across entire width of frame.

### ECONOMY PRESSES

- Rugged, yet reasonably priced. Handles many "big press" tasks, and perfect for many of the "in-between" jobs you see almost daily. (Note: Stroke length limited to 6 1/4" on economy models).

### FEATURES OF BOTH OPEN-END-ACCESS™ AND ECONOMY PRESSES

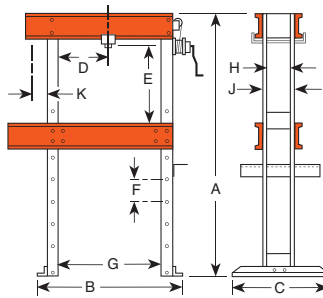
- Press bed height easily adjustable with winch. Bed will not drop when handle is released.
- Choice of power sources for rapid cylinder advance: two-speed hydraulic hand pump, electric/hydraulic or air/hydraulic.

#### Pump electrical specifications

**PE17 Series** – 1/2 hp, 115 volt, 60 cycle, single phase.

**PE21 Series** – 1 hp, 115 volt, 60 cycle, single phase. Both pumps available in 230 volt, 50 cycle, add suffix "-220" to order no.

Open-end-Access™ feature enables cylinder to be mounted on outside of press frame for fast bearing removal and more.



### DIMENSIONS

A (in.)	B (in.)	C (in.)	D* (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	K (in.)	L (in.)	M (in.)	Floor Space (in.)
68	43	28	3 - 29	6 7/8 - 43 3/8	4 1/2	32	5 1/2	6 1/2	7	2 1/2	8	43 x 28

\*Lateral head movement

### ORDERING INFORMATION

Cap. (tons)	Type of Cylinder Used	Stroke	Cylinder Model	Order No.	Speed (in./min.)	Advance Pressing	Type Pump	Valve Type	Pump‡ Model	Prod.Wt. (lbs.)
<b>Open-end-Access™ presses</b>										
25	Single-Acting	14 1/4"	C2514C	<b>SPA2514</b>	9.8	1.2	Air	2-Way Foot	PA6	683
25	Single-Acting	14 1/4"	C2514C	<b>SPM2514</b>	.49	.03	Hand	Load-Release	P159	693
25	Single-Acting	14 1/4"	C2514C	<b>SPE2514</b>	46.6	3.3	Elec.	2-Way††	PE172	665
25	Single-Acting	14 1/4"	C2514C	<b>SPE2514S</b>	52	4.0	Elec.	3-Way†	PE213S	759
25	Double-Acting	14 1/4"	RD2514	<b>SPE2514DS</b>	52	4.0	Elec.	4-Way†	PE214S	787
<b>"Economy" presses</b>										
25	Single-Acting	6 1/4"	C256C	<b>SPA256</b>	9.8	1.2	Air	2-Way Foot	PA6	578
25	Single-Acting	6 1/4"	C256C	<b>SPM256</b>	.129	.129	Hand	Load-Release	P59	595
25	Single-Acting	6 1/4"	C256C	<b>SPE256</b>	46.6	3.3	Elec.	2-Way††	PE172	607

† Solenoid valve with 24 volt remote control hand switch.

†† Holds pressure with motor shut off. Also has an automatic dump setting. Furnished with a 10' remote motor control.

††† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary under operating conditions.

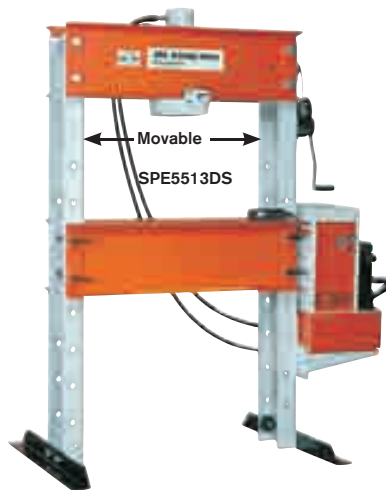
‡ Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 10,000 psi: PE172-67/81 dBA; PE21-70 dBA measured at 3 foot distance, all sides.



# PRESS

## H Frame 55 Ton Presses

- Full off-center pressing at full rated capacity across width of upper frame without buckling or bending.
- Maximum "daylight" is 42" x 36", making positioning of even bulky work pieces easy.
- Height of press bed is easily adjusted with winch; friction brake prevents bed from dropping and handle from spinning upon release.
- Presses with single-acting cylinder offer choice of 2-speed hand operated, electric/hydraulic, or air/hydraulic pump. Models with double-acting cylinder have an electric/hydraulic pump.
- Press models equipped with remote control enable operator to view work from all sides with fingertip control of cylinder piston travel.
- Press can be used horizontally for special applications with user-supplied support legs.



Hydraulic gauge and hydraulic fittings are included with presses.

### PUMP ELECTRICAL SPECIFICATIONS

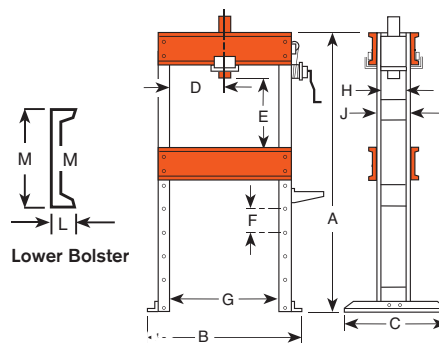
**PE17 Series** – 1/2 hp, 115 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle.

**PE21 Series** – 1 hp, 115 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle.

**PQ60 Series** – 2 hp, 230 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle. To order presses with 230 volt, 50 cycle pumps, add suffix "-220" to order no.



**No. SF50** – Straightening fixtures for use with 55-ton shop or 80-ton Roll-Bed® presses (2 ea).. Wt., 104 lbs. **Not part of press, order separately.**



A (in.)	B (in.)	C (in.)	D* (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	L (in.)	M (in.)	Floor Space (in.)
72	48 1/2	36	3 1/4- 32 3/4	6 - 42	6	36	6 3/4	8	3	12	48 1/2 x 36

\*Lateral head movement

### ORDERING INFORMATION

Cap. (tons)	Type of Cylinder Used	Stroke	Cylinder Model	Order No.	Speed (in./min).†††	Advance	Pressing	Type Pump	Valve Type	Pump‡ Model	Prod.Wt. (lbs).
55	Single-Acting	6 1/4"	C556C	<b>SPA556</b>	4.5	.5		Air	2-Way Foot	PA6	804
55	Single-Acting	6 1/4"	C556C	<b>SPM556</b>		.23	.015	Hand	Load-Release	P159	814
						in./stroke	in./stroke				
55	Single-Acting	13 1/4"	C5513C	<b>SPM5513</b>	.665	.026		Hand	2-Way	P460	960
						in./stroke			in./stroke		
55	Single-Acting	6 1/4"	C556C	<b>SPE556</b>	21.7	1.5		Elec.	2-Way††	PE172	836
55	Single-Acting	13 1/4"	C5513C	<b>SPE5513</b>	21.7	1.5		Elec.	2-Way††	PE172	980
55	Single-Acting	13 1/4"	C5513C	<b>SPE5513S</b>	24.4	1.9		Elec.	3-Way†	PE213S	1,056
55	Double-Acting	13 1/8"	RD5513	<b>SPE5513D</b>	21.7	1.5		Elec.	4-Way	PE174	993
55	Double-Acting	13 1/8"	RD5513	<b>SPE5513DS</b>	66.1	5.4		Elec.	4-Way†	PQ604S	1,114

\* Frame is shipped assembled.

† Solenoid valve with 24 volt remote control hand switch.

†† Holds pressure with motor shut off. Also has an automatic dump setting. Furnished with a 10' remote motor control.

††† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary with operating conditions.

‡ Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 10,000 psi: PE172—67/81; PE21 Series—70; PQ60—74/76; measured at 3 foot distance, all sides.



# H FRAME PRESSES

## 100 Ton Presses

- Cylinder workhead glides across upper frame on rollers, locks in place for off-center pressing jobs. May be used horizontally for special pressing applications with user-supplied supports.
- Press bed is raised and lowered by winch which locks in place for insertion of bed retaining pins. Upper bolster can be lowered 8" for convenient positioning on repetitive jobs.
- Generous "daylight" of 42" x 50" accommodates bulky work pieces, uprights are placed for easy side entry of bars or shafts for straightening or bending.
- Choice of single or double-acting cylinder. Hydraulic pump options include: 2-speed hand pump with large 2-gallon reservoir, PE172 electric/hydraulic pump or "PQ" series "Quiet" electric/hydraulic pump with low noise level.



SPE10013DS  
Hydraulic gauge and hydraulic fittings are included with presses.



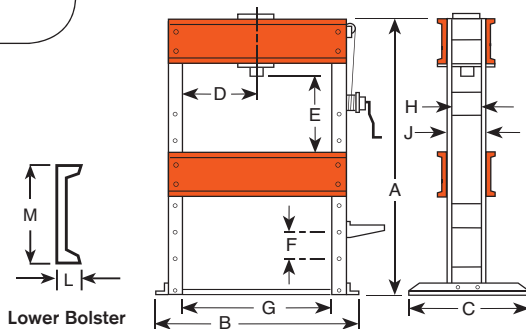
**No. SF150** – Straightening fixtures for use with 100 ton shop press and 100, 150, and 200 ton Roll-Bed® presses (2 ea.). Wt., 196 lbs. **Not part of press, order separately.**

### PUMP ELECTRICAL SPECIFICATIONS

**PE17 Series** – 1/2 hp, 115 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle, add suffix "-220" to order no.

**PQ60 Series** – 2 hp, 230 volt, 60 cycle, single phase. Available in 115 volt, 60 cycle and 230 volt, 50 cycle. To order 230 volt, 50 cycle, add suffix "-220" to order no. For 115 volt consult factory.

**PQ120 Series** – 3 hp, 460 volt, 60 cycle, three phase. Available in 220/380 volt, 50 cycle. To order 380 volt, 50 cycle, add suffix "-380" to order no.



### DIMENSIONS

A	B	C	D*	E	F	G	H	J	L	M	Floor Space
(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)
77 1/4	64	36	7 - 43	2 - 42	8	50	8	10	3 3/8	15	36 x 78 1/4

\*Lateral head movement

### ORDERING INFORMATION

Cap. (tons)†	Type of Cyl. Used	Stroke	Cylinder Model	Order No.	Speed (in./min).††	Advance Pressing	Type Pump	Valve Type	Pump‡ Prod. Model	Wt. (lbs.)
100	Single-Acting	10 1/4"	C10010C	SPM10010	.356	.01	Hand	3-way	P460	1,698
					in./stroke	in./stroke				
100	Single-Acting	10 1/4"	C10010C	SPE10010	35	2.9	Elec.	3-way	PQ603	1,795
100	Single-Acting	10 1/4"	C10010C	SPE10010R	11.5	.8	Elec.	2-way	PE172	1,690
100	Double-Acting	13 1/8"	RD10013	SPE10013DS	35	5.8	Elec.	4-way*	PQ1204S	1,886

† Frame is shipped assembled. \*Solenoid valve with 24 volt remote control hand switch.

†† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary under operating conditions.

‡ Pump standard with press. Other Power Team pumps can be substituted.

dBA at idle and 10,000 psi: PE172—67/81; PQ60—74/76; PQ120—73/78. Measured at 3 foot distance, all sides.

# H FRAME PRESSES

## 150-200 Ton Presses

- Standing 7½-feet tall, these giants handle the really big jobs. May be used horizontally for special pressing applications with user-supplied supports.
- Workhead has wide horizontal travel; rugged press frame withstands load of rated capacity across full width of frame.
- Winch mechanism provides easy positioning of press bed, locks in place for insertion of retaining pins. Upper bolster can be lowered 11" for convenient positioning on repetitive jobs.
- Uprights are placed for easy side entry of bars or shafts for straightening or bending.
- Fast cylinder approach is provided by PQ1204S "Quiet" electric/hydraulic pump. Has remote control hand switch, enabling operator to view work from all sides with fingertip control of cylinder piston travel.

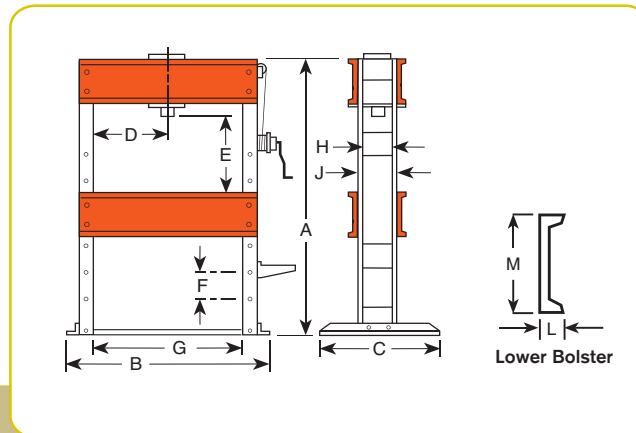


Hydraulic gauge and hydraulic fittings are included with presses.

### PUMP ELECTRICAL SPECIFICATIONS

**PQ120 Series** – 3 hp, 460 volt, 60 cycle, three phase. Also available in 220/380 volt, 50 cycle, add suffix "-380" to order no.

**NOTE:** To order press with 230 volt, 60 cycle, single phase pump, order press less PQ1204S. Order pump No. PQ604S separately.



### DIMENSIONS

A (in.)	B (in.)	C (in.)	D* (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	L (in.)	M (in.)	Floor Space (in.)
90	71	44	11 - 39	9 - 43¾	11	50	12½	15	4⅞	18	44 x 71

\*Lateral head movement

### ORDERING INFORMATION

Capacity (tons)†	Type of Cylinder Used	Stroke	Cylinder Model	Order No.	Speed (in./min.)††	Advance Pressing	Type Pump	Valve Type	Pump Model***	Prod. Wt. (lbs.)
150	Double-Acting	13⅞"	RD15013	<b>SPE15013DS</b>	24	3.9	Electric*	4-way**	PQ1204S	3,015
200	Double-Acting	13⅞"	RD20013	<b>SPE20013DS</b>	18	2.9	Electric*	4-way**	PQ1204S	3,276

† Frame is shipped assembled.

†† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary under operating conditions.

\* Pre-wired at factory for 460V.

\*\* Solenoid valve with 24 volt remote control hand switch.

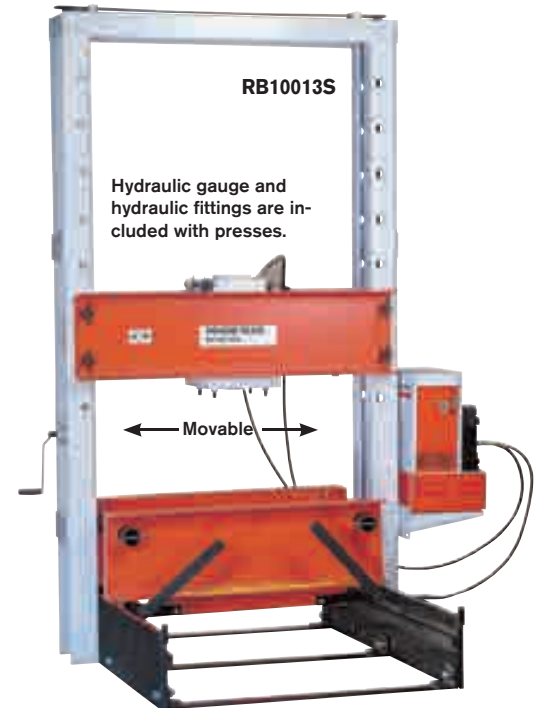
\*\*\* Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 10,000 psi: 73/78, measured at 3 foot distance, all sides.



# ROLL-BED®

## PRESS

80-200 Ton  
H Frame



### Heavy-Duty Straightening Fixtures



**No. SF50** – Fixtures for use with 80-ton Roll-Bed® presses or 55-ton heavy-duty shop presses. (2 ea).. Wt. 104 lbs. **Not part of press, order separately.**

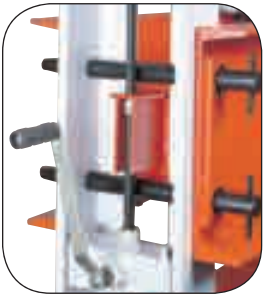


**No. SF150** – Fixtures for use with 100-, 150- and 200-ton Roll-Bed® presses and 100-ton shop presses only (1 pr).. Wt. 196 lbs. **Not part of press, order separately.**



SHOP EQUIPMENT

- The original, patented Roll-Bed® design. Bed rolls out for easy loading and unloading with a crane or other lifting device.
  - Movable workhead glides easily side-to-side for full off-center load capacity across width of upper frame.
  - "Daylight" is 50 1/2" x 60" for 80- and 100-ton models; 51 1/4" x 64" on 150- and 200-ton presses.
  - Fast approach of double-acting, 13 1/8" stroke cylinder is provided by PQ1204S "Quiet" electric/hydraulic pump with remote control hand switch. Operator can view work from all sides with fingertip control of cylinder piston travel.
- PRESS FEATURES:**
- **Roll-Bed® design** – Bed glides in or out on bearings to make loading and unloading fast and easy.
  - **Adjustable lower bed width** – For secure balancing and centering of heavy jobs. Loosen adjusting bolts to adjust bed from 4" to more than 27". See dimension "H."
  - **Movable workhead** – For off-center pressing jobs, workhead moves on bearings across upper bolster. Presses can be used at full capacity, regardless of where workhead is placed.
  - **Lifting mechanism** – Simply turn crank handle to raise or lower upper bolster. Screw mechanism raises or lowers both sides evenly (a heavy-duty 1/2" drill motor can replace handle for automatic adjustment). Four locking pins hold bolster in place for pressing.
- **Optional heavy-duty straightening fixtures** – Make straightening jobs easy and accurate to within .004"! Rollers are ball bearing mounted and handle raises or lowers for easy turning of the work.
- PUMP ELECTRICAL SPECIFICATIONS**
- PQ120 Series** – 3 hp, 460 volt, 60 cycle, three phase. Available in 220/380 volt, 50 cycle, add suffix "-380" to order no.
- NOTE: To order press with a 230 volt, 60 cycle, single phase pump, order press less PQ1204S. Order pump No. PQ604S separately.**
- NOTE: Different voltage and valve options can be obtained by substituting certain PA, PE or PQ series pumps. Consult the factory.**



Lifting screw and locking pins make bolster raising a one-man job.



Bearings make bed positioning smooth and easy.



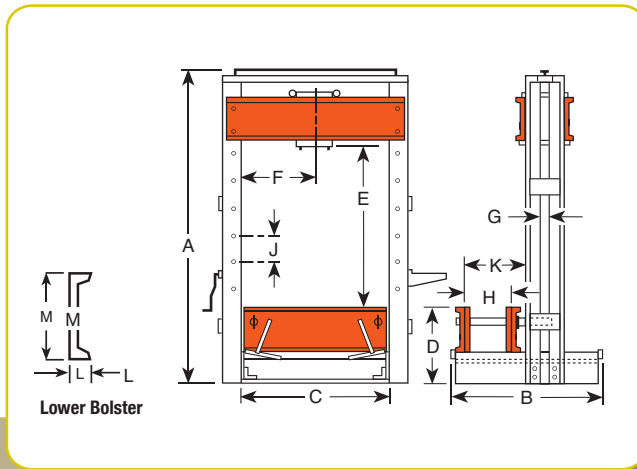
Lever lowers bed for pressing, raises it for rolling.



Cylinder is easily moved across width of upper bolster.



Width adjusts from 4" to over 27"; is secured with locking bolts.



### DIMENSIONS

Cap Tons	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	K (in.)	L (in.)	M	Floor Space (in.)
80	112 <sup>5</sup> / <sub>8</sub>	64 <sup>1</sup> / <sub>4</sub>	50 <sup>1</sup> / <sub>2</sub>	27	12 - 60	14 <sup>1</sup> / <sub>2</sub> - 36	3	4 - 27 <sup>1</sup> / <sub>4</sub>	8	36 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	15	64 <sup>1</sup> / <sub>4</sub> x 60 <sup>1</sup> / <sub>2</sub>
100	112 <sup>5</sup> / <sub>8</sub>	64 <sup>1</sup> / <sub>4</sub>	50 <sup>1</sup> / <sub>2</sub>	27	12 - 60	14 <sup>1</sup> / <sub>2</sub> - 36	3	4 - 27 <sup>1</sup> / <sub>4</sub>	8	36 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	15	64 <sup>1</sup> / <sub>4</sub> x 60 <sup>1</sup> / <sub>2</sub>
150	123 <sup>3</sup> / <sub>4</sub>	68 <sup>1</sup> / <sub>4</sub>	51 <sup>1</sup> / <sub>4</sub>	30	9 - 64	13 <sup>3</sup> / <sub>8</sub> - 37 <sup>3</sup> / <sub>8</sub>	3	4 - 27 <sup>1</sup> / <sub>8</sub>	11	37 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>8</sub>	18	68 <sup>1</sup> / <sub>4</sub> x 63 <sup>1</sup> / <sub>4</sub>
200	123 <sup>3</sup> / <sub>4</sub>	68 <sup>1</sup> / <sub>4</sub>	51 <sup>1</sup> / <sub>4</sub>	30	9 - 64	15 <sup>1</sup> / <sub>8</sub> - 36 <sup>1</sup> / <sub>8</sub>	3	4 - 27 <sup>1</sup> / <sub>8</sub>	11	37 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>8</sub>	18	68 <sup>1</sup> / <sub>4</sub> x 63 <sup>1</sup> / <sub>4</sub>

### ORDERING INFORMATION

Capacity (tons)†	Type of Cylinder Used	Stroke	Cylinder Model	Order No.	Speed (in./min.)‡	Advance Pressing	Type Pump	Valve Type	Pump‡ Model	Prod. Wt. (lbs.)
80	Double-Acting	13 <sup>1</sup> / <sub>8</sub> "	RD8013	<b>RB8013S</b>	46	7.5	Elec.	4-way*	PQ1204S	2,886
100	Double-Acting	13 <sup>1</sup> / <sub>8</sub> "	RD10013	<b>RB10013S</b>	35	5.8	Elec.	4-way*	PQ1204S	2,944
150	Double-Acting	13 <sup>1</sup> / <sub>8</sub> "	RD15013	<b>RB15013S</b>	24	3.9	Elec.	4-way*	PQ1204S	4,458
200	Double-Acting	13 <sup>1</sup> / <sub>8</sub> "	RD20013	<b>RB20013S</b>	18	2.9	Elec.	4-way*	PQ1204S	4,546

\* Solenoid valve with 24 volt remote control hand switch.

† Frame is shipped assembled.

‡ Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 10,000 psi: PQ120-73/78; measured at 3 foot distance, all sides.

‡‡ Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary with operating conditions. 3,000 lbs. maximum load can be supported on bed when raised on the rollers.

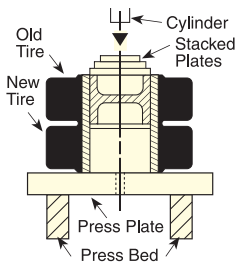
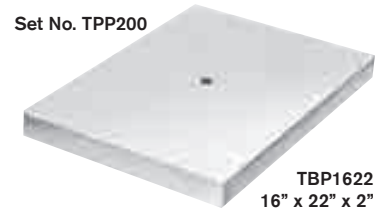
# SHOP PRESS

## Accessories

### Rubber Tire Removing/Installing set

Now an easy way to press solid rubber tires. The TPP200 uses plates instead of combination rings to press a rim from an old tire into a new one. Plates are stacked so none is more than 2 in. smaller than the one under it to keep the plates from bending. They can be used on any Power Team press with 55-ton capacity or more. NOTE: Many tires require 100 tons of force or more, depending on tire size and condition. These plates withstand max. force of 150 tons.

**No. TPP200** – Tire press plate set. Includes 13 press plates, spacer pushing adapter and press bed plate. For use on solid rubber tires from 4" to 17<sup>3</sup>/<sub>4</sub>" I.D.

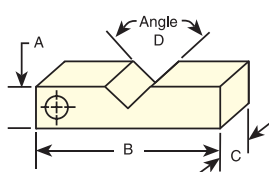


Pressing rim into new tire on Power Team Press.

Set No. TPP200		
Order No.	Tire Size I.D.	Plate O.D.
TPP1	4"	3 <sup>7</sup> / <sub>8</sub> "
TPP2	5"	4 <sup>7</sup> / <sub>8</sub> "
TPP3	6", 6 <sup>1</sup> / <sub>4</sub> "	5 <sup>7</sup> / <sub>8</sub> "
TPP4	6 <sup>1</sup> / <sub>2</sub> "	6 <sup>3</sup> / <sub>8</sub> "
TPP5	8"	7 <sup>7</sup> / <sub>8</sub> "
TPP6	10"	9 <sup>7</sup> / <sub>8</sub> "
TPP7	10 <sup>1</sup> / <sub>2</sub> "	10 <sup>3</sup> / <sub>8</sub> "
TPP8	11 <sup>1</sup> / <sub>4</sub> "	11 <sup>1</sup> / <sub>8</sub> "
TPP9	12", 12 <sup>1</sup> / <sub>8</sub> "	11 <sup>7</sup> / <sub>8</sub> "
TPP10	14"	13 <sup>3</sup> / <sub>8</sub> "
TPP11	15"	14 <sup>7</sup> / <sub>8</sub> "
TPP12	16"	15 <sup>7</sup> / <sub>8</sub> "
TPP13	17 <sup>3</sup> / <sub>4</sub> "	17 <sup>5</sup> / <sub>8</sub> "
TPS6	Spacer/Pushing Adapter	3 <sup>3</sup> / <sub>4</sub> " x 6"
TBP1622	Bed Plate	16" x 22" x 2"

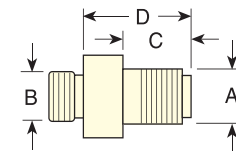


### PRESS ACCESSORIES, "V" BLOCKS & THREADED ADAPTERS



#### V-BLOCKS (in.)

Order No.	Width		Thick	Angle
	A	B		
1890	2	9	1 <sup>1</sup> / <sub>4</sub>	120°
1891	2 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub>	
1892	3 <sup>1</sup> / <sub>2</sub>	14	2	
1893	5	14	1 <sup>1</sup> / <sub>2</sub>	
207395	5 <sup>3</sup> / <sub>4</sub>	23	2 <sup>1</sup> / <sub>2</sub>	

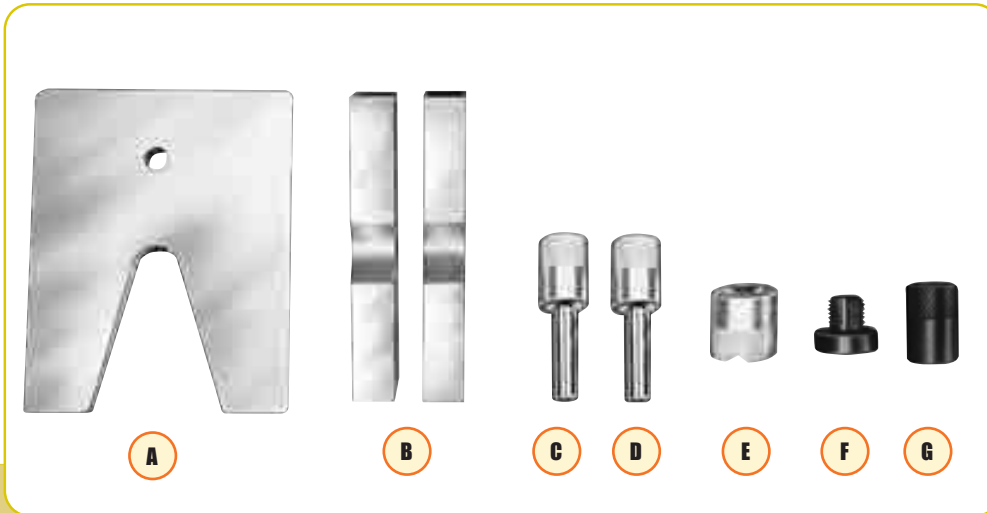


#### THREADED ADAPTER DIMENSIONS (in.)

No.	Adapter			
	A	B	C	D
38597	1- 8	1- 8	3/4	1 <sup>5</sup> / <sub>16</sub>
38953	1 <sup>1</sup> / <sub>4</sub> - 7	1 <sup>1</sup> / <sub>2</sub> - 16	2 <sup>3</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>8</sub>
37368	1 <sup>5</sup> / <sub>8</sub> - 5 <sup>1</sup> / <sub>2</sub>	—	1 <sup>11</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>
43562	2 <sup>1</sup> / <sub>4</sub> - 12	—	2 <sup>1</sup> / <sub>4</sub>	3
38954	1 <sup>5</sup> / <sub>8</sub> - 5 <sup>1</sup> / <sub>2</sub>	1 <sup>11</sup> / <sub>16</sub> - 8	3 <sup>3</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>16</sub>
43563	2 <sup>1</sup> / <sub>4</sub> - 12	2 <sup>3</sup> / <sub>4</sub> - 12	2 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>16</sub>
46070	2 <sup>1</sup> / <sub>4</sub> - 12	2 - 4 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>16</sub>

### Press Accessory Kit

Make your Power Team press even more versatile with one of these accessory sets. These sets will eliminate makeshift set-ups. Many of these items can be used with pullers you already have.



#### ORDERING INFORMATION

Use With Press:	Order No.	A		B		C	D	E	F		G
		V-Throat Press Plate	V-Blocks	Pushing Adapter ⚠	Pushing Adapter ⚠	V-Pushing Adapter	Single-Acting Cyls.	Double-Acting Cyls.	Pushing Adapter		
10 Ton	<b>SPA10</b>	1888	1890 (Pr.)	201923 1/2" dia. shank	201454 3/4" dia. shank	34806	Included in Set		38597	38597	
25 Ton	<b>SPA25</b>	1889	1891 (Pr.)	34510 3/4" dia. shank	34511 1" dia. shank	34807 Not Included	Order Separately		38953	38953	
55 Ton	<b>SPA55</b>	—	1892 (Pr.)	34755 1" dia. shank	34756 1 1/2" dia. shank	34808	Order Separately		37368	38954	
80/100 Ton	<b>SPA100</b>	—	1893**(Pr.)	—	—	36469	Order Separately		43562 46070 ***	43563 46070	21332
150/200 Ton	<b>SPA200</b>	—	207395 (Pr.)	—	44458 2 1/4" dia. shank	44457	None*		—	—	—

\* Pushing adapters thread directly into RD15013 and RD20013 cylinders.

\*\* V-blocks, No. 1893, are recommended for use with 80-ton Roll-Bed® press. Not recommended for use with 100-ton Roll-Bed® press.

\*\*\* For 80-ton Roll-Bed® press.

NOTE: Individual press accessories may be ordered separately.



**CAUTION:** Pushing adapters are designed for use with specific shaft sizes, and depending on the condition of the shaft ends, the adapter may not withstand the full press tonnage. Always use a protective blanket or other suitable guard when pressing.



# MOBILE FLOOR CRANES

2200-4400 lbs.

FC2200

U.S. Patent No. 3,367,512  
Patented 1969 Canada

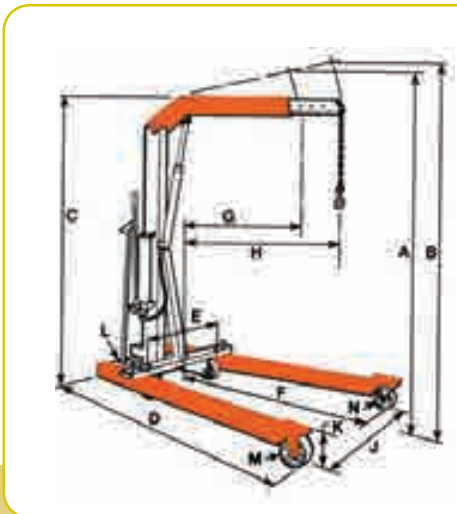
Adjustable  
Legs

Piston rod  
is ground  
and hard  
chrome  
plated.

Load-lowering valve  
provides controlled descent.

Pump has a  
safety relief valve.

Crane is locked  
in position when  
wheels are lifted.



## DIMENSIONS

	FC2200*	FC4400*
Cap., boom ret. (lbs).	2,200	4,400
Cap., boom ext. (lbs).	1,650	3,300
A Max. boom hgt., (ret).	107"	111"
B Max. boom hgt., (ext).	117"	122"
C Overall hgt., boom horiz.	80"	82"
D Overall length	83"	89"
E Min. throat width	24"	25"
F Inside leg length	54"	57 1/2"
G Eff. boom reach (ret).	33"	35 1/2"
H Eff. boom reach (ext).	48"	50 1/2"
J Inside leg width	24" - 36" - 48" (3-position)	26" - 40" - 52 1/2" (3-position)
K Leg height	8"	9 1/2"
L Dolly wheel diameter	5"	5"
M Wheel diameter	6"	8"
N Caster diameter	6"	6"
Floor space, folded	27" x 38"	31" x 42"
Height, folded	79"	86"

2,200 lbs. and 4,400 lbs. capacity  
with space-saving fold-away  
feature



- Adjustable legs spread to clear obstacles, telescoping boom for extra reach. Rugged construction, reliable hydraulics.
- Boom collapses completely and legs fold for compact storage.
- 2-speed hydraulic hand pump provides fast boom travel and precise operator controlled descent.
- Roller bearing wheels and a steering dolly provide ease of mobility. Lifting chain is included.

**No. FC4400** – 4,400 lbs. cap. crane with fold-away feature, adj. leg spread, lifting chain and 2-speed hand pump. Wt., 646 lbs.



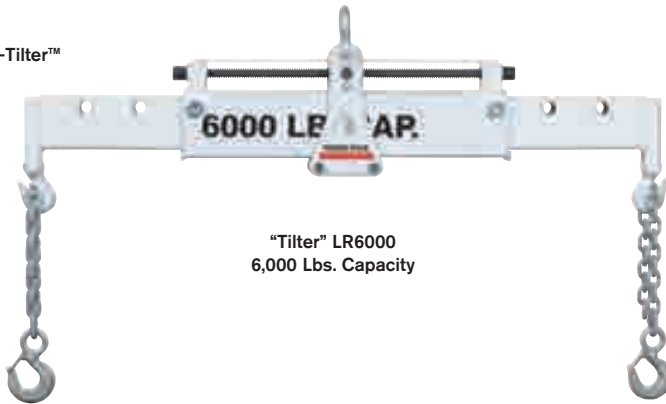


# FLOOR CRAIN ACCESSORIES

## SPREAD-TILTER™

2000-6000 lbs.

Spread-Tilter™



"Tilter" LR6000  
6,000 Lbs. Capacity



LR2000  
2,000 Lbs.  
Cap.

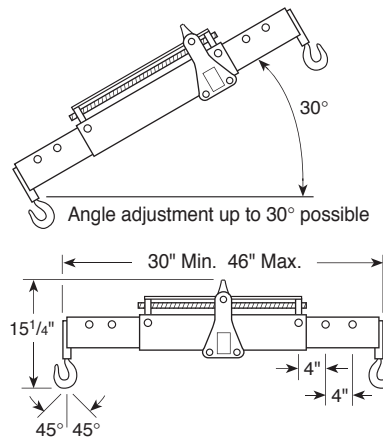
LR4000  
4,000 Lbs.  
Cap.



Whenever you have big, heavy components to move or position, nothing helps you get the job done easier and faster than the 6,000 lb. "Tilter."

- For lifting or positioning components, Power Team's heavy duty lifting slings are just right.
- The heavy-duty Load-Rotors®, when used with a crane or hoist, greatly reduce time and effort.
- A self-locking worm and gear set in the Spread-Tilter™ head permits rapid angle adjustment of the component being handled.

\* Note: not to be used for overhead lifting.



The working length is adjustable in three positions from 30" to 46". Maximum chain angle is 45°.



### ORDERING INFORMATION

Capacity (lbs.)	Order No.	Chain Size (in.)	Chain Lg. W/ Swivel Hooks (in.)	Lifting Eye Opening (in.)	Hex Drive End (in.)	Gear Ratio	Product Wt. (lbs.)
2000	LR2000	1/4	56	1 1/4	5/8	34:1	9
4000	LR4000	5/16	65	1 3/4	5/8	82:1	23
6000	LR6000	5/16	65	1 5/8	5/8	82:1	73

# JACKS



Weight Capacity (Ton) And Stroke (Inches)

Series	Description	Pg	1.1	2	3	3.6	5	5.5	6	7	8	10	11	12	13	15 (In Tons)
	Bottle Jack Standard	150		4.5"	4.5"		4.75"				4.75"			5.875"		6.125"
	Bottle Jack Low Profile	151												3.75"		
	Toe Jacks Standard	152						8.25"					9.25"			
	Toe Jacks Economy	153		4.875"			4.875"					5.875"				
	Bottle Jacks Telescoping	154							12"				10.3"		10"	7.125"
	Bottle Jacks Sidewinder	155					.75"/1.5					1.1875"				
SJ	Post Tension/Stressing Jacks	157														
IJ	Inflatable Jacks	158	2.7"			4.7"				6.3"				8.8"		
PL	High Tonnage Portable Jack RR	160														
PM	High Tonnage Portable Jack	162														

Page  
**BOTTLE JACKS...150**  
**2-110 TON**



Page  
**...151**  
**LOW PROFILE**  
**BOTTLE JACKS**  
**12-30 TON**



Page  
**...152**  
**TOE JACKS**  
**5 1/2 - 27 1/2 TON**



Page  
**ECONOMY TOE**  
**JACKS ...153**  
**2-10 TON**



Page  
**...154**  
**TELESCOPING JACKS**  
**BOTTLE JACKS**



Page  
**...155**  
**SIDEWINDER JACKS**



Page  
**...156**  
**MAINTENANCE SETS**



Page  
**...157**  
**POST TENSION JACKS**  
**20-30 TON**



Page  
**...158-159**  
**INFLATABLE JACKS**  
**1-74 TON**



Page  
**...160-163**  
**PORTABLE**  
**HIGH TONNAGE**  
**RAILROAD JACKS**



	20	22	23.8	27.5	30	33	34	46.3	50	55	60	74.6	100	110	150
	6.25"	6.125"			6.25"	5.625"			6.75"					6.125"	
	3.375"				3.125"										
			9.1875"												
	1.1875"														
	8.5"/10"				8.5"/10"										
		12"				14"	16.4"					20.5"			
									14"			14"			
									13.125"			13.125"		18.125"	

# BOTTLE JACKS

2-110 Ton

Portable Hydraulic Power



## INDUSTRIAL LIFTING AND PUSHING APPLICATIONS.

- Choose from this complete line of premium quality, standard bottle jacks. Ideal for use in any number of industrial lifting and pushing applications.
- The 9110B, 9015B, 9022B and 9033B feature a beveled base which allows the jack to “follow” the load, reducing the chance of dangerous side-loading.
- Many jacks feature screw extensions.
- All jacks can be used in the vertical, angled or horizontal positions.
- Serrated or contoured saddles help stabilize the load for a safer lift.
- All jacks meet ASME B30.1 standards and carry the Power Team Powerthon™ Lifetime Warranty.
- 110-ton jack features dual pumps for time-saving two-speed operation.



### ORDERING INFORMATION\*

Cap. Tons	Stroke (in.)	Order Number	Retracted Height (in.)	Length of Screw Ext. (in.)	Height w/Screw Ext. (in.)	No. Pump Strokes to Ext. Piston (in.)	Saddle Dia. (in.)	Base Size (in.)	Pump Handle Length (in.)	Handle Effort at Rated Cap. (lbs.)	Product Carry Handle	Product Weight (lbs.)
2	4½	9002A	7½	1 <sup>15</sup> / <sub>16</sub>	13 <sup>9</sup> / <sub>16</sub>	5	1	4 <sup>1</sup> / <sub>2</sub> x 2 <sup>9</sup> / <sub>16</sub>	12¼	75	No	4.8
3	4½	9003A	7½	2 <sup>3</sup> / <sub>8</sub>	14 <sup>3</sup> / <sub>8</sub>	10	1½	4½ x 2 <sup>27</sup> / <sub>32</sub>	19¼	45	No	5.8
5	4¾	9005A	7 <sup>7</sup> / <sub>8</sub>	2¾	15 <sup>3</sup> / <sub>8</sub>	12	1¾	5 <sup>3</sup> / <sub>16</sub> x 3	21 <sup>7</sup> / <sub>16</sub>	55	No	8
8	4¾	9008A	7 <sup>7</sup> / <sub>8</sub>	2¾	15 <sup>3</sup> / <sub>8</sub>	18	1½	6 x 3½	23 <sup>13</sup> / <sub>16</sub>	75	No	12.1
12	5 <sup>7</sup> / <sub>8</sub>	9112A	9½	3 <sup>1</sup> / <sub>8</sub>	18½	26	1 <sup>7</sup> / <sub>8</sub>	6½ x 4 <sup>3</sup> / <sub>16</sub>	23 <sup>13</sup> / <sub>16</sub>	60	Yes	17.5
15	6 <sup>1</sup> / <sub>8</sub>	9015B	9 <sup>1</sup> / <sub>16</sub>	4½	19 <sup>7</sup> / <sub>8</sub>	27	2 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>8</sub> †	27 <sup>9</sup> / <sub>16</sub>	90	No	18.3
20	6¼	9120A	10 <sup>5</sup> / <sub>8</sub>	3 <sup>5</sup> / <sub>8</sub>	20½	22	2	7 <sup>3</sup> / <sub>16</sub> x 5 <sup>1</sup> / <sub>16</sub>	31½	70	Yes	28.5
22	6 <sup>1</sup> / <sub>8</sub>	9022B	9 <sup>7</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	20½	36	2 <sup>3</sup> / <sub>8</sub>	6½ x 6 <sup>5</sup> / <sub>16</sub> †	27 <sup>9</sup> / <sub>16</sub>	90	Yes	23.6
30	6¼	9030A	11	—	17¼	35	2 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>16</sub> x 5 <sup>9</sup> / <sub>16</sub>	39 <sup>3</sup> / <sub>8</sub>	50	Yes	41.2
33	5 <sup>5</sup> / <sub>8</sub>	9033B	9 <sup>7</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	19¾	56	2 <sup>9</sup> / <sub>16</sub>	7¼ x 6 <sup>15</sup> / <sub>16</sub> †	27 <sup>9</sup> / <sub>16</sub>	88	Yes	32
50	6¾	9050A	12	—	18¾	35	3	9 <sup>5</sup> / <sub>16</sub> x 7 <sup>3</sup> / <sub>8</sub>	39 <sup>3</sup> / <sub>8</sub>	85	Yes	78
110	6 <sup>1</sup> / <sub>8</sub>	9110B	11 <sup>13</sup> / <sub>16</sub>	—	17 <sup>15</sup> / <sub>16</sub>	40/160‡	4 <sup>3</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>8</sub> x 11 <sup>1</sup> / <sub>16</sub>	27 <sup>9</sup> / <sub>16</sub>	79	Yes	154.3

\*See current price list for shipping weights.

† Comes with a Beveled Base.

‡ 2 Speed: Rapid advance≈40 strokes; Lift mode≈160 strokes.

# BOTTLE JACKS

## Low Profile

12, 20 & 30 Ton



### THE RIGHT CHOICE FOR THOSE LOWER CLEARANCE JOBS.

- All the quality, features and lifting capacity of the standard jacks in short form. The 12-ton and 20-ton models feature screw extensions for added versatility.
- All jacks meet ASME B30.1 standards and carry the Power Team Powerthon™ Lifetime Warranty.
- All jacks operate both vertically and horizontally for use in a variety of lifting, pushing and spreading applications.



#### ORDERING INFORMATION\*

Cap. Tons	Stroke (in.)	Order Number	Retracted Height (in.)	Length of Screw (in.)	Height w/Screw (in.)	No. Pump Strokes to Saddle	Piston Dia. (in.)	Base Size (in.)	Pump Handle Length (in.)	Handle Effort at Rated Cap. (lbs.)	Carry Handle	Product Weight (lbs.)
12	3 <sup>3</sup> / <sub>4</sub>	9012A	6 <sup>3</sup> / <sub>4</sub>	3	13 <sup>1</sup> / <sub>2</sub>	26	1 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>2</sub> x 4 <sup>3</sup> / <sub>16</sub>	23 <sup>13</sup> / <sub>16</sub>	60	Yes	14
20	3 <sup>5</sup> / <sub>8</sub>	9020A	7 <sup>1</sup> / <sub>8</sub>	1 <sup>9</sup> / <sub>16</sub>	12	22	2	7 <sup>3</sup> / <sub>16</sub> x 5 <sup>1</sup> / <sub>16</sub>	31 <sup>1</sup> / <sub>2</sub>	70	Yes	22.2
30	3 <sup>1</sup> / <sub>8</sub>	<b>9130A</b>	7 <sup>1</sup> / <sub>8</sub>	—	10 <sup>1</sup> / <sub>4</sub>	35	2 <sup>5</sup> / <sub>8</sub>	7 <sup>9</sup> / <sub>16</sub> x 5 <sup>9</sup> / <sub>16</sub>	39 <sup>5</sup> / <sub>8</sub>	50	Yes	30.2

\* See current price list for shipping weights.

‡ 2 Speed: Rapid advance=40 strokes; Lift mode=160 strokes.



# TOE JACKS

5.5, 11 & 27.5 Ton

## GET UNDER EQUIPMENT WITH ONLY 1<sup>1</sup>/<sub>16</sub>" OF GROUND CLEARANCE.

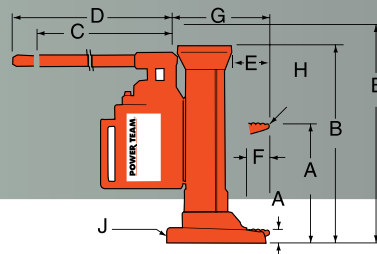
- With lifting points on the toe and on the top, these extremely rugged jacks are ideal for machine lifting, rigging, lift truck service and much more.
- Choose from 5.5-ton, 11-ton, and now, an amazing 27.5-ton lifting capacity jack.
- All jacks operate both vertically and horizontally.
- Base, toe and pumping assembly swivel independently, allowing the jack to work in confined areas.



Meets ASME B30.1 standard



The J Series Toe Jack is an extremely rugged jack used here for lift truck service.



Model	Cap. Tons	Max Lift Stroke	Order Number	Strokes to Extend Piston 1 in.	Handle Effort at Max Load (lbs.)	Carry Handle	Product Wt. (lbs.)
J58T	5 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>4</sub>	J58T	8	83.9	Yes	43
J109T	11	9 <sup>1</sup> / <sub>4</sub>	J109T	13	88	Yes	64
J259T	27 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>16</sub>	J259T	21	88	Yes	203

### ORDERING INFORMATION\*

Cap. Tons	Max Lift Stroke	Order Number	Strokes to Extend Piston 1 in.	Handle Effort at Max Load (lbs.)	Carry Handle	Product Wt. (lbs.)
5 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>4</sub>	J58T	8	83.9	Yes	43
11	9 <sup>1</sup> / <sub>4</sub>	J109T	13	88	Yes	64
27 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>16</sub>	J259T	21	88	Yes	203

\*See current price list for shipping weights.

# TOE JACKS

## Economy

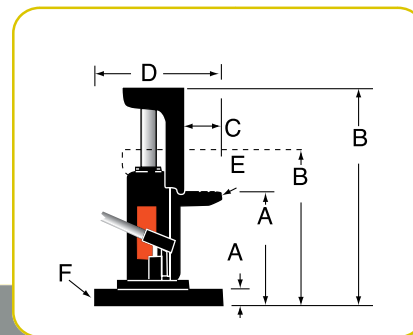
2, 5 & 10 Ton



**JUST THE POWER YOU NEED  
AT A PRICE YOU CAN AFFORD.**

**Meets ASME B30.1 standard**

- These bottle jack-style toe jacks are loaded with many of the same features as our standard bottle jacks, but the toe-lift feature and swiveling pump handle socket make them ideal for machinery lifting and positioning.
- An internal pressure relief provides added safety by limiting the jack's lifting capability to the capacity of the toe.
- Spring return is an added feature on the larger jacks.
- Swiveling pump handle assembly available on the 5 and 10-ton models. The swiveling jack assembly allows you to access and pump the unit from numerous positions.



### DIMENSIONS

Order Number	A		B		C (in.)	D (in.)	E (in.)	F (in.)
	Ret. (in.)	Ext. (in.)	Ret. (in.)	Ext. (in.)				
<b>J24T</b>	5/8	5 1/2	9 1/4	14	1 7/8	7 1/8	2	4 15/16
<b>J55T</b>	1	5 5/8	11 1/2	16 3/8	1 7/8	10 1/8	3	7 1/4
<b>J106T</b>	1 1/4	7 1/8	12 7/8	18 3/4	2 1/2	11 1/2	3 15/16	9 1/2

### ORDERING INFORMATION\*

Cap. Tons	Max Lift Stroke	Order Number	Strokes to Extend Piston 1 in.	Handle Effort at Max Load (lbs.)	Product Carry Handle	Wt. (lbs.)
2	4 3/4	J24T	14	42	Yes	18.3
5	4 7/8	J55T	22	60	Yes	53
10	5 1/8	J106T	31	73	Yes	83.8

\*See current price list for shipping weights.

# BOTTLE JACKS

## Telescoping

6-15 Ton

THESE JACKS OFFER GREATER EXTENDED LIFTING CAPABILITY.



Meets ASME B30.1 standard

- Telescoping jacks offer all of the quality features and capabilities of the standard bottle jack line with a bonus. The super-long stroke of these jacks saves time and effort by eliminating the need to lift, crib, lift, etc. In most applications, the user can place the jack once and complete the lift.
- The taller 9006X, 9011X and 9013X all feature a unique beveled base that allows the jack to "follow" the load laterally as it is raised, greatly reducing side-loading of the piston.



### ORDERING INFORMATION\*

Order Number	Cap. Tons	Stroke (in.)	Retracted Height (in.)	Length of Screw (in.)	Height w/Screw (in.)	No. Pump Strokes to Ext. Piston (in.)	Saddle Dia. (in.)	Base Size Beveled Base (in.)	Pump Handle Length (in.)	Handle Effort at Rated Cap. (lbs.)	Carry Handle	Product Weight (lbs.)
<b>9006X</b>	6	12	8½	—	20½	14	1¾	4¾ x 5¼	27 <sup>9</sup> / <sub>16</sub>	79	No	14
<b>9011X</b>	11	10.3	7 <sup>7</sup> / <sub>8</sub>	2 <sup>11</sup> / <sub>16</sub>	20 <sup>7</sup> / <sub>8</sub>	25	1 <sup>5</sup> / <sub>8</sub>	6 <sup>5</sup> / <sub>16</sub> x 6½	27 <sup>9</sup> / <sub>16</sub>	88	No	19.5
<b>9013X</b>	13	10	9 <sup>1</sup> / <sub>16</sub>	3 <sup>5</sup> / <sub>16</sub>	22 <sup>7</sup> / <sub>16</sub>	35	1 <sup>7</sup> / <sub>8</sub>	6 <sup>15</sup> / <sub>16</sub> x 7 <sup>5</sup> / <sub>16</sub>	27 <sup>9</sup> / <sub>16</sub>	79	Yes	25

\*See current price list for shipping weights.

# SIDEWINDER JACKS

## Mini Jacks

5-20 Ton



**COMPACT SIDEWINDER MINI JACK FITS IN YOUR PALM AND DELIVERS 5, 10 & 20 TONS OF LIFTING FORCE.**

**Meets ASME B30.1 standard**



- Retracted height of just 2<sup>9</sup>/<sub>16</sub>" for the smallest jack and 5<sup>1</sup>/<sub>8</sub>" for the 20 ton, allows you to slip this jack into the narrowest of crevices.
- Jacks operate either horizontally or vertically. Handles function in line with base for easier use in confined spaces.
- The perfect addition to any toolbox, this remarkable little jack has multiple uses that are limited only by your imagination. Use it as a jack or a spreader. Use it to turn your mechanical gear puller (puller capacity must match jack capacity) into a hydraulic puller. Use it vertically or horizontally in limited clearance situations.



### ORDERING INFORMATION\*

Order Number (in.)	Stroke Number	Retracted Height Min. (in.)	Max Height (in.)	No. Pump Strokes to Ext. Piston	Saddle Dia. (in.)	Base Size (in.)	Pump Handle Length (in.)	Handle Effort at Rated Cap. (lbs.)	Carry Handle	Product Weight (lbs.)	
<b>9105A</b>	5	3/4	2 1/2	33/8	30	1 9/64	2 29/32 Dia.	9 7/16	57	No	4.2
<b>9205A</b>	5	1 1/2	3 1/2	5 1/8	38	1 9/64	2 29/32 Dia.	9 7/16	57	No	5.3
<b>9210A</b>	10	1 3/16	4 3/4	5 7/8	36	1 21/32	4 21/64 Dia.	17 21/64	62	No	12.1
<b>9220A</b>	20	1 9/16	5 1/8	6 5/16	46	2 5/64	4 29/32 Dia.	23 13/16	77	No	17.6

\*See current price list for shipping weights.

# MAINTENANCE SETS

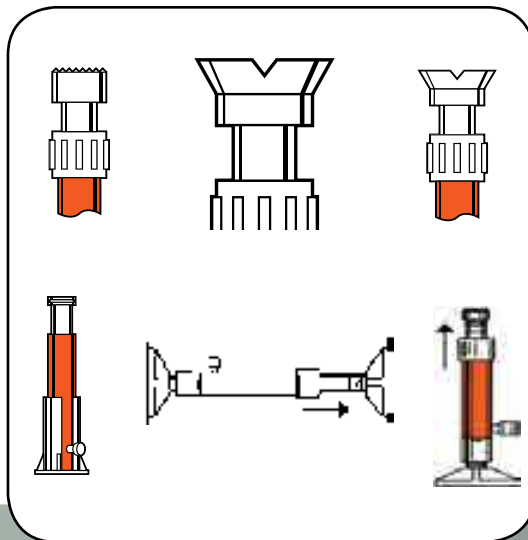
## Hydraulic System Components

IM10E

IM10H



### APPLICATION FLEXIBILITY



- Matched hydraulic system components, adapters and hydraulic spreader, contained in a rugged carrying and storage case.
- Portable sets are ideal for pushing, pulling, lifting, straightening, or clamping at remote job sites.
- Cylinders in set are rated at 10 tons at 10,000 psi. Set components are designed for full rated capacity of cylinders.
- Set IM10H/IM10L includes hand operated pump. Set IM10E includes the Quarter Horse® electrically driven portable power unit.



JACKS

### ORDERING INFORMATION\*

CONTENTS OF SET		IM10E	CONTENTS OF SET		IM10H	IM10L
Description	Part No.	Description	Part No.	Description	Part No.	Part No.
Hydraulic spreader	HS2000	Hydraulic spreader	HS2000	Hydraulic spreader	HS2000	HS2000
Hand pump (electric)	PE102	Hand pump	P59	Hand pump	P59L	P59L
10,000 psi hyd. gauge	9041	10,000 psi hyd. gauge	9041	10,000 psi hyd. gauge	9041	9041
Tee adapter	9670	Tee adapter	9670	Tee adapter	9670	9670
Hose & coupler assembly	9754	Hose & coupler assembly	9754	Hose & coupler assembly	9754	9754
90° V base	25395	90° V base	25395	90° V base	25395	25395
Threaded coupler	25664	Threaded coupler	25664	Threaded coupler	25664	25664
Serrated saddle	31772	Serrated saddle	31772	Serrated saddle	31772	31772
Flat base	32325	Flat base	32325	Flat base	32325	32325
Extension rod - 5" length	350897	Extension rod - 5" length	350897	Extension rod - 5" length	350897	350897
Extension rod - 10" length	38909	Extension rod - 10" length	38909	Extension rod - 10" length	38909	38909
Extension rod - 18" length	350898	Extension rod - 18" length	350898	Extension rod - 18" length	350898	350898
Cyl. support base	420062	Cyl. support base	420062	Cyl. support base	420062	420062
Cyl. ass'y, 10 ton, 10 <sup>1</sup> / <sub>8</sub> " stroke	C1010CBT	Cyl. ass'y, 10 ton, 6 <sup>1</sup> / <sub>8</sub> " stroke	C106CBT	Cyl. ass'y, 10 ton, 6 <sup>1</sup> / <sub>8</sub> " stroke	C106CBT	C106CBT
Cyl. ass'y, 10 ton, 6 <sup>1</sup> / <sub>8</sub> " stroke	C106CBT	Storage box*	350722	Storage box*	350722	350722
Storage box*	350722					
	Prod. Weight - 106 lbs.				Prod. Weight - 89 lbs.	Prod. Weight - 81 lbs.

\* Actual product may differ from photo.



# POST TENSION & Stressing Jacks 20 & 30 Ton

**SJ2010  
SJ3010**



**SJ2010DA  
SJ3010DA**

- Power Team Monostrand Stressing Jacks are the most durable in the industry.
- Ideally suited for work on slab-on-grade where dirt, heat and high volume use take their toll.
- Available in single or double-acting models.
- Standard single-acting units have a 10" stroke. Other stroke lengths are available on special order.
- Dead-end seaters for production work and field work available on special order. **(Part #400120)**
- Service repair is simple; components are long lasting and easily replaced.
- 3" detachable seater nose assembly easily replaced with optional 6" nose assembly.
- The jack of choice for high-rise and elevated work, thanks to fast return time and light weight.
- All hydraulic fluid controls are internal; more efficient and safer operation during tensioning and retraction.
- Standard double-acting units have an 8½" stroke; others available on special order.
- Specially designed Power Team Control Valves are available for post tensioning jacks. See pages 129.

### ORDERING INFORMATION\*

Description	Cyl. Cap. Tons	Stroke (in.)	Order Number	Recommended Pumps for this Stressing Jack	Oil Capacity (cu. in.)	Strand Diameter (in.)	Seater Type	Internal Pressure at Capacity	Tons at 10,000 psi	Weight (lbs.)
Post tension jack with spring seater, 0.50" strand.	20	10	<b>SJ2010</b>	PE554P/PE604T	45.2	.375-.50	Spring	8,948	22.4	55
Post tension jack with power seater, 0.50" strand.	20	10	<b>SJ2010P</b>	PE554PT/PE604PT	45.2	.375-.50	Power	8,948	22.4	55
Double-acting post tension jack with power seater, 0.50" strand.	20	8½	<b>SJ2010DA</b>	PE554PT/PE604PT	53.0	.375-.50	Power	7,575	26.4	42
Post tension jack with spring seater, 0.60" strand.	30	10	<b>SJ3010</b>	PE554P/PE604T	63.6	.375-.60	Spring	9,549	31.4	76
Post tension jack with power seater, 0.60" strand.	30	10	<b>SJ3010P</b>	PE554PT/PE604PT	63.6	.375-.60	Power	9,549	31.4	76
Double-acting post tension jack with power seater, 0.60" strand.	30	8½	<b>SJ3010DA</b>	PE554PT/PE604PT	67.6	.375-.60	Power	7,554	39.7	52

\*See current price list for shipping weights.

### STRESSING JACK ACCESSORIES AND HOSES—ORDERING INFORMATION



Used with Stressing Jack	3" Nose Piece	3" Wedge Seater	6" Nose Piece	6" Wedge Seater	3/8" Diameter Gripper Set	7/16" Diameter Gripper Set	1/2" Diameter Gripper Set	19/32" Diameter Gripper Set	Replacement Gripper Handle	Gripper Retainer Plate (2 used)
SJ2010	252564	252562	252759	252763	252568	252761	252567	NA	252570	252565
SJ2010P	252564	252562	252759	252763	252568	252761	252567	NA	252570	252565
SJ2010DA	252543	252542	252760	252764	252650	252762	252555	NA	252556	252544
SJ3010	252564	252562	252759	252763	252568	252761	252567	252569	252570	252565
SJ3010P	252564	252562	252759	252763	252568	252761	252567	252569	252570	252565
SJ3010DA	253363	253361	253364	253362	253390	NA	253391	253365	252556	252544

No. 9758 Hose - 10 ft. rubber, wire-braid (2-ply, 20,000 psi burst rating) 3/8" NPTF male hose ends

No. 9763 Hose - 10 ft. rubber, wire-braid (2-ply, 20,000 psi burst rating) 3/8" x 1/4" NPTF male hose ends



# INFLATABLE JACKS

13-74 Ton



The non-skid space-age reinforced inflatable jack is perfect for many applications.

- Uninflated jacks are less than 1" thick, making lifting tasks in small spaces seem routine.
- Constructed of non-conducting, high quality rubber material with multi-layer aramid fiber reinforcement.
- Samples of jacks are pressure tested to 20 bar and cycle tested (10,000 inflate/ deflate cycles at 8 bar for 10,000 inflate/deflate cycles).
- The controller, shut-off and air hoses are all equipped with an industrial interchange style quick disconnect air coupler. Female half coupler bodies have a locking collar to help the operator avoid accidentally disconnecting the jack while under load.
- The top and bottom surface of the jack has a skid resistant, interlocking pattern to assist in alignment of two jacks being used together.
- Single jack controller with "dead man" control (part no. 350090) can be used individually or in multiples to regulate the number of jacks desired.
- Heavy attachment handles are provided on the two largest jacks for attachment of a rope or hook to help in positioning the jack.
- Inflation hose system is color-coded (red and yellow) for easy recognition when using more than one jack.
- The jacks can be used at ambient temperatures of -20°C (-4°F) to + 50°C (+122°F).

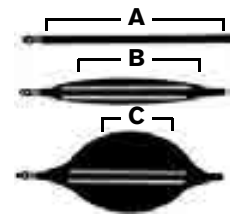
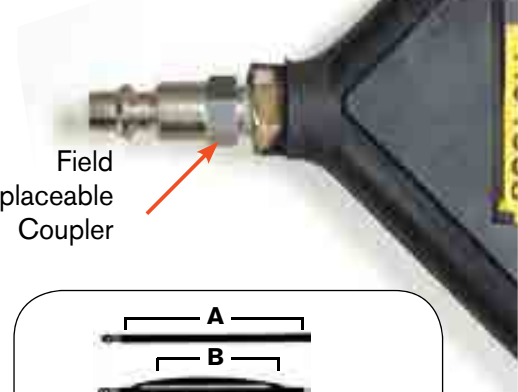
## BE SAFE!

- INSPECT BEFORE AND AFTER EACH USE.
- REPLACE IF ANY SIGNS OF DEGRADATION OR WEAR THAT MAY AFFECT SAFETY OR PERFORMANCE.
- KEEP THE PRODUCT CLEAN.
- STORE PROPERLY.



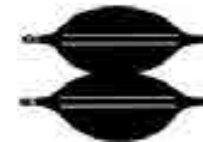
IJ Series Inflatable Air Jacks

Field Replaceable Coupler



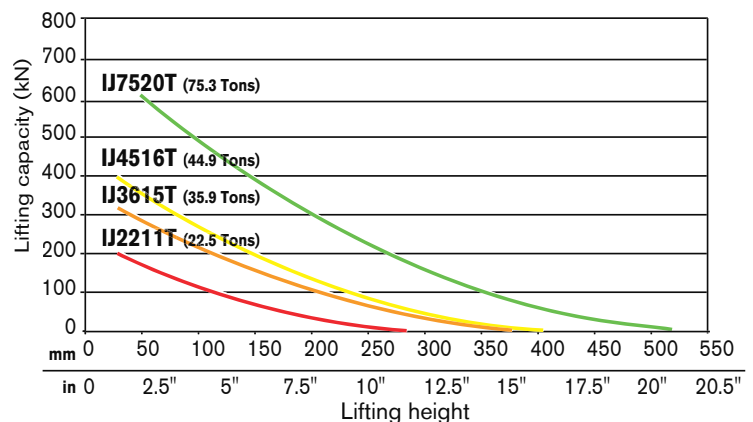
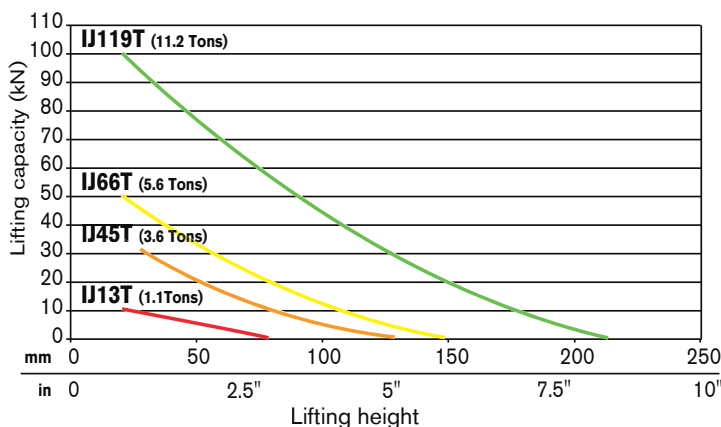
Maximum Effective Lifting Area

All lifting capacities mentioned in the charts are measured at the maximum effective lifting area (A). As the jack is inflated (B), this effective area decreases (C) due to the rounded shape of the jack. Lifting capacity also decreases (see performance chart).



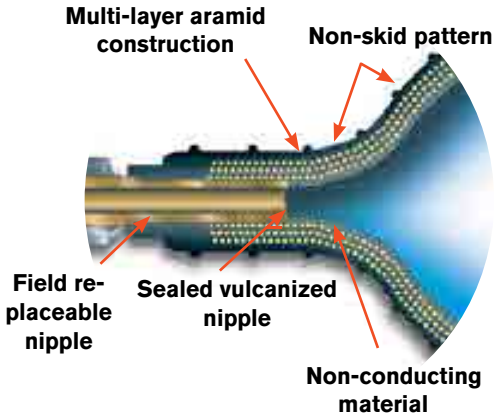
Stack up to two jacks together to increase effective lifting height.

## PERFORMANCE



JACKS

\* NOTE: 350090 air controller may be used individually to control one jack (see single line system), or in multiples to control additional jacks (see dual line system).



**No. 307159** – Pressure reducing valve. Allows use of bottled gases to operate jacks (works on CGA-580 Nitrogen/Argon/Helium bottles). Contains standard bottle fitting on inlet and 1/4" industrial interchange (female) outlet. Wt., 4 lbs.

**No. 350090** – Air controller for single jack. Equipped with relief valve and pressure gauge. Wt., 1.9 lbs.

**No. 350207** – Shut-off hose with shut-off valve and pressure relief valve. Includes a female and male quick coupler. Wt., 0.7 lb.

**No. 350208** – Air hose. Red, 30' long. Includes No. 250341 female and No. 250342 male quick coupler. Wt., 6.0 lbs.

**No. 350209** – Air hose. Same as 350208, except blue in color. Wt., 6.0 lbs.

**No. 250343** – Female quick coupler. 1/4" industrial interchange x 1/8" NPT female. Wt., 0.1 lb.

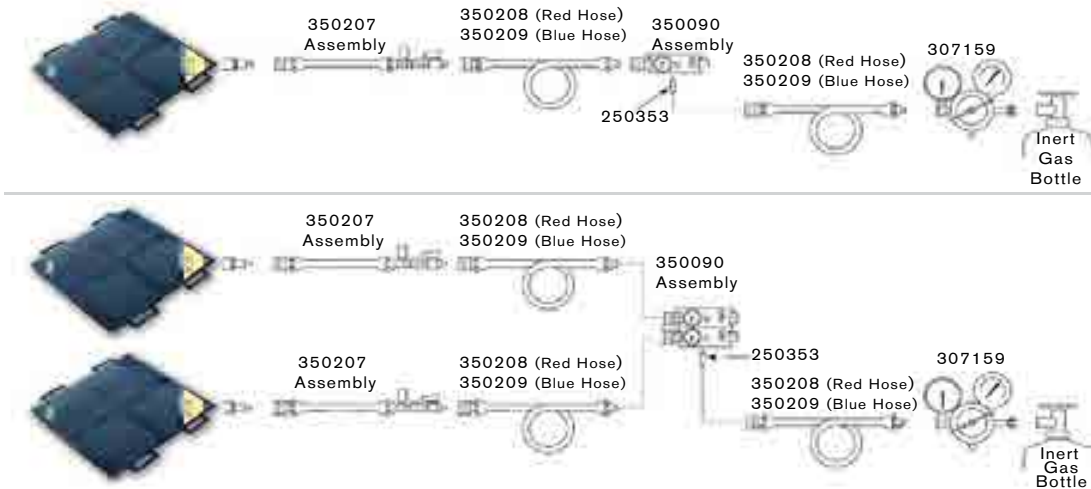
**No. 250353** – Male quick coupler. 1/4" industrial interchange x 1/8" NPT male. Wt., 0.1 lb.

**No. 250682** – Female quick coupler. 1/4" industrial interchange x 1/4" NPT male. Wt., 0.1 lb.

**No. 15235** – Connector 1/8" NPT male x 1/4" NPT female. Wt., 0.1 lb.

**No. 250341** – Female quick coupler. 1/4" industrial x 3/8" I.D. hose. Wt., 0.5 lb.

**No. 250342** – Male Quick coupler. 3/8" I.D. Hose. Wt., 0.1 lb.



**ORDERING INFORMATION\***

Lifting Cap. (lbs.)	Lifting Height (in.)	Order Number	Air Volume (liter)	Water Volume (liter)	Length (in.)	Width (in.)	Thickness (in.)	Product Weight (lbs.)
2,248	3.1	IJ 13T	3.3	0.7	6	6	0.87	1.3
7,194	5.1	IJ 45T	16.2	1.8	9	9	0.87	3.3
11,240	5.9	IJ 66T	22.5	2.5	11	11	0.87	4.4
22,480	8.5	IJ 119T	76.5	8.5	15	15	0.98	9
44,960	11.4	IJ 2211T	189	21	20	20	0.98	15.5
71,930	15.0	IJ 3615T	450	50	26	26	0.98	29
89,920	15.9	IJ 4516T	558	62	28	28	0.98	33
150,610	20.5	IJ 7520T	1,206	134	36	36	0.98	53

\*See current price list for shipping weights.

# PORTABLE 100 TON JACKS

## Railroad Edition

- Wide base cylinder design for stability.
- Double-acting cylinder with locking collar.
- The bottom of the cylinder is a bolted joint, using the base plate as part of the cylinder. This will allow for service of even the oldest or most abused jacks.
- Cribbing storage rack location is such that it allows easy access during cribbing placement and removal.
- Remote operation (20 ft. remote) for user safety and control.
- Easy to maneuver, large tires and small footprint make it easy to get into tight spaces.
- Adjustable handle, easy to position the jack under loads.



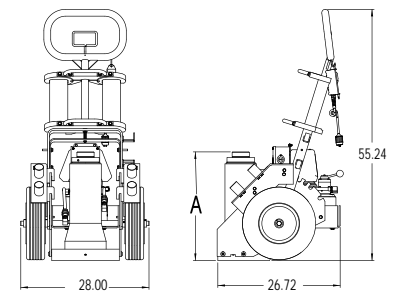
## PRODUCT SPECIFICATIONS

Type of Pump	Low Pressure Pump		High Pressure Pump		Current Draw at Max Internal Relief Settings (AMPS)	Unload Pressure (PSI)	Internal Relief Pressure (PSI)	Tank (GAL)	Valving
	Flow (cu. in./min.)	Pressure (PSI)	Flow (cu. in./min.)	Pressure (PSI)					
Electric	440	440	58	10,000	28	900-1225	10,000	2	4W3P Tandem Center Manual
Air	330		30	10,000	NA	540-780			

\* Electric pump is powered by a 110/115 VAC, 50/60 Hz, single phase motor

## ORDERING INFORMATION - JACKS

Order Number	Description	Stroke (in)	Retracted Height (in)
RJ100T24E	Jack, 100 Ton RR 24" Ret, Elect	14	24
RJ100T37E	Jack, 100 Ton RR 37" Ret, Elect	27	37
RJ100T24A	Jack, 100 Ton RR 24" Ret Air	14	24
RJ100T37A	Jack, 100 Ton RR 37" Ret Air	27	37
RJ100T24A-C*	Jack, 100 Ton RR 24" Ret Air w/Crib Block	14	24
RJ100T24E-C*	Jack, 100 Ton RR 24" Ret Elect w/Crib Block	14	24
RJ100T37A-C*	Jack, 100 Ton RR 37" Ret Air w/Crib Block	27	37
RJ100T37E-C*	Jack, 100 Ton RR 37" Ret Elect w/Crib Block	27	37
RJ100T24A-E**	Jack, 100 Ton RR 24" Ret Air w/Ext	14	24
RJ100T24E-E**	Jack, 100 Ton RR 24" Ret Elect w/Ext	14	24
RJ100T37A-E†	Jack, 100 Ton RR 37" Ret Air w/Ext	27	37
RJ100T37E-E†	Jack, 100 Ton RR 37" Ret Elect w/Ext	27	37



- \* C models include RJ-CB-S crib set
- \*\* 24"- E models include RJ-EXT-S1 set
- † 37"- E includes RJ-EXT-S set



## RAIL JACKS ACCESSORIES

### ORDERING INFORMATION - EXTENSIONS

Order Number	Description
<b>RJ-EXT18</b>	Assembly, Extension 18 in. 100 Ton RR Jack
<b>RJ-EXT14</b>	Assembly, Extension 14 in. 100 Ton RR Jack
<b>RJ-EXT11</b>	Assembly, Extension 11 in. 100 Ton RR Jack
<b>RJ-EXT9</b>	Assembly, Extension 9 in. 100 Ton RR Jack
<b>RJ-EXT7</b>	Assembly, Extension 7 in. 100 Ton RR Jack
<b>RJ-EXT5</b>	Assembly, Extension 5 in. 100 Ton RR Jack
<b>RJ-EXT-S</b>	Set, Extensions 100 Ton RR Jack 7, 9, 14
<b>RJ-EXT-S1</b>	Set, Extensions 100 Ton RR Jack 5, 11, 18



### ORDERING INFORMATION - CRIBBING BLOCKS

Order Number	Description
<b>RJ-CB10</b>	Assembly, Crib Block 10 in. 100 Ton RR Jack
<b>RJ-CB5</b>	Assembly, Crib Block 5 in. 100 Ton RR Jack
<b>RJ-CB3</b>	Assembly, Crib Block 3 in. 100 Ton RR Jack
<b>RJ-CB1</b>	Assembly, Crib Block 1 in. 100 Ton RR Jack
<b>RJ-CB-S</b>	Set, Crib Blocks 100 Ton RR Jack 1, 3, 5, 10



### ORDERING INFORMATION - SPACERS

Order Number	Description
<b>RJ-SP-1</b>	Spacer, 1 in.
<b>RJ-SP-2</b>	Spacer, 2 in.
<b>RJ-SP-3</b>	Spacer, 3 in.
<b>RJ-SP-S</b>	Spacer Set 100 ton RR Jack 1, 2, 3

### ORDERING INFORMATION - SWIVEL CAPS

Order Number	Description
<b>RJ-SC-1</b>	Assembly, Swivel Cap 100 Ton RR Jack
<b>RJ-SC-2</b>	Assembly, Swivel Cap 100 Ton RR Jack Long



Note: Contact factory for 60 Ton 14" stroke, 24" retracted height  
 Old Models: PLE6014K, PLA6014K, PLE6014K-220



# PORTABLE HIGH TONNAGE JACKS

## 55, 100 & 150 Ton

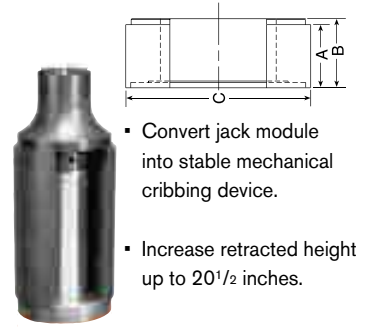
**PORTABLE AND COMPACT, IDEAL FOR LOCOMOTIVE/ RAILCAR, MINING AND HEAVY EQUIPMENT MAINTENANCE.**



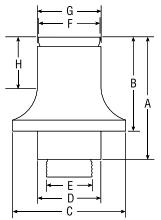
- Modular design - pump and cart separate from cylinder and base.
- Three tonnage capacity options - 55, 100 and 150 ton.
- Three collapsed height options - 26", 33" and 45".
- Two standard power options - air (PA55) and electric (PE55).
- Two control options - remote motor control and remote valve/motor control.
- Accessory options - 6<sup>5</sup>/<sub>8</sub>" extension, load-holding rings.
- Select the collapsed height to fit your most frequent application - add jacking modules to suit your needs.
- Remote operation for maximum operator safety and control - choose "motor only" or "motor and valve" control in the hand.
- Easy to maneuver - large tires and small "footprint" make it easy to scoot into the tightest quarters, then locate the exact lifting position.
- Adjustable, heavy-duty handle - makes this jack easy to move, position under vehicles. Can also be used to transport jack on site with a forklift.
- Load-holding rings (optional) - provide full rated mechanical load-holding capability.
- Shielded and sheltered hydraulic lines - for safer, longer, trouble-free service.
- Cylinder extension (optional) - adds more versatility by extending your jack's reach.
- Low-temperature oil (optional) - provides smooth, reliable operation in the coldest climate conditions.
- Modular design - allows you to change lifting modules to suit your tonnage or height requirements. Use the pump module as a portable power station for your other double-acting cylinders (10,000 psi).
- Exclusive load-control system - provides positive, chatter-free control when lowering the load.



ORDER INFORMATION										
CRIBBING BLOCK SETS - INCLUDES ONE JACK MODULE EXTENSION										
Order No.‡	55 Ton CBS55		100 Ton CBS100		150 Ton CBS150		200 Ton CBS200		300 Ton CBS300	
No. in Set	1	4	1	4	1	4	1	4	1	4
A	1 1/2"	3"	1 1/2"	3"	1 1/2"	3"	1 1/2"	3"	1 1/2"	3"
B	1 3/4"	3 1/4"	1 3/4"	3 1/4"	1 3/4"	3 1/4"	1 3/4"	3 1/4"	1 3/4"	3 1/4"
C	5 1/2"	5 1/2"	7 3/8"	7 3/8"	8 3/4"	8 3/4"	10"	10"	10"	10"
Jack Module Ext.	6 13/16"		7"		6 5/8"		6 5/8"			
Total Stack Ht.	20 5/16"		20 1/2"		20 1/8"		20 1/8"			
Product Wt. (lbs.)	36		68		85		105			



- Convert jack module into stable mechanical cribbing device.
- Increase retracted height up to 20 1/2 inches.



ORDER INFORMATION											
JACK MODULE EXTENSIONS											
(tons)	No.	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	Prod. Wt. (lbs.)	
55	<b>58945</b>	8 13/16	6 13/16	5	2 5/8	1 11/16-8UN	2 1/2	2 5/8	3 5/8	21	
100	<b>58943</b>	9	7	6 7/8	3 7/8	2 3/4-12UN	3 3/4	3 7/8	3 3/4	40	
150	<b>58944</b>	8 5/8	6 5/8	8	4 1/2	3 1/4-8UNC	4 3/8	4 1/2	3 1/2	50	

- Increases jack's reach.



**Pump & Cart Modules**

Pump and cart modules contain hydraulic pump, cart, remote control and all hoses and fittings required to connect to a jack module. Contact factory on folding handle cart option.

Remote Control		
Pump	Motor Only	Motor & Valve
Air	PMA55	PMA55S
Electric	PME55	PME55S
Electric	PME355	PME355S
Air	PMA355	PMA355S

**Jack Modules**

Jack modules easily separate from the pump and cart module.



**Air pump and cart module.**



**Electric pump and cart module.**



**26"**



**33"**



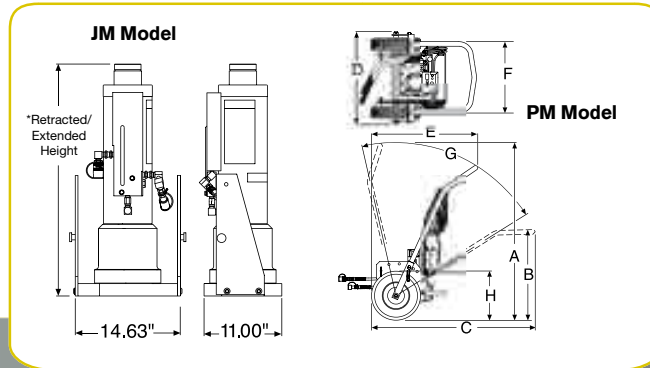
**45"**

**Jack Module Jack Module Jack Module**

Tonnage	Cylinder Stroke	Collapsed Height		
		26"	33"	45"
55	13 <sup>1</sup> / <sub>8</sub>	JM25	JM35	JM45
100	13 <sup>1</sup> / <sub>8</sub>	JM210	JM310	JM410
150	18 <sup>1</sup> / <sub>8</sub>	JM215†	JM315	JM415
200	18 <sup>1</sup> / <sub>8</sub>	JM220*	JM320	JM420
300	13 <sup>1</sup> / <sub>8</sub>	<b>CONTACT FACTORY</b>		

\* collapsed height; 28" and stroke 13<sup>1</sup>/<sub>8</sub>".

† stroke 13<sup>1</sup>/<sub>8</sub>".



**Dimensions**

Model Series	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (deg.)	H (in.)
PMA & PME	57 <sup>5</sup> / <sub>8</sub>	29 <sup>5</sup> / <sub>8</sub>	53 <sup>1</sup> / <sub>4</sub>	30	34 <sup>5</sup> / <sub>16</sub>	23 <sup>3</sup> / <sub>8</sub>	*70°	16" Tire Dia.

\* Total range with varying degree increments.

**ORDER INFORMATION – Pump and Cart Modules with Assembled Jack Module**

Capacity (tons)	Ret. Height (in.)	Ext. Height (in.)	Stroke (in.)	Pump Type	Power Required	Valve Type	Remote Control	Order No.
55	26	39 <sup>1</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	Electric	25 amps	Manual	M	JEM5526
100	33	46 <sup>1</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	Air	50 CFM @ 80 psi	Manual	M	JAM10033
100	33	46 <sup>1</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	Air	50 CFM @ 80 psi	Air Pilot	M & V	JAR10033
150	26	39 <sup>1</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	Electric	25 amps	Manual	M	JEM15026
150	33	46 <sup>1</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	Air	50 CFM @ 80 psi	Manual	M	JAM15033



# HYDRAULIC & MECHANICAL TOOLS



Page  
**TORQUE WRENCH ...166**  
Square Drive



Page  
**TORQUE WRENCH...168**  
Low Clearance



Page  
**X1E1 & X1A1 TORQUE ...170**



Page  
**PE30 SERIES...172**  
Electric Torque Wrench Pump



Page  
**PE55 TWP SERIES...173**  
Electric Torque Wrench Pump



Page  
**RWP55 SERIES...174**  
Electric Torque Wrench Pump



Page  
**HYDRAULIC NUT SPLITTER ...175**



Page  
**FLS HYDRAULIC SPREADER ...176**



Page  
**HFS HYDRAULIC SPREADER ...178**



Page  
**SPREADERS ...179**



Page  
**C CLAMPS...180**



Page  
**BEAD BREAKER...181**  
Tire Removing Tool



Page  
**PORTABLE PUNCHES...182**  
HP20, HP35



Page  
**TESTERS...184**



Page  
**TESTERS SERVICE ACCESSORIES ...185**



Page  
**RETAINING RING PLIERS...187**



Page  
**SERVICE TOOLS...188**



Page  
**WRENCHES & PRY BARS...189**



# TORQUE WRENCH

## Square Drive Series

MAX TORQUE 33496 Nm 700 bar  
24,705 Ft-Lb 10,152 PSI

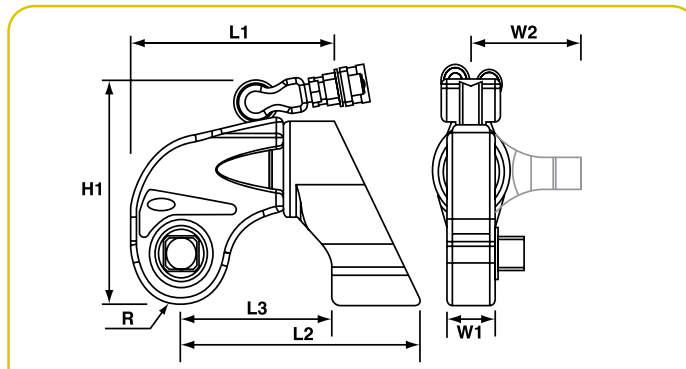


360° SWIVEL



### HYDRAULIC SQUARE DRIVE TORQUE WRENCHES

- Low Weight, High Strength Design
- Superior Torsional Strength
- Fast Operation Cycle
- Fine Tooth Pawl
- Floating Piston Design
- Internal Swivel Manifold Relief
- Rigid Steel Body Construction
- Compact Frame Size



- Push Button Reversal of Square Drive
- Corrosion Resistant Finish
- 360° Reaction Arm
- Push to Click Reaction Arms
- Multi-Axis High Flow Swivel Manifold
- Simple Design
- Consistent Torque Output
- Fully Enclosed Drive Mechanism
- Accurate Torque Output
- Powerthon™ Lifetime Warranty

Tool Model	L1		L2		L3		H1		R		W1		W2	
	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
<b>TWSD1</b>	5.5	139	6.7	170	4.4	112	5.7	145	1.1	28	1.3	33	3.4	86
<b>TWSD3</b>	6.7	170	7.7	196	4.9	124	6.9	175	1.5	38	1.8	46	4.1	104
<b>TWSD6</b>	7.7	196	9.3	236	5.6	142	8.1	206	1.8	46	2.0	51	5.4	137
<b>TWSD11</b>	9.2	234	11.5	292	7.0	178	9.5	241	2.2	56	2.4	61	6.5	165
<b>TWSD25</b>	12.0	305	14.8	376	9.1	231	12.4	315	2.8	71	3.0	76	7.9	200

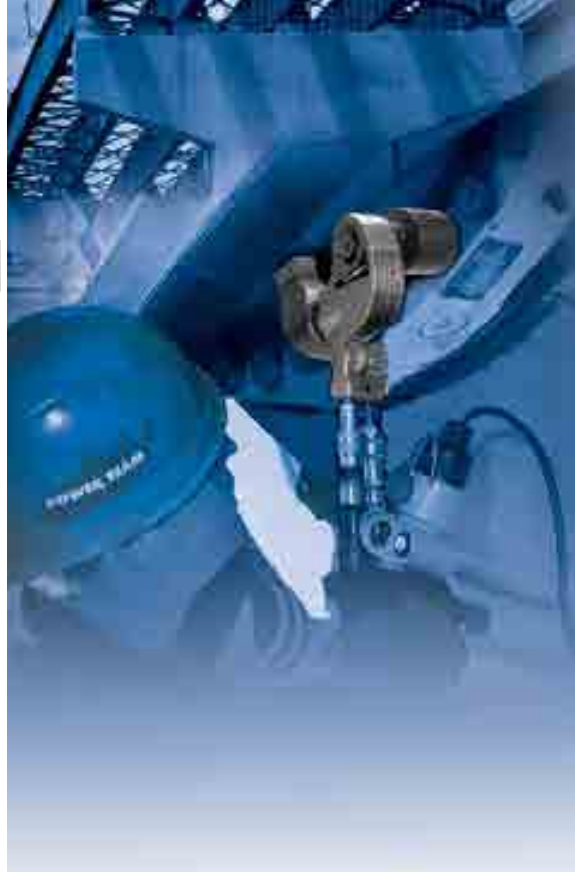


Tool Model	Square Drive		Max. Torque		Tool Weight	
	(in.)	(mm)	(ft. lbs.)	(Nm)	(lbs.)	(kg)
<b>TWSD1</b>	3/4	19.0	1,390	1800	5.1	2.3
<b>TWSD3</b>	1	25.4	3,070	4160	9.9	4.5
<b>TWSD6</b>	1 1/2	38.1	6,020	8157	17.4	7.9
<b>TWSD11</b>	1 1/2	38.1	10,940	14823	28.9	13.1
<b>TWSD25</b>	2 1/2	63.5	24,700	33496	65.0	29.5



## SQUARE DRIVE HEX DRIVES AND SOCKETS

Torque Wrench	Hexagon Drive Size A/F (in.)	Part No.	Hexagon Drive Size A/F (mm)	Part No.
TWSD1	0.63	TWD1-063	17mm	TWD1-017
	0.75	TWD1-075	19mm	TWD1-019
	0.88	TWD1-088	22mm	TWD1-022
	1.00	TWD1-100	24mm	TWD1-024
	-	-	27mm	TWD1-027
TWSD3	0.63	TWD3-063	17mm	TWD3-017
	0.75	TWD3-075	19mm	TWD3-019
	0.88	TWD3-088	22mm	TWD3-022
	1.00	TWD3-100	24mm	TWD3-024
	1.13	TWD3-113	27mm	TWD3-027
	1.25	TWD3-125	30mm	TWD3-030
	1.38	TWD3-138	32mm	TWD3-032
TWSD6	0.88	TWD6-088	22mm	TWD6-022
	1.00	TWD6-100	24mm	TWD6-024
	1.13	TWD6-113	27mm	TWD6-027
	1.25	TWD6-125	30mm	TWD6-030
	1.38	TWD6-138	32mm	TWD6-032
	1.50	TWD6-150	36mm	TWD6-036
	1.63	TWD6-163	41mm	TWD6-041
TWSD11	1.13	TWD11-113	27mm	TWD11-027
	1.25	TWD11-125	30mm	TWD11-030
	1.38	TWD11-138	32mm	TWD11-032
	1.50	TWD11-150	36mm	TWD11-036
	1.63	TWD11-163	41mm	TWD11-041
	1.75	TWD11-175	46mm	TWD11-046
TWSD25	1.50	TWD25-150	36mm	TWD25-036
	1.63	TWD25-163	41mm	TWD25-041
	1.75	TWD25-175	46mm	TWD25-046
	1.88	TWD25-188	50mm	TWD25-050
	2.00	TWD25-200	55mm	TWD25-055
	2.25	TWD25-225	60mm	TWD25-060
	2.50	TWD25-250	65mm	TWD25-065
2.75	TWD25-275	70mm	TWD25-070	



Socket Size in.	3/4" Drive Part No.	1" Drive Part No.	1-1/2" Drive Part No.	2-1/2" Drive Part No.	Socket Size mm	3/4" Drive Part No.	1" Drive Part No.	1-1/2" Drive Part No.	2-1/2" Drive Part No.
7/8	TWSIA088	TWSIB088	-	-	22	TWSMA022	TWSMB022	-	-
1-1/16	TWSIA106	TWSIB106	-	-	24	TWSMA024	TWSMB024	-	-
1-1/4	TWSIA125	TWSIB125	-	-	32	TWSMA032	TWSMB032	-	-
1-3/8	TWSIA138	TWSIB138	-	-	36	TWSMA036	TWSMB036	-	-
1-7/16	TWSIA144	TWSIB144	-	-	41	TWSMA041	TWSMB041	TWSMC041	-
1-5/8	TWSIA163	TWSIB163	TWSIC163	-	46	TWSMA046	TWSMB046	-	-
1-13/16	TWSIA181	TWSIB181	-	-	50	TWSMA050	TWSMB050	-	-
2	TWSIA200	TWSIB200	TWSIC200	-	55	-	TWSMB055	-	-
2-3/16	TWSIA219	TWSIB219	TWSIC219	-	60	-	TWSMB060	TWSMC060	-
2-3/8	TWSIA238	TWSIB238	TWSIC238	-	65	-	TWSMB065	TWSMC065	-
2-9/16	-	TWSIB256	TWSIC256	-	70	-	TWSMB070	TWSMC070	-
2-3/4	-	TWSIB275	TWSIC275	-	75	-	TWSMB075	TWSMC075	-
2-15/16	-	TWSIB294	TWSIC294	-	80	-	TWSMB080	TWSMC080	TWSMF080
3-1/8	-	TWSIB313	TWSIC313	TWSIF313	85	-	TWSMB085	TWSMC085	TWSMF085
3-3/8	-	TWSIB338	TWSIC338	TWSIF338	90	-	TWSMB090	TWSMC090	TWSMF090
3-1/2	-	TWSIB350	TWSIC350	TWSIF350	95	-	TWSMB095	TWSMC095	TWSMF095
3-3/4	-	TWSIB375	TWSIC375	TWSIF375	100	-	TWSMB100	-	TWSMF100
3-7/8	-	TWSIB388	-	TWSIF388	110	-	TWSMB110	TWSMC110	TWSMF110
4-1/8	-	TWSIB413	TWSIC413	TWSIF413	115	-	-	TWSMC115	TWSMF115
4-1/4	-	TWSIB425	TWSIC425	TWSIF425	120	-	-	TWSMC120	-
4-5/8	-	-	TWSIC463	TWSIF463	135	-	-	-	TWSMF135
5	-	-	-	TWSIF500	150	-	-	-	TWSMF150
5-3/8	-	-	-	TWSIF538					
5-3/4	-	-	-	TWSIF575					
6-1/8	-	-	-	TWSIF613					

HYDRAULIC TOOLS



# TORQUE WRENCH

## Low Clearance Series

MAX TORQUE 39,024 Nm 700 bar  
28,782 Ft-Lb 10,000 PSI

**THE LIGHTWEIGHT, HEAVY-DUTY TOOL FEATURES A LONG NECK, SHORT HEIGHT, AND SMALL RADIUS FOR INACCESSIBLE BOLTING AREAS FOUND IN INDUSTRY.**

- Low Weight, High Strength Design
- Superior Torsional Strength
- Fast Operation Cycle
- Fine Tooth Pawl
- Floating Piston Design
- Auto-Connect Drive Piston
- Compact Frame Size
- Rigid Steel Body Construction
- Internal swivel manifold Relief
- Built-in Reaction Pad
- Small Nose Radius

### HYDRAULIC LOW CLEARANCE TORQUE WRENCH

The TWLC Series Wrench was designed for the most inaccessible bolting areas found in industry. Its long neck, short height and small radius have all added to its great success

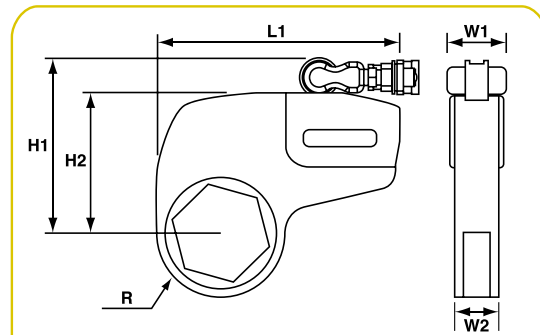


- Tool Free Link Change
- Corrosion Resistant Finish
- Multi-Axis High Flow Swivel Manifold
- Simple Design
- Consistent Torque Output
- Powerthon™ Lifetime Warranty

\* Links sold separately.  
Tool is not shipped with link.

#### HOSES – DUAL LINE

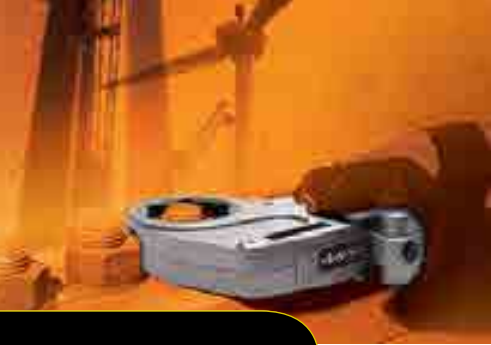
<b>TWH15</b>	15', 1/4" ID non-conductive 4.6m, 9.5mm ID non-conductive
<b>TWH20</b>	20', 1/4" ID non-conductive 6m, 9.5mm ID non-conductive
<b>TWH50</b>	50', 1/4" ID non-conductive 15.2m, 9.5mm ID non-conductive



Tool Model	L1 (in.)	L1 (mm)	H1 (in.)	H1 (mm)	H2 (in.)	H2 (mm)	R (in.)	R (mm)	W1 (in.)	W1 (mm)	W2 (in.)	W2 (mm)
<b>TWLC2</b>	7.6	193	5.4	137	4.1	104	1 1/4- 1 7/8	32-48	1.7	43	1.3	33
<b>TWLC4</b>	8.8	223	6.4	163	5.1	130	1 1/2- 1 7/8	38-47	2.0	51	1.7	43
<b>TWLC8</b>	10.4	264	7.7	196	6.2	158	2- 2 7/8	51-74	2.7	69	2.1	53
<b>TWLC15</b>	12.0	305	8.8	224	7.3	185	2 3/8- 2 1/2	60-64	3.1	79	2.5	64
<b>TWLC30</b>	15.4	391	10.9	277	9.4	239	3- 4 1/2	76-114	4.2	107	3.2	81

Tool Model	Hex Range		Max. Torque		Tool Weight	
	(in.)	(mm)	(ft.)	(Nm)	(lbs)	(kg)
<b>TWLC2</b>	1 1/4- 2 3/8	32 - 60	1,575	2,135	6.2	2.8
<b>TWLC4</b>	1 1/2- 3 1/8	38.1 - 79	3,975	5,389	12.6	5.7
<b>TWLC8</b>	2 3/8- 3 7/8	60 - 98	7,950	10,770	22.9	10.3
<b>TWLC15</b>	2 9/16- 4 5/8	65 - 117	14,850	20,133	37.3	16.9
<b>TWLC30</b>	3 1/8- 6 1/8	79 - 155	28,800	39,047	77.0	34.9





Tool	Link Part No.	Nut A/F		Reducer		Part No.	Reducer		Part No.	Reducer		Part No.
		in.	mm	in.	mm		in.	mm		in.	mm	
TWLC2	TWL2-032	1.25	32	-	-	-	-	-	-	-	-	-
	TWL2-036	1.44	36	-	-	-	-	-	-	-	-	-
	TWL2-041	1.63	41	1.63-1.44	41-36mm	TWR2-041036	1.63-1.25	41-32mm	TWR2-041032	-	-	-
	TWL2-046	1.81	46	1.81-1.63	46-41mm	TWR2-046041	1.81-1.44	46-36mm	TWR2-046036	1.81-1.25	46-32mm	TWR2-046032
	TWL2-050	2.00	50	2.00-1.81	50-46mm	TWR2-050046	2.00-1.63	50-41mm	TWR2-050041	2.00-1.44	50-36mm	TWR2-050036
	TWL2-055	2.19	55	2.19-2.00	55-50mm	TWR2-055050	2.19-1.81	55-46mm	TWR2-055046	2.19-1.63	55-41mm	TWR2-055041
TWLC4	TWL2-060	2.38	60	2.38-2.19	60-55mm	TWR2-060055	2.38-2.00	60-50mm	TWR2-060050	2.38-1.81	60-46mm	TWR2-060046
	TWL4-041	1.63	41	1.63-1.44	41-36mm	TWR4-041036	1.63-1.25	41-32mm	TWR4-041032	-	-	-
	TWL4-046	1.81	46	1.81-1.63	46-41mm	TWR4-046041	1.81-1.44	46-36mm	TWR4-046036	1.81-1.25	46-32mm	TWR4-046032
	TWL4-050	2.00	50	2.00-1.81	50-46mm	TWR4-050046	2.00-1.63	50-41mm	TWR4-050041	2.00-1.44	50-36mm	TWR4-050036
	TWL4-055	2.19	55	2.19-2.00	55-50mm	TWR4-055050	2.19-1.81	55-46mm	TWR4-055046	2.19-1.63	55-41mm	TWR4-055041
	TWL4-060	2.38	60	2.38-2.19	60-55mm	TWR4-060055	2.38-2.00	60-50mm	TWR4-060050	2.38-1.81	60-46mm	TWR4-060046
TWLC8	TWL4-065	2.56	65	2.56-2.38	65-60mm	TWR4-065060	2.56-2.19	65-55mm	TWR4-065055	2.56-2.00	65-50mm	TWR4-065050
	TWL4-070	2.75	70	2.75-2.56	70-65mm	TWR4-070065	2.75-2.38	70-60mm	TWR4-070060	2.75-2.19	70-55mm	TWR4-070055
	TWL4-075	2.94	75	2.94-2.75	75-70mm	TWR4-075070	2.94-2.56	75-65mm	TWR4-075065	2.94-2.38	75-60mm	TWR4-075060
	TWL4-080	3.13	80	3.13-2.94	80-75mm	TWR4-080075	3.13-2.75	80-70mm	TWR4-080070	3.13-2.56	80-65mm	TWR4-080065
	TWL8-060	2.38	60	2.38-2.19	60-55mm	TWR8-060055	2.38-2.00	60-50mm	TWR8-060050	2.38-1.81	60-46mm	TWR8-060046
	TWL8-065	2.56	65	2.56-2.38	65-60mm	TWR8-065060	2.56-2.19	65-55mm	TWR8-065055	2.56-2.00	65-50mm	TWR8-065050
TWLC15	TWL8-070	2.75	70	2.75-2.56	70-65mm	TWR8-070065	2.75-2.38	70-60mm	TWR8-070060	2.75-2.19	70-55mm	TWR8-070055
	TWL8-075	2.94	75	2.94-2.75	75-70mm	TWR8-075070	2.94-2.56	75-65mm	TWR8-075065	2.94-2.38	75-60mm	TWR8-075060
	TWL8-080	3.13	80	3.13-2.94	80-75mm	TWR8-080075	3.13-2.75	80-70mm	TWR8-080070	3.13-2.56	80-65mm	TWR8-080065
	TWL8-085	3.38	85	3.38-3.13	85-80mm	TWR8-085080	3.38-2.94	85-75mm	TWR8-085075	3.38-2.75	85-70mm	TWR8-085070
	TWL8-090	3.50	90	3.50-3.38	90-85mm	TWR8-090085	3.50-3.13	90-80mm	TWR8-090080	3.50-2.94	90-75mm	TWR8-090075
	TWL8-095	3.75	95	3.75-3.50	95-90mm	TWR8-095090	3.75-3.38	95-85mm	TWR8-095085	3.75-3.13	95-80mm	TWR8-095080
TWLC30	TWL8-100	3.88	100	3.88-3.75	100-95mm	TWR8-100095	3.88-3.50	100-90mm	TWR8-100090	3.88-3.38	100-85mm	TWR8-100085
	TWL15-070	2.75	70	2.75-2.56	70-65mm	TWR15-070065	2.75-2.38	70-60mm	TWR15-070060	2.75-2.19	70-55mm	TWR15-070055
	TWL15-075	2.94	75	2.94-2.75	75-70mm	TWR15-075070	2.94-2.56	75-65mm	TWR15-075065	2.94-2.38	75-60mm	TWR15-075060
	TWL15-080	3.13	80	3.13-2.94	80-75mm	TWR15-080075	3.13-2.75	80-70mm	TWR15-080070	3.13-2.56	80-65mm	TWR15-080065
	TWL15-085	3.38	85	3.38-3.13	85-80mm	TWR15-085080	3.38-2.94	85-75mm	TWR15-085075	3.38-2.75	85-70mm	TWR15-085070
	TWL15-090	3.50	90	3.50-3.38	90-85mm	TWR15-090085	3.50-3.13	90-80mm	TWR15-090080	3.50-2.94	90-75mm	TWR15-090075
TWLC30	TWL15-095	3.75	95	3.75-3.50	95-90mm	TWR15-095090	3.75-3.38	95-85mm	TWR15-095085	3.75-3.13	95-80mm	TWR15-095080
	TWL15-100	3.88	100	3.88-3.75	100-95mm	TWR15-100095	3.88-3.50	100-90mm	TWR15-100090	3.88-3.38	100-85mm	TWR15-100085
	TWL15-105	-	105	-	105-100mm	TWR15-105100	-	105-95mm	TWR15-105095	-	105-90mm	TWR15-105090
	TWL15-425	4.25	-	4.25-3.88	-	TWR15-425388	4.25-3.75	-	TWR15-425375	4.25-3.50	-	TWR15-425350
	TWL15-110	-	110	-	110-105mm	TWR15-110105	-	110-100mm	TWR15-110010	-	110-95mm	TWR15-110095
	TWL15-115	-	115	-	115-110mm	TWR15-115110	-	115-105mm	TWR15-115105	-	115-100mm	TWR15-115100
TWLC30	TWL15-463	4.63	-	4.63-4.25	-	TWR15-463425	4.63-3.88	-	TWR15-463388	4.63-3.75	-	TWR15-463375
	TWL30-080	3.13	80	3.13-2.94	80-75mm	TWR30-080075	3.13-2.75	80-70mm	TWR30-080070	3.13-2.56	80-65mm	TWR30-080065
	TWL30-085	3.38	85	3.38-3.13	85-80mm	TWR30-085080	3.38-2.94	85-75mm	TWR30-085075	3.38-2.75	85-70mm	TWR30-085070
	TWL30-090	3.50	90	3.50-3.38	90-85mm	TWR30-090085	3.50-3.13	90-80mm	TWR30-090080	3.50-2.94	90-75mm	TWR30-090075
	TWL30-095	3.75	95	3.75-3.50	95-90mm	TWR30-095090	3.75-3.38	95-85mm	TWR30-095085	3.75-3.13	95-80mm	TWR30-095080
	TWL30-100	3.88	100	3.88-3.75	100-95mm	TWR30-100095	3.88-3.50	100-90mm	TWR30-100090	3.88-3.38	100-85mm	TWR30-100085
TWLC30	TWL30-105	-	105	-	105-100mm	TWR30-105100	-	105-95mm	TWR30-105095	-	105-90mm	TWR30-105090
	TWL30-425	4.25	-	4.25-3.88	-	TWR30-425388	4.25-3.75	-	TWR30-425375	4.25-3.50	-	TWR30-425350
	TWL30-110	-	110	-	110-105mm	TWR30-110105	-	110-100mm	TWR30-110010	-	110-95mm	TWR30-110095
	TWL30-115	-	115	-	115-110mm	TWR30-115110	-	115-105mm	TWR30-115105	-	115-100mm	TWR30-115100
	TWL30-463	4.63	-	4.63-4.25	-	TWR30-463425	4.63-3.88	-	TWR30-463388	4.63-3.75	-	TWR30-463375
	TWL30-120	-	120	-	120-115mm	TWR30-120115	-	120-110mm	TWR30-120110	-	120-105mm	TWR30-120105
TWLC30	TWL30-500	5.00	-	5.00-4.63	-	TWR30-500463	5.00-4.25	-	TWR30-500425	5.00-3.88	-	TWR30-500388
	TWL30-130	-	130	-	130-120mm	TWR30-130120	-	130-115mm	TWR30-130115	-	130-110mm	TWR30-130110
	TWL30-135	5.38	135	5.38-5.00	135-125mm	TWR30-135125	5.38-4.63	135-120mm	TWR30-135120	5.38-4.25	135-115mm	TWR30-135115
	TWL30-145	5.75	145	-	-	-	-	-	-	-	-	-
	TWL30-150	-	150	-	-	-	-	-	-	-	-	-
	TWL30-155	6.13	155	-	-	-	-	-	-	-	-	-

AVAILABLE UPON REQUEST

HYDRAULIC TOOLS



# TORQUE WRENCH

Electric Pumps  
X1E1-PT  
700 bar



ELECTRIC 115V 60HZ  
TORQUE WRENCH PUMPS

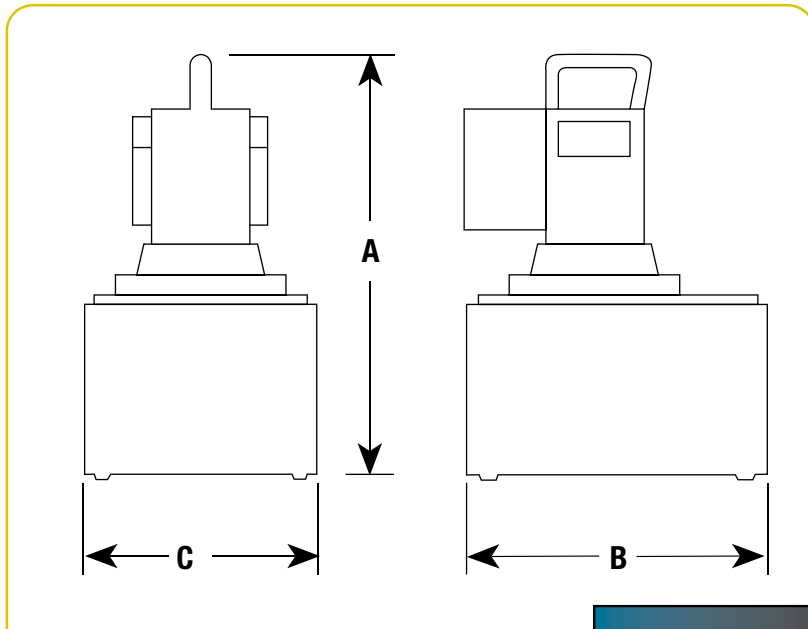
THE POWER TEAM X1E1-PT:  
SOLD FOR YEARS TO END CUSTOMERS.



**CAUTION: This Pump should not be used for lifting applications**

## FEATURES BENEFITS

- Base pump unit: Power Team PE55 series – the standard in the industry
- Two-speed high performance pump
- Retract side internal relief-valve protects tool
- 4-way 2-position solenoid valve standard
- Utilizes rugged electrical controls
- External adjustable pressure regulator
- Hand remote standard
- For single or double-acting tools



Pump Number	Description	Electric Motor	Oil Delivery per min.	Oil Reservoir (gal.)	A	B	C	Weight (lbs.)
					(in.)	(in.)	(in.)	
X1E1-PT	Electric-Powered Torque Wrench Pump	110V	55 in <sup>3</sup> @10,000 PSI	2.5	18	13	13 <sup>7</sup> / <sub>8</sub>	72.8
X1E2-PT	Electric-Powered Torque Wrench Pump	220V	55 in <sup>3</sup> @10,000 PSI	2.5	18	13	13 <sup>7</sup> / <sub>8</sub>	72.8

# TORQUE WRENCH

Air Pumps  
X1A1-PT  
700 bar



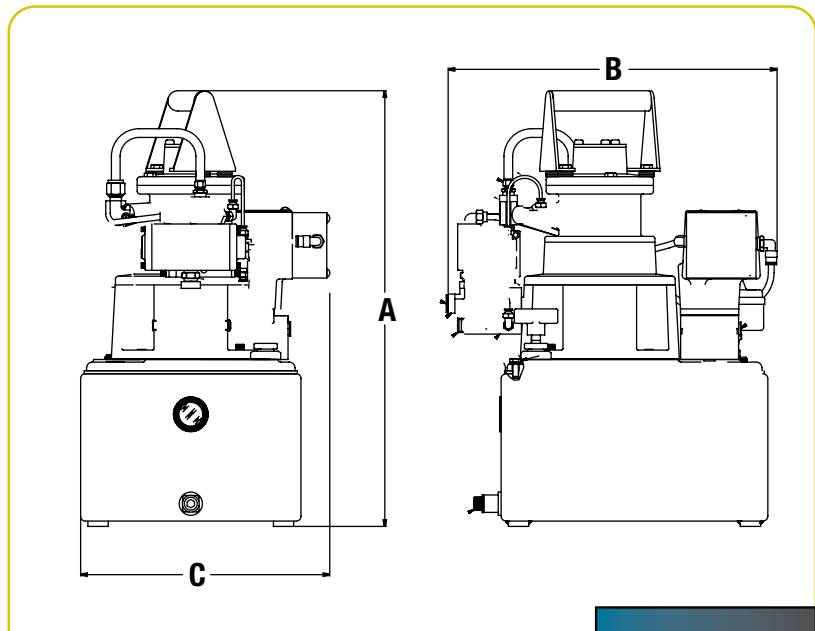
**CAUTION:** This Pump should not be used for lifting applications



**AIR-POWERED  
TORQUE WRENCH PUMPS**

**X1A1-PT FEATURES THE SAME RUGGED TIME-PROVEN DESIGN AS THE POWER TEAM X1E1-PT**

- Base pump unit, Power Team PA55 series – the standard in the industry
- Two-speed high performance pump
- Retract side internal relief-valve protects tool
- 4-way 2-position air valve standard
- External adjustable pressure regulator
- Hand remote standard



Pump Number	Description	Oil Delivery (cu. in.)	Oil Reservoir (gal.)	A (in.)	B (in.)	C (in.)	Weight (lbs.)
X1A1-PT	Air-Powered Torque Wrench Pump	55	2.5	18 <sup>3</sup> / <sub>4</sub>	18	10 <sup>3</sup> / <sub>4</sub>	75.0



# TORQUE WRENCH PUMP

Hydraulic/Electric  
PE30 Series

30 CU. IN./MIN MAX FLOW 10,000 PSI

## VANGUARD® ELECTRIC HYDRAULIC TORQUE WRENCH PUMPS

- Two-speed general duty pump
- External adjustable pressure regulator
- Retract side internal relief valve protects tool
- Hand remote
- Use for single or double-acting tools

**⚠ CAUTION:** This system should not be used for lifting applications.



Order Number	Oil Deliver per min.	Oil Reservoir (gal.)	Usable Oil (cu. in.)	Overall Width (in.)	Overall Length (in.)	Overall Height (in.)	Pump Weight w/Oil (lbs.)
<b>PE30TWP</b>							
<b>PE30TWP-E110*</b>	300 in3 @ 100 psi	1.25	280	13.82	13.13	16.62	68.0
<b>PE30TWP-E220*</b>	30 in3 @ 10,000 psi						

	Electric Motor	Electrical Data	Electrical Control
		4,000 rpm	
<b>PE30TWP</b>	1hp, 115V/60Hz, 13 amps		
<b>PE30TWP-E110</b>	110V/50Hz, 13 amps		
<b>PE30TWP-E220</b>	220V/50Hz, 7 amps		

\*CE Approved - designed for 50 Hz applications

# TORQUE WRENCH PUMP

Hydraulic/Electric  
PE55 Series

## VANGUARD® ELECTRIC HYDRAULIC TORQUE WRENCH PUMPS

- Two-speed high performance pump
- External adjustable pressure regulator
- Retract side internal relief valve protects tool
- Hand remote
- Use for single or double-acting tools
- Four-tool manifold (-4 model only) allows use of up to four tools simultaneously

56 CU. IN/MIN 10,000 PSI



PE55TWP



PE55TWP-4

**CAUTION:** This system should not be used for lifting applications.

Order Number	Oil Deliver per min.	Oil Reservoir (gal.)	Usable Oil (cu. in.)	Overall Width (in.)	Overall Length (in.)	Overall Height (in.)	Pump Weight w/Oil (lbs.)
PE55TWP	704 in <sup>3</sup> @ 0 psi	2.5	525	17.14	9.5	18.12	75.0
PE55TWP-E110*	56 in <sup>3</sup> @ 10,000 psi						
PE55TWP-E220*							
PE55TWP-4	704 in <sup>3</sup> @ 0 psi	2.5	525	18.49	9.5	19.15	78.0
PE55TWP-4-E110*	56 in <sup>3</sup> @ 10,000 psi						
PE55TWP-4-E220*							

	Electrical Data	
	Electric Motor	Electrical Control
PE55TWP	1-1/8 hp, 12000 rpm	Remote control with 20-foot cord
PE55TWP-E110	115V, 25 amps	
PE55TWP-E220	110V/50Hz, 25 amps 220V/50Hz, 13 amps	

\* CE Approved-designed for 50Hz. applications.



# TORQUE WRENCH PUMP

Air/Hydraulic  
PA55 SERIES

## AIR HYDRAULIC TORQUE WRENCH PUMP

- Use where air is the preferred source of power
- Powerful 3 hp motor starts under load
- External adjustable pressure regulator
- Retract side internal relief valve protects tool
- Use for single or double-acting tools

MAX FLOW 55 CU. IN./MIN.  
10,000 PSI

COUPLERS  
INCLUDED WITH  
PUMP

**CAUTION:** This system should not be used for lifting applications.



Pump Model	Oil Delivery per min.	Oil Reservoir (gal.)	Usable Oil (cu. in.)	Overall Width (in.)	Overall Length (in.)	Overall Height (in.)	Pump Weight w/Oil (lbs.)
<b>RWP55</b>	465 in <sup>3</sup> @ 100 psi 55 in <sup>3</sup> @ 10,000 psi	2.5	590	16.55	9.5	19.83	78.0
<b>RWP55-4</b> (4-tool manifold)	465 in <sup>3</sup> @ 100 psi 55 in <sup>3</sup> @ 10,000 psi	2.5	590	16.55	9.5	19.83	78.0



Air Motor		Motor Data	Air Control
3 hp, 50 cfm @ 80 psi			Pneumatic remote control with 25-foot cord

# NUT SPLITTERS

Hydraulic  
15 & 25 Ton Capacity

## HYDRAULIC NUT SPLITTERS – 15 & 25 TON CAPACITY

- “Dial-in” feature on HNS150 makes adjustment of splitter simple, without the worry of damaging the bolt
- Specially designed “tool steel” cutter blade penetrates the nut to the precise point where it cracks, stopping short of the bolt threads
- Nut splitter features a dramatically improved cutter blade with an 800% greater resistance to chipping and breaking over previous models
- All models feature a rugged one-piece

cutting frame coupled to a heavy-duty hydraulic cylinder

- Compact size allows you to use it in confined areas where it will deliver enough force to split the toughest “fused” or rusted-on grade 2H nuts
- Simply split nut on one side, spin nut splitter 1/2 turn and make second cut on opposite side; nut separates into halves for easy removal



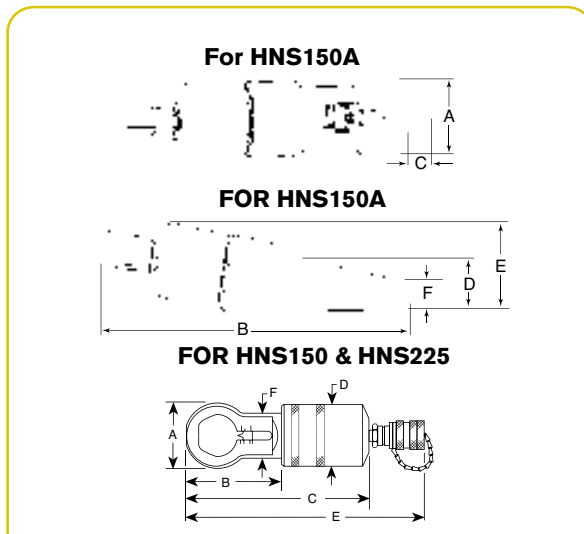
HNS150



HNS225



Align mark  
on cutter  
blade with  
scale.



### FOR HNS150 & HNS225

Tool Model	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Head Thickness (in.)	Replacement Blade	Tool Weight (lbs.)
HNS150	2.875	3.375	7.875	2.75	10.375	2.0625	1	308840	8.1
HNS150A	3.02	14.20	1.03	2.11	3.70	1.16	1	351985	15.8
HNS225	4.25	6	14.375	3.875	N/A	3.25	1.5	308022	29

### CAPACITIES

Tool Model	2 or A	Nut Grade 5 or B	8 or C	2H
HNS150	1/2 - 1-1/2 in. hex	1/2 - 1-1/2 in. hex	1/2 - 1-5/16 in. hex	1/2 - 1-1/8 in. hex
HNS150A	1/2 - 1-1/2 in. hex	1/2 - 1-1/2 in. hex	1/2 - 1-5/16 in. hex	1/2 - 1-1/8 in. hex
HNS225	1-1/8 - 2-1/4 in. hex	1-1/8 - 2-1/4 in. hex	1-1/8 - 2-1/16 in. hex	1-1/8 - 1-11/16 in. hex



# FLS

## HYDRAULIC FLANGE

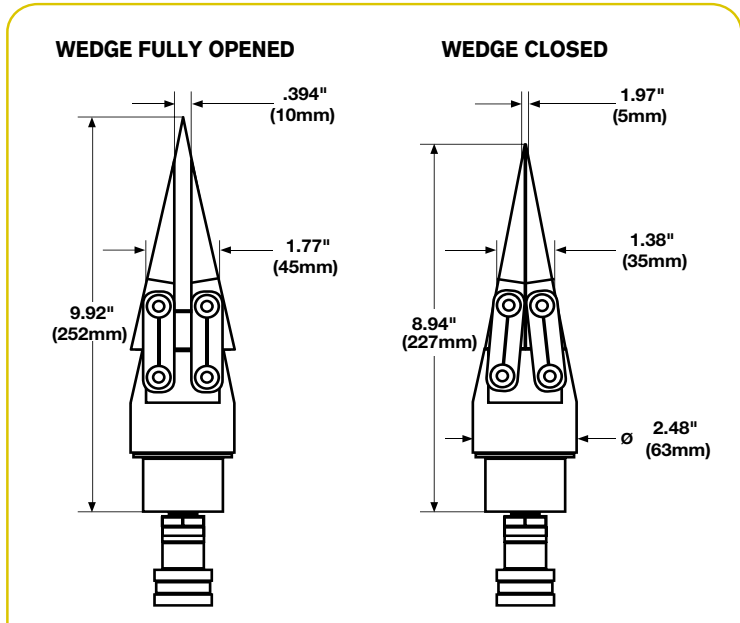
### SPREADER



**Basic FLS15 Unit With Serrated Shoes**

**FEATURES AND BENEFITS:**

- 33,000 Pound (15 Metric Ton) Wedge-Driven Spreader
- Jaws Fully Supported by Wedge for Excellent Durability
- Low Friction Provided by Heavy-Duty Extended-Life Lubricant
- Ideal for Flanges With Narrow Gaps - Only .2 Inches (5 mm) Required for Entry
- Very High Strength due to Special Alloy Used
- Compact and Lightweight Design - Only 9.9 Inches (252 mm) Long at a Weight of 7 Pounds (3.2 kg)
- Easy to use - Ergonomically Balanced Handle and Gripping Tape
- Suitable for the Offshore Environment due to Superior Corrosion Resistance
- Quick Adjustments for Various Tasks due to Interchangeable Shoes (Both Stepped and Serrated)
- Easy and Quick Maintenance - No Special Tools Required
- Includes female half coupler - mates to standard 9798 male half coupler.



Item Order Number	Maximum Spreading Force	Tip Clearance	Maximum Spread	Spreader Type	Oil Capacity	Weight	Maximum Operating Pressure
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<b>FLS15</b>	33,000 Pounds (15 Metric Tons)	.197 Inches (5 mm)	.397 Inches (10 mm)	Hydraulic	1 Cubic Inch (16 cc)	7 Pounds (3.2 kg)	10,000 psi (700 bar)
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## HYDRAULIC SPREADER FLS15

This hydraulic spreader operates using the integrated wedge concept. It is ideal for creating space for flange surface cleaning and repair, and for gasket replacement. The spreader is single-acting, and requires a hydraulic pump with a three-way valve for actuation. Maximum operating pressure is 10,000 psi (700 bar).



### SPREADING FORCE:

Maximum 33,000 pounds (15 metric tons) per tool at 10,000 psi (700 bar). It is recommended that the tools be used in pairs, providing a maximum combined force of 66,000 pounds (30 metric tons).

### TYPICAL APPLICATIONS:

- Pipe and flange repair
- Removing elbows
- Couplers - gasket and metal seal Replacement
- Heavy equipment maintenance

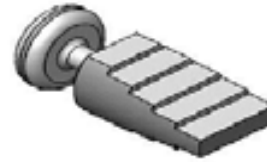
## “RECOMMENDED COMPONENTS FOR A COMPLETE HYDRAULIC CIRCUIT



Optional handle  
Part Number 2008410



Optional Stepped Shoe  
Part Number 2008083\*



Optional Stepped Block  
Part Number SB15 (1 pc)

Note: Part number is for one shoe only.  
Two shoes required per spreader. Two stepped shoes shown.

## WE RECOMMEND USE OF THE FOLLOWING POWER TEAM COMPONENTS:



Pump



Coupler



Hose



Gauge



Gauge Adapter

HYDRAULIC TOOLS



Description	Part Number (Americas & Asia)	Part Number (Europe)
Two Speed, Single-Acting Hand Pump	P19L	P19L
Hydraulic Hose Assembly	9764	9764E
Pressure Gauge	9040	9040E
Gauge Adapter	9670	9670
Coupler (male half coupler)	9798	9798

Note: Torque wrench tools use smaller couplers. Do not attempt to use torque wrench hoses with this tool.

# PIPE FLANGE

## Hydraulic Spreaders

5 & 10 Ton

HFS3A



- You'll never again have to resort to "hammer and chisel" methods that waste time and effort. Flange spreaders should be used in pairs to provide even spreading force.
- Standard 60° wedge is suitable for most flanges; 30° "thin" and 60° "blunt" wedges are optional.
- The HFS3A is designed for applications where total thickness of flanges and max. spread gap is 3" or less and flange bolts are a min. of 1/16" dia.
- Use HFS6A if total thickness of flanges and max. spread gap is 6" or less, and flange bolts are a min. of 3/16" dia.



350823



350822



350549



350550

Capacity (tons)	Order Number	Standard Wedge Type	Optional Wedges		Min. Flange Opening			Max. Flange Opening			Min. Combined Flange Opening	Pin Dia. (in.)	Weight (lbs.)
			30° Thin	60° Blunt	60° Std.	60° Blunt	30°	60° Std.	60° Blunt	30°			
5	<b>HFS3A</b>	60° Sharp	350823	350822	1/16"	1"	1/16"	1 1/4"	1 1/4"	23/32"	3 1/2"	1 1/16"	9.0
10	<b>HFS6A</b>	60° Sharp	350549	350550	1/16"	1 1/2"	1/16"	2"	2"	31/32"	6 9/16"	1 3/16"	18.0

# SPREADERS

Hydraulic  
1-1½ Ton



**HS2000**  
(Forged Steel)

## THE HYDRAULIC PRY BAR!

- Use to lift machines or as a clamp; spread concrete forms or rebar or perform straightening jobs.
- Conforms to ASME B30.1 standard.
- High strength alloy steel forged upper and lower jaws on HS2000.
- Jaws are spring-return; retract automatically when pressure is released.

**No. HS2000** – 1-ton capacity spreader. Full 2,000 lbs. capacity at 10,000 PSI with 4" spread. Can be "dead-ended" at

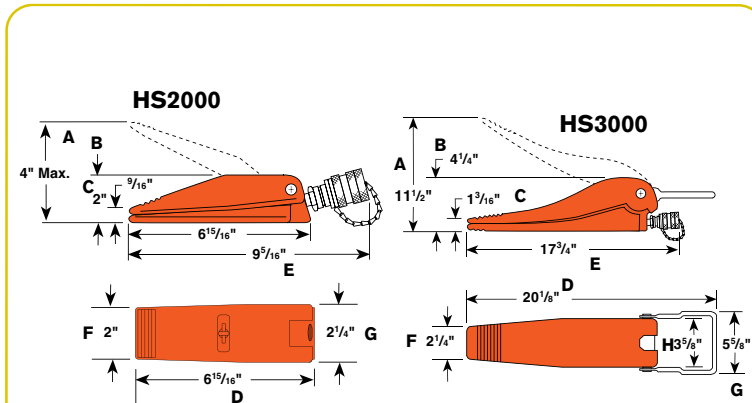
4" spread under full load. Needs only 9/16" clearance to engage jaws.

**No. HS3000** – 1½-ton capacity spreader. Full 3,000 lb. capacity at 10,000 psi. with 11½" spread. Greater than competitive units. Needs only 1¼" clearance to engage jaws. Can be "dead-ended" at 11½" spread at full load.

**HS3000**  
(High Grade Ductile Iron)



Tested to conform to ASME B30.1 standard



Cap. (tons)	Max. Spread (in.)	Order Number	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	Oil Capacity (cu. in.)	Min. Clearance Required (in.)	Weight (lbs.)
1	4	<b>HS2000</b>	4	2	9/16	6 15/16	9 9/16	2	2 1/4	—	.63	9/16	4.8
1½	11½	<b>HS3000</b>	11½	4¼	1 3/16	20 1/8	17 3/4	2¼	5 5/8	3 5/8	3.5	1¼	22

### HS2000 SPECIFICATIONS

Maximum rated capacity.....1 ton @ 10,000 psi  
 Maximum spread.....4"  
 Minimum clearance required.....9/16"  
 Cu. in. oil required ..... .63

### HS3000 SPECIFICATIONS

Maximum rated capacity..... 1½-ton @ 10,000 psi  
 Maximum spread..... 11½"  
 Minimum clearance required..... 1¼"  
 Cu. in. oil required ..... 3.50

HYDRAULIC TOOLS



# C-CLAMPS

## Hydraulic Accessories

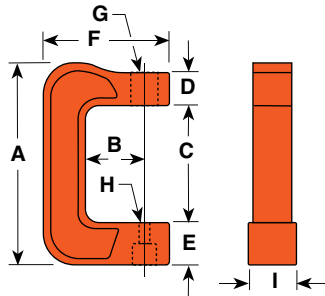
- In 5, 10 and 25 ton capacities. For use with Power Team general purpose single-acting series cylinders of comparable capacity.
- For clamping, pressing and bending. Ideal for welding and metal fabrication for fit-up of sheet or plate steel.
- Clamps withstand full rated capacity of the cylinders for which they are intended.
- To minimize the effects of off-center loading, the CC5, CC10 and CC25 should be used with the optional 350144 and 350145 swivel caps.



"C" CLAMPS

CC10

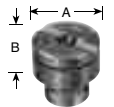
Items pictured are:  
CC10  
C104C  
201923



A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	I (in.)	Weight (lb.)	Cap. (tons)	Order Number (C-Clamp only)	Use With Cyl. No.
12 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	7 <sup>5</sup> / <sub>16</sub>	2	2 <sup>1</sup> / <sub>2</sub>	7 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> "-16 UN	<sup>7</sup> / <sub>8</sub>	3	25	5	CC5	C51C-C57C
15 <sup>7</sup> / <sub>8</sub>	6	9 <sup>13</sup> / <sub>16</sub>	2	3	10 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub> "-14 UNS	<sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	50	10	CC10	C101C-C1010C
21	6	13	3	4	12 <sup>9</sup> / <sub>16</sub>	3 <sup>5</sup> / <sub>16</sub> "-12 UNS	1 <sup>7</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>8</sub>	65	25	CC25	C251C-C2514C

### OPTIONAL ACCESSORIES FOR USE WITH CC5, CC10 & CC25 HYDRAULIC CLAMPS

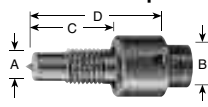
#### Swivel Caps



5/10 ton  
350144\*  
A-1<sup>3</sup>/<sub>8</sub>"  
B-3<sup>3</sup>/<sub>4</sub>"

25 ton  
350145  
A-2"  
B-1"

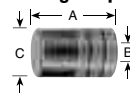
#### Threaded Adapters



10 ton  
38597  
A-1 - 8  
B-1 - 8  
C-3<sup>3</sup>/<sub>4</sub>"  
D-2"

25 ton  
38953  
A-1<sup>1</sup>/<sub>4</sub>-7  
B-1<sup>1</sup>/<sub>2</sub>-16  
C-2<sup>3</sup>/<sub>4</sub>"  
D-4<sup>3</sup>/<sub>8</sub>"

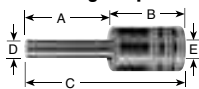
#### Pushing Adapters



10 ton  
28228\*\*  
A-2<sup>3</sup>/<sub>8</sub>"  
B-1 - 8  
C-1<sup>1</sup>/<sub>2</sub>"

25 ton  
28229\*\*  
A-2<sup>7</sup>/<sub>8</sub>"  
B-1<sup>1</sup>/<sub>4</sub>-7  
C-1<sup>3</sup>/<sub>4</sub>"

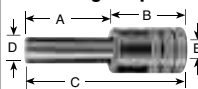
#### Pushing Adapters



10 ton  
201923\*\*  
A-3<sup>1</sup>/<sub>8</sub>"  
B-2<sup>1</sup>/<sub>4</sub>"  
C-5<sup>3</sup>/<sub>8</sub>"  
D-1<sup>1</sup>/<sub>2</sub>"  
E-1 - 8

25 ton  
34510\*\*  
A-3<sup>1</sup>/<sub>4</sub>"  
B-2<sup>5</sup>/<sub>8</sub>"  
C-5<sup>7</sup>/<sub>8</sub>"  
D-3<sup>3</sup>/<sub>4</sub>"  
E-1<sup>1</sup>/<sub>4</sub>-7

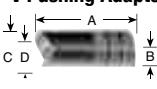
#### Pushing Adapters



10 ton  
201454\*\*  
A-3<sup>1</sup>/<sub>16</sub>"  
B-2<sup>5</sup>/<sub>8</sub>"  
C-5<sup>11</sup>/<sub>16</sub>"  
D-3<sup>3</sup>/<sub>4</sub>"  
E-1 - 8

25 ton  
34511\*\*  
A-3<sup>1</sup>/<sub>4</sub>"  
B-2<sup>5</sup>/<sub>8</sub>"  
C-5<sup>7</sup>/<sub>8</sub>"  
D-1"  
E-1<sup>1</sup>/<sub>4</sub>-7

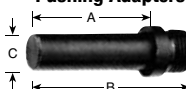
#### V Pushing Adapters



10 ton  
34806\*\*  
A-2<sup>5</sup>/<sub>8</sub>"  
B-1 - 8  
C-1<sup>1</sup>/<sub>2</sub>"  
D-1"

25 ton  
34807\*\*  
A-3<sup>1</sup>/<sub>8</sub>"  
B-1<sup>1</sup>/<sub>4</sub>-7  
C-1<sup>3</sup>/<sub>4</sub>"  
D-1<sup>1</sup>/<sub>4</sub>"

#### Pushing Adapters



5 ton  
309874\*  
A-2<sup>1</sup>/<sub>32</sub>"  
B-2<sup>25</sup>/<sub>32</sub>"  
C-5<sup>5</sup>/<sub>8</sub>"

\* May be used with CC5  
\*\* Must be used with a threaded adapter.



HYDRAULIC TOOLS

# TIRE REMOVING

## BB Series Tool 10 Ton Hydraulic

### TIRE REMOVING TOOL

- Made to fit into the pry bar pocket
- Hydraulic pressure does all the unseating.
- Lightweight and portable.
- P55 hydraulic hand pump and 9764 hose recommended to be used with BB1600.



HYDRAULIC TOOLS



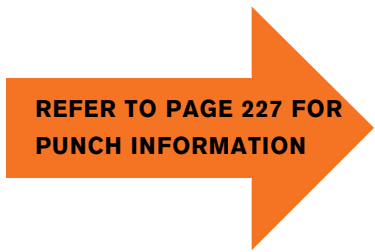
Tool Model	Rim Size (in.)	Cylinder Capacity (@10,000)	Stroke (in.)	Tool Weight (lbs.)
BB1600	25"-49"	11.2	4.0	22.5
BB1601	25"-49"	11.2	4.0	24.0
		Single-, two-, three-piece rims		



# HYDRAULIC PUNCHES

20 & 35 Ton

HP35



- Punch smooth, precise holes in seconds; much faster than drilling.
- Fully portable for construction, maintenance and service applications, or can be mounted on a workbench for production jobs. Has carrying handle for precise locating.
- Rugged, forged steel "C" frame for great strength and durability.
- Dual action, spring loaded stripper holds material during punching operation, strips material from punch on return. Scribe lines on stripper aid in locating the punch (HP 35 only).
- Double Acting prevents binding and speeds retraction (HP20 only).
- The PE172 electric/hydraulic pump is an ideal power source.

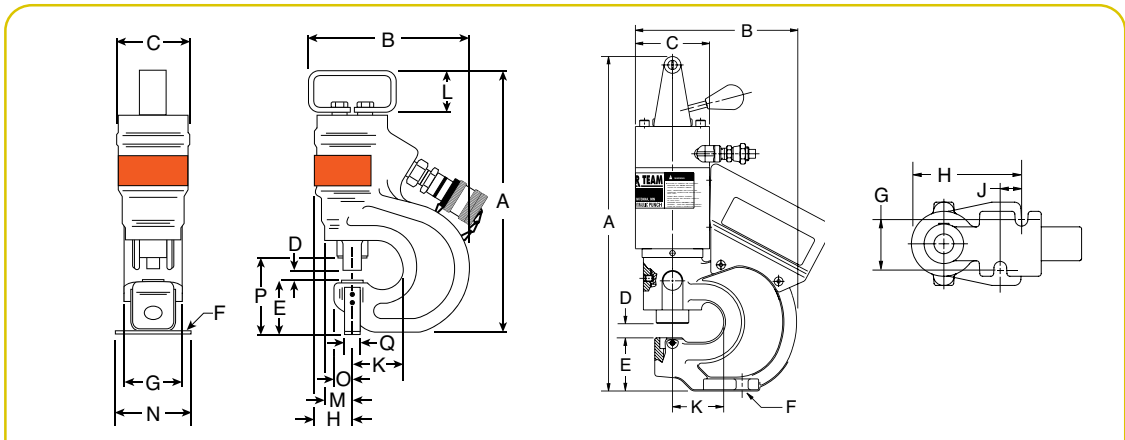
**No. HP35** – Punch only, includes metal case and die change tools. Wt., 42.5 lbs.

**No. HP35S** – Punch with punches and dies. Includes HP35 punch, metal case and 250459 punch/die set. Wt., 44.0 lbs.

**No. HP35P** – Punch set with pump. Same as HP35SP, but does not include punch/die set. Wt., 86.3 lbs. NOTE: Available in 220 volt, 50 Hz. Order with suffix "-220".

**No. HP35SP** – Punch set with pump. Includes HP35 punch, PE172 electric/hydraulic pump, 9756 hose, 9798 hose half coupler, 250459 punch/die set, metal case. Wt., 87.8 lbs. NOTE: 220 volt, 50 Hz. Order with suffix "-220".

**No. 250459** – Punch/die set for round holes. Includes one each: PD437 <sup>7</sup>/<sub>16</sub>" punch/die, PD562 <sup>9</sup>/<sub>16</sub>" punch/die, PD688 <sup>11</sup>/<sub>16</sub>" punch/die, PD812 <sup>13</sup>/<sub>16</sub>" punch/die. Wt., 1.5 lbs.



Order Cap. Number	Max. Oper. Press.	Max. Oil Cap.	Max. Material Thickness	Mtng. Holes															
				A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	K (in.)	L (in.)	M (in.)	N (in.)	O (in.)	P (in.)	Q (in.)
35	HP35	10,000 psi	4.6 cu.in.	13 <sup>3</sup> / <sub>4</sub>	9	3 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	3	1 <sup>13</sup> / <sub>16</sub>	—	2 <sup>19</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	7 <sup>7</sup> / <sub>8</sub>	4	3 <sup>3</sup> / <sub>4</sub>

**No. HP20** – Basic punch. Wt., 33 lbs.

**No. HP20S** – Punch frame with cylinder, valve, handle, two coupling nuts, plus five punch and die sets in 1/4", 5/16", 3/8", 7/16", and 17/32" dia. Wt., 35.0 lbs.

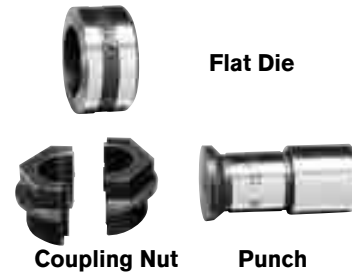
**No. HP20SP\*** – Complete punch set with PE102A pump (115V, 50/60 Hz), 9682 nipple, two 9792 female couplers and two 9793 male couplers. Also includes two 9758 10' hoses, 9680 coupling, and same punch and die sets as in HP20S (above). Tool is completely assembled and pre-filled with oil. In storage box. Wt., 83.0 lbs.



HP20



**Punch Set HP20SP**  
Includes the PE102A pump, hoses, couplers, punch and die sets in sizes 1/4", 5/16", 3/8", 7/16", and 17/32" diameter, with storage box.



Flat Die

Coupling Nut

Punch

**TYPICAL 20 TON STYLE TOOLING**

**PUNCH/DIE SETS FOR HP20 & HP35 HYDRAULIC PUNCHES**

For use with HP20 Hydraulic Punch

For use with HP35 Hyd. Punch

Punch Size (in.)	Punch Style	Punch No.	Flat Die No.	Bevel Die No.	Coupling Nut No.	Punch/w Flat Die Set	Punch/w Bevel Die Set	Punch Size (in.)	INCHES		MM	
									Hole Dia.	Bolt	Hole Dia.	Bolt
1/4	Round	251970	251983	--	252001	--	--	1/4	1/4	#10	6.3	--
5/16		251971	251984	--	252001	PD313	--	5/16	5/16	1/4	7.9	--
3/8		251972	251985	251996	252001	PD375	PD375B	3/8	3/8	5/16	9.5	M8
7/16		251973	251986	251997	252001	PD437	PD437B	7/16	7/16	3/8	11.2	M10
17/32		251974	251987	251998	252001	PD531	PD531B	17/32	17/32	7/16	13.5	M12
9/16		251975	251988	251999	252001	PD562	PD562B	9/16	9/16	1/2	14.3	--
11/16		251976	251989	--	252001	PD688	--	11/16	11/16	5/8	17.5	M16
25/32		251977	251990	--	252002	PD781	--	25/32	25/32	--	19.8	M18
13/16		251978	251991	--	252002	PD812	--	13/16	13/16	3/4	20.6	--
1/2		Square	251979	251992	--	252002	--	--				
17/32	251980		251993	--	252002	--	--					
1/4 x 3/4	251981		251994	--	252002	--	--					
3/8 x 3/4	Obround	251982	251995	--	252002	--	--					

**ACCESSORIES FOR HP20 HYDRAULIC PUNCH**

**No. HP20FS** – Optional foot switch mounted in foot switch guard. Supplied with 10 foot cord and male remote connector. Wt., 2.0 lbs.

**No. HP20HS** – Optional handswitch. Supplied with 10 foot cord and male remote connector. Wt., 2.0 lbs.

**No. 252000** – Optional coupling nut wrench. Makes punch/die changes easier without "rounding-off" coupling nuts. Wt., 0.5 lbs.



# TESTERS

## Hydraulic 50, 75 & 200 GPM



HT50A



HT200

### 75 AND 200 GPM IN-LINE HYDRAULIC TESTERS

- Accurately measure oil flow, pressure and temperature on in-plant equipment, forklifts, machine tools and more.
- Temperature and flow readings are in Metric and English, accurate to within  $\pm 2\%$  of full scale.
- Dual pressure gauges for high and low pressure readings; low pressure gauge is automatically shut off and protected as pressure rises beyond its maximum reading.
- Automatic pressure compensating

feature lets you increase flow without affecting pressure setting.

- Reverse flow through tester will not cause damage; replaceable safety disc ruptures if pressure exceeds upper limit.
- Solid state voltage regulator eliminates errors caused by voltage change during testing.

### 50 GPM IN-LINE HYDRAULIC TESTER

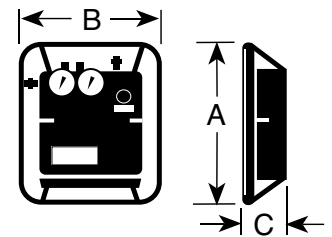
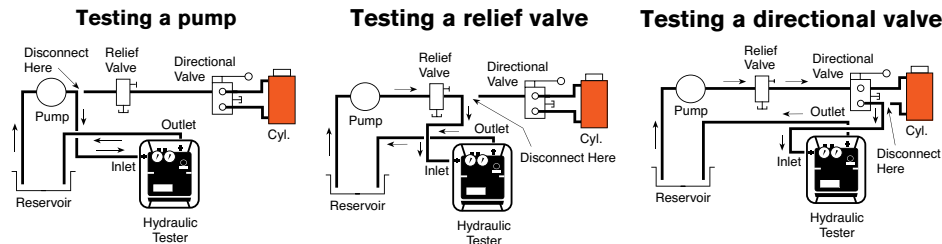
- Troubleshoots systems with capacities to 50 gpm at pressures less than 5,000 psi. Accurately measure oil flow to  $\pm 5\%$ , pressure to within 2% and tem-

perature readings within 1%.

- Pressure gauge is liquid filled to dampen system pulsation.

For more precise low pressure readings, an optional dual pressure gauge kit is available (see page 185).

**No. HT50A** – Hydraulic circuit tester with single liquid filled pressure gauge, 0-5,000 psi, 0-354 bar. Includes two adapter unions for  $\frac{3}{4}$ " male NPTF fittings. Wt., 37.0 lbs.



Order Number	Max Flow		Flow Ranges		Max. Oper. Pressure		Temp. Scale Range		Port Sizes	Weight		A in. (mm)	B in. (mm)	C in. (mm)
	(gpm)	Scale	gpm	L/min.	psi	BAR	°F	°C		lbs.	kg.			
HT50A	50	—	0-50	0-200	5,000	345	20-240	-6 to 114	1 <sup>1</sup> / <sub>16</sub> -12UN Female "O" Ring with Union Adapt. $\frac{3}{4}$ " Female NPTF	30.3	16.8	12 <sup>1</sup> / <sub>4</sub> (311)	6 <sup>1</sup> / <sub>4</sub> (159)	10 (255)
HT75	75	High Low	15-75 3-15	50-300 10-60	5,000	345	100-250	40-120	$\frac{3}{4}$ " NPT Swivel	18.2	8.6	13 <sup>3</sup> / <sub>4</sub> (349.25)	11 <sup>7</sup> / <sub>8</sub> (301.62)	5 <sup>3</sup> / <sub>4</sub> (146.05)
HT200	200	High Low	25-200 5-40	100-750 20-150	5,000	345	100-250	40-120	1 <sup>1</sup> / <sub>2</sub> ** SAE Split Flange	28.2	13.6	15 <sup>7</sup> / <sub>8</sub> (403.47)	13 <sup>1</sup> / <sub>4</sub> (336.55)	6 <sup>3</sup> / <sub>4</sub> (171.45)

For a complete listing of accessories for the HT series of hydraulic system testers, see pages 185-186.  
\*Not included, must be ordered separately, see page 186.



**307281**

**DUAL GAUGE CONVERSION KIT FOR 50 GPM TESTER.**

Provides more precise low pressure readings. Remove pressure gauge block and gauge from tester and replace it with this block. Install high pressure gauge from tester (0-5,000 psi) onto this new block.

**No. 307281** – Dual gauge conversion kit. Consists of gauge mounting block, pulsation dampener, thermal overload protector, low pressure gauge and gauge protector. Low pressure gauge calibrated 0-600 psi 0-42 bar. Wt. 1.0 lb.

**Auxiliary power cords for use with 75 and 200 gpm testers**



**37045**

**No. 37045** – Auxiliary power cord. For use with any 12 or 24 volt battery to remotely power tester. Wt. 0.1 lb.

CAUTION: For use on negative ground systems only.

- 9785**
- 9786**
- 9787**
- 9788**



**Hoses**

**No. 9785** – Hose, 3/4" I.D. x 3/4" NPTF male both ends. 10 ft. length. 2,250 psi working pressure. (2 req'd on 50 and 75 gpm testers). Wt., 0.7 lb.

The following hose assemblies are all 4-ply spiral wound wire, 10 ft. long. For use with 200 gpm testers.

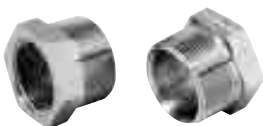
**No. 9786** – Hose, 1" I.D. x 1/4" NPT male both ends. Recommended max. flow 90 gpm, with a working pressure of 4,000 psi. Wt., 14.0 lbs.

**No. 9787** – Hose, 1 1/4" I.D. x 1/4" NPT male both ends. Recommended max. flow 140 gpm, with a working pressure of 3,000 psi. Wt., 21.0 lbs.

**No. 9788** – Hose, 1 1/2" I.D. x 1/2" NPT male both ends. Recommended max. flow 200 gpm, with a working pressure of 2,500 psi. Wt., 25.0 lbs.



**203264**



**Hose reducer bushings**

**No. 203264** – Consists of two hose reducer bushings, 1/4" NPT female x 1/2" NPT male end. Needed to adapt No. 9786 1" I.D. hose and No. 9787 1 1/4" I.D. hose to tester. Wt., 2.2 lbs.

# HYDRAULIC TESTER

## Service Accessories

Fittings/Adapters For The 200 GPM Hydraulic Tester

**ATTACH TO THE HT200 HYDRAULIC TESTER BY THE USE OF FLANGED-HEAD ADAPTERS AND SPLIT FLANGES, OR BY A SET OF FEMALE STRAIGHT ADAPTERS.**

### FLANGED HEAD ADAPTER

#### UNIONS AND SPLIT FLANGE KIT

**No. 203154** – Straight flange adapter. 1 1/2" flanged-head to 1 1/2" NPSM female swivel. Wt., 2.2 lbs.

**No. 203155** – 45° flange adapter. 1 1/2" flanged-head by 1 1/2" NPSM female swivel. Wt., 3.2 lbs.

**No. 203156** – 90° flange adapter. 1 1/2" flanged-head by 1 1/2" NPSM female swivel. Wt., 4.2 lbs.

**No. 203017** – Split flange kit. Consists of four flange halves and attaching bolts to permit use of 1 1/2"

I.D. flange adapters listed at left. Wt., 2.9 lbs.



### FEMALE STRAIGHT FLANGE ADAPTER

**No. 203003** – Consists of two female straight flange adapters with attaching bolts. When attached to inlet/outlet ports, allows connection of 1 1/2" NPT male hose ends to tester. Wt., 8.5 lbs.

### HYDRAULIC FITTINGS FOR USE WITH ALL TESTERS.

	<b>No. 16954</b> – 90° swivel adapter, 3/4" NPTF male x 3/4" NPSM female. Wt., 0.8 lb.		<b>No. 26073</b> – Swivel adapter, 3/4" NPTF female x 1/2" NPSM female. Wt., 0.3 lb.
	<b>No. 22041</b> – Coupler, 3/4" NPTF male x 3/4"-16 female ORB. Wt., 0.5 lb.		<b>No. 26074</b> – 45° swivel adapter, 3/4" NPSM female x 3/4" NPTF male. Wt., 0.6 lb.
	<b>No. 22042</b> – Coupler, 3/4"-16 female ORB x 1 1/16"-12 female 37° JIC. Wt., 0.4 lb.		<b>No. 26075</b> – Swivel adapter, 3/4" NPSM female x 3/4" NPTF female. Wt., 0.4 lb.
	<b>No. 22043</b> – Coupler, 3/4"-16 female ORB x 9/16"-18 female 37° JIC. Wt., 0.4 lb.		<b>No. 26076</b> – Swivel adapter, 3/4" NPTF male x 3/4" NPSM female. Wt., 0.4 lb.
	<b>No. 22044</b> – Coupler, 3/4"-16 female ORB x 1/2"-20 female 37° JIC. Wt., 0.4 lb.		<b>No. 26077</b> – Cap, 3/4" NPTF. Wt., 0.6 lb.
	<b>No. 27737</b> – Swivel adapter, 3/4"-16 male x 3/4" NPSM female. For use with No. 9785 hose, which has 3/4" NPTF male thread. Wt., 0.3 lb.		<b>No. 26078</b> – Plug, 3/4" NPTF. Wt., 0.3 lb.
	<b>No. 27287</b> – Coupler, 3/4"-16 UNF female ORB x 7/8"-14 UNF female 37° JIC. Wt., 0.4 lb.		<b>No. 26079</b> – Adapter, 3/4" NPTF female x 1 1/16"-12 male ORB. Wt., 0.4 lb.
	<b>No. 13449</b> – Cap, 1 1/16"-12 UNF female, 3/4" O.D. tube, 37° flare. Wt., 0.2 lb.		<b>No. 208402</b> – 45° union adapter, 7/8"-14 UNF male 37° JIC x 3/4" NPTF female. 3,000 psi working pressure. Wt., 0.6 lb.
	<b>No. 26068</b> – 45° swivel adapter, 1" NPTF male x 3/4" NPSM female. Wt., 0.8 lb.		<b>No. 208401</b> – 45° union adapter, 7/8"-14 UNF male 37° JIC x 3/4" NPTF female. Wt., 0.7 lb.
	<b>No. 26069</b> – Swivel adapter, 1" NPTF female x 3/4" NPSM female. Wt., 0.5 lb.		<b>No. 206753</b> – Coupler, 1 15/16"-12 UNF female 37° JIC x 3/4" NPTF female. Wt., 1.1 lbs.
	<b>No. 26070</b> – Adapter, 1" NPTF male x 3/4" NPTF female. Wt., 0.3 lb.		<b>No. 26666</b> – Connector, 1 5/16"-12 UNF male 37° JIC x 3/4" NPTF male. Wt., 0.4 lb.
	<b>No. 26071</b> – Service tee, 3/4" NPTF female (2) x 3/4" NPTF male. Wt., 0.9 lb.		<b>No. 28984</b> – Straight adapter, 3/4" NPTF female x 1 3/16"-12 UN male 37° JIC. Wt., 0.6 lb.
	<b>No. 26072</b> – Swivel adapter, 3/4" NPSM female x 1/2" NPTF male. Wt., 0.4 lb.		<b>No. 28985</b> – Straight adapter union, 1 3/16"-12 UN female 37° JIC x 3/4" NPTF female. Wt., 1.3 lbs.

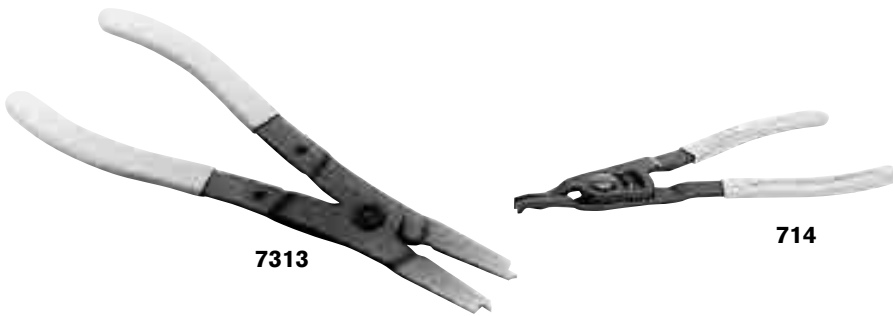
NOTE: The recommended maximum working pressure on the above fittings is 5,000 psi except the 208402.





# RETAINING RING PLIERS

Internal And External



7313

714

## HORSESHOE LOCK RING PLIER

- For removing horseshoe lock rings used on hydraulic brakes, differentials, etc. Plier is 8" long; max. spread:  $1\frac{5}{16}$ "

**No. 714** – Horseshoe lock ring plier. Wt., 0.4 lb.

**No. 7313** – External snap ring plier easily removes snap rings used to retain bearings on shafts. Max. spread:  $1\frac{7}{16}$ ".

## RETAINING RING PLIER KITS

- Choose from four sets; internal ring, external ring and convertible pliers for either internal or external rings.

**No. 7053K** – Replaceable tip kit. This versatile kit contains (1) internal and (1) external pliers with (8) tip sets. Two sets each: .038 dia. 90° bend, .047" dia. straight, .047" dia. 90° bend, .070" dia. straight. Recommended for  $\frac{1}{4}$ "–2" rings. Packaged in plastic storage case. Wt., 0.8 lb.

**No. 15702** – Replaceable tip kit (only) for No. 7053K.

**No. 7123K** – Convertible pliers kit. Contains **No. 1120** (.038" dia./straight tip) and **No. 1340** (.070" dia./straight tip). Each pliers "converts" to handle both internal and external rings. Packaged in a reusable plastic storage case. Wt., 0.8 lb.

**No. 7125K** – Convertible pliers kit. Contains **No. 1125** (.038" dia./45° bent tip) and **No. 1345** (.070" dia./45° bent tip). Each pliers "converts" to handle both internal and external rings. Packaged in a reusable plastic storage case. Wt., 0.8 lb.

**No. 7406K** – Professional pliers kit. Contains (6) retaining convertible pliers to handle both internal and external rings from  $\frac{1}{4}$ "–2". Includes straight and 90° off-set pliers with .038", .047", and .070" tip diameters. Includes Nos. 1120, 1131, 1320, 1329, 1340 and 1349. Packaged in an impact resistant

storage case. Wt., 2.0 lbs.

## REPLACEMENT TIPS FOR 7300 AND 7301 PLIERS

**No. 209201** – Replacement tips (pr.) for the 7300 and 7301 pliers.

Wt., 0.1 lb.

Fed. Spec.:GGG-P-480

**7053K**  
internal &  
external  
plier, 4  
sizes of  
tips.



7123K



7406K

## RETAINING RING PLIERS SELECTION GUIDE

Plier No	Tip Bend	Tip Size Dia. (in.)	For Int'l Rings* Bore Dia. (in.)	For External Rings* Shaft Dia. (in.)
0100	Str.	.038	.375 – 1.023	--
0200	Str.	.038	--	.250 – .875
0300	Str.	.070	1.062 – 1.750	--
0400	Str.	.070	--	.938 – 1.438
0500	Str.	.090	1.812 – 3.500	--
0600	Str.	.115	--	1.500 – 3.500
7300	Str.	.120	3.062 – 6.000	--
7301	Str.	.120	--	3.543 – 6.500
Convertible Pliers				
1120	Str.	.038	.375 – .562	.250 – .672
1125	45°	.038	.375 – .562	.250 – .672
1131	90°	.038	.375 – .562	.250 – .672
1320	Str.	.047	.625 – 1.023	.687 – .875
1329	90°	.047	.625 – 1.023	.687 – .875
1340	Str.	.070	1.062 – 1.750	.938 – 1.438
1345	45°	.070	1.062 – 1.750	.938 – 1.438
1349	90°	.070	1.062 – 1.750	.938 – 1.438

\*Capacities are shown for basic style rings.



External	Internal	Convertible
No. 0200	No. 7301	No. 0100
No. 0400	No. 0300	No. 7300
No. 0600	No. 0500	No. 1120
		No. 1320
		No. 1340
		No. 1125*
		No. 1345*
		No. 1131**
		No. 1329**
		No. 1349**

Fed. Spec.: GGG-P-480-E

\* 45° Angled Tips

\*\* 90° Angled Tips

**CAUTION:** Always wear safety goggles when using pliers

# SERVICE TOOLS

## Accessories

### PHOTO TACHOMETER

- Infrared light source, micro-processor controlled crystal display.
- Strong magnetic base is included.

Machine speed: It is critical for proper machining operations. Speeds too fast or too slow can shorten tool life and cause expensive, unnecessary machine downtime. This digital photo tach can take readings from revolving shafts on drill presses, grinders, lathes and other machines. It can also be used to check engine operation on in-plant vehicles like forklifts. The 3344 is accurate to within  $\pm 1$  rpm. The  $\frac{1}{32}$ " high liquid crystal display is easily visible even in high ambient light areas.

**No. 3344A** – Digital Photo Tachometer. With memory, photo probe assembly, magnetic base, 108" of reflective tape and plastic case. Wt., 4.5 lbs.

**No. 39811** – Replacement magnetic base assembly. Wt. 0.3 lb.

**No. 45329** – Replacement photo probe assembly. Wt., 0.4 lb.

**No. 204666** – Replacement retro-reflective indicator tape, 108" long x  $\frac{1}{2}$ " wide. Wt., 0.1 lb.

### SPECIFICATIONS

**Readout:** Liquid crystal display: 4 ( $1\frac{3}{32}$ " high) digits, low battery indicator, memory mode indicator, high and low RPM memory mode indicator.



3344A

**Range:** 200 to 9999 rpm. Accuracy:  $\pm .25\%$ ,  $\pm 1$  rpm. Update time:  $\frac{3}{4}$  second.

**Power switch:** Membrane switch (automatic shut-off after one minute of no signal input).

**Power source:** 9 volt alkaline battery. Light source: Infrared with 15-foot plug-in cable.

**Light holder assembly:** 30 lb. rated magnet; 2" dia. x  $\frac{1}{4}$ " high (4" high overall with post).

**Size:**  $3\frac{3}{8}$ " w, 6" h x  $1\frac{1}{2}$ " d.

**C case:**  $13\frac{1}{2}$ " w, 10" h x 4" d.

### HTS50 HEAVY-DUTY PIPE SEALANT WITH PTFE

- Seals new or damaged threads; resists water, chemicals and oils.
- Replaces conventional tape methods; forms a clog-free seal. Effective at 10,000 psi.

When "plumbing" a hydraulic system, there's now a better answer than tapes which can tear or shred, possibly plugging filters, valves or gauges. This compound combines the lubricating qualities of PTFE with a fast curing

anaerobic sealant. Seals all metal fittings, plugs and threaded joints quickly and easily. Cures to form a permanent seal which is inert to hydrocarbons, most acids, chemicals, solvents and steam. Allows adjustment up to 16 hours after assembly; cannot loosen under vibration. Prevents galling of mating parts upon disassembly. Withstands temperatures from 65° F to +375° F.

**No. HTS50** – Sealant, 50 ml. tube. Wt., 0.4 lb.



HTS50

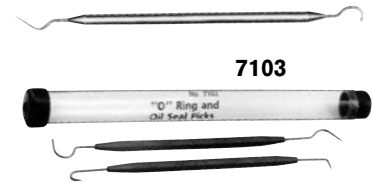
### "O" RING SEAL PICKS

Even the seemingly simple job of removing and installing "O" ring seals can be difficult without the aid of the proper tool. The 7312 all metal "O" ring seal pick does the job with ease. Two special picks in set No. 7103 get

right to the trouble areas.

**No. 7312** – "O" ring seal pick. Wt., 0.1 lb.

**No. 7103** – Set of two "O" ring seal picks. Wt., 0.1 lb.



7312

7103

### UNIVERSAL OUTSIDE THREAD CHASER

Restore damaged threads on shafts, housings, cages, etc., for re-assembly of matching parts. Eliminates need for thread-cutting equipment. Will not harm threads. V-pads and dies can be replaced. Cap.  $1\frac{1}{4}$ " to 5" O.D.

**No. 7402** – Thread chaser, complete (with 6 dies: threads per inch – 4, 5, 6, 7,  $7\frac{1}{2}$ , 8, 9, 10, 11,  $11\frac{1}{2}$ , 12, 14, 16, 18, 20 and 24). Wt., 4.5 lbs.

**No. 202817** – Metric die set (3 dies: mm per thread: 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, and 4). Wt., 0.2 lb.



7402

### MAGNETIC PICK-UP TOOL

Has permanent magnetic head for retrieving parts from otherwise inaccessible places.

**No. 7395** – Pick-up tool with pocket clip. 6" lg. Wt., 0.1 lb.

7395



MECHANICAL TOOLS

# WRENCHES, PRY BARS

## Spanners & Jimmy Bars

### RATCHETING CHAIN WRENCHES

Special head design allows you to turn wrench in either direction. Ratcheting action makes it possible to re-grip without removal. For parts of most any size and shape.

**No. 7400** – Chain wrench, cap. 1/2" to 4 3/4" O.D. (Capacity= 333 ft. lbs.) Wt., 2.0 lbs.

**No. 7401** – Chain wrench, cap. 3" to 6 3/4" O.D. (Capacity= 666 ft. lbs.) Wt., 5 lbs.

**No. 209199** – Replacement chain with pin for No. 7400 chain wrench (16" long).

**No. 209200** – Replacement chain with pin for No. 7401 chain wrench (24" long).

### ADJUSTABLE HOOK SPANNER WRENCH

Needed wherever turret adjusting nuts or packing gland nuts are used. Cap.: 1 1/2" to 4". Handle overall length: 19".

**No. 885** – Adjustable hook spanner wrench. Wt., 3.0 lbs.

### ADJUSTABLE HOOK SPANNER WRENCH

Replace many fixed-size wrenches... cover range of capacities needed to service industrial tractors and other equipment. Drop-forged jaws adjust to eleven positions for a capacity of 4 3/4" to 12 3/4" O.D. Handle overall length: 24"; diameter: 1".

**No. 7307** – Spanner wrench with one 3/8" thick jaw. Wt., 7.3 lbs.

**No. 7308** – Spanner wrench with two interchangeable jaws: one 3/8" thick, one 3/4" thick. Wt., 11.0 lbs.

### HEAVY-DUTY ADJUSTABLE SPANNER

Extra heavy construction. Has one 3/4" thick, eleven-position hook-jaw for a capacity of 4 3/4" to 12 3/4" O.D. Drop-forged. Handle length: 25 3/4"; handle dia.: 1 5/16".

**No. 7309** – Heavy duty adjustable hook spanner wrench. Wt., 13.3 lbs.

### ADJUSTABLE GLAND NUT WRENCH

Designed to handle 2" to 6" dia. hydraulic cylinder gland nuts on many construction vehicles. Fits 1/4" and 5/16" dia. pin holes; features a 3/4" sq. drive.

**No. 1266** – Adjustable gland nut wrench. Wt., 3.0 lbs.

**No. 204928** – Replacement pin for No. 1266

### PRY BARS

Our rolling head pry bars are an extremely popular and useful tool. Head may be used for almost any prying job since a great deal of leverage can be obtained. Long tapered body may be used as a lining-up drift.

**No. 7162** – Pry bar; 3/8" round, 6" long. Wt., 0.3 lb.

**No. 7163** – Pry bar; 7/16" round, 12" long. Wt., 0.6 lb.

**No. 7164** – Pry bar; 9/16" round, 16" long. Wt., 1.1 lbs.

**No. 7165** – Pry bar; 3/4" round, 18" long. Wt., 2.2 lbs.

### JIMMY BARS

Ideal for general lifting or prying. Heat treated chrome alloy steel to resist bending or breaking.

**No. 7166** – Jimmy bar; 5/8" round, 18" long. Wt., 1.4 lbs.

**No. 7167** – Jimmy bar; 3/4" round, 24" long. Wt., 2.5 lbs.

**No. 7168** – Jimmy bar; 7/8" round, 30" long. Wt., 4.3 lbs.

### "MAJOR PERSUADER" JIMMY BARS

Two big jimmy bars for big jobs. Forged from chrome alloy steel.

**No. 7420** – Jimmy bar; 7/8" round, 46" long. Wt., 7.5 lbs.

**No. 7421** – Jimmy bar; 1" round, 54" long. Wt., 11.3 lbs.



# PULLERS



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Page  
**PULLER BASICS...192-195**



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Page  
**POSI-LOCK® PULLERS...196-199**



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Page  
**MECHANICAL JAW PULLERS...200**



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Page  
**MECHANICAL BI-DIRECTONAL™ PULLERS...202**



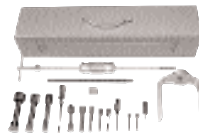
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Page  
**PULLING ATTACHMENTS...204**



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Page  
**PULLING SLIDE HAMMER...206**



---

Page  
**PULLER SETS...208**



---

Page  
**ADAPTERS...210**



---

Page  
**MANUAL PULLER SETS...212**



---

Page  
**...213**  
**PROTECTIVE BLANKETS**



---

Page  
**...214**  
**2/3 JAW PULLERS LOCK-JAW™**



---

Page  
**...215**  
**PULLER ACCESSORIES LOCK-JAW™**



---

Page  
**...216-217**  
**BI-DIRECTONAL™**



---

Page  
**...220**  
**HYDRAULIC PULLER SETS**



---

Page  
**...225**  
**BEARING PUSHER**



---

Page  
**...226**  
**UNIVERSAL PULLER**



---

Page  
**...228**  
**ROLLER BEARING PULLER/ INSTALLER**



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Page  
**...230**  
**BEARING, BUSHING, SEAL DRIVERS**





# PULLER

## SELECTION BASICS

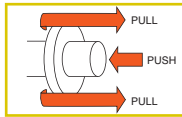
### 3 Basic Puller Scenarios

#### CONSIDERATIONS:

Determine the type of puller or puller combination.

- Which puller type is best suited for gripping the part?
- Is a combination of puller types required?
- Determine the reach needed for your particular pulling problem. The puller you select must have a reach equal or greater than the corresponding sizes of the part to be pulled.

- Determine the spread need. The spread is determined by the width of the part being pulled. The puller's spread should be greater than the width of the part to be pulled.
- Estimate the force needed to solve your pulling problem. A puller with the proper reach and spread will usually have enough capacity to remove the corresponding part. When in doubt, always use a puller with a larger capacity than what may be needed. Rusted parts or parts with a large area of resistance may need more pulling force.



# 1

## PULLING A GEAR, BEARING, WHEEL, PULLEY, ETC., FROM A SHAFT

In order to perform a proper pull, be certain that you firmly grip the gear, bearing, wheel, pulley, etc., and apply force to the shaft. Use a 3-jaw puller, instead of a 2-jaw, whenever possible for better gripping power and a more uniform displacement of pulling force.

#### RECOMMENDED TOOLS:



**Jaw-type pullers:** Either manual or hydraulic. For extra force and convenience, use a hydraulic puller. Both are available in 2 or 3 jaw configurations and are used to grip the outer circumference of a part or can be used with a pulling attachment, such as a bearing/pulley attachment. **(pages 200-201, 214-217, 226-227)**



**Bi-Directional™ Puller** can thread directly into a threaded part for easy and secure removal. Bi-Directional™ Pullers can be used in conjunction with bearing/pulley attachments which grip the part from behind. A wide assortment of male and female threaded adapters are available as well as metric adapters. **(pages 202-203, 218-219)**



**Slide hammers** are best suited for light-duty tasks. Slide hammers can be used for multiple pulling problems when combined pulling attachments. **(pages 206-207)**



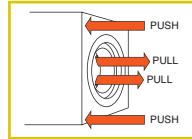
**Bearing/pulley attachments** provide a "knife-like" edge to get behind parts for added versatility and secure removal of parts. Great for parts that don't offer adequate grip with jaw-type pullers. **(page 205)**



**Adapters** Whether you need an adapter compatible with any number of threaded hole sizes, protecting the part to be pulled or for assisting the installation of a component; Power Team offers a variety of adapters to assist in the removal or installation of parts. **(pages 210-211)**



# 2



## PULLING INTERNAL BEARING RACES, RETAINER, SEALS, ETC.

By extending the narrow jaws of an internal pulling attachment through the center of the part to be pulled, a straight pull is insured, and damage to the housing is avoided. While parts within a "blind hole" in a housing do present a problem, Power Team has the internal pulling attachment or a combination of an internal pulling attachment and puller to handle the situation.

### RECOMMENDED TOOLS:



**Internal pulling attachments** have narrow jaws which extend through the center of the part to be pulled. They provide a straight pull and avoid damaging housings. Internal attachments feature adjustable jaws to fit various diameter parts. (page 204)

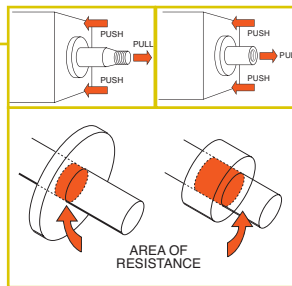
**Slide hammer with internal attachment** is ideal for removing parts from blind holes, especially where there is no housing to brace puller legs against. (pages 206-207)



**Bi-Directional™ Puller with internal attachment** is available in both manual and hydraulic versions. (pages 202-203)



# 3



## PULLING A PRESS-FITTED SHAFT FROM A HOUSING

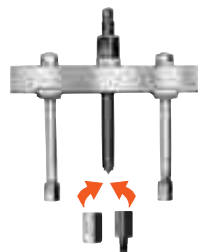
Note: Manual pullers require that the shaft being pulled is no more than twice the diameter of the puller's forcing screw. To determine the recommended tonnage for hydraulic pullers, multiply the diameter of the shaft to be pulled by ten. Example: For a 1" shaft, we recommend 10 tons of pulling force.

A shaft with a threaded end can be removed without damage by using one of our slide hammer, manual or hydraulic Bi-Directional™ Puller, in conjunction with the proper threaded adapter. Removal is easy! If the shaft to be removed has external threads, simply choose one of our female threaded adapters of proper size/thread. If the shaft has internal threads, simply choose the correct size male threaded adapter.

### RECOMMENDED TOOLS:



**Slide hammer puller** matched with a set of threaded adapters is a perfect tool for light duty pulling needs. (pages 206-207, 210-211)



**Bi-Directional™ Puller** matched with a set of threaded adapters make for an extra versatile pulling tool. (pages 202-203, 210-211, 218-219)



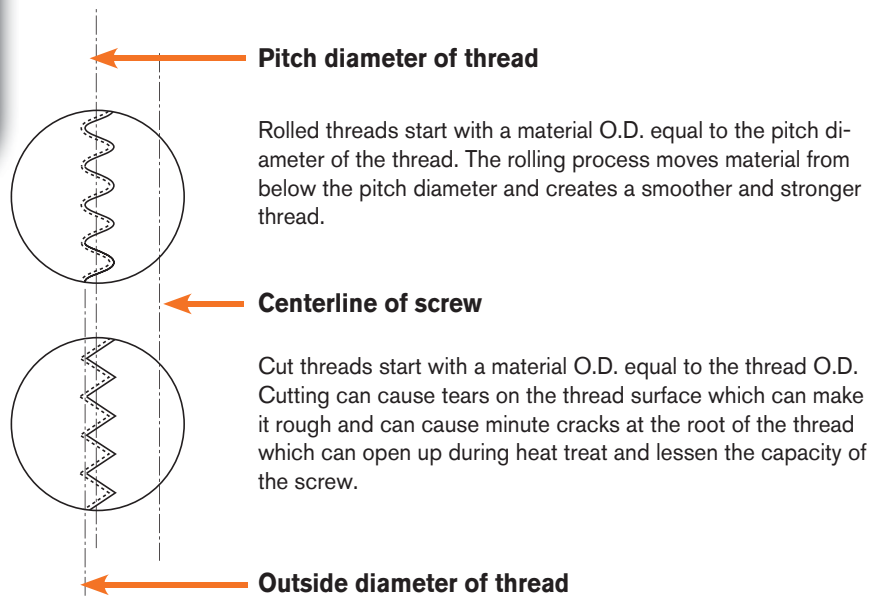
# PULLER SELECTION BASICS




## Choosing the Right Puller



Puller with a bearing pulling attachment was used to take a bearing off a utilities well pump motor.

### WHY OUR ROLLED PULLER THREADS ARE SUPERIOR:



Features	Benefits
 <ul style="list-style-type: none"> <li>Lock-Jaw™ feature on jaw-type pullers</li> <li>2-way, 3-way and 2/3-way combination pullers: <ul style="list-style-type: none"> <li>1 to 37 ton mechanical pullers</li> <li>5 to 50 ton hydraulic pullers</li> <li>2 1/8" (54 mm) to 27 5/8" (702 mm) reach</li> <li>3 1/4" (83 mm) to 44" (1,118 mm) of spread</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>The harder the pulling force, the tighter the jaws grip</li> <li>A wide variety of pullers; select a specific puller for a specific application or select one or more pullers for general applications</li> </ul>
 <ul style="list-style-type: none"> <li>Forged alloy steel jaws</li> <li>Machined puller jaw toes</li> </ul>	<ul style="list-style-type: none"> <li>Strongest possible part; the grain of the material follows the contour of the part.</li> <li>Larger and stronger pulling toe than most competitors</li> </ul>
 <ul style="list-style-type: none"> <li>Alloy steel heads (forged or flame cut)</li> <li>Rolled "V" threads</li> <li>Special coating on threads</li> </ul>	<ul style="list-style-type: none"> <li>Heat treated and designed for maximum strength</li> <li>Stronger and smoother than cut threads</li> <li>Resists corrosion, traps lubrication better than black oxide</li> </ul>
<ul style="list-style-type: none"> <li>Heat treated alloy steel cross bolts</li> </ul>	<ul style="list-style-type: none"> <li>Designed for maximum shear strength</li> </ul>

**NOTE:** The puller application photos shown in this catalog are shown without protective blankets for clarity of photos. Power Team strongly recommends you always make your pull with a protective device in place.



## Operator safety comes first!

Tons of force are being exerted with your Pulling System. You must respect this force, and observe safety precautions at all times.

### **⚠ CAUTION**

It is impossible to predict the exact force required for every pulling job: setup requirements and the size, shape and condition of the parts being pulled vary a great deal. In addition, the Power Team Pulling System is so versatile, it is possible that components in a pulling setup may have different tonnage ratings.

The lowest "capacity" component, then, determines the capacity of the setup. For example: When an accessory with a 1 ton capacity is used with a 10 ton capacity puller, the setup can be used only at a force of one ton.

These tools should be used only by trained personnel familiar with them.

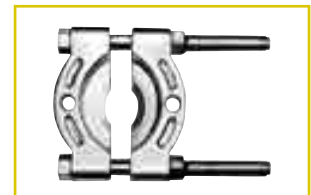
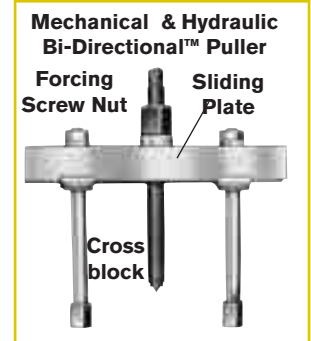
Always wear eye protection during a job since work parts, or the pulling tool itself, may break and parts may fly. It is recommended to cover the work with a Power Team Protective Blanket or use a shield while force is being applied. If you are at all unsure which tool or attachment to select, contact the Power Team factory.

### A few easy tips to remember:

- 1. Wear safety glasses at all times!** You have only one pair of eyes, so protect them from possible flying parts.
- 2. Keep your pulling tools in shape!** Clean and lubricate the puller's forcing screw frequently, from threads to tip, to assure long service life and proper operation.
- 3. Cover work with a protective blanket!** With high forces being exerted on the part being pulled, breakage may sometimes result. By covering the work with a protective blanket, the mechanic reduces the danger of flying parts.
- 4. Apply force gradually!** The component should give a little at a time. Do not try speed removal by using an impact wrench on the puller screw.
- 5. Use the right size puller!** If you have applied maximum force and the part has not moved, go to a larger capacity puller. Resist sledging.
- 6. Align puller legs and jaws!** Be sure the setup is rigid and that the puller is square with the work.
- 7. Mount puller so grip is tight!** Tighten the adjusting strap-bolts when using a jaw type puller. Always use a 3-jaw puller whenever possible. A 3-jaw puller gives a more secure grip, more even pulling power. Apply force gradually. — Never use an extension on a wrench. — Never use an impact wrench. — Never strike the end of the forcing screw. Always cover work with a protective blanket.
- 8. Do not couple puller legs!** The tonnage capacity of a Bi-Directional™ Puller is reduced when longer than standard legs are used, or when legs are in compression. The chance of breaking, bending or misaligning legs increases. Keep reach to a minimum. Use shortest legs possible to reach workpiece. Thread legs into workpiece, pulling attachment or adapters evenly. Uneven legs will cause greater pull or push on one side, creating a bending action which could cause damage to work piece or cause a leg to break. The sliding plates must always be on the opposite side of the cross block from the forcing screw nut or hydraulic cylinder. Always cover work with a protective blanket.

### Bearing pulling attachments:

These attachments may not withstand the full tonnage of the pullers with which they are used. The shape and condition of the part being pulled affects the tonnage at which the puller blocks and/or studs may bend or break. Always select the largest attachment which will fit the part to be pulled.



# PULLERS

Posi-Lock®



## FEATURES & BENEFITS

- Pullers are used whenever there are tough maintenance challenges: Railroads, Steel & Paper Mills, Mines, Oil Fields, Wind Farms, Factories, Power Plants, Shipyards, etc.
- Used to pull a variety of press fit parts from gears to wheels, pulleys to bearings, with minimum effort and without damaging the components or machinery.
- Conventional pullers use manual floppy jaws often require two operators to use and can be time-consuming and slow. Traditional jaws slip off work surfaces or snap back making the pulling operation frustrating and difficult.
- With Power Team - Posi Lock, pulling bearings is a one-man operation. The T-handle and "Safety Cage®" control the jaws at all times. This means that the opening, closing, locking and aligning of the jaws is all done automatically by simply turning the T-handle.
- Hydraulic pullers come with a lift plate for ease of transport and lifting. In addition, ram points of different sizes are available for a variety of applications
- Using a hydraulic puller system adds efficiency and eliminates unsafe practices such as hammering, heating, or prying components to be removed. The cylinder replaces the center bolt function of a manual puller.

## MECHANICAL



T-handle facilitates the opening, closing, locking and aligning of the jaws.

Steel frame guides jaws for fast setup, solid contact, and superior safety

Leverage up front for vise-like power and no slippage

Center bolt threads designed for less effort to apply high torque

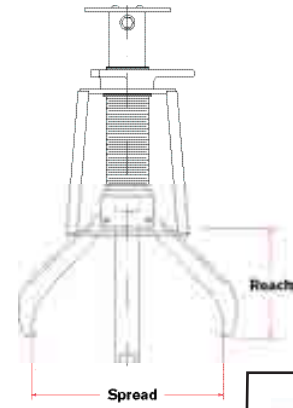
Slim tapered jaws allow for easier gripping and better access to tight spots

## HYDRAULIC



Posi Lock® is a registered trademark of Posi Lock Puller, Inc.





## ORDERING INFO

### MECHANICAL PULLERS

SPX Part #	Cap (Ton)	# of Jaws	Puller Weight (Lbs)	Reach in. (mm)	Spread in. (mm)	Accessories				
						Long Jaws			Tip Protector	Bolt Extender
						SPX Part #	Reach in. (mm)	Spread in. (mm)		
PT202	1	2	0.62	2.25 (57)	3.25 (82.6)					
PT204	2	2	3	4.00 (102)	5.00 (127)				PTP4	PTX4
PT206	6	2	7	6.00 (152)	7.00 (178)				PTP6	PTX6
PT208	12	2	11	8.00 (203)	12.00 (305)	PT11054 / PT11054L	9.8 (249) / 16.00 (406)	15.8 (401) / 22.00 (559)	PTP10	PTX10
PT210	14	2	14	9.67 (246)	15.00 (381)	PT11054L	16.00 (406)	22.00 (559)	PTP10	PTX10
PT213	25	2	30	12.00 (305)	18.00 (457)	PT11354L	20.00 (508)	30.00 (762)	PTP13 / PTP16	
PT216	35	2	50	14.00 (356)	25.00 (635)	PT11654L	26.00 (660)	38.00 (965)	PTP13 / PTP16	
PT102	1	3	0.68	2.25 (57)	3.25 (82.6)					
PT103	2	3	1.3	3.00 (76.2)	4.50 (114.3)					
PT104	5	3	4	4.00 (102)	5.00 (127)				PTP4	PTX4
PT106	10	3	8	6.00 (152)	7.00 (178)				PTP6	PTX6
PT108	17	3	13	8.00 (203)	12.00 (305)	PT11054 / PT11054L	9.8 (249) / 16.00 (406)	15.8 (401) / 22.00 (559)	PTP10	PTX10
PT110	20	3	18	9.67 (246)	15.00 (381)	PT11054L	16.00 (406)	22.00 (559)	PTP10	PTX10
PT113	30	3	40	12.00 (305)	18.00 (457)	PT11354L	20.00 (508)	30.00 (762)	PTP13 / PTP16	
PT116	40	3	65	14.00 (356)	25.00 (635)	PT11654L	26.00 (660)	38.00 (965)	PTP13 / PTP16	

### HYDRAULIC PULLERS

SPX Part #	Cap (Ton)	# of Jaws	Puller Weight (Lbs)	Reach in. (mm)	Spread in. (mm)	Accessories					
						Long Jaws			Leveling Arm Bracket Set	Hydraulic Lift Cart	Storage Transport Cart
						SPX Part #	Reach in. (mm)	Spread in. (mm)			
PTPHA-206	5	2	12.7	6.00 (152.4)	8.00 (203.2)						
PTPHA-208	10	2	14	8.00 (203)	12.00 (305)	PT11054 / PT11054L	9.8 (249) / 16.00 (406)	15.8 (401) / 22.00 (559)			
PTPHA-210	15	2	22	10.00 (254)	15.00 (381)	PTPH-11054L	16.00 (406)	22.00 (559)	PTPH-1210*		
PTPHA-213	25	2	47	12.00 (305)	18.00 (457)	PT11354L	20.00 (508)	30.00 (762)	PTPH-1213	PTPT-3050 PTPT-2550	
PTPHA-216	50	2	90	14.00 (356)	25.00 (635)	PTPH-21654L	26.00 (660)	38.00 (965)	PTPH-1216	PTPT-3050 PTPT-2550	
PTPHA-106	5	3	14.35	6.00 (152.4)	8.00 (203.2)						
PTPHA-108	10	3	16	8.00 (203)	12.00 (305)	PT11054 / PT11054L	9.8 (249) / 16.00 (406)	15.8 (401) / 22.00 (559)			
PTPHA-110	15	3	25	10.00 (254)	15.00 (381)	PTPH-11054L	16.00 (406)	22.00 (559)	PTPH-1110*		
PTPHA-113	25	3	55	12.00 (305)	18.00 (457)	PT11354L	20.00 (508)	30.00 (762)	PTPH-1113	PTPT-3050 PTPT-2550	
PTPHA-116	50	3	100	14.00 (356)	25.00 (635)	PTPH-11654L	26.00 (660)	38.00 (965)	PTPH-1116	PTPT-3050 PTPT-2550	

\* Brackets Only

Leveling Arm Bracket



# BUNDLES

## Posi-Lock® Hydraulic Bundles

### PTPHD-110



### PTPHB-110



### PTPHC-110



## HYDRAULIC BUNDLES †

SPX Part #	Cap (Ton)	# of Jaws	Cylinder Part #	Pump Part #	Gauge Part #	Hose Part #	T Adapter Part #	SPX Part #	Cap (Ton)	# of Jaws	Cylinder Part #	Pump Part #	Gauge Part #	Hose Part #	T Adapter Part #
PTPHB-206	5	2	C55C					PTPHB-106	5	3	C55C				
PTPHC-206	5	2	C55C	P19L	9040	9756	9670	PTPHC-106	5	3	C55C	P19L	9040	9756	9670
PTPHD-206	5	2	C55C	PE172	9040	9758	9670	PTPHD-106	5	3	C55C	PE172	9040	9758	9670
PTPHB-208	10	2	C106C					PTPHB-108	10	3	C106C				
PTPHC-208	10	2	C106C	P19L	9040	9756	9670	PTPHC-108	10	3	C106C	P19L	9040	9756	9670
PTPHD-208	10	2	C106C	PE172	9040	9758		PTPHD-108	10	3	C106C	PE172	9040	9758	9670
PTPHB-210	15	2	C1510C					PTPHB-110	15	3	C1510C				
PTPHC-210	15	2	C1510C	P59L	9040	9756	9670	PTPHC-110	15	3	C1510C	P59L	9040	9756	9670
PTPHD-210	15	2	C1510C	PE172	9040	9758	9670	PTPHD-110	15	3	C1510C	PE172	9040	9758	9670
PTPHB-213	25	2	C2514C					PTPHB-113	25	3	C2514C				
PTPHC-213	25	2	C2514C	P159	9040	9756	9670	PTPHC-113	25	3	C2514C	P159	9040	9756	9670
PTPHD-213	25	2	C2514C	PE172	9040	9758	9670	PTPHD-113	25	3	C2514C	PE172	9040	9758	9670
PTPHB-216	50	2	C5513C					PTPHB-116	50	3	C5513C				
PTPHC-216	50	2	C5513C	P460	9040	9756	9670	PTPHC-116	50	3	C5513C	P460	9040	9756	9670
PTPHD-216	50	2	C5513C	PE172	9040	9758	9670	PTPHD-116	50	3	C5513C	PE172	9040	9758	9670

† C & D Bundles will include 25599 fitting.



# HIGH TONNAGE

## Posi-Lock® Hydraulic Pullers

### PTPH-100TDA



#### Features and Benefits:

- 10,000 PSI electric 2 stage pump
- Remote jog switch with 10 foot cord
- 100 ton cylinder 10,000 PSI with spring return (10.25" stroke)
- Hydraulic-actuated lift cart extends puller from ground to a height of 5 feet.
- Jaws are hydraulically controlled with cylinders
- Multiple pushing adapters:
  - (1) 3.5" diameter X 9"
  - (1) 3.5" diameter X 19"
  - (1) 3.5" diameter X 29"
- Removable transport cart
- Puller can be used in horizontal and/or suspended vertical positions
- Adjustable jaw tips
- Adjustable jaw guides

### HIGH TONNAGE HYDRAULIC PULLERS

	SPX Part #	Cap (Ton)	# of Jaws	Puller Weight (lbs)	Reach in (mm)	Spread in (mm)	Jaw Tip Width in (mm)	Tip Clearance in (mm)	Tip Depth in (mm)
Single Acting	PTPH-102T	100	2	1700	50 (1270)	70 (1778)	1.25 (32)	3.5 (89)	3.5 (89)
	PTPH-100T	100	3	1950	50 (1270)	70 (1778)	1.25 (32)	3.5 (89)	3.5 (89)
	PTPH-123T	100	2/3	2000	50 (1270)	70 (1778)	1.25 (32)	3.5 (89)	3.5 (89)
	PTPH-102TV*	100	2	1800	50 (1270)	70 (1778)	1.25 (32)	3.5 (89)	3.5 (89)
Double Acting	PTPH-102TDA	100	2	1800	50 (1270)	70 (1778)	1.25 (32)	3.5 (89)	3.5 (89)
	PTPH-100TDA	100	3	2050	50 (1270)	70 (1778)	1.25 (32)	3.5 (89)	3.5 (89)
	PTPH-123TDA	100	2/3	2100	50 (1270)	70 (1778)	1.25 (32)	3.5 (89)	3.5 (89)
	PTPH-102DATV*	100	2	1800	50 (1270)	70 (1778)	1.25 (32)	3.5 (89)	3.5 (89)
	PTPH-200T**	200	4	4150	48 (1219)	71 (1778)	1.25 (32)	3.5 (89)	3.5 (89)

\* Vertical Puller.  
\*\* Contact Factory for 200T Hydraulic Puller.

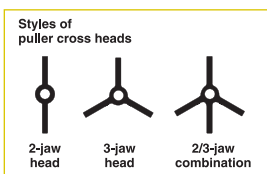


# JAW PULLERS

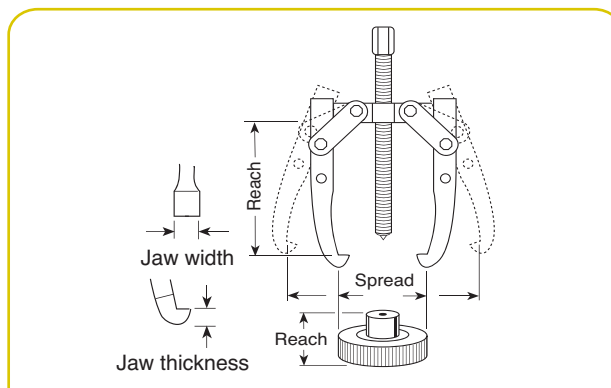
## Mechanical

### 2 & 3 Jaw Pullers

**Choosing the right size puller:** Compare the “reach” and “spread” of the pulling job with that of the pullers listed. The puller selected must have dimensions greater than those of the job.



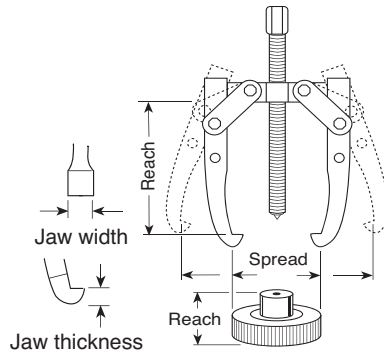
- Lock-Jaw™ feature on all pullers. The harder the pull, the tighter the grip for removing gears, bearings and countless other press fitted parts.
- 2-way, 3-way and 2/3 way combination pullers make it easy to select a specific puller for a specific application.
- Forged from high quality steel, heat treated and subjected to rigorous tests which exceed rated puller capacity.
- Meets Fed. Spec.: GGG-P-00781-D















Order No.	Max.		Screw Size (in.)	Jaw		Capacity, Style and Weight
	Reach (in.)	Spread (in.)		Thickness (in.)	Width (in.)	
1020	2 1/8	3 1/4	5/16-24 x 3 7/8	5/64	1/4	1-Ton, 2-Jaw; 5 oz.
1021	2 1/8	3 1/4	5/16-24 x 3 7/8	5/64	1/4	1-Ton, 3-Jaw; 8 oz.
1022	3 3/8	4	3/8-24 x 4 7/8	Upper 3/16 Lower 1/8	Upper 1/4 Lower 1/2	2-ton, 2-Jaw; 14 oz. (Reversible Jaws)
1023	3 3/8	4 3/4	3/8-24 x 4 7/8	Upper 3/16 Lower 1/8	Upper 1/4 Lower 1/2	2-ton, 2/3-Jaw; 1 lb., 5 oz. (Reversible Jaws)
1024	3 1/4	6	9/16-20 x 6 15/16	Upper 5/16 Lower 1/4	Upper 3/8 Lower 3/4	5-Ton, 2-Jaw; 1 lb., 12 oz. (Reversible Jaws)
1026	3 1/4	7	9/16-20 x 6 15/16	Upper 5/16 Lower 1/4	Upper 3/8 Lower 3/4	5-Ton, 2/3-Jaw; 2 lbs., 12 oz. (Reversible Jaws)



- Alloy steel heads are forged for maximum strength.
- Forcing screw threads are rolled, not cut. This process creates a smoother and stronger thread.
- Heat treated alloy steel cross bolts for maximum shear strength.
- Machined puller jaw toes produce larger and stronger pulling toes.



	Order No.	Max. Reach (in.)	Max. Spread (in.)	Screw Size (in.)	Jaw Thickness (in.)	Jaw Width (in.)	Capacity, Style and Weight
 	<b>1025</b>	5 1/2	6	9/16-20 x 6 15/16	Upper 5/16 Lower 1/4	Upper 3/8 Lower 3/4	5-Ton, Long 2-Jaw; 2 lbs. (Reversible Jaws)
	<b>1027</b>	5 1/2	7	9/16-20 x 6 15/16	Upper 5/16 Lower 1/4	Upper 3/8 Lower 3/4	5-Ton, Long 2/3-Jaw; 3 lbs., 10 oz. (Rev. Jaws)
 	<b>1035</b>	5	9	11/16-18 x 9	Upper 5/16 Lower 11/32	Upper 1 Lower 1	7-Ton, 2-Jaw; 4 lbs., 8 oz. (Reversible Jaws)
	<b>1037</b>	5	10 1/2	11/16-18 x 9	Upper 5/16 Lower 11/32	Upper 1 Lower 1	7-Ton, 2/3-Jaw; 6 lbs., 2 oz. (Rev. Jaws)
 	<b>1036</b>	8 3/4	9 1/2	11/16-18 x 9	11/32	1	7-Ton, Long 2-Jaw; 5 lbs., 6 oz.
	<b>1038</b>	8 3/4	11	11/16-18 x 9	11/32	1	7-Ton, Long 2/3-Jaw; 8 lbs., 2 oz.
 	<b>1039</b>	11	12	13/16-16 x 12	9/16	1	13-Ton, 2-Jaw; 10 lbs., 13 oz.
	<b>1040</b>	15 1/4	15 1/2	13/16-16 x 12	9/16	1	13-Ton, Long 2-Jaw; 13 lbs.
	<b>1041</b>	11	12	13/16-16 x 12	9/16	1	13-Ton, 2/3-Jaw; 16 lbs., 4 oz.
	<b>1042</b>	15 1/4	17	13/16-16 x 12	9/16	1	13-Ton, Long 2/3-Jaw; 18 lbs., 12 oz.
 	<b>1043</b>	14 1/2	14	1-14 x 13 1/2"	9/16	1	17 1/2-Ton, Long 2-Jaw; 23 lbs.
	<b>1044</b>	18 3/4	16	1-14 x 13 1/2" lg.	13/16	1 9/32	17 1/2-Ton, Long 2-Jaw; 26 lbs.
	<b>1045</b>	14 1/2	14	1-14 x 13 1/2"	13/16	1 9/32	17 1/2-Ton, 3-Jaw; 33 lbs.
	<b>1046</b>	18 3/4	16	1-14 x 13 1/2"	13/16	1 9/32	17 1/2-Ton, Long 3-Jaw; 37 lbs.
 	<b>1048</b>	22 1/4	20	1 1/4-12 x 16 5/8	1 1/16	1 1/2	25-Ton, Long 2-Jaw; 42 lbs., 12 oz.
	<b>1050</b>	22 1/4	20	1 1/4-12 x 16 5/8	1 1/16	1 1/2	25-Ton, Long 3-Jaw; 60 lbs.



For puller piece part identification, order Power Team parts catalog PC97



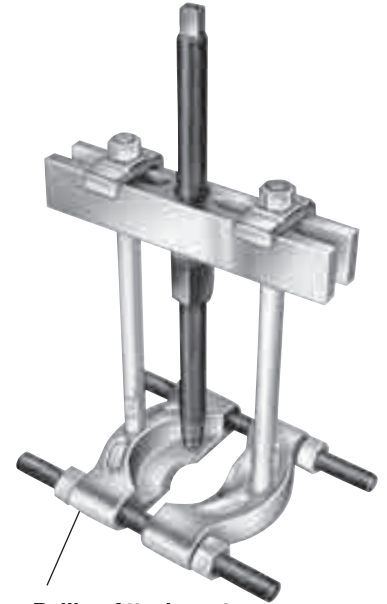
# BI-DIRECTIONAL™

## Mechanical

10, 17½, & 30 Ton Cap.

**Selection and capacity rating** – Each Bi-Directional™ Puller specified tonnage “capacity” is determined using its standard legs in tension. Using longer legs, or a setup in which the legs are in compression, will reduce the “capacity.” Always select the largest “capacity” puller and the shortest legs that will fit the job.

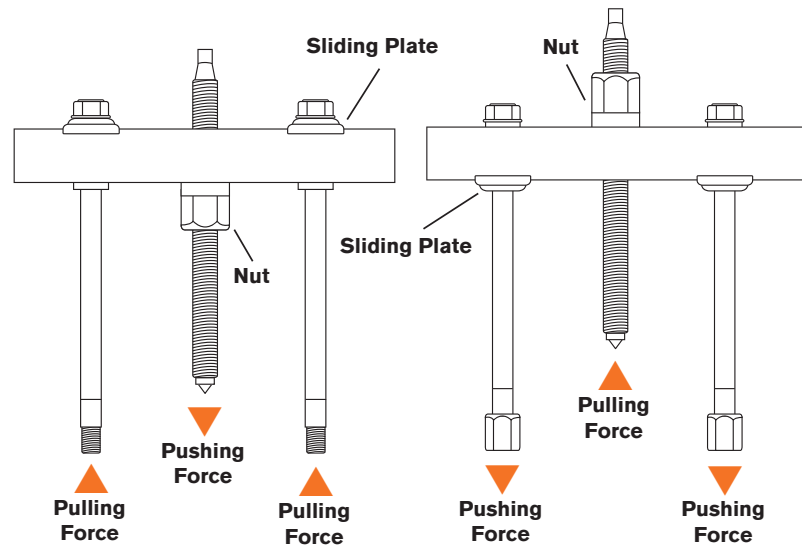
- Can apply a pushing or pulling force, depending on how the puller is set up.
- Optional leg kits adapt your Bi-Directional™ Puller to extra long or extra short reach.
- A wide variety of threaded adapters, bearing pulling attachments and internal pulling attachments can be used in combination with our Bi-Directional™ Puller.
- Meets Fed. Spec.: GGG-P-00781-D



Bearing Pulling Attachment

### ASSEMBLING THE TOOL TO APPLY PUSHING OR PULLING FORCE:

1. Determine if you want the tool's forcing screw to push or pull.
2. To exert pushing force, the forcing nut is installed beneath the cross block, as shown on left.
3. To cause the forcing screw to pull, the forcing nut is placed on top of the cross block.
4. The sliding plates must always be placed on the opposite side of the cross block from the forcing nut.



#### Available Adapters (page 206-207)



Male/Female



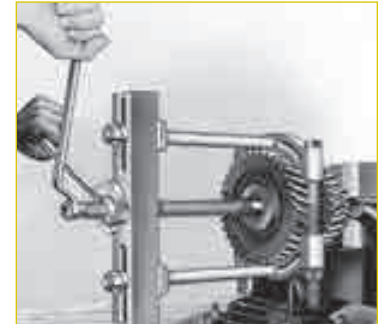
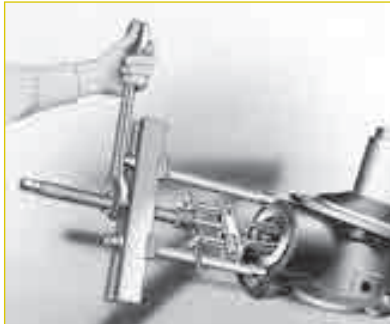
Step Plate

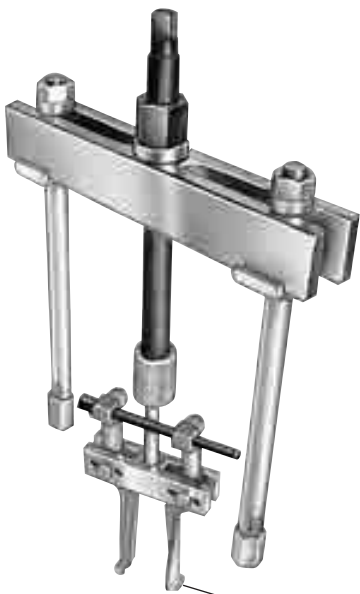


Shaft Protector



Female





Internal Pulling Attachment

**No. 927 – 10-Ton Capacity** can be used with No. 1123 bearing pulling attachment or No. 679 pulley pulling attachment. May also be used with Nos. 1150, 1151, 1152, or 1153 internal pulling attachments.

**No. 938 – 17½-Ton Capacity** can be used with Nos. 1124 and 1130 bearing pulling attachments or Nos. 679 and 680 pulley pulling attachments. May also be used with Nos. 1150, 1151, 1153, 1165, or 1166 internal pulling attachments.

**No. 939 – 30-Ton Capacity** can be used with Nos. 1126 and 1127 bearing pulling attachments or No. 680 pulley pulling attachment (two 8012 adapters are required to connect 680 to puller). Can be used with No. 1165 internal pulling attachment.

927		Max. Reach	Max. Spread	Screw	Size	Notes / Weight
		8 1/4"	2 1/8" – 7 1/4"	3/4"–16 x 12"		1/2" of forcing screw tip end is threaded 5/8"–18. No. 1100 legs and No. 24827 leg ends included. Wt., 7 lbs.
<b>Order No.</b>	<b>Leg Length &amp; Wt.</b>					
1103	4 3/4" 1 lb.					
1100	6 3/4" 1 lb., 8 oz.					
<b>Order No.</b>	<b>Leg Length &amp; Wt.</b>					
1102	11 3/4" 2 lbs., 4 oz.					
1101	15 3/4" 3 lbs., 4 oz.					

Extra Legs (pair) for No. 927 Bi-Directional Puller (Reach equals leg length plus 1 1/2" with leg end caps.)

938		Max. Reach	Max. Spread	Screw	Size	Notes / Weight
		11 1/8"	3 1/8" – 11 3/4"	1"–14 x 13 1/4"		Leg ends threaded 5/8"–18. No. 1106 legs and No. 24827 leg ends included. Wt., 20 lbs., 12 oz.
<b>Order No.</b>	<b>Leg Length &amp; Wt.</b>					
1107	4.5" 2 lbs., 8 oz.					
1106	9 1/2" 4 lbs., 8 oz.					
1104	16 1/2" 6 lbs., 8 oz.					
<b>Order No.</b>	<b>Leg Length &amp; Wt.</b>					
1105	22 1/2" 9 lbs.					
1108	30" 11 1/2 lbs.					

Extra Legs (pair) for No. 938 Bi-Directional Puller (Reach equals leg length plus 2" with leg end caps.)

939		Max. Reach	Max. Spread	Screw	Size	Notes / Weight
		10 1/2"	7" – 16 1/4"	1 1/2"–12 x 17 1/4"		Leg ends threaded 1"–14. No. 1109 legs and No. 28390 leg ends included. Wt., 44 lbs.
<b>Order No.</b>	<b>Leg Length &amp; Wt.</b>					
1109	8" 8 lbs.					
1110	18" 15 lbs.					
<b>Order No.</b>	<b>Leg Length &amp; Wt.</b>					
1111	28" 22 lbs.					

Extra Legs (pair) for No. 939 Bi-Directional Puller (Reach equals leg length plus 2 5/8" with leg end caps.)

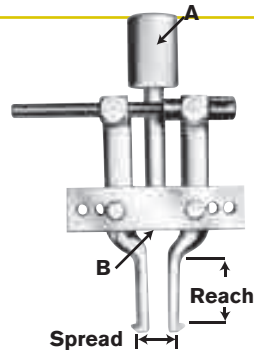


# PULLER ATTACHMENTS

1-1/2" - 9" Jaw Spreads

## RECOMMENDED FOR THE REMOVAL OF BEARINGS, BEARING CUPS, BUSHINGS AND OIL SEALS.

- Handles internal pulling jobs, such as, bearing/bearing cup removal, bushing removal, oil seals, etc.
- Remove hard to get at parts easily and without damage!
- Use with corresponding Power Team Slide Hammer or Bi-Directional™ Puller
- Adjustable jaws fit various diameters
- Meets Fed. Spec.: GGG-P-00781-D



**CAUTION** – These attachments may not withstand the full tonnage of the pullers they are used with. The shape and condition of the part being pulled affects the tonnage at which the jaws may slip off. Always select the largest attachment which will fit behind the part being pulled.

Order No.	Jaw		A (in. - thd.)	B (in. - thd.)	Wt. (lbs.)	Application
	Spread (in.)	Reach (in.)				
1153	1½-5	2⅞	1-14	⅝-18	4 lbs., 4 oz.	Use with Nos. 927 and 938 Bi-Directional™ Puller,
1150	1½-6	4	1-14	⅝-18	4 lbs., 4 oz.	
1151	1½-7	5¼	1-14	⅝-18	4 lbs., 8 oz.	
1152	1½-6	4	-	⅝-18	3 lbs., 8 oz.	Use with Nos. 927 and 938 Bi-Directional™, 1155 and 1156 slide hammer pullers, or 24832 and 24833 puller screw.
1154	1½-6	4	1-8	⅝-18	4 lbs., 8 oz.	Use with No. PPH17.
1165	3-9	5⅞	1½-12	1-14	13 lbs., 8 oz.	Use with No. 939 Bi-Directional™ Puller.
1166	3-9	5⅞	1¼-7	1-14	13 lbs., 8 oz.	Use with No. PPH30.

Order No.	Length	Puller Screws Threads	Wt. (lbs.)	Application
24832	13¾ long	⅝-18	1 lb.	Use with Nos. 1150, 1151, 1152, and 1153. Acts as a regular forcing screw when threaded directly into block of pulling attachment.
24833	5½ long	⅝-18	6 oz.	Use with Nos. 1150, 1152, and 1153. Acts as a regular forcing screw when threaded directly into block of pulling attachment.



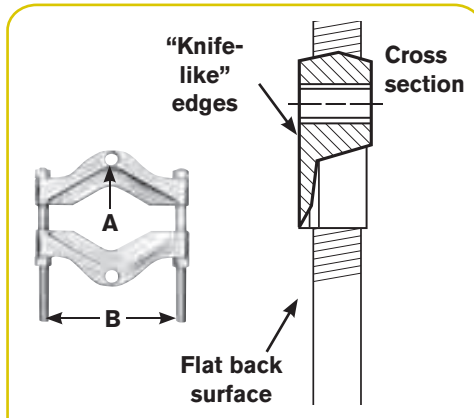
# PULLER ATTACHMENTS

Bearing & Pulley

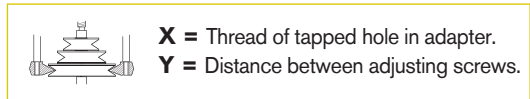


**USED WHERE SPACE DOES NOT PERMIT HOOKING PULLER JAWS DIRECTLY ON PART TO BE PULLED.**

- “Knife-like” edges fit behind bearings and other hard-to-grip parts for easy removal, even where clearance is limited.
- Usable with both Lock-Jaw™ jaw type pullers and Bi-Directional™.
- All puller blocks are made from forged alloy steel
- Meets Fed. Spec.: GGG-P-00781-D



Attachment clamps down into V-groove to distribute load. Use with Lock-Jaw™ pullers or Bi-Directional™ Pullers.

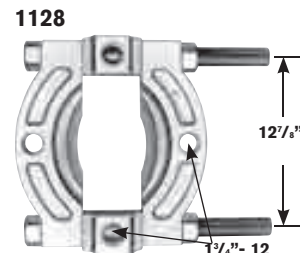


Order No.	Max. Spread (in.)	Min. Spread (in.)	A (in.)	B (in.)	Wt.	Application - (Use with Puller Nos.)
1121	1 <sup>5</sup> / <sub>16</sub> "	1/4"	5/16"-18	1 <sup>11</sup> / <sub>16</sub> "	12 oz.	1020, 1022, and 1023.
1122	2"	1/8"	3/8"-16	2 <sup>7</sup> / <sub>16</sub> "	1 lb., 4 oz.	1024, 1025, 1026, 1027, 7392 and 7393.
1123	4 <sup>5</sup> / <sub>8</sub> "	1/2"	5/8"-18	4 <sup>3</sup> / <sub>8</sub> "	5 lbs.	1035, 1036, 1037, 1038, and 927.
1124	5 <sup>3</sup> / <sub>4</sub> "	1/2"	5/8"-18	6"	12 lbs.	1035, 1040, 1041, 1042, PH172, PPH17, and 938.
1126	8"	5/8"	1"-14	7 <sup>1</sup> / <sub>2</sub> "	19 lbs., 12 oz.	1043, and 939.
1127	13 <sup>3</sup> / <sub>8</sub> "	3/4"	1"-14	10 1/4"	41 lbs., 12 oz.	939, PH302, and PPH30.
1128	12 <sup>7</sup> / <sub>8</sub> "	5"	1 <sup>3</sup> / <sub>4</sub> -12	13"	100 lbs.	PH302*, PH502*, PH553C, and PPH50. (When using 1128 with PPH50, two 8024 adapter are required to connect PPH50 to the puller tees).
1130	9"	1/2"	5/8-18	6"	12 lbs., 9 oz.	1035, 1040, 1041, 1042, PH172, PPH17, and 938.
<b>V-belt pulley pulling attachments</b>						
679	5 <sup>7</sup> / <sub>8</sub> "	1 <sup>3</sup> / <sub>4</sub>	5/8-18	6	4 lbs., 4 oz.	1035, 1036, 1037, 1038, and 927.
680	10"	1 <sup>5</sup> / <sub>8</sub>	5/8-18	10 <sup>1</sup> / <sub>16</sub>	22 lbs., 4 oz.	1039, 1040, 1041, 1042, PH172, PPH30* and 938. (When using 680 with PPH30, two 8012 adapters are required).

**Pulling attachment accessory** – “Knife-like” edges of attachment fit behind bearings or other parts for easy removal with “Enforcer 55”, even if space does not permit hooking puller jaws directly to part being pulled.

**No. 1128** – Spread: 5" to 12<sup>7</sup>/<sub>8</sub>". Wt., 100 lbs.

\* Indicates discontinued puller model.



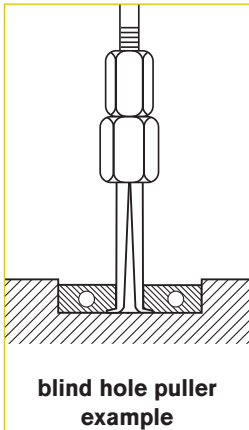
# SLIDE HAMMER PULLERS



**Set No. 981**

**Blind hole puller set** – Removal of bearings, bushings, sleeves and other friction-fitted parts from blind holes can now be accomplished with ease. Set provides selection of expanding collets  $\frac{5}{16}$ " to  $1\frac{3}{4}$ " I.D. collet is placed through bore of part to be removed, then expanded with actuator pin so that lips of collet secure a positive grip for pulling. Pulling force is exerted by means of a forcing screw and bridge assembly or with a slide hammer.

**No. 981** – Blind-hole puller set with slide hammer, forcing screw, bridge, actuator pins, collets, and storage box. Wt., 21 lbs.



Order No.	Description	Order No.	Description
<b>24835</b>	Forcing Screw	<b>28253</b>	Actuator Pin ( $\frac{9}{16}$ " dia.)
<b>24836</b>	Forcing Screw Nut	<b>28256</b>	Actuator Pin ( $\frac{1}{2}$ " dia.)
<b>22185</b>	Hammer 2½ lbs.	<b>41331</b>	Bridge
<b>208627</b>	Shank & Tee Bar Assembly	<b>28323GY8</b>	Metal Box
<b>28250</b>	Actuator Pin ( $\frac{1}{8}$ " dia.)		

Order No.	Inch Range	MM Range	Order No.	Inc Range	MM Range
<b>33856*</b>	$\frac{5}{16}$ " to $\frac{3}{8}$ "	8 to 9.5	<b>33861**</b>	$\frac{3}{4}$ " to $\frac{7}{8}$ "	19.1 to 22.2
<b>33857*</b>	$\frac{3}{8}$ " to $\frac{7}{16}$ "	9.5 to 11.1	<b>33862**</b>	$\frac{7}{8}$ " to 1"	22.2 to 25.4
<b>33858**</b>	$\frac{7}{16}$ " to $\frac{1}{2}$ "	11.1 to 12.7	<b>33863***</b>	1" to $1\frac{1}{4}$ "	25.4 to 31.7
<b>33859**</b>	$\frac{1}{2}$ " to $\frac{5}{8}$ "	12.7 to 15.9	<b>33864***</b>	$1\frac{1}{4}$ " to $1\frac{1}{2}$ "	31.7 to 38.1
<b>33860**</b>	$\frac{5}{8}$ " to $\frac{3}{4}$ "	15.9 to 19.1	<b>33865***</b>	$1\frac{1}{2}$ " to $1\frac{3}{4}$ "	38.1 to 44.4

\*Use with  $\frac{1}{8}$ " actuator pin. \*\*Use with  $\frac{3}{16}$ " actuator pin. \*\*\*Use with  $\frac{1}{2}$ " actuator pin

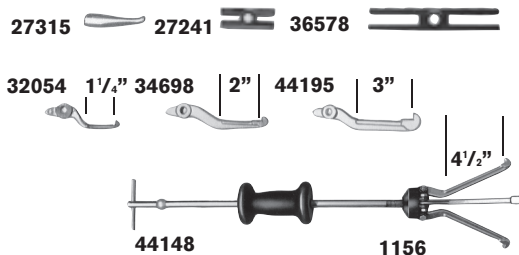
**Slide hammer puller set** – This very handy set is ideal for those close-quarter, inside pulling jobs. Very practical for pulling motor, generator, and magneto bearings. Also good for removing small-bore bushings, bearings, and oil seals.

**No. SS2** – Slide hammer puller set. Wt., 5.8 lbs.

Jaw Set	Inside Spread	
	Min. (in.)	Max. (in.)
<b>1172</b>	$\frac{1}{2}$	2
<b>1174</b>	$\frac{1}{2}$	$1\frac{3}{8}$

**Slide hammer puller set** – This useful set contains a reversible-jaw slide hammer puller with a 2.5 lb. sliding hammer plus an assortment of special jaws (3 of each size) and adapters. In this set, you get all the versatility you demand of a slide hammer puller.

**No. 1178** – Slide hammer puller set with 2.5-lb. sliding hammer. Wt., 13.8 lbs.



Jaw	2-Jaw Spread				3-Jaw Spread			
	Inside		Outside		Inside		Outside	
	Min. (in.)	Max. (in.)	Min. (in.)	Max. (in.)	Min. (in.)	Max. (in.)	Min. (in.)	Max. (in.)
<b>44195</b>	$1\frac{1}{2}$	$4\frac{1}{2}$	$\frac{3}{4}$	5	$1\frac{1}{2}$	$4\frac{3}{4}$	1	$4\frac{1}{2}$
<b>32054</b>	$\frac{3}{4}$	$2\frac{3}{8}$	—	—	1	$2\frac{3}{4}$	—	—
<b>44148</b>	$2\frac{3}{4}$	$5\frac{1}{2}$	$\frac{3}{4}$	$7\frac{1}{2}$	$3\frac{3}{4}$	$6\frac{1}{4}$	1"	$6\frac{1}{2}$
<b>34698</b>	$1\frac{1}{4}$	$3\frac{1}{2}$	1	$4\frac{1}{2}$	$1\frac{1}{2}$	$4\frac{1}{4}$	$1\frac{1}{2}$ "	$4\frac{1}{2}$

**Sliding hammers only -**

**No. 22185** – 2.5 lb. sliding hammer.

**No. 34331** – 5 lb. sliding hammer.

**22185**

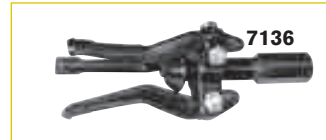


**34331**





**Bearing cup remover** – The 7136 is perfect for pulling internal bearing cups, seals, bushings, etc. Jaw spread  $1^{5/16}$ " to  $3/4$ " reach to  $3/2$ ". Use with any slide hammer having  $5/8$ "-18 thread (Power Team 1155, 1156 or 927 Bi-Directional™).



**No. 7136** – Universal bearing cup remover. Wt., 1.5 lbs.

**Pilot bearing pullers** – These very versatile pullers are built especially for inside pulling jobs, and particularly for removing flywheel pilot bearings on machines and construction vehicles. Also very practical for pulling motor, generator and magneto bearings.

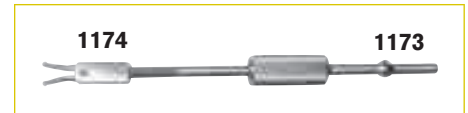
Special slide hammer puller – Ideal for pulling jobs in very close quarters, as in removal of small-bore bushings, bearings, oil seals, etc. Internal pulling attachment has jaw spread of  $1/2$ " to  $1\ 3/8$ ". Handle end has a  $1/2$ "-20 thread.

Order No.	Reach (in.)	I.D. Spread (in.)		Wt. (lbs.)
		Min.	Max.	
1170	$3/4$	$1/2$	$1\ 1/2$	4.9
1171	1	$7/8$	$2\ 1/8$	4.9
1172	$1\ 3/4$	$1/2$	2	4.9



**No. 1173** – Slide hammer puller. Wt., 3.5 lbs.

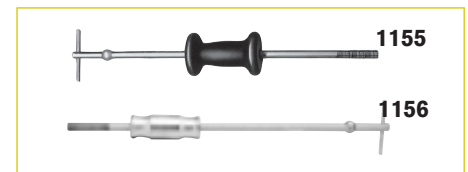
**No. 1174** – Puller head, less slide hammer. Wt., 0.8 lb.



**Basic slide hammer units** – Compatible with internal pulling attachment (see page 212). Compatible with threaded adapters (see page 210-211). 24" in length,  $5/8$ "-18 threaded end.

**No. 1155** – Basic slide hammer unit with 5 lb. hammer. Wt., 7.3 lbs.

**No. 1156** – Basic slide hammer unit with 2.5 lb. hammer. Wt., 4.8 lbs.



**Reversible-jaw slide hammer pullers** – Ideal for pulling gears, bearings, outer races, grease retainers, oil seals, etc. Two or three jaws may be used and positioned for "inside" or "outside" pulling jobs. Both have  $5/8$ "-18 threaded end so attachments and adapters may be used.

**No. 1176** – Slide hammer puller with 2.5 lb. hammer, 27241 two-way head and 34698 jaws.

**No. 1177** – Same as 1176 but with 5 lb. hammer.



Order No.	2 Jaw Spread				3 Jaw Spread				Overall Length (in.)	Prod. Wt. (lbs.)
	Min. (in.)	Max. (in.)	Min. (in.)	Max. (in.)	Min. (in.)	Max. (in.)	Min. (in.)	Max. (in.)		
1176	$1\ 1/4$	$3\ 1/2$	1	$4\ 1/2$	$1\ 1/2$	$4\ 1/2$	$1\ 1/2$	$4\ 1/2$	27	8.0
1177	$1\ 1/4$	$3\ 1/2$	1	$4\ 1/2$	$1\ 1/2$	$4\ 1/2$	$1\ 1/2$	$4\ 1/2$	27	10.5

**Slide hammer pullers with cup pulling attachments** – These combine a basic slide hammer with No. 1152 internal pulling attachment for removing oil seals, outer races, and bearing cups from blind holes.

**No. 1157** – Slide hammer puller consisting of 1156 slide hammer and 1152 internal pulling attachment.

**No. 1158** – Same as 1157 but with 1155 slide hammer.

Order No.	Reach Max. (in.)	Spread Min. (in.)	Spread Max. (in.)	Prod. Wt. (lbs.)	Overall Length (in.)
1157	4	$1\ 1/2$	6	9.8	28
1158	4	$1\ 1/2$	6	12.3	28



# PULLER SETS

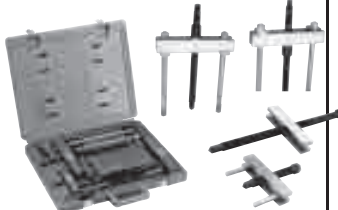




## 10 ton capacity Bi-Directional™ Puller set

– Contains three popular Power Team bar-type pullers in one versatile set, packed in a handy plastic storage case. Tools included permit damage-free pulling of gears, bearings, harmonic balancers, and other parts having tapped holes. Ideal for servicing off-road construction equipment and machinery.

**Multi-purpose puller set** – This new assortment of pulling tools gives you a wide range of job versatility. You get a 5 lb. slide hammer puller, hub puller, two sizes of Power Team Lock-Jaw™ jaw-type pullers, a bearing pulling attachment plus a cross-bar gear and pulley puller, all contained in a handy plastic storage case.

**Lock-on, jaw-type puller set** – Components can be assembled to create several versatile puller versions. The puller head is turned to securely lock the jaws onto the part being removed. Both a 2-way and 3-way puller head are included, plus three long-reach and three short-reach puller jaws in a plastic storage box. Easily removes gears, bearings and other press-fitted parts.

Order No.	Set Contents	Description																																		
<b>1180</b> 10 ton Bi-Directional™ Puller set in plastic storage case Wt., 25 lbs. 	927	10 Ton Bi-Directional™ puller, 8 <sup>3</sup> / <sub>8</sub> " reach, 2 <sup>1</sup> / <sub>8</sub> " to 7 <sup>1</sup> / <sub>4</sub> " spread. Comes with 6 <sup>3</sup> / <sub>4</sub> " puller legs, other leg sizes are available separately (See page 203).																																		
	522	Gear and pulley puller; spread range when used with 1/2" cap screws: 2" to 7 <sup>3</sup> / <sub>4</sub> ". Cap screws not included.																																		
	7393	Gear and pulley puller with standard 5 <sup>1</sup> / <sub>2</sub> " forcing screw, plus special 13" forcing screw. Includes two hex head cap screws, 3/8"-16 x 3" long. Spread range: 1 <sup>1</sup> / <sub>2</sub> " to 4 <sup>1</sup> / <sub>4</sub> ".																																		
<b>1181</b> Multi-purpose puller set. Wt., 25 lbs. 	1177	Slide hammer puller with 5 lb. hammer, 2-way and 3-way heads. Reversible: either two or three jaws may be used to handle both "inside" and "outside" pulling jobs.																																		
	7208	Hub puller. Includes a spare locknut which permits use with No. 1177 slide hammer.																																		
	1023	2 ton combination 2- or 3-jaw Lock-Jaw™ puller. Has 3 <sup>3</sup> / <sub>8</sub> " max. reach, 4 <sup>3</sup> / <sub>4</sub> " max. spread.																																		
	1027	5 ton combination 2- or 3-jaw Lock-Jaw™ puller. Has 5 <sup>1</sup> / <sub>2</sub> " max. reach, 7" max. spread.																																		
	7393	Bar-type gear and pulley puller with 5 <sup>1</sup> / <sub>2</sub> " long screw. Includes two hex head cap screws, 3/8"-16 x 3" long. Spread range: 1 <sup>1</sup> / <sub>2</sub> " to 4 <sup>1</sup> / <sub>4</sub> ".																																		
<b>1182</b> Jaw-type puller set. Wt., 6.8 lbs. 	<table border="1"> <thead> <tr> <th rowspan="2">Puller Jaws Order</th> <th rowspan="2">Inside* Min. (in.)</th> <th colspan="2">2-Jaw</th> <th colspan="3">3-Jaw Spread</th> <th colspan="2">Outside</th> </tr> <tr> <th>Max. (in.)</th> <th>Outside Min. (in.)</th> <th>Max. (in.)</th> <th>Inside* Min. (in.)</th> <th>Max. (in.)</th> <th>Min. (in.)</th> <th>Max. (in.)</th> </tr> </thead> <tbody> <tr> <td>44195</td> <td>1<sup>1</sup>/<sub>2</sub></td> <td>4<sup>1</sup>/<sub>2</sub></td> <td>3/4</td> <td>5</td> <td>1<sup>1</sup>/<sub>2</sub></td> <td>4<sup>3</sup>/<sub>4</sub></td> <td>1</td> <td>4<sup>1</sup>/<sub>2</sub></td> </tr> <tr> <td>44148</td> <td>2<sup>3</sup>/<sub>4</sub></td> <td>5<sup>1</sup>/<sub>2</sub></td> <td>3/4</td> <td>7<sup>1</sup>/<sub>2</sub></td> <td>3<sup>1</sup>/<sub>4</sub></td> <td>6<sup>1</sup>/<sub>4</sub></td> <td>1</td> <td>6<sup>1</sup>/<sub>4</sub></td> </tr> </tbody> </table>		Puller Jaws Order	Inside* Min. (in.)	2-Jaw		3-Jaw Spread			Outside		Max. (in.)	Outside Min. (in.)	Max. (in.)	Inside* Min. (in.)	Max. (in.)	Min. (in.)	Max. (in.)	44195	1 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	3/4	5	1 <sup>1</sup> / <sub>2</sub>	4 <sup>3</sup> / <sub>4</sub>	1	4 <sup>1</sup> / <sub>2</sub>	44148	2 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	3/4	7 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	1	6 <sup>1</sup> / <sub>4</sub>
	Puller Jaws Order	Inside* Min. (in.)			2-Jaw		3-Jaw Spread			Outside																										
			Max. (in.)	Outside Min. (in.)	Max. (in.)	Inside* Min. (in.)	Max. (in.)	Min. (in.)	Max. (in.)																											
	44195	1 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>2</sub>	3/4	5	1 <sup>1</sup> / <sub>2</sub>	4 <sup>3</sup> / <sub>4</sub>	1	4 <sup>1</sup> / <sub>2</sub>																											
	44148	2 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	3/4	7 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	1	6 <sup>1</sup> / <sub>4</sub>																											

\* Can be used for internal pulling tasks when used with a slide hammer.



# STRONG BOX

## Puller Sets

### 10 Ton Cap Bi-Directional™ Puller2 & 3 Jaw Pullers & Specialty Pullers



IPS10B

#### 10 ton capacity Strong Box puller set –

Here's a set of pullers that gives you almost unheard of versatility. This rugged, lockable metal storage cabinet contains pullers, attachments and extra puller jaws good for a variety of applications. Cabinet may be mounted on a wall, stand, or workbench.



IPS10HB

#### 10 ton capacity hydraulic/manual puller set in Strong Box –

This lockable metal Strong Box contains both hydraulic and manual pullers, plus attachments. The rugged storage cabinet keeps the tools organized and secure from unauthorized borrowers!

- Have the puller you need on hand, when you need it, protected from unauthorized or casual borrowers.
- Almost unheard of versatility
- Rugged, lockable storage cabinet.
- Wall, stand or workbench mountable.

Order No.	Set Contents	Description	
<b>IPS10B</b>  Cabinet (25 <sup>3</sup> / <sub>4</sub> " x 29 <sup>1</sup> / <sub>2</sub> " x 10") with tool board, adapter board, and tool set. Wt., 98 lbs.	927	10 ton capacity Bi-Directional™ Puller with 6 <sup>3</sup> / <sub>4</sub> legs	
	1027	5 ton combination 2/3-jaw puller	
	1037	7 ton combination 2/3-jaw puller	
	1101	15 <sup>3</sup> / <sub>4</sub> " puller legs (pair)	
	1122	Bearing pulling attachment	
	1123	Bearing pulling attachment	
	1152	Internal pulling attachment	
	7393	Gear and pulley puller	
	8005, 8006, 8007, 8010	Male/female threaded	
	8013, 8015, 8019	Adapters (2 ea.)	
	8035, 8037, 8038, 8039, 8040	Female threaded adapters	
	8050 thru 8053	Shaft protectors	
	8057 thru 8062	Step plate adapters	
	43892	Long jaws for 1037 (3)	
	212867	Cabinet, tool board and adapter board	
	<b>IPS10HB</b>  Cabinet (25 <sup>3</sup> / <sub>4</sub> " x 29 <sup>1</sup> / <sub>2</sub> " x 10") with tool board, pullers, and hydraulics. Wt., 119 lbs.	*PH103C	10 ton combination 2/3-jaw hydraulic puller
		1027	5 ton combination 2/3-jaw puller
1042		13 ton combination 2/3-jaw puller	
1177		Slide hammer puller	
44148		3 jaws for slide hammer puller (4 <sup>1</sup> / <sub>2</sub> " )	
44195		3 jaws for slide hammer puller (3")	
36578		Slotted cross head for slide hammer puller	
27315		Seal hook for slide hammer puller	
1152		Internal pulling attachment (1 <sup>1</sup> / <sub>2</sub> " to 6" spread)	
24832		Forcing screw for 1152	
215315		Cabinet and tool board	

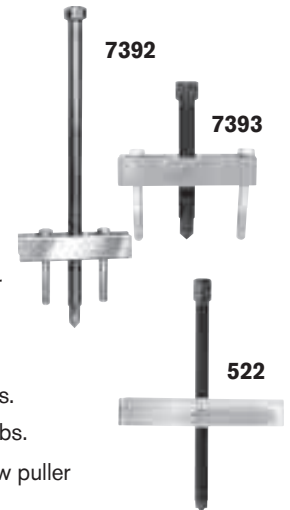


\* See page 212.

# PULLER ADAPTERS

## Specialty Metric

**Gear and pulley pullers** – Ideal for pulling many small parts having tapped holes. The Nos. 7392 and 7393 may be used with the No. 1122 pulling attachment to remove bearings, etc. Pullers include two hex head cap screws,  $\frac{3}{8}$ " – 16 NC x 3" long. Spread:  $1\frac{1}{2}$ "– $4\frac{1}{4}$ ". Width of puller block is  $4\frac{7}{8}$ ". Cap screws are not included with the No. 522, but any cap screws up to  $\frac{1}{2}$ " diameter may be used. No. 522 spread, when used with  $\frac{1}{2}$ " dia. cap screws, is  $2$ "– $7\frac{3}{4}$ ". Width of the No. 522 puller block is  $8\frac{1}{4}$ ".



**No. 7392** – Puller with  $\frac{5}{8}$ "-18 x 13" long screw. Wt., 2 lbs.

**No. 7393** – Puller with  $\frac{5}{8}$ "-18 x  $5\frac{1}{2}$ " long screw. Wt., 1.5 lbs.

**No. 522** – Puller with  $\frac{3}{4}$ "-16 x  $11\frac{5}{8}$ " long screw. Wt., 4.3 lbs.

**4-in-1 puller set** – You can quickly assemble a 2- or 3-jaw puller with standard or long reach jaws.

**No. PA7** – Four-In-One puller set, 7 ton capacity. Standard jaw max. reach is 5". Maximum spread is  $10\frac{1}{2}$ ". Long jaw maximum reach is  $8\frac{3}{4}$ ". Maximum spread is 11". Wt., 10.8 lbs.

**Flange type puller** – Slotted holes in puller body permit cap screws to be positioned to handle bolt-circle diameters from  $1\frac{1}{2}$ " to  $4\frac{5}{8}$ ".

**No. 518** – Flange type puller. Includes 3 cap screws,  $\frac{3}{8}$ " – 24 NF x 3" long and 3 cap screws  $\frac{3}{8}$ " – 16 NC x 3" long. Forcing screw is  $\frac{5}{8}$ "-18 x 5" long. Wt., 3.4 lbs.

**Metric adapters** – Add metric capability to the Bi-Directional™ Puller legs or forcing screws! Four separate metric kits available with a variety of sizes for the Bi-Directional™ legs or forcing screws! Each packaged in a convenient plastic organizer case.



Description	Kit Contents	Female End	Male End	Length	Description	Kit Contents	Female End	Male End	Length
Male Metric Wt., 3 lbs.	8111	$\frac{5}{8}$ "-18	M6 x 1.0	$2\frac{1}{4}$ "	Male Metric Wt., 3 lbs.	8121	$\frac{5}{8}$ "-18	M14 x 1.5	$2\frac{1}{4}$ "
	8112	$\frac{5}{8}$ "-18	M8 x 1.0	$2\frac{1}{4}$ "		8122	$\frac{5}{8}$ "-18	M14 x 2.0	$2\frac{1}{4}$ "
	8113	$\frac{5}{8}$ "-18	M8 x 1.25	$2\frac{1}{4}$ "		8123	$\frac{5}{8}$ "-18	M16 x 1.5	$2\frac{3}{4}$ "
	8114	$\frac{5}{8}$ "-18	M10 x 1.25	$2\frac{1}{4}$ "		8124	$\frac{5}{8}$ "-18	M16 x 2.0	$2\frac{3}{4}$ "
	8115	$\frac{5}{8}$ "-18	M10 x 1.50	$2\frac{1}{4}$ "		8125	$\frac{5}{8}$ "-18	M20 x 1.5	$2\frac{3}{4}$ "
	8116	$\frac{5}{8}$ "-18	M12 x 1.25	$2\frac{1}{4}$ "		8126	$\frac{5}{8}$ "-18	M20 x 2.5	$2\frac{3}{4}$ "
	8117	$\frac{5}{8}$ "-18	M12 x 1.75	2"					

**Female threaded adapters** - Use these adapters on the ends of Bi-Directional™ Puller forcing screws, legs, or slide hammers in the removal and installation of shafts, axles, and housings.

**Set No. 8044** – consists of a set of 6 adapters (Nos. 8037-8042).

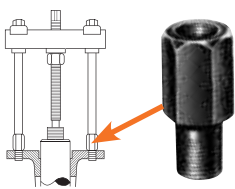


	Order No.	Female End "A"	Female End "B"	Order No.	Female End "A"	Female End "B"
	8035*	$\frac{1}{2}$ "-20	$\frac{5}{8}$ "-18	8040	$\frac{5}{8}$ "-18	1"-14
	8036*	1"-14	1"-14	8041	$\frac{5}{8}$ "-18	$1\frac{1}{8}$ "-12
	8037	$\frac{5}{8}$ "-18	$\frac{5}{8}$ "-18	8042	$\frac{5}{8}$ "-18	$1\frac{1}{4}$ "-12
	8038	$\frac{5}{8}$ "-18	$\frac{3}{4}$ "-16	8043*	$\frac{5}{8}$ "-18	$1\frac{1}{2}$ "-12
	8039	$\frac{5}{8}$ "-18	$\frac{7}{8}$ "-14			

**Note:** All adapters available separately.

\*Not included in set No. 8044. Order separately.

**Male-female threaded adapters** – These adapters are used on ends of Bi-Directional™ Puller legs, with forcing screws or slide hammers to assist in pulling shafts, bearing caps, pinions, and many other parts.

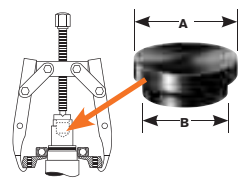
	Order No.	Female End	Male End	Length	Order No.	Female End	Male End	Length
	 <p>Fed. Spec.: GGG-P-00781-D</p>	8000	5/8"-18	1/4"-20	2 1/4"	8015	5/8"-18	3/4"-10
8001		5/8"-18	5/16"-18	2 1/4"	8016	1"-14	3/4"-10	2 1/2"
8002		5/8"-18	7/16"-14	2 1/4"	8017	5/8"-18	7/8"-14	2 1/4"
8003		5/8"-18	7/16"-20	2 1/4"	8018	5/8"-18	7/8"-9	2 1/4"
8004		5/8"-18	3/8"-24	2 1/2"	8019	5/8"-18	1"-14	2 1/4"
8005		5/8"-18	3/8"-16	2 1/4"	8020	1"-8	5/8"-18	3"
8006		5/8"-18	1/2"-20	2 1/4"	8021	1"-8	1"-14	3"
8007		5/8"-18	1/2"-13	2 1/4"	8022	5/8"-18	1/8" pipe	2 1/4"
8008		5/8"-18	9/16"-18	2 1/4"	8023	1 1/4"-12	1"-14	4 1/2"
8009		5/8"-18	9/16"-12	2 1/4"	8024	1 1/4"-12	1 3/4"-12	4 1/2"
8010		5/8"-18	5/8"-11	2 1/4"	8025	1 1/4"-7	5/8"-18	4"
8011		1"-14	5/8"-11	2 1/4"	8027	1 1/4"-7	1"-14	4"
8012		1"-14	5/8"-18	3 3/16"	8028	1 5/8"-5 1/2	1"-8	4"
8013		5/8"-18	3/4"-16	2 1/4"	8029	1 5/8"-5 1/2	1"-14	4"
8014	1"-14	3/4"-16	2 1/2"					

**Note:** Nos. 8000–8029 – each sold individually.

**Step plate adapter sets** – Power Team step plate adapters are necessary for pulling and installing bearings, gears, or other parts on hollow shafts or housings. Puller screw forces against step plate adapter, as shown at right. May be used with Power Team jaw-type pullers, Bi-Directional™ Pullers and shop presses.

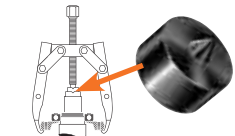
**Set No. 8075** – set of 11 adapters (Nos. 8057-8067).

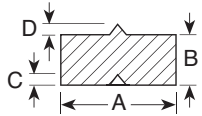
**Set No. 8076** – set of 6 adapters (Nos. 8068-8073).

	Set No. 8075			Set No. 8075			Set No. 8076		
	Order No.	Dia. "A" (in.)	Dia. "B" (in.)	Order No.	Dia. "A" (in.)	Dia. "B" (in.)	Order No.	Dia. "A" (in.)	Dia. "B" (in.)
	8057	1	3/4	8063	1 1/8	1 5/8	8068	2 5/8	2 1/8
	8058	1 1/8	7/8	8064	2	1 5/8	8069	2 3/4	2 1/4
	8059	1 1/4	1	8065	2 1/8	1 3/4	8070	2 7/8	2 3/8
	8060	1 3/8	1 1/8	8066	2 3/8	1 7/8	8071	3	2 1/2
	8061	1 5/8	1 1/4	8067	2 1/2	2	8072	3 1/4	2 3/4
	8062	1 3/4	1 3/8				8073	3 1/2	3

**Shaft protector set** – Power Team shaft protectors are designed to protect shaft centers from distortion when extreme pressures are applied with jaw-type pullers or Bi-Directional™ Pullers. Shaft protectors are inserted between the end of the puller screw and the shaft.

**Set No. 8056** – Set of 6 shaft protectors (Nos. 8050 thru 8055).

	Order No.	"A" (in.)	"B" (in.)	"C" (60°) (in.)	"D" (60°) (in.)	Order No.	"A" (in.)	"B" (in.)	"C" (60°) (in.)	"D" (60°) (in.)
		8050	1 1/2	3/4	3/8	7/16	8053	3/4	3/4	1/4
8051		1 1/4	3/4	3/8	3/8	8054	5/8	5/8	1/4	1/4
8052		1	3/4	3/8	5/16	8055	5/8	5/8	3/16	3/16





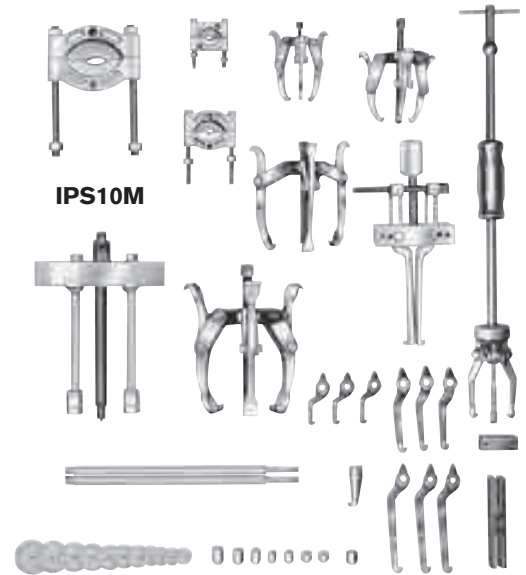
**CAUTION:** All the items shown may not withstand the full tonnage of the pullers they may be used with. Refer to page 195.



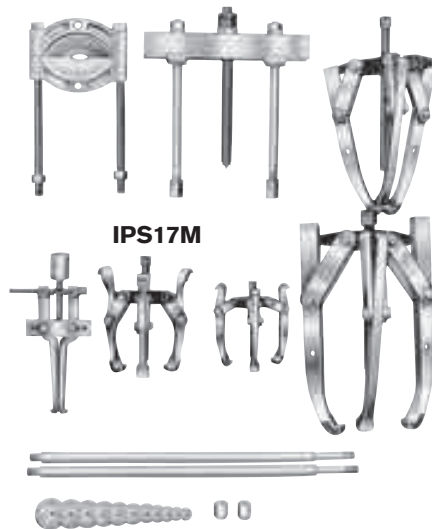
# PULLER SETS

Manual  
10 & 17½ Ton

**10 ton manual puller set –**  
This puller set is just what you need for removing gears, bearings, etc. Includes pullers, attachments, and many accessories.



**IPS10M**



**IPS17M**

**17½ ton manual puller set –** The pullers and accessories in this set can be used for hundreds of applications including quick and easy maintenance involving removal and replacement of press-fit parts.



Manual Puller Set No. Order No.	Set Contents	Pullers	Set Contents	Accessories
<b>IPS10M</b> 10 ton capacity Wt., 53 lbs.	<b>927</b>	10 ton capacity Bi-Directional™ with 6¾" legs	<b>8075</b>	Step plate adapter set
	<b>1023</b>	2 ton combination 2/3-jaw puller	<b>8044</b>	Female threaded adapter set
	<b>1026</b>	5 ton combination 2/3-jaw puller	<b>8035</b>	Female threaded adapter: ½"-20 x ¾"-18
	<b>1027</b>	5 ton combination 2/3-jaw puller	<b>1151</b>	Bearing cup pulling attachment
	<b>1037</b>	7 ton combination 2/3-jaw puller	<b>1121</b>	Bearing pulling attachment
	<b>1178</b>	Slide hammer set	<b>1122</b>	Bearing pulling attachment
<b>IPS17M</b> 17½ ton capacity Wt., 116 lbs.	<b>938</b>	17½ ton capacity Bi-Directional™ puller w/9½" legs	<b>1123</b>	Bearing pulling attachment
	<b>1027</b>	5 ton combo 2/3-jaw puller, with long jaws	<b>1101</b>	15½" long puller legs for 927 (pr.)
	<b>1037</b>	7 ton combination 2/3-jaw puller	<b>8075</b>	Step plate adapter set
	<b>1041</b>	13 ton combination 2/3 jaw puller	<b>1105</b>	22½" legs for 938
	<b>1045</b>	17½ ton 3-jaw puller	<b>1130</b>	Bearing pulling attachment
			<b>1151</b>	Bearing cup pulling attachment
			<b>8038</b>	Female adapter: ¾"-18 F. x ¼"-16 F. (2)

# PROTECTIVE BLANKETS

## And Security Chests

**PB1230C**



### Power Team protective blanket –

Our blankets are designed to contain broken or flying parts from the most extreme forces, thus resulting in a much safer work environment.

**Testing results –** In our lab, this style of blanket held the parts of a necked-down grade 8 bolt, which shattered in a 100 ton center-hole hydraulic cylinder. The blanket sustained no visible damage when shot with a force and impact that shattered safety glasses!

- Made of see-through, high-tensile, tear resistant material.
- Effectively contain broken or flying parts from the most extreme pulling, pressing, pushing or stressing forces.
- Ideal for use with pullers and forcing presses.

### PROTECT YOURSELF AND YOUR EQUIPMENT.

- Unlike rigid, fixed guards, these blankets can be wrapped and strapped around a job.
- The clear protective blankets allow you to visually monitor the job from start to finish.
- Protective blankets come in a carrying/storage pouch to reduce aging caused by prolonged exposure to light.

Order No.	Size (in.)	Number of Straps	Wt. (lbs.)
<b>PB1230C</b>	12 x 30	2	2.8
<b>PB2036C</b>	20 x 36	2	4.2
<b>PB2860C</b>	28 x 60	3	9.3
<b>PB3372C</b>	33 x 72	3	11.7
<b>PB44120C</b>	44 x 120	4	24.2
<b>PB51156C</b>	51 x 156	4	34.4

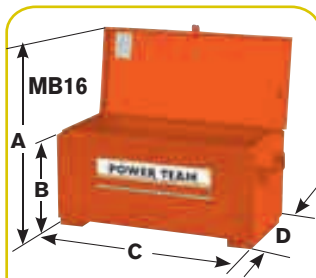


**Note:** Custom sizes are available on a special order basis. Please consult factory.

### Job-site and maintenance security chests –

Protect your valuable tools and equipment from theft and weather. When the day's work is finished, you want to rest assured that your tools and

equipment will be present the next day. In these times, security is a real concern. These rugged, lockable chests are the answer that many of our customers have been asking for.



- Rugged, 16 gauge steel construction with fully arc welded seams for extra strength and weather protection.
- Full length piano hinges, mating cover to body, protect against weather and theft.
- Single or double latch security tabs for padlocks.
- Mechanical cover supports, two 2 1/4" high skirts.
- Fold-down 3/4" pipe handles on each end of chest.
- Pre-drilled for optional casters, which enhance mobility.
- Durable baked enamel finish.

Order No.	Dimensions				Storage		Optional Caster Wheels
	A (in.)	B (in.)	C (in.)	D (in.)	Cap. (cu. ft.)	Wt. (lbs.)	
<b>MB5</b>	34 3/4	14	32	19	5	66	<b>No. 251646</b> – Set of four 4" casters (two swivel and two rigid). Furnished with mounting screws. Wt., 12.5 lbs.
<b>MB8</b>	39 3/4	19	42	19	8.8	90	
<b>MB16</b>	49 3/4	24	48	24	16	126	<b>No. 251647</b> – Set of four 6" casters (two swivel and two rigid). Furnished with mounting screws. Wt., 15.3 lbs.



# HYDRA LOCK-JAW™

Use With 2 & 3 Jaw

## Pullers

6, 8, 11 & 30 Ton

PH303C



PH63C



- You get the world's most copied puller design; the harder the pulling force, the tighter the jaws grip for secure holding force.
- Power Team pullers are tested for top performance and reliability at maximum capacity and jaw spread.
- Removing a wide variety of gears, bearings, bushings, pulleys and other press-fitted parts becomes a routine task.
- Easily metered release valve control knob.
- Spring loaded live centering cone.
- Bladder type oil reservoir.
- Rapid adjustment.
- Use with 2 or 3 jaws.
- Supplied with a sturdy storage/ carrying case.
- Features Power Team's exclusive Powerthon™ Limited Lifetime Warranty

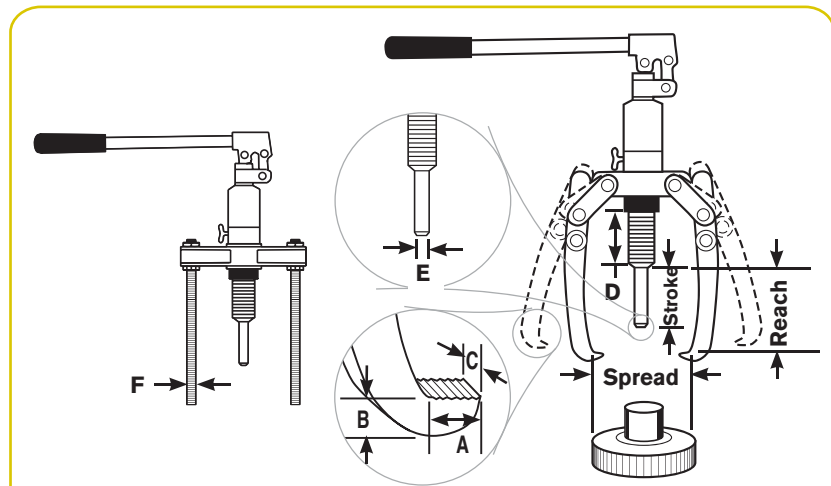
**Lock-Jaw™ pulling system** - These pullers are ideal for pulling a wide variety of press-fitted parts including bushings, bearings, wheels, gears and pulleys. Lock-Jaw™ pullers have been rigorously tested for top performance and reliability. PH82K is a complete pulling system which includes a hydraulic power module, 2-way puller head, jaws, legs and bearing splitter attachment; all contained in a convenient carrying case.



HST11S



PH82K



Order No.	Cyl. Cap. (tons)	Reach Studs (in.)	Min. Jaws (in.)	Max. Reach (in.)	Spread Studs (in.)	Jaws (in.)	Stroke (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Wt. (lbs.)
PH63C	6	---	6	---	---	7 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	7 <sup>7</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	---	10.8
PH83C	8	---	7 <sup>1</sup> / <sub>2</sub>	---	---	9 <sup>19</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	7 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	1	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	---	14.5
PH113C	11	---	9	---	---	11	3 <sup>3</sup> / <sub>8</sub>	9 <sup>9</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	---	17.6
PH303C	30	10 <sup>1</sup> / <sub>2</sub>	14 <sup>3</sup> / <sub>4</sub>	---	---	21 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	6 <sup>11</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	5 <sup>5</sup> / <sub>8</sub> -18 UNF	112
PH82K	8	10 <sup>1</sup> / <sub>2</sub>	8 <sup>5</sup> / <sub>32</sub>	4 <sup>29</sup> / <sub>32</sub>	11 <sup>51</sup> / <sub>64</sub>	9 <sup>21</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>8</sub>	2 <sup>29</sup> / <sub>64</sub>	1	5 <sup>5</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	5 <sup>5</sup> / <sub>8</sub> -18 UNF	35
HST11S*	11	---	5 <sup>29</sup> / <sub>32</sub>	---	---	16 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	---	---	---	3 <sup>3</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	---	32

\* (Max bar size 2.3622" or 60 mm)



**K82**



### Lock-Jaw™ puller accessory kits

**K82** accessory kit for the Hydra-Lock-Jaw™ puller No. PH83C. Includes 2-way puller head, 2 jaws, 2 threaded legs and sturdy carrying/storage case. Wt. 13.7 lbs.

**No. K83** – Accessory kit for PH83C Lock-Jaw™ hydraulic puller. K83 2/3 way head accessories kit for a Lock-Jaw™ puller No. PH83C. Includes 2/3 way puller head, 3 jaws, 3 threaded legs (5/8-18 thread) and sturdy carrying/storage case. Also can be used with 1123, 1124, 1130 pulling attachments. Wt. 23.0 lbs.



**K83**

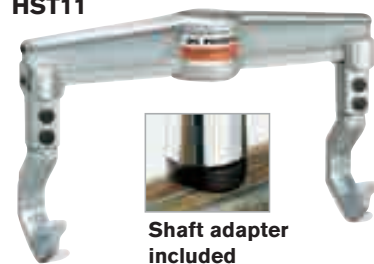


### Puller Accessory converts PH113C into a Hydraulic Straightening Tool

– Portable...Good for straightening mechanical shafts, round bars, etc. Simply remove pump and cylinder from puller head and insert them into the straightening tool accessory. This product is widely used in steel mills, wire roll companies, wire extruding companies, textile industry, and any straightening situation where portability and power are required. Contoured heat-treated shaft adapter included.

**No. HST11** – Spread: 3 1/2" to 16 1/8", Reach: 5 29/32". Wt., 21.0 lbs.

**HST11**



**Shaft adapter included**

**Long jaw set for PH83C and PH113C Lock-Jaw™ pullers** – This long jaw set is the perfect addition to the PH83C or PH113C Lock-Jaw™ hydraulic pullers. The extra long jaws give you the added capability of pulling a wider variety of parts. Jaw capacity is 8 tons when used with the PH83C puller; 15 tons when used with the PH113C puller.

**No. 1188** – Spread: 11" to 12 1/2", Reach: 12 1/2". Wt. 11.5 lbs.

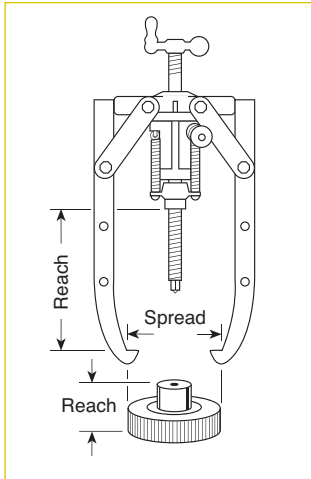
**1188**



# PULLERS

## Hydraulic

5, 10, 17 1/2, 30 & 50 Ton



### 5 ton capacity, 2/3 jaw puller –

**No. PH53C** – Combination 2-jaw/3-jaw puller set. Includes 1057 5 ton puller, RPS55 hydraulic set (C55C cylinder, P12 10,000 psi hand pump, fittings, coupler, and 6 ft. hose), and 309874 pushing adapter. Wt., 20 lbs.

**No. PH53CR** – Combination 2-jaw/3-jaw puller set. Includes 1057 5 ton puller, C55C cylinder, and 309874 pushing adapter. Wt., 12 lbs.

**No. 1057** – 5 ton cap. 2-jaw/3-jaw puller only. Wt., 7.8 lbs.

### Available components–

**No. 309874** – 5/8" diameter pushing adapter. (Included with PH53C and PH53CR hydraulic puller sets). Wt., 0.3 lb.

**No. 309875** – 7/8" diameter pushing adapter. Wt., .8 lb.

**No. 47997** – 2-way/3-way puller head. (Can be used to convert No. 1038 7 ton manual puller into a 5 ton hydraulic puller). Wt., 2.3 lbs.

- Remove gears, bearings, and other press-fitted parts with speed and ease.
- Broad capacity range of 5, 10, 17 1/2, 30 and 50 tons.
- 5 and 10 ton sets include: single-acting, spring return hydraulic cylinder with hose, coupler and dust cap; single-speed hydraulic hand pump; puller.
- 17 1/2, 30 and 50 tons sets include: Power-Twin® single acting, spring return hydraulic cylinder with hose, coupler and dust cap; single-speed hydraulic hand pump; puller, adjusting screw and crank.
- Hydraulic cylinder of all models is readily removable from puller for use with pump in other hydraulic applications. You get maximum maintenance versatility for your investment.

Fed. Spec.: GGG-P-00781-D



### 10 ton capacity, 2/3 jaw puller -

**No. PH103C** – Combination 2-jaw/3-jaw puller; 10 ton capacity. Set includes 1060 10 ton puller, RPS1010 cylinder and pump set, 202179 threaded adapter, and 34602 pushing adapter. Wt., 52 lbs.

**No. PH103CR** – Combination 2-jaw/3-jaw puller, 10 ton capacity. Set includes 1060 10 ton puller, 202179 threaded adapter, 34602 pushing adapter, and C1010C cylinder only. (Pump and hose not included). Wt., 32 lbs.

**No. 1060** – Combination 2-jaw/3-jaw puller only; 10 ton capacity. (Cylinder and pump set, hose, coupler, and adapter No. 202179 not included). Wt., 17 lbs.

**NOTE:** This puller may be used with any 10 ton single-acting cylinder having a 2 1/4"-14 straight collar thread.







**17½ ton capacity, 2-jaw puller –**

**No. PH172** – 2-jaw puller with RT172 center-hole Power-Twin® cylinder, cylinder half coupler, P55 pump, 6-ft. hose, hose half coupler, 1"– 8 x 20" long adjusting screw, and adjusting crank. Wt., 61 lbs.

**No. 1064** – Puller only. (Cylinder, pump, hose, coupler, screw, and crank not included). Wt., 22 lbs.

**17½ ton capacity, 3-jaw puller –**

**No. PH173** – 3-jaw puller with RT172 center-hole Power-Twin® cylinder, cylinder half coupler, P55 pump, 6-ft. hose, hose half coupler, 1"– 8 x 20" long adjusting screw, and adjusting crank. Wt., 75 lbs.

**No. PH173R** – 3-jaw puller with screw and crank, and RT172 center-hole twin cylinder. Wt., 56 lbs.

**No. 1066** – Puller only. (Cylinder, pump, hose, coupler, screw, and crank not included). Wt., 36 lbs.

**30 ton capacity, 3-jaw puller –**

**No. PH303** – 3-jaw puller with RT302 center-hole Power-Twin® cylinder, cylinder half coupler, P55 pump, 6-ft. hose, hose half coupler, 1¼"– 7 x 24" large adjusting screw, and adjusting crank. Wt., 149 lbs.

**No. PH303R** – 3-jaw puller with screw and crank, and RT302 center-hole twin cylinder. Wt., 130 lbs.

**No. 1074** – Puller only. (Cylinder, pump, hose, coupler, screw, and crank not included). Wt., 90 lbs.

**50 ton capacity, 3-jaw puller –**

**No. PH503** – 3-jaw puller with RT503 center-hole Power-Twin® cylinder, cylinder half coupler, P55 pump, 6-ft. hose, hose half coupler, 1⅝"– 5½ x 30⅜" long adjusting screw, and adjusting crank. Wt., 286 lbs.

Wt., 286 lbs.

**No. 1080** – 3-jaw puller only. (Cylinder, pump, hose, coupler, screw, and crank not included).

Wt., 191 lbs.

**PULLER ONLY**

Order No.	Cap. (Tons)	Jaws	Jaw Reach (in.)	Jaw Spread (in.)	Jaw Thickness (in.)	Jaw Width (in.)	Wt. (lbs.)
1057	5	2/3	8¾	11½	1⅛	63/64	7.8
1060	10	2/3	15	17	9/16	63/64	17
1064	17½	2	11½	16	13/16	19/32	22
1066	17½	3	11½	20	13/16	19/32	36
1074	30	3	197/16	34	1⅛	1⅝	90
1080	50	3	27⅝	44	113/32	1⅞	191

**⚠ CAUTION:** Always use a 3-jaw puller where clearance permits in order to provide a more stable setup and a more even pulling force.

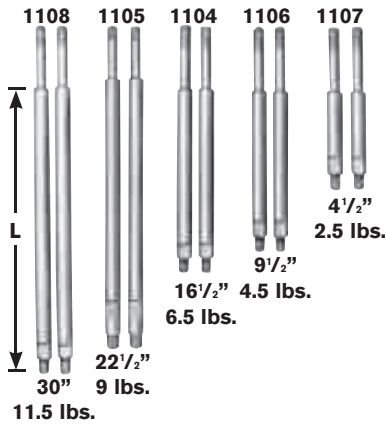


# BI-DIRECTIONAL™

## Hydraulic Pullers

17½, 30-50 Ton

The power to make impossible jobs become routine.



**NOTE:** L = leg length: 4½", 9½", 16½", 22½", 30"; subtract 4⅞" from leg length to determine reach when using leg end caps.

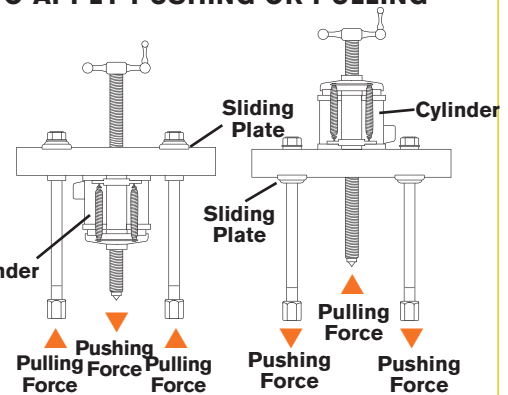
- Can apply a hydraulic pushing or pulling force, depending on how the puller is set up.
- Each unit includes perfectly matched hydraulic components that can be detached from the Bi-Directional™ Puller for other tasks requiring dependable Power Team power; assuring maximum return on your investment.
- Optional leg kits adapt your Bi-Directional™ Puller to extra long or extra short reach.
- A wide variety of threaded adapters, bearing pulling attachments and internal pulling attachments can be used in combination with our Bi-Directional™ Pullers.



### ASSEMBLING THE TOOL TO APPLY PUSHING OR PULLING FORCE:

#### FORCE:

1. Determine if you want the tool's forcing screw to push or pull.
2. To exert pushing force, the forcing nut is installed beneath the cross block, as shown on left.
3. To cause the forcing screw to pull, the forcing nut is placed on top of the cross block.
4. The sliding plates must always be placed on the opposite side of the cross block from the forcing nut.



**Selection and capacity rating** – Each Bi-Directional Puller's specified tonnage "capacity" is determined using its standard

legs in tension. Using longer legs, or a setup in which the legs are in compression, will reduce the "capacity." Always select the largest "capacity" puller and the shortest legs that will fit the job.

**Power Twin® cylinder** – This unique center-hole cylinder powers each Bi-Directional™ Puller screw runs right between the twin spring cylinder. A basic head allows you to change from a tapped hole to a plain hole by merely changing the head insert.

#### 17½ ton capacity Bi-Directional™ Puller–

**No. PPH17** – Bi-Directional™ Puller with RT172 center-hole Power Twin® cylinder, cylinder half coupler, P55 pump, 9767 6-ft. hose, 9798 hose half coupler, 16½" legs, 24827 leg ends, 1"-8 x 20" large adjusting screw and adjusting crank. Wt., 59 lbs.

**No. PPH17R** – Same as above, but without P55 pump, 9767 6-ft. hose and 9798 hose half coupler. Wt., 40 lbs.

**No. 1062** – Puller only. (Cylinder, pump, hose, coupler, screw and crank not included). Wt., 20 lbs.

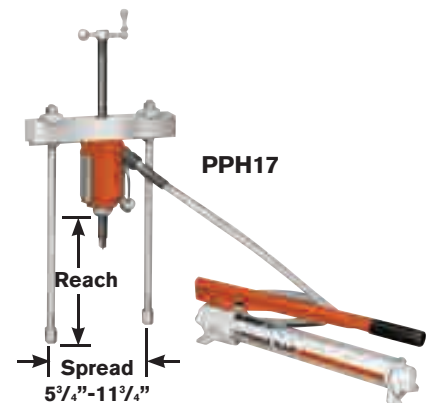
#### USE WITH:

Bearing pulling attachments: **Nos. 1124 and 1130.**

Pulley pulling attachment: **No. 679.**

Internal pulling attachment: **No. 1154.**

Legs: **Nos. 1104, 1105, 1106, 1107 and 1108** - Pair of legs for 17½-ton "capacity" Bi-Directional™ Puller.



**Leg Ends** – Upper leg ends are threaded ¾"-16. Lower leg ends are threaded ⅝"-18" lg.

### 30 ton capacity Bi-Directional™ Puller

**No. PPH30** – Bi-Directional™ Puller with RT302 center-hole Power Twin® cylinder, cylinder half coupler, P55 pump, 9767 6-ft. hose, 9798 hose half coupler, 18" legs, 28390 leg ends, 1 1/4"-7 x 24" lg. adjusting screw and adjusting crank. Wt., 102 lbs.

**No. PPH30R** – Same as above, but without P55 pump, 9767 6-ft. hose and 9798 hose half coupler. Wt., 82 lbs.

**No. 1070** – Puller only. (Cylinder, pump, hose, coupler, screw and crank not included). Wt., 42 lbs.

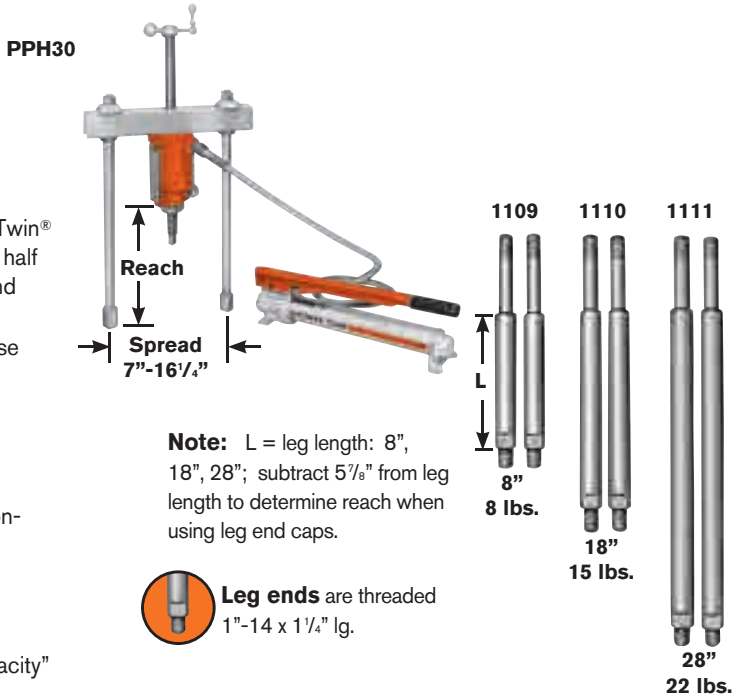
#### USE WITH:

Bearing pulling attachments: **No. 680** (Use two 8012 adapters to connect to puller.)

Pulley pulling attachment: **No. 679**.

Internal pulling attachment: **No. 1166**.

Legs: **Nos. 1109, 1110 and 1111** - Pair of legs for 30 ton "capacity" Bi-Directional™ Puller.



### 50 ton capacity Bi-Directional™ Puller

**No. PPH50** – Bi-Directional™ Puller with RT503 center-hole Power Twin® cylinder, cylinder half coupler, P55 pump, 9767 6-ft. hose, 9798 hose half coupler, 24" legs, 1 5/8"-5 1/2 x 30 3/8" large. adjusting screw and adjusting crank. Wt., 201 lbs.

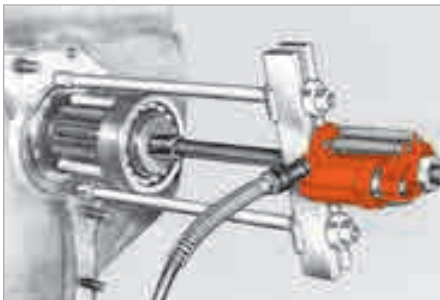
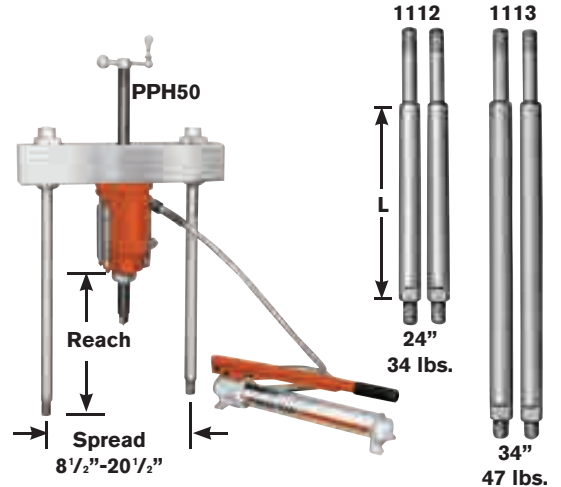
**No. PPH50R** – Same as above, but without P55 pump, 9767 6-ft. hose and 9798 hose half coupler. Wt., 181 lbs.

**No. 1076** – Puller only. (Cylinder, pump, hose, coupler, screw and crank not included.) Wt., 106 lbs.

#### USE WITH:

Bearing pulling attachments: **Nos. 1128**.

Legs: **Nos. 1112 and 1113** - Pair of legs for 50 ton "capacity" Bi-Directional™ Puller.



# PULLER SETS

17 1/2, 30 & 50 Ton

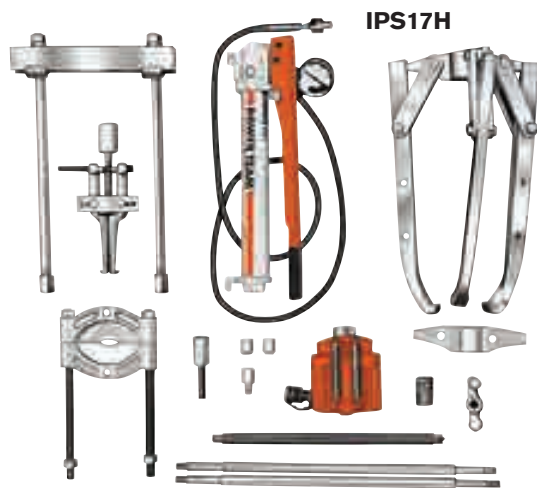
**17 1/2 ton hydraulic master puller sets** – Having this Power Team puller set at your fingertips will not only reduce your downtime, but also increase your profits.

**No. IPS17** – 17 1/2 ton capacity puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 191 lbs.

**No. IPS17B** – Puller set with MB5 metal box. Wt., 213 lbs.



Wooden storage box No. **308435OR9** is included with the sets listed on this page. 36"L x 17 1/2"W x 14"D. Wt. 44 lbs. Metal storage boxes also available (see page 213).



**17 1/2 ton hydraulic puller set** - This set includes a 3-jaw puller and a Bi-Directional™ Puller. Ideal for heavy duty applications; put this set to work wherever large gears, bearings, wheels, pulleys, etc. are found.

**No. IPS17H** – 17 1/2 ton capacity hydraulic puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 137 lbs.



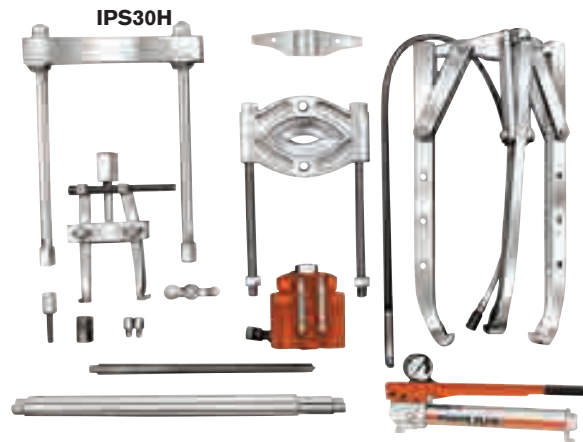
Set Contents	Hydraulics	Set Contents	Accessories
<b>P55</b>	Single-stage hyd. hand Pump assembly	<b>1154</b>	Bearing cup pulling attachment
<b>RT172</b>	17 1/2 ton cylinder with threaded insert	<b>1122</b>	Bearing pulling attachment
<b>9798</b>	Hose half coupler	<b>1123</b>	Bearing pulling attachment
<b>9767</b>	Hydraulic hose – 6'	<b>1130</b>	Bearing pulling attachment
<b>9670</b>	Tee adapter	<b>Threaded Adapters</b>	
<b>9059</b>	Pressure gauge	<b>679</b>	V-belt pulley puling attachment
<b>Pullers</b>		<b>8005</b>	5/8" – 18 F. x 3/8" – 16 M. (2)
<b>1062</b>	17 1/2 ton cap. Bi-Directional™ Puller with 16 1/2" legs	<b>8006</b>	5/8" – 18 F. x 1/2" – 20 M. (2)
<b>24814</b>	Speed crank	<b>8007</b>	5/8" – 18 F. x 1/2" – 13 M. (2)
<b>32118</b>	Adjusting screw	<b>8010</b>	5/8" – 18 F. x 5/8" – 11 M. (2)
<b>201923</b>	Pushing adapter	<b>8013</b>	5/8" – 18 F. x 3/4" – 16 M. (2)
<b>1105</b>	22 1/2" legs (pr)	<b>8015</b>	5/8" – 18 F. x 3/4" – 10 M. (2)
<b>1066</b>	17 1/2 ton 3-jaw hyd. puller	<b>8017</b>	5/8" – 18 F. x 7/8" – 14 M. (2)
<b>1027</b>	Combination 2/3-jaw puller	<b>8018</b>	5/8" – 18 F. x 7/8" – 9 M. (2)
<b>41224</b>	17 1/2 ton 2-jaw puller head	<b>8019</b>	5/8" – 18 F. x 1" – 14 M. (2)
<b>24832</b>	Puller screw	<b>8020</b>	1" – 8 F. x 5/8" – 18 M. (1)
<b>1037</b>	Combination 2/3-jaw puller	<b>8021</b>	1" – 8 F. x 1" – 14 M. (1)
<b>1041</b>	Combination 2/3-jaw puller	<b>8044</b>	Female threaded adapter set
<b>28228</b>	Cylinder cap	<b>8038</b>	5/8" – 18 F. x 3/4" – 16 F. (2)
		<b>8056</b>	Set of 6 shaft protectors (8050-8055)
		<b>8075</b>	Set of 11 shaft protectors (8057-8067)

Set Contents	Hydraulics	Set Contents	Accessories
<b>P55</b>	Single-stage hydraulic hand pump assembly	<b>1154</b>	Bearing cup pulling attachment
<b>RT172</b>	17 1/2 ton cylinder with threaded insert	<b>1130</b>	Bearing pulling attachment
<b>9798</b>	Hose half coupler	<b>1105</b>	22 1/2" legs (pr)
<b>9767</b>	Hydraulic hose – 6'	<b>24814</b>	Speed crank
<b>9670</b>	Tee adapter	<b>28228</b>	Screw cap
<b>9059</b>	Pressure gauge	<b>32118</b>	Adjusting screw
<b>Pullers</b>		<b>201454</b>	Pushing adapter
<b>1062</b>	17 1/2 ton cap. Bi-Directional™ Puller with 16 1/2" legs	<b>41224</b>	2-jaw head for 1066
<b>1066</b>	17 1/2 ton 3-jaw hyd. puller	<b>Threaded Adapters</b>	
		<b>8020</b>	1" – 8 F. x 5/8" – 18 M. (1)
		<b>8038</b>	5/8" – 8 F. x 3/4" – 16 F. (2)

**30 ton capacity puller set** – Just what you need for those big jobs. Not only do you get a 30 ton hydraulic Bi-Directional™ Puller, you also get a 2-jaw and 3-jaw hydraulic puller. Plus, many popular accessories and the hardware to tackle the big jobs right away.

**No. IPS30H** – 30 ton capacity hydraulic maintenance puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 330 lbs.

Set Contents	Hydraulics	Set Contents	Pullers
<b>P55</b>	Single-stage hydraulic hand pump assembly	<b>1074</b>	30 ton, 3-jaw hyd. puller
<b>RT302</b>	30 ton cylinder with threaded insert	<b>41226</b>	2-way head for 1074
<b>9798</b>	Hose half coupler	<b>1070</b>	30 ton cap. hydraulic Bi-Directional™ Puller with 18" legs
<b>9767</b>	Hydraulic hose – 6'	<b>1111</b>	28" legs for 1070
<b>9670</b>	Tee adapter	<b>27198</b>	Speed crank
<b>9059</b>	Pressure gauge	<b>28229</b>	Screw cap
<b>Accessories</b>		<b>34510</b>	Pushing adapter
<b>8036</b>	Female threaded adapters 1" – 14F. x 1" – 14F. (2)	<b>34758</b>	Adjusting screw
<b>1166</b>	Bearing cup pulling attach.		
<b>1127</b>	Bearing pulling attachment		

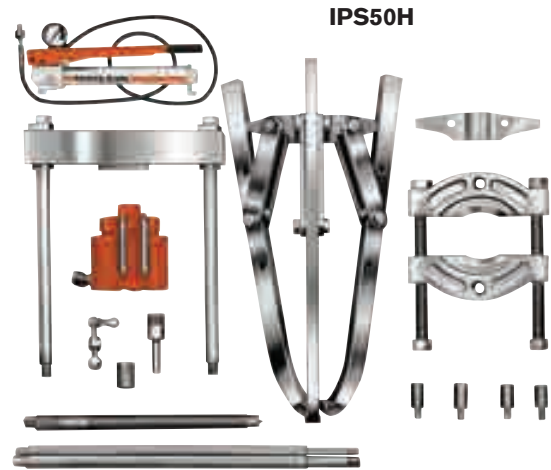



**Note:** Wooden storage box No. **3084380R9** is provided with the sets listed on this page. 46"L x 22 1/2"H x 30"D. Wt. 92 lbs. Metal storage boxes also available (see page 213).

**50 ton capacity puller set** - For those really big jobs, this 50 ton puller set is what you need. Just think of the jobs you can do with a 50 ton hydraulic Bi-Directional™ Puller, a 2-jaw and a 3-jaw puller, both with a 50 ton capacity. Of course, you also get many versatile accessories and attachments.

**No. IPS50H** – 50 ton capacity hydraulic maintenance puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 576 lbs.

Order No.	Hydraulics	Order No.	Pullers
<b>P55</b>	Single-stage hydraulic hand pump assembly	<b>1080</b>	50 ton, 3-jaw hyd. puller
<b>RT503</b>	50 ton cylinder with threaded insert	<b>50449</b>	2-way head for 1080
<b>9798</b>	Hose half coupler	<b>1076</b>	50 ton cap. hydraulic Bi-Directional™ Puller with 24" legs
<b>9767</b>	Hydraulic hose – 6'	<b>1113</b>	34" legs for 1076
<b>9670</b>	Tee adapter	<b>29595</b>	Speed crank
<b>9059</b>	Pressure gauge	<b>28230</b>	Screw cap
<b>Threaded Adapters</b>		<b>34755</b>	Pushing adapter
<b>8024</b>	1 1/4" – 12F. x 1 3/4" – 12M(2)	<b>32698</b>	Adjusting screw
<b>8028</b>	1 5/8" – 5 1/2 F. x 1" – 8M.	<b>1128</b>	Bearing pulling attachment
<b>8029</b>	1 5/8" – 5 1/2 F. x 1" – 14M.		



**CAUTION:** All the items shown may not withstand the full tonnage specified. Example: When an accessory with a 1 ton capacity is used with a 7 ton puller, the setup can be used only at a force of 1 ton.





# PULLER SETS

Hydraulic  
17 1/2 & 30 Ton



**Note:** Wooden storage box No. **3084360R9** is provided with this set. 40"L x 17 1/2"H x 24"D Wt. 64 lbs.  
Metal storage boxes also available (see page 213).



2-jaw puller reaches through spokes of gear to grip hub. Hand pump supplies hydraulic power.



Flexible coupler is removed from electric motor shaft with 2-jaw puller.



Typical setup for removing sprocket drive pinion shaft. Puller screw is attached to shaft by threaded adapter. Shaft is now ready to be pulled out hydraulically.



PULLERS

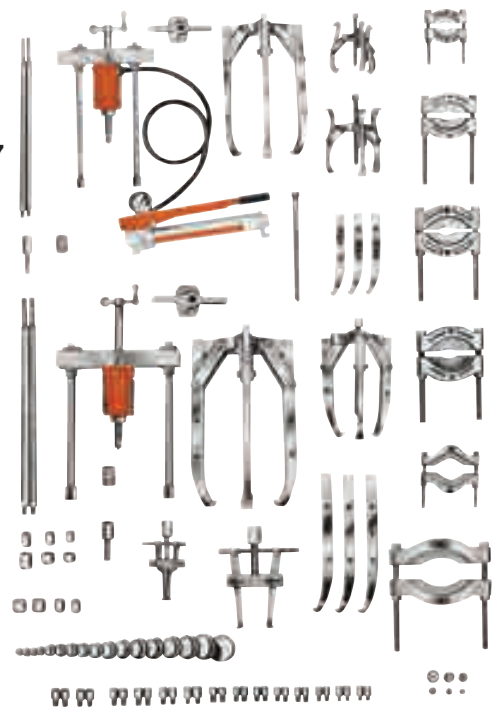
## IPS3017

### 17 1/2 and 30 ton capacity puller sets

— These heavy-duty maintenance sets will more than pay for themselves, especially in saving you costly damage to parts. This set lets you tackle hundreds of applications where pushing and pulling are required.

**No. IPS3017** — 17 1/2 and 30 ton capacity manual and hydraulic puller set. Includes hydraulics, pullers, and accessories listed below. Wt., 537 lbs.

**No. IPS3017B** — Puller set with MB8 metal box. Wt., 563 lbs.



Order No.	Hydraulics	Order No.	Accessories
<b>P55</b>	Single-stage hyd. hand pump assembly	<b>24832</b>	Special puller forcing screw
<b>RT172</b>	17 1/2 ton center-hole twin cylinder w/ threaded insert	<b>8075</b>	Step plate adapter set
<b>RT302</b>	30 ton center-hole twin cylinder w/ threaded insert	<b>8076</b>	Step plate adapter set
<b>9798</b>	Hose half coupler	<b>8056</b>	Shaft protector set
<b>9767</b>	Hydraulic hose — 6'	<b>679</b>	Pulley pulling attachment
<b>9670</b>	Tee adapter	<b>680</b>	Pulley pulling attachment
<b>9059</b>	Pressure gauge	<b>1154</b>	Bearing cup pulling attach.
	<b>Pullers</b>	<b>1166</b>	Bearing cup pulling attach.
<b>1062</b>	17 1/2 ton cap. hydraulic Bi-Directional™ w/ 16 1/2" legs	<b>1122</b>	Bearing pulling attachment
<b>1070</b>	30 ton cap. hydraulic Bi-Directional™ w/ 18" legs	<b>1123</b>	Bearing pulling attachment
<b>1066</b>	17 1/2 ton 3-jaw hyd. puller	<b>1126</b>	Bearing pulling attachment
<b>1074</b>	30 ton 3-jaw hyd. puller	<b>1130</b>	Bearing pulling attachment
<b>41224</b>	17 1/2 ton 2-jaw puller head		<b>Threaded Adapters</b>
<b>41226</b>	30 ton 2-jaw puller head	<b>8005</b>	5/8" — 18 F. x 3/8" — 16 M. (2)
<b>1027</b>	Combination 2/3-jaw puller	<b>8006</b>	5/8" — 18 F. x 1/2" — 20 M. (2)
<b>1037</b>	Combination 2/3-jaw puller	<b>8007</b>	5/8" — 18 F. x 1/2" — 13 M. (2)
<b>1041</b>	Combination 2/3-jaw puller	<b>8010</b>	5/8" — 18 F. x 5/8" — 11 M. (2)
<b>43892</b>	Long jaws (3) for 1037	<b>8012</b>	1" — 14 F. x 5/8" — 18 M. (2)
<b>30902</b>	Long jaws (3) for 1041	<b>8013</b>	5/8" — 18 F. x 3/4" — 16 M. (2)
<b>1105</b>	22 1/2" legs for 1062	<b>8015</b>	5/8" — 18 F. x 3/4" — 10 M. (2)
<b>1111</b>	28" legs for 1070	<b>8017</b>	5/8" — 18 F. x 7/8" — 14 M. (2)
<b>24814</b>	Speed crank	<b>8018</b>	5/8" — 18 F. x 7/8" — 9 M. (2)
<b>27198</b>	Speed crank	<b>8019</b>	5/8" — 18 F. x 1" — 14 M. (2)
<b>28229</b>	Screw cap	<b>8020</b>	1" — 8 F. x 5/8" — 18 M. (1)
<b>28228</b>	Cylinder cap	<b>8021</b>	1" — 8 F. x 1" — 14 M. (1)
<b>32118</b>	Adjusting screw	<b>8025</b>	1 1/4" — 7 F. x 5/8" — 18 M. (2)
<b>34758</b>	Adjusting screw	<b>8027</b>	1 1/4" — 7 F. x 1" — 14 M. (2)
<b>34510</b>	Pushing adapter	<b>8036</b>	1" — 14 F. x 1" — 14 F. (2)
<b>201923</b>	Pushing adapter	<b>8038</b>	5/8" — 18 F. x 3/4" — 16 F. (2)
		<b>8044</b>	Female threaded adapter set

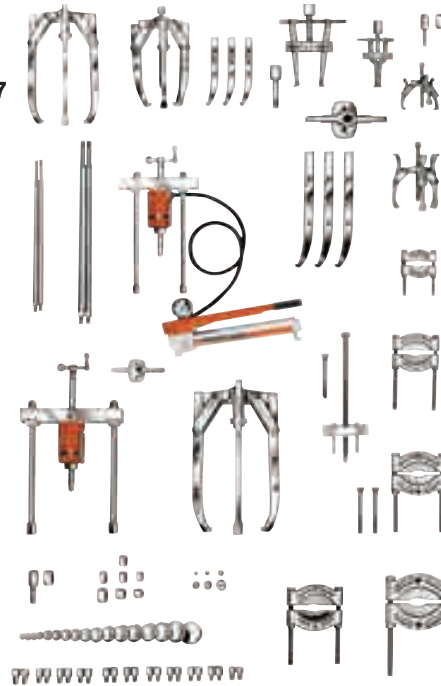
**CAUTION:** All the items shown may not withstand the full tonnage specified. Example: When an accessory with a 1 ton capacity is used with a 7 ton puller, the setup can be used only at a force of 1 ton.

**17½ and 50 ton capacity puller sets** – If you are looking for a maintenance puller set that will handle a wide variety of applications, this one is for you. The mechanical and hydraulic pullers and attachments are designed to handle most removing and installing jobs with a minimal amount of effort.

**No. IPS5017** – 17½ and 50 ton capacity manual and hydraulic puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 892 lbs.

**No. IPS5017B** – Puller set with MB16 metal box. Wt., 915 lbs.

IPS5017

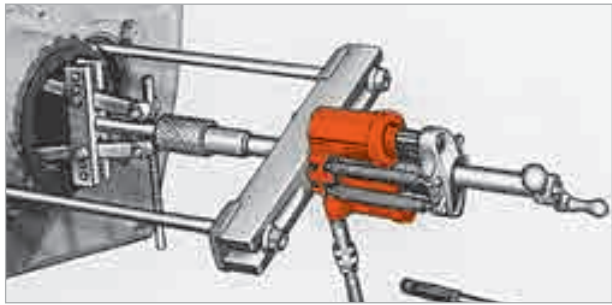


Order No.	Hydraulics	Order No.	Accessories
<b>P55</b>	Single-stage hyd. hand pump assembly	<b>8075</b>	Step plate adapter set
<b>RT172</b>	17½ ton center-hole twin cylinder w/ threaded insert	<b>8076</b>	Step plate adapter set
<b>RT503</b>	50 ton center-hole twin cylinder w/ threaded insert	<b>8056</b>	Shaft protector set
<b>9798</b>	Hose half coupler	<b>1154</b>	Bearing cup pulling attach.
<b>9767</b>	Hydraulic hose – 6'	<b>1166</b>	Bearing cup pulling attach.
<b>9670</b>	Tee adapter	<b>1122</b>	Bearing pulling attachment
<b>9059</b>	Pressure gauge	<b>1123</b>	Bearing pulling attachment
	<b>Pullers</b>	<b>1126</b>	Bearing pulling attachment
<b>1062</b>	17½ ton cap. hydraulic Bi-Directional™ w/ 16½" legs	<b>1127</b>	Bearing pulling attachment
<b>1076</b>	50 ton cap. hydraulic Bi-Directional™ w/ 24" legs	<b>1130</b>	Bearing pulling attachment
<b>1066</b>	17½ ton 3-jaw hyd. puller	<b>34479</b>	Reducing adapter for 1166
<b>1080</b>	50 ton 3-jaw hyd. puller	<b>10215</b>	Hex nut; ¾" – 16 (2)
<b>41224</b>	17½ ton 2-jaw puller head	<b>24829</b>	Short bolt
<b>50449</b>	50 ton 2-jaw puller head		<b>Threaded Adapters</b>
<b>1027</b>	Combination 2/3-jaw puller	<b>8005</b>	5/8" – 18 F. x 3/8" – 16 M. (2)
<b>1037</b>	Combination 2/3-jaw puller	<b>8006</b>	5/8" – 18 F. x ½" – 20 M. (2)
<b>1041</b>	Combination 2/3-jaw puller	<b>8007</b>	5/8" – 18 F. x ½" – 13 M. (2)
<b>43892</b>	Long jaws (3) for 1037	<b>8010</b>	5/8" – 18 F. x 3/8" – 11 M. (2)
<b>30902</b>	Long jaws (3) for 1041	<b>8013</b>	5/8" – 18 F. x ¾" – 16 M. (2)
<b>1105</b>	22½" legs for 1062	<b>8015</b>	5/8" – 18 F. x ¾" – 10 M. (2)
<b>1113</b>	34" legs for 1076	<b>8019</b>	5/8" – 18 F. x 1" – 14 M. (2)
<b>24814</b>	Speed crank	<b>8020</b>	1" – 8 F. x 5/8" – 18 M. (1)
<b>29595</b>	Speed crank	<b>8021</b>	1" – 8 F. x 1" – 14 M. (1)
<b>28228</b>	Screw cap	<b>8023</b>	1¼" – 12 F. x 1" – 14 M. (2)
<b>28230</b>	Cylinder cap	<b>8028</b>	1½" – 5½ F. x 1" – 8 M. (1)
<b>32118</b>	Adjusting screw	<b>8029</b>	1½" – 5½ F. x 1" – 14 M. (1)
<b>32698</b>	Adjusting screw	<b>8038</b>	5/8" – 18 F. x ¾" – 16 F. (1)
<b>34755</b>	Pushing adapter	<b>8044</b>	Female threaded adapter set
<b>201923</b>	Pushing adapter		
<b>7392</b>	Gear and pulley puller		
<b>24833</b>	Forcing screw for 7392		

**CAUTION:** All the items shown may not withstand the full tonnage specified. Example: When an accessory with a 1 ton capacity is used with a 7 ton puller, the setup can be used only at a force of 1 ton.



**Note:** Wooden storage box No. **3084390R9** is provided with this set. 46"L x 22½"H x 30"D Wt. 105 lbs. Metal storage boxes also available (see page 213).



Combination of 50 ton capacity Bi-Directional Puller and cup pulling attachment simplifies the removal of a final drive axle seal.



Hydraulically powered Bi-Directional Puller removes drive wheel. Pulling attachment is used to provide gripping surface.



3-jaw puller provides grip while hydraulic hand pump provides power to push shaft from housing. Shaft protector is used on end of puller screw.







# BEARING PUSHERS

8 Ton

These pushers are ideal for installing a wide variety of press-fit parts, including bushings, wheels, bearings, gears, and pulleys. Applications for the pushers will be found in motor repair shops, steel mills, mines, quarries, shipyards, utilities, maintenance shops, agricultural machinery repair, and so on.

- Power Team, a leader in hydraulic tools for over 80 years, now adds patented, pushing systems to the world's most complete line of innovative equipment.
- Power Team pushers have been rigorously tested for top performance and reliability at maximum capacity.
- These pushing systems are covered by Power Team's exclusive Lifetime Powerthon Warranty — assuring you of the highest quality and reliability.

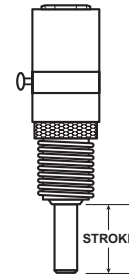
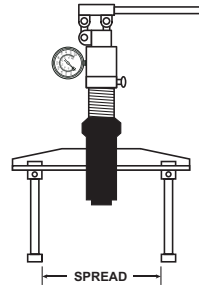
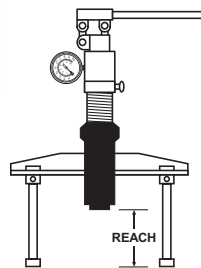


3/4-16 thread  
1 1/2" depth



## BEARING PUSHER KITS

- Portable pushing kits include an external Lock-Jaw™ puller, an internal puller, hydraulic cylinder, and a tri-section pulling attachment, all in one compact, lightweight unit complete with carrying case.



Order No.	Description	Cylinder Capacity	Reach (in./mm.)	Spread (in./mm.)	Stroke (in./mm.)	Weight with Case (lbs./kg.)
PHP8H	Manual-Hydraulic Pusher	8 tons	2.16-15.16/ 55-385	2.28-10.62/ 58-270	3.23/82	74/33.6
PHP8R	Remote Hydraulic Pusher	8 tons	2.16-15.16/ 55-385	2.28-10.62/ 58-270	3.23/82	77.3/35.1
PHP8H-1	Manual-Hydraulic Pusher/Puller Kit	8 tons	2.16-15.16/ 55-385	2.28-10.62/ 58-270	3.23/82	117/53.1
PHP8R-1	Remote Hydraulic Pusher/Puller Kit	8 tons	2.16-15.16/ 55-385	2.28-10.62/ 58-270	3.23/82	114/51.7

**IMPORTANT SAFETY INFORMATION:** Power Team recommends the use of protective blankets for all pushing operations. For ease of visual clarity, we have shown the pusher application photos without these safeguards.

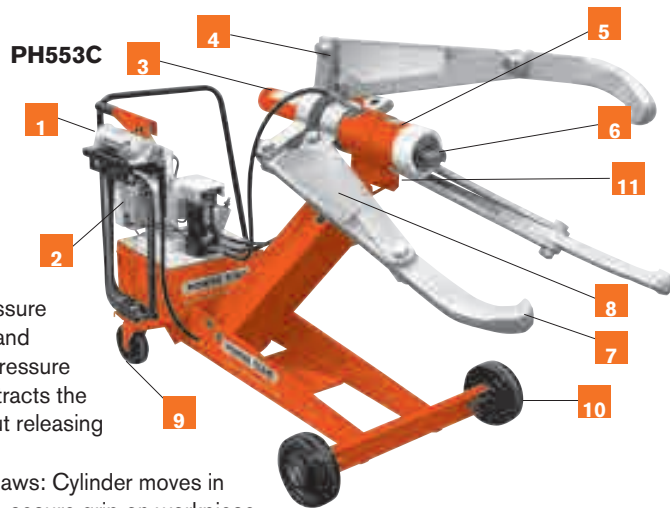


# UNIVERSAL PULLERS

55 Ton & 100 TON



**Note:** Four cylinder extensions (not pictured) are included. The included lifting eyes (not pictured) permit use of an overhead crane to raise entire assembly.



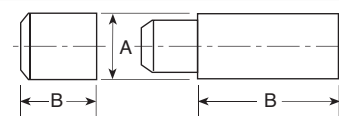
## ENFORCER 55

- 1 Hydraulic lift system for easy, precise position of puller.
- 2 Unique dual pump arrangement: Low pressure pump positions, holds and opens jaws. The high pressure pump advances and retracts the pushing cylinder without releasing clamped jaws.
- 3 Hydraulically-actuated jaws: Cylinder moves in or out to provide a safe, secure grip on workpiece.
- 4 Puller can be assembled in 2 or 3 jaw configurations.
- 5 Choice of cylinder with a 6 1/4" or 13 1/4" stroke.
- 6 Self-centering: Center cylinder on work; puller jaws will automatically grip work evenly.
- 7 Super Lock-Jaw™ feature means the harder the pull, the tighter the puller jaws grip. No chains or cages required to keep puller jaws from slipping or springing off the part being pulled.
- 8 Guards at pinch points protect operator.
- 9 Cart's swivel casters give ease of mobility.
- 10 Large wheels make movement of cart easy.
- 11 Puller can be mounted on cart 90 degrees to right or left of puller cart centerline, permitting use in tight quarters, such as between machinery.

**Conversion kit No. 251468** – Kit converts PH553C series to PH553CL series. Jaws are 12" longer. Kit contains three jaws and six straps with guards. Wt., 250 lbs.

### Pushing Adapters

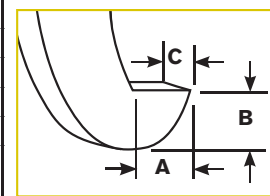
Order No.	A (in.)	B (in.)	Qty.*
251002	2 3/4	2 3/4	1
350593†	2 3/4	6	2
350594	2 3/4	3	1
350637	2 3/4	10	1



\*Number of adapters supplied with each Enforcer.  
†Only 1 for units with 13 1/4" stroke.

(251002 only)

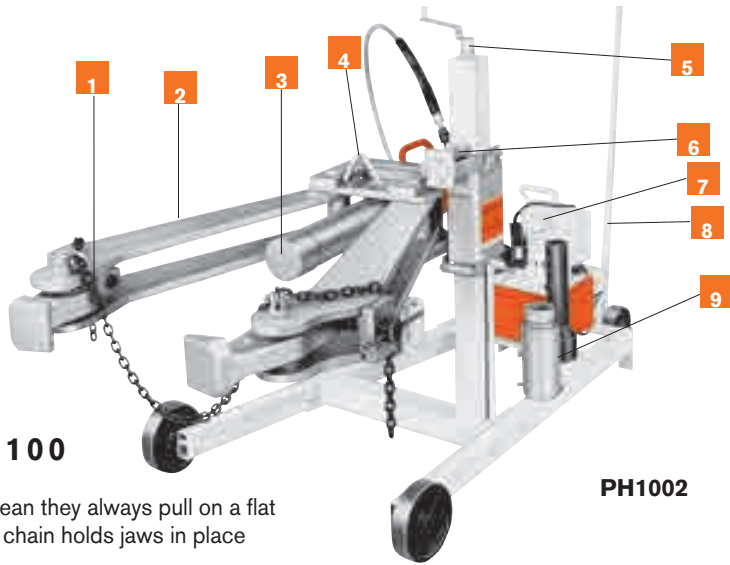
Order No.	Min. Spread (in.)	Reach		Overall Length* (in.)	Cyl. Stroke (in.)	Power Source Requirements	Prod. Wt. (lbs.)	Puller Jaw Tip Dimensions			
		Min. Spread (in.)	Max. Spread (in.)					A (in.)	B (in.)	C (in.)	
PH553C	4	22	48	14	90	6 1/4	115 V, 60Hz, 25 Amp Cap.	749	7/8	1 1/4	1 7/8
PH553C13	4	15	48	7	90	13 1/4	115V, 60Hz, 25 Amp Cap.	776			
PH553CL13	2 1/2	25 5/8	45 1/4	22	102	13 1/4	115V, 60Hz, 25 Amp Cap.	836			
PH553C-230	4	22	48	14	90	6 1/4	230V, 50/60Hz, 15 Amp Cap.	749			
PH553C13-230	4	15	48	7	90	13 1/4	230V, 50/60Hz, 15 Amp Cap.	776			
PH553CL-230	2 1/2	32 5/8	45 1/4	29	102	6 1/4	230V, 50/60Hz, 15 Amp Cap.	809			
PH553CL13-230	2 1/2	25 5/8	45 1/4	22	102	13 1/4	230V, 50/60Hz, 15 Amp Cap.	836			



**Note:** See other pulling attachments on page 205

**Note:** Cart and Puller (cart width is 32")





## ENFORCER 100

- 1 Adjustable jaws mean they always pull on a flat surface. Retaining chain holds jaws in place during positioning.
- 2 Lock-Jaw™ feature means jaws grip progressively tighter as more pulling force is applied.
- 3 100 ton hydraulic cylinder is single-acting, spring return type with a maximum working pressure of 10,000 psi.
- 4 Lifting bracket allows puller to be lifted if the workpiece center is more than 36" off the floor.
- 5 Adjusting screw allows operator to move vertical position of the puller.
- 6 Spring loaded feature means Enforcer 100 will align itself on uneven pulls.
- 7 Hydraulic pump is a 2-stage, high pressure unit controlled by remote hand switch with 25 foot cord.
- 8 Tow bar provides puller with plenty of mobility.
- 9 Pushing adapters have a diameter of 4 1/8" and 2 1/2".

PH1002

An ideal puller for steel mills, mines, oil fields, utility projects, paper mills, construction sites, railroads, airline shops, shipyards or anywhere else where large equipment and machinery pose tough maintenance challenges.

### “Enforcer 100” universal puller –

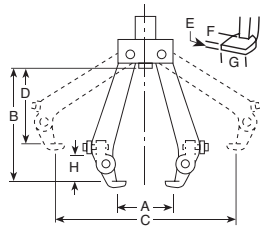
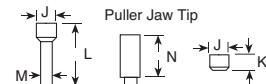
**No. PH1002** – 100 ton, 2-jaw universal hydraulic puller. Includes: 2-jaw Lock-Jaw™ puller, PE552S 2-speed electric/hydraulic power unit, C10010C 100 ton hydraulic cylinder with 10 1/4" stroke and six adapters. Wt., 890 lbs.

**No. PH1002J** – Same as PH1002, but without hydraulic power unit. Wt., 825 lbs.

**PE552S** – Pump only. 1 1/8 hp, 115 volt, 50/60Hz, single phase, draws 25 amps at full load. Also available in 220 volt, 50Hz.

**Note:** For 220 volt, 50 Hz applications, order Part No. PH1002-220

### Ram extensions



Order No.	Adapter Type	Amount included w/puller	Amount included w/puller				
			J (in.)	K (in.)	L (in.)	M (in.)	N (in.)
44745	Push	1	4 1/8	—	13 1/2	2 1/2	—
44766	Ext.	4	4 1/8	—	—	—	8
303045	Push	1	4 1/8	3 1/2	—	—	—

Order No.	Reach		Reach		Puller Jaw Tip			Cylinder Height H (in.)	Vertical Stroke Adjust. (in.)	Overall Length (in.)	Max. Thickness Workpiece (in.)	Wheel Dia.	Power Source Requirements
	Min. Spread A (in.)	Min. Spread B (in.)	Max. Spread C (in.)	Max. Spread D (in.)	E (in.)	F (in.)	G (in.)						
PH1002	15	42	48	34	1	2 1/4	5	10 1/4	12-36	94	12	8	115v, 50/60hZ, 25 Amp Cap.
PH1002J	15	42	48	34	1	2 1/4	5	10 1/4	12-36	94	12	8	—



# ROLLER BEARING PULLER/INSTALLER

(Railroad Edition)  
100 Ton Pulling Capacity



Our roller bearing pullers are ideal for replacing tough, worn-out bearings on RR freight cars.



The photo above shows the Universal Puller in position on the roller bearing assembly, which is ready for removal.

- Quickly remove or install tapered roller bearings.
- Designed with the cooperation of major bearing manufacturers.
- It's a fast, simple, one-man operation with 100-tons of pulling force provided.
- Completely portable for easy, convenient positioning and out-of-the-way storage.
- The standard in most wheel shops.

**Universal railroad axle journal roller bearing puller/installer** – For years, the standard in most wheel shops. Power Team now has four models to choose for greater flexibility. With both sling and jack models available and two pumps to choose from, you can tailor the unit to match your needs. With the proper equipment and know-how, removal and installation of axle journal roller bearings takes an absolute minimum of time and effort.

Each unit will service a full line of bearings with rotating end caps, from class B thru GG. No other method can match Power Team's simplicity. Removal is very easy. Simply remove the end caps, slip the pulling shoe between the bearings and the wheel, actuate the pump, and in seconds, 100 tons of pulling force removes the bearing. Installation is just as easy! Each unit is CSA certified (LR19814) and comes complete with a heavy-duty 100-ton hydraulic cylinder, 10,000 P.S.I. (700 bar) pump with remote control solenoid valve, hydraulic pressure gauge (No. 11543), a pulling shoe and installing tube.

Order No.	Model Type	Cylinder Type	Valve Type	Pump Information		
				H.P	Phase	Voltage
PR2100J †	Jack	Double-Acting	Solenoid	2**	1	115 or 230*
PR3100J †	Jack	Double-Acting	Solenoid	3	3	230 or 460*
PR2100S †	Sling	Double-Acting	Solenoid	2	1	115 or 230*
PR3100S †	Sling	Double-Acting	Solenoid	3	3	230 or 460*

\* Prewired at factory for this voltage. Other voltages available upon request.

\*\* The 2 hp, 115 volt requires 30 amp service.

† Equipped with hydraulic pressure gauge No. 11543.

**Tooling order information - IMPORTANT:** This tooling chart applies only to standard AAR configurations for freight care applications. In order to provide adapters needed to service housing-type locomotive and passenger car bearings, as well as metric bearings, Power Team must be provided with the following information: bearing manufacturer's name and general arrangement drawing number, size of bearing to be serviced, railroad name and location and part numbers of adapters already in your possession if you currently own a Puller/Installer.

Tool Description	Class and size of bearing assembly TBU & SP "Metric Tooling"			
	120	130	140	150
Pulling Shoe Insert Adapter	No. 351830	No. 30512	No. 30521	No. 30520
Guide Tube & Cap Screw Assembly	No. 253341	No. 253342	No. 253343	No. 253344
Cap Screw**	No. 253339	No. 253394	No. 253339	No. 253395
Guide Tube Adapter	No. 21247	No. 21247	No. 21247	No. 21247
Installing Tube Adapter Ring	No. 253335	No. 253336	No. 253337	No. 253338

\*\* Screws are supplied with the guide tube and should be ordered as replacements only.





PR3100J

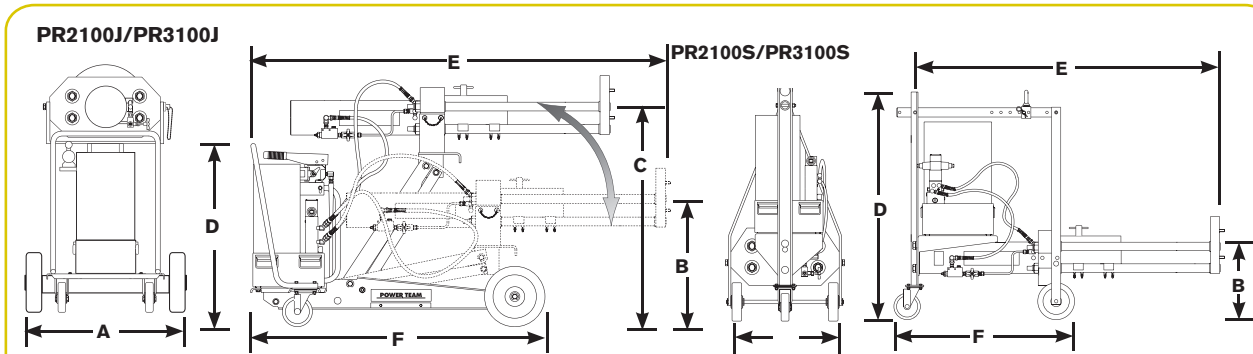


PR3100S

Tool Description	Class and size of bearing assembly to be serviced									
	Class B 4 1/4" x 8" (No.)	Class C 5" x 9" (No.)	Class D 5 1/2" x 10" (No.)	Class E 6" x 11" (No.)	Class EE 5 1/2" Axle (No.)	Class EE 6" Axle (No.)	Class F 6 1/2" x 12" (No.)	Class G 7" x 12" (No.)	Class G 6 1/2" Axle (No.)	Class GG 6 1/2" Axle (No.)
Pulling Shoe	No. 420845 is included as part of basic machine – Do Not Order							420846	420846	420846
Pulling Shoe	30522	30512	30521	30520	30520	30519	30519	—	—	—
Insert Adapter										
Guide Tube & Cap Screw Assembly	253313	253314	253317	253318	253316	253327	253320	253321	253319	253323
Cap Screw**	253156	253349	253308	253155	253307	253308	253310	253326	253309	253309
Guide TubeNo. Adapter	23934	21248	21248	21247	21247	21247	21247	21247	21247	21247
Installing Tube	No. 30416 is included as part of basic machine – Do Not Order							30417	30417	30417
Installing Tube Adapter Ring	21242	21258	21256-1	21255-1	21255-1	21257-1	21257-1	30586	30585	30585

**Note:** Adapters listed above are for servicing the following roller bearing assemblies: Brenco "Crown-Taper", New Departure-Hyatt "Hy-Roll Taper", SKF "Expediter" and Timken "AP".

\*\* Screws are supplied with the guide tube and should be ordered as replacements only.



Order No.	Stroke (in.)	Capacity					Speed						Weight (lbs.)
		Pull (Tons)	Inst. (Tons)	Advance (in./min.)	Pull (in./min.)	Inst. (in./min.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	
PR2100J	15 1/2	100	68	35 7/16	3 9/16	4 7/16	32	15 1/16	41 11/16	36 29/32	78	58 3/4	1,162
PR3100J	15 1/2	100	68	35 7/16	3 9/16	4 7/16	32	15 1/16	41 11/16	36 29/32	78	58 3/4	1,146
PR2100S	15 1/2	100	68	35 7/16	3 9/16	4 7/16	24 3/8	11	—	50 1/2	64 1/4	38 3/4	1,003
PR3100S	15 1/2	100	68	35 7/16	3 9/16	4 7/16	24 3/8	11	—	50 1/2	64 1/4	38 3/4	1,008



# DRIVERS

## Bearing, Bushing And Seal



**No. 27793  
Starter Set**



**27797 Master Set  
(Board not included)**

Patent No. 4,429,447

### Universal bearing cup installer

This installer adjusts to fit bearing cups from 3<sup>5</sup>/<sub>8</sub>" to 6<sup>1</sup>/<sub>2</sub>" O.D. Replaces over two dozen plates and drivers. Simply adjust the jaws to fit the cup I.D., lock the jaws, slip the new cup on and drive it home with a hammer. Will not damage new bearings.

**No. 7180** – Univ. bearing cup installer. Wt., 10 lbs.

### Assemble your own "custom-made" driver tools

These sets include discs and handles for custom seal driver assembly to provide a pilot (to prevent cocking), a spacer (so force is applied on the proper area) and a driver (for even force dist.). Discs range

from 1/2" thru 4 1/2" diameters in 1/16" increments. Each set includes a handy plastic box with pre-cut tool tray.

**No. 27793** – Starter Set. Contains handle and discs especially selected to provide the driver sizes most frequently needed. Maximum utility at a modest investment! Wt., 4 lbs.

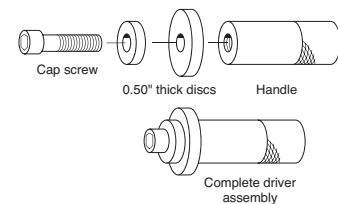
**No. 27794** – Basic Set. Wide coverage, low investment! Includes 41 discs and two handles. Size range: 1/2" thru 3" diameter. Wt., 22 lbs.

**No. 27795** – Big Job Set. Used for servicing large components. You get coverage of 3 1/16" thru 4 1/2" diameter with the 24 discs and handle provided. Wt., 45 lbs.

**No. 27797** – Master Set. For maximum coverage. Three handle sizes and all 65

discs listed in chart below are included. Range: 1/2" thru 4 1/2" diameter. Wt., 68 lbs.

**No. 212377** – Tool organizer board. Will accommodate all components of 27797 Master Set. Tools not included. Wt., 5 lbs.



These sets have the proper-size driver for any seal, bearing or bushing installing job. Select the proper-size discs, attach to handle with cap screws and strike with hammer.

Order No.	DISCS Inch	MM	Order No.	DISCS Inch	MM	Order No.	DISCS Inch	MM
27491	1/2	12.7	27512	1 <sup>13</sup> / <sub>16</sub>	46.0	27534	3 <sup>3</sup> / <sub>16</sub>	81.0
27492	9/16	14.3	27513†	1 <sup>7</sup> / <sub>8</sub>	47.6	27535	3 <sup>1</sup> / <sub>4</sub>	82.6
27493†	5/8	15.9	27514	1 <sup>15</sup> / <sub>16</sub>	49.2	27536	3 <sup>5</sup> / <sub>16</sub>	84.1
27494	1 <sup>1</sup> / <sub>16</sub>	17.5	27515	2	50.8	27537	3 <sup>3</sup> / <sub>8</sub>	85.7
27495†	3/4	19.0	27516	2 <sup>1</sup> / <sub>16</sub>	52.4	27538	3 <sup>7</sup> / <sub>16</sub>	87.3
27496	1 <sup>3</sup> / <sub>16</sub>	20.6	27517	2 <sup>1</sup> / <sub>8</sub>	54.0	27539	3 <sup>1</sup> / <sub>2</sub>	88.9
27497†	7/8	22.2	27518	2 <sup>3</sup> / <sub>16</sub>	55.6	27540	3 <sup>9</sup> / <sub>16</sub>	90.5
27498	1 <sup>5</sup> / <sub>16</sub>	23.8	27519	2 <sup>1</sup> / <sub>4</sub>	57.2	27541	3 <sup>5</sup> / <sub>8</sub>	92.1
27499†	1	25.4	27520	2 <sup>5</sup> / <sub>16</sub>	58.7	27542	3 <sup>11</sup> / <sub>16</sub>	93.7
27500	1 <sup>1</sup> / <sub>16</sub>	27.0	27521	2 <sup>3</sup> / <sub>8</sub>	60.3	27543	3 <sup>3</sup> / <sub>4</sub>	95.3
27501†	1 <sup>1</sup> / <sub>8</sub>	28.6	27522	2 <sup>7</sup> / <sub>16</sub>	61.9	27544	3 <sup>13</sup> / <sub>16</sub>	96.8
27502	1 <sup>3</sup> / <sub>16</sub>	30.2	27523	2 <sup>1</sup> / <sub>2</sub>	63.5	27545	3 <sup>7</sup> / <sub>8</sub>	98.4
27503†	1 <sup>1</sup> / <sub>4</sub>	31.8	27524	2 <sup>9</sup> / <sub>16</sub>	65.1	27546	3 <sup>15</sup> / <sub>16</sub>	100.0
27504	1 <sup>5</sup> / <sub>16</sub>	33.3	27525	2 <sup>5</sup> / <sub>8</sub>	66.7	27547	4	101.6
27505†	1 <sup>3</sup> / <sub>8</sub>	34.9	27526	2 <sup>11</sup> / <sub>16</sub>	68.3	27548	4 <sup>1</sup> / <sub>16</sub>	103.2
27506	1 <sup>7</sup> / <sub>16</sub>	36.5	27527	2 <sup>3</sup> / <sub>4</sub>	69.8	27549	4 <sup>1</sup> / <sub>8</sub>	104.8
27507†	1 <sup>1</sup> / <sub>2</sub>	38.1	27528	2 <sup>13</sup> / <sub>16</sub>	71.4	27550	4 <sup>3</sup> / <sub>16</sub>	106.4
27508	1 <sup>9</sup> / <sub>16</sub>	39.7	27529	2 <sup>7</sup> / <sub>8</sub>	73.0	27551	4 <sup>1</sup> / <sub>4</sub>	108.0
27509†	1 <sup>5</sup> / <sub>8</sub>	41.3	27530	2 <sup>15</sup> / <sub>16</sub>	74.6	27552	4 <sup>5</sup> / <sub>16</sub>	109.5
27510	1 <sup>11</sup> / <sub>16</sub>	42.9	27531	3	76.2	27553	4 <sup>3</sup> / <sub>8</sub>	111.1
27511†	1 <sup>3</sup> / <sub>4</sub>	44.4	27532	3 <sup>1</sup> / <sub>16</sub>	77.8	27554	4 <sup>7</sup> / <sub>16</sub>	112.7
			27533	3 <sup>1</sup> / <sub>8</sub>	79.4	27555	4 <sup>1</sup> / <sub>2</sub>	114.3

† = Items contained in 27793 starter set.

### SET COMPONENTS

Order No.	Description
10012†	1/4"-20 UNC X 7/8"*
10020†	1/4"-20 UNC X 1 1/4"*
10854†	1/4"-20 UNC X 1 3/4"*
10855†	1/4"-20 UNC X 2 3/4"*
12001†	1/4"-20 UNC X 2 1/4"*
27487†	Small Handle 5" X 3/4" Dia.
27488	Med. Handle 6" X 1 1/4" Dia.
27489	Large Handle 6" X 1 5/8" Dia.
27490	Extension Tube
7350†	Allen Wrench



### SELECTING A PUNCH

The following information is provided as a convenient general reference guide for metal punching operations.

#### HOLE SIZE VS. MATERIAL THICKNESS

Punching holes in metal is the fast, economical way to get precise hole size, smoothness and minimum burr. Compressive strength of the punch steel determines that the thickness of the metal being punched must not exceed the diameter of the punch. This relationship varies with the type of material. For example: the minimum hole diameter will be 1/4" in 1/4" mild steel, 1/4" in 3/16" stainless steel, and 1/4" in 5/16" aluminum.

#### MAXIMUM RATED CAPACITY

All punching tools have their maximum capacity for safe, dependable operation over a long life span. The hydraulic punches listed in this catalog have a "rated capacity" based on their design strength. Before selecting a tool, use the following charts to determine the specific tonnage required to punch the size and shape holes through the type and gauge metal considered.

#### DETERMINING TONNAGES FOR ROUND HOLES

To determine tonnages for hot rolled mild steel (typically used in bar size angle iron, channels, tees and zees) with a 50,000 PSI shear strength, read directly from chart #1. Example: To punch a 3/8" diameter hole thru 3/8" thick mild steel, chart #1 shows 11.1 tons are required. For ASTM A-36 steel (typically used for structural size wide flange, H and I beams, tees and zees) with a 60,000 PSI shear strength, read direct from chart #2. Example: To punch a 1/4" round hole in 1/4" thick A-36 steel, chart #2 shows 5.9 tons of force is needed.

CHART #1		TONS OF PRESSURE REQUIRED TO PUNCH MILD STEEL											
Material		Round Hole Diameter											
Thickness		1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"
Gauge	Inches												
20	1/32	.4	.5	.7	.9	1.1	1.2	1.4	1.6	1.8	1.9	2.1	2.3
18	3/64	.5	.7	.9	1.2	1.4	1.6	1.9	2.1	2.4	2.6	2.8	3.1
16	1/16	.6	.9	.6	1.5	1.8	2.1	2.3	2.6	2.9	3.2	3.5	3.8
14	5/64	.7	1.1	1.2	1.8	2.2	2.6	2.9	3.3	3.7	4.0	4.4	4.8
12	7/64	1.0	1.5	1.5	2.6	3.1	3.6	4.1	4.6	5.1	5.7	6.2	6.7
11	1/8	1.2	1.8	2.1	2.9	3.5	4.1	4.7	5.1	5.9	6.2	7.1	7.6
10	9/64	1.3	2.0	2.4	3.3	4.0	4.6	5.3	5.9	6.6	7.3	7.9	8.6
3/16"	3/16	---	2.8	2.6	4.6	5.5	6.4	7.4	8.3	9.2	10.1	11.0	12.0
1/4"	1/4	---	---	3.7	6.1	7.4	8.6	9.8	11.1	12.3	13.5	14.7	16.0
5/16"	5/16	---	---	4.9	7.8	9.2	10.7	12.3	13.9	15.4	17.0	18.5	20.0
3/8"	3/8	---	---	---	---	11.1	12.8	14.8	16.5	18.5	20.2	22.1	23.8
1/2"	1/2	---	---	---	---	---	---	19.7	22.0	24.6	26.9	29.5	31.8

TONS OF PRESSURE

CHART #2		TONS OF PRESSURE REQUIRED TO PUNCH ASTM-A36 STRUCTURAL STEEL											
Material		Round Hole Diameter											
Thickness		1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"
Gauge	Inches												
12	7/64	1.2	1.9	2.5	3.1	3.7	4.3	4.9	5.6	6.2	6.8	7.4	8.0
11	1/8	1.4	2.1	2.8	3.5	4.2	4.9	5.7	6.4	7.1	7.8	8.5	9.2
10	9/64	---	2.4	3.2	4.0	4.8	5.6	6.4	7.2	7.9	8.7	9.5	10.3
3/16"	3/16	---	3.3	4.4	5.5	6.6	7.7	8.8	9.9	11.0	12.1	13.2	14.3
1/4"	1/4	---	4.4	5.9	7.4	8.6	10.3	11.8	13.2	14.7	16.2	17.7	19.1
5/16"	5/16	---	---	7.4	9.2	11.0	12.9	14.7	16.5	18.4	20.2	22.0	24.0
3/8"	3/8	---	---	8.8	11.0	13.3	15.5	17.7	19.9	22.1	24.3	26.5	28.7
1/2"	1/2	---	---	---	---	---	---	23.6	26.5	29.4	32.4	35.3	38.3

TONS OF PRESSURE

RESOURCES





# MEASUREMENTS/ SPECIFICATIONS

## Die Clearance

**CHART #3 TONS OF PRESSURE REQUIRED TO SHEAR 1" LENGTH**

Material Thickness	Mild Steel	Stainless Steel	Brass	TONS OF PRESSURE
3/16	4.25	7.0	3.25	
1/4	6.25	9.5	4.5	
5/16	8.0	12.0	5.5	
3/8	9.5	14.25	6.25	
7/16	11.0	16.5	7.75	
1/2	12.5	18.75	8.75	

### DETERMINING TONNAGES FOR IRREGULAR SHAPED HOLES

When punching irregular shaped holes (square, obround, etc...) multiply the length of metal to be cut by the multiplier given for a 1" length of cut in chart #3. Example: The shear length (or total

distance around a 1/2" square hole) is 2". To punch such a hole in 1/4" thick mild steel, multiply 2" x 6.25 (from chart #3) = 12.5 tons. For stainless steel this would be 2" x 9.5 = 19 tons.

### DIE CLEARANCE

The relationship of the larger die hole size to the punch size is die clearance and is stated as a percentage of the thickness of the material being punched. The range of clearances varies from 10% for thin materials to 20% for thicker materials. For 0.75" material, the total die clearance is .150".

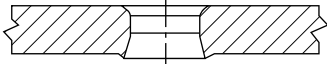
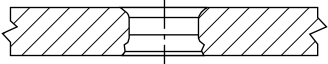

Clearance should always be specified when there is any reason for doubt (see illustrations below). Effects of die clearance are more noticeable in thicker materials (such as 0.50") than in thinner materials (such as 0.19"). When ordering die sets, specify the type and thickness of material being punched (see chart #4).

**CHART #4 CLEARANCE FOR MILD STEEL**

Material Thickness	Approximate Decimal Thickness	Overall Clearance—Add to Punch Size	TONS OF PRESSURE
7 gauge	.1793	.021	
3/16	.1875	.023	
1/4	.250	.037	
5/16	.3125	.047	
3/8	.375	.057	
1/2	.500	.075	

NOTE: Most grades of half hard aluminum use the same clearance as shown above. In many cases, your own experience may dictate that you call for clearances different from the above, especially when punching other materials such as stainless steel. Special clearances may be ordered for that purpose.

### DIE CLEARANCE HAS THE FOLLOWING EFFECTS:

Too much clearance	Too little clearance	Correct Clearance
 <ol style="list-style-type: none"> <li>1. Extra roll-in at top of the hole.</li> <li>2. Too much burr at bottom of the hole.</li> </ol>	 <ol style="list-style-type: none"> <li>1. More punching pressure needed. Can reduce tool life.</li> <li>2. High stripping force causes part distortion and extra punch wear.</li> </ol>	 <ol style="list-style-type: none"> <li>1. Straighter hole thru material.</li> <li>2. Minimum distortion at top of hole.</li> <li>3. Minimum burr at bottom of hole.</li> </ol>



### USE THE 50, 75 OR 200 GPM TESTER TO SIMULATE ACTUAL OPERATING CONDITIONS OF THE SYSTEM UNDER TEST

**Testing the pump:** Operator runs engine at a specific rpm and adjusts tester's pressure compensating valve to simulate a work load. By comparing meter readings with manufacturer specs, proper operation of pump can be confirmed. If oil flow and pressure do not meet specs, the pump is faulty. Or, if test results and specifications agree, the operator will know that the problem is elsewhere in the system and that other tests must be performed. Regardless of the component being tested, hook-up and testing is accomplished in minutes. **NOTE:** These hydraulic testers should always be used with the owner's manual/ manufacturers' specifications for the system under test.

#### Cyl. Caps furnished with "C" Series Cylinders:

5 ton cylinders	<b>No. 201375</b>
10 ton cylinders	<b>No. 201362</b>
15 ton cylinders	<b>No. 201362</b>
25 ton cylinders	<b>No. 201412</b>
55 ton cylinders	<b>No. 36161</b>
75 ton cylinders	<b>No. 36161</b>
100 ton cylinders	<b>No. 36161</b>

See page 15.

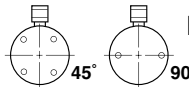
#### PERFORMANCE

The table at right gives you an idea of what to expect when coupling RD series cylinders to a Power Team pump. Actual performance will vary according to job conditions.

See page 24-25.

Pump	Cylinder	Time to Extend Cylinder 1"	
		100 psi	10,000 psi
PE55	RD55	1.0 sec.	12.0 sec.
	RD100	1.8 sec.	22.5 sec.
	RD200	3.5 sec.	45.0 sec.
	RD400	7.2 sec.	85.0 sec.
PQ120 Series	RD200	3.4 sec.	20.6 sec.
	RD300	4.9 sec.	30.0 sec.
	RD400	6.4 sec.	39.0 sec.
PE400 Series	RD300	3.0 sec.	8.5 sec.
	RD400	3.9 sec.	11.1 sec.
	RD500	4.9 sec.	14.1 sec.

NOTE: Base mounting holes are standard on all RD cylinders. Orientation of base mounting holes to coupler. Orientation on RD300, RD400 & RD500 series is random.



#### BASE MOUNTING HOLES FOR "RD" CYLINDERS

See page 24-25.

Tonnage	10	25	55	80	100	150	200	300	400	500
No. of Holes	2	4	4	4	4	4	4	4	4	6
Thread Size	3/8"-16	1/2"-13	5/8"-11	5/8"-11	3/4"-10	1"-8	1 1/4"-7	1 1/4"-7	1 1/2"-12	1 3/8"-12
Depth	5/8"	3/4"	7/8"	7/8"	1"	1"	1 1/4"	1 3/4"	1 7/8"	2"
B.C. Dia.	2"	2 3/4"	3 1/2"	4 1/2"	5 1/2"	6"	6 1/2"	6 1/4"	7 1/4"	8"
Orientation	90°	45°	45°	45°	45°	45°	45°	Random	Random	Random

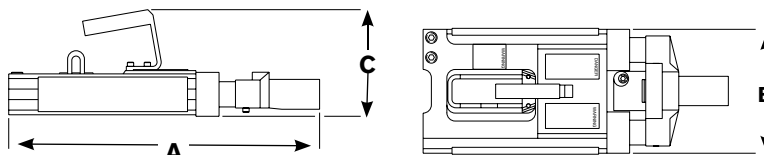
#### MOUNTING HOLES FOR "RLS" CYLINDERS

See page 18.

RLS50	1 1/32" C'bore x 1/4" deep, 7/32" thru hole	RLS200	39/64" C'bore x 13/32" deep, 13/32" thru hole	RLS500S	45/64" C'bore x 1/2" deep, 15/32" thru hole	RLS1000S	51/64" C'bore x 9/16" deep, 17/32" thru hole
RLS100	27/64" C'bore x 11/32" deep, 9/32" thru hole	RLS300	39/64" C'bore x 7/16" deep, 13/32" thru hole	RLS750S	51/64" C'bore x 9/16" deep, 17/32" thru hole	RLS1500S	13/16" C'bore x 9/16" deep, 17/32" thru hole

#### POST TENSION/STRESSING JACK DIMENSIONS

See page 157.



Order Number	A (in.)	B (in.)	C (in.)	Weight (lbs.)
SJ2010	21	9	6 1/2	55
SJ2010	22	10 13/64	7	76
SJ3010	22	10 13/64	7	76
SJ3010P	22	10 13/64	7	76
SJ2010DA	18 1/2	7 1/2	6 1/2	42
SJ3010DA	18 1/2	8 1/2	6 1/2	52

# MEASUREMENTS/ SPECIFICATIONS

## Conversion Formulas

	DECIMALS	MILLIMETERS
1/64	.015625	— 0.397
1/32	.03125	— 0.794
3/64	.046875	— 1.191
1/16	.0625	— 1.588
5/64	.078125	— 1.984
3/32	.09375	— 2.381
7/64	.109375	— 2.778
1/8	.1250	— 3.175
9/64	.140625	— 3.572
5/32	.15625	— 3.969
11/64	.171875	— 4.366
3/16	.1875	— 4.763
13/64	.203125	— 5.159
7/32	.21875	— 5.556
15/64	.234375	— 5.953
1/4	.2500	— 6.350
17/64	.265625	— 6.747

### DECIMAL & MILLIMETER EQUIVALENTS

9/32	.28125	— 7.144	43/64	.671875	— 17.066
19/64	.296875	— 7.541	11/16	.6875	— 17.463
5/16	.3125	— 7.938		DECIMALS	MILLIMETERS
21/64	.328125	— 8.334	45/64	.703125	— 17.859
11/32	.34375	— 8.731	23/32	.71875	— 18.256
	DECIMALS	MILLIMETERS	47/64	.734375	— 18.653
23/64	.359375	— 9.128	3/4	.7500	— 19.050
3/8	.3750	— 9.525	49/64	.765625	— 19.447
25/64	.390625	— 9.922	25/32	.78125	— 19.844
13/32	.40625	— 10.319	51/64	.796875	— 20.241
27/64	.421875	— 10.716	13/16	.8125	— 20.638
7/16	.4375	— 11.113	53/64	.828125	— 21.034
29/64	.453125	— 11.509	27/32	.84375	— 21.431
15/32	.46875	— 11.906	55/64	.859375	— 21.828
31/64	.484375	— 12.303	7/8	.8750	— 22.225
1/2	.5000	— 12.700	57/64	.890625	— 22.622
33/64	.515625	— 13.097	29/32	.90625	— 23.019
17/32	.53125	— 13.494	59/64	.921875	— 23.416
35/64	.546875	— 13.891	15/16	.9375	— 23.813
9/16	.5625	— 14.288	61/64	.953125	— 24.209
37/64	.578125	— 14.684	31/32	.96875	— 24.606
19/32	.59375	— 15.081	63/64	.984375	— 25.003
39/64	.609375	— 15.478	1	1.000	— 25.400
5/8	.6250	— 15.875			
41/64	.640625	— 16.272			
21/32	.65625	— 16.669			

1 mm = .03937"  
.001" = .0254 mm

### SI\* CONVERSION FORMULAS

#### APPROXIMATE CONVERSION

MULTIPLY	BY	TO GET OR MULTIPLY	BY	TO GET
SI* UNIT	CONV FACTOR	NON-SI UNIT	CONV FACTOR	SI* UNIT
<b>LENGTH</b>				
millimeter (mm)	X 0.03937	= inch	X 25.4	= mm
(1 inch = 25.4 mm exactly)				
centimeter (cm)	X 0.3937	= inch	X 2.54	= cm
meter (m)	X 3.28	= foot	X 0.305	= m
meter (m)	X 1.09	= yard	X 0.914	= m
kilometer (km)	X 0.62	= mile	X 1.61	= km
<b>AREA</b>				
millimeter <sup>2</sup> (mm <sup>2</sup> )	X 0.00155	= inch <sup>2</sup>	X 645	= mm <sup>2</sup>
centimeter <sup>2</sup> (cm <sup>2</sup> )	X 0.155	= inch <sup>2</sup>	X 6.45	= cm <sup>2</sup>
meter <sup>2</sup> (m <sup>2</sup> )	X 10.8	= foot <sup>2</sup>	X 0.0929	= m <sup>2</sup>
meter <sup>2</sup> (m <sup>2</sup> )	X 1.2	= yard <sup>2</sup>	X 0.836	= m <sup>2</sup>
hectare (ha)	X 2.47	= acre	X 0.405	= ha
kilometer <sup>2</sup> (km <sup>2</sup> )	X 0.39	= mile <sup>2</sup>	X 2.59	= km <sup>2</sup>
<b>VOLUME</b>				
centimeter <sup>3</sup> (cm <sup>3</sup> )	X 0.061	= inch <sup>3</sup>	X 16.4	= cm <sup>3</sup>
liter (l)	X 61	= inch <sup>3</sup>	X 0.016	= l
milliliter (ml)	X 0.034	= oz-liqu	X 29.6	= ml
(1 ml = 1 cm <sup>3</sup> )				
liter (l)	X 1.06	= quart	X 0.946	= l
liter (l)	X 0.26	= gallon	X 3.79	= l
meter <sup>3</sup> (m <sup>3</sup> )	X 1.3	= yard <sup>3</sup>	X 0.76	= m <sup>3</sup>
<b>MASS</b>				
gram (g)	X 0.035	= ounce	X 28.3	= g
kilogram (kg)	X 2.2	= pound	X 0.454	= kg
metric ton (t)	X 1.1	= ton (short)	X	

#### APPROXIMATE CONVERSION

MULTIPLY	BY	TO GET OR MULTIPLY	BY	TO GET
SI* UNIT	CONV FACTOR	NON-SI UNIT	CONV FACTOR	SI* UNIT
<b>FORCE (N = kg · m/s<sup>2</sup>)</b>				
newton (N)	X 0.225	= pound	X 4.45	= N
kilonewton (kN)	X 225	= pound	X 0.00445	= kN
<b>TORQUE</b>				
newton meter (N·m)	X 8.9	= lb. in.	X 0.113	= N·m
newton meter (N·m)	X 0.74	= lb. ft.	X 1.36	= N·m
<b>PRESSURE (Pa = N/m<sup>2</sup>)</b>				
kilopascal (kPa)	X 4.0	= in. H <sub>2</sub> O	X 0.249	= kPa
kilopascal (kPa)	X 0.30	= in. Hg	X 3.38	= kPa
kilopascal (kPa)	X 0.145	= p.s.i.	X 6.89	= kPa
megapascal (MPa)	X 145	= p.s.i.	X 0.00689	= MPa
Bar	X 14.5	= p.s.i.	X .0689	= Bar
<b>POWER (w = J/s)</b>				
kilowatt (kw)	X 1.34	= hp	X 0.746	= kw
kilowatt (kw)	X 0.948	= Btu/s	X 1.055	= kw
watt (w)	X 0.74	= ft. lb/s	X 1.36	= w
<b>TEMPERATURE</b>				
°C = (°F - 32) ÷ 1.8    °F = (°C X 1.8) + 32				
<b>FLOW</b>				
cu. cm./min.	X .061	= cu. in./min.	X 16.4	= cu. cm./min.
liters/min.	X .2642	= GPM	X 3.785	= liters/min.

\* System International (Modern Metric System)



Power Team's commitment to quality is evident in everything we do, from raw material receipt to how we support our customers years after they purchase our products. Power Team is registered to ISO 9001:2000 international quality standard. ISO 9001:2000 requires compliance with standards for management, administration, product development, manufacturing and continual improvement. Our Registration verifies that Power Team has adopted and maintains documentation for processes ranging from suppliers to customers, inspection, handling, and training. ISO 9001 also requires periodic internal and external audits to ensure all aspects of work affecting quality control are monitored. This always has been, and will continue to be, our philosophy. That's our guarantee to you.

### ASME B30.1

Power Team hydraulic cylinders fully comply with the criteria set forth in the American Society of Mechanical Engineers standard ASME B30.1:

Our cylinders are designed to have a minimum of a 2-to-1 safety factor on typical material yield strength;

Each cylinder is tested at 125 percent of rated pressure at full travel and is inspected to assure functionality and freedom from leaks.

### ASME B40.1

Power Team heavy-duty pressure gauges are designed in accordance with the recommendations set forth in the American Society of Mechanical Engineers standard ASME B40.1, Grade B.

### CE MARK

 Team is committed to designing, manufacturing, and marketing products that meet or exceed the needs of the customers we serve. Power Team supplies a Letter of Incorporation or a Declaration of Conformity and CE Marking for products that conform with European community directives.

### IJ100

Power Team hoses meet the criteria set forth in the Material Handling Institute's specification #IJ100 for hydraulic hose. Under the procedures outlined in this standard, hydraulic hose shall:

1. Have an average minimum life of 30,000 cycles at full rated capacity.
2. Have a minimum burst pressure of at least twice the rated operating pressure.



Where specified, Power Team electric power pump assemblies meet the design, assembly, and test requirements of the Canadian Standards Association. Note: If CSA certification is required, it must be requested at the time the pump is ordered.

### NEMA

Where specified, Power Team electric power pump assemblies meet the design, assembly, and test requirements of NEMA 12, a National Electrical Manufacturers' Association standard relating to electrical components used to resist moisture and dust.

### POWER TEAM PRODUCT DESIGN CRITERIA

All Power Team brand hydraulic components are designed and/or tested to be safe for use at maximum operating pressures of 10,000 psi unless otherwise specifically noted.

### QUALITY ASSURANCE

All of our hydraulic cylinders are subjected to quality checks during production. All steel bar is certified and has material traceability to the mill. Before leaving the factory, all cylinders are pressure tested to 12,500 psi, except the RT series which are tested to 10,000 psi to insure on-the-job reliability. We have made every effort to include the latest specifications for our products in this catalog. Please call the Power Team factory for the most current product specifications. The Power Team Lifetime Powerthon Warranty is described in more detail on page 237 of this catalog.

# MEASUREMENTS/ SPECIFICATIONS

## Torque Wrench Selection Guide



### Torque Wrench Selection Guide

#### TOOL GUIDELINE

BOLT - TORQUE				RECOMMENDED MODEL					
SAE1 SAE 2 30,000 PSI	ASTM 193 B7 BOLT	8-7 A/F HEAVY HEX NUT	ASTM 354 B8 60000 PSI	FT. LBS.	Nm	SQUARE DRIVE MAKE-UP ONLY	LOW CLEARANCE MAKE-UP	SQUARE DRIVE Break Out	LOW CLEARANCE Break Out
1"	7/8"	1-7/16"		300	408	TWSD1	TWLC2	TWSD1	TWLC2
1-1/8"	1"	1-5/8"	7/8"	425	578	TWSD1	TWLC2	TWSD1	TWLC2
				500	680	TWSD1	TWLC2	TWSD1	TWLC2
1-1/4"			1"	600	816	TWSD1	TWLC2	TWSD1	TWLC2
1-3/8"	1-1/8"	1-13/16"	1-1/8"	700	952	TWSD1	TWLC2	TWSD1	TWLC2
	1-1/4"	2"		800	1,088	TWSD1	TWLC2	TWSD3	TWLC4
1-1/2"				900	1,224	TWSD1	TWLC2	TWSD3	TWLC4
				1,000	1,360	TWSD1	TWLC2	TWSD3	TWLC4
1-5/8"	1-3/8"	2-3/16"	1-1/4"	1,250	1,700	TWSD1	TWLC2	TWSD3	TWLC4
				1,350	1,836	TWSD1	TWLC2	TWSD3	TWLC4
1-3/4"	1-1/2"	2-3/8"	1-3/8"	1,500	2,040	TWSD3	TWLC2	TWSD3	TWLC4
				1,600	2,176	TWSD3	TWLC4	TWSD6	TWLC4
1-7/8"				1,800	2,448	TWSD3	TWLC4	TWSD6	TWLC4
	1-5/8"	2-9/16"		2,000	2,720	TWSD3	TWLC4	TWSD6	TWLC4
2"				2,200	2,992	TWSD3	TWLC4	TWSD6	TWLC8
	1-3/4"	2-3/4"	1-5/8"	2,600	3,536	TWSD3	TWLC4	TWSD6	TWLC8
2-1/4"				3,000	4,080	TWSD3	TWLC4	TWSD6	TWLC8
	1-7/8"	2-15/16"	1-3/4"	3,700	5,032	TWSD6	TWLC4	TWSD11	TWLC8
2-1/2"	2"	3-1/8"		4,000	5,440	TWSD6	TWLC8	TWSD11	TWLC15
			1-7/8"	4,400	5,984	TWSD6	TWLC8	TWSD11	TWLC15
2-3/4"			2"	5,100	6,936	TWSD6	TWLC8	TWSD11	TWLC15
	2-1/4"	3-1/2"		6,000	8,160	TWSD6	TWLC8	TWSD25	TWLC15
3"		3-7/8"	2-1/4"	7,000	9,520	TWSD11	TWLC8	TWSD25	TWLC15
	2-1/2"			8,000	10,880	TWSD11	TWLC15	TWSD25	TWLC30
3-1/4"				9,000	12,240	TWSD11	TWLC15	TWSD25	TWLC30
3-1/2"	2-3/4"	4-1/4"	2-1/2"	10,000	13,600	TWSD11	TWLC15	TWSD25	TWLC30
				11,500	15,640	TWSD25	TWLC15	TWSD25	TWLC30
3-3/4"	3"	4-5/8"	2-3/4"	13,000	17,680	TWSD25	TWLC15	Please Inquire	TWLC30
				14,500	19,720	TWSD25	TWLC15	Please Inquire	
4"				15,500	21,080	TWSD25	TWLC30	Please Inquire	
4-1/4"	3-1/4"	5"	3"	16,500	22,440	TWSD25	TWLC30	Please Inquire	
				19,500	26,520	TWSD25	TWLC30	Please Inquire	
4-1/2"	3-1/2"	5-3/8"	3-1/4"	20,500	27,880	TWSD25	TWLC30		
				21,500	29,240	TWSD25	TWLC30	For	
4-3/4"	3-3/4"	5-3/4"	3-1/2"	24,500	33,320	TWSD25	TWLC30	Higher	
				25,500	34,680	Please Inquire	TWLC30	Torque	
6-1/2"	4-1/4"			29,500	40,120	Please Inquire	Please Inquire	Values	





LIFETIME

Powerthon™

WARRANTY



## >Power Team®

All Power Team products and parts, with the exceptions noted below, are warranted against defects in materials and workmanship for the life of the product or part. (The life of the product or part is defined as that point in time when it no longer safely or properly functions due to normal wear). Inflatable jacks, chains, batteries, electric motors, gas engines, knives and cutter blades which are sold with Power Team products are not covered by this warranty and instead are warranted as follows:

- Inflatable jacks and electronics are warranted against defects in materials and workmanship for a period of one year from date of purchase from SPX.
- Consumable parts or accessories, including without limitation, chains, batteries, knives and cutter blades are warranted against defects in materials and workmanship for a period of one year from date of purchase from SPX.
- All electric motors and gas engines are separately warranted by their respective manufacturer under the terms and conditions stated in their separate warranty.

The foregoing warranties do not cover ordinary wear and tear or any product or part that has been worn out, abused, heated, ground or otherwise altered, used for a purpose other than that for which it was intended or used in a manner inconsistent with any instructions regarding its use.

To qualify for warranty consideration, return the Power Team product, freight prepaid, to a Power Team authorized repair center or to the Power Team factory. If any product or part manufactured by Power Team is found to be defective by Power Team, in its sole judgment, Power Team will, at its option, either repair or replace such defective product or part with same or equivalent of like kind and quality and return it via best ground transportation, freight prepaid. THIS REMEDY SHALL BE THE EXCLUSIVE REMEDY AVAILABLE FOR ANY DEFECTS IN THE PRODUCTS OR PARTS MANUFACTURED AND SOLD BY POWER TEAM OR FOR DAMAGES RESULTING FROM ANY OTHER CAUSE WHATSOEVER, INCLUDING WITHOUT LIMITATION, POWER TEAM'S NEGLIGENCE. POWER TEAM SHALL NOT, IN ANY EVENT, BE LIABLE TO ANY BUYER FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, WHETHER FOR DEFECTIVE OR NON-CONFORMING GOODS, NEGLIGENCE, ON THE BASIS OF STRICT LIABILITY OR FOR ANY OTHER REASON.

Power Team's warranty is expressly limited to persons who purchase Power Team's products or parts for the resale or for use in the ordinary course of the buyer's business.

THIS WARRANTY IS EXCLUSIVE, AND POWER TEAM MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCTS MANUFACTURED AND SOLD BY IT, WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER. No agent, employee or representative of Power Team has any authority to bind Power Team to any affirmation, representation or warranty concerning Power Team products or parts, except as stated herein.

The purpose of this exclusive remedy shall be to provide the buyer with repair or replacement of products or parts manufactured by Power Team found to be defective in materials or workmanship or negligently manufactured. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as Power Team is willing and able to replace said defective products or parts in the prescribed manner.

# MOTION CONTROL

## SYSTEM (MCS)

Power Team® Synchronized  
Lifting and Lowering System

### POWER TEAM® SYNCHRONIZED LIFTING AND LOWERING SYSTEM

The Power Team® Motion Controller System provides positional control of a load in motion where load position is critical by means of cylinder synchronization. The PLC-controlled system is a combination of digital actuation and digital control providing significant advantages such as time savings, repeatability and extremely low internal stress in the moving object. Synchronized lifting reduces the risk of bending, twisting or tilting due to uneven weight distribution or load-shifts between the lift points.



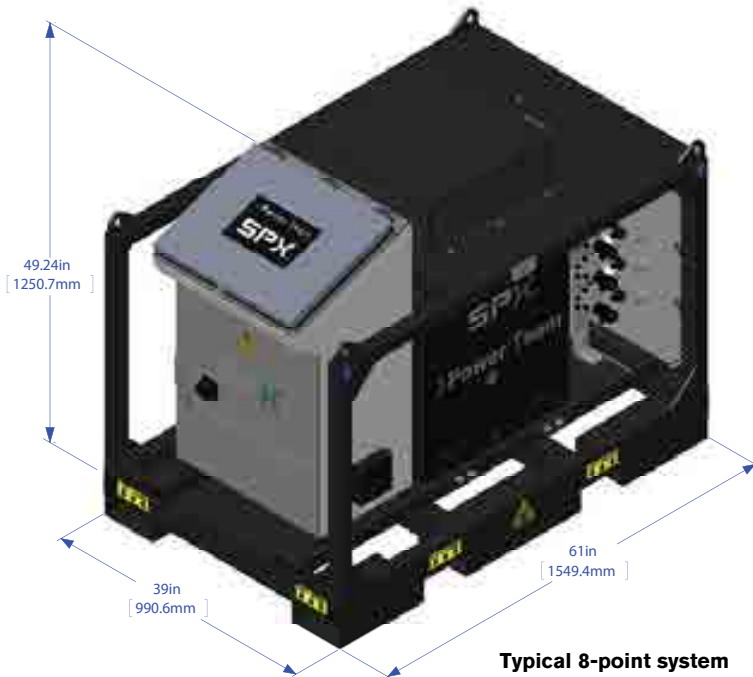
MCS-PE554-8 shown.

### THE SYSTEM CONSISTS OF:

1. PLC controller, pump, and oil reservoir.
2. Feedback sensors to monitor the position of the load.
3. Electrically controlled valves to control the distribution of oil into the hydraulic circuits.
4. Pressure sensors to monitor lifting pressures in each hydraulic circuit.

### FEATURES:

- Load Capacity: limited by cylinders (use with single or double acting cylinders).
- Intuitive graphic, touch screen control.
- Basic systems start at 4 or 8 Jacking Points.
- Safety features include: Full stop due to power failure, sensor failure, pressure overload, tolerance error, uncontrolled load movement, etc.
- Displayed information includes:
  - Startup diagnostics.
  - Position of lift points relative to starting position.
  - Pressure at each lift point.
  - Status of each cylinder.
  - Status of alarms.
- Lifting / lowering accuracy of +/- 1 mm (0.040 in.).
- Operating Pressure (up to) 10,000 psi.
- Standard system has a 40 gallon tank.



### TYPICAL MOVING AND WEIGHTING APPLICATIONS:

- BRIDGES
- OIL RIG PLATFORMS
- STEEL BUILDINGS
- VESSELS AND HEAT EXCHANGERS
- STADIUM ROOFS
- SHIPS

Ordering info: Please contact  
Power Team for technical  
support and optimal  
configuration of your system

# Power Team University



*Proper training is needed to operate and maintain hydraulic equipment with safety and efficiency. Power Team offers a range of classes to help you safely operate and maintain your tools.*

## **Safety Training**

Workplace safety should be a high priority to assure high-pressure hydraulic tools are used in accordance with recommended safety procedures. Power Team Safety Training Seminars demonstrate the proper methods for operating high-pressure hydraulic tools to avoid equipment damage and lost time accidents. Safety seminars can be conducted at a customer facility, job site or Power Team headquarters.

## **Maintenance & Repair Training**

Maintaining Power Team products in good operating condition enhances operating efficiency and extends service life. This seminar explains the proper methods for keeping Power Team products operating at peak levels of performance and reliability. Topics include understanding hydraulic circuits, product maintenance, troubleshooting, and field repairs. Three and five day seminars are structured to meet your product knowledge requirements.

Class schedules are posted on [powerteam.com](http://powerteam.com). Contact your district sales manager for more details or call **800-477-8326**.

**SPX**

HYDRAULIC TECHNOLOGIES

## CUSTOMER SERVICE CENTERS

### Cylinders



6-39

### pumps



40-103

### Accessories



104-133

### Shop Equipment



134-147

### Jacks



148-163

### Hydraulic Tools



164-189

### Pullers



189-230

### Measurements



231-237

### Synchronized Lift



238

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