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

Hydraulic Cylinders

- Rams
- Standard
- Construction
- Industria
- High Tonnago
- 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

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- Floor Cranes
- Spread Tilters

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>Power Team[®]

Selection Chart

Choose the right pump: This chart helps you calculating the time required for a cylinder to lift a load when powered by a 700 bar Power Team pump. For the hand pumps the number indicates the number of strokes to extend 25 mm. For the electric/air/gas pumps the number indicates the number of seconds to extend 25 mm.

						Culinda	r Cana	city (To	one)							
		CTACE		10						76	100	150	000	200	400	E00
		STAGE	5	10	15	20	25	30	55	75	100	150	200	300	400	500
Hand Pumps *	P12	Single	14	32	44	65	72	93								
and the same	P55	Single	6	14	19	28	31	40	71		_		nerally Re		ded	
-	P19/	Low	4	8	10	15	17	21					Recomm		r most	
Y/255	P19L	High	13	30	42	59	68	86				app	olications			
	P59F	Low	1,8	4,1	5,7	8	9	12	20	29	Spe	od #nun	nber of str	akaa ta ay	tand 05 m	am.
		High	8	17	24	34	48	50	85	122	Spe		ber of sec			
1160	P59(L)	Low	1,5	3,2	4,7	7	7,7	9,7	16,7	23,9						
-	P157	High	6	14	19	28	31	40	71	101						
	P159	Low	0,5	1	1,3	1,9	2,2	2,8	5	7	9	13	18			
The second second	P300	High	7	15	21	30	34	43	77	110	143	200	250			
	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	
Electric Hydraulic	PE10	Low	0,5	1,2	1,6	2,2	2,6	3,2	5,5							
Pumps **		High	6	13,4	18,9	27	31	39	66,2							
200411 %	PE17	Low	0,2	0,5	0,7	0,9	1,1	1,4	2,3	3,3	4,3	6,5	8,7			
	1 217	High	3,5	7,9	10,9	16	18	23	39	56,3	73	109	146			
	PE18			0,8	1,2	1,6	1,8	2,3	3,9	5,7	7,3	10,8		21,9	29,2	
	FEIØ	Low High	3,3	7,5	10,3	1,6	1,8	2,3	3,9	5,7	7,3 69	10,8	14,6 136	21,9	29,2	
	DE04	Ü														
	PE21	Low	0,2	0,5	0,7	1	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	
	PED25	Low	0,2	0,4	0,6	0,9	1	1,3	2,2	3,2	4,1	6,1	8,3	12	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
	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				
.530	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	
0		High	1,3	2,9	4,1	5,9	6,8	8,6	14	22	28	42	56	84	112	
	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	
	PE60	High	1,1	2,4	3,4	4,8	5,6	7,1	12	17,8	23	34	45	69	92	
-	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
6	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
Marine 1	PE400	Low	0,1	0,1	0,2	0,2	0,3	0,3	0,6	0,8	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
Air Hydraulic	PA6/	Single	10	22,4	31	44,4	51,3	65,2	-	-	-	-	-	0,7	11,0	14,0
Pumps **	PA9	Single	10	22,4	31	44,4	51,3	65,2	-	-	-	-	-			
1	PA17	Low	0,2	0,5	0,7	0,9			2,3	3,3	4,3	6,5	8,7	_	-	
- 1	rai/					,	1,1	1,4	,	-	· ·			-	-	
-	DA 40	High	3,5	7,9	10,9	16	18	23	39	56	73	109	146	7.0	0.0	
	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	
	D:	High	1,3	2,9	4,1	5,9	6,8	8,6	14	22	28	56	42	84	112	
	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	
Gas Hydraulic Pumps **	PG30	Low	0,3	0,7	1	1,3	1,6	2	3,3	4,8	6,2	9,3	12,4	18,1	-	
rullips **		High	2	4,5	6,3	8,9	10,3	13	22	31,8	41,3	61,4	83	121	-	
	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
(T)	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
C TO THE PARTY OF		High	0,5	1	1,5	2	2,4	3	5,1	7,3	9,5	14,2	19,1	27,8	36,3	46
9	PG400	Low	0,1	0,1	0,2	0,2	0,3	0,3	0,6	0,8	1	1,5	2	3	3,8	4,9
3.00		High	0,2	0,3	0,5	0,7	0,8	1	1,7	2,4	3,1	4,6	6,2	9	11,8	15
		J .	, -	,	,	,	, .		,	,	, .	,-			,-	



> Power Team[®]

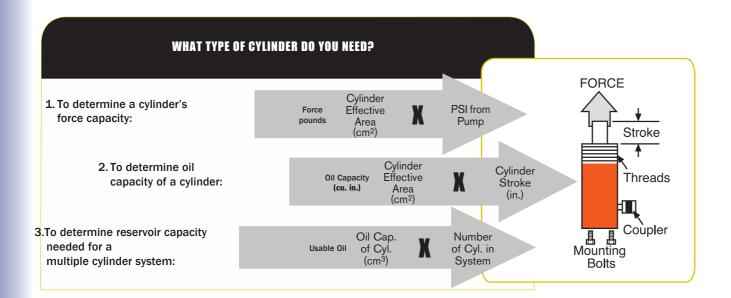
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Selection

Choosing The Right Cylinder **Step 1** Select the hydraulic cylinder that best suits the application. See page 6, 12-13.

Step 2 Select the hydraulic pump, with valve option, that best matches the cylinder and application. See pages 6, 48-57.

Stell 3 Select the hydraulic accessories you need. See pages 36-41.



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? (Singleacting 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 it's 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.



Choosing the Right Tool

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.

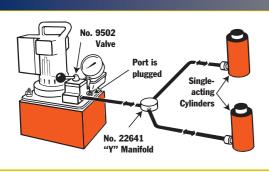
The "Power Tech" surface treatment is standard on the gland nut, cylinder body and piston/piston rod of the following cylinders: RLS50, RLS100, RLS200, RLS300, RLS500S, RLS750S, RLS1000S, RLS1500S, and RSS1002. NOTE: Bronze plating may be used in place of the "Power Tech" surface finish for the piston/piston 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

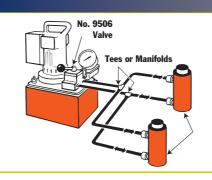
Pumps, Cylinders, Controls

These are just a few basic systems possible with Power Team hydraulic components. Countless applications are possible: In presses, for lifting or jacking applications or in production or maintenance setups. The pump shown is a typical electric/hydraulic unit. Electric, air or gas driven pumps are available

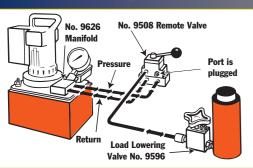
Single-acting cylinder or cylinders in the circuit, controlled by a pump mounted valve.



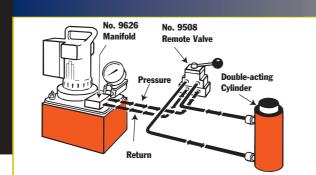
Double-acting cylinder or cylinders in the circuit, controlled by a pump mounted valve.



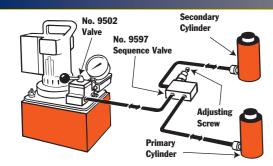
3 Single-acting cylinder controlled by a remote mounted valve.



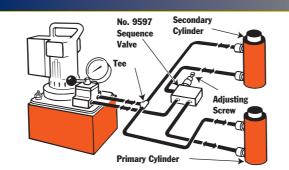
4 Double-acting cylinders controlled by a remote mounted valve



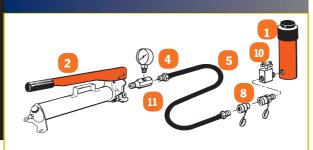
5 Single-acting cylinders with a sequence valve which controls the primary and secondary cylinder circuits.



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

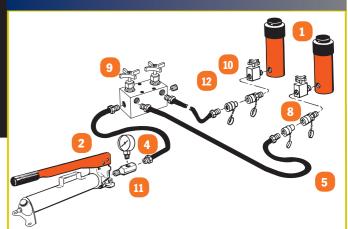


Basic single-acting system with a hand pump, gauge, hose and single-acting cylinder.

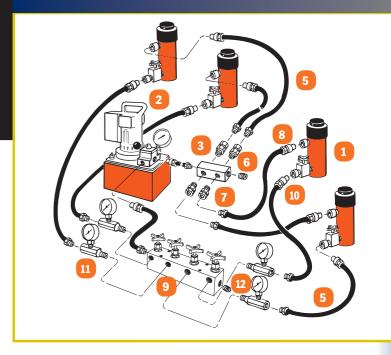


- 1 Cylinder applies hydraulic force.
- Pump a device for converting mechanical energy to fluid energy.
- 3 Directional valve controls the direction of hydraulic fluid in the system.
- Gauge measures bar pressure and/or force.
- 5 Hose transports hydraulic fluid.
- 6 Manifold allows distribution of hydraulic 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)
- Tee Gauge Adapter allows for installation of pressure/tonnage gauge anywhere in the hydraulic system. (No. 9670)
- Pipe Plug for blocking unused ports within the system. (No. 9687)

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.



> Power Team®

CYLINDERS

SUPERIOR FEATURES OF POWER TEAM HYDRAULIC CYLINDERS:

We build our own cylinders in our ISO 9001 registered Team cylinders are date-coded. by 30%. Base mounting holes Maximum pressure rating and withstand full capacity capacity are stamped on the cylinder. All cylinders comply to the demanding ASME B30.1 standard and are proof tested to 125% of capacity before leaving our factory. Cylinder

bores are roller burnished to harden the surface and make burst pressures range from 700 to 2400 bar. Cylinders with gland nuts may be "deadended" at 700 bar. Cylinders are assembled and

Eddy current and mag particle steel, not welded like some is removed from surface, to assure that any flaws are



tested by certified assemblers. manufacturing facility. All Power it smoother, increasing seal life inspection detects flaws in the steel. Cylinder bodies are solid of the cylinder. Typical cylinder competitive cylinders. Material





C SERIES...14 General Purpose Cylinders

RSS SERIES...21 Shorty Cylinders



CBT SERIES... 16 Threaded End Cylinders

RH SERIES...22 Center Hole Cylinders



RA SERIES...17 Aluminum Cylinders



RT SERIES...24 Center Hole Power-twin^a Cylinders



SELECTION CHART... 18

Choose the right Cylinder



RP SERIES...25 Pull Cylinders



RLS SERIES...20 Low Profile Cylinders



RD SERIES...26

Double-Acting, Hydraulic-Return

Page



R SERIES...28, 30

Single Acting, Load Return Double-Acting, Hydraulic Return



RL ALUMINUM ...32

Locking Collar Aluminum



RC SERIES...33 Pancake Cylilnders



RL STEEL...34 Locking Collar Steel



ACCESSORIES ... 36-41



								1 O 1	I N A	GE											T O	N N	A G	E				740
Series	Description	Page	Action	2	5	10				20		30	50		55	60	75 8	0 10	0 150						00 43	30 500	565	1220
С	General Purpose	14	Single/Spring		X	X		X			X			C	X		X	X										
CBT	Threaded End Cylinders	16	Single/Spring		X	X					X			CBT														
RA	Aluminum Cylinders	17	Single/Spring							X		X		RA	X			X										
RLS	Low Profile Cylinders	20	Single/Spring		X	X				X		X	X	RLS			X	X	X									
RSS	Shorty Cylinders	21	Single/Spring/Double Act			X				X		X	X	RSS				X			X							
RH	Center Hole Cylinders	22	Single/Spring/Double Act			X	X			X		X	X	RH		X		X	X	X								
RT	Center Hole Power Twin Cylinder	s 24	Single/Spring/Double Act						X			X	X	RT				X										
RP	Pull Cylinders	25	Single/Spring	X	X									RP														
RD	Double Acting Cylinders	26	Double Acting			X					X			RD	X		2	XX	X	X			X		X	X		
R	High Tonnage Cylinder	28, 30	Single Acting/Load Return/																									
			Double Acting											R	X			X		X		X		X	X		X	X
RL	Locking Collar Cylinders	32, 34-35	Single Acting/Load Return											RL	Χ [†]			X	X	X		X		X	2	X	X	X
RC	Pancake Cylinders	33	Single Acting/Load Return											RC	Χ			Х	X		240			Х			620	
					•						•								_	_	_					_		

† LOCKING COLLAR AVAILABLE IN ALUMINUM.

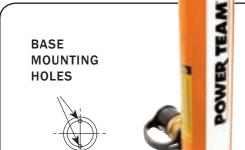
F R O M

T O

General Purpose CYLINDERS C SERIES

5-100 TONS General Purpose, Single Acting, Spring-Return

Rugged, high quality cylinder used for lifting and pressing

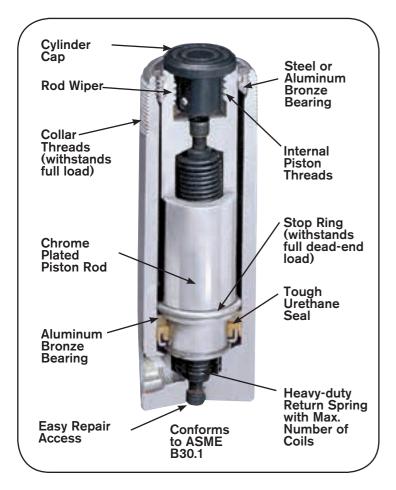


RUGGED, HIGH QUALITY CYLINDER USED FOR LIFTING AND PRESSING

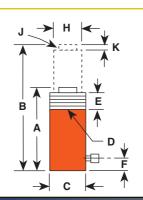
- Aluminum bronze bearing reduces wear caused by off-center loads.
- Maximum sized springs speed piston return and increase spring life.
- Solid steel cylinder body for durability.
- Chrome plated piston rod resists wear and corrosion.
- Wide range of accessories available
- to thread onto piston rod, 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 (mm)
5		1/4-20	9.5	25.4
10		5/16-18		39.7
15	2†	3/8-16	12.7	47.6
25				58.7
55		¹ /2-13	19.1	95.3
*Optional 75		3/4-10	25.4	114.3
*Optional 100	4	1-8	20.4	120.7

^{*} Consult Factory (45° from coupler) † 90° from coupler.







Base mounting holes page 229.



					A	В	C	D	E Piston	F	Н	J	K			Metric	
					Re-	Ex-			Collar	Page	Piston	Piston Rod	Rod		Cylinder	Tons	
	C-1			Oil			Outoido	Collar						Dovo	Effective		
	Cyl	Chroko	Oudou		tracted	tended	Outside		Thread	to Port	Rod	Int. Thread	Protru-	Bore Dia.		at 700	Wainh
		Stroke	Order	Cap.	Height	Height	Dia.	Thread	Length		Dia.	and Depth	sion (mm)		Area		Weight
ı	опѕ	(mm)	No.	(cm³)	(mm)	(mm)	(mm)	(in.)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(cm²)	(bar)	(kg)
	-	25,4	C51C	18	110,3	138,1	38,1	1 ¹ / ₂ -16	28,6	19,1	25,4	3/4-16 x 15,9	6,4	28,6	6,4	4,5	1,0
	-	82,6	C53C	52	165,1	247,7	38,1	1 ¹ / ₂ -16	28,6	19,1	25,4	3/4-16 x 15,9	6,4	28,6	6,4	4,5	1,5
•	۔ اگ	133,4	C55C	85	215,9	349,3	38,1	1 ¹ /2-16	28,6	19,1	25,4	3/4-16 x 15,9	6,4	28,6	6,4	4,5	1,8
	-	184,2	C57C	118	273,1	457,2	38,1	1 ¹ / ₂ -16	28,6	19,1	25,4	3/4-16 x 15,9	6,4	28,6	6,4	4,5	2,3
	-	235,0	C59C	151	323,9	558,8	38,1	1 ¹ /2-16	28,6	19,1	25,4	3/4-16 x 15,9	6,4	28,6	6,4	4,5	2,6
	-	25,4	C101C	36	92,1	117,5	57,2	2 ¹ / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	1,8
	-	50,8	C102C	79	122,0	172,8	57,2	2 ¹ / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	2,3
	-	104,8	C104C	151	171,5	276,2	57,2	2 1 / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	3,0
	-	155,6	C106C	225	247,7	403,2	57,2	2 ¹ / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	4,3
i	5 -	206,4	C108C	362	298,5	504,8	57,2	2 1 / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	5,0
			C1010C	370	349,3	606,4	57,2	2 1 / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	5,9
	-		C1012C	444	400,1	708 ,0	57,2	2 ¹ / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	6,6
	_		C1014C	518	450,9	809,6	57,2	2 1 / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	7,3
	_		C1016C	592	520,7	927,1	57,2	2 1 / ₄ -14	28,6	19,1	38,1	1-8 x 19,1	6,4	42,8	14,4	10,2	8,4
	_	25,4	C151C	51	123,8	149,2	69,9	2 ³ /4-16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	3,4
	_	54,0	C152C	110	149,2	203,2	69,9	2³/4-16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	4,0
	_	104,8	C154C	211	200 ,0	304,8	69,9	2 ³ / ₄ -16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	5,2
		155,6	C156C	315	271,4	427,0	69,9	2 ³ /4-16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	6,9
;	<u> </u>	206,4	C158C	418	322,2	528,6	69,9	2 3 /4-16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	8,1
	_	257,2	C1510C	521	373 ,0	630,2	69,9	2 3 /4-16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	9,4
		308,0	C1512C	625	423,8	731,8	69,9	2 ³ /4-16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	10,5
	_	358,8	C1514C	728	474,6	833,4	69,9	2 3 /4-16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	11,8
		406,4	C1516C	824	522,3	928,7	69,9	2 3 /4-16	28,6	19,1	44,5	1-8 x 19,1	6,4	50,8	20,3	14,2	12,8
		25,4	C251C	84	139,7	165,1	85,7	3 ⁵ /16-12	49,2	25,4	57,2	1 ¹ /2-16 x 25,4	9,5	65,1	33,2	23,4	5,4
		50,8	C252C	169	164,5	215,3	85,7	3 5 /16-12	49,2	25,4	57,2	1 ¹ / ₂ -16 x 25,4	9,5	65,1	33,2	23,4	6,3
		101,6	C254C	338	215,9	317,5	85,7	3 5 /16-12	49,2	25,4	57,2	1 ¹ / ₂ -16 x 25,4	9,5	65,1	33,2	23,4	8,0
	25	158,8	C256C	528	273,1	431,8	85,7	3 5 /16-12	49,2	25,4	57,2	1 ¹ /2-16 x 25,4	9,5	65,1	33,2	23,4	9,8
•		209,6	C258C	697	323,9	533,4	85,7	3 5 /16-12	49,2	25,4	57,2	1 ¹ / ₂ -16 x 25,4	9,5	65,1	33,2	23,4	11,6
		260,4	C2510C	865	374,4	635,0	85,7	3 ⁵ /16-12	49,2	25,4	57,2	1 ¹ /2-16 x 25,4	9,5	65,1	33,2	23,4	13,3
		311,2	C2512C	1.036	425,5	736,0	85,7	3 5 /16-12	49,2	25,4	57,2	11/2-16 x 25,4	9,5	65,1	33,2	23,4	15,0
		362,0	C2514C	1.205	476,3	838,2	85,7	3 5 /16-12	49,2	25,4	57,2	11/2-16 x 25,4	9,5	65,1	33,2	23,4	16,7
		50,8	C552C	362	174,6	225,4	127,0	5-12	55,6	34,9	79,4	-	3,2	95,3	71,2	50,1	14,7
		108,0	C554C	769	231,8	339,7	127,0	5-12	55,6	34,9	79,4	-	3,2	95,3	71,2	50,1	18,7
3	77	158,8	C556C	1.131	282,6	441,3	127,0	5-12	55,6	34,9	79,4	-	3,2	95,3	71,2	50,1	23,1
		260,4	C5510C	1.853	384,2	644,5	127,0	5-12	55,6	34,9	79,4	-	3,2	95,3	71,2	50,1	30,4
		336,6	C5513C	2.398	460,4	796,9	127,0	5-12	55,6	34,9	79,4	-	3,2	95,3	71,2	50,1	35,3
	J	155,6	C756C	1.596	314,3	469,9	146,1	5 3 /4-12	44,5	31,8	95,3	-	3,2	114,3	102,6	72,1	33,3
•	3	333,4	C7513C	3.421	492,1	825,5	146,1	5 ³ / ₄ -12	44,5	31,8	95,3	-	3,2	114,3	102,6	72,1	49,6
		50,8	C1002C	675	219,1	269,9	158,8	6 ¹ / ₄ -12	57,2	41,3	104,8	-	3,2	130,2	133,0	93,6	28,5
7		168,3	C1006C	2.245	336,6	504,8	158,8	6 ¹ / ₄ -12	57,2	41,3	104,8	-	3,2	130,2	133,0	93,6	41,2
•		260,4	C10010C	3.467	428,6	689,0	158,8	6 ¹ /4-12	57,2	41,3	104,8	-	3,2	130,2	133,0	93,6	51,2

CYLINDER/PUMP MATCHING

> ACCESSORY/REPAIR

PUMP/CYLINDER SETS

Page 61

> HYDRAULIC ACCESSORIES Page 120

> VALVES Page 129

TECH DATA Page 231

Threaded End CYLINDERS 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

POWER TEAM

SPX

- · Half the weight of 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.



from coupler (RA556, RA5510) 3/8"-16 x 114,3mm Dia. B.C.

Depth = 12,7 mm

Piston

Rod

Dia.

50,8

50,8

50,8

63,5

63,5

63,5

79,4

79,4

79,4

79,4

104.8

104,8

to

Port

31,8

31,8

31,8

31.8

31,8

31,8

34,9

34,9

34,9

34,9

30,2

30,2

Piston

Rod

7,9

7,9

7,9

9,5

9,5

9,5

6,4

6,4

6,4

6,4

3,2

3,2

Bore

Dia.

60,3

60,3

60,3

73.0

73,0

73,0

95,3

95,3

95,3

95,3

130,2

130,2

← C →

215,9

317,5

419,1

241,3

342,9

444.5

225,4

428,6

638,2

250,8

457,2

95,3

95,3

95,3

108.0

108,0

108.0

133,4

133,4

133,4

187,3

187,3

327,0 133,4

ALUMINUM CYLINDERS RA-SERIES

20-200 TONS Single Acting, Spring-Return

Half the weight of equal capacity steel cylinders.

GYLINDERS

ASME B30.1





Metric

Tons at

700

bar

20,1

20,1

20,1

29,4

29,4

29,4

50,1

50,1

50,1

50,1

93,5

93,5

Weight.

(kg)

3,5

4.2

5.1

5,0

5,9

6,8

7,3

8,9

10,9

14,4

15,1

22,6

Cylinder

Effective

Area

(cm²)

28,6

28,6

28,6

41,9

41,9

41,9

71,2

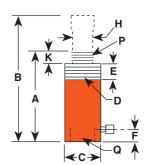
71,2

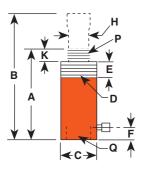
71,2

71,2

133.0

133,0





	o. Stroke s) (mm)	Order No.					D Collar Thread (in.)	E Collar Thread Length (mm)	F Base to Port (mm)	H Piston Rod Dia. (in.)	K Piston Rod Protrusion (mm)	P Piston Rod Thread (NPT)	Q Internal Base Thread (NPSM) (in.)	Bore Dia. (mm)	Cyl. Eff. Area (cm²)	Metric Tons at 700 bar	Weight (kg)
5	133,4	C55CBT	85	266,7	400,1	38,1	1 ¹ /2-16	28,6	47,6	25,4	28,6	3/4-14	3/4-14	28,6	6,4	4,5	2,0
5	155,6 257,2	C106CBT C1010CBT	228 375	292,1 393,7	447,7 650,9		2 ¹ /4-14 2 ¹ /4-14	28,6 28,6	42,9 42,9	38,1 38,1	27,0 27,0	1 ¹ /4-11 ¹ /2 1 ¹ /4-11 ¹ /2	1 ¹ /4-11 ¹ /2 1 ¹ /4-11 ¹ /2	27,0 27,0	14,4 14,4	10,2 10,2	4,7 6,3
25	158,8 362,0	C256CBT C2514CBT	528 1205	339,7 542,9	498,5 904,9	85,7 85,7	3 ⁵ /16-12 3 ⁵ /16-12	49,2 49,2	47,6 47,6	57,2 57,2	47,6 47,6	2-11 ¹ / ₂ 2-11 ¹ / ₂	$\frac{2-11^{1}/2}{2-11^{1}/2}$	47,6 47, 6	33,3	23,4	11,1

ALVES	TECH DATA	
	Page 231	

* Equipped with carrying handles.

CYLINDER/PUMP MATCHING > ACCESSORY/REPAIR

No.

154 161,9

445 263,5

226 187.3

746 222,3

300

439

652

386

155,6 RA556* 1.109 273,1

254,0 RA5510* 1.811 384,2

54,0 RA1002 718 196,9

158,8 RA1006* 2.116 298,5

212,7

238,1

288.9

171,5

54,0 RA202

104,8 RA204

155,6 RA206

54.0 RA302

104,8 RA304

155,6 RA306

54,0 RA552

104,8 RA554

PUMP/CYLINDER SETS

> HYDRAULIC ACCESSORIES

> VALVES

CYLINDER/PUMP MATCHING

> ACCESSORY/REPAIR

PUMP/CYLINDER SETS

> HYDRAULIC ACCESSORIES

> Power Team

Selection Chart - Choose the right cylinder

		Đ	etracte	ed		Base					В	etracte	ed		Base		
	SA and DA						Collar	Order		SA and DA					Mount.	Collar	Order
Tons	action	mm.		of return				No.		action	mm.		of return	Duty	hole	Thread	No.
	_								_								
2		127	233	MARKE	High	-	V	RP25		r=	54	187	80,600,00	Lliab	_		RA302
5 pull		139,7	302	BARARA	High	-	~	RP55			104,8	238	BURNEY	High High	-		RA302
5 puii		25,4	111	BURNING	High	· /	~	C51C			155,6	289	BURNEY	High	-	-	RA304
		82,6	165	BARARA	High	~	~	C51C			257,2	438	anamana •	High	-	· ·	RH3010
			216	BARAGA		V	V				63,5	159	MARKE		· ·	V	RH302
_		133,4		BARANA	High		~	C55C						High	V		
5		133,4	267	BARARA	High	· ·	~	C55CBT	30		76,2	179	MAAAAA	High	~	- V	RH303
		184,2	273	BARARA	High			C57C C59C			152,4	248		High	V	-	RH306
		235	324		High	V	V				152,4	281	MINIMI	High			RH306D
		14,3	41	BARAKA	High	V	-	RLS50			149,2	283	MAAAA	High	-	-	RHA306
		257,2	349	NAMA.	High	~	V	C1010C			12,7	59	MANAG	High	V	-	RLS300
		257,2	394	BARAKA	High	-	V	C1010CBT			61,9	117	MANAG	High	-	-	RSS302
		308	400	MAAAA	High	V	V	C1012C	-		63,5	214	MANAG	High	V	-	RT302
		358,8	451	BAAAAA	High	V	V	C1014C			76,2	181	BAAAAA	High	V	V	RH503
		25,4	92	MAAAA	High	V	V	C101C	50		15,9	67	MANAG	High	V	-	RLS500S
		54	121	MAAAA	High	V	V	C102C		$\overline{}$	60,3	127	MANA	High	-	-	RSS502
		104,8	172	MAAAA	High	V	V	C104C			76,2	268	MANAG	High	V	-	RT503
10	\Box	155,6	248	MAAAA	High	V	V	C106C		\Box	260,4	384	MANAG	High	V	V	C5510C
		155,6	292	MAAAA	High	-	~	C106CBT			336,6	460	MARKE	High	~	V	C5513C
		206,4	299	BARARA	High	V	V	C108C			50,8	175	Millill	High	~	~	C552C
		254	391	٠	High	V	~	RD1010			108	232	8,44,674	High	V	~	C554C
		158,8	297	٠	High	V	V	RD106			158,8	283	8343634	High	~	~	C556C
		63,5	133	8343634	High	V	-	RH102			254	329	Load	-	-	-	R5510C
		203,2	287	MARKA	High	V	-	RH108			254	365	Load	-	-	-	R5510L
		11,1	45	MAAAA	High	V	-	RLS100			50,8	125	Load	-	-	-	R552C
		38,1	89	MAAAAA	High	-	-	RSS101			50,8	162	Load	-	-	-	R552L
		7,9	56	MAAAAA	High	V	~	RH120	55		152,4	264	Load	-	-	-	R556C
12		41,3	122	MAAAA	High	-	V	RH121	33		152,4	321	Load	-	-	-	R556L
12		41,3	122	MAAAAA	High	-	~	RH121T			254	384	834334	High	~	-	RA5510
		76,2	184	MAAAAA	High	-	~	RH123			54	171	MARKE	High	-	-	RA552
		257,2	373	BUAUGU	High	V	~	C1510C			104,8	222	MAAAAA	High	-	-	RA554
		308	424	834334	High	V	~	C1512C			155,6	273	MARKE	High	~	-	RA556
		358,8	475	MAAAAA	High	V	V	C1514C			155,6	318	MAAAA	High	-	-	RA556L
		406,4	522	MAAAAA	High	V	V	C1516C			50	125	Load	High	-	-	RC0552P
15		25,4	124	MAAAA	High	V	V	C151C			333,4	504	٠	High	~	V	RD5513
		54	149	MAAAAA	High	V	~	C152C			463,6	657	٠	High	~	~	RD5518
		104,8	200	MAAAA	High	V	~	C154C			158,8	329	٨	High	~	V	RD556
		155,6	271	MAAAA	High	V	~	C156C			257,2	459	٨	High	-	~	RH6010
		206,4	322	BAAAAA	High	V	~	C158C			76,2	235	MARKE	High	~	V	RH603
17,5		50,8	175	MAAAAA	High	V	-	RT172	60		127	241	٠	High	~	-	RH605
		54	162	MAAAA	High		-	RA202			152,4	318	MARKE	High	~	V	RH606
		104,8	213	MAAAAA	High	-	-	RA204		خت	101,6	241	•	High	V	-	RHA604D
		155,6	264	MAAAAA	High	-	-	RA206			333,4	492	MAAAA	High	-	V	C7513C
		50,8	156	MAAAAA	High	V	V	RH202	75	\Box	155,6	314	MAAAA	High	-	V	C756C
20		76,2	154	MANAN	High	V	-	RH203			15,9	79	BAAAAA	High	V	-	RLS750S
		152,4	308	BAAAAA	High	V	V	RH206	80		333,4	518	•	High	V	~	RD8013
		11,1	51	MANAN	High	V	-	RLS200			260,4	429	MARKE	High	-	V	C10010C
		44,5	95	MANA	High	-	-	RSS202			50,8	219	MANAGE	High	-	V	C1002C
		260,4	375	BAAAAA	High	~	~	C2510C			168,3	337	MARKE	High	-	~	C1002C
		311,2	425	BAAAAA	High	V	V	C2512C			254	343	Load		-	-	R10010C
		362	476	BARAGA	High	~	~	C2512C			254	372	L∪au	_	-	-	R10010D
		362	543	BUALLUA	High	-	~	C2514CBT			254	387	Load	-	-	-	R10010L
		25,4	140	BAAAAA	High	<i>V</i>	~	C2514CB1			50,8	140	Load	-			R10010L
		50,8	165	BARAGA		~	~	C251C	100		50,8	169	LUau	-			R1002C
25	-			834334	High							184		-	-	-	R1002D R1002L
		101,6	216	MARKE	High	V	V	C254C		<u> </u>	50,8	_	Load		-		
		158,8	273	NAMES A	High	V		C256C			152,4	241	Load	-		-	R1006C
		158,8	314		High	-	V	C256CBT			152,4	270	Load	-	-	-	R1006D
		209,6	324	MAAAA	High	V	V	C258C			152,4	286	Load	- 1 E a la	-	-	R1006L
4		362	518	•	High High	V	V	RD2514 RD256			54 158,8	197	834334	High High	-	-	RA1002
1		158,8	340	•		V						298			-	-	RA1006

			etracte			Base						Retracte			Base		
	SA and DA						Collar	Order	Ι	SA and D.						Collar	
ions	action	mm.	mm.	of return	Duty	hole	Thread	No.	Tons	action	mm.	mm.	of return	Duty	hole	Thread	No.
		158,8	340	Load	High	-	-	RA1006L			50,8	290	٠	-	-	-	R3552[
		45	137	Load	High	-	-	RC1002P			50,8	292	Load	-	-	-	R3552l
		333,4	515	•	High	V	~	RD10013	355		152,4	333	Load	-	-	-	R35560
		511,2	718	•	High	V	~	RD10020			152,4	448	•	-	-	-	R3556l
		168,3	350	•	High	V	~	RD1006			152,4	394	Load	-	-	-	R3556
100		38,1	165	•	High	-	-	RH1001	380		45	178	Load	High	-	-	RC3802
100		260,4	503	•	High	-	~	RH10010	400		330,2	651	•	High	~	~	RD4001
		76,2	254	83,636,02	High	-	-	RH1003	400		152,4	473	•	High	~	~	RD400
		152,4	314	•	High	V	-	RH1006			254	467	Load	-	-	-	R43010
		15,9	86	Middle	High	V	-	RLS1000S			254	516	•	-	-	-	R43010
		57,2	140	MAAAA	High	-	-	RSS1002			254	537	Load	-	-	-	R43010
		38,1	144	•	High	-	-	RSS1002D			50,8	264	Load	-	-	-	R4302
		123,8	384	•	High	V	-	RT1004	430		50,8	313	•	-	-	-	R4302
		254	365	Load	-	-	-	R15010C			50,8	333	Load	-	-	-	R4302
		254	392	•	-	-	-	R15010D			152,4	365	Load	-	-	-	R4306
		254	410	Load	-	-	-	R15010L			152,4	413	•	-	-	-	R4306
		50,8	162	Load	-	-	-	R1502C			152,4	435	Load	-	-	-	R4306
		50,8	189	•	-	-	-	R1502D	500		330,2	677	•	High	~	~	RD500
		50,8	206	Load	-	-	-	R1502L	300		152,4	499	•	High	~	~	RD500
		152,4	264	Load	-	-	-	R1506C			254	495	Load	-	-	-	R56510
150		152,4	291	•	-	-	-	R1506D			254	548	٠	-	-	-	R56510
		152,4	308	Load	-	-	-	R1506L			254	575	Load	-	-	-	R56510
		333,4	543	•	High	V	~	RD15013			50,8	292	Load	-	-	-	R5652
		460,4	674	•	High	V	~	RD15018	565		50,8	345	•	-	-	-	R5652
		168,3	378	•	High	V	~	RD1506			50,8	371	Load	-	-	-	R5652
	\rightleftharpoons	127	308	•	High	-	-	RH1505			152,4	394	Load	-	-	-	R5656
		203,2	349	•	High	-	-	RH1508			152,4	447	٠	-	-	-	R5656
		14,3	102	MAAAA	High	~	-	RLS1500S			152,4	473	Load	-	-	-	R5656
155		45	148	Load	High	-	-	RC1552P	620		45	192	Load	High	-	-	RC620
		254	394	Load	-	-	-	R20010C			250	465	Load	-	-	-	RC7401
		254	410	•	-	-	-	R20010D			250	508	٠	High	-	-	RC7401
		254	445	Load	-	-	-	R20010L			250	595	Load	High	-	-	RC7401
		50,8	191	Load	-	-	-	R2002C			50	265	Load	-	-	-	RC7402
		50,8	207	•	-	-	-	R2002D	740		50	283	٠	High	-	-	RC7402
		50,8	241	Load	-	-	-	R2002L			50	395	Load	High	-	-	RC740
200		152,4	292	Load	-	-	-	R2006C			150	365	Load	-	-	-	RC7406
		152,4	308	•	-	-	-	R2006D			150	398	•	High	-	-	RC7406
		152,4	343	Load	-	-	-	R2006L			150	495	Load	High	-	-	RC7406
		333,4	572	•	High	V	~	RD20013			250	390	Load	-	-	-	RC9651
		460,4	724	•	High	V	~	RD20018			250	530	٠	High	-	-	RC9651
		168,3	406	•	High	V	~	RD2006			250	635	Load	High	-	-	RC9651
		203,2	408	MANA	High	V	-	RH2008			50	290	Load	-	-	-	RC9652
240		45	155	Load	High	-	-	RC2402P	965		50	310	٠	High	-	-	RC9652
250		76,2	290	BUAUGU	High	-	-	RSS2503			50	455	Load	High	-	-	RC965
		254	394	Load	-	-	-	R28010C			150	390	Load	-	-	-	RC9656
		254	437	•	-	-	-	R28010D			150	420	•	High	-	-	RC9656
		254	451	Load	-	-	-	R28010L			150	555	Load	High	-	-	RC965
		50,8	191	Load	-	-	-	R2802C			250	615	Load	-	-	-	RC1220
280		50,8	234	•	-	-	-	R2802D			250	550	•	High	-	-	RC12201
		50,8	248	Load	-	-	-	R2802L			250	698	Load	High	-	-	RC1220
		152,4	292	Load	-	-	-	R2806C	1000		50	415	Load	-	-	-	RC1220
		152,4	335	•	-	-	-	R2806D	1220		50	330	٠	High	-	-	RC1220
		152,4	349	Load	-	-	-	R2806L			50	443	Load	High	-	-	RC1220
300	\Rightarrow	330,2	617	٠	High	V	V	RD30013			150	440	Load	-	-	-	RC1220
300	\Rightarrow	152,4	439	٠	High	V	V	RD3006			150	440	٠	High	-	-	RC1220
		254	435	Load	-	-	-	R35510C			150	598	Load	High	-	-	RC1220
055		254	550	•	-	-	-	R35510D									
355		254	495	Load	-	-	-	R35510L			Single A Double				g Returr		
											LIQUIDIA	CTION	•	Hydrs	aulic Ret	TIPP	

>Power Team^o



· 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

 Unique heavy duty spring provides fast piston return.

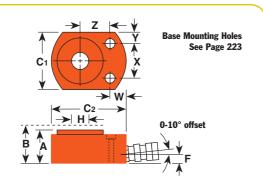
• A 9796 3/8" NPTF female half coupler is standard with each cylinder (the RLS50 has a 3/8" coupler which is not angled). Oil ports are 3/8" NPTF (except the RLS50).

· Couplers on all cylinders, except RLS50, are angled upward for extra clearance.

RLS100



RLS1000S



ASME B30.1

Cyl.			Oil	A Re- tracted	B Ex- tended	C1 & C2 Outside	F Base to	H Piston Rod Prod	. w	X	Y	Z	Bore	Cyl. Eff.	Metric Tons at	
Cap.	Stroke	Order	Cap.	Height	Height	Dia.	Port	Dia.	Mo	unting F	lole Lo	cation	Dia.	Area	700	Weight
(tons)	(mm)	No.	(cm³)	(mm)	(mm)	(mm)	(mm)	(mm)		(mn	1)		(mm)	(cm²)	bar	(kg)
5	14,3	RLS50	10	41,3	55,6	41,3x65,1	19,1	15,9	19,1	28,6	6,4	25,4	28,6	6,4	4,5	1,0
10	11,1	RLS100	17	44,5	55,6	55,6x82,6	15,9	19,1	17,5	36,5	9,5	33,3	42,9	14,4	10,1	1,5
20	11,1	RLS200	33	50,8	61,9	76,2x101,6	16,7	28,6	18,3	49,2	13,5	39,7	60,3	28,6	20,1	2,5
30	12,7	RLS300	53	58,7	71,4	95,3x114,3	18,3	34,9	20,6	52,4	21,4	44,5	73,0	41,9	29,5	3,9
50	15,9	RLS500S	99	66,7	82,6	114,3x139,7	21,4	44,5	23,8	66,7	23,8	54,0	88,9	62,1	43,6	6,3
75	15,9	RLS750S	163	79,4	95,3	140,5x165,1	25,4	54,0	23,8	76,2	32,1	65,9	114,3	102,6	72,2	10,6
100	15,9	RLS1000S	202	85,7	101,6	152,4x177,8	25,4	63,5	20,6	76,2	38,1	71,4	127,0	126,6	89,1	13,6
150	14,3	RLS1500S	282	101,6	115,9	190,5x215,9	33,3	76,2	33,3	117,5	36,5	79,4	158,8	197,9	139,2	23,6

CYLINDER/PUMP MATCHING	> ACCESSORY/REPAIR	PUMP/CYLINDER SETS	> HYDRAULIC ACCESSORIES	> VALVES	TECH DATA
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· 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

Shorty **CYLINDERS RSS SERIES**

10-250 Ton Single-Acting, Spring-Return & Double-Acting

Ideal for confined areas from 89 to 290,5 mm clearance.

CYLINDERS



ASME B30.1

Cribbing blocks are shown in a 30 ton RSS302 "Shorty" cylinder. For more information see pg 40.

→	H ←
B A	
↓ Å	5°
	c →

					A	В	C	F	н				
Cyl Capacity (Tons)	Stroke (mm)	Order No.	(c	il ap. m³) Return	Retracted Height (mm)	Extended Height (mm)	Outside Dia. (mm)	Base to Port (mm)	Piston Rod Dia. (mm)	Bore Dia. (mm)	Cylinder Effective Area (cm²)	Metric Tons at 700 (bar)	Weight (kg)
10	38,1	RSS101	56	-	88,9	127,0	69,9	15,9	38,1	42,9	14,4	10,2	2,7
20	44,5	RSS202	126	-	95,3	139,7	90,5	15,9	54,8	60,3	28,6	20,0	4,5
30	61,9	RSS302	259	-	117,5	179,4	101,6	15,9	63,5	73,0	41,9	29,5	6,7
50	60,3	RSS502	374	-	127,0	187,3	123,8	19,1	79,4	88,9	62,0	43,6	10,5
100	57,2	RSS1002	725	-	139,7	196,9	168,3	23,8	111,1	127,0	126,6	89,1	21,4
100	38,1	RSS1002D	482	212	144,5	182,6	174,6	23,8 *	95,3	127,0	126,6	89,1	24,7
250	76,2	RSS2503	2.469	-	290,5	366,7	250,8	46,0	139,7	203,2	323,9	227,8	99,7

*Cylinder top to port is 40 mm See pages 30-35 & 110-123 for hydraulic accessories.

CYLINDER/PUMP MATCHING	ACCESSORY/REPAIR	PUMP/CYLINDER SETS	HYDRAULIC ACCESSORIES VALVES	TECH DATA	>
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>Power Team®

Center Hole CYLINDERS RH SERIES

10-100 Ton Single-Acting, Spring-Return

Ideal for pulling and tensioning of cables, anchor bolts, forcing screws, etc.

- Interchangeable piston head inserts (see page 41) 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.



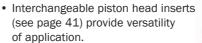


10, 20, 100 Ton Single-Acting Models Feature Plain Collar

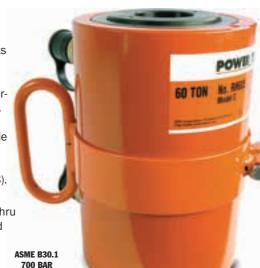
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N-	0
B A A	E A D ¥ F
→	- c - ↑

				A	В	C	D	E	F	Н	N	0	l			
Cyl.			Oil	Re-	Ex-	Outsida	Collar	Collar	Base to	Piston Rod	Center Hole	Insert Thread		Cylinder Effective		
_	Stroke	Order	Cap.		Height	Dia.		Length	Port	Dia.	Dia.	and Size	Bolt	Area	700	Weight
(tons)	(mm)	No.	(cm³)	(mm)	(mm)	(mm)	(in.)	(mm)	(mm)	(mm)	(mm)	(in.)	Circle	(cm²)	bar	(kg)
10	63,5	RH102	91	134,9	198,4	76,2	-	-	25,4	52,4	19,4	1 ³/4-12	¹/4-20 x 60,3	3 14,3	10,0	4,1
10	203,2	RH108	290	287,3	490,5	76,2	-	-	25,4	52,4	19,4	1 3/4-12	¹/4-20 x 60,3	3 14,3	10,0	8,5
12	7,9	RH120**	14	55,6	63,5	69,9	2 3/4-16	31,8	9,5	34,9	17,5	3/4-16	5/16-18 x 50,	8 17,8	12,5	1,4
12	41,3	RH121	74	122,2	163,5	69,9	2 3/4-16	31,8	25,4	34,9	20,2	-		17,8	12,5	3,0
12	41,3	RH121T**	74	122,2	163,5	69,9	2 3/4-16	31,8	25,4	34,9	17,5	3/4-16	5/16-18 x 50,	8 17,8	12,5	3,0
12	76,2	RH123	136	184,2	260,4	69,9	2 3/4-16	20,6	25,4	34,9	20,6	-		17,8	12,5	4,0
20	50,8	RH202	155	155,6	206,4	98,4	3 7/8-12	38,1	25,4	54,0	27,4	1 9/16-16	³/s-16 x 82,6	30,4	21,4	7,3
20	76,2	RH203	193	154,0	230,2	101,6	-	-	25,4	69,9	26,6	2 1/4-12	³/s-16 x 82,6	3 25,3	17,8	9,1
20	152,4	RH206	465	308,0	460,4	98,4	3 7/8-12	38,1	25,4	54,0	27,4	1 9/16-16	³/s-16 x 82,6	30,4	21,4	13,7
30	63,5	RH302	260	158,8	222,3	120,7	4 3/4-12	38,1	29,4	82,6	32,9	2 3/4-12	⁷ /16-20 x 92,	1 40,9	28,8	11,6
30	149,2	RHA306	625	283,4	432,6	130,2	-	-	31,8	82,6	32,5	2 5/8-8	⁷ /16-20 x 92,	1 40,9	28,8	9,9
30	152,4	RH306	625	247,7	400,1	120,7	4 3/4-12	38,1	29,4	82,6	32,5	2 3/4-12		40,9	28,8	17,7
50	76,2	RH503	534	181,0	257,2	152,4	6-12	50,8	31,8	104,8	42,5	3 1/4-12	5/s-18 x 120	7 70,0	49,3	21,2
60	76,2	RH603*	607	235,0	311,2	158,8	6 ¹ /4-12	63,5	25,4	91,3	54,0	3-12	¹/₂-13 x 130	2 79,4	55,9	27,2
60	152,4	RH606*	1.211	311,2	463,6	158,8	6 1/4-12	63,5	25,4	91,3	54,0	3-12	1/2-13 x 130	2 79,4	55,9	35,4
100	76,2	RH1003*	1.014	254,0	330,2	212,7	-	-	31,8	127,0	79,4	4 1/8-12		133,0	93,5	52,2

^{*}Supplied with carrying handles.



- Built-in safety feature prevents overpressurization of the retract 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.



Center Hole CYLINDERS RH SERIES

30-200 Ton Double-Acting

Ideal for pulling and tensioning of cables, anchor bolts, forcing screws.



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100	_					•••	_	•							_							
						Re-	Ex-			Collar	Base	Cylinde	r Piston	Center	Insert	Mounting	Cyl	linder	Met	ric		
Cyl.				Oi	ı	tracted	tended	Outside	Collar	Thread	to	Top to	Rod	Hole	Thread	Holes (in.) and	Eff	ective	Tons	at		
Cap.		Stroke	Order	Cap	p.	Height	Height	Dia.	Thread	Length	Port	Port	Dia.	Dia.	Size	Bolt Circle	A	lrea	70	0	Weight	
(tons)		(mm)	No.	(cm	1 ³)	(mm)	(mm)	(mm)	(in.)	(mm)	(mm)	(mm)	(mm)	(mm)	(in.)	(mm)	(0	cm²)	ba	r	kg)	
Push	Pul	<u> </u>		Push	Pull										_		Push	Pull	Push	Pull		
30	15	76,2	RH303	289	167	179,4	255,6	120,7	-	-	25,4	41,3	63,5	32,5	2-12	³/8-16 x 92,1	38,0	21,8	26,8	15,3	13,5	
30	15	152,4	RH306D	580	333	281,0	433,4	120,7	-	-	25,4	41,3	63,5	32,5	2-12	⁷ /16-20 x 92,1	38,0	21,8	26,8	15,3	20,4	
30	20	257,2	RH3010	1.082	672	438,2	695,3	114,3	4 1/2-12	41	44,5	81,0	60,3	33,3	1 ⁷ /8-16	-	42,2	26,1	29,7	18,3	27,7	
60	25	101,6	RHA604D	807	338	241,3	342,9	177,8	-	-	39,7	57,2	101,6	54,0	3-12	¹ /2-13 x 130,2	79,4	33,2	55,8	25,1	16,2	
60	25	127,0	RH605*	1.009	423	241,3	368,3	165,9	-	-	25,4	44,5	101,6	54,0	3-12	¹ /2-13 x 130,2	79,4	33,2	55,8	25,1	33,1	
60	40	257,2	RH6010*	2.181	1.427	458,8	716,0	158,8	6 1/4-12	47,6	54,0	81,8	92,1	54,4	3-16	-	84,8	55,4	59,6	38,9	54,5	
100	45	38,1	RH1001*	526	233	165,1	203,2	212,7	-	-	31,8	58,7	127,0	79,8	4-16	5/8-11 x 177,8	138,0	60,8	97,0	42,7	38,6	
100	50	152,4	RH1006*	1.971	1.076	314,3	466,7	184,2	-	-	37,3	59,1	111,1	52,4	-	¹ /2-13 x 139,7	129,2	70,5	90,8	49,6	43,1	
100	45	257,2	RH10010*	3.552	1.556	495,3	752,5	215,9	8 1/2-12	57	63,5	91,7	139,7	79,8	4 ¹ /2-12	-	138,0	60,8	97,0	42,7	109,0	
150	70	127,0	RH1505*	2.475	1.207	311,2 [†]	438,2	215,9	-	-	37,3	68,3	139,7	65,1	-	-	194,1	94,8	136,9	66,8	67,2	
150	75	203,2	RH1508*	3.929	2.086	349,3	552,5	247,7	-	-	39,3	61,1	152,4	80,2	5-12	-	193,2	102,6	135,9	72,1	103,1	
200	75	203,2	RH2008*	5.307	2.093	408,0	611,2	273,1	-	-	57,2	81,8	190,5	103,2	6-12	1 ¹ /4-12 x 198,1	260,9	102,9	183,5	72,4	142,0	

^{*} Supplied with carrying handles.

HYDRAULIC ACCESSORIES CYLINDER/PUMP MATCHING > ACCESSORY/REPAIR PUMP/CYLINDER SETS > VALVES

^{**} 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.

[†] Measured with 19 mm high serrated insert installed. See pages 36-41 & 120-133 for hydraulic accessories.

17¹/2-100 Ton

Single- Acting, Spring-Return & Double-Acting

Ideal for pulling and pressing.

CYLINDERS



- A proven design; used throughout industry for over 40 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 41)

RT 302

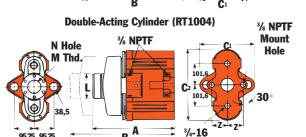
Cyl. Metric

 Pistons have "Power Tech" treatment for corrosion and abrasion resistance.

RT 302

3/8 NPTF

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





	30,	25 55,25	1	В					
	А	В	C1	C2	L	М	N	z	
	Re-	Ex	Out-	Out-	Load	Load	Center	Mounting	
Oil	tracted	tended	side	side	Сар	Сар	Hole	Hole	
y Stroke Order Cap.	Height	Height	Dia.	Dia.	Dia.	Thread	Dia.	Location	
(mm) No. (cm³)	(mm)	(mm)	(mm)	(mm)	(mm)	(in.)	(mm)	(mm)	
Push Retu	'n								

Cyl. Capacity	y Strok	e Order	Oi Ca		tracted Height	tended Height		side Dia.	Cap Dia.	Cap Thread	Hole Dia.	Hole Location	Mounti Hole	ng Eff. Area	Tons at 700	Weight
(Tons)	(mm)	No.	(cn		(mm)	(mm)	(mm)	(mm)	(mm)	(in.)	(mm)	(mm)	(mm)	(cm²)	bar	(kg)
Push			Push	Return												
17,5	50,8	RT172	116	-	174,6	225,4	95,3	146,1	44,5	1-8	27,0	38,1	8,7	22,8	16,1	6,6
30	63,5	RT302	258	-	214,3	277,8	108,0	190,5	57,2	1 1/4-7	32,9	46,0	11,9	40,5	28,5	12,8
50	76,2	RT503	482	-	268,3	344,5	149,2	238,1	73,0	1 5/8-5 1/2	42,5	60,3	16,7	63,3	44,5	25,4
100	123,8	RT1004**	1.583	1.037	384,2	508,0	266,7	336,6	120,7	2 1/2-8	65,1	73,0	19,8	124,1*	87,3	72,6

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

> ACCESSORY/REPAIR

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

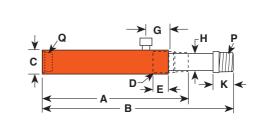
> HYDRAULIC ACCESSORIES > VALVES PUMP/CYLINDER SETS

Pulling CYLINDERS RP SERIES

2 & 5 Ton Single-Acting, Spring-Return

Designed for pulling and tensioning.

SPX POWER TEAM RP25



Heavy duty compression spring provides

Spring automatically extends piston rod

when pump pressure is released.

long cycle life and rapid extension of

Cyl. Cap. (Tons) Pull				Height		Dia.	Thread	Thread Length	Top to	Rod Dia.	Rod Protrusion			Dia.		Metric Tons at 700 bar Pull	Weight (kg)
_ 2	127,0	RP25	45	242,9	379,9	44,5	1 1/2-16	25,4	42,9	19,1	25,4	3/4-14	3/4-14	28,6	3,5	2,5	1,8
5	139,7	RP55	102	301,6	441,3	57,2	2 1/4-14	25,4	42,9	30,2	34,9	11/4-111/2	11/4-111/	² 42,9	7,3	5,1	5

Clevis

SPX POWER TEAM

ASME B30.1 700 BAR

Clevis ORDERING INFORMATION

Use with	Order	Α	В	C	D	E
Cyl No.	No.	(mm)	(mm)	(mm)	(mm)	(mm)
RP25	421057*	130,3	109,5	33,3	50,8	19,1
RP55	421056**	152,4	127,0	38,1	63,5	22,4

- * For base mounting, extension rod 351106 is required.
 ** For base mounting, extension rod 351075 is required.

PUMP/CYLINDER SETS TECH DATA CYLINDER/PUMP MATCHING > HYDRAULIC ACCESSORIES > VALVES > ACCESSORY/REPAIR

CYLINDER/PUMP MATCHING

>Power Team

www.powerteam.com

Double Acting, Hydraulic-Return

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 resist 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.

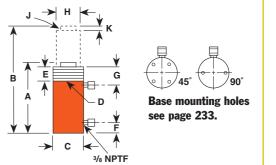


Four special ordered 500 ton, 610 mm stroke cylinders used in a swaging press for crimping 89 mm wire rope.



Features of RD Series Cylinders







CYLINDERS

					A	В	C	D	E	F	G	Н	J	K								
										Base	Cylinder											
				_	Re-	Ex-	Out-	Collar	Thread	to	Piston	Piston	Rod Int.							_		
Cyl.		•	0		tracted	tended	side	Thread	Length	Port	Top to	Rod	(in) and	Rod Pro	1.22	Bore		. Eff.		c Tons		
(tons)	. Stroke (mm)	Order No.	Capa (cr		Height (mm)	Height (mm)	Dia. (mm)	Size (in.)	(mm)	trusion (mm)	Port (mm)	Dia. (mm)	Depth (mm)	trusion (mm)	Dia. (mm)	Dia.		rea m²)		700 ar	Weight (kg)	
Push Pul		No.	Push		(111111)	(111111)	(111111)	(111.)	(111111)	(111111)	(111111)	(111111)	(11111)	(111111)	((111111)	Push	<u> </u>	Push	Pull	INGI	—
10 4	158,8	RD106	228	90	296.9	455.6	76,2	23/4-12	41.3	25,4	63.5	33.3	1-8 x 25.4	6.4	349	42,9	14,4	5.7	10,2	4,0	10,0	
10 4	1 1	RD1010	366	144	398.5			23/4-12	41,3	25,4	63.5	33,3	1-8 x 25,4	6.4			14,4	5,7	10.2	4.0	12.7	
25 8		RD256	528	166	314.3		101.6	4-12	41.3	25.4	63.5	54.0	1 ¹ / ₂ -16 x 25.4			65.1			23.4	7.3	18.1	
		RD2514	1.205	376	517.5	879.5		4-12	41.3	25.4	63.5	54.0	1 1/2-16 x 25.4			65.1		10.4	23.4	7.3	29.5	
55 28		RD556	1.132	577	329,4		127,0	5-12	41,3	33,3	63.5	66.7	1 11/16-8 x 30,2	- / - /			71,2	- '	50,1	25,6	27,9	
55 28		RD5513	2.376		504.0	837.4		5-12	41.3	33.3	63.5	66.7	1 11/16-8 x 30.2			95,3			50.1	25.6	40.9	
55 28		RD5518	3280			1.117.6		5-12	41.3	33.3	63.5	66.7	1 11/16-8 x 30.2				71.2		50.1	25.6	64.5	
80 44	333,4	RD8013	3421	1.901	517,5	850,9	146,1	5 3/4-12	41,3	38,1	63,5	76,2	2-4 ¹ / ₂ x 38,1	14,3	73,0	114,3	102,6	57,0	72,1	40,1	53,6	
100 44	168,3	RD1006	2.242	959	350,0	518,3	174,6	67/8-12	41,3	38,1	63,5	98,4	23/412 x 29,4	15,9	98,4	130,2	133,1	57,0	93,5	40,1	57,2	
100 44	333,4	RD10013	4.440	1.902	515,1	848,5	174,6	67/8-12	41,3	38,1	63,5	98,4	2 3/4-12 x 29,4	15,9	98,4	130,2	133,1	57,0	93,5	40,1	82,2	
100 44	511,2	RD10020	6.809	2.919	718,3	1.229,5	174,6	67/8-12	41,3	38,1	63,5	98,4	23/412 x 29,4	15,9	98,4	130,2	133,1	57,0	93,5	40,1	118,0	
150 73	168,3	RD1506	3.334	1.606	377,8	546,1	209,6	81/4-12	41,3	50,8	63,5	114,3	3 1/48 x 38,1	20,6	114,3	158,8	197,9	95,3	139,1	66,9	85,4	
150 73	333,4	RD15013	6.604	3.180	542,9	876,3	209,6	81/4-12	41,3	50,8	63,5	114,3	3 ¹ /4-8 x 38,1	20,6	114,3	158,8	197,9	95,3	139,1	66,9	123,5	
150 73	460,4	RD15018	9.132	4.392	673,9	1.134,3	209,6	81/4-12	41,3	50,8	63,5	114,3	3 ¹ /4-8 x 38,1	19,1	114,3	158,8	197,9	95,3	139,1	66,9	170,7	
200 113	168,3	RD2006	4.485	2.457	406,4	574,7	241,3	9 1/2-12	41,3	63,5	68,3	123,8	31/48 x 57,1	27,0	114,3	184,2	266,3	145,9	187,2	102,6	118,9	
200 113	333,4	RD20013	8.886	4.869	571,5	904,9	241,3	9 1/2-12	41,3	63,5	68,3	123,8	31/48 x 57,1	27,0	114,3	184,2	266,3	145,9	187,2	102,6	161,6	
200 113	460,4	RD20018	12.270	6.722	723,9	1.184,3	241,3	91/212	41,3	63,5	68,3	123,8	3 ¹ /48 x 57,1	27,0	114,3	184,2	266,3	145,9	187,2	102,6	200,7	
300 147	152,4	RD3006	5.920	2.903	488,9	591,3	273,1	10 ½-12	60,3	85,7	85,7	158,8	2 ½-12 x 82,5	28,6	174,6	222,3	387,8	190,0	272,7	133,6	172,5	
300 147	330,2	RD30013	12.825	6.281	630,2	960,4	273,1	10 ½-12	60,3	85,7	85,7	158,8	2 ½12 x 82,5	28,6	174,6	222,3	387,8	190,0	272,7	133,6	296,9	
400 186	152,4	RD4006	7.724	4.051	489,7	642,1	320,7	12 ¹ /2-8	69,9	97,6	97,6	184,2	3-12 x 92,2	31,8	198,4	254,0	506,6	240,3	356,2	169,0	265,6	
400 186	330,2	RD40013	16.744	8.790	667,5	997,7	320,7	12 ½-8	69,9	97,6	97,6	184,2	3-12 x 92,2	31,8	198,4	254,0	506,6	240,3	356,2	169,0	349,6	
500 245	152,4	RD5006	9.774	4.838	522,3	674,7	374,7	14³/4-8	79,4	105,6	105,6	203,2	3 ½-12 x 107,9	38,1	215,9	285,8	641,1	317,0	450,8	222,8	371,8	
500 245	330,2	RD50013	21.189	10.480	700,1	1.030,3	374,7	14³/4-8	79,4	105,6	105,6	203,2	3 ¹ /4-12 x 107,9	38,1	215,9	285,8	641,1	317,0	450,8	222,8	495,8	

CYLINDER/PUMP MATCHING ACCESSORY/REPAIR PUMP/CYLINDER SETS HYDRAULIC ACCESSORIES VALVES TECH DATA

Page 6 Page 36 Page 61 Page 120 Page 129 Page 231

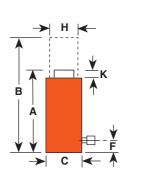
High Tonnage CYLINDERS R SERIES

55-565 Ton Single-Acting Load-Return

High-tonnage, low cycle, gravity return.

GYLINDERS





- · 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 increase corrosion resistance and give superior bearing qualities.

1					A	В	C	F	Н	K					
								Base	Piston		Piston				
	Cyl.		Order	Oil	Retracted	Extended	Outside	to	Rod	Rod	Bore	Effective	Metric Tons		
	Cap.	Stroke	No.	Cap.	Ht.	Ht.	Dia.	Port	Dia.	Protrusion	Dia.	Area	at 700	Weight	
	(tons)	(mm)		(cm³)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(cm²)	bar	(kg)	
Г	55	50,8	R552C	362	125,4	176,2	127,0	25,4	95,3	3,2	95,3	71,2	50,1	12,3	
	55	152,4	R556C	1.087	227,0	379,4	127,0	25,4	95,3	3,2	95,3	71,2	50,1	22,7	
	55	254,0	R5510C	1.811	328,6	582,6	127,0	25,4	95,3	3,2	95,3	71,2	50,1	32,7	
	100	50,8	R1002C	677	139,7	190,5	165,1	25,4	130,2	3,2	130,2	133,1	93,6	23,6	
	100	152,4	R1006C	2.030	241,3	393,7	165,1	25,4	130,2	3,2	130,2	133,1	93,6	40,4	
	150	50,8	R1502C	1.007	161,9	212,7	204,8	31,8	158,8	3,2	158,8	197,9	139,1	41,8	
	150	152,4	R1506C	3.019	263,5	415,9	204,8	31,8	158,8	3,2	158,8	197,9	139,1	68,6	
	150	254,0	R15010C	5.032	365,1	619,1	204,8	31,8	158,8	3,2	158,8	197,9	139,1	95,3	
	200	50,8	R2002C	1.355	190,5	241,3	235,0	41,3	184,2	3,2	184,2	266,3	187,2	65,8	
	200	152,4	R2006C	4.062	292,1	444,5	235,0	41,3	184,2	3,2	184,2	266,3	187,2	100,3	
	280	50,8	R2802C	1861	190,5	241,3	260,4	41,3	215,9	3,2	215,9	365,9	257,5	91,6	
	280	152,4	R2806C	5583	292,1	444,5	276,2	41,3	215,9	3,2	215,9	365,9	257,5	136,7	
	355	50,8	R3552C	2.326	231,8	282,6	298,5	54,0	241,3	3,2	241,3	457,2	321,4	137,1	
	355	152,4	R3556C	6.975	333,4	485,8	298,5	54,0	241,3	3,2	241,3	457,2	321,4	197,0	
	355	254,0	R35510C	11.624	435,0	689,0	298,5	54,0	241,3	3,2	241,3	457,2	321,4	256,5	
	430	50,8	R4302C	2.841	263,5	314,3	330,2	63,5	266,7	3,2	266,7	558,5	392,7	199,8	
	430	152,4	R4306C	8.520	365,1	517,5	330,2	63,5	266,7	3,2	266,7	558,5	392,7	276,5	
	565	50,8	R5652C	3.710	292,1	342,9	377,8	69,9	304,8	3,2	304,8	729,5	512,9	289,7	
	565	152,4	R5656C	11.129	393,7	546,1	377,8	69,9	304,8	3,2	304,8	729,5	512,9	389,5	
	565	254,0	R56510C	18.548	495,3	749,3	377,8	69,9	304,8	3,2	304,8	729,5	512,9	489,4	

	vith "RC" c Swivel Cap	-		B	SWIVEL CAPS Reduce the effects of off center loading. Tilts up to 5 degrees. Radial grooves on top of cap reduce load	
	Order No.	_		(mm)	slippage.	
150-200 ton	420867	4,0	38,1	130,2	←─── B ────	
280 ton	420868	6,1	44,5	149,2	1777	
355 ton	420869	16,8	69,9	195,3	A	
430 ton	420870	23,6	79,4	225,4	/////// //////////////////////////////	
565 ton	420871	35,4	92,1	250,8		

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.

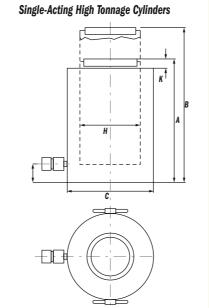


High Tonnage CYLINDER RC SERIES

740 - 1220 Ton Single-Acting, Load Return

High-tonnage, low cycle, gravity return.





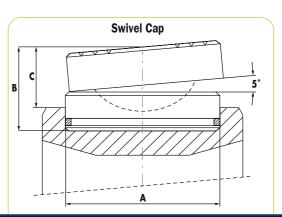
piston from being overextended

• Plated piston rod increase corrosion resistance and give superior

reliability and strength.

bearing qualities.

under load.



Order No.	Used with Cyl. Order No.	A mm	B mm	C mm	Product Wt. kg
2000824	RC740*C, RC965*C	290	140	99	72
2000825	RC1220*C	323	175	124	113

In mm Cyl. Cap. (tons)	Stroke (mm)	Order No.	Oil Cap. (cm³)	A Retracted Height (mm)	B Extended Height (mm)	C Outside Dia. (mm)	F Base to Port (mm)	H Piston Rod Dia. (mm)	K Piston Rod Protrusion (mm)	Bore Dia. (mm)	Cyl. Effective Area (cm²)	Tons @ 700 bar	Product Wt. (kg)
740	50	RC7402C	4.811	265	315	430	65	350	9	350	962	673,5	300
740	150	RC7406C	14.132	365	515	430	65	350	9	350	962	673,5	416
740	250	RC74010C	24.053	465	715	430	65	350	9	350	962	673,5	530
965	50	RC9652C	6.283	290	340	490	70	400	10	400	1.256,6	879,7	423
965	150	RC9656C	18.850	390	540	490	70	400	10	400	1.256,6	879,7	577
965	250	RC96510C	31.416	490	740	490	70	400	10	400	1.256,6	879,7	725
1220	50	RC12202C	7.952	415	465	550	80	450	10	450	1.590,4	1.113,3	766
1220	150	RC12206C	23.856	440	665	550	80	450	10	450	1.590,4	1.113,3	960
1220	250	RC122010C	39.761	615	865	550	80	450	10	450	1.590,4	1.113,3	1.147

HYDRAULIC ACCESSORIES VALVES CYLINDER/PUMP MATCHING ACCESSORY/REPAIR PUMP/CYLINDER SETS

>Power Team®

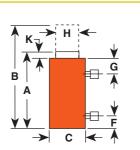
High Tonnage CYLINDERS R SERIES

100-565 Ton Double-Acting, Hydraulic-Return

High-tonnage, low cycle, hydraulic return.

- Cylinders come standard with swivel caps to reduce the effects of off-center
- 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 overpressurization of the retract circuit.
- Each cylinder has two 9796 3/8" NPTF female half couplers.







•		Re-	Ex-	Outeido	Base	Cylinder			Poro	Cylinder	Metric	
		Height	Height	Dia.	Port	Port			Dia.	Area	at 700	Weight
		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(cm²)	bar	(kg)
		400.7	040.5	105.1	05.4	50.0	05.0	7.4	100.0			04.5
						,		-		-		24,5
						, -						36,8
3.378	1.574	371,9	625,9	165,1	25,4	56,0	95,3	7,1	130,2	132,9	93,4	49,0
1.007	485	188,9	239,7	204,8	31,8	57,2	114,3	7,5	158,8	198,0	139,1	43,1
3.021	1.456	290,5	442,9	204,8	31,8	57,2	114,3	7,5	158,8	198,0	139,1	61,7
1.355	643	206,8	257,6	235,0	41,3	58,7	133,4	8,7	184,2	266,4	187,2	61,7
4.064	1.929	308,4	460,8	235,0	41,3	58,7	133,4	8,7	184,2	266,4	187,2	84,9
6.773	3.214	410,0	664,0	235,0	41,3	58,7	133,4	8,7	184,2	266,4	187,2	108,5
1861	774	233,8	284,6	276,2	47,6	65,5	165,1	10,3	215,9	365,7	257,3	99,4
5.579	2.322	335,4	447,8	276,2	47,6	65,5	165,1	10,3	215,9	365,7	257,3	134,8
9.299	3.870	437,0	691,0	276,2	47,6	65,5	165,1	10,3	215,9	365,7	257,3	170,7
2.326	777	288,9	339,7	298,5	54,0	69,9	196,9	11,1	241,3	457,3	321,4	147,0
6.977	2.332	390,5	542,9	298,5	54,0	69,9	196,9	11,1	241,3	457,3	321,4	191,1
2.840	977	312,7	363,5	330,2	63,5	75,0	215,9	11,9	266,7	558,6	392,7	199,3
8.521	2.932	414,3	566,7	330,2	63,5	75,0	215,9	11,9	266,7	558,6	392,7	253,3
14.202	4.887	515,9	769,9	330,2	63,5	75,0	215,9	11,9	266,7	558,6	392,7	305,5
3.710	1.260		396,1	377.8	69.9	81,4	247,7	13.9	304.8	-		281,0
	3.779	446.9	599.3	,	69.9	81.4	247.7		304.8			350.4
		- , -									-	420,4
	Call (c) Push 676 2.027 3.378 1.007 3.021 1.355 4.064 6.773 1861 5.579 9.299 2.326 6.977 2.840 8.521 14.202	676 315 2.027 945 3.378 1.574 1.007 485 3.021 1.456 1.355 643 4.064 1.929 6.773 3.214 1861 774 5.579 2.322 9.299 3.870 2.326 777 6.977 2.332 2.840 977 8.521 2.932 14.202 4.887 3.710 1.260 11.129 3.779	Capacity (cm²) Height (mm) Push Return 676 315 168,7 2.027 945 270,3 3.378 1.574 371,9 1.007 485 188,9 3.021 1.456 290,5 1.355 643 206,8 4.064 1.929 308,4 6.773 3.214 410,0 1861 774 233,8 5.579 2.322 335,4 9.299 3.870 437,0 2.326 777 288,9 6.977 2.332 390,5 2.840 977 312,7 8.521 2.932 414,3 14.202 4.887 515,9 3.710 1.260 345,3 11.129 3.779 446,9	Capacity (cm²) Height (mm) Height (mm) Push Return (mm) Height (mm) 676 315 168,7 219,5 2.027 945 270,3 422,7 3.378 1.574 371,9 625,9 1.007 485 188,9 239,7 3.021 1.456 290,5 442,9 1.355 643 206,8 257,6 4.064 1.929 308,4 460,8 6.773 3.214 410,0 664,0 1861 774 233,8 284,6 5.579 2.322 335,4 447,8 9.299 3.870 437,0 691,0 2.326 777 288,9 339,7 6.977 2.332 390,5 542,9 2.840 977 312,7 363,5 8.521 2.932 414,3 566,7 14.202 4.887 515,9 769,9 3.	Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Push Return 676 315 168,7 219,5 165,1 2.027 945 270,3 422,7 165,1 3.378 1.574 371,9 625,9 165,1 1.007 485 188,9 239,7 204,8 3.021 1.456 290,5 442,9 204,8 1.355 643 206,8 257,6 235,0 4.064 1.929 308,4 460,8 235,0 6.773 3.214 410,0 664,0 235,0 1861 774 233,8 284,6 276,2 5.579 2.322 335,4 447,8 276,2 9.299 3.870 437,0 691,0 276,2 2.326 777 288,9 339,7 298,5 2.840 977 312,7 363,5 330,2 8.521 2.932 414,3 566,7 330,2 <td< td=""><td>Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Push Return 676 315 168,7 219,5 165,1 25,4 2.027 945 270,3 422,7 165,1 25,4 3.378 1.574 371,9 625,9 165,1 25,4 1.007 485 188,9 239,7 204,8 31,8 3.021 1.456 290,5 442,9 204,8 31,8 1.355 643 206,8 257,6 235,0 41,3 4.064 1.929 308,4 460,8 235,0 41,3 6.773 3.214 410,0 664,0 235,0 41,3 1861 774 233,8 284,6 276,2 47,6 5.579 2.322 335,4 447,8 276,2 47,6 9.299 3.870 437,0 691,0 276,2 47,6 2.326 777 288,9 339,7 298,5 54,0 <</td><td>Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Port (mm) Push Return 676 315 168,7 219,5 165,1 25,4 56,0 2.027 945 270,3 422,7 165,1 25,4 56,0 3.378 1.574 371,9 625,9 165,1 25,4 56,0 1.007 485 188,9 239,7 204,8 31,8 57,2 3.021 1.456 290,5 442,9 204,8 31,8 57,2 1.355 643 206,8 257,6 235,0 41,3 58,7 4.064 1.929 308,4 460,8 235,0 41,3 58,7 6.773 3.214 410,0 664,0 235,0 41,3 58,7 1861 774 233,8 284,6 276,2 47,6 65,5 5.579 2.322 335,4 447,8 276,2 47,6 65,5 9.299 3.870</td><td>Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Port (mm) Dia. (mm) Push Return 676 315 168,7 219,5 165,1 25,4 56,0 95,3 2.027 945 270,3 422,7 165,1 25,4 56,0 95,3 3.378 1.574 371,9 625,9 165,1 25,4 56,0 95,3 1.007 485 188,9 239,7 204,8 31,8 57,2 114,3 3.021 1.456 290,5 442,9 204,8 31,8 57,2 114,3 1.355 643 206,8 257,6 235,0 41,3 58,7 133,4 4.064 1.929 308,4 460,8 235,0 41,3 58,7 133,4 6.773 3.214 410,0 664,0 235,0 41,3 58,7 133,4 1.861 774 233,8 284,6 276,2 47,6 65,5 165,1</td><td>Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Dia. (mm) Protrusion (mm) 676 315 168,7 219,5 165,1 25,4 56,0 95,3 7,1 2.027 945 270,3 422,7 165,1 25,4 56,0 95,3 7,1 3.378 1.574 371,9 625,9 165,1 25,4 56,0 95,3 7,1 1.007 485 188,9 239,7 204,8 31,8 57,2 114,3 7,5 3.021 1.456 290,5 442,9 204,8 31,8 57,2 114,3 7,5 1.355 643 206,8 257,6 235,0 41,3 58,7 133,4 8,7 4.064 1.929 308,4 460,8 235,0 41,3 58,7 133,4 8,7 1861 774 233,8 284,6 276,2 47,6 65,5 165,1 10,3 9.299 3.870</td><td>Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Dia. (mm) Protrusion (mm) Dia. (mm) Protrusion (mm) Dia. (mm) Dia.</td><td>Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Dia. (mm) Protusion (mm) Dia. (mm) Area (cm²) Push Return Return Fush Return Return Fush 2.027 945 270,3 422,7 165,1 25,4 56,0 95,3 7,1 130,2 132,9 3.378 1.574 371,9 625,9 165,1 25,4 56,0 95,3 7,1 130,2 132,9 1.007 485 188,9 239,7 204,8 31,8 57,2 114,3 7,5 158,8 198,0 3.021 1.456 290,5 442,9 204,8 31,8 57,2 114,3 7,5 158,8 198,0 1.355 643 206,8 257,6 235,0 41,3 58,7 133,4 8,7 184,2 266,4 4.064 1.929 308,4 460,8 235,0 41,3 58,7 133,4 8,7 184,2 266,4<</td><td>Capacity (cm²) Height (mm) Height (mm) Dia. (mm) Port (mm) Dia. (mm) Protusion (mm) Dia. (mm) Area (mm) at 700 Push Return Return Image: Return (mm) Return Return Push Push Push Push Push 2.027 945 270,3 422,7 165,1 25,4 56,0 95,3 7,1 130,2 132,9 93,4 3.378 1.574 371,9 625,9 165,1 25,4 56,0 95,3 7,1 130,2 132,9 93,4 1.007 485 188,9 239,7 204,8 31,8 57,2 114,3 7,5 158,8 198,0 139,1 3.021 1.456 290,5 442,9 204,8 31,8 57,2 114,3 7,5 158,8 198,0 139,1 1.355 643 206,8 257,6 235,0 41,3 58,7 133,4 8,7 184,2 266,4 187,2</td></td<>	Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Push Return 676 315 168,7 219,5 165,1 25,4 2.027 945 270,3 422,7 165,1 25,4 3.378 1.574 371,9 625,9 165,1 25,4 1.007 485 188,9 239,7 204,8 31,8 3.021 1.456 290,5 442,9 204,8 31,8 1.355 643 206,8 257,6 235,0 41,3 4.064 1.929 308,4 460,8 235,0 41,3 6.773 3.214 410,0 664,0 235,0 41,3 1861 774 233,8 284,6 276,2 47,6 5.579 2.322 335,4 447,8 276,2 47,6 9.299 3.870 437,0 691,0 276,2 47,6 2.326 777 288,9 339,7 298,5 54,0 <	Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Port (mm) Push Return 676 315 168,7 219,5 165,1 25,4 56,0 2.027 945 270,3 422,7 165,1 25,4 56,0 3.378 1.574 371,9 625,9 165,1 25,4 56,0 1.007 485 188,9 239,7 204,8 31,8 57,2 3.021 1.456 290,5 442,9 204,8 31,8 57,2 1.355 643 206,8 257,6 235,0 41,3 58,7 4.064 1.929 308,4 460,8 235,0 41,3 58,7 6.773 3.214 410,0 664,0 235,0 41,3 58,7 1861 774 233,8 284,6 276,2 47,6 65,5 5.579 2.322 335,4 447,8 276,2 47,6 65,5 9.299 3.870	Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Port (mm) Dia. (mm) Push Return 676 315 168,7 219,5 165,1 25,4 56,0 95,3 2.027 945 270,3 422,7 165,1 25,4 56,0 95,3 3.378 1.574 371,9 625,9 165,1 25,4 56,0 95,3 1.007 485 188,9 239,7 204,8 31,8 57,2 114,3 3.021 1.456 290,5 442,9 204,8 31,8 57,2 114,3 1.355 643 206,8 257,6 235,0 41,3 58,7 133,4 4.064 1.929 308,4 460,8 235,0 41,3 58,7 133,4 6.773 3.214 410,0 664,0 235,0 41,3 58,7 133,4 1.861 774 233,8 284,6 276,2 47,6 65,5 165,1	Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Dia. (mm) Protrusion (mm) 676 315 168,7 219,5 165,1 25,4 56,0 95,3 7,1 2.027 945 270,3 422,7 165,1 25,4 56,0 95,3 7,1 3.378 1.574 371,9 625,9 165,1 25,4 56,0 95,3 7,1 1.007 485 188,9 239,7 204,8 31,8 57,2 114,3 7,5 3.021 1.456 290,5 442,9 204,8 31,8 57,2 114,3 7,5 1.355 643 206,8 257,6 235,0 41,3 58,7 133,4 8,7 4.064 1.929 308,4 460,8 235,0 41,3 58,7 133,4 8,7 1861 774 233,8 284,6 276,2 47,6 65,5 165,1 10,3 9.299 3.870	Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Dia. (mm) Protrusion (mm) Dia. (mm) Protrusion (mm) Dia.	Capacity (cm³) Height (mm) Height (mm) Dia. (mm) Port (mm) Dia. (mm) Protusion (mm) Dia. (mm) Area (cm²) Push Return Return Fush Return Return Fush 2.027 945 270,3 422,7 165,1 25,4 56,0 95,3 7,1 130,2 132,9 3.378 1.574 371,9 625,9 165,1 25,4 56,0 95,3 7,1 130,2 132,9 1.007 485 188,9 239,7 204,8 31,8 57,2 114,3 7,5 158,8 198,0 3.021 1.456 290,5 442,9 204,8 31,8 57,2 114,3 7,5 158,8 198,0 1.355 643 206,8 257,6 235,0 41,3 58,7 133,4 8,7 184,2 266,4 4.064 1.929 308,4 460,8 235,0 41,3 58,7 133,4 8,7 184,2 266,4<	Capacity (cm²) Height (mm) Height (mm) Dia. (mm) Port (mm) Dia. (mm) Protusion (mm) Dia. (mm) Area (mm) at 700 Push Return Return Image: Return (mm) Return Return Push Push Push Push Push 2.027 945 270,3 422,7 165,1 25,4 56,0 95,3 7,1 130,2 132,9 93,4 3.378 1.574 371,9 625,9 165,1 25,4 56,0 95,3 7,1 130,2 132,9 93,4 1.007 485 188,9 239,7 204,8 31,8 57,2 114,3 7,5 158,8 198,0 139,1 3.021 1.456 290,5 442,9 204,8 31,8 57,2 114,3 7,5 158,8 198,0 139,1 1.355 643 206,8 257,6 235,0 41,3 58,7 133,4 8,7 184,2 266,4 187,2

- · Cylinders come standard with hardened caps.
- Otional swivel caps to reduce the effects of off-center loading.
- Cylinders may be "dead-ended" without damage.
- · Safety relief valve prevents overpressurization of the retract circuit.
- Each cylinder has two 9796 3/8" NPTF female half couplers.

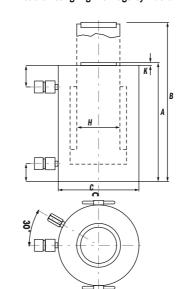


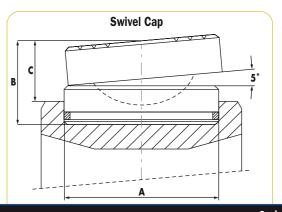
High Tonnage CYLINDER RC SERIES

740 & 1220 Double-Acting, Hydraulic Return

High Tonnage Cylinders Rugged And Reliable!

Double-Acting High Tonnage Cylinders





Order No.	Used with Cyl. Order No.	A mm	B mm	C mm	Product Wt. kg
2000822	RC740*D	200,1	78,7	55,9	19,3
2000823	RC965*D	248,9	104,1	76,2	40
2000825	RC1220*D	322,6	175,3	124,5	113

In mm Cyl. Cap. (tons)	Stroke (mm)	Order No.	Oil Cap. (cm ³)	A Retracted Height (mm)	B Extended Height (mm)	C Outside Dia. (mm)	F Base to Port (mm)	G Cyl. Top to Port (mm)	H Piston Rod Dia. (mm)	K Piston Rod Protrusion (mm)	Cyl. Effective Area (cm²)	700 bar	Product Wt.
740	50	RC7402D	4.811	283	333	430	65	100	280	9	962,0	673,5	304
740	150	RC7406D	14.132	398	548	430	65	100	280	9	962,0	673,5	398
740	250	RC74010D	24.053	508	758	430	65	100	280	9	962,0	673,5	490
965	50	RC9652D	6.283	310	360	490	70	115	320	10	1.256,6	879,7	434
965	150	RC9656D	18.850	420	570	490	70	115	320	10	1.256,6	879,7	551
965	250	RC96510D	31.416	530	780	490	70	115	320	10	1.256,6	879,7	668
1220	50	RC12202D	7.952	330	380	550	80	135	360	10	1.590,4	1.113,3	584
1220	150	RC12206D	23.856	440	590	550	80	135	360	10	1.590,4	1.113,3	731
1220	250 F	RC122010D	39.761	550	800	550	80	135	360	10	1.590,4	1.113,3	878



Locking Collar CYLINDER RL SERIES – ALUMINUM

55 & 100 Ton Single- Acting, Spring-Return

Positive mechanical lock to support load.



Locking collar feature permits non-hydraulic support of load.



- · Support 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.
- Feature carrying handle.

ASME B30.1 700 BAR



Metric Tons at

700

bar

50,1

93,5

Weight

(kg)

13,4

29,1

<u>+</u> H	
B A K T	
A P	
→ C ← ↑	

Cyl. Cap. Stroke (tons) (mm)	Order No.	Oil Cap. (cm³)	A Retracted Ht. (mm)	B Extended Ht. (mm)	C Outside Dia. (mm)	F Base to Port (mm)	H Piston Rod Dia. (mm)	K Piston Rod Protrusion (mm)	Nut Thickness (mm)	T Bore Dia. (mm)	Cylinder Effective Area (cm²)
55 155,5	RA556L	1.109	317,5	473,1	133,4	34,9	82,6	12,7	38,1	95,3	71,2

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.

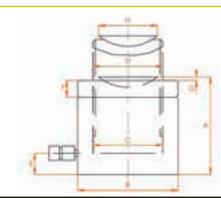
- Compact design for use where space is limited
- · Locking collar designed to support lifted load for extended periods of time with hydraulic pressure relesed
- Integral tilt saddle standard improves performance under side load
- Overflow port ("weep hole") prevents piston from being overextended under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

Pancake Cylinders LOCKING COLLAR RC SERIES

55 & 620 Ton Single- Acting, Load-Return

Positive mechanical lock to support load.





Cyl.			Oil	A Retracted	B Outside	C Piston Rod	D Bore	E Base to	F Nut	G Swivel Cap	H Swivel	
Cap. (tons)	Stroke (mm)	Order No.	Cap. (cm³)	Height (mm)	Dia. (mm)	Dia. (mm)	Dia. (mm)	Port (mm)	Thickness (mm)	Protrusion (mm)	Cap Dia. (mm)	Weight. (kg)
55	50	RC0552P	355	125	120	95	95	19	21	6	92	11
100	45	RC1002P	597	137	165	130	130	21	31	8	126	22
155	45	RC1552P	905	148	205	160	160	27	38	9	148	39
240	45	RC24022P	1.413	155	255	200	200	28	40	10	157	59
380	45	RC3802P	2.208	178	320	250	250	35	50	11	240	110
620	45	RC6202P	3.618	192	405	320	320	38	60	10	295	193

Locking Collar CYLINDER RL SERIES STEEL

55-565 TonSingle- Acting,
Load-Return

Positive mechanical lock to support load.





- · Support 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.

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. Notch across face of each cap helps keep

loads having a protruding or round shaped centered.

Cyl. No. 25,4 71,4 55-100 ton 420866 0,8 38.1 130.2 150-200 ton 420867 4.8

280 ton

355 ton

565 ton

435 ton

44,5 149,2

69,9 195,3

79.4 225.4

92,1 250,8

Use with Swivel Cap Wt.

Order No. (kg)

420868 6,1

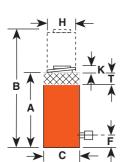
420869 16,8

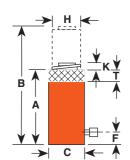
420870 23.6

420871 35,4

· All cylinders feature coated pistons to resist corrosion and abrasion.

ASME B30.1 10,000 PSI



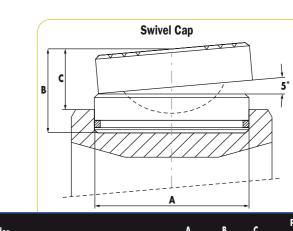


7					A	В	C	F	Н	K	T				
								Base	Piston	Piston			Cylinder	Metric	
	Cyl.		Order	Oil	Retracted	Extended	Outside	to	Rod	Rod	Nut	Bore	Effective	Tons at	
	Cap.	Stroke	No.	Cap.	Ht.	Ht.	Dia.	Port	Dia.	Protrusion	Thickness	Dia.	Area	700	Weight
	(tons)	(mm)		(cm³)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(cm²)	bar	(kg)
_	55	50,8	R552L	362	161,9	212,7	125,4	25,4	95,3	3,2	36,5	95,3	71,2	50,1	15,3
_	55	152,4	R556L	1.087	263,5	415,9	125,4	25,4	95,3	3,2	36,5	95,3	71,2	50,1	26,3
_	55	254,0	R5510L	1.811	365,1	619,1	125,4	25,4	95,3	3,2	36,5	95,3	71,2	50,1	36,3
_	100	50,8	R1002L	677	184,2	235,0	165,1	25,4	130,2	3,2	44,5	130,2	133,1	93,4	30,0
_	100	152,4	R1006L	2.030	285,8	438,2	165,1	25,4	130,2	3,2	44,5	130,2	133,1	93,4	46,8
_	100	254,0	R10010L	3.383	387,4	641,4	165,1	25,4	130,2	3,2	44,5	130,2	133,1	93,4	64,5
_	150	50,8	R1502L	1.007	206,4	257,2	204,8	31,8	158,8	3,2	44,5	158,8	197,9	139,1	53,0
_	150	152,4	R1506L	3.019	308,0	460,4	204,8	31,8	158,8	3,2	44,5	158,8	197,9	139,1	80,4
_	200	50,8	R2002L	1.355	241,3	292,1	235,0	41,3	184,2	3,2	50,8	184,2	266,3	187,2	83,1
_	200	152,4	R2006L	4.062	342,9	495,3	235,0	41,3	184,2	3,2	50,8	184,2	266,3	187,2	117,6
_	280	50,8	R2802L	1.861	247,7	298,5	276,2	41,3	215,9	3,2	57,2	215,9	366,0	257,3	118,5
_	280	152,4	R2806L	5.583	349,3	501,7	276,2	41,3	215,9	3,2	57,2	215,9	366,0	257,3	163,0
_	280	254,0	R28010L	9.305	450,9	704,9	276,2	41,3	215,9	3,2	57,2	215,9	366,0	257,3	208,1
_	355	50,8	R3552L	2.326	292,1	342,9	298,5	54,0	241,3	3,2	60,3	214,3	457,2	321,4	173,0
_	355	152,4	R3556L	6.975	393,7	546,1	298,5	54,0	241,3	3,2	60,3	241,3	457,2	321,4	232,5
_	430	50,8	R4302L	2.841	333,4	384,2	330,2	63,5	266,7	3,2	69,9	266,7	558,5	392,7	252,4
_	430	152,4	R4306L	8.520	435,0	587,4	330,2	63,5	266,7	3,2	69,9	266,7	558,5	392,7	329,2
_	430	254,0	R4310L	14.201	536,6	790,6	330,2	63,5	266,7	3,2	69,9	266,7	558,5	392,7	405,9
_	565	50,8	R5652L	3.710	371,2	422,3	377,8	69,9	304,8	3,2	79,4	304,8	729,5	512,9	368,2
	565	152,4	R5656L	11.129	473,1	625,5	377,8	69,9	304,8	3,2	79,4	304,8	729,5	512,9	468,0
	565	254,0	R56510L	18.548	574,7	828,7	377,8	69,9	304,8	3,2	79,4	304,8	729,5	512,9	568,0

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.



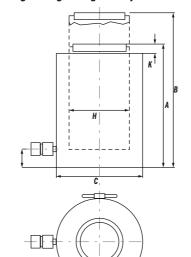






Cyl. Cap. (tons)	Stroke (mm)	Order No.	Oil Cap. (mm ³)	A Retracted Height (mm)	B Extended Height (mm)	C Outside Dia. (mm)	F Base to Port (mm)	H Piston Rod Dia. (mm)	K Piston Rod Protrusion (mm)	Bore Dia. (mm)	Cyl. Effective Area (mm²)	Tons @ 700 bar	Product Wt. (kg)
740	50	RC7402L	4.811	395	445	475	90	TR350X6	5	350	962,0	673,5	545
740	150	RC7406L	14.432	495	645	475	90	TR350X6	5	350	962,0	673,5	683
740	250	RC74010L	24.053	595	845	475	90	TR350X6	5	350	962,0	673,5	821
965	50	RC9652L	6.280	455	505	540	100	TR400X6	5	400	1.256,6	879,7	714
962	150	RC9656L	18.849	555	705	540	100	TR400X6	5	400	1.256,6	879,7	990
962	250	RC96510L	31.400	635	885	540	100	TR400X6	5	400	1.256,6	879,7	1.170
1220	50	RC12202L	7.949	443	493	600	110	TR450X6	5	450	1.590,4	1.113,3	969
1220	150	RC12206L	23.856,5	598	748	600	110	TR450X6	5	450	1.590,4	1.113,3	1.310
1220	250	RC122010L	39.741	698	948	600	110	TR450X6	5	450	1.590,4	1.113,3	1.530





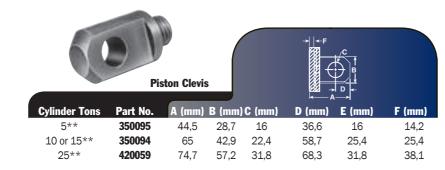
Order		A	В	c	Product Wt.
No.		mm	mm	mm	kg
2000824	RC740*L, RC965*L	290	140	99	72
2000825	RC1220*L	323	175	124	113

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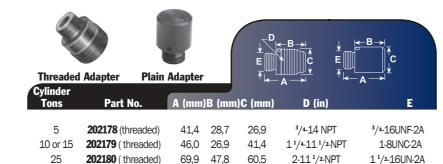
Mounting

Cylinde	er Order	A (mm)	B (mm)	C (mm
10	420062	177,8	127	11,2
25	420063	177.8	127	11.2

Threaded Connector Cylinder Tons Part No. 5 25748 44,5 22,4 3/4-14 NSPM 4,8 12,7 10 25664 41,4 36,6 1 1/4-11 1/2 NSPM 7,9 14,2 25 25654 57,2 54,1 2-11 ¹/₂ NSPM 16 9,7

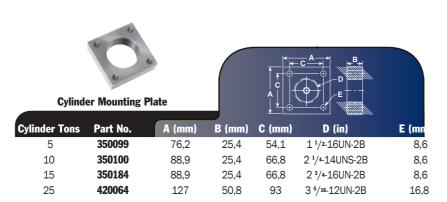


^{**} Can be used with RD106, RD1010 Cylinder.



50,8 31,8

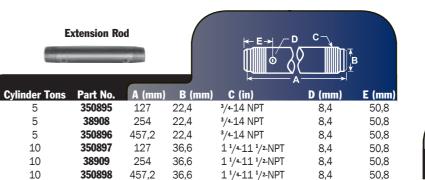
54,1 31,8 57,2



37,6

1-8UNC-2A

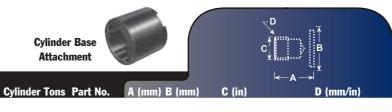
1 1/2-16UN-2A



1 ¹/4-11 ¹/2-NPT

8,4

50,8



36,6

10

³/4-14NPSM 7,1Dia.(No.2) 1/4-20 UNC x3/	;	44,5	41,4	208380	5†
Lg.Socket Head Cap Srew					
1 ¹ /4-11 ¹ /2-NPSM 8,6 Dia.(No.2) 5/16-18 UNC x1"	;	63,5	47,8	208381	10†
Lg. Socket Head Cap Screv					
2-11 ¹ /2-NPSM 13,5 Dia. (No.2) ¹ /2-13 UNC x 1")	98,6	60,5	208382	25†
Lg. Socket Head Cap Screv					

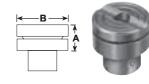
Cylinde Flat Bas		太			
Cylinder Tons	Part No.	A (mm)	B (mm)	C (in)	D (mm)
5	25750*	114,3	63,5	3/4-14-NPSM	34
10	32325*	166,6	88,9	1 ¹ /4-11 ¹ /2-NPSM	36,6

Serrated Saddle

Cylinder Tons	Part No.	A (mm)	B (mm)	C (in)
5	25746* (serrated)	28,7	33,3	3/4-14NPSM
10 or 15	31772* (serrated)	28,7	50,8	1 ¹ /4-11 ¹ /2-NPSM
25	31776* (serrated)	33,3	76,2	2-11 ¹ / ₂ -NPSM
5	351575* (plain)	28,7	33,3	3/4-14-NPSM
10	24016* (plain)	28,7	50,8	1 ¹ /4-11 ¹ /2-NPSM
25	351576* (plain)	33,3	76,2	2-11 ¹ / ₂ -NPSM

Body Cle	evis†	7		→ ← F	C	•	
Cylinder Tons	Part No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
5	350096	52,3	28,7	16	16	14,2	6,4
10	350097	76,2	42,9	22,4	25,4	25,4	6,4
15	350098	77,7	42,9	22,4	25,4	25,4	6,4
25	420061	90,4	57,2	31,8	31,8	38,1	6,4

^{*} 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.

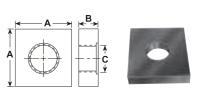


		Swivel C	ap	
Cylinder		Part		
Tons	No.	A (mm)	B (mm)	
10 or 15	350144	22,4	30,1	
25	350145	28,7	50,8	
55 or 75	350376	31,8	71,4	
100	351574	48,5	88,1	





	90	° "V" Ba	ise	
Cylinder Tons	Part No.	A (mm)	B (mm)	C (in)
5	25388*	35,1	26,9	3/4-14-NPSM
10	25395*	54,1	54,1	1 ¹ / ₄ -11 ¹ / ₂ -NPSM





25 25652 152,4 31,8 2-11 ¹/_{2-NPSM}

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10 or 15

25

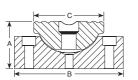
350724 (plain)

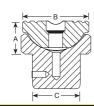
350723 (plain)

[†] Mounting screws are included.

Accessories

Swivel Caps
Center Hole Accessories





		SWIVEL CAPS FOR "RSS",					
Use with	Swivel Cap	Weight	A	В	С		
RSS101 RSS202 RSS302 RSS502 RSS1002	350320 350321 350322 350331 350332	0,2 0,6 0,7 1,2 3,0	25,4 34,9 34,9 36,5 46	36,5 54 63,5 82,6 111,1	36,5 54 54 54 54 85,7		
Tonnage		61	'RA" Cy	linders			
55 100	350376 350984	0,9 2,5	31,8 49,2	71,4 95,3	71,4 79,4		

SWI	VEL CAPS F	OR "RD	" CYL	INDER	s	١
Cylinder	Swivel Cap	Weight	A	В	С	
10 25	350144 350145	,	,	36,5 54	,	
55	351325	1,9	61,9	63,5	39,3	
100	351324	5,1	75,0	95,3	67,5	
150	351334	5,8	66,7	111,1	77,8	

	For use w	ith "RC" cy	linders			SWIVEL CAPS Reduce the effects of off center loading. Tilts up to 5 degrees. Radial grooves	Fo	or use w	vith "RL" cyl	inders	
		Swivel Cap	_		В	on top of cap reduce load	A	В			
P	Cyl. No.	Order No.	(Kg)	(mm)	(mm)	slippage.	(mm)	(mm)	Cyl. No.	Order No.	(Kg)
	150-200 to	1 420867	4,0	38,1	130,2	←─── B ────	25,4	71,4	55-100 ton	420866	0,8
	280 ton	420868	6,1	44,5	149,2	1	38,1	130,2	150-200 ton	420867	4,8
	355 ton	420869	16,8	69,9	195,3	A	44,5	149,2	280 ton	420868	6,1
	435 ton	420870	23,6	79,4	225,4		69,9	195,3	355 ton	420869	16,8
	565 ton	420871	35,4	92,1	250,8		79,4	225,4	435 ton	420870	23,6
							92,1	250,8	565 ton	420871	35,4
L								$\overline{}$			

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.

			"	CENTER-HOLE" CYI	INDER 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
Ω	1 Speed Crank	1	24814	27198	29595	303785
	2 Speed Nut	2	302482	302483	33439	34136
			1"-8	1 1/4"-7	1 5/8"-5 _"	2 1/2"-8
	3 Adjusting	3	32118	34758	32698	32699
	Screw		1"-8 508 mm Lg.	1 ¹ /4"-7 x 609,6 mm Lg.	1 ⁵ /8"-5 ¹ /2"x 762 mm Lg. 3	2 ¹ /2 "-8 x 869,9 mm Lg
	4 Threaded	4	Order threaded in	sert for RH series cyline	lers with the accessory set.(S	iee page 36/37)
	Insert		Threaded insert s	supplied with RT series o	ylinders.	
	5 Pushing	5	201923	34510	34755	-
Tomas)	Adapter		1"-8, 12,7 mm	1 ¹ / ₄ "-7 x 19,1mm	1 5/8"-5 1/2" x 25,4 mm	
	·		dia, shank	dia. shank	dia. shank	
7	6 Pushing	6	201454	34511	34756	-
	Adapter		1"-8, 19,5 mm	1 ¹ / ₄ "-7 x 25,4 mm	1 5/8"-5 1/2" x 31,7 mm	
			dia. shank	dia. shank	dia. shank	
	7 Jack Screw	7	24813	25931	32701	32702
6	•		1"-8 x 177,8 mm Lg.	1 ¹ /4"-7 x 228,6 mm Lg.	1 5/8"-5 1/2" x 279,4 mm Lg.	2 ¹ / ₂ "-8 x 406,4 mm lg.
	8 Screw Cap	8	28228	28229	28230	-
	•		1"-8 x 38,1 mm dia.	1 ¹ /4"-7 x 44,4 mm dia	1 ⁵ /8"-5 ¹ /2" x 57,2 mm Lg.	

Accessories

Seal Kits

Cylinder		Viton	Cylinde
Order	Seal	Seal	Order
No.	Kit*	Kit	No.
C51C	300404	300210	R2001
C53C		300210	R2802
C55C	300404		R2806
C57C	300404	300210	R2801
C57C	300404	300210	R3552
C101C	300404	300210	R3556
C102C	300116	300211	R3551
C104C	300116		R4302
C106C	300116		R4306
C108C		300211	R4301
C1010C	300116		R5652
C1012C	300116	300211	R5656
C1014C		300211	R5651
C1016C		300211	R1002
C151C		300471	R1006
C152C		300471	R1001
C154C	300453		R1502
C156C	300453	300471	R1506
C158C	300453	300471	R1501
C1510C	300453	300471	R2002
C1512C		300471	R2006
C1514C		300471	R2001
C1516C	300453	300471	R2802
C251C	300147	300213	R2806
C252C	300147	300213	R2801
C254C	300147	300213	R3552
C256C		300213	R3556
C258C	300147	300213	R3551
C2510C	300147	300213	R4302
C2512C	300147	300213	R4306
C2514C	300147	300213	R4301
C552C	300114	300215	R5652
C554C	300114	300215	R5656
C556C	300114	300215	R5651
C5510C	300114		R552I
C5513C	300114	300215	R556I
C756C	300647	300846	R5510
C7513C	300647	300846	R1002
C1002C	300112	300216	R1006
C1006C	300112	300216	R1001
C10010C	300112	300216	R1502
C55CBT	300404	300210	R1506
C106CBT	300116	300211	R1501
C1010CBT		300211	R2002
C256CBT	300147		R2008
C2514CBT	300147	300213	R2001
R1502C	300676	300213	R2802
R1506C	300676		R2806
R15010C	300676		
R2002C			R2801
R2002C	300677		R3552 R3556
1120000	300677		(1333)

Order Seal Seal Kit No. Kit* Kit R220010C 300677 — R2800C 300678 — R28010C 300678 — R28010C 300679 — R3555C 300679 — R35510C 300680 — R4302C 300680 — R43010C 300680 — R43010C 300680 — R43010C 300681 — R5652C 300681 — R5655C 300681 — R5655C 300681 — R56510C 300681 — R56510C 300681 — R1001D 300928 — R1506D 300929 — R1506D 300929 — R1506D 300930 — R2001D 300931 — R22001D 300931 — R2800D				
No. Kit* Kit R220010C 300677 — R2800C 300678 — R28010C 300678 — R28010C 300678 — R3555C 300679 — R35510C 300680 — R4302C 300680 — R43010C 300680 — R43010C 300681 — R56510C 300681 — R56510C 300681 — R56510C 300681 — R56510C 300681 — R65510C 300928 — R1002D 300928 — R1506D 300929 — R1506D 300929 — R1501D 300930 — R2002D 300930 — R2001D 300931 — R22001D 300931 — R2355D 300932 — R4300D 300933	Cylinder			
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	300679	_	RH121	300576	KIL _
	300680	_	RH121T	300576	
	300680	_	RH123	300576	_
	300680	_	RH202	300615	_
	300681	_	RH203	300069	300222
	300681	_	RH206	300615	_
	300681	_	RH302	300037	300223
	300631	_	RH306	300037	300223
	300631	_	RH503	300059	300225
	300631		RH603	300477	300476
	300632		RH606	300477	300476
	300632		RH1003	300485	300585
	300632		RH303	300077	300224
	300391		RH306D	300822	300224
	300391		RH3010	300625	_
	300391		RH605	300269	300226
	300391		RH6010	300626	_
	300444		RH1001	300927	_
	300444		RH1006	300295	300227
	300395		RH10010	300629	_
	300396		RH1505	300154	300228
	300017		RH1508	300583	_
	300017		RH2008	300582	
	300118		RHA306	300867	300868
	300118		RHA604D	300269	300226
	300005		RLS50	300454	
	300005		RLS100	300455	
	300005		RLS200	300456	
	300410		RLS300	300457	
_	300006		RLS500S	300458	_
3	300006		RLS750S	300459	
)	300006		RLS1000S		
,	300007		RLS1500S		
3	300007		RP25	300628	
>	300007		RP55	300627	
•	300008		RSS101	300010	_
5	300008		RSS202	300011	
3	300466 300466		RSS302	300297	
•			RSS502	300292	
3	300467		RSS1002	300293	_
,	300467 300468		RSS2503	_	
3	300468		RSS1002D		_
,	300408	300221	RT172	300358	
	300071	300221	RT302	300359	
	300657		RT503	300360	
	300001		RT1004	300024	

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>Power Team[®]

^{*} Nitrile seals come standard on all cylinders.

Accessories

Cribbing Blocks

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

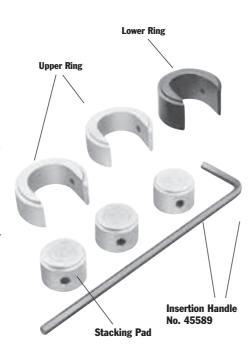
- 1. Extend cylinder and insert lower supporting ring.
- 2. Retract cylinder, insert a stacking pad.
- 3.Extend cylinder again; pad increases cylinder stroke.
- 4. Repeat process until all rings and pads are used.

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

No. ${\rm CB30-Cribbing}$ 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.



3. Insert pad. 4. Lift load by adding rings LOAD LOAD 1. Extend LOAD and nads. → 2. Insert cylinder lower ring. Retract cylinder.

FOR USE WITH ————————————————————————————————————	> 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	2	3
Outside Diameter (mm)	114,3	114,3	69,9	139,7	139,7	85,7	187,7	187,7	120,7
Inside Diameter (mm)	71,4	71,4		87,7	87,7		122,2	122,2	
Height, each (mm)	57,9	45,6	45,2	56,4	43,7	42,8	54	44,5	43,7
Total stacked height of rings in Set (mm)		138,1			131,7			174,6	
Weight of Set (kg)		9,1			12,7			29	

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



No. 420498BK2 — Lifting handle RA1002, 100 ton cylinder.

CYLINDER LIFTING HANDLE No. 4206550R9 — Lifting handle for "C" series, 25 ton cylinders. **No. 4213120R9** – Lifting handle for RH302, RH303, RH306 and RH306D, cylinders. **No. 252215** — Lifting handle RHA306, 30 ton cylinder. No. 420496BK2 — Lifting handle RA552 and RA554, 55 ton cylinders.

Accessories

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

No. 208406 - Aluminum cylinder base, 317 cm². For use with RA556, RA556L and RA5510 cylinders.



Quick-Change Inserts

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
	11/4"-7
RH303	28644
	11/4"-7
RH503	38855
	1 ⁵ /8"-5 ¹ /2
RH603, RH605	34251

15/8"-51/2

RH606

"QUICK CHANGE" HEAD INSERTS FOR RT SERIES CYLINDERS

For Use	Threaded	Plain
With:	Order No.*	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 readjusting cylinder after extension.

* Provided with cylinder

PUMPS

HIGH PERFORMANCE PUMPS









PUMP SELECTION...44-47

VALVES...48-57

P SERIES...58-60



Page PA60...68 Air Hydraulic



PE55...94 Vanguard® Electric Hydraulic



PA50...70

Air Hydraulic



PE60...96 Air Hydraulic



PA17...72



Air Hydraulic

PA46/55...74

PUA, PMA...76-79

Air Operated Pump

Air Hydraulic



Quiet Electric Hydraulic



RPS SERIES...61

Hand Pumps

Cylinder and Pump Sets



PA6...62-63

Air Hydraulic



PA6D...64-65

Air Hydraulic



PE10...80







Electric Hydraulic



Vanguard Jr.® Electric Hydraulic



Electric Hydraulic



Electric Hydraulic

PED...88





PE30...90 Vanguard[®]

Electric Hydraulic



Page PE46...92

Electric Hydraulic

PQ120...100

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PE400...102

Electric Hydraulic



PE-NUT...104 Electric Hydraulic



Gasoline Driven



PG30/55...106

Gasoline Driven



PG120-PG400...108











>Power Team®

Pump Selection HIGH PERFORMANCE

Choosing 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 47. 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 48-49.

CONSIDERATIONS:

What maximum system operating pressure (bar) is required?

What volume of oil delivery is required? (For manual pumps, cm³ of oil per handle stroke; for powered pumps, l./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 to the 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 58.

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 59-60.

P157D, P159D, P300D, P460D – These 2-speed pumps are used with double-acting cylinders. See page 60.



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 inflammable or explosive environments.

PA6 Series – These single-speed pumps drive single- or double-acting cylinders. See pages 62-65.

PA9 Series – These new single-speed pumps drive single-acting cylinders and are ideal for powering portable hydraulic tools. See pages 66-67.

PA50 Series – These single-speed pumps drive single- or double-acting low pressure (225 bar) cylinders. See pages 70.71

PA60 – This 2-speed pump is equipped with a manifold to operate multiple cylinders, and provides a 7,6 liter reservoir capacity. See pages 68-69.

PA64 – Similar to PA60, this 2-speed pump drives single- or double-acting cylinders. See pages 68-70.

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 72-73.

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 74-75.

PA554 – This 2-speed pump drives single- or double-acting cylinders, delivering a high volume of oil. See pages 72-74.



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 0,18Kw (½ hp) electric motor. A battery-powered version is available. Having a low noise level and weighing just 9 kg, they are ideal for powering portable hydraulic spreaders, nut splitters, pipe flange spreaders and other tools. See pages 80-81.

PE17 Series – CSA rated for intermittent duty, these feature a 0,37Kw ($^{1}\!/_{2}$ 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 82-83.

PE46 Series – Powered by a 1,1Kw ($1^{1}/_{2}$ hp), single phase induction motor, operate at a moderate noise level of 77-81 dBA. CSA rated for intermittent duty. See pages 92-93.

PE18 Series – CSA rated for intermittent duty, these feature a 0,37Kw ($^{1}\!/_{2}$ 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 84-85.

PE30 Series – Equipped with a 0,75Kw (1 hp), single phase permanent magnet motor, have a noise level of only 82-87 dBA. CSA rated for intermittent duty, and require a relatively low voltage; ideal for use in general construction applications. Roll cage/handle protects the motor and controls. See pages 90-91.

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 0,83Kw ($1^{1}/_{8}$ hp), single phase universal motor, have a high noise level (90-95 dBA). 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 1,1Kw ($1^{1}/_{2}$ hp) induction motor.

See pages 88-89, 94-95.

CYLINDER/PUMP MATCHING CYLINDERS PUMP/CYLINDER SETS PUMP ACCESSORIES HYDRAULIC ACCESSORIES

Page 6 Page 12 Page 61 Page 116 Page 120

Power Team

Pump Selection HIGH PERFORMANCE

Choosing the Right Pump







PE60 Series – The Vanguard® Supreme® pumps provide trouble-free service in the most severe working environments. Powered by a $0.82 \, \text{Kw} \, (1^1\!/_8 \, \text{hp})$, single phase motor, has a moderate noise level of 80-85 dBA. Start well 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 96-97

"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 112-115.

PE21 Series – Ideal for heavy-duty, extended-cycle applications. Powered by a 0,75Kw (1 hp), single phase motor, pump operates 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 1,5Kw (2 hp) (single phase) motor; the PQ120 has a 2,2Kw (3 hp) (3-phase) motor. These pumps are designed for heavy-duty, extended cycle operations. CSA rated for intermittent duty. See page 86.

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 7,5Kw (10 hp), 3-phase motor. Low noise rating of 73-80 dBA. See pages 102-103.

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, 1,5Kw (2 hp) Tecumseh 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 106-107.

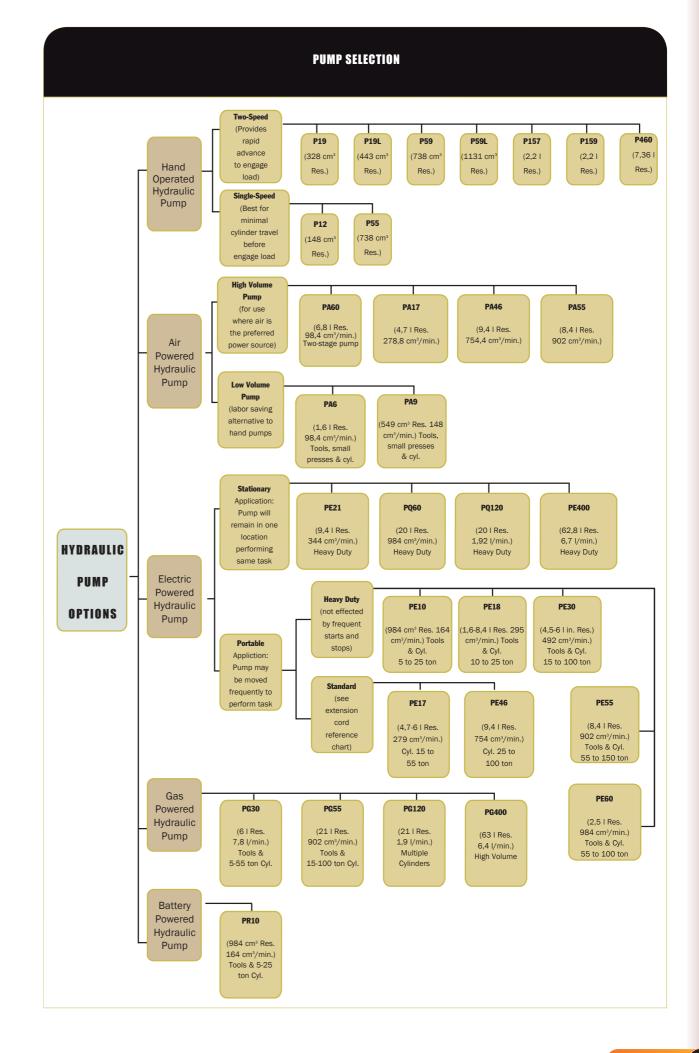
PG55 Series – With a 4-cycle, 3Kw (4 hp) Briggs & Stratton engine, this pump is based on our popular Vanguard® Series. It has a generous five gallon reservoir capacity. See pages 106-107.

PG120 Series – Powered by a 4-cycle, 4,1Kw (5.5 hp) Honda engine. Has a 19 liter reservoir; capable of handling multiple-cylinder lifting tasks. Ideal for the structure moving, pier setting, bridge lifting and concrete contracting industries. See pages 108-109.

PG4004 – Featuring a 4-cycle, 13,5Kw (18 hp) Briggs & Stratton engine, this unit has a big 76 liter reservoir. Rugged steel "roll cage" has a hook on top and swivel casters for ease of mobility. Popular for concrete stressing applications. See pages 108-109.

HYDRAULIC INTENSIFIER

HB Series – Turns low pressure hydraulic pumps into high pressure power sources to operate single-acting 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 110.



Valve Selection

Choosing the Right Valve

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?

- 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.
- Will the valve be manually operated or is remote control preferred?

 Basic valve types include manually operated, air or solenoid operated.
- 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
Oil goes from pump to cylinder; pressure is held from valve to cylinder when pump is shut off.	None	Oil goes from cylinder to pump; pressure is released to reservoir when motor is turned off.

3-WAY, 2-POSITION

(FOR CONTROL OF SINGLE-ACTING CYLINDERS)

POSITION 1		CENTER POSITION		POSITION 2
Pump VALVE Oil goes from pu cylinder and hol pump is shut of to reservoir is bl	ds when f. Return line	None	Pump Port A VALVE Tank	Cylinder retracts, oil returns to reservoir.

3-WAY, 3-POSITION

(FOR CONTROL OF SINGLE-ACTING CYLINDERS)

POSITION 1		CENT	ER POSITION		POSITION 2
	d holds when ut off. Return line	Pump Port A VALVE	Cylinder pressure is held; pump can remain running and oil returns to reservoir.	Pump Port A VALVE Tank	All oil is open to reservoir through return line.

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

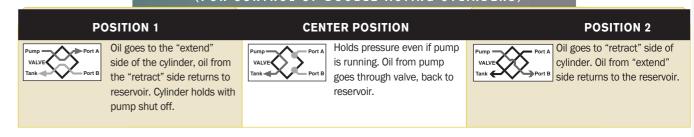
4-WAY, 2-POSITION

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

POSITION 1	CENTER POSITION	POSITION 2
Oil goes to the "extend" side of the cylinder. The oil from the "retract" side returns to reservoir. Cylinder holds with pump shut off.	None	Oil goes to the "retract" side of the cylinder, oil from the "extend" side returns to reservoir.

4-WAY, 3-POSITION

(FOR CONTROL OF DOUBLE-ACTING CYLINDERS)



TYPICAL CENTERS

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

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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	53	S.A & D.A.	Manual	4-way, 3 Pos. Tandem Center	_	no	yes	no
 9501	53	S.A. & D.A.	Manual	4-way, 3 Pos. Closed Center	_	no	yes	no
 9502	52	S.A.	Manual	3-way, 3 Pos. Closed Ctr.		no	yes	yes
 9504	51	S.A. & D.A.	Manual	3/4-way, 2 Pos.	_	yes	yes	no
 9506	53	D.A.	Manual	4-way, 3 Pos. Tandem Center	_	no	yes	yes
 9507	53	D.A.	Manual	4-way, 3 Pos. Closed Center	_	no	yes	yes
9511	53	S.A. & D.A.	Manual	4-way, 3 Pos. Open Center	_	yes	yes	no
 9512	56	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	24	no	yes	yes
9513	56	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	115	no	yes	yes
 9516	56	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	12DC	no	yes	yes
9517	51	S.A.	Manual	2-way, 2 Pos.	_	no	yes	no
9519	56	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	230	no	yes	yes
9520	52	S.A.	Manual	4-way, 3 Pos. Tandem Center	_	no	yes	yes
9522	56	D.A.	Solenoid	4-way, 3 Pos. Open Center	230	yes	no	no
9523	56	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	230	yes	no	no
9552	55	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	230	yes	no	no
9553	56	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	24	yes	no	no
9569	56	S.A.	Solenoid	3-way, 2 Pos.	24	no	yes	no
9570	56	S.A.	Solenoid	3-way, 2 Pos.	230	no	yes	no
9572	56	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	24	yes	no	no
9576	52	S.A.	Manual	3-way, 3 Pos. Metering Tandem Ctr.	_	no	yes	no
9579	55	S.A.	Solenoid	3-way, 2 Pos.	115	no	yes	no
9582	51	S.A.	Manual	3-way, 2 Pos.	_	no	yes	no
9584	51	S.A.	Manual	3-way, 2 Pos.	_	no	yes	no
9589	56	S.A.	Pilot Operated Solenoid	3-way, 2 Pos.	115	yes	no	no
9590	56	D.A.	Solenoid	4-way, 3 Pos. Open Center	115	yes	no	no
9592	55	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	115	yes	no	no
9594	55	S.A. & D.A.	Air	3/4-way, 2 Pos.	_	no	yes	yes
9599	54	S.A.	Pilot Operated Solenoid	3-way, 3 Pos. Tandem Center	24	no	yes	yes
9605	54	S.A.	Pilot Operated Solenoid	3-way, 3 Pos. Tandem Center	115	no	yes	yes
9609	54	S.A.	Manual	3-way, 3 Pos. Tandem Center	_	no	yes	no
9610	51	S.A.	Auto Pilot Operated	3-way, 2 Pos.	_	yes	no	no
9610A	51	S.A.	Manual	2/3-way, 2 Pos.	_	no	yes	no
9615	56	D.A.	Solenoid	4-way, 3 Pos. Open Center	24	yes	no	no
9628	57	S.A. & D.A.	Manual	Post Tensioning	_	special	no	no
9632	57	S.A. & D.A.	Manual	Post Tensioning	_	special	no	no

^{* &}quot;S.A." represents single-acting cylinders, "D.A." represents double-acting cylinders

CYLINDER/PUMP MATCHING HYDRAULIC ACCESSORIES PUMP/CYLINDER SETS PUMP ACCESSORIES CYLINDERS Page 12 Page 61 Page 116 Page 120

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

No. 9582 - 3-way/2-position manual valve, Wt. 1.13 kg.

No. 9584 - Same as 9582, but has "flipper" control, Wt., 0.8 kg.

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,

No. 9610 - 3-way/2-position pilot operated automatic valve. Wt., 1,9 kg.

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.

PE55. PE90 and PE120 series.

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., 2 kg.

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., 1.45 kg.

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 52 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., 1,9 kg.

NOTE: 9504 can be remote mounted with a 9510 subplate (see page 107).

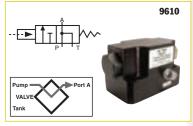
NOTE: A pressure switch and/or gauge may be attached to any valve on this page. (refer to pages 117, 124-125)

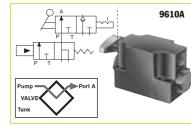
ACAUTION: To prevent sudden, uncontrolled descent of a load as it is being lowered, use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 132) in conjunction with the directional valve used in your application.

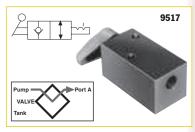
IMPORTANT: Conversion kit 251528 must be used when mounting any of the valves on this page on PA17 or PE17 pumps.

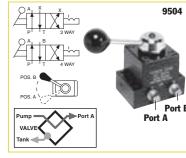
IMPORTANT: When ordering any valve for a PE30 or PG30 series pump, ½" longer mounting screws are required. For valves 9504, 9584, 9610 and 9610A, order four 12001 cap screws. For valve 9582, order two 12001 and two 10856 cap screws.

Valves









max flow rate.

3 Way/3 Position

700 bar, 3/8" ports, 19 l/min

3-WAY/3-POSITION (CLOSED CENTER) NON-INTERFLOW MANUAL VALVE WITH "POSI-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 124-125, 117). Also, the 9502 can be remote mounted if a 9510 subplate is used (see page 117).

No. 9502 - 3-way/3-position (closed center) manual valve. Wt., 1,9 kg.



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

Application – Single-acting cylinders.

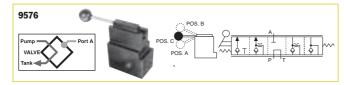
Actuation – Lever operated, detent positioned.

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., 2,3 kg.

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, P060, P0120, PE200, PE400, PG30, PG55, PG120 and PG400 series.

NOTE: A pressure switch and/or gauge may be attached if desired see pages 124-125, 117). Also, the 9576 can be remote mounted with a 9510 subplate (see page 117).

No. 9576 - 3-way/3-position (tandem center) metering valve. Wt., 3,9 kg.

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

Application – 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., 2,3 kg.

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, P060 and PQ120 series. *Does not mount without 251528

No. 9500 - 4-way/3-position (tandem center) manual valve. Wt., 1,9 kg.

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 46 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

No. 9507 - 4-way/3-position (closed center) manual valve. Wt., 2,3 kg.

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 52 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.

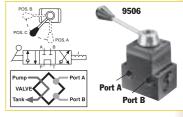
No. 9501 - 4-way/3-position (closed center) valve. Wt., 1,9 kg.

NOTE: A pressure switch and/or gauge may be attached to valves 9500, 9501, 9506, 9511 if desired (see pages 124-125, 117). Also, all valves on this page may be remote mounted with a 9510 subplate (see page 117).

Valves HYDRAULIC PUMP MOUNTED

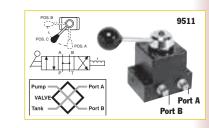
4 Way/3 Position Manual

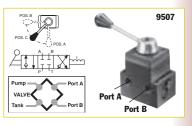
700 bar, 3/8" ports, 19 l/min max flow rate.

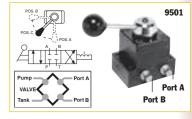




PUMPS/VALVES







HYDRAULIC ACCESSORIES PUMP ACCESSORIES PUMP/CYLINDER SETS **CYLINDERS** Page 116 Page 120

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 132) 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, \(\frac{1}{2} \) noger mounting screws are required. For valves 9502 and 9520, order four 12001 cap screws. For valve 9576, order four 17428 cap screws.

Valves HYDRAULIC PUMP MOUNTED

Manual and Pilot Operated

700 bar, 3/8" ports, 19 l/min max flow rate.



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 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.

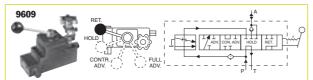
Used on these pumps – Furnished with pilot lines and adapters for PE55, PE30 (carrying handles must be removed) and PE120 series. For application on other models, consult factory.

No. 9605 – 3-way/3-position (tandem center) solenoid valve, 115 volt, 50 Hz. Wt., 6,4 kg.

No. 9599 - Same as 9605 except for 24 volt, 50 Hz circuits.

NOTE: Valves above are shipped without controls. Use 202777 remote hand control (see page 116). Consult factory for field installation.





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 70 and 700 bar.

Used on these pumps – PA17, PA46, PA55, PE17, PE21, PE30*, PE46, PE55, PE90, PE200, PE400, PG30*, PG55, PG120, PG400, PO60 and PO120 series.

* **NOTE:** Adapter kit 252161 is required for mounting this valve to a PE30 or PG30 series pump.

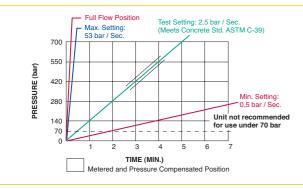
NOTE: This valve can be remote mounted with a 9510 subplate (see page 117).

No. 9609 – 3-way/4-position manual pressure compensated valve. Wt., 4 kg.

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 132) 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 - 19 I (Ref.) Metered advance position 1 I/min. (Max.)

PRESSURE

Min. working pressure - 70 bar. Max. working pressure - 700 bar. Max. valve case pressure - 35 bar.

3-WAY/2-POSITION SOLENOID VALVE

Application - Single-acting cylinders.

Actuation - Solenoid operated, 115 volt, 50 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 Hz. Wt., 4.4 kg.

No. 9569 - Same as 9579, except with 24 volt, 50 Hz solenoid.

No. 9570 - Same as 9579 except with 230 volt, 50 Hz solenoid.

NOTES: Valves above are shipped without control switch. Use 202777 remote hand switch (see page 116). 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 Hz. Wt., 6,6 kg.

No. 9552 - Same as 9592, except with 230 volt, 50 Hz solenoid.

No. 9572 - Same as 9592, except with 24 volt, 50 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 116)

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.

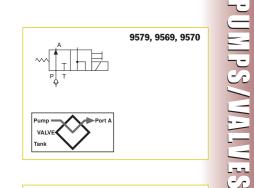
No. 9594 – 3/4-way/2-position solenoid valve, air operated (minimum of 4 bar air pressure required). Wt., 5 kg.

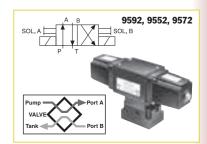
NOTES: Valve above is shipped without controls. 9594 can be used with the 209593 remote hand control (see page 116). See page 132 for remote mounted models of this valve.

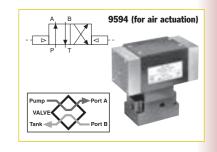
Valves HYDRAULIC PUMP MOUNTED

Solenoid or Air Operated

700 bar, ³/₈" ports, 19 l/min max flow rate.







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 132) 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, ½" 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.



max flow rate.

700 bar, ³/8" ports, 19 l/min

4-WAY/3-POSITION (OPEN CENTER) **SOLENOID VALVE**

9590, 9522, 9615

Application – Double-acting cylinders. Actuation - Solenoid operated, 115 volt, 50 Hz.

Functions – "Advance", open center and "return" positions. Cylinder ports and pump port are open to reservoir in "neutral".

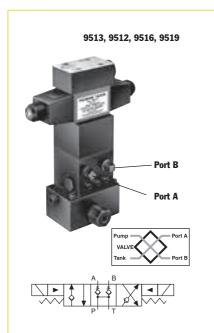
Used on these pumps – Furnished with pilot lines and adapters for PE30 (with carrying handles removed), PE55, PE90 and PE120 for field installation. series. For other pump models, consult factory.

NOTE: A pressure switch and/or gauge may be attached if desired (see pages 117, 124-125).

No. 9590 – 4-way/3-position (open center) solenoid valve, 115 volt, 50 Hz. Wt., 7 kg.

No. 9522 – Same as 9590 except for 230 volt. 50 Hz.

No. 9615 - Same as 9590 except for 24 volt, 50 Hz.



4-WAY/3-POSITION (TANDEM CENTER) PILOT OPERATED **SOLENOID VALVE**

Application - Double-acting cylinders. Actuation - Solenoid operated, 115 volt, 50 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 124-125).

No. 9513 – 4-way/3-position (tandem center) solenoid valve, 115 volt, 50Hz. Wt., 8,2 kg.

No. 9512 - Same as 9513 except for 24 volt, 50 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 Hz circuits. Consult factory



9589, 9523, 9553

3-WAY/2-POSITION (PILOT **OPERATED) SOLENOID VALVE**

Application: Single-acting cylinders. Actuation: Solenoid operated, 115 volt, 50

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

may be attached if desired (see pages 117, 124-125).

No. 9589 - 3-way/2-position (pilot operated) solenoid valve, 115 volt, 50Hz. Wt., 3,7 kg.

No. 9523 – Same as 9589 except for 230 volt, 50 Hz.

No. 9553 - Same as 9589 except for 24 volt, 50 Hz.

NOTE: Valves above are shipped without control switch. Use 202777 remote hand switch (see page 116).

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 132) in conjunction with the directional valve used in your application.

4-WAY/3-POSITION (TANDEM CENTER) MANUAL VALVE

Application - Single strand, doubleacting stressing jacks with Power Wedge

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 440 bar. "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

9628

Designed for use

with Power Team air, gasoline and electric

powered hydraulic

4. Pump is stopped, valve is placed in "A" position, releasing "B" port pressure.

differential is maintained.

Used on these pumps: PA17*, PA46*, PA55, PE17*, PE21*, PE30, PE46*, PE55, PE60, PE84, PE120, PE200, PE400, PG30*, PG55, PG120, PG400, **No. 9628** – Post tensioning valve for 700 P060 and P0120 series.

Valves HYDRAULIC PUMP MOUNTED

Manual

700 bar, 3/8" ports, 19 l/min max flow rate.

PUMPS/VALVES

- * These pumps may have reduced first flow stage characteristics due to internal valve restrictions.
- bar (max.) single-acting/Power Wedge

Wt., 2,5 kg.

"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 -

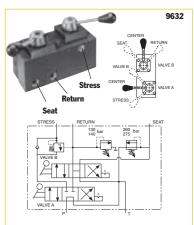
- 1. With valves "A" and "B" in center position, pump is started; cable is inserted into stressing tool.
- 2. Valve "A" is placed in "Stress" position;
 6. When cylinder has fully returned, both cylinder extends to tension cable. Pump pressure controls force exerted by tensioning cylinder in this position. "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

- controlled by "Seat" relief valve (factory No. 9632 Post tensioning valve for 700 set to 275 bar).
- 4. Valve "B" is shifted to "Return" position. which is pressure controlled and will not exceed 155 bar. "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.
- valves are shifted to "Center" position and oil will be directed to reservoir. Maximum pressure setting for the "Seat" relief valve is 420 bar.

Used on these pumps: PA17*, PA46*, PA55, PE17*, PE21*, PE30, PE46*, PE55, PE84, PE120, PE200, PE400, PG30*, PG55, PG120, PG400, PO60 and PO120 series.*

* These pumps may have reduced first flow stage characteristics due to internal 420 bar. Case pressure is 35 bar max. valve restrictions.

bar (max.) double-acting systems. Wt., 6,2 kg.



Pump mounted, 6-position detented 5-way manual dual valve. Rated pressure to valve "A" is 700 bar and valve "B" is

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 132) 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.



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, ½" 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.

> Power Team

Hand Pump HYDRAULIC P SERIES

197 to 738 cm³ reservoir

Single-Speed Single-Acting

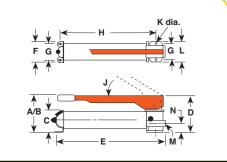
Best suited for applications where there is little or no free travel.

- 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.











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 (mm)		C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (deg.)	K (mm)	L (mm)	M (in)	N (mm)	
P12	101,6	_	_	101,6	342,9	85,7	55,6	_	45°	4,8	85,7	³ /8-NPTF	28,6	
* P23	158,8	330,2	88,9	141,3	346,1	108,0	82,6	261,6	38°	7,9	120,7	3/8-NPTF	41,3	
* The P2	23 pump	maxim	um pre	ssure is 2	210 bar	only.								

P55 165,1 533,4 88,9 141,3 584,2 108,0 82,6 501,7 38° 7,9 120,7 ³/_{8-NPTF} 41,3

				Volume 8	Pressure			Rese	ervoir		
For			Volu	ıme per	Maxi	mum	Handle	0il	Usable Oil	Oil	Product
Use	Order		Stro	ke (cm³)	Pressui	re (bar)	Effort	Capacity	Capacity	Port	Weight
With	No.	Speed	LP	HP	LP	HP	(kg)	(cm³)	(cm³)	(in)	(kg))
Single	P12	1	_	1,1	_	700	34	197	148	³/8-NPTF	2,6
Acting	P23	1	_	2,6	_	210	32	390	333	³/8-NPTF	5,5
Cylinders*	P55	1	_	2,6	_	700	66	902	738	³/8-NPTF	7,2

LP = Low Pressure HP = High Pressure * Pump includes 2-Way Valve





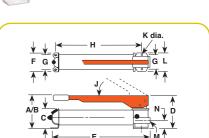
> Power Team

Hand Pump HYDRAULIC P SERIES reservoir

- 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.



	Pump No	A (mm)		C (mm)			F (mm)		H (mm)	J (deg.)	K (mm)	L (mm)	M (in)	N (mm)
	P19	139,7	371,5	73,0	115,9	347,7	101,6	82,6	281,0	53°	7,9	101,6	3/8-NPTF	35,7
_	P19L	141,5				347,7	104,1	82,6	281,0	40°	7,9	104,1	³/8-NPTF	
	P59	177,8	533,4	88,9	127,0	584,2	108,0	82,6	501,7	38°	7,9	120,7	³/8-NPTF	41,3
	P59L	177,8				533,4	120,7	82,6	501,7	50°	7,9	120,7	³/8-NPTF	
_	P59F	88,9	425,5	88,9	152,4	590,6	108,0	82,6	514,4	_	7,9	114,3	³/8-NPTF	42,9

				Volume	& Pressure			Rese	ervoir		
For Use	Order		Volum Stroke			mum re (bar)	Handle Effort	Oil Capacity	Usable Oil Capacity	0il Port	Product Weight
With	No.	Speed	LP	HP	LP	HP	(kg)	(cm³)	(cm³)	(in)	(kg)
Single	P19	2	5,0	1,2	22	700	45	400	328	³ /8-NPTF	3,0
Acting	P19L	2	4,1	0,9	70	700	37	475	443	3/8-NPTF	2,3
Cylinders*	P59	2	10,9	2,6	22	700	66	902	738	3/8-NPTF	7,8
	P59L	2	12	2,6	59	700	44	1131	1082	3/8-NPTF	4,1
	P59F	2	9,0	2,1	22	700	55	902	738	3/8-NPTF	6.4

LP = Low Pressure HP = High Pressure *Pump includes 2-Way Valve



Cylinder/Pump HYDRAULIC RPS SERIES

Cylinder and pump combinations

Precision-matched cylinder and pump combinations for wide range of applications.

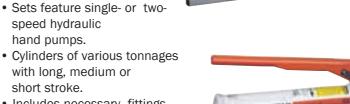


Note: Actual product may differ from photo.

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.





· Includes necessary fittings, couplers and 1,8m hose.

· Four styles of

cylinders to

choose from.

P157/P159

FK59 FK159B

Foot pump conversion kit

conversion kit for use

No. FK159B - Foot pump

conversion kit for use

P300/P300D pumps.

on P157/P159 and

Wt., 2,7 kg.

on P55/P59 pumps. Wt.,

No. FK59 - Foot pump

2,7 kg.

SPX POWER TEAM

 Gauge and gauge mounting adapter is recommended. (See pages 124-125)



ASMEB30-1

No. 350722 - 890mmL x 356mmH x 343mmW, storage box.

Handle Strokes Required to Prod. Cyl. Cap. Stroke Order Height **Fully Extended** Pump (Tons) No. Cylinder Speed (kg) RPS55 5 133.4 216 75 C55C P12 9756 9798 Single 5.4 RPS102** 10 54.0 121 32 C102C P55 9756 9798 Single 11.8 155,6 RPS106** C106C 10 248 93 P55 9756 9798 Single 14,5 257,2 RPS1010** 349 154 C1010C P55 9756 9798 16,1 10 Single "C"-15 104.8 RPS154** 200 81 C154C P55 9756 9798 13.1 Single Series 15 155,6 RPS156** 271 118 C156C P55 9756 9798 Single 15,4 25 158.8 RPS256** 273 219 C256C P55 9756 9798 Single 19,3 25 362,0 RPS2514** 476 285* C2514C P159 9756 9798 Two 28,4 55 158.8 RPS556* 283 268* C556C P159 9756 9798 Two 37,5 C1006C P460 100 168,3 RPS1006 337 428* 9756 9798 Two 58,3 P59 30 RPS302** 117 61* RSS302 9756 9798 18.1 "Shorty" 61.9 Two 50 RPS552** 127 89* RSS502 P59 9756 9798 22,7 60,3 Two 100 57,2 RPS1002** 140 172* RSS1002 P59 9756 9798 Two 36,7 "Center Hole" 20 76.2 RPS203H** 154 80 RH203 P55 9756 18.3 9798 Single

RA556

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

RPS556A**

55

155,6

optional storage box shown above.

9756

9798

Two

P159

** Add suffix "B" (example: RPS102B, RPS203HB, etc.) to order set with

273

CYLINDER/PUMP MATCHING > CYLINDERS PUMP ACCESSORIES > HYDRAULIC ACCESSORIES PUMP/CYLINDER SETS Page 116 Page 120

262*

Hand Pump HYDRAULIC P SERIES Rugged all metal construction for strength and durability that won't burn through in welding 9,5 liter reservoir environments.

Two-Speed Single-

and Double-Acting

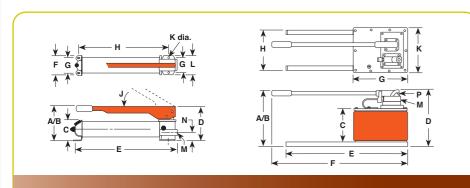
Best suited for applications

where there is little or

no free travel.

- · 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.





Pump	A	В	C	D	E	F	G	Н	J	K	L	M	N	P
No.	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(deg.)	(mm)	(mm)	(in)	(mm)	
P157/														
P159	197	521	123,8	175	578	98,4	76,2	502	39°	7,9	95,3	3/8-NPTF	57,2	_
DOOD	240	E22	1112	175	E7E	0450	100 F	FOC	200	7.0	05.3	3 /a NIDTE	E7.0	

Pump	A	В	C	D	E	F	G	H	J	K	L	M	N	P
No.	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(deg.)	(mm)	(mm)	(in)	(mm)	
P157/ P159	197	521	123,8	175	578	98,4	76,2	502	39°	7,9	95,3	³/8-NPTF	57,2	_
P300	210	533	114,3	175	575	215,9	190,5	526	39°	7,9	95,3	3/8-NPTF	57,2	-
P460	283	787	171.5	289	610	743	279.4	229	80°	241.3	_	3/8-NPTF	— ¹ /	4 NPTF

For Use	Order		Volum	e & Pressure ne per e (cm³)	Maxi Pressur		Reservoir Handle Effort	Oil Capacity	Usable Oil Capacity	Oil Port	Product Weight
With	No.	Speed	LP	HP	LP	HP	(kg)	(cm³)	(cm³)	(in)	(kg)
Single-	P157	2	10,7	2,6	97	700	64	2491	2245	3/8-NPTF	11,8
Acting	P159	2	42,6	2,6	22	700	64	2491	2245	3/8-NPTF	11,8
Cylinders*	P300	2	42,6	2,6	22	700	64	5.700	5081	3/8-NPTF	25,1
	P460	2	120,5	4,6	22	700	41	9.500	7539	3/8-NPTF	24,9
Double-	P157D	2	10,7	2,6	97	700	64	2491	2245	3/8-NPTF	13,1
Acting	P159D	2	42,6	2,6	22	700	64	2491	2245	3/8-NPTF	12,7
Cylinders*	* P300D	2	42,6	2,6	22	700	64	5.700	5081	3/8-NPTF	25,9
	P460D	2	120.5	4.6	22	700	41	9.500	7539	3/8-NPTF	26.3

LP = Low Pressure HP = High Pressure

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

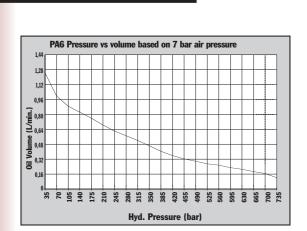
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Air Pump HYDRAULIC PAG SERIES

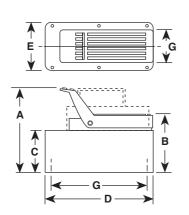
Single-Acting

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 3-8 bar shop air pressure at the pump.
- dBA 85 at 700 bar.
- 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.







Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)
PA6	197	149	111	241	127	102 x 229
PA6A	197	149	111	241	127	102 x 229
PA6AM	197	149	111	241	127	102 x 229
PA6M	197	149	111	241	127	102 x 229
PA6R	197	149	111	241	127	102 x 229
PA6RM	197	149	111	241	127	102 x 229
PA6M-1	200	152	111	321	187	_
PA6AM-2	254	197	171	292	241	203 x 254
PA6-2	260	203	178	292	241	130 x 181



Typical Set-up Hook-up for single-acting cylinders



PAG-2	SPX POWER TEAM

		Air Supply	Res	ervoir	Oil	Prod.
Description	Order No.	Req'd (bar)	Cap. (I)	Usable (I)	Port (in)	Wt. (kg)
Base model pump with high density polyethylene reservoir.	PA6	3-8	1,7	1,6	³/8-NPTF	6,3
PA6 with externally adjustable relief valve.	PA6A	3-8	1,7	1,6	³/8-NPTF	6,8
PA6A with metal reservoir.	PA6AM	3-8	1,7	1,6	³/8-NPTF	7,7
PA6, except has metal reservoir.	PA6M	3-8	1,7	1,6	³/8-NPTF	8,2
PA6 with 3,7m remote control.	PA6R	3-8	1,7	1,6	3/8-NPTF	9,3
PA6R, except has metal reservoir.	PA6RM	3-8	1,7	1,6	³/8-NPTF	9,8
PA6, except has 3,8 I metal reservoir.	PA6M-1	3-8	3,8	3,0	³/8-NPTF	10,7
PA6, except has 7,6 I high density polyethylene reservoir.	PA6-2	3-8	7,6	7,3	³/8-NPTF	11,1
PA6, except has 9,5 I metal reservoir.	PA6M-2	3-8	9,5	9,1	³/8-NPTF	14,5

CYLINDER/PUMP MATCHING	> CYLINDERS	PUMP/CYLINDER SETS	PUMP ACCESSORIES	HYDRAULIC ACCESSORIES
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>Power Team®

Air Pump Hydraulic Pagd Series

98 cm³/min. Double-Acting

Compact, lightweight and portable single-speed pump for driving double-acting cylinders.

• Operate at 3-8 bar shop air pressure at the pump.

• Internal relief valve protects circuit components, air inlet filter protects motor.

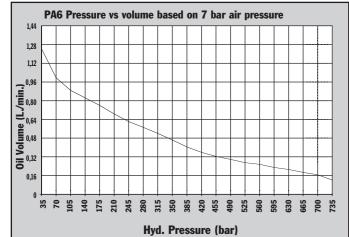
 Serviceable pump motor is not a "throw away", providing economical repair.

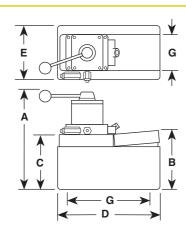
Permanently vented reservoir cap.

 dBA 85 at 700 bar for all PA6 pumps.



700 bar





Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)
PA6D	264	149	111	241	127	102 x 229
PA6DM	264	149	111	241	127	102 x 229
PA6DM-1	279	146	111	321	187	_
PA6D2	324	203	178	287	235	130 x 181
PA6DM-2	318	197	171	292	241	203 x 254



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

Typical Set-up Hook-up for double-acting cylinders	OIL	
AIR	OIL	

			Air Supply	Res	ervoir		Prod.
Description	Order No.	Valve No.	Req'd (bar)	Cap. (I)	Usable (I)	Oil Port (in)	Wt (kg)
Base model pump with high density polyethylene reservoir.	PA6D	9504, 3-way/ 4-way	3-8	1,7	1,6	³/8-NPTF	8,3
PA6D, except has metal reservoir.	PA6DM	9504, 3-way/ 4-way	3 - 8	1,7	1,6	³/8-NPTF	9,2
PA6D, except has 3,8 I metal reservoir.	PA6DM-1	9504, 3-way/ 4-way	3 - 8	3,8	3,0	³/8-NPTF	12,7
PA6D, except has 7,6 l, high density polyethylene reservoir.	PA6D2	9504, 3-way/ 4-way	3 - 8	7,6	7,3	³/8-NPTF	13,0
PA6D, except has 9,5 I metal reservoir.	PA6DM-2	9504, 3-way/ 4-way	3 - 8	9,5	9,1	³/8-NPTF	16,4

CYLINDER/PUMP MATCHING CYLINDERS PUMP/CYLINDER SETS PUMP ACCESSORIES HYDRAULIC ACCESSORIES

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Air Pump Hydraulic pag series

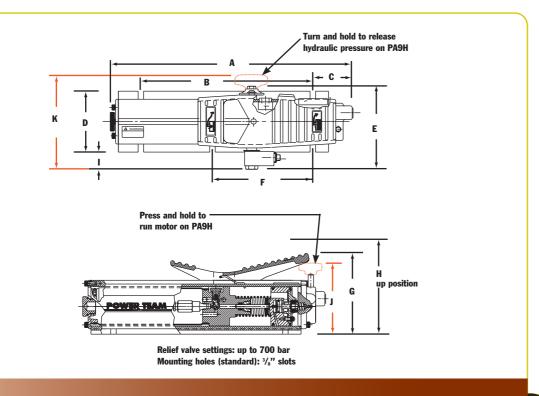
148 cm³/min. Single-Acting

Ideal for powering single-acting cylinders and portable 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 allposition operation and storage.
- Operates on 3-8 bar shop air, at 570 I.
- Hard-coat anodized aluminum housing.
- Oil filler with integral safety relief minimizes chance of damage to reservoir bladder if overfilling occurs.

PA9 Foot Control





Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	l (mm)	J (mm)	K (mm)	
PA9	432	305	71,4	108	149	178	142	178	28,2	_	_	
РА9Н	432	305	71,4	108	_	178	_	178	28,2	122	170	



For Use with Cyl. Type	Order No.	Air Supply Req'd (bar)	Rese Cap. (cm³)	rvoir Usable (cm³)	Oil Port (in)	Max. Pressure Output (bar)	Prod. Wt. (kg)	
Single-Acting	PA9	3 - 8	574	549	³/8-NPTF	700	6,8	
Single-Acting	РА9Н	3 - 8	574	549	³/≈-NPTF	700	6,8	

CYLINDER/PUMP MATCHING CYLINDERS PUMP/CYLINDER SETS PUMP ACCESSORIES > HYDRAULIC ACCESSORIES

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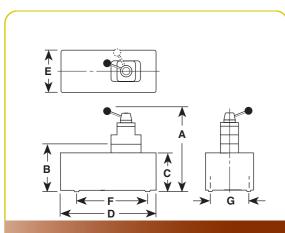
Air Pump HYDRAULIC PAGO SERIES

98 cm³/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.

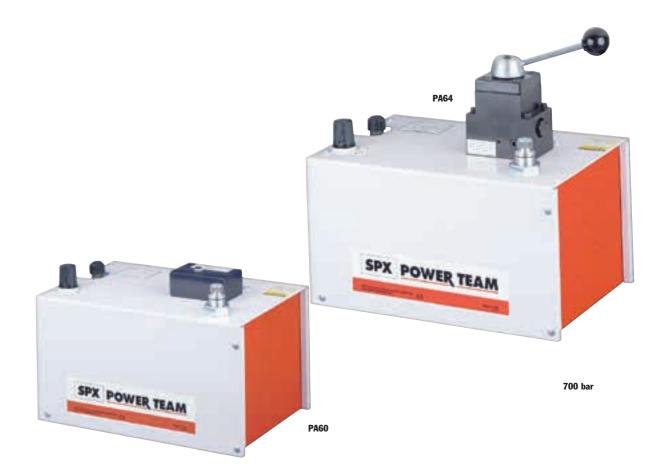


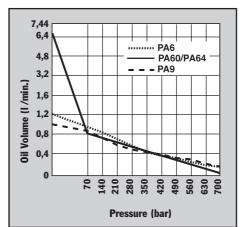


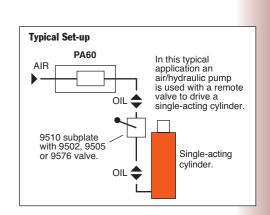
The PA60 used in a workholding environment.

								Max. Pressure		Oi	l Del. * (l/m	in)	
Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Output bar	0 bar	7 bar	70 bar	350 bar	700 bar
PA60	_	240	206	362	244	181	130	700	6,24	5,6	0,8	0,19	0,1
PA64	362	_	206	362	244	181	130	700	6,24	5,6	0,8	0,19	0,1

^{*} Typical delivery. Actual flow will vary with field conditions.







				Air Supply	Reservoir		Oil	Prod.	
Description	Order No.	Valve No.	Valve Function	Req'd bar	Cap. (I)	Usable (I))	Port (in)	Wt (kg)	
For use with remote valves.	PA60	Manifold	_	3 - 8	7,6	6,8	3/8-NPTF	24,5	
For use with single- or double-acting cylinders.	PA64	9507, 3-way/ 4-way	Advance Hold Return	3 -8	7,6	6,8	³/8-NPTF	24,5	

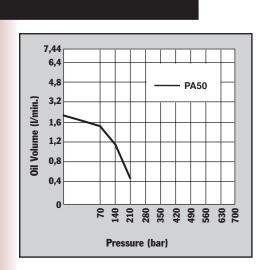
Notes: Air inlet port $\frac{1}{4}$ " NPTF. Requires 570 I at 7 bar shop air pressure at the pump.



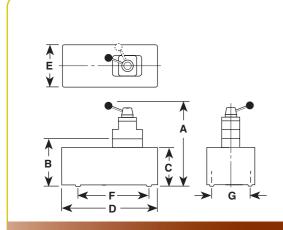
Air Pump Hydraulic Pa50 Series

460 cm³/min. Low Pressure

Single-speed, low pressure (220 bar) output pumps.



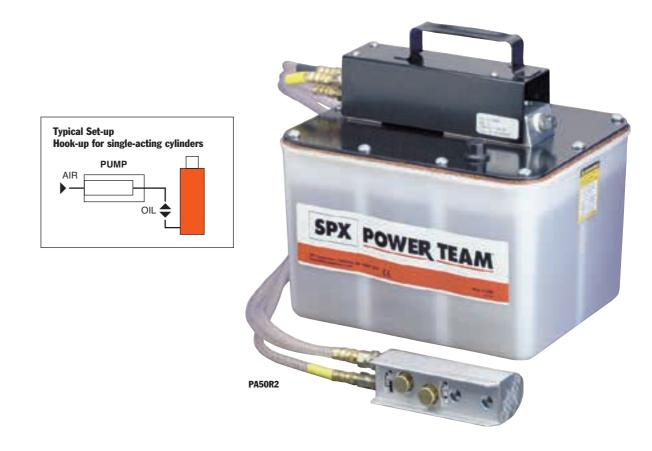




Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Max. Pressure Output bar	0 bar	Oil Del. * 7 bar	(I/min) 70 bar	220 bar	
PA50, PS50R													
PA50M, PA50RN	197	149	111	241	127	_	102 x 229	220	2,05	1,76	1,41	0,45 †	
PA50R2	260	203	178	292	241	_	130 x 181	220	2,05	1,76	1,41	0,45 †	
PA50D	264	149	111	241	127	229	102	220	2,05	1,76	1,41	0,45 †	

- * Typical delivery. Actual flow will vary with field conditions.
- † PA50 Series measured at 220 bar.

- 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.



				Air Supply	Res	ervoir	Oil	Prod.
For use with Cyl. Type	Description	Order No.	Valve No.	Req'd bar	Cap. (I)	Usable (I)	Port (in)	Wt (kg)
Single-Acting	Base model pump with high density polyethlene reservoir.	PA50	-	3-8	1,7	1,6	³ /8-NPTF	6,4
Single-Acting	PA50, except has metal reservoir.	PA50M	_	3 - 8	1,7	1,6	³/8-NPTF	7,3
Single-Acting	PA50, except has 3.7 meter 12 foot remote control.	PA50R	_	3-8	1,7	1,6	³/8-NPTF	8,4
Single-Acting	PA50R, except has metal reservoir.	PA50RM	_	3-8	1,7	1,6	3/8-NPTF	9,3
Single-Acting	PA50R, except has 7.6 liter reservoir 2 gallon reservoir.	PA50R2	_	3-8	7,6	7,3	3/8-NPTF	12,9
Single- and	PA50, except designed to operate either	PA50D	9504,	3-8	1,7	1,6	³/8-NPTF	8,3
Double	single- or double-acting systems.		3-way/					
Acting	Valve function: Advance/Return.		4-way					

Notes: Air inlet port ¹/₄" NPTF. Requires 570 I at 7 bar shop air pressure at the pump.

CYLINDER/PUMP MATCHING	> CYLINDERS	PUMP/CYLINDER SETS	PUMP ACCESSORIES	HYDRAULIC ACCESSORIES
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>Power Team®

Air Pump HYDRAULIC PA17 SERIES

279 cm³/min. Two Speed

Rotary-style air motor. Use where air is preferred source of energy, where electricity is unavailable or sparks are a concern.

- Two-speed operation for high speed cylinder advance.
- Durable 7,6 liter thermoplastic reservoir. (Metal reservoir conversion kits are available.)
- Features air motor capable of starting under full load.



The PA17 used with a flange spreader

PA554
- - PA172, PA174
- - PA464R,
PA464RA Hyd. Pressure (bar)

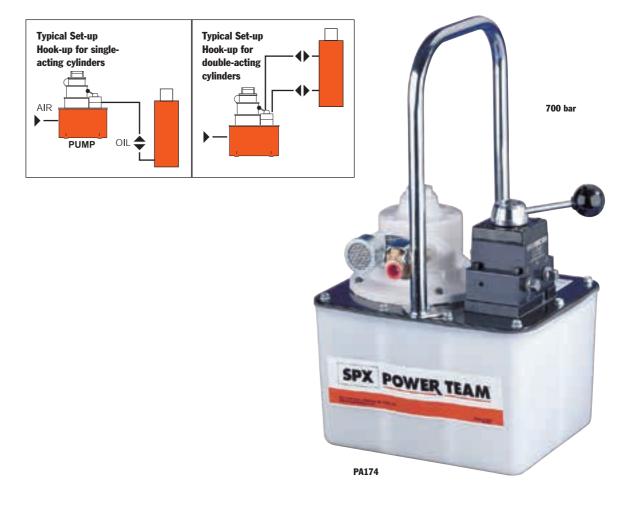


PA172

HAA	
D	<-F→ -

									Max. Pressure		0	il Del. * (l/r	min)		
	Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	H (mm)	Output bar	0 bar	7 bar	70 bar	350 bar	700 bar	
P	A172	359	289	235	178	181	130	³/8-NPTF	700	4,6	3,8	0,4	0,4	0,3	
P	A174	359	289	235	178	181	130	³/8-NPTF	700	4,6	3,8	0,4	0,4	0,3	

^{*} Typical delivery. Actual flow will vary with field conditions.



					Air Supply	Res	ervoir	Prod.
For use with Cyl. Type	Description	Order No.	Valve No.	Valve Function	Req'd bar	Cap. (I)	Usable (I)	Wt (kg)
Single-Acting	Base model pump with 7.6 liter 2 gallon thermoplastic reservoir.	PA172	9517, 2-way	Advance/Return*	3-8	7,6	4,7	18,1
Single- and Double Acting	PA172, except has 9500 valve for use with single- or double-acting cylinders.	PA174	9500, 4-way	Advance Hold Return*	3-8	7,6	4,7	18,6

Note: Requires 570 I at 6 bar shop air pressure at the pump. dBA 85/90 * Holds pressure in advance position when valve motor is shut off, in at 700 bar.

return position with motor running. Pump will build pressure when motor is shut off, oil returns to reservoir.

CYLINDER/PUMP MATCHING > CYLINDERS	PUMP/CYLINDER SETS	PUMP ACCESSORIES	HYDRAULIC ACCESSORIES
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>Power Team®

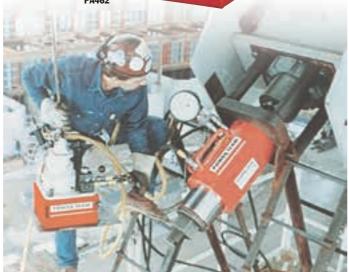
Air Pump Hydraulic PA46/55 SERIES

Up to 150 ton Cylinders 754-902 cm³/min.Two Speed

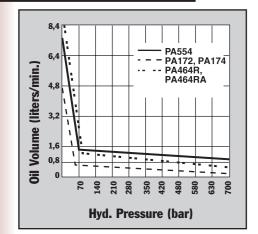
Rotary-style air motor. Use where air is the preferred source of energy.

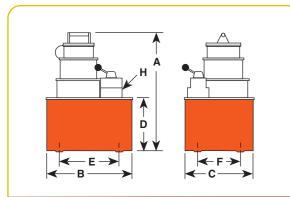
- 2,2 kW motor starting under full load.
- Two-speed operation for rapid cylinder advance.
- Models available with full remote control over advance and return, (except PA554).
- Tandem center valve holds the load when pump is shut off.





 $\begin{tabular}{ll} PA554 pump and RH2008 Center Hole cylinder used to tension cables. \end{tabular}$





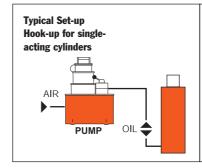
							Max.		Oil Del. * (I/min)				
Pump No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F H (mm) (mm)	Pressure Output bar	0 bar	7 bar	70 bar	350 bar	700 bar	
PA462	381	292	241	178	254	203 ³ / ₈ NPTF	700	7,4	7,2	0,8	0,8	0.7	
PA464	381	292	241	178	254	203 ³ / ₈ NPTF	700	7,4	7,2	0,8	0,8	0,7	
PA464R	381	292	241	178	254	203 ³ / ₈ NPTF	700	7,4	7,2	0,8	0,8	0,7	
PA464RA	381	292	241	178	254	203 ³ / ₈ NPTF	700	7,4	7,2	0,8	0.8	0,7	
PA554	483	292	241	178	254	203 ³ / ₈ NPTF	700	7,4	7,2	1,3	1,1	0,7	

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

Note: Four mounting holes $\frac{1}{2}$ - 20







Typical Set-up Hook-up for double acting cylinders	e- OIL
AIR	OIL

					Air Supply	Rese	ervoir	Prod.
For use with Cyl. Type	Description	Order No.	Valve No.	Valve Function	Req'd bar	Cap. (I)	Usable (I)	Wt (kg)
0 0	Base model pump with 9,5 I steel reservoir.	PA462	9584, 2-way	Advance/Hold/ Return	3 - 8	9,5	9,4	27,2
Double	PA462, except has 9500 valve capable of running 2 single-acting cylinders or one double-acting cylinder.	PA464	9500, 4-way	Advance/Hold/ Return*	3 - 8	9,5	9,4	27,6
Double	PA462 with air actuated valve for full remote control over advance and return. Includes 3,7m remote control.	PA464R†	9594, 4-way	Advance/Hold/ Return	3 - 8	9,5	9,4	35,3
O	PA464R except, has automatic dump feature. 7,6 m remote control.	PA464RA**†	9594, 4-way	Advance/Hold/ Return*	3 - 8	9,5	9,4	35,8
O	High performance pump with 9,5 I steel reservoir.	PA554	9500, 4-way	Advance/Hold/ Return*	3-8	9,5	8,4	32,0

Note: Requires 570 I at 6 bar shop air pressure at the pump. dBA 85/90 at 700 bar.

- * 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.



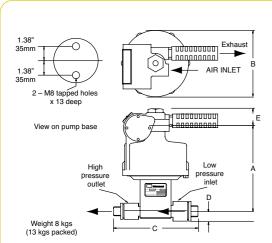
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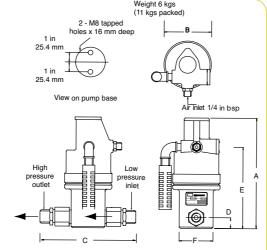
Air Operated Pua & PMA SERIES

2410 bar

Suitable for pumping a wide range of fluids at pressures up to 35,000 psi (2,410 bar).







CAT #	RAM/DIAMET		A	В	C	D	E	ļ
PUA26(B/U)	31.75	in	9.17	4.02	6.61	.87	6.69	2.87
	31.73 11	mm	233	102	168	22.2	170	73_
PUA70(B/U)	19 3/	₄ <u>in</u>	8.74	4.02	6.61	.87	6.22	2.87
I OAT O(D/O)	., 3,	mm	222	102	168	22.2	158	73
PUA157(B/U)	12.7 1/	7 <u>in</u>	8.74	4.02	6.61	.87	6.22	2.87
I OAISI (D/O)		mm	222	102	168	22.2	158	73
PUA275(B/U)	9.53 3/	_{′8} <u>in</u>	8.74	4.02	6.61	.87	6.22	2.87
1 0A213(D/0)	7.03 37	<u> </u>	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
1 0A+30(b/0)	7.71 37	mm	222	102	168	22.2	158	73
PUA655(B/U)	6.35 L	₄ <u>in</u>	8.74	4.02	6.61	.87	6.22	2.87
FUA033(B/U)	0.55 17	mm	222	102	168	22.2	158	73
PUA982(B/U)	5.13 .20)) <u>in</u>	8.74	4.02	6.61	.87	6.22	2.87
FUA302(D/U)	5.15 .20	mm_	222	102	168	22.2	158	73
PMA27(B/U)	76.2 3	<u>in</u>	8.66	7.01	9.06	1.5	1.89	
PIVIAZI (D/U)	76.2 3	mm	220	178	230	38	48	
PMA60(B/U)	50.8 2	<u>in</u>	8.27	7.01	9.06	1.5	1.89	
FIVIAOU(B/U)	30.8 2	mm	210	178	230	38	48	
DMAQQ(D/II)	41.3 1.5	5/8 in	8.27	7.01	9.06	1.5	1.89	
PMA90(B/U)	71.3 1 3	^{0/0} mm	210	178	230	38	48	

RAM/DIAMETER CAT #	(mm) (in)	А В	C D	E F
PMA130(B/U)	35 3/8 i !	<u>7.99</u> 7.01	7.68 .87	1.89
1 MAI30(b/0)	33 1 3/0 m	m 203 178	195 22	48
PMA190(B/U)	28.5 1/8 ! !	<u>n</u> 7.99 7.01	7.68 .87	1.89
I MAISO(D/O)	m			48
PMA240(B/U)	25.4 l i		7.68 .87	1.89
	m m			48
PMA370(B/U)	206 13/16 -	<u>n 7.99 7.01</u>	7.01 .87	1.89
	m			48
PMA520(B/U)	17.5 11/16 i		7.01 .87	1.89
	m			48
PMA770(B/U)	14.3 9/16 i		7.01 .87	1.89
	// m			48
PMA980(B/U)	12.7 1 <i>1</i> 2 i		7.01 .87	1.89
				48
PMA1740(B/U)	9.5 3/8 ! !		10.08 .87	1.89
	,,,, ,,, ,, ,, m			48
PMA2410(B/U)	8 5/16 ^{<u>i</u>ii}		10.08 .87	1.89
	- 3/10 m	m 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 15psi (1bar) air pressure required to start pump



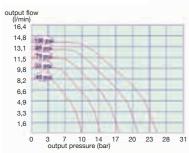
		BATIO	OUT		OUT		MAXIMU			
BSP	NPT	RATIO	PRES	SURE	PER C	YGLE	AI ZEKU	PRESSURE		
FITTINGS	FITTINGS	1:	(BAR)	(PSI)	(LITRES)	(IN ₃)	(LITRES/MIN)	(IN3/MIN)	INLET	OUTLET
PUA26B	PUA26U	4.3	26	380	0.028	1.68	14	850	1/2" BSP/NPT	1/2" BSP/NPT
PUA70B	PUA70U	11.9	70	1,010	0.01	0.607	5	305	1/2" BSP/NPT	1/2" BSP/NPT
PUA157B	PUA157U	26.7	157	2,280	0.004	5.269	2.4	146	1/2" BSP/NPT	1/2" BSP/NPT
PUA275B	PUA275U	47.5	275	3,990	0.0025	0.151	1.4	85	1/2" BSP/NPT	1/2" BSP/NPT
PUA430B	PUA430U	68.4	430	6,230	0.0017	0.105	0.9	55	1/2" BSP/NPT	1/2" BSP/NPT
PUA655B	PUA655U	107	655	9,500	0.0011	0.67	0.6	36	1/2" BSP/NPT	1/2" BSP/NPT
PUA982B	PUA982U	163.8	982	14,250	0.0007	0.044	0.4	24	1/2" BSP/NPT	1/2" BSP/NPT
PMA27B	PMA27U	4	27	390	0.16	9.72	37	2260	1" BSP/NPT	3/4" BSP/NPT
PMA60B	PMA60U	9	60	870	0.07	4.32	23	1400	1" BSP/NPT	3/4" BSP/NPT
РМА90В	PMA90U	13.6	90	1,300	0.05	2.85	15	915	1" BSP/NPT	3/4" BSP/NPT
PMA130B	PMA130U	19	130	1,880	0.034	2.04	11	670	3/4" BSP/NPT	1/2" BSP/NPT
PMA190B	PMA190U	28.4	190	2,750	0.023	1.37	7.3	455	3/4" BSP/NPT	1/2" BSP/NPT
PMA240B	PMA240U	36	240	3,480	0.018	1.08	5.8	354	3/4" BSP/NPT	1/2" BSP/NPT
PMA370B	PMA370U	54.5	370	5,360	0.012	0.71	3.8	230	1/2" BSP/NPT	1/2" BSP/NPT
PMA520B	PMA520U	76.5	520	7,540	0.008	.51	2.8	170	1/2" BSP/NPT	1/2" BSP/NPT
PMA770B	PMA770U	113	770	11,160	0.006	0.34	1.8	110	1/2" BSP/NPT	1/2" BSP/NPT
PMA980B	PMA980U	145	980	14,210	0.004	0.27	1.5	91	1/2" BSP/NPT	1/2" BSP/NPT
PMA1740B	PMA1740U	256	1,740	25,230	0.0025	0.15	0.84	51	1/2" BSP/NPT	1/2" HP
PMA2410B	PMA2410U	368	2,410	35,000	0.0017	0.104	0.58	35	1/2" BSP/NPT	1/2" HP

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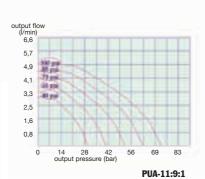
Air Operated Pua & PMA SERIES

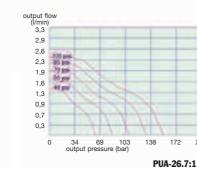
Suitable for pumping a wide range of fluids at pressures up to 35,000 psi (2,410 bar).

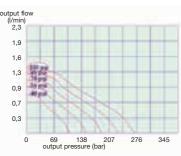
Performance charts



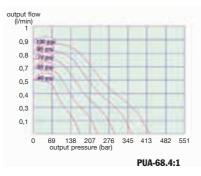
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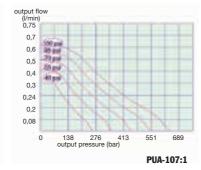


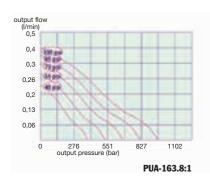




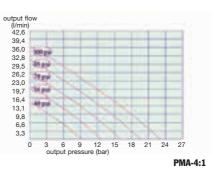
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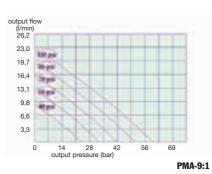


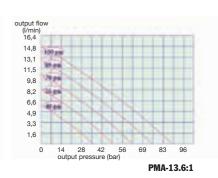


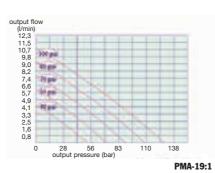


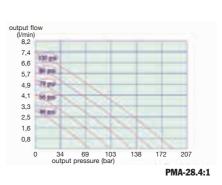
100 psi = 6.89 bar(85 psi) = 5,85 bar (70 psi) = (4,82 bar) 3,79 bar **55 psi** = 2,76 bar (40 psi) =

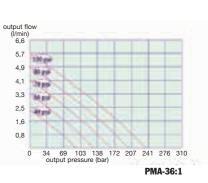


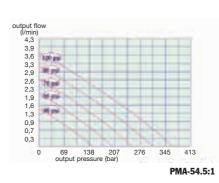


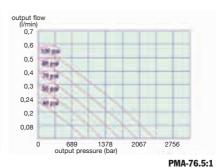


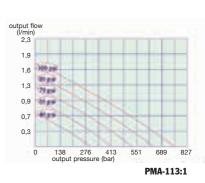


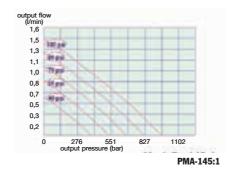


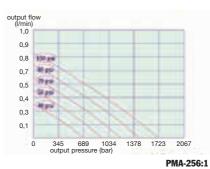


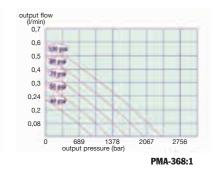










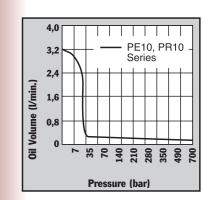


Electric/Battery Pump HYDRAULIC PE10 SERIES

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 2,4 m 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 700 bar on a single battery.

POWER TEAM

QUARTER HORSE

- Pump can be operated in any position.
- 24 volt hand and foot switches available for all AC powered models.
- · High-impact housing with flameretardant 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. (I)
Single-Acting	Base model pump with 0,19 KW motor. Bladder type reservoir, 110 volt power required.	PE102	2-Way/ Auto. Dump	9561	Advance Return (Auto.)*	Rocker Type off, Momentary on	0,19 KW, 110/115V 50/60 Hz, Single Phase	1
Single-Acting	PE102, except has automatic dump valve.	PE102A	Auto. Dump	9562	Advance Return**	Rocker Type off, Momentary on	0,19 KW, 110/115V 50/60 Hz, Single Phase	1
Single-Acting	PE102, except requires 220 volt.	PE102-220	2-Way/ Auto. Dump	9561	Advance Return (Auto.)*	Rocker Type off, Momentary on	0,19 KW, 110/115V 50/60 Hz, Single Phase	1
Single-Acting	PE102A, except requires 220 volt.	PE102A-220	Auto. Dump	9562	Advance Return	Rocker Type off, Momentary on	0,19 KW, 220/230V 50/60 Hz, Single Phase	1
Single-Acting	PE102, except requires 12 volt DC.	PR102	2-Way/ Auto. Dump	9561	Advance Return (Auto.)*	Rocker Type off, Momentary on	0,19 KW, 12V†	1
Single-Acting	PE102A, except requires 12 volt DC.	PR102A	Auto. Dump	9562	Advance Return**	Rocker Type off, Momentary on	0,19 KW, 12V†	1
Single-Acting/ Double-Acting	Base model pump has 4-way valve for operating double-acting systems. 110 volt power required.	PE104	4-Way	9563	Advance Hold Return	Rocker Type off, Momentary on	0,19 KW, 110/115V 50/60 Hz, Single Phase	1
Single-Acting/ Double-Acting	PE104, except requires 220 volt.	PE104-220	4-Way	9563	Advance Hold Return	Rocker Type off, Momentary on	0,19 KW, 220/230V 50/60 Hz, Single Phase	1
Single-Acting/ Double-Acting	PE104, except requires 12 volt DC.	PR104	4-Way	9563	Advance Hold Return	Rocker Type off, Momentary on	0,19 KW, 12V†	1

[&]quot;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 2,4 m. alligator clip cord for 12 volt DC use.





The Quarter Horse pump has a maxim operating pressure of 700 bar, which handles a wide variety of hand held hydraulic tools.

Accessories



BP212VQ - Optional 12 volt battery pack. Includes sealed lead acid battery, 115V charger, 1,2 m cord, carrying case and shoulder strap. Wt., 8 kg.

RB12V – Battery only.

BP12INT – Battery with cord and carrying case. Wt., 5 kg.

RC12V - Replacement 1,2 m battery cord only. Wt., 0,2 kg.

THE PARTY OF THE P	
- CONTRACTOR HAND	
BC 21	2

BC212 – Battery charger for U.S.A. Wt., 3 kg.

BC212EUR - Battery charger for Europe. Wt., 3 kg.

25017 – Remote hand control with 3 m cord. Wt., 0,4 kg.

Max. Pump No.	Pressure Output (bar)	dBa @ Idle and 700 (bar)	Oil Del. (l/ O (bar)	min at) 700 (bar)	Overall Dimensions (mm)	Prod. Wt. with Oil (kg)
PE10 Series PR10 Series	700	68-74*	1,9	0,16	330 L x 197 W x 203 F	1 9,1

* Measured at 0,9 m distance, all sides.

NOTE: PR10 rechargeable model is equipped with 2,4 m cord with alligator clips. Order optional battery pack (No. BP212VQ) or use with any 12

NOTE: Amp draw at 700 bar; 6 amp at 115 volt, 3 amp at 230 volt, and 35 amp at 12 volt.



9560 – Pressure regulator. Adjustable from 70 to 700 bar. All mounting hardware included. Wt., 1,4 kg.



251660 - Foot switch with 3 m cord. Single pole, double throw, 15 amp @ 125-250 VAC. Wt., 0,45 kg.

HYDRAULIC ACCESSORIES PUMP/CYLINDER SETS **PUMP ACCESSORIES** CYLINDERS Page **11**6

> Power Team®

Electric Pump HYDRAULIC PE17 SERIES

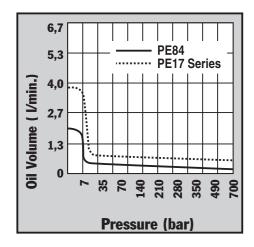
Up to 55 Ton 279 cm³/min. 2 Speed

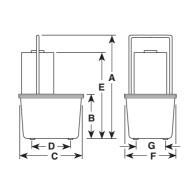
For maintenance and construction applications.

- · For use with single-acting or double-acting cylinders at operating pressures to 700 bar.
- · For intermittent duty; starts under full load.
- Equipped with 0,37Kw (½ hp), 3,450 rpm, single-phase, thermal protected induction motor; 3 m remote control cord (PE172S has 7,6 m cord)
- · Low amperage draw; small generators and low amperage circuits can be used as power
- Extremely quiet noise level (67-81 dBA).





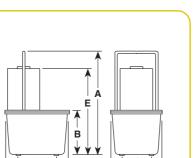




	Max. Pressure		dBA at Idle	Amp Draw 220 V –	0il	Del. (lit	ers./min.	@) †	П							Prod. Wt.
Pump No.	Output bar	rpm	and 700 bar	at 700 bar	0 bar	7 bar	350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	with Oil (kg)
PE17 Series	700	2850	67/81*	5	3,9	2,5	0,3	0,2	470	178	289	181	378	235	130	20,4
PE17M Series	700	2850	67/81*	5	3,9	2,5	0,3	0,2	460	168	292	_	368	241	_	24,0

- * Measured at 0,9 m distance, all sides.
- Typical delivery. Actual flow will vary with field conditions.







((

Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch ††	Motor	Reservoir Usable (I)
Base model pump with 0,37 KW pump with 7,6 I thermoplastic reservoir.	PE172- 50-220	2-Way	9517	Advance Return (Auto†)	Remote Motor Control (3,1m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	4,72
PE172-50-220, except has 9,5 I aluminum reservoir.	PE172M- 50-220	2-Way	9517	Advance Return (Auto†)	Remote Motor Control (3,1m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	6
PE172-50-220, except has solenoid operated valve.	PE172S- 50-220	3-Way	9570	Advance Hold Return	Remote Motor & Valve (7,6 m)	0,37 kW, 220 V* 50/60 Hz, Single Phase	
PE172S-50-220, except has aluminum reservoir.	PE172SM- 50-220	3-Way	9570	Advance Hold Return	Remote Motor & Valve (7,6 m)	0,37 kW, 220 V* 50/60 Hz, Single Phase	
Best suited for crimping, punching, pressing. Not for lifting.Thermoplastic reservoir.	PE172A- 50-2208	Auto./Dump Manifold	45554	Advance Return	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	
PE172A, except has aluminum reservoir.	PE172AM- 50-2208	Auto./Dump Manifold	45554	Advance Return	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	
0,37 KW pump with 7,6 I thermoplastic reservoir. Meets CE requirements.	PE172- E220	2-Way	9517	Advance Return (Auto+)	Remote Motor Control (3,1 m) on/off	C€	4,72
PE172-50-220, except has 9,5l aluminium reservoir. Meets CE requirements	PE172M- E220	2-Way	9517	Advance Return (Auto+)	Remote Motor Control (3,1 m) on/off	(€	6
PE172-50-220,except has solenoid operated valve.Meets CE requirements	PE172S- E220	3-Way	9570	Advance Hold Return	Remote Motor & Valve (3,1m)	C€	4,72
PE172S-50-220 except has aluminium reservoir. Meets CE requirement	PE172SM- E220	3-Way	9570	Advance Hold Return	Remote Motor & Valve (3,1m)	(€	6
Best suited for crimping,punching,pressing. Thermoplastic res.Meets CE requirement	PE172A- E220∞	Auto./Dump Manifold	45554	Advance/Return	Remote Motor Control (3,1 m) on/off	(€	4,72
PE172A, except has aluminium reservoir. Meets CE requirements	PE172AM- E220∞	Auto./Dump Manifold	45554	Advance/Return	Remote Motor Control (3,1 m) on/off	C€	6
PE172-50-220, except has 9500 double-acting valve.	PE174- 50-220	4-Way	9500	Advance Hold Return**	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	
Same as PE174-50-220, except has aluminum reservoir.	PE174M- 50-220	4-Way	9500	Advance Hold Return**	Remote Motor Control (3,1 m) on/off	0,37 kW, 220 V* 50/60 Hz, Single Phase	6
PE172-50-220, except has 9500 double-acting Valve. Meets CE requrements	PE174- E220	4-Way	9500	Advance Hold Return**	Remote Motor Control (3,1 m) on/off	CE	4,72
Same as PE174-50-220, except has aluminium Reservoir. Meets CE requirements	PE174M- E220	4-Way	9500	Advance Hold Return	Remote Motor Control (3,1 m) on/off	(€	6

PE172SM

Available with 115V., 60 Hz motor (to order , remove suffix "50-220" behind pump order number).

SPX POWER TEAM

- "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., 50 cycle PE17 series pumps is 24 volt (non €€).

NOTE: Usable oil is calculated with the oil fill at the recommended maximum level of 38 mm below reservoir cover plate.

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.

Also available in \in | E 110

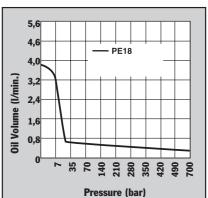
PUMP ACCESSORIES **HYDRAULIC ACCESSORIES** CYLINDER/PUMP MATCHING PUMP/CYLINDER SETS CYLINDERS Page **11**6 Page 12 Page 61 Page **12**0

Electric Pump HYDRAULIC PE18 SERIES

Up to 55 Ton 295 cm³/min. Vanguard Jr. Series®

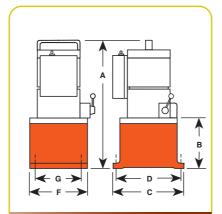
Ideal for use with small hydraulically powered tools. • Vanguard Jr.® pumps provide two-speed high performance in a light-weight, compact package.

- Gauge port provided on pump. Metal reservoir on
- Equipped with a 0,37Kw (1/2 hp), 220 volt, 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 3 m remote control (PE183C has 7,6 m 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 you 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.



700 bar

LR19814

Pump No.	Max. Pressure Output bar	rpm	dBA at Idle and 700 bar	Amp Draw 220 V at 700 bar	Oil O bar	Del. (lit 7 bar	ers./min. (350 bar	@) † 700 bar	A (mm)	B (mm)	C (mm)	D (mm)	F (mm)	G (mm)	Prod. Wt. with Oil (kg)
PE182	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE183	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE183A	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE184	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE183-2*	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	470	184	292	254	241	203	19,0
PE184-2*	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	470	184	292	254	241	203	19,0
PE183C ††	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6
PE184C ††	700	12.000	85/90**	4,5 Amp.	3,7	3,0	0,4	0,3	406	121	203	181	152	130	13,6

- 9,5 I reservoir.
- ** Measured at 0,9 m distance, all sides.

- † Typical delivery. Actual flow will vary with field conditions.
- †† Special application pumps for cutting, crimping or pressing.







For use with cyl. type	Description	Order No.	Valve Type	Valve Function	Control Switch	Motor	Reservoir Usable (I)
Single-acting	Base model pump has 0,37 KW	PE182-	2-Way	Advance Return†	Remote Motor Control	0,37 kW, 220 V** 50 Hz,	1,7
	pump with 2-Way valve and	50-220			(3,1 m) on/off	A.C., Single Phase	
	1,9 I reservoir.						
Single-acting	PE182-50-220, except	PE183-	3-Way	Advance Hold	Remote Motor Control	0,37 kW, 220 V** 50 Hz,	1,7
	has 3-way valve.	50-220		Return	(3,1 m) on/off	A.C., Single Phase	
Single-acting	PE183-50-220, except	PE183-2-	3-Way	Advance Hold	Remote Control	0,37 kW, 220 V** 50 Hz,	8,4††
	has 9,5 I reservoir.	50-220		Return	(3,1 m)	A.C., Single Phase	
Single-acting	PE183-50-220, except	PE183A-	Auto./Dump	Advance Return	Remote	0,37 kW, 220 V** 50 Hz,	1,7
	has "dump valve".	50-220 ∞	Pump		(3,1 m)	A.C., Single Phase	
Single-acting	Special crimping pump.	PE183C-	Special, for	Advance Hold	Remote Motor Control	0,37 kW, 220 V** 50 Hz,	1,7
	See details on page 74.	50-220 ∞	crimping only	Return	(7,6 m) on/off	A.C., Single Phase	
Single-acting/	Base model pump has 0,37 KW	PE184-	4-Way	Advance Hold	Remote Motor Control	0,37 kW, 220 V** 50 Hz,	1,7
double-acting	pump for double-acting systems	50-220		Return†	(3,1 m) on/off	A.C., Single Phase	
	with 1,9 I reservoir.						
Single-acting/	PE184, except with	PE184-2-	4-Way	Advance Hold	Remote Motor Control	0,37 kW, 220 V** 50 Hz,	8,4††
double-acting	9,5 I reservoir.	50-220		Return†	(3,1 m) on/off	A.C., Single Phase	
Single-acting/	Special crimping pump.	PE184C-	4-Way	Advance Return	Remote Control	0,37 kW, 220 V** 50 Hz,	1,7
double-acting	See details on page 74.	50-220*			(3,1 m) on/off	A.C., Single Phase	

- Also for use with special single-acting cylinder applications.
- ** Available with 115 Volt, 50 Hz motor (to order, remove 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 7,6 I oil (usable oil is 5,7 I), will hold 9,5 I when filled to within 13 mm below reservoir cover plate.
- Not to be used for lifting.

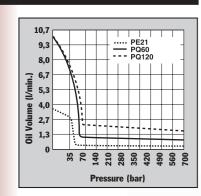


> Power Team®

Electric Pump PE21 SERIES

Up to 75 Ton 361 cm³/min. Two-Speed

Low-speed, high-torque for heavy-duty, extended-cycle operations.

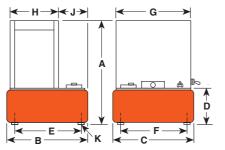


- Totally enclosed, fan cooled induction motor: 0,75Kw (1 hp), 1,725 rpm, 60 Hz, single phase. Thermal overload protection.
- Remote control, with 3,1 m cord is standard on pumps with solenoid valves.
 Manual valve pumps have "Stop", "Start" and "Run/Off/Pulse" switches. Pump controls are moisture and dust resistant.
- Motor drip cover with carrying handles and lifting lug.
- Low noise level of 70 dBA® 700 bar.
- In the event of electrical interruption, pump shuts off and will not start up until operator presses the pump start button.
- 24 volt control circuits on units with remote controls provide additional user/ operator safety.





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



	Pump No.	Max. Pressure Output bar	rpm	dBA at Idle and 700 bar	0 7 bar	il Del. (I/min. at.) 70 bar	350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K*** (in)	Prod. W w/Oil (kg)
ľ	PE21 Series	700	1.437	70*	3,6	0,4	0,4	0,3	543	292	241	165	254	203	359	241	82,6	1/2-20 UNF	44,4†

- * Measured at a 0,9 m distance, all sides.
- *** For 50,8 mm dia. swivel casters, order (4) No. 10494.
- † Shipping weight with manual valve; add 6,4 kg for pump with solenoid valve.





For use with cyltype	Description	Order No.	Valve Type	Valve No.	Valve Function	Max. Amp Draw at 700 bar	Motor	Reservoir Usable (I)
Single-acting	0,75 KW pump with 9,5 I Reservoir and manual valve.	PE213- 50-220	3-Way	9520*	Advance Hold Return	230 V - 7,5 amps	0,75 KW, 220 Volt 50 Hz, Single Phase	590
Single-acting	PE213, except has solenoid operated remote valve.	PE213S- 50-220	3-Way	9599†	Advance Hold Return	230 V - 7,5 amps	0,75 KW, 220 Volt 50 Hz, Single Phase	590
Double-acting	0,75 KW pump with 9,5 I Reservoir and manual valve.	PE214- 50-220	4-Way	9506*	Advance Hold Return	230 V - 7,5 amps	0,75 KW, 220 Volt 50 Hz, Single Phase	590
Double-acting	PE214, except has solenoid operated remote valve.	PE214S- 50-220	4-Way	9512†	Advance Hold Return	230 V - 7,5 amps	0,75 KW, 220 Volt 50 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 3,1 m cord.

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.



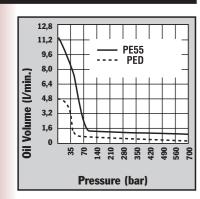
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>Power Team[®]

Electric Pump Hydraulic Ped Series

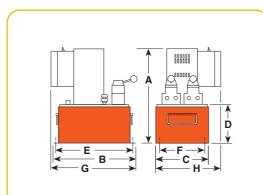
410 cm³/min. Two-Speed

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 4,8 I/min. of oil at 7and 0,4 I/min. at 700 bar from each pump.
- 1,12 KW, 220 volt, 50 Hz induction motor, 3,1 m remote control and 19 I steel reservoir.
- Models available for operating singleacting 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.





	Max. Pressure		dBA at Idle	(220 V)** Amp Draw	0il Ii	Del. (I/min	at)										Prod. Wt.
Pump No.	Output	unus	and 700	At 700 bar	7 box	50	350	700	A (1999)	B (mm)	C	D (*****)	E (mm)	F (mm)	G (mm)	H /mm\	w/0il
NO.	bar	rpm	bar	Var	bar	bar	bar	bar	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
PED- Series	700	2.874	87/85*	11	4,8	0,6	0,6	0,4	527	457	292	216	419	229	457	330	77

- * Noise level reading (dBA) measured at a 0,9 m distance, all sides.
- ** $\,$ Amp draw at 700 bar, 230 Volts 50 Hz is 15 Amps.



For use with cyltype	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch ††	Motor	Reservoir Usable (I)
Single-acting	1,12 KW pump with 19 I reservoir. Valve has "Posi-Check*" feature.	PED253- 50-220	3-Way	9520	Advance Hold Return	Remote Motor	1,12 KW, 220 VAC 50 Hz††, Single Phase	16
Double-acting	1,12 KW pump with 19 I reservoir. Valve has "Posi-Check®" feature.	PED254- 50-220	4-Way	9506	Advance Hold Return	Remote Motor	1,12 KW, 220 VAC 50 Hz††, Single Phase	16
Double-acting	PED254, except has solenoid operated remote valve.	PED254S- 50-220	4-Way	9513	Advance Hold Return	Remote Valve	1,12 KW, 220 VAC 50 Hz††, Single Phase	16

†† Control switch wired with line voltage. All remotes are 3,1 m long.

CYLINDER/PUMP MATCHING	> CYLINDERS	PUMP/CYLINDER SETS	PUMP ACCESSORIES	HYDRAULIC ACCESSORIES
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>Power Team[®]

Electric Pump HYDRAULIC PE30 SERIES

0,48 I/min. Two-Speed Vanguard® Series

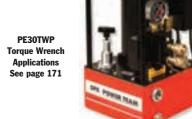
Ideal for maintenance and construction applications

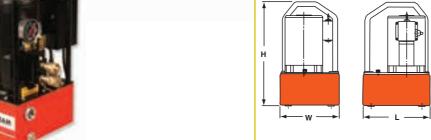
single-acting or double-acting cylinders. • Integral roll cage protects pump from abuse.

• Deliver a powerful punch to operate

- 0,75Kw (1 hp), single phase, permanent magnet motor.
- High performance to weight ratio.
- Starts under full load even when voltage is reduced to 50% of
- nominal rating.
- Quiet operation: 87 dBA @ 700 bar and 82 dBA @ 0 bar. CSA rated for intermittent duty.
- Remote controls and/or solenoid valves feature 24 volt controls.







	Max Pressure	Noise level	Amp.Draw 220V at	0	il Del. (Vmin at.	.)			Prod. Wt.
Pump No.	Output bar	at 700 bar (dBA)	700 bar (A)	7 bar	35 bar	70 bar	350 bar	700 bar	Overall Dimensions (mm)	With Oil (kg)
PE30 Series with 4,7 I res.	700	87/82	7	4,8	3,2	0,7	0,6	0,5	254L x 229W x 406H	18,6
PE30 Series with 7,6 I res.	700	87/82	7	4,8	3,2	0,7	0,6	0,5	343L x 241W x 419H	22,2





								Reservoir
For use wit	h	Order	Valve	Valve	Valve	Control	Motor	Usable
Cyltype	Description	No.	Туре	No.	Function	Switch	(4.000 rpm)	(1)
Single-act.	Base model 0,75 KW pump with 4,7 I Reservoir & 2 position valve.	PE302- 220∞	3-Way, 2 Pos.	9584	Advance Return	On/Off/ Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE302-220, except has 6,6 I reservoir.	PE302-2- 220	3-Way, 2 Pos.	9584	Advance Return	On/Off/ Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Single-act.	PE302-220, except has remote motor control.	PE302R- 220	3-Way, 2 Pos.	9584	Advance Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE302R-220, except has 6,6 I reservoir.	PE302R-2- 220	3-Way, 2 Pos.	9584	Advance Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Single-act.	PE302R-220, except also has solenoid operated remote valve.	PE302S- 220†	3-Way, 2 Pos.	9570	Advance Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE302S-220, except has 6,6 I reservoir.	PE302S-2- 220†	3-Way, 2 Pos.	9570	Advance Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Single-act.	PE302-220, except has "Auto Dump" valve	PE302A- 220	Auto Dump	9610	Automatic Pilot Operation	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	Base model 0,75 KW pump with 4,7 I Reservoir & 3 position valve.	PE303- 220	3-Way, 3 Pos.	9520*	Advance Hold Return	On/Off/ Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE303-220, except has 6,6 I reservoir.	PE303-2- 220	3-Way, 3 Pos.	9520*	Advance Hold Return	On/Off/ Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Single-act.	PE303-220, except has remote motor control.	PE303R- 220	3-Way, 3 Pos.	9520*	Advance Hold Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Single-act.	PE303R, except has 6,6 I reservoir.	PE303R-2- 220	3-Way, 3 Pos.	9520*	Advance Hold Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Double-act.	Base model 0,75 KW pump with 4,7 I Reservoir & 4-way valve for double-acting systems	PE304- 220	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	On/Off/ Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Double-act.	PE304-220, except has 6,6 I reservoir.	PE304-2- 220	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	On/Off/ Pulse Switch	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***
Double-act.	PE304-220, except has remote motor control.	PE304R- 220	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	4,5**
Double-act.	PE304R-220, except has 6,6 I reservoir.	PE304R-2- 220	4-Way, 3 Pos. Tandem Ctr.	9506*	Advance Hold Return	Remote Motor Control (3,1 m)	0,75 KW 220/230 VAC, 50 Hz, Single Phase	6,1***

- "Posi-Check®" valve design, "Posi-Check®" guards against pressure loss when valve is shifted from "advance" to "hold"
- ** Shipped with 3,8 I of oil (3,4 I usable).
- *** Shipped with 7,6 I of oil.

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

HYDRAULIC ACCESSORIES CYLINDER/PUMP MATCHING PUMP/CYLINDER SETS PUMP ACCESSORIES > CYLINDERS Page 61 Page **11**6 Page 120

>Power Team®

HYDRAULIC PE46 SERIES 0,6 I/min

Two-speed

Best suited for under the roof maintenance and production

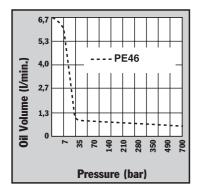
Electric Pump

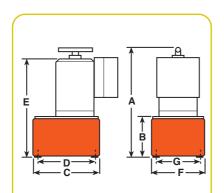
applications.

- Two-speed high performance pump.
- · For use with single- or double-acting cylinders at operating pressures to 700 bar.
- Equipped with a 1.12 KW, 2.875 rpm single-phase, 50 Hz thermal protected induction motor that starts under full load. Noise level of 77-81
- All equipped with a 3,1 m remote control except PE462S which has a 7,6 m remote control.
- 24 volt control circuit on all units with remote control.
- CSA rated for intermittent duty.









Pump No.	Max. Pressure Output bar	rpm	Noise level at Idle and 700 bar (dBA)	Amp Draw 220 V - at 700 bar (A)	Oil O bar	Del. (I/min. at 7 bar)† 350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Prod. Wt. w/Oil (kg)
PE46-Series PE46-E220			77/81 77/81*	13 13	6,7 6,7	6,0 6,0	0,7 0,7	0,6 0,6	499 499	173 173			378 378			35,8 41,3

- Measured at 0,9 m distance, all sides.
- † Typical delivery. Actual flow will vary with field conditions.





For use with cyltype	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch+++	Motor	Reservoir Usable*** (I)
Single-acting	Base model 1,12 KW pump with	PE462-	3-Way	9584	Advance	Remote Motor Control	1,12 KW, 220 VAC*	9,4
	9,5 I metal reservoir.	50-220			Return†	(3,1 m) on/off	50 Hz, Single Phase	
Single-acting	PE462-50- 220, except has solenoid valve.	PE462S-	3-Way	9570	Advance	Remote Motor	1,12 KW, 220 VAC*	9,4
		50-220			Return**	alve (7,6 m)	50 Hz, Single Phase	
Single-acting	PE462-50-220, except has "dump valve"	PE462A-	Auto/Dump	9610	Advance	Remote Motor Control	1,12 KW, 220 VAC*	9,4
		50-220 ∞	3-Way		Return	(3,1 m) on/off	50 Hz, Single Phase	
Single-acting	1,12 KW pump with 9,5l metal reservoir.	PE462-	3-Way	9584	Advance	Remote Motor Control	1,12 KW, 220 VAC*	9,4
	Meets C € requirement	E220			Return +	(3,1 m) on/off	50 Hz, Single Phase	
Single-acting	PE462-50-220, except has solenoid valve.	PE462S-	3-Way	9570	Advance	Remote Motor/	1,12 KW, 220 VAC*	9,4
	Meets C € requirement	E220			Return**	Valve (7,6 m)	50 Hz, Single Phase	
Single-acting	PE462-50-220, Except has "dump valve".	PE462A-	Auto/Dump	9610	Advance	Remote Motor Control	1,12 KW, 220 VAC*	9,4
	Meets C € requirement	E220 ∞	3-Way		Return	(3,1 m) on/off	50 Hz, Single Phase	
Double-acting/	PE462-50-220, except has	PE464-	4-Way	9500	Advance Hold	Remote Motor Control	1,12 KW, 220 VAC*	9,4
multi-single-act	.9500 double-acting valve.	50-220			Return†	(3,1 m) on/off	50 Hz, Single Phase	
Double-acting/	Same as PE464-50-220	PE464-	4-Way	9500	Advance Hold	Remote Motor Control	1,12 KW, 220 VAC*	9,4
multi-single-act	. Meets C € requirement	E220			Return +	(3,1 m) on/off	50 Hz, Single Phase	
Double-acting/	Same as PE464S-50-220	PE464S-	3/4-Way	9552	Advance	Remote Motor/	1,12 KW, 220 VAC*	9,4
multi-single-act	. Meets C € requirement	E220			Return**	Valve (3,1m)	50 Hz, Single Phase	
Double-acting/	PE462S-50-220, except	PE464S-	3/4-Way	9552	Advance	Remote Motor/	1,12 KW, 220 VAC*	9,4
multi-single-act	has 9592 double-acting valve.	50-220			Return**	Valve (3,1m)	50 Hz, Single Phase	

- Available with 115 V., 60 Hz motor (to order, remove 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 13 mm below reservoir cover plate.
- "Advance" position holds pressure with motor shut off. "Return" position returns cylinder.
- ††† The remote motor control switch on PE46 series pumps is 24 volt.
- $\,\infty\,$ $\,$ Not to be used for lifting. When pump is shut off, oil returns to reservoir.



>Power Team®

Electric Pump HYDRAULIC PE55 VANGUARD®

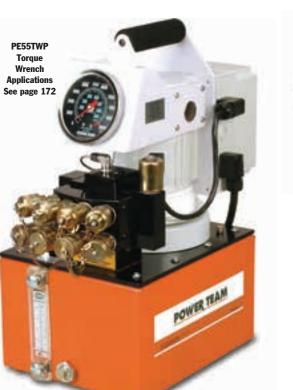
0,9 I/min For cylinders up to 200 tons.

Heavy duty multiple-applications pump. Heavy construction and concrete stressing. Low voltage starting possible.

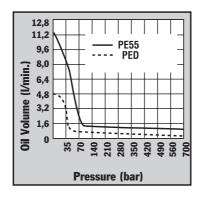
- 0,48Kw, 12,000 rpm, 220 volt, 50 Hz universal motor; draws 25 amps at full load, starts at reduced voltage. CSA rated for intermittent duty.
- 3,1 m remote motor control (except PE552S which has a 7,6 m remote motor and valve control).
- True unloading valve achieves greater pump efficiency, allowing higher flows at maximum pressure.
- Reservoirs available in sizes up to 38 l. See accessories page 119.
- · 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-theshelf components to build a customized pump to fit specific requirements. By selecting standard components you get a "customized" pump without "customized"

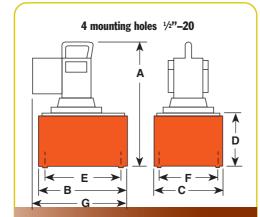
All pumps come fully assembled, less oil and ready for work. See pages 112-115.







PE554W The new pump;

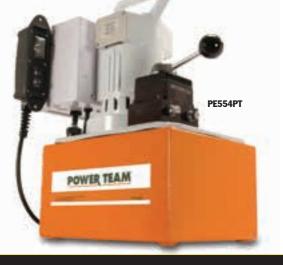


Pump No.	Max. Pressure Output bar	rpm	Noise level Idle and at 700 bar (dBA)	Amp Draw at 700 bar (220 V.)" (A)	Oil I O bar	Del. (I/min 50 bar	at) 350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Prod. Wt. w/Oil (kg)
 5-Series 5-E220	700	12,000	90/89*	13	11,3	7,1	1,2	0,9	464 520	292	241	178	254	203	356 391	29,4

^{*}Noise level reading (dBA) measured at a 0,9 m distance, all sides.



LR19814 700





((

For use with		Order	Reservoir Valve	Valve	Valve	Control		Usable
cyltype	Description	No.***	Туре	No.	Function	Switch ††	Motor	(I)
Single-acting	Base model 0,84 KW pump with 9,5 I reservoir, remote motor control & 3-way valve.	PE552- 50-220	3-Way	9582	Advance Return**	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	PE552-50-220, except also has solenoid operated remote valve.	PE552S- 50-220	3-Way	9570	Advance Hold Return	Remote Motor & Valve	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	PE552-50-220, except has "Auto Dump" valve.	PE552A- 50-220	Auto/Dump	9610	Advance Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	0,84 KW pump with 9,5 I reservoir. Valve has "Posi-check" feature.	PE553- 50-220	3-Way†	9520	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Single-acting	Same as PE552-50-220, but meets also CE requirement	PE552- E220	3-Way	9584	Advance Return**	Remote Motor	(€	8,4
Single-acting	Same as PE552S-50-220, but meets also CE requirement	PE552S- E220	3-Way	9570	Advance Return	Remote Motor & Valve	(€	8,4
Single-acting	Same as PE552A-50-220, but meets also CE requirements	PE552A- E220∞	Auto/Dump	9610	Advance Hold Return	Remote Motor	(€	8,4
Single-acting	Same as PE553-50-220 but needs also CE Requirement	PE553- E220	3-Way	9520	Advance Hold Return	Remote Moter	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Base model 0,84 KW pump with 9,5 I res. and 4-way valve for double-acting systems.	PE554- 50-220	4-Way†	9506	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Same as PE554-50-220 but needs also CE Requirement	PE554- E220	4-Way†	9506	Advance Hold Return	Remote Moter	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	PE554-50-220, except has 9500 tandem center valve.	PE554T- 50-220	4-Way	9500	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
	For use with single-acting Spring Seat, Stressing Jack or double-acting cylinder.	PE554P- 50-220	4-Way	9500	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	For use with single- or double-acting Power Seat, Stressing Jacks ONLY.	PE554PT- 50-220	4-Way	9628	Advance Hold Sequenced Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Pump suitable to run multiple . spring return tools	PE554C- 50-220	4-Way	9511†††	Advance Hold Return	Remote Motor	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Pump equipped with 3/4-way solenoid valve.	PE554S- 50-220	3/4-Way	9552	Advance Hold Return	Remote Motor & Valve	0,84 KW*, 220 VAC 50Hz, Single Phase	8,4
Double-acting	Pump suitable to run multiple Spring return cylinder	PE554C- E220	4-Way	9511 +++	Advance Hold Return	Remote Motor	(€	8,4
Double-acting	Pump equipped with 3/4 -way solenoid valve	PE554S- E220	3/4-Way	9552	Advance Hold Return	Remote Motor & Valve	C€	8,4

- Pumps available with 115 volt, 50 Hz motors. (to order remove the -50-220 suffix from the order code). See "Assemble to Order" pump options on pages 102-105.
- Holds with motor shut off.
- *** To order PE55 series pumps with CSA approval, add "-C" to the Order No.
- Valves have "Posi-Check®" feature.

- †† Control switch wired with line voltage. All remotes are 3,1m long except for PE552S which is 7,6m 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.

Also available in E 110 € €

CYLINDER/PUMP MATCHING HYDRAULIC ACCESSORIES PUMP/CYLINDER SETS **PUMP ACCESSORIES CYLINDERS** Page 61 Page **11**6 Page 120

>Power Team®

^{**} Amp draw at 700 bar, 230 Volts 60 Hz is 15 Amps.

Electric Pump Hydraulic PE60 SERIES

Post Tensioning 0,9 **I/min**

Two-Speed

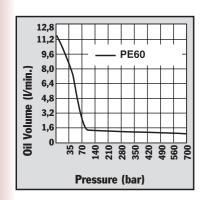
Compact, light weight pump. Excellent choice for rugged applications and low voltage starting.

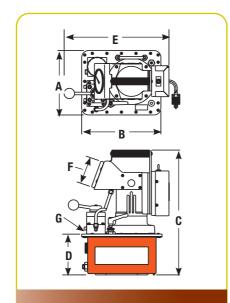
- Long, trouble free life in the most demanding work environments. For operating single- or double-acting cylinders, or stressing jacks.
- Powered by 0,84 KW, 220 volt, 60/50 Hz single phase motor. Starts under load, even at the reduced voltages at construction sites.
- · Optional fan-driven external oil cooler includes rollover guard.
- Insulated carrying handle.
- Integral 102 mm fluid-filled pressure gauge with steel bezel complies with ASME B40.1 Grade A. With 0 to 700 bar pressure range in 7 bar increments.
- Sealed 4,34 I (usable) reservoir. Reservoir drain port is standard.
- Standard oil level sight gauge for accurate oil level monitoring.



contaminants from circulating oil to maximize pump, valve and cylinder/tool

• External spin-on filter removes





	Max. Pressure		Noise level Idle and	Amp Draw	Oil	Del. (I/min	at)									Prod. Wt.
Pump No.	Output bar	rpm	700 bar (dBA)	at 700 bar (A)	0 bar	50 (50)	350 bar	700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (in)	w/Oil (kg)
110.	vui	ı pılı	(ubit)	(11)	bui	(00)	bui	Dui	()	()	\/	(/	\/	(11111)	\""/	(116/
PE604T	700	12.000	80/85	13	11,3	7,1	1,2	0,9	263,5	301,6	457,2	152,4	381	101,6	3/8	27,2
-220															NPTF	
PE604PT	700	12.000	80/85	13	11,3	7,1	1,2	0,9	263,5	301,6	457,2	152,4	381	101,6	3/8	27,7
-220															NPTF	

NOTE: Unloading pressure is 70 bar.

Consult factory for PE60 pump models with other control

and valve options.









The PE60 used for pre-stressing.



	Description	Order No.	Valve Type	Valve No.	Valve Function	Control Switch	Motor	Reservoir Usable (I)
Single-Acting, Spring Seat, Stressing Jack or Double-Acting	0,84 kW pump with 4,73 l reservoir & valve for double-acting systems.	PE604T	4-Way 3-position	9500	Advance Hold Return	On/Off/Pulse	0,84 kW, 220 VAC 50 Hz, Single Phase	4,34
Single-Acting or Double-Acting Power Seat,	PE604T, except has special valve for post tensioning application only.	PE604PT	4-Way 3-position	9628 Model C	Advance Hold Sequenced Return	On/Off/Pulse	0,84 kW, 220 VAC 50 Hz, Single Phase	4,34
Stressing Jacks	Only			OPTION	AL			



>Power Team®

Electric Pump HYDRAULIC PQ60 SERIES

Up to 200 ton 0,8 I/min

Pump designed specifically for heavy duty, extended cycle operation.

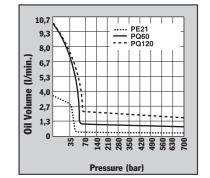
SdWnd

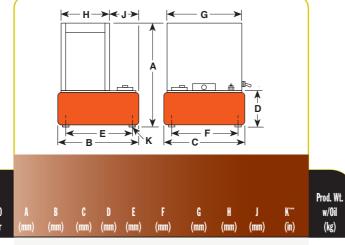
- For operating single- or double-acting cylinders.
- Metal shroud keeps dirt and moisture out of motor and electrical components.
- Electrical shut-down feature prevents unintentional restarting of motor following an electrical service interruption.
- Internal relief valve limits pressure to 700 bar. External relief valve is adjustable from 70 to 700 bar.
- Pumps operate below maximum OSHA noise limitation (74-76 dBA).
- Start and operate under full load, even with voltage reduced 10%.











Max. Noise level Pressure at Idle Amp Draw Oil Del. (I/min at..) Pump Output and 700 bar at 700 bar 7 70 350 700 No. bar rpm (dBA) (A) bar bar bar bar

 PQ60
 700
 1.437
 74/76*
 See Chart
 9,7
 0,9
 0,9
 0,8
 638
 362
 394
 184
 308
 338
 373
 237
 122,2 ½-20
 76,6**

 Series
 (following page)
 UNF

- * Measured at a 0,9 m distance, all sides.
- ** Total weight with oil and 3-way solenoid valve.

 Subtract 4,5 kg to obtain weight of pump with manual valve.
- *** For 50,8 mm dia. swivel casters, order (4) No. 10494.







Hydraulic Machine Press Operation.

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Valve Function	Max. Amp Draw at 700 bar (A)	Motor	Reservoir Usable (I)
Single-	1,49 KW pump with 21,6 I	PQ603-	3-Way	9520*	Advance Hold	115V - 22 amps	1,49 KW, 220 Volt	20
Acting	reservoir and manual valve,	50-220	-		Return	230V - 11 amps	50 Hz, Single	
Single-	PQ603-50-220, except has	PQ603S-	3-Way	9599†	Advance Hold	115V - 22 amps	1,49 KW, 220 Volt	20
Acting	solenoid operated remote valve.	50-220			Return	230V - 11 amps	50 Hz, Single	
Double-	1,49 KW pump with 21,6 I	PQ604-	4-Way	9506*	Advance Hold	115V - 22 amps	1,49 KW, 220 Volt	20
Acting	reservoir and manual valve.	50-220			Return	230V - 11 amps	50 Hz, Single	
Double-	PQ604-50-220, except has	PQ604S-	4-Way	9512†	Advance Hold	115V - 22 amps	1,49 KW, 220 Volt	20
Acting	solenoid operated remote valve.	50-220			Return	230V - 11 amps	50 Hz. Single	

- * 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 3.1 m cord.
- \$\Delta\$ 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.



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>Power Team[®]

Electric Pump HYDRAULIC PQ120 SERIES

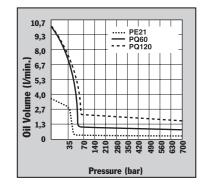
Up to 400 Ton **1,6 I/min**

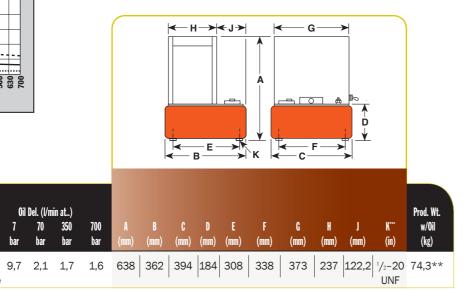
Low speed, high torque pump designed specifically for heavy duty, extended cycle operation. Ideal for press operation.

- Start and operate under full load, even with voltage reduced 10%.
- Electrical shut-down feature prevents unintentional restarting of motor following an electrical service interruption.
- Internal relief valve limits pressure to 700 bar. External relief valve is adjustable from 70 to 700 bar.
- · Pump prewired at factory with a 2,24 KW, 380 volt, 50 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
- 2,24 KW(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.









Measured at a 0,9 m distance, all sides.

PQ120- 700 1.437 73/78*

Max.

Pressure

Output

Total weight with oil and 3-way solenoid valve. Subtract 4,5 kg to obtain weight of pump with manual valve.

Noise level

at Idle

and 700 bar

(dBA)

Amp Draw

at 700 bar

Chart Above

*** For 50,8 mm dia. swivel casters, order (4) No. 10494.





700 bar





For use with cyltype	Description	Order No.	Valve Type	Valve No.	Valve Function	Motor	Reservoir Usable (I)
Single-acting	2,24 KW pump with 21,6 I	PQ1203-	3-Way	9520*	Advance Hold	2,24 KW, 400 Volt	20
	reservoir and manual valve.	E380			Return	50 Hz, 3 Phase	
Single-acting	PQ1203-50-380, except has	PQ1203S-	3-Way	9599†	Advance Hold	2,24 KW, 400 Volt	20
	solenoid operated remote valve.	E380			Return	50 Hz, 3 Phase	
Double-acting	2,24 KW pump with 21,6 I	PQ1204-	4-Way	9506*	Advance Hold	2,24 KW, 400 Volt	20
	reservoir and manual valve.	E380			Return	50 Hz, 3 Phase	
Double-acting	PQ1204-50-380, except has	PQ1204S-	4-Way	9512†	Advance Hold	2,24 KW, 400 Volt	20
	solenoid operated remote valve.	E380			Return	50 Hz, 3 Phase	

- 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 3,1 m cord.

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.



Series

Oil Del. (I/min at..)

Electric Pump HYDRAULIC PE400 SERIES

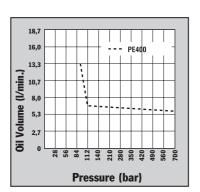
Up to 1,000 Ton 5,6 I/min

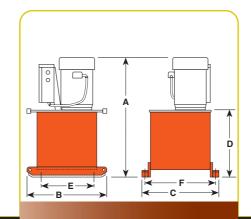
High tonnage double-acting cylinders, Single or multiple cylinder applications. Up to 1,000

• Two-speed high output pump delivers up • 75,7 l (62,8 l usable) reservoir has to 16 I/min of oil.

- Low noise level of 73-80 dBA.
- Integral electrical shut-down feature prevents unintentional restarting of motor • 3 phase motor has all the electrical 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 100 to 700 bar.
- Heavy duty 50,8 mm dia. casters assure easy maneuvering.

- a low oil level sight gauge.
- Powered by a dual voltage 7,46 KW, 3 phase, 1,437 rpm motor.
- components necessary to operate the pump.The customer has no hidden charges when making purchase.
- Deliver 16 I/min. of oil at 15 bar, 5,6 l/min. of oil at 700 bar.





Pump No.	Max. Pressure Output bar	rpm	Noise level at Idle and 700 bar (dBA)	Amp Draw at 700 bar (A)	Oil D 15 bar	el. (I/mir 90 bar	1 at) 350 bar	700 bar	A* (mm)	B (mm)	C (mm)	D (mm)	E Caster Mfg. (mm)	F Caster Mfg. (mm)	Prod. Wt. w/Oil (kg)
PE4004-50-3		1.437 1.437	73/80 73/80	6 6	16 16	14 14	6 6	5,6 5,6	924 924	635 635	610 610	540 540	394 394	546 546	223 229

^{*} Add 127 mm and 3,6 kg when casters are mounted. (Units are supplied with four 102 mm dia. swivel casters.)



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







For use with cyltype	Description	Order No.	Valve Type	Valve No.	Valve Function	Motor††	Reservoir Usable (I)
Double-acting	7,46 KW pump with 75,5 I	PE4004-	4-Way	9506	Advance Hold	7,46 KW, 400 volt	62,8†
	reservoir and manual valve.	E380			Return	50 Hz, 3 Phase	
Double-acting	PE4004, except has solenoid	PE4004S-	4-Way	9512**	Advance Hold	7,46 KW, 400 volt	62,8†
	operated remote valve.	E380			Return	50 Hz, 3 Phase	

^{**} Solenoid valve with remote control.

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



>Power Team®

[†] Usable oil is calculated with oil fill at recommended level at 57 mm below cover plate.

^{††} PE400 series available in 220/380V, 50Hz and 460V, 50Hz. Please specify when ordering. Example: PE4004-50-380 or for 460 V PE4004-460.

Crimping Pump ELECTRIC HYDRAULIC PE-NUT

0,49 I/min Two-Speed

Extremely durable yet lightweight and operate under low-line voltage conditions.

PE-NUT PUMP - 115V

- 0,46 KW universal electric motor (50 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 3,1 m cord

- · Carrying handle
- · Factory filled oil reservoir
- · Pressure matched quick-coupler supplied
- · Optional carrying case
- Two-stage pumping system
- · Unique, intermittent duty pump
- · Piston-type high-pressure pump supercharged by a low-pressure pump.

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

	Oil	Oil	Usable	Overall	Overall	Overall	Pump Weight
Order	Delivery	Reservoir qt.	Oil qt.	Width	Length	Depth	w/Oil
No.	(l/min.)	(1)	(1)	(mm)	(mm)	(mm)	(kg)
PE-NUT	2,62 at 7 bar	6	2,8	165	365	210	12,6
PF-NIITC*	0.49 at 700 har						

*Includes Case

Electric Motor 0,46 KW, 10,000 rpm 115V AC, 50 Hz 11 amp current draw (115V at 700 bar) Electrical Data

Electrical Control

GASOLINE POWER PUMPS

PG1203-CP

- 4,5 Kw Briggs & Stratton engine
- · Manual control valve
- High-pressure safety relief valve
- Protective roll cage
- For use with single acting tools

PG1203/4S-CP

- 4,1 Kw Honda OHV-type engine
- Remote hand control with 3,1 m cord
- Two-stage pump for rapid advance
- High-pressure safety relief valve
- · Protective roll cage
- For use with either single or double acting tools

Two-stage pump for rapid advance



Order No.	Oil Delivery (I/min.)	Oil Reservoir (I)	Usable Oil (I)	Overall Width (mm)	Overall Length (mm)	Overall Height (mm)	Pump Weight w/Oil (kg)
1101	(v mini)	(1)	V-I	(111111)	(111111)	(111111)	(1.6/
PG1203-CP	8 at 7 bar	11,3	7	502	552	622	25
PG1203/4S-CP	2,1 at 700 bar						



>Power Team

Gasoline Pump HYDRAULIC PG30/55 SERIES

0,5 - 0,9 **I/min** Gasoline driven

Gasoline power supply ideal for remote locations. PG30 series for to 75 ton cylinders. PG55 series for up to 150 ton cylinders.

- A logical choice at work sites where electricity or compressed air are unavailable. For single- or double-acting cylinders at operating pressures to 700 bar.
- 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 2-cycle, 1,5 kW Tecumseh engine giving it the lowest weight to horsepower ratio of all gasoline driven pumps. Has an aluminum reservoir with 6 I of usable oil.
- Has 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 weigh in at only 14,5 kg with oil.
- PG303 is for single-acting cylinders, has a 9520 valve with separate internal return line; allows oil from running pump to return to reservoir, independently of cylinder return oil, when valve is in "return" position.

PG553 and PG554

PG303 and PG304

• PG304 is for double-acting cylinders, has a 9506 4-way (tandem center) valve.

Pressure (bar)

		Max. Pressure		0i	l Del. (l/mi	in at)								Prod. Wt.
	Pump	Output		7	0	350	700	A	В	C	D	E	F	w/Oil
	No.	bar	rpm	bar	bar	bar	bar	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
Р	G303, PG304	700	6.000	4,4*	0,6	0,6	0,5	378	264	241	406	130	343	14,5
P	G553, PG554	700	3.600	7,7	1,2	1,1	0,9	559	457	318	219	422	229	54,4

^{*} First stage oil delivery from 0-28 bar at 3,7 I/min minimum.

PG553 and PG554

- 4,5 Kw Intek "Diamond Edge" 4-cycle, by Briggs & Stratton 19 I 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.





c	POWER TEAM

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

For use with cyltype	Description	Order No.	Valve Type	Valve No.	Valve Function	Reservoir Usable (I)	Kw	Cycle
Single-acting	1,5 Kw pump with 7,6 I reservoir and single-acting valve.	PG303	3-Way	9520	Advance Hold Return	6	1,5	2
Single-acting	4,5 Kw pump with 21,6 I Reservoir and single-acting valve.	PG553	3-Way	9520	Advance Hold Return	20,8**	4,5	4
Double-acting	PG303, except has double-acting valve.	PG304	4-Way	9506	Advance Hold Return	6	1,5	2
Double-acting	PG553, except has double-acting valve.	PG554	4-Way	9506	Advance Hold Return	20,8**	4,5	4

^{**} Usable oil is calculated with oil fill at recommended level at 13 mm below cover plate.

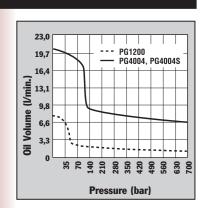


>Power Team

Gasoline Pump PG120-PG400 SERIES

2,1 - 6,4 I/min Max.output gasoline powered pumps.

Large reservoir capacity roll cage equipped. PG120 for up to 300 ton cylinders. PG400 for up to 1,000 ton cylinders.



700 bar

- 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 doubleacting cylinders at operating pressures to 700 bar.
- · 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 2,1 I/ min at 700 bar.
- A 19 liter reservoir means adequate capacity for multi-cylinder applications. Dual element air cleaner protects engine from dusty environments.



- · Heavy duty "roll cage" provides pickup points for lifting. Horizontal bars on PG1203, PG1204 and PG1204S protect unit, provide hand holds for
- · Adjustable external pressure regulator.



- · Rubber anti-skid insulation on bottom of reservoir resists skidding and dampens vibration. PG1200M-4 and PG1200M-4D include a pump cart with 305 mm wheels.



PG1204S

PG1200M-4

four cylinders.

included.

PG1200M-4D

• For single-acting cylinders. Has

9520 3-way/3-position (tandem

individual needle valves at each

· Has a 9796 coupler and 9797 dust

cap at each port. Valving permits

precise individual control of up to

· For single- or double-acting cylinders

with precise individual control of up

except has 9506 4-way/3-position

(tandem center) valve, and second

· A 9052 heavy duty, fluid filled

to four cylinders possible.

· Equipped same as PG1200M-4,

pressure gauge (0-700 bar) is

center) valve, 9596 load lowering

4-port manifold without needle valves mounted beneath 9644 manifold for operating double-acting cylinders.

PG400 Series Maximum output Hydraulic Power Package

- · Ideal for single or multiple cylinder applications. Has a 4-cycle, 15 kW Honda engine and 76 I reservoir (63 I usable) with low oil level sight
- · Steel "roll cage" protects pump, has a lifting hook; 102 mm dia. swivel casters provide mobility.
- Delivers 6,4 I/min of oil at maximum

PG1200M-4D



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).

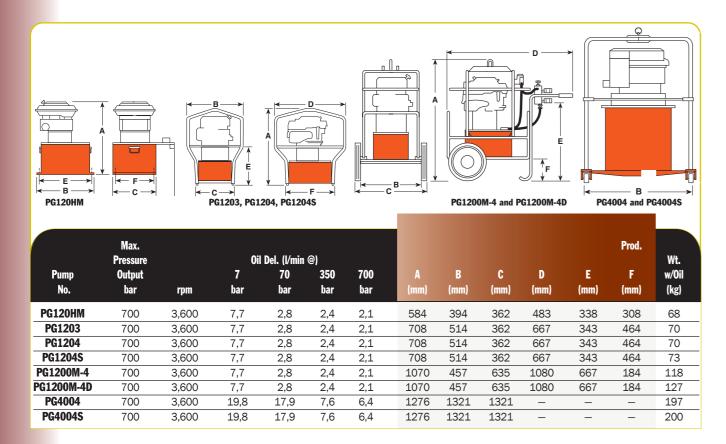
Valve Valve Valve Usable For use with **Order** cyl.-type No. No. **Function (I)** Type Single-acting Base model 4,1 Kw gasoline PG1203 3-Way 9520 Advance Hold 20,8 4.1 4 pump with 22 I reservoir. Return PG1200M-4 Single-acting PG1203 with cart, rollcage, load 3-Way 9520 Advance Hold 20,8 4.1 4 9644 lowering valve, 4 port Manifold Return** manifold & gauge Single-acting/ PG1200M-4D, except without PG120HM 4-Way 9506 20,8 4,1 4 Advance Hold Manifold 9642 double-acting "Roll Cage" and cart. Ideal for Return** house moving industry. Double-acting Base model 4.1 Kw gasoline pump. PG1204 20,8 4-Way 9506 Advance Hold 4,1 4 with 22 I reservoir and Return double-acting valve. PG1204S 20,8 Double-acting PG1204, except has roll cage, cart, 4-Way 9516 Advance Hold 4,1 4 solenoid valve and 7,6 m cord. Solenoid*** Return PG1200M-4D 20,8 Double-acting PG1200M-4, except for 4-Way 9506 Advance Hold 4,1 4 9644 Return** double-acting systems. Manifold PG4004 62,8* Double-acting Base model 15 Kw pump 4-Way 9506 Advance Hold 15 4 with 76 I reservoir Return PG4004S 4-Way 9516 62,8* Double-acting PG4004, except has solenoid Advance Hold 15 Solenoid*** operated remote valve Return

Usable oil is calculated with oil fill at recommended level at 57 mm below cover plate.

*** Has 7,6 m remote control cord.

** Control up to 4 cylinders independently.

PUMP/CYLINDER SETS **PUMP ACCESSORIES HYDRAULIC ACCESSORIES** CYLINDER/PUMP MATCHING **CYLINDERS** Page **11**6 Page 61 Page 120



> Power Team

Intensifier **HYDRAULIC**

Pressure ratio 5:1

Converts low-pressure portable hydraulic pumps or on-board hydraulic systems, into high

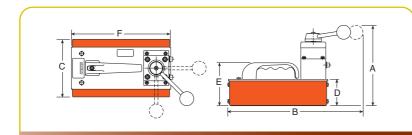
pressure power sources.

- 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.
- May be used to operate two separate, single-acting tools (with integral valves) independently, without need for additional manifold.
- Compact and rugged for use inside a utility vehicle aerial bucket or stowing in a
- Control valve included. Other Power Team valves available as an option to suit your specific application, if needed; consult factory.

 • No reservoir level to maintain; uses low
- pressure system as oil supply.
- Has 3/8" NPTF ports; compatible with standard fittings for low and high pressure systems.



700 bar



Pump No.	Output Flow at 700 bar	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Prod. Wt. (kg)	
HB44- Series	0,7 l/min.	210	368	156	70	114	267	7,2	

For use with Cyl. Type	Description	Order No.	Valve Type	Valve No.	Output Flow Valve Function	Input Flow Range (I/min)	Input Flow Pressure (bar)	Output Flow Range (I/min)
Single-Acting	Hydraulic intensifier for single-acting systems	HB443	3-Way 3-Position	9520*	Advance Hold Return	0 -38	20 - 138	0 - 9,5
Single-Acting/ Double-Acting	Hydraulic intensifier for double-acting systems	HB444	4-Way 3-Position	9506*	Advance Hold Return	0 -38	20 - 138	0 - 9,5
Double-Acting	Hydraulic intensifier for double-acting torque wrench tools	HB445-RR	4-Way 3-Position	-	Advance Hold Return	0 -38	20 - 138	0 - 9,5

- † For maximum efficiency, recommended input flow is 19 I/min at a maximum pressure of 140 bar. 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.







Assemble to Order Pumps

CUSTOM BUILT HYDRAULIC PUMP

Choose your basic pump, make your selections, and we will assemble, test and ship your pump.







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.

0.83 KW UNIVERSAL MOTOR

These motors start under full load and are suitable for operation up to 350 or 700 bar. The motor is 0,83 KW, 12,000 rpm, 115 or 230 volt, 50 cycle A.C. single phase (25 amp draw at 115V.). With proper valve they can be used with single- or double-acting cylinders. Remote control available.

2 1.1 KW JET MOTOR, SINGLE & THREE-PHASE

Feature low noise level, moderate speed for long service and are ideal for fixed applications. Motor is 1,1 KW, 3.450 rpm, 115 or 230 volt, 50 cycle, A.C. 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, threephase (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.









2.2 KW JET MOTOR, THREE-PHASE

Gives low noise level and long life due to its moderate operating speed. Ideal for fixed installations. Consists of basic 700 bar pump, jet pump motor: 2,2 KW, 3.450 rpm, 230/460 volt, 50 cycle. A.C. three-phase, with thermal overload switch. Equipped with internal and external relief valve. Will start under load.

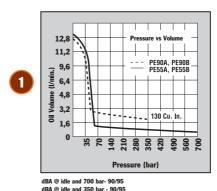
2.3 KW AIR MOTOR

This pump is ideal for use where electricity is unavailable or cannot be used. The 350 or 700 bar pump has a 2,3 KW air driven motor at 3.000 rpm (optimum performance based on 6 bar air pressure and 1165 l/min 1419 I/min at the pump). You can drive single- or doubleacting cylinders with the correct valve.

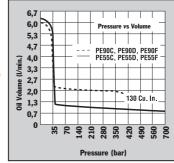
NOTE: 6 bar air supply required to start under full load.

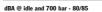
5 GASOLINE ENGINE

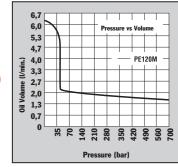
This version is perfect when electricity and air are unavailable. It is capable of continuous operation at full pressure. Consists of basic 700 bar pump, 4-cycle Briggs & Stratton "Diamond Edge" gasoline engine, developing 4,5 KW. As with all these pumps, this unit can be valved for use with either single- or double-acting cylinders.



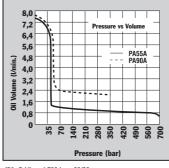


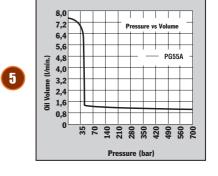






dBA @ idle and 700 bar - 80/85



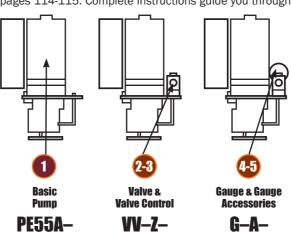


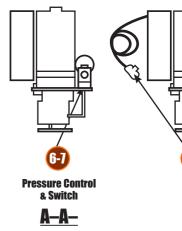
dBA @ idle and 700 bar - 83/88 dBA @ idle and 350 bar - 83/88

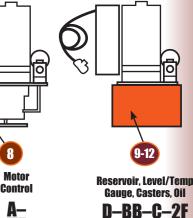
"ASSEMBLE TO ORDER" SYSTEM **HOW TO ORDER YOUR "CUSTOM" HYDRAULIC PUMP...**

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 114-115. Complete instructions guide you through

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-W-Z-G-A-A-A-D-BB-C-2F is a 700 bar two-speed pump with a 115 volt, 50Hz, single phase, 1,12 KW, 12,000 rpm motor; a 9512

4-way solenoid valve with a 202778 remote hand control, a 9041 pressure gauge, no gauge accessories, standard hydraulic oil.

standard pressure control, standard On-Off-Pulse motor

level/temperature gauge, 10494 casters, and 7,6 liter of

control, 400630R9 7,6 liter reservoir, a 350431 oil

See next two pages for pump components

HYDRAULIC ACCESSORIES CYLINDER/PUMP MATCHING PUMP/CYLINDER SETS **PUMP ACCESSORIES CYLINDERS** Page 120 Page 61 Page 116

> Power Team

PUMP COMPONENT SPECIFICATION CHART

TO BUILD YOUR PUMP. FILL IN KEY LETTERS FROM CHARTS

1 Basic Pump	2 Select Valve	Select Valve Control	4 Select Gauge	Select Gauge Accessories	Pressure Control
7 Pressure Switch	8 Motor Control	9 Reservoir	Level/Temp Gauge	Choose Casters	Select Oil

Use the charts numbered from 1-12 below to select the pump, valve, gauge and other miscellaneous 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.

BASIC PUMP (See pages 94-106)

PE55	PE90	BASIC PU PE120	MP NUMBERS Pa55	PA90	PG55	SPECIFICATIONS NOTE: Customer must specify voltage required.				
(700 bar)	(350 bar)	(700 bar)	(700 bar)	(350 bar)	(700 bar)	Power Source	rpm	KW		
A or AC*	A or AC*					115V-60 Hz, 1Ø	12,000	0,84		
						110V-50 Hz, 1Ø	12,000	0,84		
B or BC*	B or BC*					230V-60 Hz, 1Ø	12,000	0,84		
						220V-50 Hz, 1Ø	12,000	0,84		
† C or CC*	† C or CC*					115V-60 Hz, 1Ø	3,450	1,12		
† C50	† C50					110V-50 Hz, 1Ø	2,850	1,12		
† D or DC*	† D or DC*					230V-60 Hz, 1Ø	3,450	1,12		
† D50	† D50					220V-50 Hz, 1Ø	2,850	1,12		
† F60 **	† F60**					208, 230/460V-60 Hz, 3Ø	3,450	1,12		
† F50 **	† F50**					220/380V-50 Hz, 3Ø	2,850	1,12		
		M60 **				208, 230/460V-60 Hz, 3Ø	3,450	2,24		
		M50 **				220/380V-50 Hz, 3Ø	2,850	2,24		
			Α	A		Air Motor	3,000	2,24		
					Α	Gas Engine	3,600	4,47		

^{*}Suffixes AC, BC, CC & DC indicate pumps for Canadian orders only. **NOTE:** All electric units have 24 volt secondary circuit.

2 VALVE (See pages 50-60)

Manifold/Manual/Air Operated Directional Valves		Function Manifold/Manual/Air Operated Directional Valves		Manifold/Manual/Air Operated Directional Valves	Function
AB	9628 manual, tandem center	4-way, 3 pos.	0	9609 manual, pressure compensated flow control	3-way, 4 pos.
AC	9632 manual "twin" tandem and open center	valves	R	9506 manual, tandem center "Posi-Check®"	
Α	None	_	RR	9511 manual, open center	4-way,
В	9626 manifold	Manifold	S	9500 manual, tandem center	3 pos.
С	9584 manual	3-way,	Т	9507 manual, closed center "Posi-Check®"	valves
D	9582 manual	2 pos.	U	9501 manual, closed center	1
Е	9610 automatic, pilot operated	valves		Solenoid Operated Directional Valves	Function
G	9504 manual	3/4-way,	FF	9569 solenoid operated - 24 volt	3-way, 2 pos.
JJ	9594 air operated	2 pos. valves	НН	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.
М	9520 manual, tandem center "Posi-Check®"	3 pos.	VV	9512 solenoid operated - 24 volt	4-way,
N	9576 manual, metering tandem center	valves	WW	9615 solenoid operated - 24 volt	3 pos. valves

3 VALVE CONTROL (See page 116)

	Valve Remote Control	Use with Valve Valve Re		alve Remote Control	Use with Valve	
Α	None	_	Z	202778 remote hand control, 3,1 m	9512 or 9615	
Х	304718 remote hand control, 3,1 m	9572	ZF	309653 remote foot control, 3,1 m	9512, 9615,	
XF	XF 309652 remote foot control, 3,1 m				9569 or 9599	
Y	202777 remote hand control, 3,1 m	9569 or 9599	ZZ	209593 remote hand control, 3,7 m	9594	

4 GAUGE (See page 124-125)

	Pressure Gauges
Α	None
В	Other - Specify
G	9041 0-10.000 psi - 0-700 Bar (63 mm dia.)
Н	9040 0-10.000 psi - 0-700 Bar (Liquid) (63 mm dia.)
J	9051 0-10.000 psi - 0-700 Bar (100 mm dia.)
M	9052 0-10.000 psi - 0-700 Bar (Liquid) (100 mm dia.)

6 PRESSURE CONTROL (See page 133)

		Pressure Controls		
A With standard external pressure regulator				
	С	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 700 bar unless otherwise specified.

8 MOTOR CONTROL (See page 116)

	Electric Motor Controls
А	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.
В	None
С	25017 remote motor hand switch, 3,1 m.
D	203225 remote motor hand switch, 3,1 m. (heavy duty)
Е	10461 remote motor foot switch, 3,1 m.
	Air Motor Controls
AA	Other
В	None
Р	27876 hand motor control (for PA55 & PA90 series)
Q	27877 foot motor control (for PA55 & PA90 series)

OIL LEVEL/TEMP. GAUGE (SEE PAGE 118)

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

CASTERS (See page 124)

	Casters			
Α	None			
C 10494 caster for use with 400630R9 reservoir				
	(Specify quantity of four)			

5 GAUGE ACCESSORY (See page 125)

	Gauge Accessories				
Α	None				
N	9049 pulsation dampener - All dry gauges				

PRESSURE SWITCH (See page 117)

	Pressure Switch					
A None						
В	B 9625 electric pressure switch (35-700 bar)					
	NOTE: Pressure switch is factory pre-set at 700 bar unless					
	otherwise specified.					
С	9641 pilot operated air control valve - N.C.					
D	9643 pilot operated air control valve - N.O.					

9 RESERVOIR (See page 119)

	Reservoirs	Capacity
Α	None	-
В	Other - Specify	-
D	400630R9 - PE55, PE90, PE120,	
	PA55 and PA90 series	9,5 I
E	61165† - PE55, PE90, PE120, PA55 and PA90 series (Oil temperatures in excess of 65.5° C. may cause permanent failure of the thermoplastic reservoir)	7,61
F	RP22‡ - PE55, PE90, PE120, PA55 and PA90 series	9,5
Н	617990R9 Same as D except with drain port	9,5
J	RP50 - PE55, PE90, PE120, PA55 and PA90 series	191
K	401370R9 - PG55 series	19
Р	209124 - PE55, PE90, PE120, PA55 and PA90 series	26,5
V	RP100 - PE55, PE90, PE120, PA55 and PA90 series	37,91
W	RP101 - PG55 series	37,9

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

12 OIL (See page 126)

	Oil
Е	Ship pump without oil
F	9637 3,8l. standard hydraulic oil
G	9638 9,5l. standard hydraulic oil
Q	9639 3,8l. Flame-Out hydraulic oil
R	9640 9,5l. Flame-Out hydraulic oil
U	9645 3,8l. biodegradable hydraulic oil
V	9646 9,5l. biodegradable hydraulic oil

NOTE: Select type of hydraulic oil and specify quantity.

14

^{**}Specify voltage 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.

Hydraulic Pump accessories



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 pumps.

No. 25017 - Remote hand control. Has a push button switch, with a 3,1 m cord. Wt., 0.4 kg.

No. 203225 - Remote hand control. Heavy-duty with single push button switch in a neoprene housing with 3,1 m cord. Housing seals out dust, lint and liquids (unit is not submersible).

Wt., 0.4 kg.

No. 10461 - Remote foot control, with 3,1 m cord. Wt., 1,4 kg.

No. 251660 - Remote foot control, with 3,1 m cord.

For use with the PE10 style pumps. Wt., 0.4 kg.

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 3,1 m cord, for use with 3-way/2 or 3-position valves. Wt.,0,4 kg. 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 3,1 m cord, for use with 4-way/3-position valves. Wt., 0,4 kg

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 the advance and retract position and is spring centered to the hold position. This foot switch comes with 3,1 m cord. Wt., 1,8 kg.

No. 17627 – Remote foot control. Same as the No. 309653 but without a cord. Wt., 0,9 kg.

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 3,1 m cord. To be used with 4-way/ 2-position valves. Wt., 0.4 kg.

No. 309652 – Remote foot control. Has same functions as No. 304718. Supplied with a 3,1 m cord. To be used with 4-way/2-position valves. Wt., 1,8 kg.

No. 216209 – Remote foot control. Same as the No. 309652, but without a cord. Wt., 0,9 kg.

NOTE: See valves listing to determine which remote to use. Page 44-51.

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 3,7 m cord. Wt., 0,9 kg.

SUBPLATES

For remote mounting of control valves. They 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 kg.

No. 9620 - For use with 9500, 9501, 9502, 9552, 9572, 9592 and 9594. Same as No. 9510 but has integral pressure regulating valve. Wt., 1,7 kg.

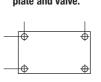
PUMP-MOUNTED SUBPLATES

When fitted between pump cover plate valve mounting flange and control valve, provides a separate 3/8" NPTF female port, open to "return" regardless of position of valve. Also provides a separate 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, 9552, 9572, 9575, 9576, 9592, 9594 and 9609.

No. 9515 - Subplate, Wt., 0,6 kg.

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., 1,7 kg.

9510 and 9620 attach to the bottom of valve for remote mounting. The 9515 and 9521 mount between the pump cover plate and valve.











9625

AIR FILTER/REGULATOR/LUBRICATOR

Recommended for use with single-speed air/hydraulic pumps found on pages 55-69. **No. 9531 -** Filter/regulator. 1/4" NPTF inlet and outlet. Wt., 0,4kg.

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 1/4" NPTF male thread, and a 1/4" NPTF fitting for gauge mounting if required. Adjustable from 70 to 700 bar. 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 1/4" NPTF gauge port. Wt., 0,5 kg.

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 1/4" NPTF male thread and 1/4" NPTF fitting for gauge mounting if required. Adjustable from 35-700 bar. Maximum rating of 700 l at 7 bar.

No. 9641 - Pilot operated control valve, normally closed, with 1/4" NPTF male thread. Wt., 0,4 kg.

No. 9643 - Same as 9641 except normally open. Wt., 0,4 kg.



9643

116

> Power Team

Wiring Schematic

N.O. Held Closed

Hydraulic Pump Accessories











OIL COOLER KITS

No. 252511 - Oil cooler kit designed for use with PE604T or PE604PT pumps with 115 VAC. Wt.,2,2Kg.

No. 252512 - Oil cooler kit designed for use with PE604T or PE604PT pumps with 220 VAC. Wt.,2,2 kg.

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., 0,6 kg.

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., 0,6 kg.

CASTERS

50,8 mm diameter casters attach to the bottom of large reservoir for portability. Sold individually; order the amount you need.

No. 10494 - Single caster wheel. Wt., 0,1kg.

FLUID LEVEL/TEMPERATURE GAUGE

Displays fluid level and temperature of hydraulic oil in reservoir. 32°-212°F, 0°-100°C. 32 mm wide and 162 mm high.

No. 350431 - Fluid level/temperature gauge.

FOOT CONTROL GUARD

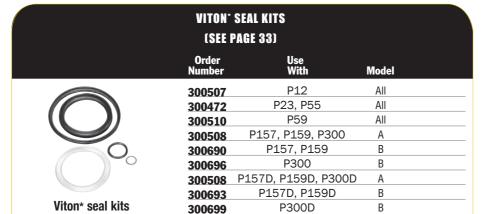
Guard for use with 10461 and 251660 foot controls.

No. 16339 - Wt., 2 kg.

MAGNETIC STRIP

Magnetic strip with adhesive back can be added to No. 25017, 202777, 202778 and 304718 hand controls. Provides 2,7 kg. of holding force.

No. 207762 - Wt., 0,1 kg.



VITON* SEAL KITS Can be used in all "C" and "RH" series cylinders (see pages 14-15 and 22-23), 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. For use with phosphate ester fluids. Not required with Flame-Out fluid.

UNIVERSAL PUMP CART

Mobilize your hydraulic pumps with the PC200. The rugged tubular frame can easily handle pumps weighing up to 90 kg. With 305 mm 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 305 mm 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 19- and 38 I - reservoirs; Nos. RP50, RP51, RP101 and RP103. Wt., 12,3 kg (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 38 I reservoir.

Note: Refer to PG1203/PG1204 specification chart (pages 108-109) for dimensions of roll cage.

No. PC200RC - Roll cage for use with PC200. (Cannot be used on pumps with 38 liter reservoirs.) Wt., 16 kg.

No. RC5 - Roll cage. Wt., 9 kg.

LARGE CAPACITY RESERVOIRS			•	n			
Capacity (liter)	Order Number	Usable Oil (I/min)	Use With		Size (mn A B	1) C	
7,6	RP20**	7.1	PA6, PA50 series (models A-E)	292	241	165	
7,6	RP20-F**	7,1	PA6 series (model F), PA 50 series (model F	& G) 292	241	165	
9,5	RP20M*	7,2	PA6, PA50 series (models A-E)	292	241	165	
9,5	RP20M-F*	7,2	PA6 series (model F), PA50 series (model F &	& G) 292	241	165	
9,5	RP21*	7,2	PE18 series	292	241	165	
9,5	RP22†	7,1	PE55, PE90, PE120, PA55	292	241	165	
19	RP50	18,4	PE55, PE90, PE120, PA55	381	318	203	
19	RP51	18,4	PA46, PE46, PE21	381	318	203	
37,9	RP100	35,1	PE55, PE90, PE120, PA55	381	318	356	
37,9	RP101	35,1	PG55, PG120	381	318	356	
37,9	RP103*	37,0	PQ60, PQ120	392	362	313	
37,9	RP104	35,1	PA46, PE46, PE21	381	318	356	

* Four mounting holes: 1/2"-20, for 50.8 mm diameter swivel casters (No. 10494)

NOTE: All metal reservoirs are equipped with drain plugs and all necessary conversion items. Hydraulic oil is not included with reservoir kits. Please order separately. See page 126.

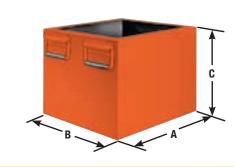
** High density polyethylene reservoir. † Aluminum reservoir.

METAL RESERVOIR CONVERSION KITS FOR PUMPS 'INCLUDES GASKETS AND FASTENERS.

Metal Pump Number	Res. Order Number	Metal Reservoir Capacity (I)	Reservoir Weight (kg)	Metal Pump Number	Res. Order Number	Metal Reservoir Capacity (I)	Reservoir Weight (kg)	Metal Pump Number	Res. Order Number	Metal Reservoir Capacity (I)	Reservo Weight (kg)
PA6	213896	1,7	1,4	PA50	213896	1,7	1,4	PA174	213895	9,5	4,1
PA6A	213896	1,7	1,4	PA50R	213896	1,7	1,4	PE172	213895	9,5	4,1
PA6D	213896	1,7	1,4	PA6R	213896	1,7	1,4	PE172A	213895	9,5	4,1
PA6-2	213895	9,5	4,1	PA50R2	213895	9,5	4,1	PE172S	213895	9,5	4,1
PA6D2	213895	9,5	4,1	PA172	213895	9,5	4,1	PE174	213895	9.5	4,1







^{*} Viton is the E.I. duPont De Nemours & Co., Inc, trade name for flouroelastomers.

HYDRAULIC ACCESSORIES















HOSES

Page **122**

Rubber

Urethane Non-Conducting



COUPLERS

Quick Connect Flush Face



GAUGES

Page **124-125**

Heavy Duty Hydraulic Pressure Gauges Digital and Analog



FLUIDS

Page **126**

Standard Oil 0,9 I, 3,8 I, 9,5 I, 208 I

Flame Out 3,8 1, 9,5 1
Bio Degradable 3,8 1, 9,5 1
Low Temperature 3,8 1



MANIFOLDS

Page **127**

Standard Blocks
Blocks with Valves



700 BAR FITTINGS

Page **128**

Connectors

Couplings

Crosses

Elbows Tees

Swivels

Special Adapters



VALVES

Page **129-133**

In-Line Remote

See Also Pump Mounted...pages 45-51



ACCESSORIES



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 2.800 bar.



B Rubber hose

6 spiral (R13 specification) rated hose reinforced with two braids of high tensile steel wire and have a tool 4:1 safety factor. The rubber covering is oil and weather resistant.



Polyurethane hose

Made with Nylon core and then one braid of Aramid and one braid of wire reinforcement with a orange polyurethane cover (Conductive). 4:1 safety factor standard 700 bar WP / 2800 bar BP.



Hydraulic hose assembly

No. 9764E - Hose assembly consisting of 9767E (1,8 m hose), 6,4mm I.D. polyurethane with 9798 hose half coupler and 9800 dust

No. 9754 - Hose assembly consisting of 9756 (1,8 m hose), 6,4 mm I.D. rubber with 9798 hose half coupler and 9800 dust cap.



The figures show the relative effect two styles of hose can have

CYLINDER RETURN TIME

	No. 9769E	No. 9781E
	3,1 m Hose	3,1 m Hose
Cylinder	6,4 mm I.D.	9,5 mm I.D
C2514C	51 sec.	14 sec.
C556C	1 min., 30 sec.	24 sec.
C5513C	4 min., 12 sec.	59 sec.
C10010C	6 min., 56 sec.	1 min., 3 sec.

				ORDERING IN	IFORMATION				
Hose Type	Hose I.D.	Hose Length	Burst Rating	Order No.	Hose Type	Hose I.D.	Hose Length	Burst Rating	Order No.
Polyurethane	6,4 mm	0,6 m	2 800 bar	9765E	Rubber, Wire-braid	6,4 mm	2,4 m	2 800 bar	9757E
Polyurethane	6,4 mm	0,9 m	2 800 bar	9766E	Rubber, Wire-braid	6,4 mm	3,1 m	2 800 bar	9758E
Polyurethane	6,4 mm	1,8 m	2 800 bar	9767E	Rubber, Wire-braid	6,4 mm	3,7 m	2 800 bar	9759E
Polyurethane	6,4 mm	1,8 m	2 800 bar	9764E*	Rubber, Wire-braid	6,4 mm	6,1 m	2 800 bar	9760E
Polyurethane	6,4 mm	2,4 m	2 800 bar	9768E	Rubber, Wire-braid	6,4 mm	9,1 m	2 800 bar	9761E
Polyurethane	6,4 mm	3,1 m	2 800 bar	9769E	Rubber, Wire-braid	6,4 mm	15,3 m	2 800 bar	9762E
Polyurethane	6,4 mm	3,7 m	2 800 bar	9770E	Rubber, Wire-braid	9,5 mm High Flow	0,9 m	2 800 bar	9733E
Polyurethane	6,4 mm	6,1 m	2 800 bar	9771E	Rubber, Wire-braid	9,5 mm High Flow	1,8 m	2 800 bar	9776E
Polyurethane	6,4 mm	15,3 m	2 800 bar	9772E	Rubber, Wire-braid	9,5 mm High Flow	3,1 m	2 800 bar	9777E
Polyurethane	6,4 mm	22,9 m	2 800 bar	9750E	Rubber, Wire-braid	9,5 mm High Flow	4,6 m	2 800 bar	9734E
Polyurethane	6,4 mm	30,5	2 800 bar	9751E	Rubber, Wire-braid	9,5 mm High Flow	6,1 m	2 800 bar	9778E
Polyurethane	9,5 mm High Flow	1,8 m	2 100 bar	9780E	Rubber, Wire-braid	9,5 mm High Flow	9,1 m	2 800 bar	9735E
Polyurethane	9,5 mm High Flow	3,1 m	2 100 bar	9781E	Rubber, Wire-braid	9,5 mm High Flow	12,2 m	2 800 bar	9736E
Polyurethane	9,5 mm High Flow	6,1 m	2 100 bar	9782E	Rubber, Wire-braid	9,5 mm High Flow	15,3 m	2 800 bar	9779E
Polyurethane	9,5 mm High Flow	15,3 m	2 100 bar	9783E	Non-Conductive	6,4 mm	1,8 m	2 800 bar	9773
Rubber, Wire-brai	id 6,5 mm	0,9 m	2 800 bar	9755E	Non-Conductive	6,4 mm	3,1 m	2 800 bar	9774
					Non-Conductive	6,4 mm	6,1 m	2 800 bar	9775
Rubber, Wire-brai	id 6,5 mm	1,8 m	2 800 bar	9756E					
Rubber, Wire-brai	id 6,5 mm	1,8 m	2 800 bar	9754E*	CE				

NOTE: Polyurethane hoses not recommended for use where heat or weld splatter conditions exist. *Furnished with 9798 hose half coupler and 9800 dust cap.

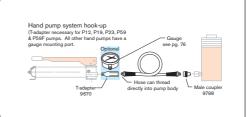
Couplers

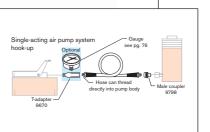
Standard & Flush-Face

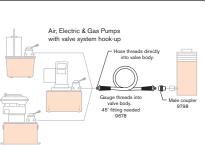
HYDRAULIC

ACCESSORIES









CYLINDER AND HOSE COUPLERS

Designed for use up to 700 bar with hydraulic jacks, cylinders, etc. They are the threaded union type for interchanging cylinders in seconds. Each half is valved 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, 3/8" NPTF. (Includes two 9800 dust caps.) No. 9798 - Male (hose) half coupler (less hose half dust cap), 3/8" NPTF. No. 9796 - Female (cylinder) half coupler

with No. 9800 dust cap, 3/8" NPTF. No. 9796-V - Same as 9796, but with Viton

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**

High flow, no-spill, push-to-connect couplers 3/8" NPTF half couplers. Wt., 0,1 kg. with a precision ball for a tight shutoff when with locking collar and flush face designed for high pressure applications. The flushface 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 700 bar operation. Designed to permit high oil flow.

No. 9792 - Female (cylinder) half quick coupler only. Wt., 0.1 kg.

No. 9793 - Male (hose) half quick coupler only. Wt., 0,1 kg.

No. 9794 - Complete quick coupler (male and female). Dust caps not included. Wt.,0,2 kg.

HYDRAULIC COUPLER DUST CAP

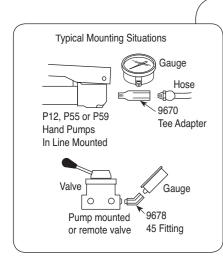
Dust cap fits either male or female half couplers.

No. 9800 - Dust cap. For male or female

Gauges

Analog & Digital







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.
- Have ¹/₄" NPT connections.

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.
- 1,8 m signal input cable connects to back of display unit.

FEATURES

- Pressure values are displayed on large red LEDs in 0,7 bar 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
- High and low limit relays are rated to 5 amps at 115 volts.
- Operating temperature of -18 to 60°C for the electronic display and -29 to 82°C 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 selfdiagnostic routine.

Digital Pressure Gauge

No. DG100 - Digital pressure gauge, pressure range 0-700 bar. Note: Serviced only at factory. Wt.,1 kg.

No. DG100B - Digital pressure gauge. pressure range 0-700 bar. Note: Serviced only at factory. Wt., 1 kg.

Digital Pressure Gauge Accessories

No. 420778 - Gauge stand for DG100. Has angled base mounting to hold gauge at a convenient viewing angle. Wt., 0,5 kg.

No. 37045 – Auxiliary power cord for use with any 12 or 24V battery. Wt., 0,1 kg. Caution: For use on negative ground systems only.

Standard Pressure Gauge Accessories

No. 9046 - Silicone fill kit. 0,2 kg Requires one bottle to fill 100 mm gauge; four bottles to fill 150 mm gauge.

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

Gauges

Analog & Digital



420778	No. 2005 Biograph Manager Phild Williams
37045	9046

			STANDARD PRESSU	RE GAUGE ORDERING IN	FORMATION	N .	
			Major	Minor	Silicone	Use With	Gauge
Face Dia.	psi/Bar	Tons	Graduations	Graduations	Filled	Cylinder Series	No.
63,5 mm	0-10,000 /.0-690	-	2000 psi, 100 Bar	200 psi, 20 Bar	Yes	All	9040E
100 mm	0-10,000 /.0-690	-	1000 psi, 100 Bar	100 psi, 10 Bar	Yes	All	9052E
		0-17.5,		200 psi, .5 Ton on			
100 mm	0-10,000 /.0-690	0-30 and	2000 psi, 5 Ton	30, 50 Ton Scales; .2	Yes	RT172, RT302, RT503	9059E
		0-50		Ton on 17.5 Ton Scale			
100 mm	0-10,000 /.0-690	0-5	2000 psi, 1 Ton	200 psi, .1 Ton	Yes	C & RLS	9053E
100 mm	0-10,000 /.0-690	0-10	2000 psi, 1 Ton	200 psi, .1 Ton	Yes	C, RD, RH, RLS & RSS	9055E
100 mm	0-10,000 /.0-690	0-25	2000 psi, 5 Ton	200 psi, .5 Ton	Yes	C & RD	9063E
100 mm	0-10,000 /.0-690	0-30	2000 psi, 5 Ton	200 psi, .5 Ton	Yes	RH†, RLS & RSS	9065E
100 mm	0-10,000 /.0-690	0-50	2000 psi, 5 Ton	200 psi, .5 Ton	Yes	RH†, RLS & RSS	9067E
100 mm	0-10,000 /.0-690	0-55	2000 psi, 5 Ton	200 psi, .5 Ton	Yes	C, R, RA & RD	9069E
100 mm	0-10,000 /.0-690	0-60	2000 psi, 5 Ton	200 psi, 1 Ton	Yes	RH	9071E
100 mm	0-10,000 /.0-690	0-75	2000 psi, 5 Ton	200 psi, 1 Ton	Yes	C, RLS & RD8013	9073E
100 mm	0-10,000 /.0-690	0-100	2000 psi, 10 Ton	200 psi, 1 Ton	Yes	C, R, RA, RD, RH,	9075E
						RLS†, RSS† & RT1004†	
100 mm	0-10,000 /.0-690	0-150	2000 psi, Initial	200 psi, 2 Ton	Yes	C, R, RD & RLS	9077E
			10 Then 20 Ton				
100 mm	0-10,000 /.0-690	0-200	2000 psi, 20 Ton	200 psi, 2 Ton	Yes	R, RD & RH†	9079E
			10 Then 20 Ton				
150 mm	0-10,000 /.0-690	0-690	1000 psi, 100 Bar	100 psi, 10 Bar	No	All	9089

† The tonnage scale on the gauge is based on a different effective area. A slight error in tonnage reading will occur relative to the different effective area. Note: Gauge 9040-9079 are available with readings in bar. To order, add the letter "E" to the part number (example 9075E).

HYDRAULIC ACCESSORIES

Fluids HYDRAULIC

Standard, Flame Out®, Biodegradable and Low Temp.

Oil

Description

Standard Oil

Standard Oil

Standard Oil

Standard Oil

Flame-Out®

Flame-Out®

Biodegradable Biodegradable Qty.

0,91

3,81

9,51

208 I

3.81

9,51 3,81

9,51



	Low Temp.		3,8 I							
		Spec. Gravity		SI	PECIFICATIO	DNS	Vis	cosity		Foam
Description	Grade (ASTM)	at 16°C (kg / l)	Color (ASTM)	Flash Point	Fire Point	Pour Point	SUS @ (38°C)	SUS @ (99°C)	Viscosity Index	Test (ASTM)
Standard Oil	215	0.88	2.0	204°C	221°C	-34°C	215	48	100 min.	Pass
Flame-Out®	220	0.91	Light Amber	260°C	288°C	-26°C	220	55	140 min.	Pass
Biodegradable	_	0.92	2.0	224°C	NA*	-30°C	183	53	213 min.	Pass
Low Temp.	_	0.87	6.5 (Red)	180°C	204°C	-45°C	183	52	190 min.	Pass

*Not available.

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 antisludge additives.
- Provides fire resistant protection.
- Provides maximum lubrication and heat transfer.
- 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 • Offers a wider operating temperature biodegradable and non-toxic. Can be used with all Power Team pumps, cylinders, valves and other accessories using standard seals. Depending on the or to order a MATERIAL SAFETY DATA 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 -7 °C or above 71°C. Recommended storage temperatures not below -23°C or above For additional technical information

SHEET call **1-800-477-8326**

Low-Temperature Oil

Provides smooth, reliable operation in the coldest climate conditions.

(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.)

Manifolds Remote and Pump Mounted 2" Square 1¹/₂" Thick 3/8" NPTF 21/2" Hex x B B 11/2" Thick 9635 3/₆" NPTF 3/8" NPTF (not shown) No. (mm) (mm) (mm) 9.5 mm Ø THRU (MOUNTING HOLFS) 9627 406,4 114,3 38,1 (4 PLACES) (REF.) 9648 177,8 38,1 38,1 (MOUNTING HOLES) 3/8" NPTF 3/8" NPTF (4 PLACES) FEMALE (6 PLACES) 25,4 mm (REF.) 82.5 mm 87.6 mm ₹ 76.2 mm > 82,5 mm (RFF.)

No. 9691 - "Y" Manifold

Extremely useful when connecting two hydraulic cylinders to a single line. Has three 3/8" NPTF ports. Wt. 0,45 kg.

No. 9634 - Manifold block

This manifold is for multiple-cylinder installations, has four 3/8" NPTF ports and two 1/4" mounting holes. Wt. 0,7

No. 9635 - Manifold block

This hex-shaped manifold offers extra versatility with six 3/8" NPTF ports and valves. This manifold block is subplate six 3/8" NPTF ports. Wt. 7,4 kg two 1/4" mounting holes. Wt. 0,9 kg.

No. 9617 - Manifold block

When a multiple-cylinder installation is required, this manifold is invaluable. multiple-cylinder systems. Wt. 1.4 kg.

No. 9648 - Manifold block

This 178 mm long manifold block has

seven 3/8" NPTF ports and two 6.4 mm 9642 AND 9644 MANIFOLD BLOCKS mounting holes. Wt.1,2 kg.

No. 9627 – Manifold block

This 406,4 mm long manifold block allows you to mount the 9575 or 9596 valves without interference. Has seven 3/8" NPTF ports and two 6,4 mm mounting holes. Wt. 2,7 kg.

No. 9626 - Pump mounted manifold

Converts pumps with pump mounted valves for use with remote mounted mounted on the pump cover plate and provides 3/8" NPTF pressure and return ports. Maximum recommended flow rate is 19 I/min. Note: If used on PE30 or PG30 series pump, 12,7mm Has six 3/8" NPTF ports to handle larger longer mounting screws are required. Order four (4) No. 11956 screws separately.

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. 3,7 kg No. 9644 - Manifold with four needle valves for control of four cylinders. Has

> Power Team

HYDRAULIC ACCESSORIE

Fittings

700 bar Power Team fittings: All applications.

=======	9190	Hyd. tubing. 3/8" 0.D. x .065" wall, 15,3 m. (10 pieces 1,53 m long.) Wt. 5,5 kg.
	9670	Tee adapter. For installing gauge between pump and hose coupling. Has 1/4" and 3/8" NPTF female and 3/8" NPTF male ports. Wt. 0,2 kg.
	9671	Double tee adapter. Permits use of more than one cylinder in series with one pump. Three 3/8" NPTF female ports. Wt. 0,5 kg.
	9672	Service tee. Two 3/8" NPTF female internal, one 3/8" NPTF male external. Wt. 0.3 kg.
	9673*	Swivel connector. 3/8" NPSM male, 1/4" NPSM female. Wt. 0,1 kg.
	9674	Male connector. 43 mm long, 1/4" x 3/8" NPTF. Wt. 0,1 kg.
	9675*	Swivel connector. 3/8" NPTF male, 3/8" NPSM female. Wt. 0,1 kg.
	9676*	Swivel connector. 1/4" NPTF male, 3/8" NPSM female. Wt. 0,1 kg.
	9677*	45° swivel connector. 3/8" NPTF male, 3/8" NPSM female. Wt. 0,1 kg.
	9678	45° fitting. Used when mounting gauge at an angle on connection such as 9670. Male and female 1/4" NPTF ends. Wt. 0,1 kg.
	9679	Connector. 1/4" NPTF female and 3/8" NPTF male. Wt. 0.1 kg.
	9680	Coupling. Both ends 3/8" NPTF female. Wt. 0.1 kg.
	9681	Street elbow. Male and female 3/8" NPTF ends. Wt. 0,1 kg.
	9682	Male connector. 43 mm long, 3/8" NPTF

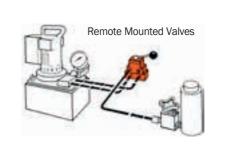
		9683	Male connector. 57 mm long, 3/8" NPTI male ends. Wt. 0,1 kg.
		9684	Male connector. 57 mm long, 1/4" NPTI male ends. Wt. 0,1 kg
F		9685	Coupling. 1/4" NPTF female and 3/8" NPTF female. Wt. 0.1 kg.
	+	9686	90° elbow. 3/8" NPTF female ends. Wt. 0.2 kg.
3		9687	Pipe plug. Heat-treated, 3/8" NPTF. Wt. 0.1 kg.
en		9688	Pipe plug. Heat-treated, 1/4" NPTF. Wt. 0.1 kg.
		9689	Connector. 1/4" NPTF male and 3/8" NPTF female. Wt. 0.1 kg.
е		9690	Male connector. 43 mm long, 1/4" NPTI male ends. Wt. 0.1 kg.
_		9692	Straight connector. 3/8" tube x 3/8" male NPTF. Wt. 0.1 kg.
4"		9693	90° elbow. 3/8" tube x 3/8" male NPTF Wt. 0.1 kg.
8"		9694	45° elbow. 3/8" tube x 1/4" male NPTF Wt. 0.1kg.
"		9695	Tee. 3/8" tube. Wt. 0.1 kg.
7		9696	Male run tee. 3/8" tube x 1/4" male NPTF. Wt. 0.1 kg.
_		9697	Male branch tee. 3/8" tube x 1/4" male NPTF. Wt. 0.1 kg.
0.		9698	Cross. 3/8" tube. Wt. 0.2 kg.
		9699	45° gauge fitting. 3/8" NPTF male and female, and 1/4" NPTF female at 45°. Wt. 0.3 kg.
:		9705	Fitting, swivel. 3/8" NPTF male to 3/8" NPTF female. 90° fitting with internal 370 micron screen. May be rotated 360° about male thread axis.
	•	1	1

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 700 bar unless otherwise noted.

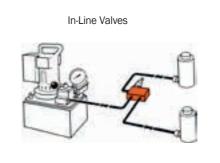
* CAUTION: On part numbers 9673, 9675, 9676 and 9677 the female swivel end of these adapters is a straight pipe thread (NPSM) with a 30° seat. All male pipe fittings that are used with these female swivel adapters must have an internal 30° seat in order to effect a proper seal. All Power Team male fittings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



Valve selection chart



Order No.	Page No.	*Cylinder Application	Operation	Valve Type	Volt	Advance/ Return	Advance/ Hold Return	Posi- Check [®] Feature
9508	131	S.A & D.A.	Manual	4-way, 3 Pos. Closed Center	_	no	yes	yes
9509	131	S.A. & D.A.	Manual	4-way, 3 Pos. Tandem Center	_	no	yes	yes
9514	131	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	115	no	yes	yes
9524	130	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	230	no	yes	no
9525	131	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	230	no	yes	yes
9526	131	S.A.	Solenoid	3-way, 2 Pos.	230	no	yes	no
9554	130	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	24	no	yes	no
9555	131	D.A.	Solenoid	4-way, 3 Pos. Tandem Center	24	no	yes	yes
9556	131	S.A.	Solenoid	3-way, 2 Pos.	24	no	yes	no
9559	131	S.A.	Solenoid	3-way, 2 Pos.	115	no	yes	no
9593	130	S.A. & D.A.	Solenoid	3/4-way, 2 Pos.	115	no	yes	no
9595	130	S.A. & D.A.	Air	3/4-way, 2 Pos.	_	no	yes	no
		In-Lin	e Valves					



						A.L.,				
Order No.	r Page *Cylinder No. Application Operation		Valve Type	Volt	Advance/ Return	Advance/ Hold Return	Posi-Check [®] Feature			
9575	132	S.A.	Manual	Shut-Off Valve	_	_	_	_		
9580	133	S.A.	Automatic	One-way Check Valve	_	_	_	_		
9581	133	S.A. & D.A.	Automatic	Pilot Op. Check Valve	_	_	_	_		
9596	132	S.A.	Manual	Load Lowering Valve	_		_	_		
9597	132	S.A. & D.A.	Automatic	Sequence Valve	_	_	_	_		
9608	132	S.A. & D.A.	Automatic	Pressure Reducing Valve	_	_	_	_		
9623	133	S.A. & D.A.	Automatic	Pressure Relief Valve	_		_	_		
9631	133	S.A. & D.A.	Automatic	Metering Valve	_	_	_	_		
9633	133	S.A. & D.A.	Automatic	Pressure Regulator Valve	_	_	_	_		
9720	132	S.A. & D.A.	Automatic	Counter Balance Valve	_	special	_	_		
9721	132	S.A. & D.A.	Automatic	Counter Balance Valve	_	special	_	_		
RV21278	133	_	Automatic	Relief Valve	_	_	_	_		

[&]quot;S.A." represents single-acting cylinders, "D.A." represents double-acting cylinders. For pump-mounted valves, see pages 51-57.

>Power Team®

male ends. Wt. 0,1 kg.

Valves HYDRAULIC REMOTE MOUNTED

700 bar. 1/4" norts 19 1 / min max flow

3/4-way/2-position solenoid and air actuated valves

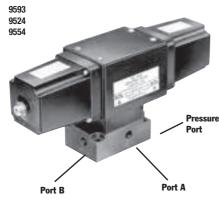
RECESSORIES

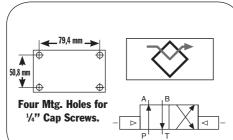
IVDERULLE

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.

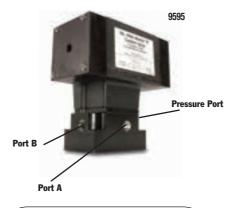


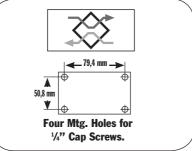


Operation with double-acting cylinder: Port "A" is connected to "advance" port of cylinder, oil port "B" connects to cylinder "return" port. Solenoid is energized to position "A," oil port "A" becomes pressurized to extend cylinder piston. The opposite happens when solenoid "B" is energized. Valve does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

NOTE: When using more than one valve on required). Wt.,5,2 kg. a pump, the tank port may require a check NOTE: Valves above are shipped without 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., 7 kg.

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

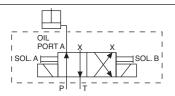
No. 9554 - Same as 9593 except with 24 volt. 50/60 Hz.

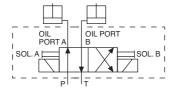
No. 9595 - Same as 9593 except is air operated (minimum of 3,5 bar air pressure

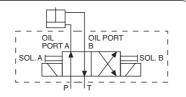
controls. The 9524, 9554 and 9593 can be used with the 304718 remote hand control (see page 106). The 9595 can be used with the 209593 remote hand control (see page 106).

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 35 bar.



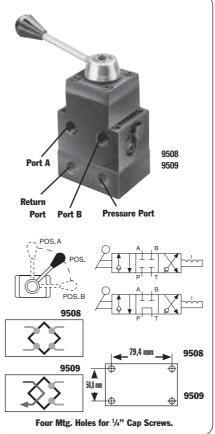




1. To actuate one single-acting cylinder. 2. To actuate two single-acting cylinders. NOTE: Valves above are shipped without control switch. Use 202777 remote hand switch (see page 116).

3. To actuate one double-acting cylinder.

A 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 132) in conjunction with the directional valve used in your application.



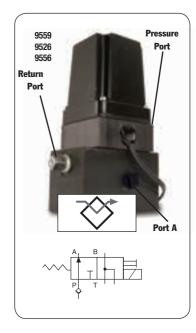
4-way/3-position (closed center) and (tandem center) manual valves with Posi-Check® Application: Single- or double-acting cylinder. When used with single-acting cylinders,

one port must be plugged. For doubleacting cylinders, either port can be used for "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. IMPORTANT: A 9580 in-line check valve (see The 9509 has "advance," "hold" and "return" with tandem center (cylinder ports are blocked, pump remains running). Both valves an outlet check valve. 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., 2.9 kg.

No. 9509 - Same as 9508, except is tandem center.



3-WAY/2-POSITION SOLENOID VALVE

Application: Single-acting cylinders. Actuation: Solenoid operated, 115 volt,

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 (7 bar back pressure maximum) back to the

page 123) must be installed in the "pressure" Application: Double-acting cylinders. port if the supply pump is not equipped with **Actuation:** Solenoid operated, 115 volt, 50/60

No. 9559 - 3-way/2-position solenoid valve, 115 volt 50/60 Hz. Includes a remote mounting subplate. Wt., 4,4 kg.

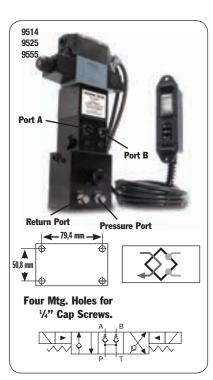
No. 9526 - Same as 9559 except for 230 volt. 50/60 Hz.

No. 9556 - Same as 9559 except for 24 volt, and oil is directed from pump to reservoir. 50/60 Hz

NOTE: Valves above are shipped without control switch. Use 202777 remote hand switch (see page 106).

Valves HYDRAULIC REMOTE MOUNTED

700 bar. 3/8" norts 19 1 / min max flow



4-way/3-position (tandem center) solenoid valve with Posi-CHeck®

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

NOTE: Do not allow return tank pressure to exceed 35 bar at the valve.

No. 9514 – 4-way/3-position (tandem center) solenoid valve, 115 volt, 50/60 Hz. Remote hand control included. Wt., 4,6 kg.

No. 9525 - Same as 9514 except for 230 volt, 50/60 Hz. A CAUTION: To prevent sudden, uncontrolled descent of a load as it is being lowered.

No. 9555 - Same as 9514 except for 24 volt,

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

use a No. 9596 Load Lowering Valve or No. 9720 Counter Balance Valve (see page 132) in conjunction with the directional valve used in your application. A 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 35 bar.

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 830 bar. Operating pressure is 700 bar and max. flow rate is 19 I /min.

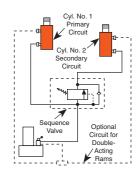
No. 9596 - Load lowering valve. Wt., 1 kg.

Port A 9597 Port P Pressure **%" NPTF** Port B Secondary

3/8" NPTF

RECESSORIES

HYDRAULLE

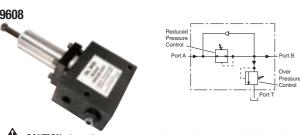


SEQUENCE VALVE

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 35 to 550 bar with adjustment screw; factory preset at 70 bar. Has 3/8" NPTF ports.

No. 9597 - Pressure control sequencing valve. Wt., 2,5 kg.



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

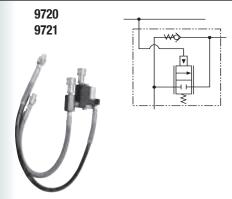
PRESSURE REDUCING VALVE

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 70 to 350 bar at outlet port "R" (secondary).

Has 1/4" NPTF ports.

No. 9608 - Pressure reducing valve. Wt., 2,6 kg.



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 1,9 I/min. and cylinder ratios of 3 to 1.

No. 9720 - Counter balance valve, including two male and two female half two hydraulic hoses, fittings and dust caps. Wt., 4,5 kg.

No. 9721 - Same as 9720, but does not include couplers, hoses, fittings and dust caps. Wt.,4,2 kg.

A CAUTION: The 9720 patented counter balance valve has a pilot pressure as high as 210 bar. 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

A 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

Check 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., 0,6 kg.

Application: Permits flow of hydraulic oil in one direction only.

No. 9580 - Check valve with 3/8" NPTF male ends. Wt., 0,2 kg.



9575

9580



Pilot operated check valve

Operation: Installs right in hydraulic line.

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 4,1 bar. Required pilot pressure is approximately 16% of checked system pressure.

No. 9581 - Pilot operated check valve with 3/8" NPTF ports. Wt., 1,7 kg.



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 70 to 700 bar. Valve is spring-loaded and direct-acting.

No. 9623 - Pressure relief valve with 3/8" NPTF ports. Wt., 0,9 kg.



Metering valve

Application: For systems using large cylinders or extended lengths of hydraulic hose.

Operation: Controls surges by restricting flow if it exceeds 26,5 I / min. 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., 0.1 kg.





AGGESSOBIES

"In-line" pressure regulator valve

Application: Single- or double-acting cylinders. Permits adjusting operating pressures at various values below relief valve setting of pump.

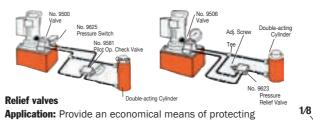
Operation: Regulator valve is easily adjusted to maintain pressures between 20 and 700 bar. Maintains a given pressure setting within 3% over repeated cycles. Flow range is 0,3 l/ min to 23 l / min.

 $\textbf{No. 9633} \ \ - \ \text{In-line pressure regulator valve with two 3/8" NPTF inlet ports, one 1/8" NPTF tank port}$ and 1 m drain line kit. Wt., 0,9 kg.

Simply turn the handle clockwise to increase the pressure setting, counter-clockwise to reduce pressure. Note: 1 m Drain Line Kit is included.







an hydraulic circuit against over pressurization. **Operation:** These factory preset valves are designed for maximum flow rate of 19 L/min.

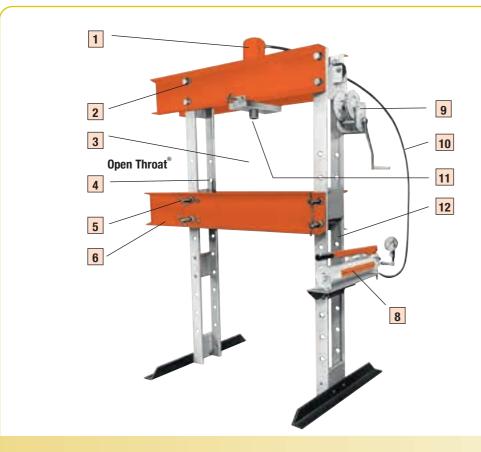
Furnished with 1/8" NPTF male port. All valves weigh 0.1 kg. See chart to the right for ordering information.

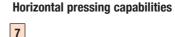
RV21278 Series

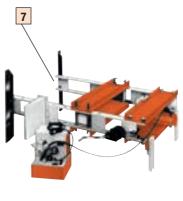
Valve	Pressure	Valve	Pressure
Order No.	Setting (bar)	Order No.	Setting (bar
RV21278	697/738	RV21278-52	366/407
RV21278-6	41/44	RV21278-55	386/428
RV21278-10	62/69	RV21278-57	400/442
RV21278-15	103/117	RV21278-60	421/462
RV21278-20	131/152	RV21278-65	455/497
RV21278-28	186/207	RV21278-70	490/531
RV21278-30	207/235	RV21278-75	524/566
RV21278-32	214/228	RV21278-80	559/600
RV21278-35	241/262	RV21278-83	580/621
RV21278-40	283/310	RV21278-86	600/642
RV21278-43	304/331	RV21278-88	614/662
RV21278-48	338/366	RV21278-90	628/669
RV21278-50	352/393	Preset - Non-Se	orviocable

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

SHOP MAINTENANCE







ALL SHOP PRESSES AVAILABLE IN CE

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 THROAT® FEATURE on 25 ton press provides additional work area by

mounting cylinder on outside is standard on all electric for C-frame advantage.

7 FRAMES CAN BE USED **HORIZONTALLY** for pressing jobs on extra-long shafts (see control on pumps equipped photo on next page).

8 ELECTRIC, AIR OR HAND **HYDRAULIC PUMPS** are available. All are standard Power Team pumps. CE approved electric pumps are standard on all presses. **Externally adjustable relief** valve for precise operator

control of working pressure

pumps except PE10 and PE17 series.

24 volt hand switch for remote with solenoid valves.

9 ONE-MAN OPERATION for bed adjustment. Winch unit quickly raises or lowers bed to desired height. Selflocking winch mechanism prevents bed from dropping when handle is released.

10 9.5 MM I.D. HOSE on spring return cylinders on heavy-duty presses provides up to six times faster cylinder return than standard 6,4 mm 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 quarding 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 217 for additional information.

C FRAME...136





H FRAME ...142 80-200 TON **ROLL BED**

ACCESSORIES...14





LOADROTORS®





- Can be bench mounted or on optional pedestal base.
- Bench mount requires less than 1.4 sq. m. of space; on optional pedestal, only 4 sq.m. of floor space is needed.
- "Open Throat" design makes loading and unloading of work easy.
- Cylinder head adjusts to three convenient working positions, providing up to 514 mm of "daylight."
- Hydraulic cylinder delivers a 159 mm stroke, 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., 34,5 kg.

• Ideal for small pressing jobs; repairing small motors, armatures, removing and installing gears, bearings, other press-fit

• Bench press has 391 x 457 mm work area; floor press bed height is adjustable from 127 mm to 1.041 mm with horizontal "daylight" of 553 mm.

- Choices of power sources: single-speed hand pump, electric/hydraulic or air/ hydraulic.
- Hydraulic gauges, hoses and fittings included.

PUMP ELECTRICAL SPECIFICATIONS

PE10 Series - 220 volt, 50 cycle, single phase.





Shop Press H FRAME

10 Tons



- G → [

DIMENSIONS													
	A	В	C	D	E	F	G	Н	J	K	L	Bench Space	Floor Space
Frame	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
Bench	622	841	641	182	391		559	279	102	40	102	182 x 641	
Floor	1.499	1.718	641	711	127-1.041	152	559	63,5-470*	102	40	102		711 x 730

*Lateral head movement

	ORDERING INFORMATION													
	Cap.	Type of		Cylinder	Order	Speed (mr	n./min.)†††	Туре	Pump F	Prod. Wt.				
Frame	(tons)	Cyl. Used	Stroke	Model	No.	Advance	Pressing	Pump	Model †	(kg)				
222481 Bench	10	Single-Acting	257	C1010C	SPM1010	1,5 m	nm/stroke	Hand	P55	41,2				
222480 Floor	10	Single-Acting	257	C1010C	SPH1010	1,5 m	nm/stroke	Hand	P55	77,5				
222480 Floor	10	Single-Acting	257	C1010C	SPE1010	55,7	5,1	Elec. ††	PE172-E220	79,3				
222480 Floor	10	Single-Acting	257	C1010C	SP1010A	93,7	7,6	Air	PA9H	78,1				
222480 Floor	10	Double-Acting	254	RD1010	SPE1010D	55,7	5,1	Elec. ††	PE174-E220	87,0				

- † 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 7 bar and 700 bar pump specifications. Actual speeds may vary with operating conditions.

PRESS ACCESSORIES Page 144-145

Internal Thread	The stroke of th
	₩ B → H

DIMENSIONS C D E F G H (Cyl. Retracted) J K

1.972 622 610 1.057 914 152 127 260, 387, 514 165 318 $1^{1}/_{2}$ - 16 203 1.092 51 178

((

ORDERING INFORMATION Prod.Wt. Capacity Type Cyl. **Order** Speed** Stroke (kg) (tons) Cyl. Used Model No. Advance Model (mm) Pressing Pump **SPM256C*** 3,3 mm/ 159 C256C 0,8 mm/ P59 108 Single-Hand stroke Acting

* SPM256C does not include No. 60846 pedestal base.

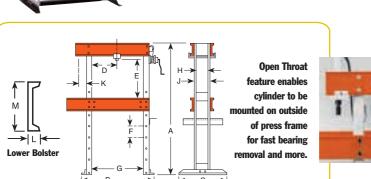
** Typical performance based on pump specifications. Actual speeds may vary with operating conditions

>Power Team

SHOP EQUIPMENT



SPE2514



OPEN THROAT PRESSES

Hydraulic gauge and

hydraulic fittings are

included with 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 throat 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 159 mm on economy

FEATURES OF BOTH OPEN THROAT 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 - 0,37 KW, 220 volt, 50 cycle, single phase.



	DIMENSIONS												
		C				G	Н	J	K	L	М	Floor Space	
				(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
1.727	1.092	711	76-737	175-1.102	114	813	140	165	178	64	203	1.092 x 711	
*Lateral hea	d movement												

ORDERING INFORMATION												
Cap. (tons)	Type of Cylinder Used	Stroke (mm)	Cylinder Model	Order No.	Speed (m Advance	m/min.)†† Pressing	Type Pump	Valve Type	Pump‡ Model	Prod.Wt. (kg)		
"Open Throat" presses												
25	Single-Acting	362	C2514C	SPA2514	249	30	Air	2-Way Foot	PA6	309		
25	Single-Acting	362	C2514C	SPM2514	12,4 mm/	0,8 mm/	Hand	Load -	P159	314		
					stroke	stroke		Release				
25	Single-Acting	362	C2514C	SPE2514	1.184	84	Elec.	2-Way††	PE172-E220	301		
25	Single-Acting	362	C2514C	SPE2514S	1.321	102	Elec.	3-Way†	PE172S-E220	344		
25	Double-Acting	362	RD2514	SPE2514DS	1.321	102	Elec.	4-Way†	PE174S-E220	357		
"Econ	omy" presses											
25	Single-Acting	159	C256C	SPA256	249	30	Air	2-Way Foot	PA6	197		
25	Single-Acting	159	C256C	SPM256	3,0 mm/	0,8 mm/	Hand	Load -	P59	205		
					stroke	stroke		Release				
25	Single-Acting	159	C256C	SPE256	1.184	84	Elec.	2-Way††	PE172-E220	210		

- † Solenoid valve with 12 volt remote control hand switch.
- †† Holds pressure with motor shut off. Also has an automatic dump setting. Furnished with a 3.1m remote motor control.
- ††† Typical performance based on 7 bar and 700 bar pump specifications. Actual speeds may vary under operating conditions.
- ‡ Pump standard with press. Other Power Team pumps can be substituted.
- dBA at idle and 700 bar: PE172-67/81 dBA; measured at 0,9 m distance, all sides.

- · Full off-center pressing at full rated capacity across width of upper frame without buckling or bending.
- Maximum "daylight" is 1067 x 914 mm, making positioning of even bulky work pieces
- · 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.

PUMP ELECTRICAL SPECIFICATIONS

PE17 Series - 0,4 Kw, 220 volt, 50 cycle, single phase.

 ϵ

Press H FRAME

55 Ton

Hydraulic gauge and hydraulic fittings are included with presses.

No. SF50 - Straightening fixtures for use with 55-ton shop or 80-ton Roll-Bed® presses (2 ea.). Wt., 47,2 kg. Not part of press, order EQUIPMENT

Lower Bolste

separately.

						DIMENSIO	DNS				
		C				G	Н	J	L	M	Floor Space
				(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1.829	1.232	914	83-832	152-1.067	152	914	171	203	76	305	1,232 x 914

TO MANAGEMENT

SPE5513S

*Lateral head movement

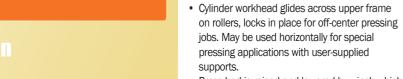
ORDERING INFORMATION												
Cap. (tons)†	Type of Cylinder Used	Stroke (mm)	Cylinder Model	Order No.	Speed (m Advance	m/min.)†† Pressing	Type Pump	Valve Type	Pump‡ Model	Prod.Wt. (kg)		
55	Single-Acting	159	C556C	SPA556	114	12,7	Air	2-Way Foot	PA6	318		
55	Single-Acting	159	C556C	SPM556	5,8 mm/	0,4 mm/	Hand	Load-	P159	323		
					stroke	stroke		Release				
55	Single-Acting	337	C5513C	SPM5513	18,9 mm/	0,7 mm/	Hand	2-Way	P460	435		
					stroke	stroke						
55	Single-Acting	159	C556C	SPE556	551	38	Elec.	2-Way++	PE172-E220	333		
55	Single-Acting	337	C5513C	SPE5513	551	38	Elec.	2-Way++	PE172-E220) 444		
55	Single-Acting	337	C5513C	SPE5513S	620	48	Elec.	3-Way†	PE172S-E22	0 478		
55	Double-Acting	333	RD5513	SPE5513D	551	38	Elec.	4-Way	PE174-E220	450		
55	Double-Acting	333	RD5513	SPE5513DS	1.679	137	Elec.	4-Way†	PE554S-E22	0 505		

- * 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 3,1 m remote motor control.
- ††† Typical performance based on 7 bar and 700 bar pump specifications. Actual speeds may vary with operating conditions.

 ‡ Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 700 bar: PE172—67/81; measured at 0,9 m distance,

PRESS ACCESSORIES

Page 144-145



SF150

No. SF150 - Straightening fixtures for use with 100-ton

shop press and 100-, 150-, and 200-ton RollBed® presses

(2 ea.). Wt., 89 kg. Not part of press, order separately.

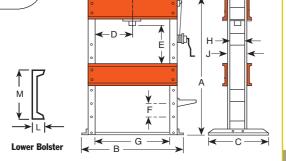
- · Press bed is raised and lowered by winch which locks in place for insertion of bed retaining pins. Upper bolster can be lowered 203 mm for convenient positioning on repetitive jobs.
- Generous "daylight" of 1.067 x 1.270 mm accommodates bulky work pieces, uprights are placed for easy side entry of bars or shafts for straightening or bending.
- Choice of single- or double-acting cylinder. Hydraulic pump options include: 2-speed hand pump with large 7,6 I reservoir, PE172 electric/ hydraulic pump or "PQ" series "Quiet" electric/ hydraulic pump with low noise level.



ELECTRICAL SPECIFICATIONS

PE17 Series - 0,4 KW, 220 volt, 50 cycle,

PQ120 Series - 2,2 kW, 380 V, 50 cycle, three phase.





DIMENSIONS													
			C				G	н	1	L	M	Floor Space	
					(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
1	L.962	1.626	914	178-1.092	51-1.067	203	1.270	203	254	86	381	914 x 1.988	

*Lateral head movement

Cap.	Type of	Stroke	Cylinder	ORDERING Order		TION nm/min.)††	Туре	Valve	Pump‡	Prod. Wt.
(tons)†	Cyl. Used	(mm)	Model	No.	Advance	Pressing	Pump	Type	Model	(kg)
100	Single-Acting	260	C10010C	SPM10010	9,0 mm/	0,3 mm/	Hand	3-way	P460	769
					stroke	stroke				
100	Single-Acting	260	C10010C	SPE10010	889	74	Elec.	3-way	PE552-E220	813
100	Single-Acting	260	C10010C	SPE10010R	292	20	Elec.	2-way	PE172-E220	766
100	Double-Acting	333	RD10013	SPE10013DS	889	147	Elec.	4-way*	PQ1204S-E38	0 854

- † Frame is shipped assembled. *Solenoid valve with 24 volt remote control hand switch.
 †† Typical performance based on 7 bar and 700 bar pump specifications. Actual speeds may vary under operating conditions.
- ‡ Pump standard with press. Other Power Team pumps can be substituted.
 dBA at idle and 700 bar: PE172—67/81; PQ120—73/78. Measured at 0,9 m distance, all sides.

- Standing 2,3 m tall, these giants handle the really big jobs. May be used horizontally for special pressing applications with usersupplied 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 279 mm 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.

PUMP ELECTRICAL SPECIFICATIONS

PQ120 Series - 2,24 KW, 380 volt, 50 cycle, three phase.

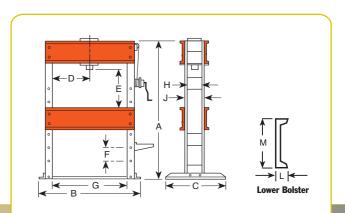
H Frame Presses

150-200 Ton









		C				G	Н	J	L	M	Floor Space
		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm <u>)</u>
2.286	1.803	1,118	279-991	228-1.111	279	1.270	318	381	105	457	1.117 x 1.803

*Lateral head movement

ORDERING INFORMATION											
	Capacity	Type of	Stroke	Cylinder	Order	Speed (n	nm/min.)††	Type	Valve	Pump	Prod. Wt.
	(tons)†	Cylinder Used	(mm)	Model	No.	Advance	Pressing	Pump	Type	Model***	(kg)
	150	Double-Acting	333	RD15013	SPE15013DS	610	99	Electric	4-way**	PQ1204S-E380	1.366
Ī	200	Double-Acting	333	RD20013	SPE20013DS	457	74	Electric	4-way**	PQ1204S-E380	1.484
	+ Everes	in abinuad assemble									

- †† Typical performance based on 7 bar and 700 bar pump specifications. Actual speeds may vary under operating conditions
- *** Solenoid valve with 24 volt remote control hand switch.

 **** Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 700 bar: 73/78, measured at 0,9 m foot distance, all sides.

PRESS ACCESSORIES Page 144-145

SHOP EQUIPMENT

Roll-Bed® Press

80-200 Tol H Frame



((





No. SF50 – Fixtures for use with 80-ton Roll-Bed® presses or 55-ton heavy-duty shop presses. (2 ea.). Wt. 47,2 kg. 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.89 kg. Not part of press, order separately.

- 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 sideto-side for full off-center load capacity across width of upper frame.
- "Daylight" is 1.283 x 1.524 mm for 80- and 100-ton models; 1.302 x 1.625 mm on 150- and 200-ton presses.
- Fast approach of double-acting, 334
 mm 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 102 to more than 686 mm.
 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

RB10013S

Hydraulic gauge and

hydraulic fittings are included with presses.

 Make straightening jobs easy and accurate
 to within 0.1 mm! Rollers are ball bearing mounted and handle raises or lowers for easy turning of the work.

PUMP ELECTRICAL SPECIFICATIONS

PQ120 Series – 2,24 KW, 380 volt, 50 cycle, three phase.

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.



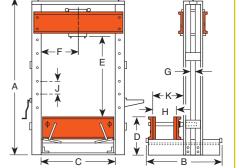
Lever lowers bed for pressing, raises it for rolling.



Cylinder is easily moved across width of upper bolster.



Width adjusts from 102 mm to over 686 mm; is secured with locking bolts.



							DIMENSI	ONS					
Сар			C				G	н	J	K	L	M	Floor Space
(Tons)					(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
80	2.861	1.632	1.283	686	305-1.524	368-914	76,2	102-692	203	927	86	381	1.632-1.537
100	2.861	1.632	1.283	686	305-1.524	368-914	76,2	102-692	203	927	86	381	1.632-1.537
150	3.131	1.734	1.302	762	229-1.626	352-949	76,2	102-689	279	946	105	457	1.734-1.607
200	3.131	1.734	1.302	762	229-1.626	352-949	76.2	102-689	279	946	105	457	1.734-1.607

Lower Bolster

			01	RDERING INFO							
Capacity	Type of	Stroke	Cylinder	Order	Speed (m	m/min.)††	Type	Valve	Pump‡	Prod. Wt.	
(tons)†	Cylinder Used	(mm)	Model	No.	Advance	Pressing	Pump	Type	Model	(kg)	
80	Double Acting	333	RD8013	RB8013S	1.168	190	Elec.	4-way* F	Q1204S-E380	1.307	
100	Double Acting	333	RD10013	RB10013S	889	147	Elec.	4-way* F	Q1204S-E380	1.334	
150	Double Acting	333	RD15013	RB15013S	610	99	Elec.	4-way* F	Q1204S-E380	2.019	
200	Double Acting	333	RD20013	RB20013S	457	74	Elec.	4-way* F	Q1204S-E380	2.059	

- * 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 700 bar: PQ120-73/78; measured at 0,9 mdistance, all sides.

†† Typical performance based on 7 bar and 700 bar pump specifications. Actual speeds may vary with operating conditions.

PRESS ACCESSORIES
Page 144-145

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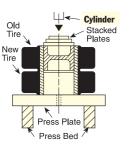
THEMPIUDE

SHOP EQUIPMENT

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 50,8 mm 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 102 mm to 451 mm I.D.





Pressing rim into new tire on Power Team Press.

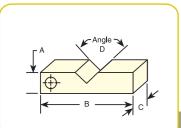
Set No. TPP200 TBP1622 406 x 559 x 50,8 mm



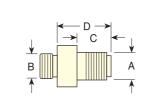
TPP1 - TPP13 98,4 x 448 x 19,1 mm 95,3 x 152,4 mm

	Set No. TPP200	Plate 0.D.
Order No.	Tire Size I.D. (mm)	(mm)
TPP1	102	98,4
TPP2	127	123,8
TPP3	152,159	149,2
TPP4	165	161,9
TPP5	203	200
TPP6	254	250,8
TPP7	267	263,5
TPP8	286	282,6
TPP9	305,308	301,6
TPP10	356	352,4
TPP11	381	377,8
TPP12	406	403,2
TPP13	451	447,7
TPS6	Spacer/Pushing	
	Adapter	82,6 x 152,4
TBP1622	Bed Plate	406 x 559 x5

PRESS ACCESSORIES, "V" BLOCKS & THREADED ADAPTERS



	1	/-BLOCKS (mn	n)	
Order	Width	Length	Thick	Angle
No.	A (mm)	B (mm)	C (mm)	D
1890	50,8	228,6	31,8	120°
1891	63,5	292,1	44,5	120°
1892	88,9	355,6	50,8	120°
1893	127	355,6	38,1	120°
207395	146,1	584,2	63,5	120°



	THREADED A	ADAPTER DIMI	ENSIONS	
Adapter				
		В	C (mm)	D (mm)
38597	1-8	1-8	19,1	33,3
38953	1 ¹ /4 - 7	1 1/2 -16	69,9	111,1
37368	1 ⁵ /8 - 5 ¹ /2	_	42,9	63,5
43562	2 1/4 - 12		57,2	76,2
38954	1 ⁵ /8 - 5 ¹ /2	1 1/2 - 8	82,6	106,4
43563	2 1/4 - 12	2 3/4 -12	57,2	81
46070	2 1/4 - 12	$2 - 4^{1/2}$	57,2	81

Shop Press Accessories

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.

0				
				4
A	В	()	(i)	F G

		A		C	D	E	F		G
		V-Throat					Threaded	Adapter	
With Press:		Press Plate	V-Blocks	Pushing Adapter 🗘	Pushing Adapter 🗘	V-Pushing Adapter	Single- Acting Cyl.	Double- Acting Cyl.	Pushin Adapte
10 Ton	SPA10	1888	1890 (Pr.)	201923	201454	34806	Included	in Set	_
			1	L2,7 mm dia. shank	19 mm dia. shank		38597	38597	
25 Ton	SPA25	1889	1891 (Pr.)	34510	34511	34807	Included	in Set	
25 1011	JI MZJ	1009	1091 (F1.)	.9 mm dia. shank	25,4 mm dia. shank	34001	38953	38953	_
				34755	34756		Not Incl	uded	
55 Ton	SPA55	_	1892 (Pr.) ₂		31,8 mm dia. shank	34808	Order Sep	arately	_
			2	5,4 mm ula. Sharik	51,0 IIIIII ula. Silalik		37368	38954	
							Not Incl	uded	
20/400	CD8100		4000 ***	(D.,)	_	36469	Order Sep	arately	2133
30/100 Ton	SPA100	_	1893 **(Pr.)	43562	43563	43562	43563	
1011							46070 ***	46070	
50/200	SPA200	_	207395 (Pr.)	_	44458	44457	None*		
Ton					57,1 mm dia. shank		_	_	_

- * 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®. *** 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.

>Power Team®

1000- 2000 kg

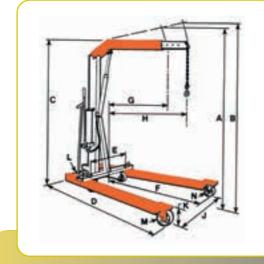
SHOP EQUIPMENT



- 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 – 2000 kg cap. crane with foldaway feature, adj. leg spread, lifting chain and 2-speed hand pump. Wt. 293 kg.



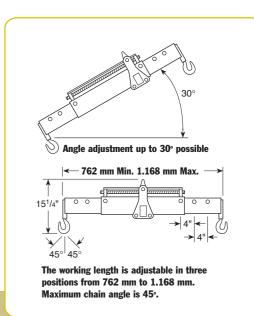


DIN	IENSIONS	
	FC2200*	FC4400*
Cap., boom ret. (kg)	1.000	2.000
Cap., boom ext. (kg)	750	1.500
A Max. boom hgt., ret (mm)	2,718	2.819
B Max. boom hgt., ext.(mm)	2.972	3.099
C Overall hgt., boom horiz.(mm)	2.032	2.083
D Overall length (mm)	2.108	2.261
E Min. throat width (mm)	610	635
F Inside leg length (mm)	1.372	1.461
G Eff. boom reach -ret.(mm)	838	902
H Eff. boom reach -ext. (mm)	1.219	1.238
J Inside leg width (mm)	610-914-1.219	660-1.016-1.333
(3 –position)	(3 –position)	
K Leg height (mm)	203	241
L Dolly wheel diameter(mm)	127	127
M Wheel diameter (mm)	152	203
N Caster diameter (mm)	152	152
space, folded (mm)	686 x 965	787 x 1.067
Height, folded (mm)	2.007	2.184
* Frame shipped unassembled.		

Load-Rotors® TILTERS

908-2720 kg

- 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 Load-Rotor® head permits rapid angle adjustment of the component being handled.
- Whenever you have big, heavy components to move or position, nothing helps you get the job done easier and faster than the 2.720 kg "Tilter."



			ORDERING	INFORMATION			
Capacity (kg)	Order No.	Chain Size (mm)	Chain Lg. W/ Swivel Hooks (mm)	Lifting Eye Opening (mm)	Hex Drive End (in)	Gear Ratio	Product Wt. (kg)
2000	LR2000	6,4	1.422	31,8	5/8	34:1	4,1
4000	LR4000	7,9	1.650	44,5	5/8	82:1	10,4
6000	LR6000	7,9	1.650	41,3	5/8	82:1	33,1

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>Power Team®

JACKS



Page ...155 SIDEWINDER JACKS









...156 MAINTENANCE SETS







POST TENSION JACKS





...158-159 **INFLATABLE JACKS**



ECONOMY TOE JACKS...153



...160-163 **PORTABLE HIGH TONNAGE RAILROAD JACKS** 55-150 Ton

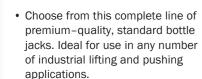


	_																													
			STROK	(E (MM)																										
Sei	ries Description	Pg	1,1 Ton	2 Ton 3 Ton	3,6 To	n 5 Ton	5,5 Ton	6 Ton	7 Ton	8 Ton	10 Ton 1	1 Ton	12 Ton	13 Ton	15 Ton	20 Ton	22 Ton	23,8 Ton	27,5 Ton	30 Ton	33 Ton	34 Ton	46,3 Ton	50 Ton	55 Ton	60 Ton	74,6 Ton	100 Ton	110 Ton	150 Ton
	Bottle Jack Std	140		114 114		120				120			149		156	159	156			159	143			171					155	
	Bottle Jack Low Profile	141											95			86				79										
	Toe Jacks Std	142					210					235							233											
	Toe Jacks Economy	143		124		124					149																			
	Bottle Jacks Telescoping	144						305				262		254	181															
	Bottle Jacks Sidewinder	145				19/38					30					30														
SJ	Post Tension/Stressing Jacks	147														216/254				216/254										
IJ	Inflatable Jacks	148	68		119				160				224					305				355	416				521			
PL	High Tonnage Portable Jack RR	150																								355		355		
PM	1 High Tonnage Portable Jack	152																							333			333		333

Bottle Jacks

2-110 Ton Portable hydraulic power

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 and all 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 Marathon Lifetime Warranty.
- 110-ton jack features dual pumps for time-saving two-speed operation.

	ORDERING INFORMATION													
			Retracted Height	Length of Screw	Height w/Screw	No. Pump Strokes to	Saddle	Base	Pump Handle	Handle Effort at		Metric tons	Product	
Cap.	Stroke	Order	Min.	Ext.	Ext.	Ext. Piston	Dia.	Size	Length	Rated Cap.	Carry	at 700	Weight	
Tons	(mm)	Number	(mm)	(mm)	(mm)	completly	(mm)	(mm)	(mm)	(kg)	Handle	(bar)	(kg)	
2	114	9002A	181	49	344	5	25	110x65	311	34	No	1,8	2,2	
3	114	9003A	191	60	365	10	29	114x72	489	20,4	No	2,7	2,6	
5	121	9005A	200	70	391	12	35	132x76	545	24,9	No	4,5	3,6	
8	121	9008A	200	70	391	18	38	152x89	605	34	No	7,3	5,5	
12	149	9112A	241	79	470	26	48	165x106	605	27,2	Yes	10,9	7,9	
15	156	9015B	230	110	495	27	60	130x140†	700	40,8	No	13,6	8,3	
20	159	9120A	270	40	429	22	51	183x129	800	31,7	Yes	18,1	12,9	
22	156	9022B	240	110	505	36	60	165x160†	700	40,8	Yes	20,0	10,7	
30	159	9030A	279		438	35	60	192x141	1.000	22,7	Yes	27,2	18,7	
33	143	9033B	240	100	483	56	65	184x176†	700	39,9	No	29,9	14,5	
50	171	9050A	305		476	35	76	237x187	1.000	38,6	Yes	45,4	35,4	
110	110 156 9110B 300 456 40/160‡ 111 339x291 700 35,8 Yes 99,8 70													
† Com	Comes with a Beveled Base													
‡ 2 Sp	eed: Ra	pid advan	ce≈40 strok	es; Lift mod	de≈160 stro	kes								



Low Profile BOTTLE JACKS

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 Marathon Lifetime Warranty.
- · All jacks operate both vertically and horizontally for use in a variety of lifting, pushing and spreading applications.

						ORDERI	NG INFOR	MATION					
			Retracted Height	Length of Screw	Height w/Screw	No. Pump Strokes to	Saddle		Pump Handle	Handle Effort at		Metric tons	
Produc													
Cap.	Stroke	Order	Min.	Ext.	Ext.	Ext. Piston	Dia.	Base Size	Length	Rated Cap.	Carry	at 700	Weight
12	95	9012A	171	76	343	26	48	165x106	605	27	Yes	10,9	6,4
20	86	9020A	181	40	305	22	51	183x129	800	32	Yes	18,1	10,1
30	79	9130A	181		260	35	60	192x141	1.000	23	Yes	27,2	13,7
‡ 2 Spe	ed: Rapid	l advance	≈40 strokes; I	Lift mode≈1	60 stroke								

>Power Team®

Economy

Toe Jacks

5.5, 11 & 27.5 Ton

Get under equipment with only 27 mm 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.



- · All jacks operate both vertically and horizontally.
- Base, toe and pumping assembly swivel independently, allowing the jack to work in confined areas.



The J Series Toe Jack is an extremely rugged jack used here for lift truck service.

				•	_	ام	IMENSIONS					
		A	E	3	C	D	E	F	G	Н	J	
Order	Ret.	Ext.	Ret.	Ext.								
Number	(mm)	(mm)	(mm)	(mm)	(mm)							
J58T	30	238	375	584	368	451	71	56	176	41	130	
J109T	30	264	419	654	368	451	76	56	183	64	171	
J259T	54	289	505	738	210	756	146	102	267	89	270	

			ORDERIN	G INFORMATION			
			Strokes to Extend	Handle Effort at Max		Metric tons at	Product
Cap.	Max Lift	Order	Piston	Load	Carry	700	Wt.
Tons	Stroke (mm)	Number	25,4 mm	(kg)	Handle	bar	(kg)
$5^{1/2}$	210	J58T	8	38,1	Yes	5,0	19,5
11	235	J109T	13	40	Yes	10,0	29
271/2	233	J259T	21	40	Yes	24,9	92,1

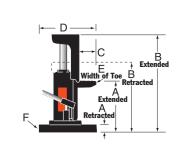


- These bottle jack-style toe jacks are loaded with many of the same features as our standard bottle jacks, but the toe-lift feature and swiveling pump handle socket make them ideal for machinery lifting and positioning.
- An internal pressure relief provides added safety by limiting the jack's lifting capability to the capacity of the toe.

- 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.



• Spring return is an added



	ı	4	١,	DIMENSIO	DNS				
Order Number	Ret. (mm)	Ext. (mm)	Ret. (mm)	Ext. (mm)	C (mm)	D (mm)	E (mm)	F (mm)	
J24T	16	140	232	356	47,5	181	51	125	
J55T	25	149	292	476	47,5	257	76,2	184,2	
J106T	32	181	327	476	64	292	100	241	

			ORDERING	INFORMATION	1		
	Max Lift		Strokes to	Handle Effort		Metric	Product
Cap.	Stroke	Order	Extend Pisto	n at Max Load	Carry	tons at	Wt.
Tons	(mm)	Number	25 mm	(kg)	Handle	700 bar	(kg)
2	121	J24T	14	19	Yes	1,8	8,3
5	121	J55T	22	27	Yes	4,5	24
10	146	J106T	31	33	Yes	9,1	38

>Power Team®

Bottle Jacks TELESCOPING

6-15 Ton

These jacks offer greater extended lifting capability.

> 9006X Beveled BASE



9011X Beveled BASE

ASME B30.1

9013X Beveled BASE

- 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 9015X offers very low clearance capability, making it the ideal choice for forklift maintenance or machine
- 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.

						ORDERII	NG INFOR	MATION					
Cap.	Stroke	Order	Retracted Height Min.	Length of Screw Ext.	Height w/Screw Ext.	No. Pump Strokes to Ext. Piston	Saddle Dia.	Base Size Beveled Base	Pump Handle Length	Handle Effort at Rated Cap.	Carry	Metric tons at 700	Product Weight
Tons	(mm)	Number	(mm)	(mm)	(mm)	25,4 mm	(mm)	(mm)	(mm)	(kg)	Handle	bar	(kg)
6	305	9006X	216		521	14	44	121 x 133	700	36	No	5,4	6,4
11	262	9011X	200	68	530	25	41	160 x 165	700	40	No	10,0	8,8
13	254	9013X	230	84	570	35	48	176 x 186	700	36	Yes	11,8	11,3
15	181	9015X	170	70	419	32	52	143 x 194	600	43	Yes	13,6	12



Sidewinder Jacks MINI JACKS

5-20 Ton

9205A

Compact Sidewinder Mini Jack fits in your palm and delivers 5, 10 & 20 tons of lifting force.



ASME B30.1

- Retracted height of just 63,5 mm for the smallest jack and 130,2 mm 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.

						ORDERIN	IG INFORMA	TION				
Сар.	Stroke	Order	Retracted Height Min.	Max Height	No. Pump Strokes to Ext. Piston	Saddle Dia.	Base Size Dia.	Pump Handle Length	Handle Effort at Rated Cap.	Carry	Metric tons at 700	Product Weight
Tons	(mm)	Number	(mm)	(mm)	25 mm	(mm)	(mm)	(mm)	(kg)	Handle	bar	(kg)
5	19	9105A	63,5	85,7	30	29	73,8	240	26	No	4,5	1,9
5	38	9205A	88,9	130,2	38	29	73,8	240	26	No	4,5	2,4
10	30	9210A	120,7	149,2	36	42,1	109,9	440	28	No	9,1	5,5
20	30	9220A	130,2	160,3	46	52,8	119,9	605	35	No	18,1	8,0

>Power Team®

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Maintenance Sets

Hydraulic system components

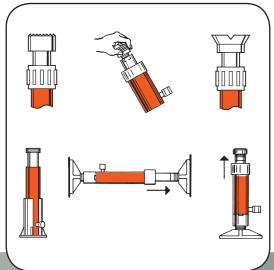




IM10E

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 700 bar. Set components are designed for full rated capacity of cylinders.
- Set IM10H includes hand operated pump. Set IM10E includes the Quarter Horse® electrically driven portable power unit

		ORDERING	INFORMATION		
	CONTENTS OF SET	NO. IM10E	CONTENTS OF SET	NO. IM10H	NO. IM10L
Description		Order No.	Description	Order No.	Order No.
Hydraulic spreader	HS2000		Hydraulic spreader	HS2000	HS2000
Hand pump (electric)		PE102	Hand pump	P59	P59L
700 bar hyd. gauge		9041	700 bar hyd. gauge	9041	9041
Tee adapter		9670	Tee adapter	9670	9670
Hose & coupler assem	bly	9754	Hose & coupler assembly	9754	9754
90° V base		25395	90° V base	25395	25395
Threaded coupler		25664	Threaded coupler	25664	25664
Serrated saddle		31772	Serrated saddle	31772	31772
Flat base		32325	Flat base	32325	32325
Extension rod - 127m	m length	350897	Extension rod - 127mm length	350897	350897
Extension rod - 254 m	ımlength	38909	Extension rod - 254mm length	38909	38909
Extension rod - 457 m	nm length	350898	Extension rod - 457mm length	350898	350898
Cyl. support base		420062	Cyl. support base	420062	420062
Cyl. ass'y, 10 ton, 257	mm stroke	C1010CBT	Cyl. ass'y, 10 ton, 156mm stroke	C106CBT	C106CBT
Cyl. ass'y, 10 ton, 156	mm stroke	C106CBT	Storage box	350722	350722
Storage box		350722		Prod. Weight	Prod. Weight
P	rod. Weight – 48,1 kg.		I	40,4 kg.	36,8 kg.



- Post Tension
 & stressing Jacks
- 20 & 30 Ton

- Power Team Monostrand Stressing Jacks are the most durable in the industry.
- Ideally suited for work on slab-ongrade where dirt, heat and high volume use take their toll.
- Available in single- or doubleacting models.
- Standard single-acting units have
- a 254 mm stroke. Other stroke lengths are available on special order.
- Dead-end seaters for production work and field work available on special order.
- Service repair is simple; components are long lasting and easily replaced.
 return time and light weight.
 All hydraulic fluid controls are interior designed; more efficient

The jack of choice for high-rise

- 76,2 mm detachable seater nose assembly easily replaced with optional 152,4 mm nose
 - Standard double-acting units have an 216 mm stroke; others available on special order.
- and elevated work, thanks to fast return time and light weight.

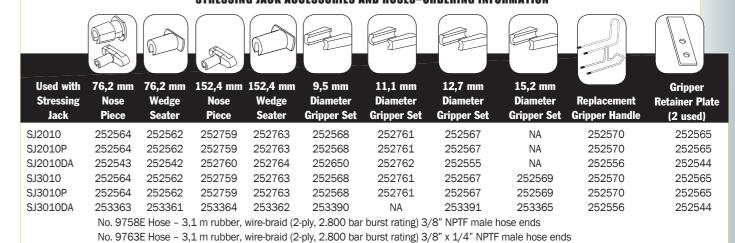
 All hydraulic fluid controls are interior designed; more efficient

 Specially designed Power Team Control Valves are available for post tensioning jacks.

 See pages 51.

			ORDI	ERING INFORMATI	ON				
Description	Cyl. Cap. Tons	Stroke (mm)	Order Number	Recommended Pumps for this Stressing Jack	Oil Capacity (I)	Strand Diameter (mm)	Seater Type	Tons at 700 bar	Weight (kg)
Post tension jack with spring seater,	20	254	SJ2010	PE554T/PE604T	0,72	11,1-12,7	Spring	20,3	25
12,7 mm strand. Post tension jack with power seater, 12,7 mm strand.	20	254	SJ2010P	PE604PT	0,72	11,1-12,7	Power	20,3	25
Double-acting post tension jack with power seater, 12,7 mm strand.	20	215	SJ2010DA	PE554PT/PE604PT	0,85	11,1-12,7	Power	23,9	19
Post tension jack with spring seater, 15,2 mm strand.	30	254	SJ3010	PE554T/PE604T	1	11,1-15,2	Spring	28,5	34,5
Post tension jack with power seater, 15,2 mm strand.	30	254	SJ3010P	PE604PT	1	11,1-15,2	Power	28,5	34,5
Double-acting post tension jack with power seater, 15,2 mm strand.	30	215	SJ3010DA	PE554PT/PE604PT	1,1	11,1-15,2	Power	36,0	23,5

STRESSING JACK ACCESSORIES AND HOSES-ORDERING INFORMATION



TECH DATA

Page 227





Inflatable Jacks

1-74 Ton



The non-skid space-age reinforced inflatable jack is perfect for many applications.

- Uninflated jacks are less than 25mm 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).
- · 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.

PERFORMANCE. •KEEP THE PRODUCT CLEAN. STORE PROPERLY.

INSPECT BEFORE AND AFTER

DEGRADATION OR WEAR THAT
MAY AFFECT SAFETY OR

•REPLACE IF ANY SIGNS OF

EACH USE.

pattern to assist in alignment of two jacks being used together. · Single jack controller with "dead man" control (part no. 350090) can be used

the number of jacks desired.

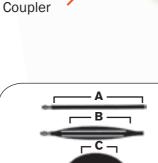
• The top and bottom surface of the

jack has a skid resistant, interlocking

· Heavy attachment handles are provided on the two largest jacks for attachment of a rope or hook to help in positioning

individually or in multiples to regulate

- · 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 to + 50°C



Field

Replaceable

IJ Series Inflatable **Air Jacks**

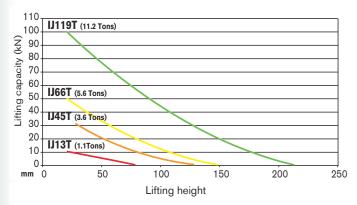
Maximum Effective Lifting Area

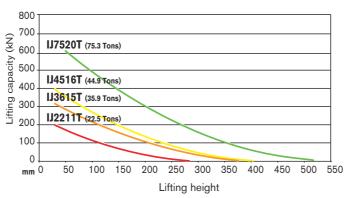
All lifting capacities mentioned in the charts are measured at the maximum effective lifting area (A). As the jack is inflated (B), this effective area decreases (C) due to the rounded shape of the jack. Lifting capacity also decreases (see performance chart).



Stack up to two jacks together to increase effective lifting height.

PERFORMANCE





* 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 Includes No. 250341 female and No. (works on CGA-580 Nitrogen/Argon/Helium bottles). Contains standard bottle fitting on inlet and 1/4" industrial interchange (female) outlet. Wt., 1.8 kg

Sealed vulcanized

Multi-laver aramid

construction

Field

replaceable nipple

Non-skid pattern

Non-conducting material

No. 350090 - Air controller for single jack. Equipped with relief valve and pressure gauge. Wt., 0.9 kg

No. 350207 - Shut-off hose with shut-off valve and pressure relief valve. Includes a female and male quick coupler. Wt., 0.3kg

No. 350208 - Air hose. Red, 9m long. 250342 male quick coupler. Wt., 2.7kg

No. 350209 - Air hose. Same as 350208, except blue in color. Wt., 2.7kg

No. 250343 - Female quick coupler. 1/4" industrial interchange x 1/8" NPT female. Wt., 0.05kg

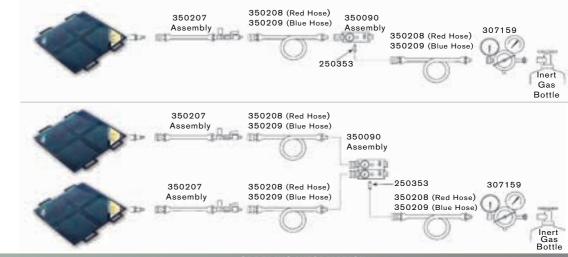
No. 250353 - Male quick coupler. ¹/₄" industrial interchange x 1/8" NPT male. Wt., 0.05kg

No. 250682 - Female quick coupler. 1/4" industrial interchange x 1/4" NPT male. Wt., 0.05kg

No. 15235 - Connector 1/8" NPT male x 1/4" NPT female. Wt., 0.05kg

No. 250341 - Female quick coupler. 1/4" industrial x 3/8" I.D. hose. Wt., 0.23kg

No. 250342 - Male Quick coupler. 3/8" I.D. Hose, Wt., 0.05kg



Lifting	Lifting		Air	Water				Product
Cap.	Height	Order	Volume	Volume	Length	Width	Thickness	Weight
(Metric Tons)	(mm)	Number	(liter)	(liter)	(mm)	(mm)	(mm)	(kg)
1,0	80	IJ 13T	3.3	0.7	150	150	22	0.6
3,3	130	IJ 45T	16.2	1.8	228	228	22	1.5
5,1	150	IJ 66T	22.5	2.5	270	270	22	2
10,2	215	IJ 119T	76.5	8.5	380	380	25	4
20,4	290	IJ 2211T	189	21	508	508	25	7
32,7	380	IJ 3615T	450	50	658	658	25	13
40,8	405	IJ 4516T	558	62	708	708	25	15
68.4	520	IJ 7520T	1,206	134	908	908	25	24

*See current price list for shipping weights.

> Power Team

Portable HIGH TONNAGE JACKS

60-100 Ton Railroad Edition

Portable & compact, ideal for locomotive and railcar

maintenance.

protection. Patented load lowering valve. Lowers load smoothly and safely. Eliminates dangerous

chatter and bounce.

• Full range of rod extensions. Jack comes fully • NEMA 4 electrical box and rain hood. Pump • Electric and air motor options. Quiet, equipped with extensions to match lifting pad heights on most rolling stock. Max. lifting Quiet operation. height to 1 778 mm.

 Low collapsed height, long stroke. 610 mm collapsed height for low-clearance lift pads.360 mm stroke for maximum lift.

start the job and is easily locked/unlocked without moving from operating position.

motor and controls protected from water.

 Cribbing block set with handles and convenient storage rack. Provides solid mechanical load holding.

• High-profile, low rolling resistance, foam-filled

Adjustable, ergonomic handle. Handle tilts to

5 position adjustable handle.

NEMA 4 electrical box

Safety pin to

to cylinder.

Cribbing interlocks

60-ton lifting capacity.

with body.

Heavy-duty

Reach heights up to

Extensions fit over and around piston

giving maximum

stability side load

1 778 mm with just

7 extensions.

secure extension

and rain hood

tires. Jack can be moved and positioned with minimal effort. No chance of downtime due to punctured tires.

Steel base not prone to

cracking like cast.

All steel cylinder

is threaded into base.

Cribbing blocks

with handles and

6,1 m remote on/

Reliable Vanguard Pump.

field for over 30 years.

THE PROVEN LEADER in the

off switch.

Patented load control system

for chatter-free

lowering of load.

406 mm foam-filled tires.

storage racks.

powerful air and electric motor powered units available.

		DOWED HAIT	r enemeina	TIONS				
Order No.	Motor	POWER UNIT	Motor Control	Valve Function	Power Cord	dBa at 700 bar		
PLE6014- 220	0,84 kW, 220 VAC***, 50 Hz Single Phase	12 amps	6,1 m Remote Control	Lift Hold Lower Manual	Pigtail	80/95		
PLA6014	Rotary Air Powered	1,4 cu.m at 6 bar	6,1 m Remote Air Control	Lift Hold Lower Manual	NA	82		
*** For 110/115V-50/60 Hz order PLE6014								



		ORDE	R INFORMAT	TION	
Capacity (Tons)	Stroke (mm)	Order Number	Retracted Height (mm)	Extended Ht. w/Extensions (mm)	Product Wt. Less Cribbing & Ext. (kg)
60	356	*PLE6014K	610	1.778	237
60	356	*PLA6014K	610	1.778	237
60	356	*PLE6014K-220	610	1.778	237
100	356	Consult Factory	610	1.499	237
*Includes	cribbing b	olock set stored on ia	ck handle rack	k, and 7 extensions	s (25.4: 50.8:

76,2; 101,6; 127; 254 and 308 mm)

PLE6014 = Jack, Electric, includes: Cart, Pump & Cylinder PLE6014-220 = Jack, Electric (220 V.) PLA6014 = Jack, Air, includes: Cart, Pump & Cylinder **CBS60** = **Cribbing Block Set** (5 cribbing blocks) **PL60EXT** = Extension Set (Consists of 7 extensions)

CRIBBING BLOCKS (CBS60, INCLUDED) Height (mm) Order Number 351954 38,1 76,2 351953

EXTENSIONS (PLGO EXT, INCLUDED)									
Extension		Extension							
Length	Order	Weight							
(mm)	Number	(kg)							
25,4	351931	2,2							
50,8	351927	4,0							
76,2	351928	6,4							
101,6	351929	8,7							
127	66053	9,5							
254	66054	13,8							
508	66055	22,1							

LIFTING RANGE

Lifting range (in 25,4 mm increments): 610 mm- 1.778 mm.

Only 3 extensions are needed to provide this range.

Do NOT exceed 1.778 mm lifting range on 60-ton unit or 1.489 mm on 100-ton unit.

>Power Team

LACES:

Electric

pump

4

Portable and compact, ideal for

- Three tonnage capacity options 55-ton, 100ton and 150-ton.
- Three collapsed height options 660, 838 and 1,143 mm.
- Two standard power options air (PA55) and electric (PE55).
- Two control options remote motor control and remote valve/motor control.
- Accessory options 168 mm extension, load Load-holding rings (optional) provide full 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.

6,1m

remote

control.

Adjustable

handle for

maximum

control.

Shielded

hydraulic

lines for

greater safety.

Steel base

not prone to

cracking like

cast.

Electric or air

hydraulic systems

available.

- Easy to maneuver large tires and small "footprint" make it easy to scoot into the tightest quarters, then locate the exact lifting
- · Adjustable, heavy-duty handle makes this jack easy to move, position under vehicles. Can also be used to transport jack on site
- rated mechanical load-holding capability.
- Cylinder extension (optional) adds more versatility by extending your jack's reach.

- Modular design allows for quick interchange of pump with other modules.
 - 55-, 100- and 150ton capacities

Large urethane-filled tires provide durability and easy maneuverability.

Patented load control system for chatter-free lowering of loads.

- 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 doubleacting cylinders (700 bar).
- · Exclusive load-control system provides positive, chatter-free control when lowering
- · Shielded and sheltered hydraulic lines for safer, longer, trouble-free service.

Pump & cart modules

Pump and cart modules contain

folding handle cart option.

hydraulic pump, cart, remote control and

all hoses and fittings required to connect

to a jack module. Contact factory on







660 mm

Jack Module



838 mm **Jack Module**



1143 mm **Jack Module**

		Remote Control	
1	Pump	Motor Only	Motor & Valve
\Box	Air	PMA55	PMA55S
\angle	Electric	Consult Factory	PME55S

Jack modules

Jack modules easily separate from the pump and cart module.

,		Cylinder	Collap	sed Height	mm)
1	Tonnage	Stroke	660,4	838,2	1.143
	55	333	JM25	JM35	JM45
	100	333	JM210	JM310	JM410
	150	460	JM215†	JM315	JM415
1	200	333	JM220*	JM320	JM420

^{*} collapsed height; 711 mm and stroke 333 mm. † stroke 333 mm.

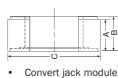
Model Series	A	В	С	D	E	F	G	н
PMA & PME	1.464	752	1.353	762	872	594	*70°	406 mm
Total range with v	arving degree in	crements						Tire Dia.

ORDER INFORMATION - Pump and Cart Modules with Assembled Jack Module

Capacity	Ret. Height	Ext. Height	Stroke	Pump	Power	Valve	Remote	Order
(tons)	(mm)	(mm)	(mm)	Туре	Required	Туре	Control	No.
55	660,4	994	333	Electric	13/25 amps	Manual	M	JEM5526
100	838,2	1.172	333	Air	1,4 cu m /min at 6 bar	Manual	M	JAM10033
100	838,2	1.172	333	Air	1,4 cu m/min at 6 bar	Air Pilot	M & V	JAR10033
150	660,4	994	333	Electric	25 amps	Manual	M	JEM15026
150	838,2	1.172	333	Air	1,4 cu m/min at 6 bar	Manual	M	JAM15033

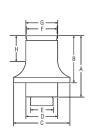
ORDER INFORMATION CRIBBING BLOCK SETS - INCLUDES ONE JACK MODULE EXTENSION

Order No.‡	55 Ton CBS55			Ton 3100		50 Ton BS150	200 To CBS20	
No. in Set	1	4	1	4	1	4	1	4
A	38,1	76,2	38,1	76,2	38,1	. 76,2	38,1	76,2
В	44,5	82,5	44,5	82,5	44,5	82,5	44,5	82,5
С	139,7	139,7	139,7	139,7	222,	2 222,2	254	254
Jack Module Ext.	173		17	177,8		168,3		8,3
Total Stack Ht.	515,9		52	520,7		512,2		2,2
Product Wt. (kg.) 16,3		30	30,9		38,6		47,7	



into stable mechanical cribbing device.

Increase retracted height up to 521 mm.



	ORDER INFORMATION JACK MODULE EXTENSIONS										
(Tons)	No.	A (mm)		C (mm)		E (in.)	F (mm)	G (mm)	H (mm)	Prod. Wt.	
55	58945	223,8	173	127	66,8	1 ¹¹ / ₁₆ -8UN	63,5	66,8	92,2	9,5	
100	58943	228,6	177,8	174,7	98,6	2 ³ / ₄ -12UN	95,3	98,6	95,3	18,2	
150	58944	219,2	168,4	203,2	114,3	31/4-8UNC	111,3	114,3	88,9	22,7	

Increases jack's reach.

HYDRAULIC & MECHANICAL TOOLS









Power Team continues to expand its line of high-force industrial tools by offering a line of hydraulic torque wrenches. These tools, combined with Power Team's Power Team brand name. torque wrench pumps, are the standard in the market.

Power Team Cable Tools, originally known as the Brock Equipment Company, were

first developed in 1945. In 2000. SPX acquired Brock. We are pleased to offer this time-tested line of tools under the

Today, as we prepare to celebrate our 80th anniversary in the industrial tool market, we continue to extend our offering of industrial tools and

commitment to excellence in our desire to ensure complete satisfaction with our products. Like all Power Team products. these tools are covered by the Power **Team Lifetime Marathon Warranty,** protecting our customers from possible defects in materials and workmanship. (Contact factory for details.)

TWSD SERIES...166 Square Drive



NUT SPLITTER...174 15 and 25 Ton



HYDRAULIC



TWLC SERIES...167 Low Clearance

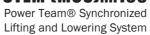


Page ...175 **PIPE FLANGE SPREADER** 5 and 10 Ton





MOTION CONTROL SYSTEM (MCS)....168





Page ...176 < **SPREADER** 1 and 1 1/2 Ton



...185-186 **SERVICE ACCESSORIES**



PE 30TWP...171 Electric Torque Wrench Pump

PE 55TWP...172

Electric Torque Wrench Pump



C CLAMPS...177



...187 RETAINING **RING PLIERS**



BEAD BREAKER...178 Tire Removing Tool



...188 **SERVICE TOOLS**



RWP55...173 Pneumatic Torque Wrench Pump



FLS...180 Hydraulic Flange Spreade

...189 **WRENCHES & PRY BARS**



Torque Wrench square drive

MAX TORQUE 33496 Nm 700 bar

Heavy duty simple-to-use. Accuracy and speed under load. Breaking nuts loose and torquing.

SQUARE DRIVE TORQUE WRENCHES

The TWSD Series Square Drive Torque Wrenches are designed with the following:

- · 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
- Marathon Lifetime Warranty

LOW CLEARANCE TORQUE WRENCHES

The TWLC 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

- 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 SwivelManifold Relief

- Built-in Reaction Pad
- Small Nose Radius
- Tool Free Link Change
- Corrosion Resistant FinishMulti-Axis High Flow Swivel Manifold
- Simple Design
- Consistent Torque Output
- Marathon Lifetime Warranty

Torque Wrench LOW CLEARANCE

MAX TORQUE 39024 Nm 700 bar

The lightweight, heavy-duty tool features a long neck, short height, and small radius for inaccessible bolting areas found in industry.











Motion Control System (MCS)

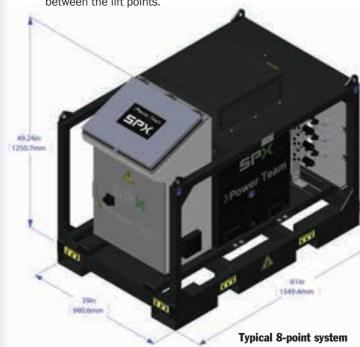
Power Team® Synchronized Lifting and Lowering System



MCS-PE554-8 shown.

POWER TEAM® SYNCHRONIZED LIFTING AND LOWERING SYSTEM

The Power Team ® Motion Control System provides position control of a load in motion with high precision trough a combination of accurate measurements, digital processing and sophisticated hydraulics. 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.



THE SYSTEM CONSISTS OF:

- 1. PLC controller, pump, and oil reservoir.
- Displacement 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 hydraulic pressures in each hydraulic circuit.

FEATURES:

- Load Capacity: only limited by the choice of cylinders (use with single or double acting cylinders).
- · Intuitive graphic, touch screen control.
- Basic systems start at 8 jacking points, also available 16 or 24 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 and load in kN at each lift point.
- -Status of each cylinder.
- -Status of alarms.
- Lifting / lowering accuracy of +/- 1 mm.
- Operating Pressure (up to) 700 bar.
- Standard system has a 151 liter tank.
- Standard system has a PE554 pump unit.
- Suitable for single acting and double acting cylinders.
- Suitable for standard cylinders and telescopic cylinders.

Ordering info: Please contact Power Team for technical support and optimal configuration of your system



Motion Control System (MCS)

Power Team® Synchronized Lifting and Lowering System







TYPICAL MOVING AND WEIGHING APPLICATIONS:

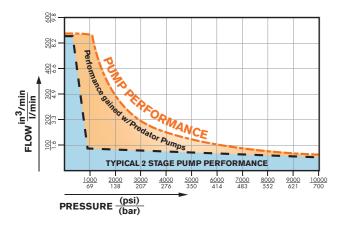
Bridges

- Stadium roofs
- Oil rig platforms
- Ships
- Steel structures
- Heavy vehicles
- Vessels and heat exchangers
- Buildings

Air Pump TORQUE WRENCH PUMP

Air/Hydraulic 700 bar

Faster, quieter and lighter than typical 2-stage portable pumps - the Air/Hydraulic Pump is a constant horsepower pump that provides consistently high hydraulic flow and pressure for faster tool operation. A typical two stage pump flow curve transitions high to low flow around 48 bar. The Air Pump has much higher, smoother flow throughout the pressure curve and the hydraulic flow continually changes based on pressure - making maximum horsepower and flow at all pressures. The largest flow increase is between 69 & 414 bar, where torque wrenches normally operate - dramatically increasing productivity. As a result, tools operate up to twice as fast vs. two-stage pumps, getting tasks done in much less time.



Constantly variable flow also allows continuous operation and eliminates the need for external heat exchangers and cool-off downtime.

The Air pump is designed to be rugged, but light weight for ease of transporting it to a job site. It is engineered for low sound levels to reduce operator fatigue and increase productivity. A roll cage option allows users to customize the Air Pump to suit their needs.

The Pump also comes in an electric/hydraulic model. For a complete high force hydraulic package, Power Team offers a full range of cylinders, tools, and torque wrenches to match the pump hydraulic power source.



Technical Data

REQUIRED AIR PRESSURE

2.3 m3/min à 5.5 bar 2.5 m3/min à 6 bar 2,8 m3/min à 7 bar

MAXIMUM HYDRAULIC PRESSURE OUTPUT 700 bar

SOUND LEVEL

75 dB A

HYDRAULIC OIL RESERVOIR CAPACITY

5,68 l utile min. réservoir standard

HYDRAULIC OIL DELIVERY

	7 bar	6 bar	5,5 bar
50 bar	9,4 l/min	9,3 l/min	8,9 l/min
172 bar	3,8 l/min	3,7 l/min	3,4 l/min
345 bar	1,9 l/min	1,8 l/min	1,7 l/min
700 bar	0,9 I/min	0,9 l/min	0,8 l/min

^{*} Values shown are with filter/regulator/lubricator, values will increase without FRL

HEIGHT = 51 cm | WIDTH = 46 cm | LENGTH = 30 cm

WEIGHT

36 kg with 4,7 L hydraulic oil

Features & Benefits

- Quiet operation
- Light weight for easy portability
- Cool operation without add-on heat exchanger
- Rugged construction for durability in tough environments
- Fewer parts for lower service costs
- ATEX Ell 2 GDc T4

Part Numbers

PA60APF5FP - standard with handle and guard PA60APF5FPR-CR - with roll cage

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 double or single acting tools

Electric Pump HYDRAULIC TORQUE WRENCH PUMP

PE30 Series 5 I/min Max Flow 700 bar

((



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

Pump	Oil	Oil Reservoir	Usable Oil	Overall Width	Overall Length	Overall Height	Pump Weight
Model	Delivery	(I)	(I)	(mm)	(mm)	(mm)	w/Oil (kg)
PE30TWP-E110*	5 I/min. at 7 bar	4,75	4,5	356	331	458	30,9
PE30TWP-E220*	0,5 I/min. at 700 bar	4,75	4,5	356	331	458	33

	Electrical Data
Electric Motor	Electrical Control
4,000 rpm 0,75 KW, 115V/50Hz, 13 A 0,75 KW220V/50Hz, 7 A	24 Volt remote control with 3 m cord

*CE Approved - designed for 50 Hz applications

PUMP ACCESSORIES **TORQUE GUIDELINES TECH DATA**

Electric Pump HYDRAULIC TORQUE WRENCH PUMP

PE55 Series 11,5 I/min MAX FLOW

700 bar



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 double or single acting tools
- Four-tool manifold (-4 model only) allows use of up to four tools simultaneously

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

Pump Model	Oil Delivery (I/min)	Oil Reservoir (I)	Usable Oil (I)	Overall Width (mm)	Overall Length (mm)	Overall Height (mm)	Pump Weight w/Oil (kg)
PE55TWP PE55TWP-E110* PE55TWP-E220*	11,5 at 7 bar 0,9 at 700 bar	9,5	8,4	435	241	460	34
PE55TWP4 PE55TWP4-E110*	11,5 at 7 bar	9,5	8,4	470	241	486	35,4
PE55TWP4-E220*	0,9 at 700 bar						

1		
	Electrical D	
ı	Electric Motor	Electrical Control
	0,84 KW, 12000 rpm 115V, 25 amps 110V/50Hz, 25 amps	Remote control with 3m cord
	220V/50Hz, 13 amps	

^{*} **C** € Approved-designed for 50Hz. applications.

AIR HYDRAULIC TORQUE WRENCH PUMP

- Use where air is the preferred source of power
- Powerful 2,2 Kw motor starts under load
- External adjustable pressure regulator
- Retract side internal relief valve protects tool
- Use for double or single acting tools

Air Pump HYDRAULIC TORQUE WRENCH

RWP55 SERIES Max. flow 7,6 I/min 700 bar



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

Pump Model	Oil Delivery (I/min)	Oil Reservoir (I)	Usable Oil (I)	Overall Width (mm)	Overall Length (mm)	Overall Height (mm)	Pump Weight w/Oil (kg)
RWP55	7,6 I/min at 7 bar 0,9 I/min at 700 bar	9,5	8,4	450	280	483	44
RWP55-4 (4-tool manifold)	7,6 I/min at 7 bar 0,9 I/min at 700 bar	9,5	8,4	450	280	483	44

	Motor Data
Air Motor 2,25 KW	Air Control Pneumatic remote control with 3,6 m cord
1,4 m³ / min @ 6 bar	

PUMP ACCESSORIES TORQUE GUIDELINES **TECH DATA** Page 116-119 Page 231 Page 241

>Power Team®

www.powerteam.com

HYDRAULIC TOOLS

HYDRAULIC TOOLS

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

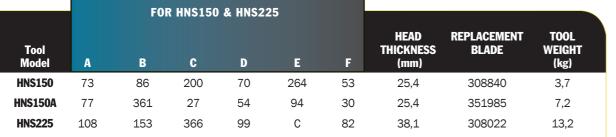






Align mark on cutter blade with scale.

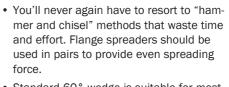
For HNS150A III III FOR HNS150A **FOR HNS150 & HNS225**



		CAPACITIES	;	
Tool Model	5 (2 or A)	Nut Grade 9 (5 or B)	10 (8 or C)	12 (2 or H)
HNS150	¹/² - 1-¹/²" (12,7-38,1mm) hex	¹ /2 - 1- ¹ /2" (12,7-38,1mm) hex	¹ / ₂ - 1- ⁵ / ₁₆ " (12,7-33mm) hex	¹ / ₂ - 1- ¹ / ₈ " (12,7-29mm) hex
HNS150A	¹ / ₂ - 1- ¹ / ₂ " (12,7-36mm) hex	¹ /2 - 1- ¹ /2" (12,7-36mm) hex	¹ / ₂ - 1- ⁵ / ₁₆ " (12,7-33mm) hex	¹ / ₂ - 1- ¹ / ₈ " (12,7-29mm) hex
HNS225	1-1/8 - 2-1/4" (29-57mm) hex	1-1/8 - 2-1/4" (54-57mm) hex	1-1/8 - 2-1/6" (29-55 mm) hex	1-1/8 - 1-11/16" (29-43mm) hex



5 & 10 Ton



- 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 76,2 mm or less and flange bolts are a min. of 17,5 mm dia.
- Use HFS6A if total thickness of flanges and max. spread gap is 152,4 mm or less, and flange bolts are a min. of 20,7 mm dia.











350550

		Standard	Opti Wed	onal Iges		in. Flar ening	_		ax. Flan ening (r	_	Combined Flange	Max. Pin	
Capacity	Order	Wedge	30°	60°	60°	60°	30°	60°	60°	30°	Opening	Dia.	Weight
(tons)	Number	Туре	Thin	Blunt	Std.	Blunt		Std.	Blunt		(mm)	(mm)	(kg)
5	HFS3A	60° Sharp	350823	350822	1,6	25,4	1,6	38,1	38,1	18,3	76,2	17,4	4,1
10	HFS6A	60° Sharp	350549	350550	1,6	38,1	1,6	50,8	50,8	24,6	152,4	20,6	8,2

TECH DATA

HFS3A

>Power Team www.powerteam.com



Spreaders HYDRAULIC

1-11/2 Ton

HYDRAULIG TOOLS

It's a 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.

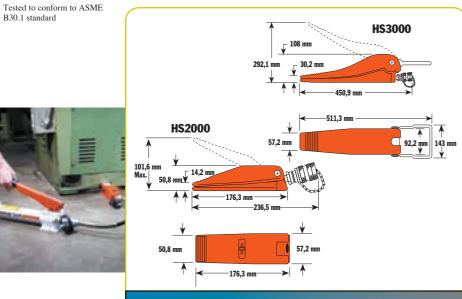
No. HS2000 – 1-ton capacity spreader. Full 908 kg capacity at 700 bar with 102mm spread. Can be "dead-ended" at

102mm spread under full load. Needs only 14,2mm clearance to engage jaws.

No. HS3000 – 1¹/2-ton capacity spreader.
Full 1.362 kg capacity at 700 bar with 292 mm spread. Greater than competitive units. Needs only 30,2 mm clearance to engage jaws. Can be "dead-ended" at 292 mm spread at full load.

HS2000

(Forged Steel)



Capacity (tons)	Max. Spread (mm)	Order Number	
1	101,6	HS2000	
1 ¹ /2	292	HS3000	

			D (1999)	_					(
			(mm) 252,52						
292	108	30,2	_	451	57,2	511	143	92	

HS2000 SPECIFICA	TIONS
Maximum rated capacity	.1 ton at 700 bar
Maximum spread	101,6 mm
Minimum clearance required	14,2 mm
Cm ³ oil required	4

HS3000 SPECIFICA	ATIONS
Maximum rated capacity	11/2-ton at 700 bar
Maximum spread	292 mm
Minimum clearance required	30,2 mm
Cm ³ oil required	20

20

(kg)

2,2

10

14,2

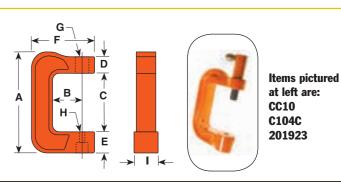
30.2

"C" CLAMPS 5, 10 & 25 TONS

- 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.

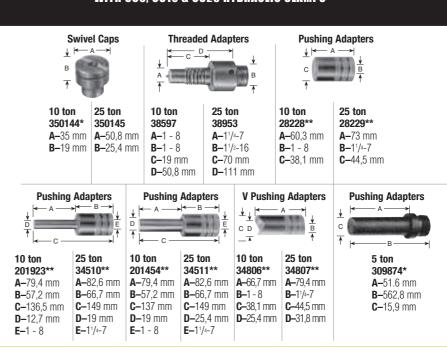
C-Clamps HYDRAULIC

Accessories



Cap.	o. Order Number Use With		A	В	C	D	E	F	G	н	,	Weight
(tons)	(C-Clamp only)	Cyl. No.	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(in.)	(mm)	(mm)	(kg)
5	CC5	C51C-C57C	314	95,3	186	50,8	63,5	197	1 ¹ /2"-16 UN	22,2	76,2	11,3
10	CC10	C101C-C1010C	403	152,4	240	50,8	85,8	273	2 ¹ / ₄ "-14 UNS	22,2	88,9	20,9
25	CC25	C251C-C2514C	533	152,4	319	76,2	114,3	313	3 ⁵ /16"-12 UNS	36,5	117,5	41,3

OPTIONAL ACCESSORIES FOR USE WITH CC5, CC10 & CC25 HYDRAULIC CLAMPS



- * May be used with CC5
 ** Must be used with a
- ** Must be used with threaded adapter.

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> Power Team[®]

www.powerteam.com

Tire Removing BB SERIES TOOL

10 Ton Hydraulic

Unseat tire beads hydraulically on 25" to 49" diameter earth mover rims with pry bar pockets.

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.



Tool	Tool Weight	Rim	Cylinder	Stroke (mm)
Model	kg.	Size	Capacity	
BB-1600	10,25	25"-49"	10	101,6
BB1601	10,9	25"-49" Single, two, three piece rims	10	101,6
Contact Factory	13,65	25"–51"	12,3	107,9

POWER TEAM GIVES MUSEUM PROJECT A LIFT

Challenge:

To lower the basement floor by 1.4 meters, removing the basement walls to open up space for the new facilities and street-level entrance and with control and maximum flexibility for a very restricted budget.

Solution:

Using several Power Team hand pumps and sets of cylinders that would be spread out along each beam.

Cylinders were selected that could fit in the very tight gaps available to accommodate the lifting equipment

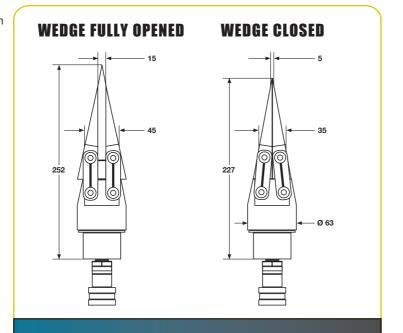






FEATURES AND BENEFITS:

- 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 5 mm Required for Entry
- · Very High Strength due to Special Alloy Used
- Compact and Lightweight Design Only 252 mm Long at a Weight of 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	
FLS15	15 Metric Tons	5 mm	10 mm	Hydraulic	16 cc	3.2 kg	700 bar	

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 700 bar.



HYDRAULIC FLANGE SPREADER

SPREADING FORCE:

Maximum 15 metric tons per tool at 700 bar. It is recommended that the tools be used in pairs, providing a maximum combined force of 30 metric tons.

TYPICAL APPLICATIONS:

- Pipe and flange repair
- Removing elbows
- Couplers gasket and metal seal Replacement
- Heavy equipment maintenance

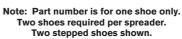
"RECOMMENDED COMPONENTS FOR A COMPLETE HYDRAULIC CIRCUIT



Optional handle Part Number 2008410



Optional Stepped Shoe Part Number 2008083*





Optional Stepped Block Part Number SB15 (1 pc)

WE RECOMMEND USE OF THE FOLLOWING POWER TEAM COMPONENTS:



Description	Part Number
Two Speed, Single-Acting Hand Pump	P19L
Hydraulic Hose Assembly	9764E
Pressure Gauge	9040E
Gauge Adapter	9670
Coupler (male half coupler)	9798

Note: Torque wrench tools use smaller couplers. Do not attempt to use torque wrench hoses with this tool.

Hydraulic PUNCHES

20 & 35 Ton

- · 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.

 $\textbf{No. HP35} - \textbf{Punch only, includes metal case} \quad \textbf{No. HP35SP} - \textbf{Punch set with pump. Includes}$ and die change tools. Wt., 19 kg.

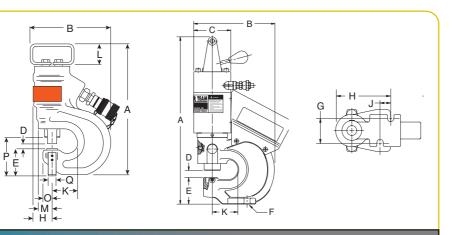
Includes HP35 punch, metal case and 250459 punch/die set. Wt.,20 kg.

No. HP35P - Punch set with pump. Same as HP35SP, but does not include punch/die set. Wt., 39 kg. NOTE: Available in 220 volt, 50 Hz. holes. Includes one each: PD437 11,1 mm Order with suffix "-220".



HP35 punch, PE172 electric/hydraulic No. HP35S - Punch with punches and dies. pump, 9756 hose, 9798 hose half coupler, 250459 punch/die set, metal case. Wt., 40 kg. NOTE: 220 volt, 50 Hz. Order with suffix "-220".

> No. 250459 - Punch/die set for round punch/die, PD562 14,3 mm punch/die, PD688 17,5 mm punch/die, PD812 20,6 mm punch/die. Wt., 0,7 kg.



1																					
ı			Max.		Max.						Mtng.			Ma	x. Th	roat					
ı			Oper.	Oil	Materia	1					Holes				Depth						
ı		Order	Press.	Cap.	hicknes	s A	В	C	D	E	F	G	Н	J	K	L	M	N	0	P	Q
ı	Cap.	Number	(bar)	(cm³)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
	20	HP20	700	64	12,7	419	202	93	16	66	14	54	124	24	57	_	_	_	_	_	_
	35	HP35	700	75	12,7	349	229	95	14	73	6	76	46	_	71	57	38	89	22	102	19
ı																					

No. HP20 - Basic punch. Wt., 15 kg.

No. HP20S - Punch frame with cylinder, valve, handle, two coupling nuts, plus five punch and die sets in 6,4 7,9 ,9,5 ,11,1 and 13,5mm dia.Wt. 15,9 kg.

No. HP20SP* - Complete punch set with PE102AR pump (115/230V, 50/60 Hz), HP20HS hand switch, 9682 nipple, two 9792 female couplers and two 9793 male couplers. Also includes two 9758 3 m 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., 15,9 kg.







Punch Set HP20SP Includes the PE102AR pump, HP20HS hand switch, hoses, couplers, punch and die sets in sizes 6,4, 7,9 ,9,5 ,11,1 , and 13,5 mm

diameter, with storage box Wt.15,9 kg.

252002

HP20

TYPICAL 20 TON STYLE TOOLING

		or use w	FOR HP vith HP20 c Punch)								
Punch					Coupling	Punch/w	Punch/w	Punch Size	INCHES		MM	
Size (mm)	Style	No.	No.	Die No.	Nut No.	Flat Die Set	Bevel Die Set	(mm)	Hole Dia.	Bolt	Hole Dia.	Bolt
6,4		251970	251983		252001			6,4	1/4	#10	6.3	
7.9		251971	251984		252001	PD313		8,0	5/16	1/4	7.9	
9,5		251972	251985	251996	252001	PD375	PD375B	9,5	3/8	5/16	9.5	M8
11,1	0	251973	251986	251997	252001	PD437	PD437B	11,1	7/16	3/8	11.2	M10
13,5	Round	251974	251987	251998	252001	PD531	PD531B	13,5	17/32	7/16	13.5	M12
14.3		251975	251988	251999	252001	PD562	PD562B	14,3	9/16	1/2	14.3	
17,5		251976	251989		252001	PD688		17,5	11/16	5/8	17.5	M16
19,8		251977	251990		252002	PD781		19,8	25/32		19.8	M18
20,6		251978	251991		252002	PD812		20,6	13/16	3/4	20.6	_
12,7		251979	251992		252002							
13,5	Square	251980	251993		252002							
6,4 x 19		251981	251994		252002							



9,5 x 19 Obround 251982 251995



TECH DATA

ACCESSORIES FOR HP20 HYDRAULIC PUNCH

No. HP20FS - Optional foot switch mounted in foot switch guard. Supplied with 3 m cord and male remote connector. Wt., 0,9 kg.

No. HP20HS - Replacement handswitch. Supplied with 3 m cord and male remote connector. Wt., 0,9 kg.

No. 252000 - Optional coupling nut wrench. Makes punch/die changes easier without "rounding- off" coupling nuts. Wt., 0,3 kg.

> Power Team

-G→

www.powerteam.com

Testers Hydraulic

200, 300 and 750 I/min







200 , 300 AND 750 L/MIN IN-LINE HYDRAULIC TESTERS

4

- 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 ±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.
- Troubleshoots systems with capacities to 750 l/min at pressures less than 350 bar. Accurately measure oil flow to ±5%, pressure to within 2% and temperature 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 183).

No. HT50A – Hydraulic circuit tester with single liquid filled pressure gauge, 0-5000 psi, 0-350 bar. Includes two adapter unions for 3/4" male NPTF fittings. Wt., 16,8 kg.

Testing a pump Testing a relief valve Testing a directional valve Relief Valve Va

	Max		Flow		Max.	Oper.	Tem	p. Scale				A	В	C
Order	Flow		Ranges		Press	sure	R	ange	Port	Weight		in.	in.	in.
Number	(/min)	Scale	(gpm)	(l/min)	psi	(bar)	°F	°C	Sizes	lbs.	kg.	(mm)	(mm)	(mm)
									1 ¹ /16-12UN					
HT50A	200	_	0-50	0-200	5,000	345	20-240	-6 to 114	Female "0"	30.3	16.8	121/4	61/4	10
									Ring with			(311)	(159)	(255)
									Union Adapt.			,	,	,
									³/₄" Female					
									NPTF					
HT75	300	High	15-75	50-300	5,000	345	00-250	40-120	3/4" NPT	18.2	8.6	133/4	117/8	5 ³ / ₄
		Low	3-15	10-60					Swivel			(349.25)	(301.62)	(146.05)
		High	25-200	100-750					11/2"*					
HT200	750				5,000	345	00-250	40-120	SAE	28.2	13.6	15 ⁷ / ₈	131/4	63/4
		Low	5-40	20-150					Split Flange			(403.47)	(336.55)	(171.45)

For a complete listing of accessories for the HT series of hydraulic system testers, see pages 193-194. *Not included, must be ordered separately, see page 194.

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 (350 bar) 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. Wt. 0,45 kg.



307281 Low pressure gauge calibrated 0-600 psi 0-42 bar.

Service Accessories HYDRAULIG TESTER



Auxiliary power cord for use with 300 and 750 l/min testers

No. 37045 – Auxiliary power cord. For use with any 12 or 24 volt battery to remotely power tester. Wt. 0,5 Kg. CAUTION: For use on negative ground systems only.





Hoses

No. 9785 – Hose, 19,1 mm I.D. x 3/4" NPTF male both ends. 3 m length. 155 bar working pressure. (2 req'd on 200 and 300 I/min testers) Wt., 3kg.

The following hose assemblies are all 4-ply spiral wound wire, 3 m long. For use with 750 I/min testers.

No. 9786 - Hose, 25,4 mm I.D. x 11/4" NPT male both ends. Recommended max. flow 340 l/min, with a working pressure of 280 bar. Wt., 6,3 kg.

No. 9787 - Hose, 31,8 mm I.D. x 11/4" NPT male both ends. Recommended max. flow 530 I/min, with a working pressure of 210 bar. Wt., 6,4 kg.

No. 9788 - Hose, 38,1 mm I.D. x 11/2" NPT male both ends. Recommended max. flow 750 l/min, with a working pressure of 175 bar. Wt., 11,4 kg.

203264





Hose reducer bushings

No. 203264 – Consists of two hose reducer bushings, 11/4" NPT female x 11/2" NPT male end. Needed to adapt No. 9786 25,4 mm I.D. hose and No. 9787 31,8 mm I.D. hose to tester. Wt., 1 kg.

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FLANGED HEAD ADAPTER UNIONS AND **SPLIT FLANGE KIT**

No. 203154 - Straight flange adapter. 38,1 mm flanged-head to 11/2" NPSM female swivel. Wt.,1 kg.

No. 203155 – 45° flange adapter. 38,1 mm flanged-head by 11/2" NPSM female swivel. Wt., 1,5 kg.

No. 203156 - 90° flange adapter. 38,1 mm flanged-head by 11/2" NPSM female swivel. Wt., 1,9 kg.

No. 203017 - Split flange kit. Consists of four flange halves and attaching bolts to permit use of 38,1 mm

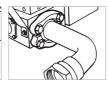
I.D. flange adapters listed at left. Wt., 1.3 kg.











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 11/2" NPT male hose ends to tester. Wt., 3.9 kg.

No. 26073 - Swivel adapter, 3/4" NPTF female

HYDRAULIC FITTINGS FOR USE WITH ALL TESTERS.

No. 16954 - 90° swivel adapter, 3/4" NPTF

male x ³ / ₄ " NPSM female. Wt., 0.4 kg.		x $^{1}/^{2}$ " NPSM female. Wt., 0.1 kg.
No. 22041 - Coupler, 3/4" NPTF male x 3/4" - 16 female ORB. Wt., 0.2kg.		No. 26074 - 45° swivel adapter, 3/4" NPSM female x 3/4" NPTF male. Wt., 0.3kg.
No. 22042 – Coupler, ³ / ₄ " –16 female ORB x 1 ¹ / ₁₆ "–12 female 37° JIC. Wt., 0.2kg.		No. 26075 - Swivel adapter, 3/4" NPSM female x 3/4" NPTF female. Wt., 0.2 kg.
No. 22043 – Coupler, ³ / ₄ " –16 female ORB x ⁹ / ₁₆ "–18 female 37° JIC. Wt.,0,2kg.		No. 26076 – Swivel adapter, 3/4" NPTF male x 3/4" NPSM female. Wt., 0.2kg.
No. 22044 – Coupler, ³ / ₄ " –16 female ORB x ¹ / ₂ " – 20 female 37° JIC. Wt., 0,2 kg.		No. 26077 - Cap, ³ / ₄ " NPTF. Wt., 0.3kg.
No. 27737 - 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., 0.1kg.		No. 26078 – Plug, ³ / ₄ " NPTF. Wt., 0.1 kg.
No. 27287 – Coupler, ³ / ₄ " –16 UNF female ORB x ⁷ / ₈ "–14 UNF female 37° JIC. Wt., 0.2kg		No. 26079 – Adapter, ³ / ₄ " NPTF female x 1 ¹ / ₁₆ " –12 male ORB. Wt., 0.2 kg.
No. 13449 - Cap, 1 ¹ / ₁₆ "-12 UNF female, ³ / ₄ " O.D. tube, 37° flare. Wt., 0.1kg.		No. 208402 - 45° union adapter, ⁷ /s"-14 UNF male 37° JIC x ³ /4" NPTF female. 210 bar working pressure. Wt., 0,3 kg.
No. 26068 – 45° swivel adapter, 1" NPTF male x 3/4" NPSM female. Wt., 0,4 kg.		No. 208401 – 45° union adapter, ⁷ /8"–14 UNF male 37° JIC x ³ /4" NPTF female. Wt., 0,4kg.
No. 26069 - Swivel adapter, 1" NPTF female x ³ / ₄ " NPSM female. Wt., 0.2 kg.		No. 206753 – Coupler, 1 ¹⁵ / ₁₆ "–12 UNF female 37° JIC x ³ / ₄ " NPTF female. Wt., 0,5 kg.
No. 26070 - Adapter, 1" NPTF male x ³ / ₄ " NPTF female. Wt., 0.1kg.		No. 26666 – Connector, 1 ⁵ / ₁₆ "–12 UNF male 37° JIC x ³ / ₄ " NPTF male. Wt., 0.2 kg.
No. 26071 – Service tee, ³ / ₄ " NPTF female (2) x ³ / ₄ " NPTF male. Wt., 0.4 kg.		No. 28984 – Straight adapter, ³ / ₄ " NPTF female x 1 ³ / ₁ s" –12 UN male 37° JIC. Wt., 0.3 kg.
No. 26072 – Swivel adapter, ³ / ₄ " NPSM female x ¹ / ₂ " NPTF male. Wt., 0,2kg.		No. 28985 - Straight adapter union, 1 ³ / ₁₆ "-12 UN female 37° JIC x ³ / ₄ " NPTF female. Wt., 0,6 kg.
	No. 22041 - Coupler, 3/4" NPTF male x 3/4" – 16 female ORB. Wt., 0.2kg. No. 22042 - Coupler, 3/4" -16 female ORB x 1½16" –12 female 37° JIC. Wt., 0.2kg. No. 22043 - Coupler, 3/4" -16 female ORB x 9/16" – 18 female 37° JIC. Wt., 0,2kg. No. 22044 - Coupler, 3/4" -16 female ORB x ½2" - 20 female 37° JIC. Wt., 0,2 kg. No. 27737 - 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., 0.1kg. No. 27287 - Coupler, 3/4" -16 UNF female ORB x 7/8" –14 UNF female 37° JIC. Wt., 0.2kg No. 13449 - Cap, 1½16" –12 UNF female, 3/4" O.D. tube, 37° flare. Wt., 0.1kg. No. 26068 - 45° swivel adapter, 1" NPTF male x 3/4" NPSM female. Wt., 0,4 kg. No. 26070 - Adapter, 1" NPTF male x 3/4" NPSM female. Wt., 0.2 kg. No. 26071 - Service tee, 3/4" NPTF female (2) x 3/4" NPTF male. Wt., 0.4 kg. No. 26072 - Swivel adapter, 3/4" NPSM	No. 22041 - Coupler, ³ / ₄ " NPTF male x ³ / ₄ " - 16 female ORB. Wt., 0.2kg. No. 22042 - Coupler, ³ / ₄ " -16 female ORB x 1 ¹ / ₁ s" -12 female 37° JIC. Wt., 0.2kg. No. 22043 - Coupler, ³ / ₄ " -16 female ORB x ⁹ / ₁ s" -18 female 37° JIC. Wt., 0,2kg. No. 22044 - Coupler, ³ / ₄ " -16 female ORB x ¹ / ₂ " - 20 female 37° JIC. Wt., 0,2 kg. No. 27737 - 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., 0.1kg. No. 27287 - Coupler, ³ / ₄ " -16 UNF female ORB x ⁷ / ₈ " -14 UNF female 37° JIC. Wt., 0.2kg No. 13449 - Cap, 1 ¹ / ₁ s" -12 UNF female, ³ / ₄ " O.D. tube, 37° flare. Wt., 0.1kg. No. 26068 - 45° swivel adapter, 1" NPTF male x ³ / ₄ " NPSM female. Wt., 0,4 kg. No. 26069 - Swivel adapter, 1" NPTF female x ³ / ₄ " NPSM female. Wt., 0.2 kg. No. 26070 - Adapter, 1" NPTF male x ³ / ₄ " NPTF female (2) x ³ / ₄ " NPTF male. Wt., 0.4 kg. No. 26071 - Service tee, ³ / ₄ " NPSM No. 26072 - Swivel adapter, ³ / ₄ " NPSM

NOTE: The recommended maximum working pressure on the above fittings is 5,000 psi except the 208402.

714 Fed. Spec.:

GGG-P-480

HORSESHOE LOCK RING PLIER

 For removing horseshoe lock rings used on hydraulic brakes, differentials, etc. Plier is 203mm long; max. spread: 23,8mm

7313

No. 714 - Horseshoe lock ring plier. Wt., 0.2 kg.

No. 7313 - External snap ring plier easily removes snap rings used to retain bearings on shafts. Max. spread: No. 7125K - Convertible pliers kit. 27mm.

RETAINING RING PLIER KITS

· Choose from four sets; internal ring, either internal or external rings.

No. 7053K – Replaceable tip pliers kit. This versatile kit contains (1) internal and (1) external pliers with (8) tip sets. Two sets each: 0,9 mm dia. 90° bend, 1,2 mm dia. straight, 1,2 mm dia. 90° bend, 1,8mm dia. straight. Recommended for 6,4 -51 mm rings. Packaged in plastic storage case. Wt., 0.3 kg.

Tip

Str.

Str.

Str.

Str.

Str.

Str.

Str.

Str.

Str.

45° 90°

Str.

90°

Str.

45° 90°

0100

0200

0300

0400

0500

0600

7300

7301

1120

1125

1131

1320

1329

1340

1345

1349

No. 15702 - Replaceable tip kit (only) for No. 7053K.

No. 7123K - Convertible pliers kit. Contains No. 1120 (1mm dia./straight tip) and No. 1340 (1,8mm dia./ straight tip). Each pliers "converts" to handle both internal and external rings. Packaged in a reusable plastic storage case. Wt., 0,4Kg.

Contains No. 1125 (1 mm dia./45° bent tip) and No. 1345 (1,8 mm dia./45° bent tip). Each pliers "converts" to external ring and convertible pliers for handle both internal and external rings. Packaged in a reusable plastic storage case. Wt., 0.4kg.

No. 7406K - Professional pliers kit. Contains (6) retaining convertible pliers to handle both internal and external rings from 6,4-51 mm. Includes straight and 90° off-set pliers with 1, 1,2, and 1,8 mm tip diameters. Includes Nos. 1120, 1131, 1320, 1329, 1340 and 1349. Packaged in an impact resistant storage case. Wt., 0,9 kg.

AND 7301 PLIERS

No. 209201 - Replacement tips (pr.) for the 7300 and 7301 pliers. Wt., 0.1 kg.

REPLACEMENT TIPS FOR 7300

Retaining Ring

Internal and External

7053K internal & external plier, 4 sizes of tips.







Tip Size Dia. (mm)	For Int'l Rings* Bore Dia. (mm)	
1	9,5 - 26	
1		6,4 - 22
1,8	27 - 44,5	
1,8		24 - 36,5
2,3	46 - 89	
2,9		38 - 89
3	78 - 152	
3		38 - 165
Conv	ertible Pliers	
1	9,5 - 14	6,4 - 17
1	9,5 - 14	6,4 - 17
1	9,5 - 14	6,4 - 17
1,2	16 - 26	17 - 22
1,2	16- 26	17 - 22
1,8	27 - 44,5	24 - 36,5
1,8	27 - 44,5	24 -36,5
1.8	27 - 44.5	24 - 36.5

Always wear safety goggles when using pliers *Capacities are shown for basic style rings.

RETAINING RING PLIERS SELECTION GUIDE



Exte	rnal	Inte	Internal					
No. 0200	No. 7301	No. 0100	No. 7300	No. 1120				
No. 0400		No. 0300		No. 1320				
No. 0600		No. 0500		No. 1340				
				No. 1125*				
				No. 1345*				
5 0	000 B 40			No. 1131**				
	.: GGG-P-48			No. 1329**				
∖ * 45° Anį	gled Tips	** 90° Ang	gled Tips	No. 1349**				

> Power Team

ANICA



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 3344A is

accurate to within ± 1 rpm. The 10mm 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, 2,75 m of reflective tape and plastic case. Wt., 2 kg.

No. 39811 - Replacement magnetic base assembly. Wt. 0,1kg.

No. 45329 - Replacement photo probe assembly, Wt., 0.2 kg.

No. 204666 - Replacement retro-reflective indicator tape, 2,75 m long x 12,7mm wide.

SPECIFICATIONS

Readout: Liquid crystal display: 4 (10mm high) digits, low battery indicator, memory mode indicator, high and low RPM memory mode indicator.

Range: 200 to 9999 rpm. Accuracy: ± .25%, ± 1 rpm. Update time: 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 4,6m plug-in cable. Light holder assembly: 13,6 kg rated magnet; 50,8 mm dia. x 6,4 mm high (102 mm high overall with post). Size: 86 w. 152 h x 38 mm d.

Carrying case: 343 w, 254 h x 102 mm d.

HTS50 HEAVY-DUTY PIPE SEALANT WITH TEFLON®

- Seals new or damaged threads: resists water, chemicals and oils.
- Replaces conventional tape methods; forms a clog-free seal. Effective at 700 bar.

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 Teflon® 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 -54° to

No. HTS50 - Sealant, 50 ml, tube, Wt., 0.2 kg. (Teflon® is a registered trademark of duPont Co.)

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 - "0" ring seal pick. Wt., 0.1 kg.

No. 7103 - Set of two "O" ring seal picks. Wt., 0.1 kg.

7103

7312

UNIVERSAL OUTSIDE THREAD CHASER No. 7402 - Thread chaser, complete

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. 32 to 127 mm O.D.

(with 6 dies: threads per inch - 4, 5, $6, 7, 7^{1}/_{2}, 8, 9, 10, 11, 11^{1}/_{2}, 12, 14,$ 16, 18, 20 and 24).

No. 202817 - Metric die set (3 dies: mm per thread: 1, $1^{1}/_{4}$, $1^{1}/_{2}$, $1^{3}/_{4}$, 2, $2^{1}/_{2}$, 3, $3^{1}/_{2}$, and 4). Wt., 0.1 kg.

7402

MAGNETIC PICK-UP TOOL

Has permanent magnetic head for retrieving parts from otherwise inaccessible places.

No. 7395 - Pick-up tool with pocket clip. 152 mm lg. Wt., 0.1 kg.



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 mm dia. pin holes; features a 3/4" sq. and shape.

No. 7400 – Chain wrench, cap. 12,7 to 121 mm O.D. (Capacity= 450 Nm) Wt., 0,9kg

No. 7401 - Chain wrench, cap. 76 to 171 mm O.D. (Capacity= 900 Nm) Wt., 2,3 kg.

No. 209199 - Replacement chain with Our rolling head pry bars are an pin for No. 7400 chain wrench (406 mm long).

No. 209200 - Replacement chain with pin for No. 7401 chain wrench (610 mm long).

ADJUSTABLE HOOK SPANNER

WRENCH

packing gland nuts are used. Cap.: 38 to No. 7164 - Pry bar; 14,3 mm round, 102 mm. Handle overall length: 483 mm. 406 mm long. Wt., 0,5 kg.

No. 885 - Adjustable hook spanner wrench. Wt., 1,4 kg.

ADJUSTABLE HOOK SPANNER

WRENCHES

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 121 to 324 mm O.D. Handle overall length: 610 mm; diameter: 25,4 mm.

No. 7307 - Spanner wrench with one 9,5 mm thick jaw. Wt., 3,3 kg.

No. 7308 - Spanner wrench with two interchangeable jaws: one 9,5 mm thick, one 19 mm thick, Wt., 5 kg

HEAVY-DUTY ADJUSTABLE SPANNER

Extra heavy construction. Has one 19 mm thick, eleven-position hook-jaw for a capacity of 131 to 324 mm O.D. Drop-forged. Handle length: 654 mm; handle dia.: 33.3 mm

No. 7309 - Heavy duty adjustable hook spanner wrench. Wt., 5 kg.

ADJUSTABLE GLAND NUT WRENCH

Designed to handle 51 to 152 mm dia. hydraulic cylinder gland nuts on many construction vehicles. Fits 6,4 and 7,9

No. 1266 - Adjustable gland nut wrench. Wt., 1,4 kg.

No. 204928 - Replacement pin for No. 1266

PRY BARS

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; 9,5 mm round, 152 mm long. Wt., 0,1 kg.

No. 7163 - Pry bar; 11,1 mm round, Needed wherever turret adjusting nuts or 305 mm long. Wt., 0,3 kg.

No. 7165 - Pry bar; 19 mm round, 457 mm long. Wt., 1 kg.

JIMMY BARS

Ideal for general lifting or prying. Heat treated chrome alloy steel to resist bending or breaking.

No. 7166 - Jimmy bar; 15,9 mm round, 457 mm long. Wt., 0,6 kg.

No. 7167 – Jimmy bar; 19 mm round, 610mm long. Wt., 1,1 kg.

No. 7168 – Jimmy bar; 22,2 mm round, 762 mm long. Wt., 1 kg.

"MAJOR PERSUADER" JIMMY BARS

Two big jimmy bars for big jobs. Forged from chrome alloy steel.

No. 7420 – Jimmy bar; 22,2 mm round, 1.168 mm long. Wt., 3,4 kg.

No. 7421 - Jimmy bar; 25,4 mm round, 1.372 mm long. Wt., 1,9 kg.

Wrenches **AND PRY BARS**



PULLERS













...213
PROTECTIVE
BLANKETS



...196 POSI-LOCK PULLERS



2/3 JAW PULLERS
GRIP-O-MATIC



...200 MECHANICAL JAW PULLERS



...215 PULLER ACCESSORIES GRIP-O-MATIC



...202 MECHANICAL PUSH PULLERS



...216 PULLERS HYDRAULIC



204... PULLING TTACHMENTS



...220 HYDRAULIC PULLER SETS



...206 PULLING SLIDE HAMMER



...225 BEARING PUSHER



PULLER SETS...208



...226 UNIVERSAL PULLER



ADAPTERS...210



...228 ROLLER BEARING PULLER/INSTALLER



...212 MANUAL PULLER SETS



...230 BEARING, BUSHING, SEAL DRIVERS



CONSIDERATIONS:

Determine the type of puller or puller combination. Which puller type is best suited for gripping the part?

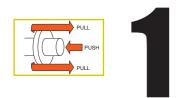
Is a combination of puller types required?

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.



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.

PULLING A GEAR, BEARING, WHEEL, PULLEY, ETC., FROM A SHAFT

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 196-197, 210-211, 212-213, 222-223)



Push-Pullers can thread directly

into a threaded part for easy and secure removal. Push-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 198-199, 214-215)



Slide hammers are

best suited for lightduty tasks. Slide hammers can be used for multiplewith pulling problems when combined pulling attachments.

(pages 202-204)



Bearing/pulley attachments provide a "knife-like" edge

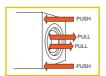
to get behind parts for added versatility and secure removal of parts. Great for parts that don't offer adequate grip with jaw-type pullers. (page 201)



Adapters

Whether you need an adapter compatible with any number of threaded hole sizes, protection of 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 206-207)



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.



Internal pulling

attachments have is ideal for removing narrow jaws which extend through the center of the part to be pulled. They provide a straight puller legs against. pull and avoid damaging (pages 210-211) housings. Internal

adjustable jaws to fit various diameter parts.

attachments feature

(page 208)

PULLING INTERNAL BEARING RACES, RETAINER, SEALS, ETC.

RECOMMENDED TOOLS:

Slide hammer with internal attachment

parts from blind holes, especially where there is no housing to brace



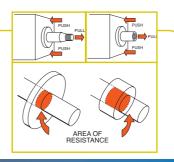
Push-puller with internal attachment.

Push-puller is available in both manual and hydraulic versions.

(pages 206-207)



PULLERS



A shaft with a threaded end can be removed without damage by using one of our slide hammer, manual Push-puller or hydraulic Push-pullers, 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



Slide hammer puller matched with a set of threaded adapters is a perfect tool for light duty pulling needs. (pages 202-203, 206-207)



Push-pullers matched with a set of threaded adapters make for an extra versatile pulling tool. (pages 198-199,

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.

RECOMMENDED TOOLS:



206-207, 216-217)

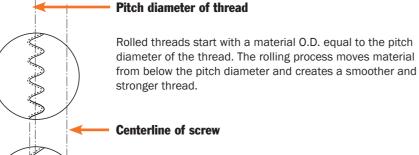
Basics

PULLERS

Puller selection

Choosing the Right Puller

WHY OUR ROLLED PULLER THREADS ARE SUPERIOR:



Cut threads start with a material O.D. equal to the thread O.D.. Cutting can cause tears on the thread surface which can make it rough and can cause minute cracks at root of thread which can open up during heat treat and lessen the capacity of the screw.

Outside diameter of thread

Puller with a bearing pulling attachment was used to take a bearing off a utilities well pump

A 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.

Operator safety comes first!

and observe safety precautions at all times

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:

- Wear safety glasses at all times! You have only one pair of eyes, so protect them from possible flying parts.
- 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.

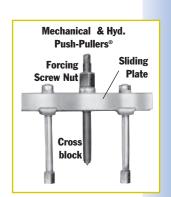
Tons of force are being exerted with your Pulling System. You must respect this force,

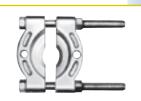
- 3. Cover work with a protective blanket! With high forces being exerted on the part being pulled, breakage may sometimes result. By covering the work with a protective blanket, the mechanic reduces the danger of flying parts.
- **4. Apply force gradually!** The component should give a little at a time. Do not try speed removal by using an impact wrench on the puller screw.
- 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 Push-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.screw. Always cover work with a protective blanket







Features Benefits



- Grip-O-Matic® feature on jaw type pullers
- 2-way, 3-way and 2/3-way combination pullers
 1 to 37 ton mechanical pullers
 5 to 50 ton hydraulic pullers
 2¹/s" (54 mm) to 27⁵/s" (702 mm) reach
 3¹/4" (83 mm) to 44" (1,118 mm) of spread
- Forged alloy steel jaws
- Machined puller jaw toes
- Alloy steel heads (forged or flame cut)
- Rolled "V" threads
- · Special coating on threads
- · Heat treated alloy steel cross bolts
- Standard hydraulic cylinders on Grip-O-Matic® series
- Adjusting nut on Super Grip-O-Matic® series

- The harder the pulling force, the tighter the jaws grip
- A wide variety of pullers; select a specific puller for a specific application or select one or more pullers for general applications
- Strongest possible part; the grain of the material follows the contour of the part.
- Larger and stronger pulling toe than most competitors
- Heat treated and designed for maximum strength
- Stronger and smoother than cut threads
- Resists corrosion, traps lubrication better than black oxide
- · Designed for max. shear strength
- Cylinder can be removed from puller and used in other hydraulic applications
- · Allows for controlled jaw spread adjustment

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.



> Power Team®

PULLERS

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 $\text{Cage}^{\circledR}"$ 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.

HYDRAULIC





T-handle facilitates the opening, closing, locking and aligning of the jaws.

Steel frame guides jaws for fast setup, solid contact, and superior safety

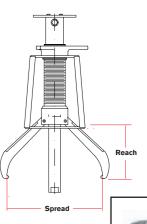
> Leverage up front for vise-like power and no slippage

Center bolt threads designed for less effort to apply high torque

Slim tapered jaws allow for _ easier gripping and better access to tight spots

Posi Lock[®] is a registered trademark of Posi Lock Puller, Inc.





ORDERING INFO

MECHANICAL	PULLERS
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MECHANIC	JAL 1 0.					Accessories						
SPX	Сар	# of	Puller	Reach	Spread		Long Jaws			Bolt		
Part #	(Ton)	Jaws	Weight kg	mm	mm	SPX Part #	Reach mm	Spread mm	Tip Protector	Extender		
PT202	1	2	0,3	57	82.6							
PT204	2	2	1.4	102	127				PTP4	PTX4		
PT206	6	2	3.2	152	178				PTP6	PTX6		
PT208	12	2	5	203	305	PT11054 / PT11054L	249/406	401/559	PTP10	PTX10		
PT210	14	2	6.4	246	381	PT11054L	406	559	PTP10	PTX10		
PT213	25	2	13.6	305	457	PT11354L	508	762	PTP13 / PTP16			
PT216	35	2	22.7	356	635	PT11654L	2660	965	PTP13 / PTP16			
PT102	1	3	0.3	57	82.6							
PT103	2	3	0.6	76.2	114.3							
PT104	5	3	1.8	102	127				PTP4	PTX4		
PT106	10	3	3.6	152	178				PTP6	PTX6		
PT108	17	3	5.9	203	305	PT11054 / PT11054L	249/406	401/559	PTP10	PTX10		
PT110	20	3	8.2	246	381	PT11054L	406	559	PTP10	PTX10		
PT113	30	3	18.2	305	457	PT11354L	508	762	PTP13 / PTP16			
PT116	40	3	29.5	356	635	PT11654L	660	965	PTP13 / PTP16			

HADDVIII IC DITTI EDG

HYDRAULIC PULLERS						Accessories								
			Puller				Long Jaws		Leveling		Storage			
SPX Part #	(Ton)	# of Jaws	Weight	Reach mm	Spread mm	SPX Part #	Reach mm	Spread mm	Arm Bracket Set	Hydraulic Lift Cart	Transport Cart			
PTPHA-206	5	2	5.8	152.4	203.2									
PTPHA-208	10	2	6.4	203	305	PT11054 / PT11054L	249/406	401/559						
PTPHA-210	15	2	10	254	381	PTPH-11054L	406	559	PTPH-1210*					
PTPHA-213	25	2	21.3	305	457	PT11354L	508	62	PTPH-1213	PTPT-3050	PTPT-2550			
PTPHA-216	50	2	40.9	356	635	PTPH-21654L	660	965	PTPH-1216	PTPT-3050	PTPT-2550			
PTPHA-106	5	3	6.5	152.4	203.2									
PTPHA-108	10	3	7.3	203	305	PT11054 / PT11054L	249/406	401/559						
PTPHA-110	15	3	11.4	254	381	PTPH-11054L	406	559	PTPH-1110*					
PTPHA-113	25	3	25	305	457	PT11354L	508	762	PTPH-1113	PTPT-3050	PTPT-2550			
PTPHA-116	50	3	45	356	635	PTPH-11654L	660	965	PTPH-1116	PTPT-3050	PTPT-2550			

Leveling Arm



* Brackets Only

>Power Team®

PULLERS

Hydraulic Bundles



PTPHD-110-E220

Also available in E110

HYDRAULIC BUNDLES[†]

SPX Part #	Cap (Ton)	# of Jaws	Cylinder Part #	Pump Part #	Gauge Part #	Hose Part #	T Adapter Part #	Coupler	Dust Cap	SPX Part #	Сар (Топ)	# of Jaws	Cylinder Part #	Pump Part #	Gauge Part #	Hose Part #	T Adapter Part #	Coupler	Dust Cap
PTPHB-206	5	2	C55C							PTPHB-106	5	3	C55C						
PTPHC-206E	5	2	C55C	P19L	9040E	9767E	9670	9798	9800	PTPHC-106E	5	3	C55C	P19L	9040E	9767E	9670	9798	9800
PTPHD-206-E220	5	2	C55C	PE172-E220	9040E	9769E	9670	9798	9800	PTPHD-106-E220	5	3	C55C	PE172 -E220	9040E	9769E	9670	9798	9800
PTPHD-206-E110	5	2	C55C	PE172-E110	9040E	9769E	9670	9798	9800	PTPHD-106-E110	5	3	C55C	PE172-E110	9040E	9769E	9670	9798	9800
PTPHB-208	10	2	C106C							PTPHB-108	10	3	C106C						
PTPHC-208E	10	2	C106C	P19L	9040E	9767E	9670	9798	9800	PTPHC-108E	10	3	C106C	P19L	9040E	9767E	9670	9798	9800
PTPHD-208-E220	10	2	C106C	PE172-E220	9040E	9769E	9670	9798	9800	PTPHD-108-E220	10	3	C106C	PE172 -E220	9040E	9769E	9670	9798	9800
PTPHD-208-E110	10	2	C106C	PE172-E110	9040E	9769E	9670	9798	9800	PTPHD-108-E110	10	3	C106C	PE172-E110	9040E	9769E	9670	9798	9800
PTPHB-210	15	2	C1510C							PTPHB-110	15	3	C1510C						
PTPHC-210E	15	2	C1510C	P59L	9040E	9767E	9670	9798	9800	PTPHC-110E	15	3	C1510C	P59L	9040E	9767E	9670	9798	9800
PTPHD-210-E220	15	2	C1510C	PE172-E220	9040E	9769E	9670	9798	9800	PTPHD-110-E220	15	3	C1510C	PE172-E220	9040E	9769E	9670	9798	9800
PTPHD-210-E110	15	2	C1510C	PE172-E110	9040E	9769E	9670	9798	9800	PTPHD-110-E110	15	3	C1510C	PE172-E110	9040E	9769E	9670	9798	9800
PTPHB-213	25	2	C2514C							PTPHB-113	25	3	C2514C						
PTPHC-213E	25	2	C2514C	P159	9040E	9767E	9670	9798	9800	PTPHC-113E	25	3	C2514C	P159	9040E	9767E	9670	9798	9800
PTPHD-213-E220	25	2	C2514C	PE172-E220	9040E	9769E	9670	9798	9800	PTPHD-113-E220	25	3	C2514C	PE172 -E220	9040E	9769E	9670	9798	9800
PTPHD-213-E110	25	2	C2514C	PE172-E110	9040E	9769E	9670	9798	9800	PTPHD-113-E110	25	3	C2514C	PE172-E110	9040E	9769E	9670	9798	9800
PTPHB-216	50	2	C5513C							PTPHB-116	50	3	C5513C						
PTPHC-216E	50	2	C5513C	P460	9040E	9767E	9670	9798	9800	PTPHC-116E	50	3	C5513C	P460	9040E	9767E	9670	9798	9800
PTPHD-216-E220	50	2	C5513C	PE172-E220	9040E	9769E	9670	9798	9800	PTPHD-116-E220	50	3	C5513C	PE172 -E220	9040E	9769E	9670	9798	9800
PTPHD-216-E110	50	2	C5513C	PE172-E110	9040E	9769E	9670	9798		PTPHD-116-E110	50	3	C5513C	PE172-E110	9040E	9769E	9670	9798	980

† C & D Bundles will include 25599 fitting.



Hydrauic Pullers



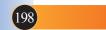
Features and Benefits:

- 700 bar electric 2 stage pump
- Remote jog switch with 3m cord
- 100 ton cylinder 700 bar with spring return (260.4 mm stroke)
- Hydraulic-actuated lift cart extends puller from ground to a height of 1.5m.
- Jaws are hydraulically controlled with cylinders
- Multiple pushing adapters:
- (1) 89mm diameter X 228.6mm
- (1) 89mm diameter X 482.6mm
- (1) 89mm diameter X 736.6mm
- 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 (kg)	Reach mm	Spread mm	Jaw Tip Width mm	Tip Clearance mm	Tip Depth	Cylinder Part #	Pump Part #	Gauge Part #	Hose Part #
					S	ingle Acting						
PTPH-102T-E220	100	2	772	1270	1778	32	89	89	C10010C	PE552-E220	9040E	9769E
PTPH-102T-E110	100	2	772	1270	1778	32	89	89	C10010C	PE552-E110	9040E	9769E
PTPH-100T-E220	100	3	885	1270	1778	32	89	89	C10010C	PE552-E220	9040E	9769E
PTPH-100T-E110	100	3	885	1270	1778	32	89	89	C10010C	PE552-E110	9040E	9769E
PTPH-123T-E220	100	2/3	908	1270	1778	32	89	89	C10010C	PE552-E220	9040E	9769E
PTPH-123T-E110	100	2/3	908	1270	1778	32	89	89	C10010C	PE552-E110	9040E	9769E
PTPH-102TV-E220*	100	2	817	1270	1778	32	89	89	C10010C	PE552-E220	9040E	9769E
PTPH-102TV-E110*	100	2	817	1270	1778	32	89	89	C10010C	PE552-E110	9040E	9769E
					Do	ouble Acting	1					
PTPH-102TDA-E220	100	2	817	1270	1778	32	89	89	RD10013	PE554-E220	9040E	9769E
PTPH-102TDA-E110	100	2	817	1270	1778	32	89	89	RD10013	PE554-E110	9040E	9769E
PTPH-100TDA-E220	100	3	931	1270	1778	32	89	89	RD10013	PE554-E220	9040E	9769E
PTPH-100TDA-E110	100	3	931	1270	1778	32	89	89	RD10013	PE554-E110	9040E	9769E
PTPH-123TDA-E220	100	2/3	953	1270	1778	32	89	89	RD10013	PE554-E220	9040E	9769E
PTPH-123TDA-E110	100	2/3	953	1270	1778	32	89	89	RD10013	PE554-E110	9040E	9769E
PTPH-102DATV-E220*	100	2	817	1270	1778	32	89	89	RD10013	PE554-E220	9040E	9769E
PTPH-102DATV-E110*	100	2	817	1270	1778	32	89	89	RD10013	PE554-E110	9040E	9769E
PTPH-200T-E220**	200	4	1884	1219	1778	32	89	89	CONTACT FACTORY			
PTPH-200T-E110**	200	4	1884	1219	1778	32	89	89	CONTACT FACTORY			
PTPH-200T-E380**	200	4	1884	1219	1778	32	89	89	CONTACT FACTORY			

^{*} Vertical Puller.





^{**} Contact Factory for 200T Hydraulic Puller.

201

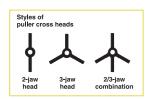
Jaw Pullers MECHANICAL

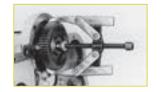
2 & 3 Jaw Pullers

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.

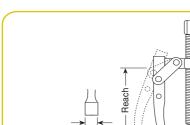




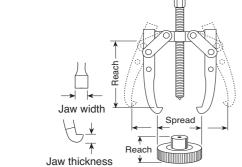


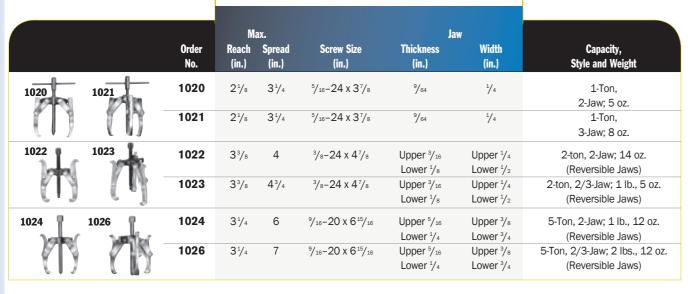
- Lock-Jaw[™] feature on all pullers. The harder the pull, the tighter the grip for removing gears, bearings and countless other press fitted parts.
- 2-way, 3-way and 2/3 way combination pullers make it easy to select a specific puller for a specific application.
- · Forged from high quality steel, heat treated and subjected to rigorous tests which exceed rated puller capacity.
- Meets Fed. Spec.: GGG-P-00781-D



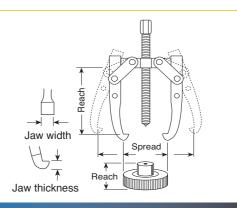


Pulling attachment





- 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.	Ma Reach (in.)	ax. Spread (in.)	Screw Size (in.)	Jav Thickness (in.)	v Width (in.)	Capacity, Style and Weight
1025	1027	1025	51/2	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)
(1)	(1)	1027	51/2	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)
1035	1037	1035	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)
(1)		1037	5	101/2	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)
1036	1038	1036	83/4	91/2	¹¹/₁6−18 x 9	11/32	1	7-Ton, Long 2-Jaw; 5 lbs., 6 oz.
(I)	(W	1038	83/4	11	¹¹ / ₁₆ -18 x 9	11/32	1	7-Ton, Long 2/3-Jaw; 8 lbs., 2 oz.
1039/1040	1041/1042	1039	11	12	¹³ / ₁₆ -16 x 12	9/16	1	13-Ton, 2-Jaw; 10 lbs., 13 oz.
7	271	1040	15 ¹ / ₄	15 ¹ / ₂	¹³ / ₁₆ -16 x 12	9/16	1	13-Ton, Long 2-Jaw; 13 lbs.
(1)		1041	11	12	¹³ / ₁₆ -16 x 12	9/16	1	13-Ton, 2/3-Jaw; 16 lbs., 4 oz.
		1042	151/4	17	¹³ / ₁₆ -16 x 12	9/16	1	13-Ton, Long 2/3-Jaw; 18 lbs., 12 oz.
1043/1044	1045/1046	1043	141/2	14	1-14 x 13 ¹ / ₂ "	9/16	1	17 ¹ / ₂ -Ton, Long 2-Jaw; 23 lbs.
W	والسا	1044	18³/₄	16	1-14 x 13½" lg.	13/16	19/32	17½-Ton, Long 2-Jaw; 26 lbs.
(1)		1045	141/2	14	1-14 x 13 ¹ / ₂	13/16	19/32	$17^{1}/_{2}$ -Ton, 3-Jaw; 33 lbs.
• /	~ <i>p</i>	1046	18³/ ₄	16	1-14 x 13 ¹ / ₂	13/16	19/32	17 ¹ / ₂ -Ton, Long 3-Jaw; 37 lbs.
1048	1050	1048	221/4	20	1 ¹ / ₄ -12 x 16 ⁵ / ₈	11/16	11/2	25-Ton, Long 2-Jaw; 42 lbs., 12 oz.
7		1050	221/4	20	1 ¹ / ₄ -12 x 16 ⁵ / ₈	11/16	11/2	25-Ton, Long 3-Jaw; 60 lbs.

For puller piece part identification, order Power Team parts catalog PC97

>Power Team® www.powerteam.com

Mechanical PUSH PULLERS

10, 17¹/₂, & 30 Ton Cap.

PULLERS

For removing and installing gears, bearings, pulleys and other press-fitted parts.

Fed. Spec.: GGG-P-00781-D

• Can apply a pushing or pulling force, depending on how the puller is set up.

- Optional leg kits adapt your Push-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 Push-Pullers.®

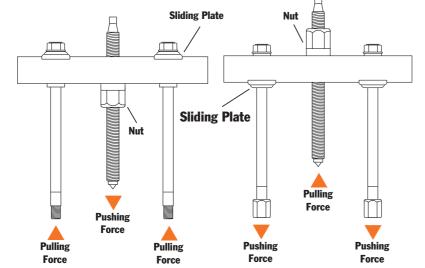
Selection and capacity rating - Each Push-Puller's specified tonnage "capacity" is determined using its standard legs in tension. Using longer legs, or a setup in which the legs are in compression, will reduce the "capacity". Always select the largest "capacity"

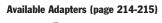
puller and the shortest legs that will fit the job.



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.

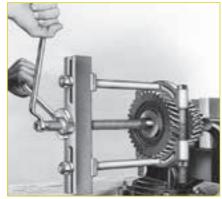






Shaft Protector







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

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.

used with Nos. 1126 and 1127

Internal Pulling Attachment

	927			,	Max.	
	Reach	Spread	Screw	Size	Notes / Weight	
	210 mn	n 54 - 184 mm	³/4"-16 x 305 mm	1/2" of forcing	g screw tip end is thi	readed ⁵ /8"-18. No. 1100 legs and No.
927				24827 leg e	nds included. Wt., 3	,2 kg.
	Order No. Leg	Length & Wt.		Order No.	Leg Length & Wt	
	1103	121 mm,		1102	298 mm,	
		0,45 kg			1 kg	
111	1100	171 mm,		1101	400 mm,	
		0,7 kg	- 10		1,5 kg	
h Council I	Extra Loga	(noir) for No. 027 D	ish-Puller (Reach equa	ale log longth r	olus EO 9 mm with	log and cane)

	938	Max.				
	Read	h Spread	Screw	Size	Notes / Weight	
938	282 r	nm 79-298 mr	m 1"-14 x 336 mm	•	threaded ⁵ /8"-18. No. 13 7 leg ends included. Wt.	· ·
	Order No.	Leg Length & Wt.		Order No.	Leg Length & Wt.	
	1107	114 mm		1105	572 mm	
"	1106	1,1 kg		1108	4,1 kg	
į.	1106	241 mm 2 kg.		1108	762 mm 5,2 kg	
Spread	← 1104	419 mm 3 kg				

Extra Legs (pair) for No. 938 Push-Puller (Reach equals leg length plus 50,8 mm with leg end caps.)

939 Max. Spread Notes / Weight 267 mm 178-413 mm 1¹/₂"-12 x 438 mm Leg ends threaded 1"-14. No. 1109 legs and No. 28390 leg ends included. Wt., 20 kg Leg Length & Wt. Order No. Leg Length & Wt. Order No. 1109 1111 203 mm 711 mm 10 kg 3,6 kg 1110 457 mm 6,8 kg

Extra Legs (pair) for No. 939 Push-Puller (Reach equals leg length plus 66,7 mm with leg end caps.)

> Power Team

www.powerteam.com

Pulling

Pulling ATTACHMENTS

38,1 - 228 mm **Jaw Spreads**

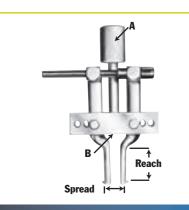
PULLERS

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 Push-Puller.®
- Adjustable jaws fit various diameters

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. Refer to page 195.

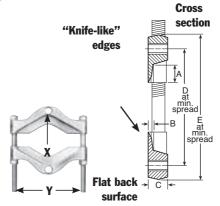
	Jav	V				
Order No.	Spread (mm)	Reach (mm)	A (in. – thd.)	B (in. – thd.)	Wt. (kg)	Application
1153 1150	38,1-127 38,1-152	54 102	1-14 1-14 1-14	5/s-18 5/s-18	1,9	Use with Nos. 927 and 938 Push-Pullers,
1151 1152	38,1-178 38,1-152	38,1-178 133 38,1-152 102		5/s-18 5/s-18	2 1,6	Use with Nos. 927 and 938 Push-Pullers, 1155 and 1156 slide hammer pullers, or
1154 1165	38,1-152 76,7-229	102 149	1-8 1 ¹ / ₂ -12	⁵ / ₈ -18 1-14	2 6,1	24832 and 24833 puller screw. Use with No. PPH17. Use with No. 939 Push-Puller.
1166	76,2-229 Puller Screws	149	11/4-7	1-14	6,1	Use with No. PPH30.
24832	349 mm long		5/8-18	0,5		Use with Nos. 1150, 1151, 1152, and 1153. Acts as a regular forcing screw when threaded directly into block of pulling attachment.
24833	140 mm long		5/8-18	0,2		Use with Nos. 1150, 1152, and 1153. Acts as a regular forcing screw when threaded directly into block of pulling attachment.



- "Knife-like" edges fit behind bearings and other hard-to-grip parts for easy removal, even where clearance is limited.
- Usable with both Grip-O-Matic® jaw type pullers and Push-Pullers®.
- All puller blocks are made from forged alloy steel

Fed. Spec.: GGG-P-00781-D

Used where space does not permit hooking puller jaws directly on part to be pulled.



Attachment clamps down into V-groove to distribute load. Use with Grip-O-Matic® pullers or Push-Pullers.

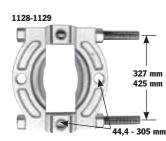


- **X** = Thread of tapped hole in adapter.
- **Y** = Distance between adjusting screws.

	Max.									
Order	Spread	X	Y	A	В	C	D	E	Wt.	
No.	(mm)	(in.)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	Application - (Use with Puller Nos.)
4404	0.4.00.0	E / 40	40			40.7	040		0.0	1000 1000 11000
	6,4-22,2	5/16-18	43	11,1	3,2	12,7	34,9	50,8	0,3	1020, 1022, and 1023.
1122	3,2-51	3/8-16	62	11,1	4,0	15,9	50,8	69,9	0,6	1024, 1025, 1026, 1027, 7392 and 7393.
1123	9,5-117	5/8-18	111	22,2	9,5	25,4	88,9	114,3	2.3	1035, 1036, 1037, 1038, and 927.
1124	12,7-133	5/8-18	152	34,9	11,1	31,8	127	158,8	5,4	1039, 1040, 1041, 1042, PH172, PPH17,
										and 938.
1126	16-203	1-14	181	34,9	17,5	34,9	146,1	190,5	9	1047, 1043, and 939.
1127	19-340	1-14	260	44,5	17,5	44,5	158,8	215,9	18,8	1047, 1073, and 939.
1128	127-327	13/4-12	330	44,5	19,1	57,2	327	406	45,4	PH553C and PPH50.
										(When using 1128 with PPH50, two 8024 adapters are
										required to connect PPH50 to the puller tees.)
1129	152-425	13/4-12	425	47,6	26,2	69,9	400,1	495,3	89,5	1079 and 1077. (see No.8024 adapter to connect legs of
										1077 to puller tees of 1129).
1130	12,7-219	5/8-18	152	34,9	11,1	31,8	127	158,8	5,4	1039, 1040, 1041, 1042, PH172, PPH17, and 938.
			V-belt	pulley p	ulling at	ttachme	ents			
679	45-149	5/8-18	152						2	1035, 1036, 1037, 1038, and 927.
680	42,3-254	5/8-18	257						10,1	1039, 1040, 1041, 1042, 1047, 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: 127 to 327 mm. Wt., 45,5 kg.



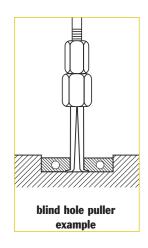
CAUTION: Please refer to page 195.

>Power Team®

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 8 to 44,5 mm 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., 9,5 kg.



Order No.	Desc	ription	Order No.	Desc	ription		
24835	Forcin	g Screw	28253	Actuator Pir	n (5 mm dia.)		
24836	Forcing	Screw Nut	28256	Actuator Pin	(12,7 mm dia.)		
22185	Hamme	er 1,1 kg.	41331	Br	idge		
208627	Shank & Tee	Bar Assembly	28323GY8	Metal Box			
28250	Actuator Pin	(3,2 mm dia.)	10419	Meta	al Box		
Order No.	Inch Range	MM Range	Order No.	Inc Range	MM Range		
33856*	5/16" to 3/8"	8 to 9.5	33861**	3/4" to 7/8"	19.1 to 22.2		
33857*	3/8" to 7/16"	9.5 to 11.1	33862**	⁷ /s" to 1"	22.2 to 25.4		
33858**	7/16" to 1/2"	11.1 to 12.7	33863***	1" to 11/4"	25.4 to 31.7		
33859**	1/2" to 5/8"	12.7 to 15.9	33864**	11/4" to 11/2"	31.7 to 38.1		
33860**	5/8" to 3/4"	15.9 to 19.1	33865***	1½" to 1¾4	38.1 to 44.4		

*Use with 3 mm actuator pin. **Use with 4,8 mm actuator pin. ***Use with 12,7 mm actuator pin

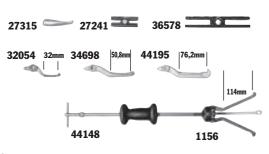
Slide hammer puller set – This very handy set is ideal for those close-quarter, inside pulling jobs. Very practical for pulling motor, generator, and magneto bearings. Also good for removing smallbore bushings, bearings, and oil seals.

No. SS2 - Slide hammer puller set. Wt., 2,6 kg.

	Inside Spread			
Jaw Set	Min. (mm)	Max. (mm)		
ડ હા	(111111)	(111111)		
1172	 12,7	50,8		
1174	12,7	34,9		

Slide hammer puller set - This useful set contains a reversible-jaw slide hammer puller with a 1,1 kg 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 1,1 kg. sliding hammer. Wt., 6,3 kg.



		2-Jaw Sp	read		3-Jaw Spread						
	Ins	ide	Out	side	Ins	side	Outside				
Jaw	Min.	Min. Max.		Min. Max.		Min. Max.		Max.			
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			
44195	38,1	114,3	19,1	127	38,1	120,7	25,4	114			
32054	19,1	60.3	_	-	25,4	69.9	_	-			
44148 34698	69,9 31,8	139.7 88,9	19,1 25,4	191 114	82,6 38,1	158,8 108	25,4 38,1	159 114			

Sliding hammers only

No. 22185 – 1,1 kg sliding hammer.

No. 34331 – 2,3 kg sliding hammer.



Bearing cup remover - The 7136 is perfect for pulling internal bearing cups, seals, bushings, etc. Jaw spread - 23,8 to 82,6 mm, reach to 88,9 mm.

Use with any slide hammer having 5/8"-18 thread (Power Team 1155, 1156 or 927 Push-Puller®

No. 7136 - Universal bearing cup remover. Wt., 0,7 kg.

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.

Order Reach

1170 19.1

1171 25.4

1172 44.5

Max.

38 1

54

50.8

127

22.2

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 12,7 to 35

mm. Handle end has a 1/2" - 20 thread.

No. 1173 – Slide hammer puller. Wt., 1,6 kg.

No. 1174 – Puller head, less slide hammer.

Basic slide hammer units - Compatible with internal pulling attachment (see page 198). Compatible with threaded adapters (see page 204-205). 610 mm length, ⁵/₈" –

No. 1155 – Basic slide hammer unit with 2,3 kg hammer. Wt., 3,3 kg.

No. 1156 - Basic slide hammer unit with 1,1 kg hammer. Wt., 2,2 kg.

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 $\frac{5}{8}$ " - 18 threaded end so attachments and adapters may be used.

No. 1176 – Slide hammer puller with 1,1 kg hammer, 27241 two-way head and 34698 jaws. Wt., 3,3 kg

No. 1177 - Same as 1176 but with 2,2 kg hammer. Wt., 4,8 kg



2,2 2,2 2,2	1170	_
	1172	









		2 Jaw Spread 3 Jaw Spread									
	Ins	ide	Out	side	Insid		Inside Outside		Prod.	Overall	
Order	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Wt.	Length	
No.	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	(mm)	
1176	31,8	88,9	25,4	114	38,1	108	38,1	114	3,6	686	1176
1177	31,8	88,9	25,4	114	38,1	108	38,1	114	4,8	686	 1177

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. (mm)	Spread Min. (mm)	Spread Max. (mm)	Prod. Wt. (kg)	Overall Length (mm)	
1157	102	38,1	152	4,5	711	1158
1158	102	38,1	152	5,6	711	1136

Puller Sets

Convenient, portable puller sets that go where you do.

PULLERS

10 ton capacity Push-Puller® set - Contains three popular Power Team bar-type pullers in one versatile set, packed in a handy plastic storage case. Tools included permit damagefree 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 2,2 kg slide hammer puller, hub puller, two sizes of Power Team Grip-O-Matic® jaw-type pullers, a bearing pulling attachment plus a cross-

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.

bar gear and pulley puller, all contained in a handy plastic storage case.

Order No.	Set Contents	Description	n						
1180 10 ton Push-Puller® set,	927	•		213 mm rea	ach, 54 to 1	84 mm sprea	d. Comes with	171 mm puller	legs,
in plastic storage case. Wt., 11,4 lg.	other leg sizes are available separately (See page 197). Gear and pulley puller; spread range when used with 12,7 mm cap screws: 50,8 to 197 mm. Cap screws not included. Gear and pulley puller with standard 140 mm forcing screw, plus special 330 mm forcing screw. Includes two hex head cap screws, ³/s "-16 x 76,2 mm long. Spread range: 38 to 180 mm.								
Multi-purpose puller set. Wt., 11,4 kg	7208 1023 1027 7393 1122	Slide hammer puller with 2,2 kg hammer, 2-way and 3-way heads. Reversible: either two or three jaws may be used to handle both "inside" and "outside" pulling jobs. Hub puller. Includes a spare locknut which permits use with No. 1177 slide hammer. 2 ton combination 2- or 3-jaw Grip-O-Matic® puller. Has 86 mm max. reach, 121 mm max. 5 ton combination 2- or 3-jaw Grip-O-Matic® puller. Has 140 mm max. reach, 178 mm max. spread. Bar-type gear and pulley puller with 140 mm long screw. Includes two hex head cap screws, 3/8"-16 x 76 mm long. Spread range: 38 to 108 mm. Bearing pulling attachment for use with No. 1027 and No. 7393 pullers. Has 50,8 mm max. spread, 3 mm min. spread.							
1182 Jaw-type puller set.			2-Jaw			3-Jaw Spread			
Wt., 3,1 kg	Puller Jaws Order	Inside* Min.	Max.	Outside Min.	Max.	Inside* Min.	Max.	Outside Min.	Max.
	Olugi	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
一个	44195 44148	38 70	114 140	19 19	127 191	38,1 83	121 159	25,4 25,4	114 159

^{*} Can be used for internal pulling tasks when used with a slide hammer.



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.



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!

when you need it, protected from unauthorized users.

Puller Sets

Push-Pullers®, 2/3 Jaw

Pullers & Specialty Pullers

STRONG BOX

10 Ton Cap

- · 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	Set	
No.	Contents	Description
IPS10B	927	10 ton capacity Push-Puller® with 172 mm legs
Cabinet (654 x 749 x 254 mm)	1027	5 ton combination 2/3-jaw puller
with tool board,	1037	7 ton combination 2/3-jaw puller
adapter board, and tool set.	1101	400 mm puller legs (pair)
Wt., 44,5 kg.	1122	Bearing pulling attachment
WL, 44,5 kg.	1123	Bearing pulling attachment
<u> </u>	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
IPS10HB	*PH103C	10 ton combination 2/3-jaw hydraulic puller
	1027	
Cabinet (654 x749 x 254 mm)	1042	5 ton combination 2/3-jaw puller
with tool board, pullers,		13 ton combination 2/3-jaw puller
and hydraulics.	1177	Slide hammer puller
Wt., 44,5 kg.	44148	3 jaws for slide hammer puller (114 mm)
ļ.	44195	3 jaws for slide hammer puller (76 mm)
	36578	Slotted cross head for slide hammer puller
	27315	Seal hook for slide hammer puller
	1152	Internal pulling attachment (38 to 152 mm spread)
	24832	Forcing screw for 1152
	215315	Cabinet and tool board

^{*} See page 212.



Adapters

Specialty Pullers & Metric





to remove bearings, etc. Pullers include two hex head cap screws, ³/₈" - 16 NC x 76 mm long. Spread: 38 - 108 mm. Width of puller block is 124 mm. Cap screws are not included with the No. 522, but any cap screws up to 12,7 mm diameter may be used. No. 522 spread, when used with 12,7 mm dia. cap screws, is 51-197 mm. Width of the No. 522 puller block is 209 mm. No. 7392 - Puller with 5/8"-18 x 330 mm long screw. Wt., 0,9 kg. No. 7393 - Puller with 5/8"-18 x 140 mm long screw. Wt., 0,7 kg

No. 522 - Puller with 3/4"-16 x 295 mm long screw. Wt., 2 kg

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

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 127 mm. Maximum spread is 267 mm. Long jaw maximum reach is 222 mm. Maximum spread is 279 mm., 4,9 kg

Flange type puller - Slotted holes in puller body permit cap screws to be positioned to handle bolt-circle diameters from 38 -117 mm.

No. 518 – Flange type puller. Includes 3 cap screws, 3/8" – 24 NF x 76 mm long and 3 cap screws $^{3}/^{8}$ " - 16 NC x 76 mm long. Forcing screw is $^{5}/^{8}$ "-18 x 127 mm long Wt.,

Metric adapters – Add metric capability to your Push-Puller® legs or forcing screws! Four separate metric kits available with a variety of sizes for your Push-Puller® legs or forcing screws! Each packaged in a convenient plastic organizer case.

Order No.	Kit Contents	Female End	Male End	Length (mm)	Order No.	Kit Contents	Female End	Male End	Length (mm)
No. 8110	8111	%"- 1 8	M6 x 1.0	57,2	No. 8120	8121	%"-18	M14 x 1.5	57
Male Metric	8112	%"-18	M8 x 1.0	57,2	Male Metric	8122	%"-18	M14 x 2.0	57
Wt., 1,4 kg	8113	%"-18	M8 x 1.25	57,2	Wt., 1,3 kg	8123	%"-18	M16 x 1.5	70
	8114	%"-18	M10 x 1.25	57,2		8124	%"-18	M16 x 2.0	70
	8115	%"-18	M10 x 1.50	57,2		8125	%"-18	M20 x 1.5	70
	8116	%"-18	M12 x 1.25	57,2		8126	%"-18	M20 x 2.5	70
	8117	%"-18	M12 x 1.75	57,2					

Note: The adapters in each of these sets are also available separately.

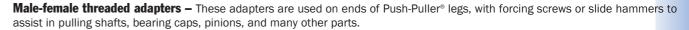
Female threaded adapters - Use these adapters on the ends of Push-Puller® forcing screws, legs, or slide hammers in the removal and installation of shafts, axles, and housings.

Set No. 8044 - consists of a set of 6 adapters (Nos. 8037-8042)

	Order	Female	Female	Order	Female	Female
	No.	End "A"	End "B"	No.	End "A"	End "B"
	8035*	¹ / ₂ "-20	⁵ /8"-18	8040	5/8"-18	1"-14
	8036*	1"-14	1"-14	8041	5/8"-18	1½"-12
A B	8037	5/8"-18	⁵ /8"-18	8042	5/8"-18	1 ¹ / ₄ "-12
	8038	5/8"-18	³ / ₄ "-16	8043*	5/8"-18	1 ¹ / ₂ "-12
	8039	5/8"-18	⁷ /s ⁻ -14		, = =0	=,

Note: All adapters available separately.

*Not included in set No. 8044. Order separately.



	Order No.	Female End	Male End	Length (mm)	Order No.	Female End	Male End	Length (mm)	
	8000	5/8"-18	½"-20	57,2	8015	5/8"-18	3/4"-10	57,2	
	8001	5/8"-18	5/16"-18	57,2	8016	1"-14	3/4"-10	63,5	
	8002	5/8"-18	7/16"-14	57,2	8017	5/8"-18	⁷ /s"-14	57,2	
	8003	5/8"-18	7/16"-20	57,2	8018	5/8"-18	⁷ /8"-9	57,2	
	8004	5/8"-18	³/s"-24	57,2	8019	5/8"-18	1"-14	57,2	
	8005	⁵ /8"-18	3/8"-16	57,2	8020	1"-8	⁵ /8"-18	76,2	
	8006	5/8"-18	1/2"-20	57,2	8021	1"-8	1"-14	76,2	
	8007	5/8"-18	1/2"-13	57,2	8022	⁵ /8"-18	1/8" pipe	57,2	
	8008	5/8"-18	9/16"-18	57,2	8023	11/4"-12	1"-14	114,3	
	8009	5/8"-18	9/16"-12	57,2	8024	11/4"-12	13/4"-12	114,3	
	8010	5/8"-18	⁵ /8"-11	57,2	8025	11/4"-7	5/8"-18	101,6	
Fed. Spec.: GGG-P-00781-D	8011	1"-14	5/16"-11	63,5	8027	11/4"-7	1"-14	101,6	
uuu-F-00/61-D	8012	1"-14	5/8"-18	81	8028	15/8"-51/2	1"-8	101,6	
	8013	5/8"-18	3/4"-16	57,2	8029	15/8"-51/2	1"-14	101,6	
	8014	1"-14	3/4"-16	63,5					

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, Push-Pullers® and shop presses.

Set No. 8075 – set of 11 adapters (Nos. 8057-8067).

Set No. 8076 - set of 6 adapters (Nos. 8068-8073).

		Order No.	Set No. 8075 Dia."A" (mm)	Dia."B" (mm)	Order No.	Set No. 8075 Dia."A" (mm)	Dia."B" (mm)	Order No.	Set No. 8076 Dia."A" (mm)	Dia."B" (mm)
9	← A →	8057	25,4	19,1	8063	47,5	38,1	8068	66,5	53,8
		8058	28,4	22,1	8064	50,8	41,1	8069	69,9	57,2
		8059	31,8	25,4	8065	53,8	44,5	8070	72,9	60,3
	o	8060	34,8	28,4	8066	60,2	47,5	8071	76,2	63,5
V D)	8061	41,1	31,8	8067	63,5	50,8	8072	82,6	69,9
	V .	8062	44,5	34,8	1			8073	88,9	76,2

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 Push-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" (mm)	"B" (mm)	"C" (60°) (mm)	"D" (60°) (mm)	Order No.	"A" (mm)	"B" (mm)	"C" (60°) (mm)	"D" (60°) (mm)	
8050	38,1	19,1	9,4	11,1	8053	19,1	19,1	6,4	6,4	_ <u> </u>
8051	31,8	19,1	9,4	9,4	8054	15,7	15,7	6,4	6,4	→ → / / / / / / / / / /
8052	25,4	19,1	9,4	7,9	8055	15,7	15,7	4,8	4,8	$C^{\frac{1}{\sqrt{1}}} \stackrel{ \longleftarrow A \longrightarrow }{\longrightarrow} \frac{1}{\sqrt{1}}$

ACAUTION: All the items shown may not withstand the full tonnage of the pullers they may be used with. Refer to page 195.



Protective Blankets

and Security Chests

Puller Sets MANUAL

10 & 17¹/₂ Ton

PULLERS

10 ton manual puller set - This puller set is just what you need for removing gears, bearings, etc. Includes pullers, attachments, and many accessories.





(AAA3333330 O O

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
IPS10M	927	10 ton capacity Push-Puller® with 171 mm legs	8075	Step plate adapter set
10 ton capacity	1023	2 ton combination 2/3-jaw puller	8044	Female threaded adapter set
Wt., 24 kg.	1026	5 ton combination 2/3-jaw puller	8035	Female threaded adapter: ½"-20 x %"-18
	1027	5 ton combination 2/3-jaw puller	1151	Bearing cup pulling attachment
	1037	7 ton combination 2/3-jaw puller	1121	Bearing pulling attachment
	1178	Slide hammer set	1122	Bearing pulling attachment
			1123	Bearing pulling attachment
			1101	400 mm long puller legs for 927 (pr.)
IPS17M	938	17½ ton capacity Push-Puller® with 241 mm legs	8075	Step plate adapter set
17½ ton capacity	1027	5 ton combo 2/3-jaw puller, with long jaws	1105	572 mm legs for 938
Wt., 52,7 kg.	1037	7 ton combination 2/3-jaw puller	1130	Bearing pulling attachment
	1041	13 ton combination 2/3 jaw puller	1151	Bearing cup pulling attachment
	1045	17½ ton 3-jaw puller	8038	Female adapter: %"-18 F. x ¾"-16 F. (2)

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

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!

- · Effectively contain broken or flying parts from the most extreme pulling, pressing, pushing or stressing forces.
- · Ideal for use with pullers and forcing presses.

Order

PB1230C

PB2036C

PB2860

PB3372C

305 x 762

508 x 914

711 x 1.524

838 x 1.829

PB44120C 1.118 x 3.048

PB51156C 1.295 x 3.962

· Made of see-through, high-tensile, tear resistant material.

of Straps

- 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.

	11
	#
	1
4	

Protect yourself and your equipment.



(kg) 1,3 1,9 4,2 5,3 10.9

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, 1,6 mm steel construction with fully arc welded seams for extra strength and weather protection.

PB1230C

- Full length piano hinges, mating cover to body, protect against weather and
- Single or double latch security tabs for padlocks.
- Mechanical cover supports, two 57 mm high skids.
- Fold-down 19 mm pipe handles on each end of chest.
- Pre-drilled for optional casters, which enhance mobility.
- Durable baked enamel finish.

Order	Dimensions A B C D			Cap.	Storage Wt.	Optional					
No.	(mm)	(mm)	(mm)	(mm)	(cu. m)	(kg)	Caster Wheels				
MB5 MB8	883 1.010	356 483	813 1.670	483 483	0,14 0,25	30 40,9	No. 251646 – Set of four 102 mm casters (two swivel and two rigid). Furnished with mounting screws. Wt., 5,7 kg.	S .			
MB16	1264	610	1.219	610	0,45	57,2	No. 251647 – Set of four 152 mm casters (two swivel and two rigid). Furnished with mounting screws. Wt., 7 kg.	S			

>Power Team

Hydra Grip-0-Matic® USE WITH 2/3 JAW PULLERS

6, 8, 11 & 30 Ton

A self contained pulling system in a compact package













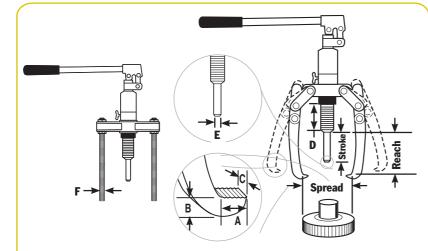


- You get the world's most copied puller design; the harder the pulling force, the tighter the jaws grip for secure holding
- Power Team pullers are tested for top performance and reliability at maximum capacity and jaw spread.
- · Removing a wide variety of gears, bearings, bushings, pulleys and other press-fitted parts becomes a routine
- Easily metered release valve control
- · Spring loaded live centering cone.
- · Bladder type oil reservoir.
- · Rapid adjustment.
- Use with 2 or 3 jaws.
- · Supplied with a sturdy storage/carrying
- Features Power Team's exclusive Marathon Limited Lifetime Warranty

HST11S

Hydra Grip-O-Matic® pulling system - These pullers are ideal for pulling a wide variety of press-fitted parts including bushings, bearings, wheels, gears and pulleys. Applications can be found in a wide variety of industries as well. Grip-O-Matic® 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.



Cyl.	Order	Rea	ch	Min.	Max.	Spread								
Cap. (tons)	No.	Studs (mm)	Jaws (mm)	Reach (mm)	Studs (mm)	Jaws (mm)	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (in.)	Wt.
6	PH63C		152			200	80	11	6,4	22	83	22	_	4,9
8	PH83C		190		_	249	80	11	9,5	25,4	83	22		6,6
15	PH113C	_	229		_	280	80	14,3	9,5	29	83	29		8,0
30	PH303C	266,7	375			540	110	27	36,5	38	170	54	5/8-18 UNF	32,3
8	PH82K	266,7	207	125	300	245	80	52	25,4	16	83	22	5/8-18 UNF	9,5
11	HST11S	_	150		_	102-410	80	_	_	_	65	29	_	14,5



Hydra Grip-O-Matic® puller accessory

kits - K82 accessory kit for the Hydra-Grip-O-Matic® puller No. PH83C. Includes 2-way puller head, 2 jaws, 2 threaded legs and sturdy carrying/storage case.

No. K82 - Accessory kit for PH83C Grip-O-Matic® hydraulic puller. K83 2/3 way head accessories kit for a Hydra Grip-O-Matic® 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.

No. K83 - Accessory kit for PH83C Grip-O-Matic® hydraulic puller.





- 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: 89 to 410 mm, Reach: 150 mm. Wt., 9,5 kg.

Long jaw set for PH83C and PH113C Grip-O-Matic® pullers - This long jaw set is the perfect addition to the PH83C or PH113C Grip-O-Matic® 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: 280 to 317 mm, Reach: 317 mm.



Puller

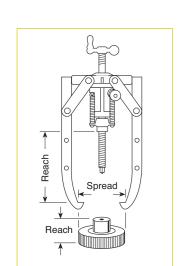
Accessories

>Power Team

Pullers HYDRAULIC

PULLERS

5, 10, 17¹/₂, 30 & 50 Ton



- · Remove gears, bearings, and other pressfitted parts with speed and ease.
- Broad capacity range of 5, 10, 17¹/₂, 30 and
- 5 and 10 ton sets include: single-acting, spring return hydraulic cylinder with hose, coupler and dust cap; single-speed hydraulic hand pump; puller.
- 17¹/₂, 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.



PH53CR

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 700 bar hand pump, fittings, coupler, and 1,8 m hose), and 309874 pushing adapter. Wt., 9,1 kg.

No. PH53CR - Combination 2-jaw/3-jaw puller set. Includes 1057 5 ton puller, C55C cylinder, and 309874 pushing adapter. Wt., 5,5 kg

No. 1057 - 5 ton cap. 2-jaw/3-jaw puller only. Wt., 3,5 kg.

Available components -

No. 309874 - 15,9 mm diameter pushing adapter. (Included with PH53C and PH53CR hydraulic puller sets.) Wt., 0,3 kg.

No. 309875 - 22,2 mm diameter pushing adapter. Wt., 0,3 kg.

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., 1,1 kg.

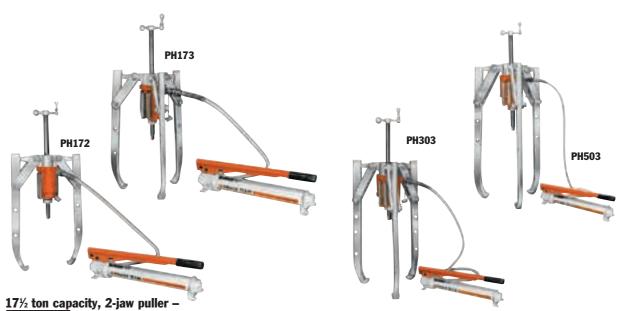
10 ton capacity, 2/3 jaw puller -

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., 23,6 kg.

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., 14,5 kg.

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., 7,7 kg.

NOTE: This puller may be used with any 10 ton single-acting cylinder having a 2¹/₄" –14 straight collar thread.



No. PH172 – 2-jaw puller with RT172 center-hole Power-Twin® cylinder, cylinder half coupler, P55 pump, 1,8 m hose, hose half coupler, 1" - 8 x 508 mm long adjusting screw, and adjusting crank. Wt., 27,7 kg. No. 1064 - Puller only. (Cylinder, pump, hose, coupler, screw, and crank not included). Wt.,10 kg.

17½ ton capacity, 3-jaw puller -

No. PH173 – 3-jaw puller with RT172 center-hole Power-Twin® cylinder, cylinder half coupler, P55 pump, 1,8 m hose, hose half coupler, 1" - 8 x 508 mm long adjusting screw, and adjusting crank. Wt., 34 kg.

No. PH173R - 3-jaw puller with screw and crank, and RT172 center-hole twin cylinder. Wt.,25,4 kg.

No. 1066 - Puller only. (Cylinder, pump, hose, coupler, screw, and crank not included). Wt., 16,3 kg.

30 ton capacity, 3-jaw puller -

No. PH303 – 3-jaw puller with RT302 center-hole Power-Twin® cylinder, cylinder half coupler, P55 pump, 1,8 m hose, hose half coupler, $1^{1/4}$ " – 7 x 610 mm lg. adjusting screw, and adjusting crank. Wt., 67,7 kg. No. PH303R - 3-jaw puller with screw and crank, and RT302 center-hole twin cylinder. Wt., 59 kg.

No. 1074 - Puller only. (Cylinder, pump, hose, coupler, screw, and crank not included). Wt., 40,9 kg.

50 ton capacity, 3-jaw puller -

No. PH503 _ 3-jaw puller with RT503 center-hole Power-Twin® cylinder, cylinder half coupler, P55 pump, 1,8 m hose, hose half coupler, 15/8" - 51/2 x 772 mm long adjusting screw, and adjusting crank. Wt., 130 kg. No. 1080 - 3-jaw puller only. (Cylinder, pump, hose, coupler, screw, and crank not included). Wt., 86,7 kg.

PULLER ONLY

Order No.	Cap. (Tons)	Jaws	Jaw Reach (mm)	Jaw Spread (mm)	Jaw Thickness (mm)	Jaw Width (mm)	Wt. (kg)
1057	5	2/3	222	292	8,7	25	3,5
1060	10	2/3	381	432	14,3	25	7,7
1064	171/2	2	292	406	20,6	32,5	10
1066	171/2	3	292	508	20,6	32,5	16,3
1074	30	3	494	864	28,6	41,3	40,9
1080	50	3	702	1.118	35,7	47,6	86,7

CAUTION: Always use a 3-jaw puller where clearance permits in order to provide a more stable setup and a more even pulling force.

711 mm

Push-Pullers® HYDRAULIC

17¹/₂, 30-50 Ton

PULLERS

The power to make impossible jobs become routine.

1108 1105 1104 1106 1107

114 mm
1,1 kg
241 mm
419 mm
2 kg
3 kg

NOTE: L = leg length: 114; 241; 419; 572 and 762 mm subtract 124 mm from leg length to determine reach when using leg end caps.

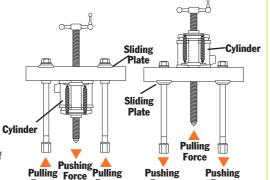
 Can apply a hydraulic pushing or pulling force, depending on how the puller is set up.

 Each unit includes perfectly matched hydraulic components that can be detached from the Push-Puller® for other tasks requiring dependable Power Team power; assuring maximum return on your investment.

- Optional leg kits adapt your Push-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 Push-Pullers*.

ASSEMBLING THE TOOL TO APPLY PUSHING OR PULLING FORCE:

- 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.
- The sliding plates must always be placed on the opposite side of the cross block from the forcing nut.



Selection and capacity rating – Each Push-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 Push-Puller®. 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 Push-Puller® -

No. PPH17 — Push-Puller® with RT172 center-hole Power Twin® cylinder, cylinder half coupler, P55 pump, 9767 1,8 m. hose, 9798 hose half coupler, 419 mm legs, 24827 leg ends, 1"-8 x 508 mm lg. adjusting screw and adjusting crank. Wt., 26,8 kg.

No. PPH17R – Same as above, but without P55pump, 9767 1,8 m. hose and 9798 hose half coupler. Wt., 18,2 kg.

No. 1062 – Puller only. (Cylinder, pump, hose, coupler,

screw and crank not included.) Wt., 9,1 kg.

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 $17^{1}/_{2}$ -ton "capacity" Push-Puller®.





30 ton capacity Push-Puller® -

No. PPH30 — Push-Puller® with RT302 center-hole Power Twin® cylinder, cylinder half coupler, P55 pump, 9767 1,8 m. hose, 9798 hose half coupler, 457 mm legs, 28390 leg ends, 1¹/₄"-7 x 610 mm lg. adjusting screw and adjusting crank. Wt., 46,3 kg.

No. PPH30R – Same as above, but without P55 pump, 9767 1,8 m hose and 9798 hose half coupler. Wt., 37,2 kg.

No. 1070 – Puller only. (Cylinder, pump, hose, coupler, screw and crank not included.) Wt., 19,1 kg.

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" Push-Puller®.

50 ton capacity Push-Puller® -

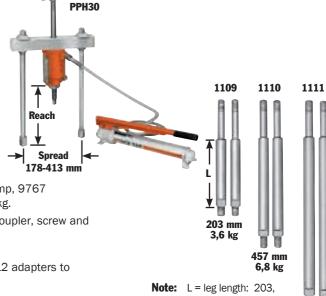
No. PPH50 – Push-Puller® with RT503 center-hole Power Twin® cylinder, cylinder half coupler, P55 pump, 9767 1,8 m hose, 9798 hose half coupler, 610 mm legs, 15/8"-51/2 x 722 mm lg. adjusting screw and adjusting crank. Wt., 91,3 kg.

No. PPH50R - Same as above, but without P55 pump, 9767 1,8 m hose and 9798 hose half coupler. Wt., 82,2 kg.

No. 1076 – Puller only. (Cylinder, pump, hose, coupler, screw and crank not included.) Wt., 48,1 kg.

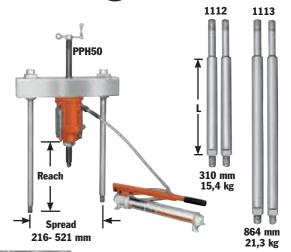
USE WITH:

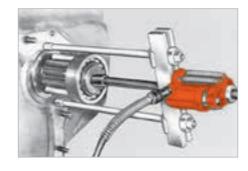
Bearing pulling attachments: **Nos. 1128 and 1129**. Legs: **Nos. 1112 and 1113 -** Pair of legs for 50 ton "capacity" Push-Puller®.



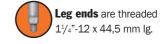
Note: L = leg length: 203, 457 and 711 mm; subtract 149 mm from leg length to determine reach when using leg end caps.

Leg ends are threaded 1"-14 x 32 mm lg.











Note: Wooden storage box

No. 3084380R9 is provided

page. 1180L x 615H x 579D

with the sets listed on this

Metal storage boxes also

available (see page 209).

IPS50H

PULLERS

171/2 ton hydraulic master puller sets

- Having this Power Team puller set at your fingertips will not only reduce your downtime, but also increase your

No. IPS17 – 17¹/₂ ton capacity puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 86,7 kg.

No. IP\$17B - Puller set with MB5

metal box. Wt., 96,7 kg.

IPS17

\$50 00 00 00 00 00 00 00 00 00 00 00 00

0000000



Wooden storage box No. 3084350R9 is included with the sets listed on this page. 1.016L x 406 W x 406 mmD Metal storage boxes also available (see page 209).



17½ ton hydraulic puller set - This set includes a 3-jaw puller and a Push-Puller®. Ideal for heavy duty applications; put this set to work wherever large gears, bearings, wheels, pulleys, etc. are found. No. IPS17H - 17¹/₂ ton capacity hydraulic puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 62,2 kg.

		Set	
Contents	Hydraulics	Conten	s Accessories
P55	Single-stage hyd. hand	1154	Bearing cup pulling attach
	Pump assembly	1122	Bearing pulling attachment
RT172	17 ¹ / ₂ ton cylinder	1123	Bearing pulling attachment
	with threaded insert	1130	Bearing pulling attachment
9798	Hose half coupler		Threaded Adapters
9767E	Hydraulic hose - 1,8 m	679 \	/-belt pulley puling attachment
9670	Tee adapter	8005	⁵ / ₈ " - 18 F. x ³ / ₈ " - 16 M. (2)
9059E	Pressure gauge	8006	⁵ / ₈ " - 18 F. x ¹ / ₂ " - 20 M. (2)
	Pullers	8007	$^{5}/_{8}"$ – 18 F. x $^{1}/_{2}"$ – 13 M. (2
1062	171/2 ton cap. Push-Puller®	8010	⁵ / ₈ " - 18 F. x ⁵ / ₈ " - 11 M. (2)
	with 419 mm legs	8013	⁵ / ₈ " - 18 F. x ³ / ₄ " - 16 M. (2)
24814	Speed crank	8015	⁵ / ₈ " - 18 F. x ³ / ₄ " - 10 M. (2)
32118	Adjusting screw	8017	⁵ / ₈ " - 18 F. x ⁷ / ₈ " - 14 M. (2)
201923	Pushing adapter	8018	⁵ / ₈ " - 18 F. x ⁷ / ₈ " - 9 M. (2)
1105	572 mm legs (pr)	8019	⁵ / ₈ " - 18 F. x 1" - 14 M. (2)
1066	17 ¹ / ₂ ton 3-jaw hyd. puller	8020	1" - 8 F. x ⁵ / ₈ " - 18 M. (1)
1027	Combination 2/3-jaw puller	8021	1" - 8 F. x 1" - 14 M. (1)
41224	17 ¹ / ₂ ton 2-jaw puller head	8044	Female threaded adapter set
24832	Puller screw	8038	⁵ / ₈ " - 18 F. x ³ / ₄ " - 16 F. (2)
1037	Combination 2/3-jaw puller	8056	Set of 6 shaft protectors
1041	Combination 2/3-jaw puller		(8050-8055)
28228	Cylinder cap	8075	Set of 11 adaptors
			(8057-8067)

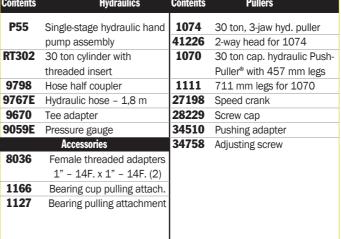
Contents	Hydraulics	Contents	Accessories
P55	Single-stage hydraulic hand pump assembly	1154 1130	Bearing cup pulling attach. Bearing pulling attachment
RT172	17 ¹ / ₂ ton cylinder with threaded insert	1105 24814	572 mm legs (pr) Speed crank
9798 9767E	Hose half coupler Hydraulic hose – 1,8 m	28228 32118	Screw cap Adjusting screw
9670 9059E	Tee adapter Pressure gauge	201454 41224	Pushing adapter 2-jaw head for 1066
1062	Pullers 17 ¹ / ₂ ton cap. Push-Puller	8020	Threaded Adapters 1" - 8 F. x 5/s" - 18 M. (1)
1066	with 419 mm legs 17½ ton 3-jaw hyd. puller	8038	⁵ / ₈ " - 8 F. x ³ / ₄ " - 16 F. (1)

30 ton capacity puller set - Just what you need for those big jobs. Not only do you get a 30 ton hydraulic Push-Puller®, you also get a 2-jaw and 3-jaw hydraulic puller. Plus, many popular accessories and the hard

No. IPS30H - 30 ton ca Includes hy accessories listed below.

rdware to tackle the big jobs right away. capacity hydraulic maintenance puller set. ydraulics, pullers, wooden storage box and v. Wt., 150 kg.			N N	
aulics	Contents	Pullers		
aulic hand	1074	30 ton, 3-jaw hyd. puller		
	41226	2-way head for 1074		
/ith	1070	30 ton cap. hydraulic Push-		
		Puller® with 457 mm legs		

IPS30H



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 Push-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., 261 kg.



No.	Hydraulics	No.	Pullers
	<u> </u>		
P55	Single-stage hydraulic hand	1080	50 ton, 3-jaw hyd. puller
	pump assembly	50449	2-way head for 1080
RT503	50 ton cylinder with	1076	50 ton cap. hydraulic Push-
	threaded insert		Puller® with 610 mm legs
9798	Hose half coupler	1113	864 mm legs for 1076
9767E	Hydraulic hose - 1,8 m	29595	Speed crank
9670	Tee adapter	28230	Screw cap
9059E	Pressure gauge	34755	Pushing adapter
	Threaded Adapters	32698	Adjusting screw
8024	1 ¹ / ₄ " - 12F. x 1 ³ / ₄ " - 12M.		Accessories
(2)		1128	Bearing pulling attachment
8028	1 ⁵ / ₈ " - 5 ¹ / ₂ F. x 1" - 8M.	1	

8029 1⁵/s" - 5¹/₂ F. x 1" - 14M.

A 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.

17¹/₂ & 30 Ton 17¹/₂ & 50 Ton

PULLERS



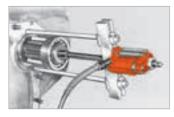
Note: Wooden storage box No. 3084360R9 is provided with this set. 1.016 L x 432 H x 610 mm D Metal storage boxes also available (see page 209).



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.

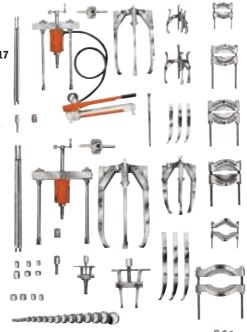
IPS3017

171/2 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 – 17½ and 30 ton capacity manual and hydraulic puller set. Includes hydraulics, pullers, and accessories listed below. Wt., 244 kg.

No. IPS3017B – Puller set with MB8 metal box. Wt., 256 kg.



No.	Hydraulics	No.	Accessories
P55	Single-stage hyd. hand	24832	Special puller forcing screw
	pump assembly		Step plate adapter set
RT172	17½ ton center-hole twin	8076	Step plate adapter set
	cylinder w/ threaded insert	8056	Shaft protector set
RT302	30 ton center-hole twin	679	Pulley pulling attachment
	cylinder w/ threaded insert	680	Pulley pulling attachment
9798	Hose half coupler	1154	Bearing cup pulling attach.
9767E	Hydraulic hose – 1,8 m	1166	Bearing cup pulling attach.
9670	Tee adapter	1122	Bearing pulling attachment
9059E	Pressure gauge	1123	Bearing pulling attachment
	Pullers	1126	Bearing pulling attachment
1062	17 ¹ / ₂ ton cap. hydraulic	1130	Bearing pulling attachment
	Push-Puller® w/419 mm legs		Threaded Adapters
1070	30 ton cap. hydraulic	8005	⁵ / ₈ " - 18 F. x ³ / ₈ " - 16 M. (2)
	Push-Puller® w/457 mm legs	8006	⁵ / ₈ " - 18 F. x ¹ / ₂ " - 20 M. (2)
1066	17 ¹ / ₂ ton 3-jaw hyd. puller	8007	⁵ / ₈ " - 18 F. x ¹ / ₂ " - 13 M. (2)
1074	30 ton 3-jaw hyd. puller	8010	5/8" - 18 F. x 5/8" - 11 M. (2)
41224	17 ¹ / ₂ ton 2-jaw puller head	8012	1" - 14 F. x ⁵ / ₈ " - 18 M. (2)
41226	30 ton 2-jaw puller head	8013	⁵ / ₈ " - 18 F. x ³ / ₄ " - 16 M. (2)
1027	Combination 2/3-jaw puller	8015	⁵ / ₈ " - 18 F. x ³ / ₄ " - 10 M. (2)
1037	Combination 2/3-jaw puller	8017	⁵ / ₈ " - 18 F. x ⁷ / ₈ " - 14 M. (2)
1041	Combination 2/3-jaw puller	8018	⁵ / ₈ " - 18 F. x ⁷ / ₈ " - 9 M. (2)
43892	Long jaws (3) for 1037	8019	⁵ / ₈ " - 18 F. x 1" - 14 M. (2)
30902	Long jaws (3) for 1041	8020	1" - 8 F. x ⁵ / ₈ " - 18 M. (1)
1105	572 mm legs for 1062	8021	1" - 8 F. x 1" - 14 M. (1)
1111	711 mm legs for 1070	8025	1½" - 7 F. x 5/8" - 18 M. (2)
24814	Speed crank	8027	1½" - 7 F. x 1" - 14 M. (2)
27198	Speed crank	8036	1" - 14 F. x 1" - 14 F. (2)
28229	Screw cap	8038	⁵ / ₈ " - 18 F. x ³ / ₄ " - 16 F. (2)
28228	Cylinder cap	8044	Female threaded adapter se
32118	Adjusting screw		
34758	Adjusting screw		
34510	Pushing adapter		
201923	Pushing adapter		

▲ 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.

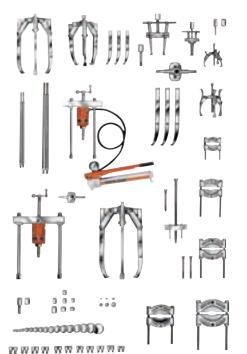
17½ and 50 ton capacity puller sets – If your looking for a maintenance puller set that will handle a wide variety of applications, this is the one for you. The mechanical and hydraulic pullers and attachments are designed to handle most removing and installing jobs with a minimal amount of effort.

No. IPS5017 – $17^{1}/_{2}$ and 50 ton capacity manual and hydraulic puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 405 kg.

No. IPS5017B – Puller set with MB16 metal box. Wt., 415 kg.

No.	Hydraulics	No.	Accessories
P55	Single-stage hyd. hand	8075	Step plate adapter set
	pump assembly	8076	Step plate adapter set
RT172	17 ¹ / ₂ ton center-hole twin	8056	Shaft protector set
	cylinder w/ threaded insert	1154	Bearing cup pulling attach.
RT503	50 ton center-hole twin	1166	Bearing cup pulling attach.
	cylinder w/ threaded insert	1122	Bearing pulling attachment
9798	Hose half coupler	1123	
9767E	Hydraulic hose – 1,8 m	1126	Bearing pulling attachment
9670	Tee adapter	1127	Bearing pulling attachment
9059E	Pressure gauge	1130	
	Pullers		Reducing adapter for 1166
1062	17½ ton cap. hydraulic		Hex nut; 3/4" - 16 (2)
	Push-Puller® w/419 mm legs	24829	Short bolt
1076	50 ton cap. hydraulic		Threaded Adapters
	Push-Puller® w/610 mm legs		⁵ / ₈ " - 18 F. x ³ / ₈ " - 16 M. (2)
	17 ¹ / ₂ ton 3-jaw hyd. puller		⁵ / ₈ " - 18 F. x ¹ / ₂ " - 20 M. (2
	50 ton 3-jaw hyd. puller		⁵ /8" - 18 F. x ¹ / ₂ " - 13 M. (2)
	17 ¹ / ₂ ton 2-jaw puller head		⁵ / ₈ " − 18 F. x ⁵ / ₈ " − 11 M. (2)
	50 ton 2-jaw puller head	8013	⁵ /8" - 18 F. x ³ / ₄ " - 16 M. (2)
	Combination 2/3-jaw puller	8015	⁵ /8" - 18 F. x ³ / ₄ " - 10 M. (2)
	Combination 2/3-jaw puller	8019	⁵ / ₈ " – 18 F. x 1" – 14 M. (2)
	Combination 2/3-jaw puller	8020	1" - 8 F. x 5/8" - 18 M. (1)
	Long jaws (3) for 1037	8021	
	Long jaws (3) for 1041		1½" - 12 F. x 1" - 14 M. (2)
	572 mm legs for 1062		$1^{5}/8" - 5^{1}/2$ F. x $1" - 8$ M. (1)
	864 mm legs for 1076		$1^{5}/8" - 5^{1}/2$ F. x $1" - 14$ M. (1)
	Speed crank	l .	$\frac{5}{8}$ " - 18 F. x $\frac{3}{4}$ " - 16 F. (1)
	Speed crank	8044	Female threaded adapter set
	Screw cap		
	Cylinder cap		
	Adjusting screw		
	Adjusting screw		
	Pushing adapter		
	Pushing adapter		
	Gear and pulley puller		
24833	Forcing screw for 7392		

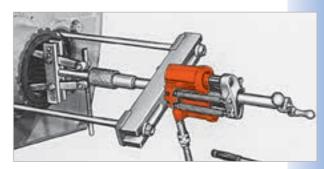
★ CAUTION: All the items shown may not withstand the full tonnage specified. Example: When an accessory with a 1 ton capacity is used with a 7 ton puller, the setup can be used only at a force of 1 ton.





IPS5017

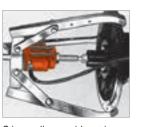
Note: Wooden storage box No. 3084360R9 is provided with this set. 1143 L x 572 H x 762 mm D Metal storage boxes also available (see page 209.



Combination of 50 ton capacity Push-Puller and cup pulling attachment simplifies the removal of a final drive axle seal.



Hydraulically powered Push-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.

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>Power Team[®]

Puller Sets HYDRAULIC

17¹/₂, 30 & 50 Ton

17½, 30 & 50 ton capacity puller set – Here's the ultimate in industrial puller sets! You'll find a puller for just about every job. Included in this "master set" are $17\frac{1}{2}$, 30 and 50 ton hydraulics, along with an extensive assortment of pullers, attachments and adapters.

No. IPS5317 – $17^{1}/_{2}$, 30 and 50 ton capacity manual and hydraulic puller set. Includes hydraulics, pullers, wooden storage box and accessories listed below. Wt., 572 kg.

		IPS5317



Content	s Hydraulics	Content	s Accessories
P55	Single-stage hyd. hand	28230	Screw cap
	pump assembly		Adjusting screw
P460	Two-stage hyd. hand pump	32698	Adjusting screw
	w/ 3-way control valve	34758	Adjusting screw
RT172	17 ¹ / ₂ ton center-hole twin	34510	Pushing adapter
	cylinder w/ threaded insert	34755	Pushing adapter
RT302	30 ton center-hole twin		Pushing adapter
	cylinder w/ threaded insert	8075	Step plate adapter set
RT503	50 ton center-hole twin	8076	Step plate adapter set
	cylinder w/ threaded insert		Shaft protector set
	Hose half coupler (2)	679	Pulley pulling attachment
	Hydraulic hose - 1,8 m (2)	680	Pulley pulling attachment
	Tee adapter	1154	Bearing cup pulling attach.
9059E	Pressure gauge		Bearing cup pulling attach.
1000	Pullers	1122	Bearing pulling attachment
1062	17½ ton cap. hydraulic	1123	Bearing pulling attachment
1070	Push-Puller® w/419 mm legs	1126	Bearing pulling attachment
10/0	30 ton cap. hydraulic	1127	Bearing pulling attachment
1070	Push-Puller® w/457 mm legs	1128	Bearing pulling attachment
10/6	50 ton cap. hydraulic	1130	Bearing pulling attachment
1000	Push-Puller® w/610 mm legs 17½ ton 3-jaw hyd. puller	344/9	Reducing adapter Threaded Adapters
	30 ton 3-jaw hyd. puller	8005	5/s" - 18 F. x 3/s" - 16 M. (2)
	50 ton 3-jaw hyd. puller	8006	⁵ / ₈ " - 18 F. x ¹ / ₂ " - 20 M. (2)
	17 ¹ / ₂ ton 2-jaw puller head	8007	5/8" - 18 F. x 1/2" - 13 M. (2)
	30 ton 2-jaw puller head	8010	⁵ / ₈ " - 18 F. x ⁵ / ₈ " - 11 M. (2)
	50 ton 2-jaw puller head	8012	1" - 14 F. x ⁵ / ₈ " - 18 M. (2)
	Combination 2/3-jaw puller	8013	⁵ / ₈ " - 18 F. x ³ / ₄ " - 16 M. (2)
	Combination 2/3-jaw puller	8015	⁵ / ₈ " - 18 F. x ³ / ₄ " - 10 M. (2)
	Combination 2/3-jaw puller	8017	⁵ / ₈ " - 18 F. x ⁷ / ₈ " - 14 M. (2)
	Long jaws (3) for 1037	8018	⁵ /s" - 18 F. x ⁷ /s" - 9 M. (2)
	Long jaws (3) for 1041	8019	⁵ / ₈ " – 18 F. x 1" – 14 M. (2)
32136	Long jaws (3) for 1154	8020	1" - 8 F. x ⁵ / ₈ " - 18 M. (1)
	572 mm legs for 1062	8021	1" - 8 F. x 1" - 14 M. (1)
1106	241 mm legs for 1062	8023	1 ¹ / ₄ " - 12 F. x 1" - 14 M. (2)
1107	114 mm legs for 1062	8024	1 ¹ / ₄ " - 12 F. x 1 ³ / ₄ " - 12 M. (2)
1109	203 mm legs for 1070	8025	1½" - 7 F. x 5/8" - 18 M. (2)
1111	711 mm legs for 1070	8027	1 ¹ / ₄ " - 7 F. x 1" - 14 M. (2)
1113	864 mm legs for 1070		15/8" - 51/2 F. x 1" - 8 M. (1)
	Accessories		1 ⁵ / ₈ " - 5 ¹ / ₂ F. x 1" - 14 M. (1)
24832	Special puller forcing screw		1" - 14 F. x 1" - 14 F. (2)
	Speed crank	8038	⁵ / ₈ " - 18 F. x ³ / ₄ " - 16 F. (2)
	Speed crank	8044	Female threaded adapter set
	Speed crank		
	Screw cap		
28229	Screw cap		

★ 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.

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 the list goes 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 Marathon Warranty assuring you of the highest quality and reliability.



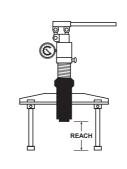


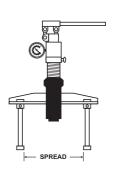


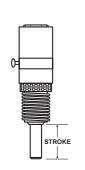
BEARING PUSHER KITS

3/4-16 thread

 Portable pushing kits include an external Grip-O-Matic 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 (mm)	Spread (mm)	Stroke	Weight with Case (kg)	
РНР8Н	Manual-Hydraulic Pusher	8 tons	55-385	58-270	82	33.5	
PHP8R	Remote Hydraulic Pusher	8 tons	55-385	58-270	82	33	
PHP8H-1	Manual-Hydraulic Pusher/Puller Kit	8 tons	55-385	58-270	82	53	
PHP8R-1	Remote Hydraulic Pusher/Puller Kit	8 tons	55-385	58-270	82	52	

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.

224

Universal Puller

55 Ton & 100 TON

"Enforcer 55" & Enforcer 100

PULLERS



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. 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.

- Hydraulically-actuated jaws. Cylinder moves in or out to provide a safe, secure grip on workpiece.
- Puller can be assembled in 2 or 3 jaw configurations.
- Choice of cylinder with a 159 mm or 337 mm stroke.
- Self-centering: Center cylinder on work; puller jaws will automatically grip work
- Super Grip-O-Matic® 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.
- Guards at pinch points protect operator.
- Cart's swivel casters give ease of mobility.
- Large wheels make movement of cart easy.
- 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 PH5532CL series. Jaws are 305 mm longer. Kit contains three jaws and six straps with guards. Wt., 114 kg.

Pushing Adapters

Order No.	A (mm)	B (mm)	Qty.*	
251002	69,9	69,9	1	
350593	69,9	152,4	2	
350594	69,9	76,2	1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
350637	69,9	254	1	$ \leftarrow B \rightarrow $ $ \leftarrow B \rightarrow $

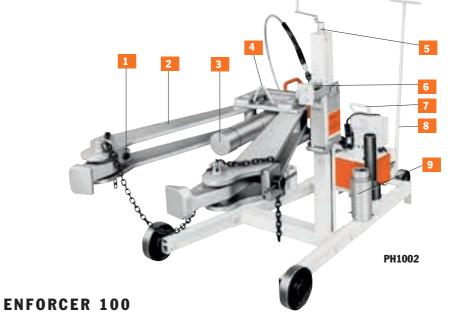
*Number of adapters supplied with each Enforcer.

(251002)

	Min.	Reach Min.	Max.	Reach Max.	Overall	Cyl.		Prod.	ı	Puller Jaw Tip Dimensions	
Order	Spread	Spread	Spread	Spread	Length*	Stroke	Power Source	Wt.	A	В	C
No.	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	Requirements	(kg.)	(mm)	(mm)	(mm)
PH553C-E220	101,6	559	1.219	356	2.286	159	230 V, 50 Hz, 15 Amp Cap.	339	1	1	
PH553C13-E220	101,6	381	1.219	178	2.286	337	230 V, 50 Hz, 15 Amp Cap.	352	\ \	\ c	٠. ا
PH553CL-E220	63,5	829	1.149	737	2.591	159	230 V, 50 Hz, 15 Amp Cap.	366	\\		
PH553CL13-E220	63,5	651	1.149	559	2.591	337	230 V, 50 Hz, 15 Amp Cap.	379		→ A	B ★

Note: See other pulling attachmnts on page201 Note: Cart and Puller (cart width is 813 mm)

Also available in 110 Volt



- Adjustable jaws mean they always pull on a flat surface. Retaining chain holds jaws in place during positioning.
- Grip-O-Matic® feature means jaws grip progressively tighter as more pulling force is
- 100 ton hydraulic cylinder is single-acting, spring return type with a maximum working pressure of 700 bar.
- Lifting bracket allows puller to be lifted if the workpiece center is more than 914
- Adjusting screw allows operator to move vertical position of the puller.
- Spring loaded feature means Enforcer 100 will align itself on uneven pulls.
- Hydraulic pump is a 2-stage, high pressure unit controlled by remote hand switch
- Tow bar provides puller with plenty of mobility.
- Pushing adapters have a diameter of 105 and 63,5 mm.

"Enforcer 100" universal puller -

PH1002-E220 381

381

PH1002J

1.067

1.067

1.219

1.219

864

25,4 57,1 127 260

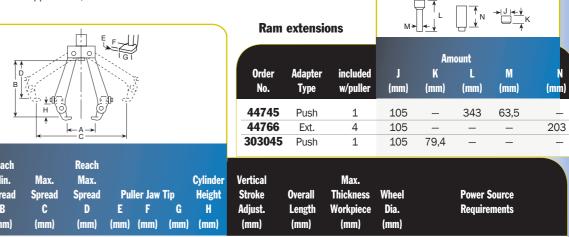
864 25,4 57,1 127 260 305-914

No. PH1002 - 100 ton, 2-jaw universal hydraulic puller. Includes: 2-jaw Grip-O-Matic® puller, PE552S-E220 2-speed electric/hydraulic power unit, C10010C 100 ton hydraulic cylinder with 260 mm stroke and six adapters. Wt., 404 kg.

No. PH1002J - Same as PH1002-E220, but without hydraulic power unit. Wt., 375 kg.

PE552S-E220 - Pump only. 0,84 KW, 220 volt, 50Hz, single phase, draws 13 amps at full load. Also available in 115 volt, 50/60Hz.

Note: For 115 volt, 50/60Hz applications, order Part No. PH1002



305-914

2.388



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.



305

305

260

260

220 V, 50 Hz, 13 Amp Cap.

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 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	kW	Pump Information Phase	Voltage
PR2100J-E220	† Jack	Double Acting	Solenoid	1,5**	1	230*
PR3100J-E380	† Jack	Double Acting	Solenoid	2,2	3	400*
PR2100S-E220	† Sling	Double Acting	Solenoid	1,5	1	230*
PR3100S-E380	† Sling	Double Acting	Solenoid	2,2	3	400*

- Prewired at factory for this voltage. Other voltages available upon request.
- ** The 1,49 Kw, 115 volt requires 30 amp service.

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		Class and size of bo TBU & SP "Met	•	
Description	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.

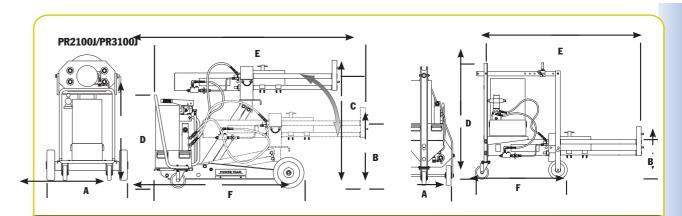




				Class a	nd size of beari	ng assembly to b	e serviced			
Tool Description	Class B 108 x 203 (No.)	Class C 127 x 229 (No.)	Class D 140 x 254 (No.)	Class E 152 x 279 (No.)	Class EE 140 Axie. (No.)	Class EE 152 Axle. (No.)	Class F 165 x 305 (No.)	Class G 178 x 305 (No.)	Class G 165 Axle. (No.)	Class GG 165 Axle. (No.)
Pulling Shoe		No. 420	845 is include	ed as part of b	asic machine	- Do Not Orde	r	420846	420846	420846
Pulling Shoe	30522	30512	30521	30520	30520	30519	30519	_	_	_
Insert Adapter										
Guide Tube & Cap	253313	253314	253317	253318	253316	253327	253320	253321	253319	253323
Screw Assembly										
Cap Screw**	253156	253349	253308	253155	253307	253308	253310	253326	253309	253309
Guide TubeNo.	23934	21248	21248	21247	21247	21247	21247	21247	21247	21247
Adapter										
Installing Tube		No. 304	16 is included	d as part of ba	sic machine -	- Do Not Order		30417	30417	30417
Installing Tube	21242	21258	21256-1	21255-1	21255-1	21257-1	21257-1	30586	30585	30585
Adapter Ring										

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.



	Vap	acity						əpecu				\
Stroke	Pull (Tons)	Inst.	Advance	Pull	Inst.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Weight (kg)
` '						` '	· '			` '		_
												528 520
												455
 394	100	68	900	81	113	619	279	_	1.283	1.632	985	458
Order No. 2100J 3100J 2100S 3100S	No. (mm) 2100J 394 3100J 394 2100S 394	Order No. Stroke (mm) Pull (Tons) 2100J 394 100 3100J 394 100 2100S 394 100	No. (mm) (Tons) (Tons) 2100J 394 100 68 3100J 394 100 68 2100S 394 100 68	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) 2100J 394 100 68 900 3100J 394 100 68 900 2100S 394 100 68 900	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) Pull (mm/min.) 2100J 394 100 68 900 81 3100J 394 100 68 900 81 2100S 394 100 68 900 81	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) Pull (mm/min.) Inst. (mm/min.) 2100J 394 100 68 900 81 113 3100J 394 100 68 900 81 113 2100S 394 100 68 900 81 113	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) Pull (mm/min.) Inst. (mm/min.) A (mm/min.) 2100J 394 100 68 900 81 113 813 3100J 394 100 68 900 81 113 813 2100S 394 100 68 900 81 113 619	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) Pull (mm/min.) Inst. A (mm/min.) B (mm/min.) 2100J 394 100 68 900 81 113 813 383 3100J 394 100 68 900 81 113 813 383 2100S 394 100 68 900 81 113 619 279	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) Pull (mm/min.) Inst. (mm/min.) A B (mm) C (mm) 2100J 394 100 68 900 81 113 813 383 1.059 3100J 394 100 68 900 81 113 813 383 1.059 2100S 394 100 68 900 81 113 619 279 —	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) Pull (mm/min.) Inst. (mm/min.) A B (mm) C D (mm) D (mm) 2100J 394 100 68 900 81 113 813 383 1.059 912 3100J 394 100 68 900 81 113 813 383 1.059 912 2100S 394 100 68 900 81 113 619 279 — 1.283	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) Pull (mm/min.) Inst. (mm/min.) A (mm) B (mm) C (mm) D (mm) E (mm) 2100J 394 100 68 900 81 113 813 383 1.059 912 1.981 3100J 394 100 68 900 81 113 813 383 1.059 912 1.981 2100S 394 100 68 900 81 113 619 279 — 1.283 1.632	Order No. Stroke (mm) Pull (Tons) Inst. (Tons) Advance (mm/min.) Pull (mm/min.) Inst. (mm/min.) A B (mm) C D (mm) E F (mm) F (mm) 2100J 394 100 68 900 81 113 813 383 1.059 912 1.981 1.493 3100J 394 100 68 900 81 113 813 383 1.059 912 1.981 1.493 2100S 394 100 68 900 81 113 619 279 — 1.283 1.632 985

Drivers

Bearing, Bushing And Seal



27797 Master Set (Board not included)



Universal bearing cup installer

This installer adjusts to fit bearing cups from 92 to 165 mm 0.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., 4,5 kg.

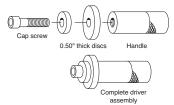
Assemble your own "custom-made" driver tools

These sets include discs and hand-les 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 12,7 thru 114,3 mm

diameters in 1,6 mm 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.,1,8 kg.

No. 27794 – Basic Set. Wide coverage, low investment! Includes 41 discs and two



handles. Size range: 12,7 thru 76,2 mm diameter. Wt., 10 kg.

No. 27795 – Big Job Set. Used for servicing large components. You get coverage of 77,8 thru 114,3 mm diameter with the 24 discs and handle provided. Wt., 20,4 kg.

No. 27797 – Master Set. For maximum coverage. Three handle sizes and all 65 discs listed in chart at left are included. Range: 12,7 thru 114,3 mm diameter. Wt., 30,9 kg.

No. 212377 – Tool organizer board. Will accommodate all components of 27793 Starter Set. Tools not included. Wt., 2,3 kg.

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	ММ	Order No.	DISCS Inch	ММ	Order No.	DISCS Inch	ММ
27492	9/16	14.3	27513†	17/8	47.6	27535	31/4	82.6
27493†	5/8	15.9	27514	1 15/16	49.2	27536	35/16	84.1
27494	11/16	17.5	27515	2	50.8	27537	33/8	85.7
27495†	3/4	19.0	27516	21/16	52.4	27538	$3^7/_{16}$	87.3
27496	13/16	20.6	27517	21/8	54.0	27539	31/2	88.9
27497†	7/8	22.2	27518	23/16	55.6	27540	39/16	90.5
27498	15/16	23.8	27519	21/4	57.2	27541	35/8	92.1
27499†	1	25.4	27520	25/16	58.7	27542	311/16	93.7
27500	1 1/16	27.0	27521	23/8	60.3	27543	$3^{3}/_{4}$	95.3
27501†	1 ¹ /8	28.6	27522	27/16	61.9	27544	$3^{13}/_{16}$	96.8
27502	1 ³ / ₁₆	30.2	27523	21/2	63.5	27545	37/8	98.4
27503†	11/4	31.8	27524	29/16	65.1	27546	$3^{15/16}$	100.0
27504	1 ⁵ / ₁₆	33.3	27525	25/8	66.7	27547	4	101.6
27505†	13/8	34.9	27526	211/16	68.3	27548	41/16	103.2
27506	1 7/16	36.5	27527	23/4	69.8	27549	41/8	104.8
27507†	11/2	38.1	27528	213/16	71.4	27550	43/16	106.4
27508	1 9/16	39.7	27529	27/8	73.0	27551	41/4	108.0
27509†	15/8	41.3	27530	215/16	74.6	27552	45/16	109.5
27510	1 11/16	42.9	27531	3	76.2	27553	43/8	111.1
27511†	13/4	44.4	27532	31/16	77.8	27554	47/16	112.7
			27533	31/8	79.4	27555	41/2	114.3
† = Items	contained in	27793 star	ter set.					

	SET COMPONENTS
Order No	
10012†	1/4"-20 UNC X 22,2mm*
10020†	¹/₄"-20 UNC X 31,8 mm*
10854†	¹/₄"-20 UNC X 44,5 mm
10855†	¹/4"-20 UNC X 70 mm*
12001†	1/4"-20 UNC X 21/4"*
27487 †	Small Handle 127 X19mm Dia.
27488	Med. Handle 152 X 41mm Dia.
27489	Large Handle 152 X 41mm 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 6,4 mm in 6,4 mm mild steel, 6,4 mm in 4,8 mm stainless steel, and 6,4 mm in 7,9 mm 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.

Measurements AND SPECIFICATIONS

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 3.500 bar shear strength, read directly from chart #1. Example: To punch a 9,5 mm diameter hole thru 9,5 mm 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 4.200 bar shear strength, read direct from chart #2. Example: To punch a 6,4 mm round hole in 6,4 mm thick A-36 steel, chart #2 shows 5.9 tons of force is needed.

CHART	#1			TONS	OF PRE	SSURE	REQUIRE	D TO PU	NCH MI	LD STEE	L			
Mate	erial					Round I	Hole Dia	neter (m	ım)					1
Thickr	ness	3,2	4,8	6,4	7,9	9,5	11,1	12,7	14,3	15,9	17,5	19	20,6	
Gauge	(mm)													
20	1/32	.4	.5	.7	.9	1.1	1.2	1.4	1.6	1.8	1.9	2.1	2.3	1
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	1.5
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	13
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
1/4"	1/4			3.7	6.1	7.4	8.6	9.8	11.1	12.3	13.5	14.7	16.0	1
5/16"	5/16			4.9	7.8	9.2	10.7	12.3	13.9	15.4	17.0	18.5	20.0	1
3/8"	3/8					11.1	12.8	14.8	16.5	18.5	20.2	22.1	23.8	1
1/2"	1/2							19.7	22.0	24.6	26.9	29.5	31.8	1

		C	HART #2	TONS	OF PRES	SSURE R	EQUIREI	TO PUI	NCH AST	M-A36	STRUCT	URAL ST	EEL	
	Mate	rial			Rou	nd Hole	Diamete	r (mm)						
	Thick	ness	3,2	4,8	6,4	7,9	9,5	11,1	12,7	14,3	15,9	17,5	19	20,6
SNOT	Gauge	(mm)												
	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
윾	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
PRESSURE	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
ISS	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
쿒	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

	TO OHEMH 2	O,4 IIIII EEIIGI	•	
Material Thickness	Mild Steel	Stainless Steel	Brass	TONS
4,8 mm	0,167	0,276	0,128	
6,4 mm	0,246	0,374	0,177	유
7,9 mm	0,314	0,472	0,216	- E
9,5 mm	0,373	0,560	0,246	PRESSURE
11,1 mm	0,432	0,649	0,305	R
12,7 mm	0,491	0,737	0,344	

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 25,4 mm length of cut in chart #3. Example: The shear length (or total distance around a 12,7 mm square hole) is 50,8 mm. To punch such a hole in 6,4 mm thick mild

steel, multiply 50,8 mm x 6.25 (from chart #3) = 12.5 tons. For stainless steel this would be 50,8 $mm \times 9.5 = 19 \text{ tons.}$

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 19 mm material, the total die clearance is 3,8 mm. Clearance should always be specified when there is any reason for doubt.

Effects of die clearance are more noticeable in thicker materials (such as 12,7 mm) than in thinner materials (such as 4,8 mm). When ordering die sets, $\,$ NOTE: Most grades of half hard aluminum use the same 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
7 Gauge	4,55	0,5 mm
3/16	4,76	0,58 mm
1/4	6,35	0,94 mm
5/16	7,94	1,2 mm
3/8	9,5	1,45 mm
1/2	12,7	1,90 mm

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:

		υu	Ш	ucii	CIG	cai	all	CE	
_					_				

1. Extra roll-in at top of the hole. 2. Too much burr at bottom of the hole.

Too much clearence

- Too little clearance 1. More punching pressure needed.
- 2. High stripping force causes part distortion and extra punch wear

Correct Clearance

- 1. Straighter hole thru material.
- 2. Minimum distortion at top of hole.
- 3. Minimum burr at bottom of hole.

USE THE 200.300 OR 750 L/MIN 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.

BASE MOUNTING HOLES FOR "C"CYLINDERS

Cylinder Tonnage	No.	Thread	Thread	Bolt Circle
	Holes	Size	Depth (mm)	Diameter (mm)
5		1/4-20	9.5	25.4
10		⁵ /16-18	40.7	39.7
15	2†	³ / ₈ -16	12.7	47.6
25		1, ,,		58.7
55		1/2-13	19.1	95.3
* Optinonal 75		³ ⁄4-10		114.3
* Optinonal 100	4	1-8	25.4	120.7



* Consult Factory (45° from coupler)

Cyl. Caps furnished with

"C" Series Cylinders:

No. 201375

No. 201362

No. 201362

No. 201412

No. 36161

No. 36161

No. 36161

† 90° from coupler.

5 ton cylinders

10 ton cylinders

15 ton cylinders

55 ton cylinders

75 ton cylinders

100 ton cylinders

25 ton cylinders

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.

Dumn	Cylinder	Time to Extend Cylinder 25,4 m					
rump	Cyllilaer	7 bar	700 bar				
	RD55	1.0 sec.	12.0 sec.				
Pump PE55 PQ120 Series PE400 Series	RD100	1.8 sec.	22.5 sec.				
	RD200	3.5 sec.	45.0 sec.				
	RD400	7.2 sec.	85.0 sec.				
	RD200	3.4 sec.	20.6 sec.				
PQ120	RD300	4.9 sec.	30.0 sec.				
Series	RD400	6.4 sec.	39.0 sec.				
	RD500	8.1 sec.	49.5 sec.				
PE400	RD300	3.0 sec.	8.5 sec.				
Series	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.

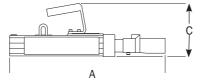


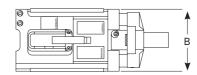
Tonnage	10	25	55	80	100	150	200	300	400	500
No. of Holes	2	4	4	4	4	4	4	4	4	6
Thread Size	3/8"-16	1/2"-13	5/8"-11	5/8"-11	3/4"-10	1"-8	11/4"-7	11/4"-7	11/2"-12	13/8"-12
Depth (mm)	16	19	22	22	25	25	32	44	48	51
B.C. Dia.	51	70	89	114	140	152	165	159	184	203
Orientation	90°	45°	45°	45°	45°	45°	45°	Random	Random	Random

MOUNTING HOLES FOR "RLS" CYLINDERS

RLS50	8,6 mm C'bore x 6,4 mm deep, 5,6 mm thru hole	R	15,5 mm C'bore x 10,4 mm deep,10,4 mm thru hole	RLS500S	17,8 mm C'bore x 12,7 mm deep,11,9 mm thru hole	RLS1000S	20,3 mm C'bore x 14,2 mm deep, 13,5 mm thru hole
RLS100	10,7 mm C'bore x 8,7 mm deep, 7,1 mm thru hole	R	 15,5 mm C'bore x 11,2 mm deep, 10,4 mm thru hole	RLS750S	20,3 mm C'bore x14,2 mm deep, 13,5 mm thru hole	RLS1500S	20,6 mm C'bore x 14,2 mm deep, 13,5 mm thru hole

POST TENSION/STRESSING JACK DIMENSIONS





Number Number	(mm)	(mm)	(mm)	(kg)
SJ2010	533	229	165	25
SJ2010	559	259	178	34
SJ3010	559	259	178	34
SJ3010P	559	259	178	34
SJ2010DA	470	190	165	19
SJ3010DA	470	216	165	23

Conversion FORMULAS

1/64

1/32

3/64

1/16

5/64

3/32

7/64

1/8

9/64

5/32

11/64

3/16

7/32

15/64

17/64

1/4

13/64

DECIMALS

.015625

.03125

.046875

.0625

.078125

.09375

.109375

.140625

.15625

.171875

.1875

.203125

.21875

.234375

.2500

.265625

MILLIMETERS

-0.397 -0.794

-1.191

-1.588

-1.984

- 2.381

-2.778

-3.175

- 3.572 - 3.969

- 4.366

-4.763

-5.159

-5.556

-5.953

-6.350

-6.747

DECIMAL & MILLIMETER EQUIVALENTS

9/32	.28125	-7.144
19/64	.296875	- 7.541
5/16	.3125	- 7.938
21/64	.328125	- 8.334
11/32	.34375	- 8.731
	DECIMALS	MILLIMETERS
23/64	.359375	- 9.128
3/8	.3750	- 9.525
25/64	.390625	- 9.922
13/32	.40625	- 10.319
27/64	.421875	- 10.716
7/16	.4375	- 11.113
29/64	.453125	– 11.509
15/32	.46875	- 11.906
31/64	.484375	- 12.303
1/2	.5000	- 12.700
33/64	.515625	- 13.097
17/32	.53125	- 13.494
35/64	.546875	- 13.891
9/16	.5625	- 14.288
37/64	.578125	- 14.684
19/32	.59375	- 15.081
39/64	.609375	- 15.478
5/8	.6250	– 15.875
41/64	.640625	- 16.272
21/32	.65625	- 16.669

43/64	.671875	- 17.066
11/16	.6875	-17.463
	DECIMALS	MILLIMETERS
45/64	.703125	- 17.859
23/32	.71875	-18.256
47/64	.734375	- 18.653
3/4	.7500	- 19.050
49/64	.765625	- 19.447
25/32	.78125	- 19.844
51/64	.796875	- 20.241
13/16	.8125	- 20.638
53/64	.828125	- 21.034
27/32	.84375	- 21.431
55/64	.859375	- 21.828
7/8	.8750	- 22.225
57/64	.890625	- 22.622
29/32	.90625	- 23.019
59/64	.921875	- 23.416
15/16	.9375	- 23.813
61/64	.953125	- 24.209
31/32	.96875	- 24.606
63/64	.984375	- 25.003
1	1.000	- 25.400

1 mm = .03937" .001" = .0254 mm

SI* CONVERSION FORMULAS

APPF	ROXIMATE (ONVERSIO	N	
MULTIPLY	ВУ	TO GET OR MULTIPLY	ВҮ	TO GET
SI*	CONV	NON-SI	CONV	SI*
UNIT	FACTOR	UNIT	FACTOR	UNIT
	LENGTH			
millimeter (mm) (1 inch = 25.4 mm exactly)	X 0.03937	= inch	X 25.4	= mm
centimeter (cm) 10 mm	X 0.3937	= inch	X 2.54	= cm
meter (m) 1000 mm	X 3.28	= foot	X 0.305	= m
meter (m)	X 1.09	= yard	X 0.914	= m
kilometer (km) 1000 m	X 0.62	= mile	X 1.61	= km
	AREA			
millimeter ² (mm ²)	X 0.00155	= inch ²	X 645	= mm ²
centimeter ² (cm ²)	X 0.155	= inch2	X 6.45	= cm ²
meter ² (m ²)	X 10.8	= foot ²	X 0.0929	= m ²
meter ² (m ²)	X 1.2	= yard ²	X 0.836	= m ²
hectare (ha) 10,000 m ²	X 2.47	= acre	X 0.405	= ha
kilometer ² (km ²)	X 0.39	= mile ²	X 2.59	= km ²
	VOLUME			
centimeter3 (cm3)	X 0.061	= inch ³	X 16.4	= cm ³
liter (I)	X 61	= inch ³	X 0.016	=
milliliter(ml) ml = 1 cm³)	X 0.034	= oz-liq	X 29.6	= ml (1
liter (I) 1000 ml	X 1.06	= quart	X 0.946	=
liter (I)	X 0.26	= gallon	X 3.79	=
meter3 (m3) 1000 I	X 1.3	= yard ³	X 0.76	= m ³
	MASS			
gram (g)	X 0.035	= ounce	X 28.3	= g
kilogram (kg) 1000 g	X 2.2	= pound	X 0.454	= kg
metric ton (t) 1000 kg	X 1.1	= ton (short) X 0.907	= t

AF	PPROXIMATE C	ONVERSION	ON	
MULTIPLY	BY	TO GET OR MULTIPLY	BY	TO GET
SI*	CONV	NON-SI	CONV	SI*
UNIT	FACTOR	UNIT	FACTOR	UNIT
FOF	$RCE (N = kg \bullet$	m/s2)		
newton (N)	X 0.225	= pound	X 4.45	= N
kilonewton (kN)	X 225	= pound	X 0.00445	= kN
	TORQUE			
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
PRE	ESSURE (Pa =	N/m2)		
kilopascal (kPa)	X 4.0	= in. H ₂ 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
	POWER $(w = J)$	/s)		
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
	TEMPERATUR	RE		
°C = (°F - 32) ÷ 1.8	°F = (°C X 1.8) +	32		
	FLOW			
cu. cm./min. min.	X .061	= cu. in/mi	n.X 16.4 =	cu. cm./
liters/min.	X .2642	= GPMX	3.785 = lit	ers/min.

^{*} System International (Modern Metric System)

Standards

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:

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

Power 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.

11100

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.



CSA

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 700 bar unless otherwise specifically noted.

OUALITY 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 875 bar, except the RT series which are tested to 700 bar 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 Marathon Warranty is described in more detail on pgs. 240-241 of this catalog.

Warranty



Warranty

"Power Team" is a registered trademark of the SPX Hydraulic Technologies division of SPX Corporation ("SPX"). 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.
- 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.
- All electric motors and gas engines are separately warranted by their respective manufacturer under the terms and conditions stated in their separate warranty.

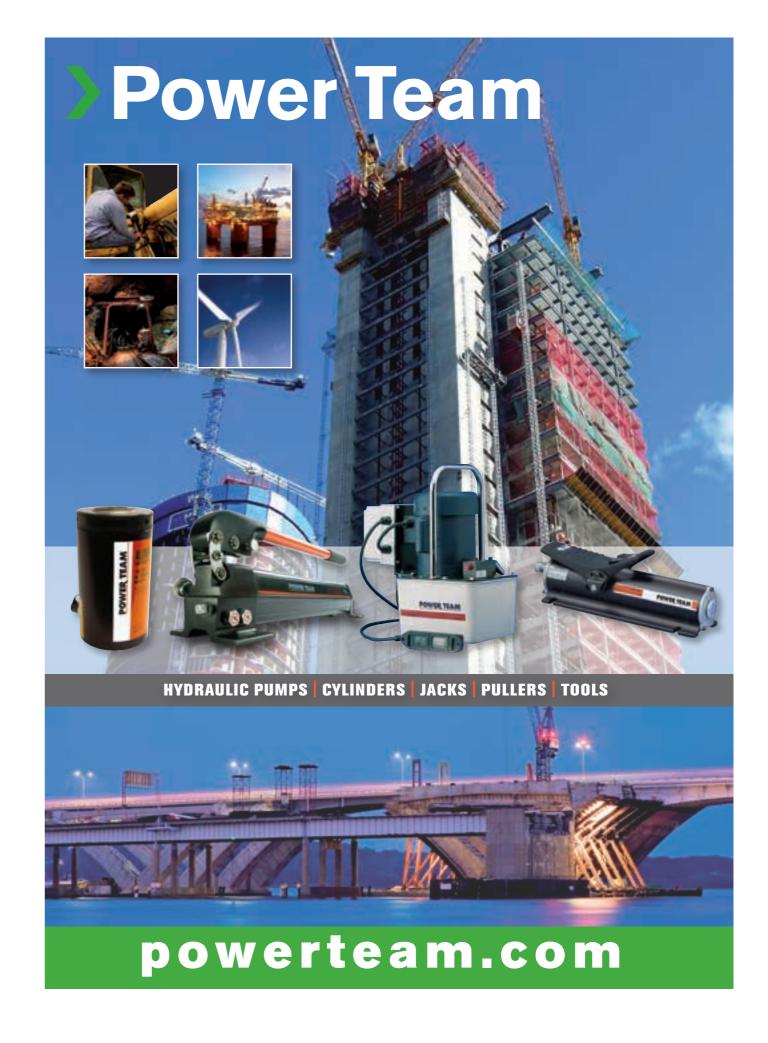
The foregoing warranties do not cover ordinary wear and tear or any product or part that has been worn out, abused, heated, ground or otherwise altered, used for a purpose other than that for which it was intended or used in a manner inconsistent with any instructions regarding its use.

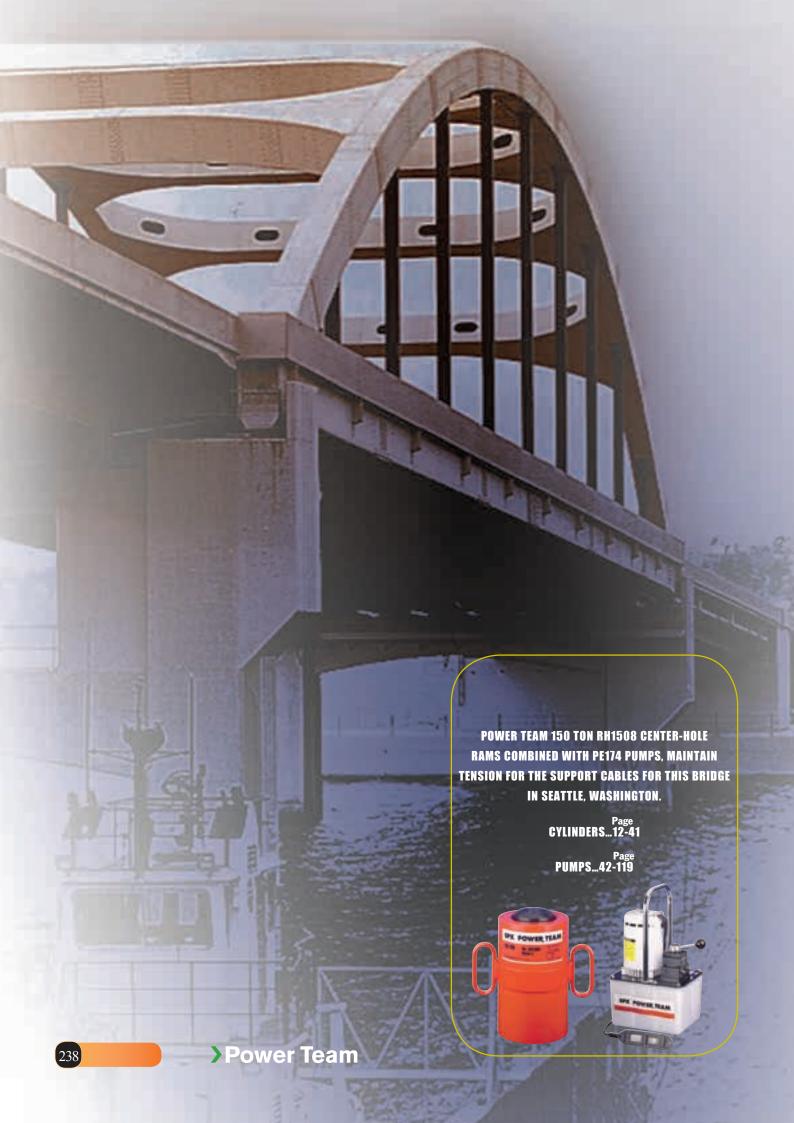
To qualify for warranty consideration, return the Power Team product, freight prepaid, to a Power Team authorized repair center or to the SPX factory. If any product or part manufactured by SPX found to be defective by SPX, in its sole judgment, SPX will, at its option, either repair or replace such defective product or part 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 SPX OR FOR DAMAGES RESULTING FROM ANY OTHER CAUSE WHATSOEVER, INCLUDING WITHOUT LIMITATION, SPX'S NEGLIGENCE. SPX 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.

SPX's Warranty is expressly limited to persons who purchase Power Team products or parts for the resale or for use in the ordinary course of the buyer's business.

THIS WARRANTY IS EXCLUSIVE, AND SPX 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 SPX has any authority to bind SPX 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 SPX 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 SPX is willing and able to replace said defective products or parts in the prescribed manner.





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, trouble-shooting, and field repairs. Three and five day seminars are structured to meet your product knowledge requirements.

Class schedules are posted on powerteam. com. Contact your district sales manager for more details or call 800-477-8326.



Cylinders P6-P41



Pumps P42-P119



Accessories P120-P133



Shop Equipment P134-P147



Jacks P148-P133



Hydraulic Tools P164-P189



Pullers P190-P230



Resources P231-P234



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