

Hydraulic and Mechanical Power for Industry Since 1899

SIMPLEX

CYLINDERS

PUMPS

VALVES AND ACCESSORIES

HYDRAULIC Tools

TORQUE WRENCHES

PRESSES

MECHANICAL Jacks

www.tksimplex.com

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All Simplex Product Dimensions are subject to change without notice. Please consult your Simplex Representative for verification of critical specifications, or call 1-(800) 323-9114.

QUALITY SINCE

SINCE - 1899

QUALI

Today, as in the past, developing products that set new benchmarks in quality are "business as usual" at Simplex. For example, the Simplex Pow'r-Claw[™] track jack, introduced in 1992, is equally as revolutionary as the original track jack Walter B. Templeton invented more than 100 years ago. Other innovations include new lines of push/pull jacks, air bags, hand pumps, cylinders and maintenance tools designed to meet the needs of a cross section of industries, from testing and manufacturing... to rescue operations and heavy construction.

In 1992, Simplex also instituted an ambitious expansion of its sales channels to better serve its widening customer base. A direct sales force made up of Templeton Kenly & Co highly-experienced industry professionals was put into place to support Simplex's more than 2,000 distributors. Once a small, local company, Simplex now has a presence in virtually every country around the world.

Quality products can only result from quality people. At Simplex, attracting the right people, and giving them the tools and motivation to be their best remains the key to continued growth. Every Simplex employee is part of a dynamic team that is dedicated to expanding the company's competitive position. The companywide philosophy of "team building" management enables the organization to be more open to employee participation, encouraging

new ideas and finding better ways to serve customers.

The Simplex of tomorrow promises to be a vibrant, innovative company that is distinguished not only by its quality products and people, but by its family ownership. In an age of faceless "parent" companies and Wall Street mergers, Simplex stands alone in the jack industry as the only family-

owned company. The descendants of W. B. Templeton are still involved in the management of Simplex and sit on its board of directors, assuring that its founders' vision is as focused today as it was in 1899.







HELPFUL HYDRAULIC SAFETY TIPS



Choose The Right Ram.

You must know the weight of what you intend to lift and choose a ram with at least 10% more capacity. Be aware of possible load shift requiring more capacity at any particular lifting point.

2 Inspect All System Components.



Check each component before you set up your hydraulic system. Do not use damaged or worn components. Turn them in for repair or replacement.

3 Safety Instructions.



Read all warning labels and instructions. Operating instructions must be understood before using equipment. Never remove labels from equipment. Replace missing, worn, or damaged labels. Always wear safety goggles and protective clothing when using hydraulic equipment.

4 Each Jack or Ram Must Be Fully Supported at the Base.



Every jack or ram, whether used individually or in a system, should be completely supported on a solid, firm, non-sliding foundation capable of supporting the load.

5 Fill Oil Reservoirs With Cylinder Retracted.



Only fill pump to recommended level, and fill only when connected cylinder is fully retracted.

6 Know How Your Hydraulics Work.



Do not use extensions or cheeter bars on hydraulic jacks or hand pumps to raise a load.

7 Center the Load on the Lifting Point.





The load must be centered on the ram, or equally distributed on multiple rams. Off center loading can result in the ram slipping out and loss of the load.

8 When Using Multiple Rams, Distribute the Load Evenly.



For multiple ram lifts, you must be able to determine the location and number of lifting points that will allow the load to be evenly distributed to all the rams. This is called load balance. Size, center of gravity, and load geometry must to be considered in order to correctly determine load balance.

HELPFUL HYDRAULIC SAFETY TIPS

9 Block or Crib Your Load as it Raises.



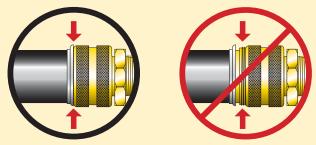
Place blocking or cribbing under the loads as you raise it. Each time you raise it higher, insert more blocking. Position yourself in a manner that will keep you clear of the load, and will not allow your hands or other body parts between the load and the cribbing.

10 Do Not Use Rams as Permanent Supports.



Hydraulic rams are not meant to be used as permanent supports. They are designed to lift and lower. If you need to hold the load for any length of time, cribbing or Simplex locknut cylinders should be used.

11 Hydraulic Connections.



When making connections with quick couplers, make sure the couplings are fully engaged. Threaded connections such as fittings, gauges, etc. must be securely tightened and leak free. Never use excessive tightening force that may distort the fittings or strip the thread profile.

12 Avoid Extreme Heat or Weld Splatter.



Weld splatter will damage plunger rods and hoses. Hydraulic fluid can ignite if vaporized or exposed to high temperatures.

13 Hydraulic Disconnections.



Never attempt to disconnect hydraulic hoses, fittings or couplers under pressure. Unload the ram, open the release screw on the hand pump and shift or open all hydraulic controls several times. If system includes a gauge, double check the gauge to insure pressure has been completely released.

14 Do Not Carry or Drag Pumps and Rams by Their Hoses.



Dragging or carrying rams or pumps by a connected hose can damage the couplers and hoses. Using damaged couplers and hoses can be dangerous.

15 Keep Hydraulic Hoses Free of Obstructions.



Do not drop sharp or heavy objects on hose. Keep hose out of heavy traffic areas. This will cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture. Avoid sharp bends and kinks when routing hydraulic hoses.



YDRAULIC PRINCIPL ES AND

Flow: is created by the pump.

Pressure: is created by resistance to flow. This resistance is usually the result of a load.

Force: The amount of force a hydraulic cylinder can generate is equal to hydraulic pressure times the effective area of the cylinder. (Effective area is the surface area of the piston face in square inches.) For multiple cylinder systems, multiply the effective area times the number of cylinders times pressure to determine system force.

Formula for Calculation of Output Force:

PSI x Cylinder Effective Area x No. of Cylinders

2,000

Speed: When using a "**power pump**" the speed at which your cylinder will lift is determined by dividing the pump's flow by the cylinder's effective area.

Formula for Calculation of Lifting Speed:

Pump Flow Per Minute	in./min.
	= Piston
vlinder Effective Area x No. of Cvlinders	Travel

1 Gallon = 231 cu. in. • 1 Ounce = 1.8 cu. in. • 1 "KIP" = 1,000 lbs.

METRIC CONVERSION CHART

1 U.S. Gallon =3.785 Liters =3.785 cu./cm

1 Cubic Inch =16.39 cu./cm 1 Bar =14.7 psi

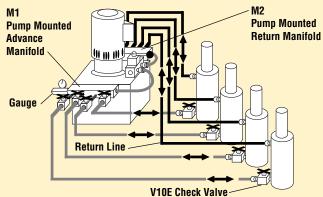
1 Metric Ton =2,205 lbs. =1.000 kg` 1 Ton (Short) =2,000 lbs. -907.18 kg



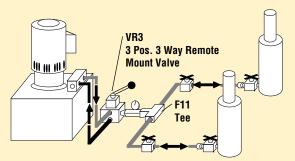
Now you can avoid the complex and confusing plumbing requirements of inline manifolds. Hydraulic connections are quick and convenient when you use our M1 and M2 pump mounted manifolds to control up to 4 doubleacting cylinders.

- = TONS

Effective Area

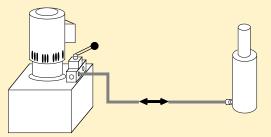


Many different system arrangements can be achieved by using a remote mounted directional valve. Remote valves are ideal when system control is desired away from the pump.



BASIC HYDRAULIC CONFIGURATIONS

Here is a basic hydraulic system consisting of a single acting cylinder, a pump, and a hose. The pump shown is a typical electric/hydraulic power pump, however, other hand, air, or gas powered pumps may be substituted.



INTRODUCTION

CYLINDERS

THE SIMPLEX CYLINDER

■ Wide Variety

Simplex offers the widest selection of cylinder style, tonnage and stroke to match your every day needs.

Built for Rugged Industrial/Construction Use

All Simplex cylinders meet **ANSI/ASME B30.1 Safety Standards**. Stop rings, plated pistons and heavy duty construction provide trouble free operation and long life.

Sure Spring Retraction

Heavy duty, wound steel plate springs provide fast and complete retraction cycle after cycle, and retain their tension longer. Long lasting springs contribute substantially to cylinder life.

Versatile Fixturing

Threaded collars and internal plunger threads withstand full loading for **maximum flexibility** in fixturing.

Piston Blow-Out Protection

Every Simplex cylinder incorporates a positive piston stop to limit piston travel at the end of the stroke, and allows the cylinder to be operated at full stroke. Piston stops **add strength and safety to your Simplex cylinder**.

Protection from Contamination

Polyurethane wipers clean the rod surface during retraction, protecting the inner cylinder assembly from dirt, moisture, and other contaminants.

Exceeds ANSI/ASME B30.1 Safety Standards.

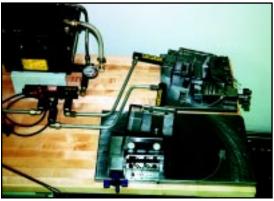


Cylinders **Description/Applications** Cylinder Plunger Capacity **Strokes** Page Series Type Type (Tons) (in.) No.(s) R 12 - 14 General purpose spring return for fast retraction 5 - 100 5/8 - **14** 1/4 RAS 50 - 150 2 - 8 Lightweight for easy carrying and positioning 15 RLS Low height - spring return 10 - 100 1 - 2 16 RL Low height - load return 10 - 200 1 - 2 16 Single-RFS Very low height - spring return Solid 5 - 150 17 5/8 - 11/16 Acting Very low height - load return RF 10 - 150 17 5/8 - 11/16 Pull cylinder spring return RP 2 - 5 5 - 5 1/2 18 RLR Jacking cylinders - load return 30 - 1,000 2 - 12 24 - 25 RLN Mechanical load holding/lock nut - load return 30 - 1,000 2 - 12 26 - 27 RC Hard-Kor cylinders are used for pulling applica-12 - 100 5/16 - 6 1/8 20 - 21 Hollow RCD tions, prestressing & post tensioning 30 - 660 1 - 10 22 Double-Double-acting controlled retraction/fast cycling RDA Acting Solid 10 - 1,000 2 - 24 28 - 29

SIMPLEX CYLINDERS AT A GLANCE CHART

APPLICATION SELECTION GUIDE

SINGLE-ACTING SPRING RETURN CYLINDERS



DOUBLE-ACTING CYLINDERS



■ Choose double-acting cylinders for higher cycle production work or when complete control of larger cylinders is desired. Here two RDA-Series 150 ton cylinders are used in this custom made press to extract vanilla. "With these Simplex cylinders we can extract 30% more vanilla in less time making the process more efficient and profitable." See pages 28 - 29.



Spring return cylinders are used for greater application flexibility. With capacities up to 100 tons, and the widest choice of stroke lengths, as well as mounting options and accessories, the Simplex R-Series cylinders can fill almost any requirement. See pages 11 - 14.

LIGHT WEIGHT ALUMINUM CYLINDERS



Choose light weight aluminum cylinders when easy carrying and positioning are important. Here Simplex RAS-Series aluminum cylinders were specified to overcome a difficult setup in tight quarters while leveling a large structural foundation. See page 15.

LOCKNUT CYLINDERS



Choose locknut cylinders when the load must be lifted and held in place for a period of time. In this application Simplex RLN-Series cylinders cut installation time on this power generator by 25%. "The locknut held the load without installing cribbing." See pages 26 - 27.

For Application Questions Call Simplex 1(800) 323-9114.

ACCESSORIES

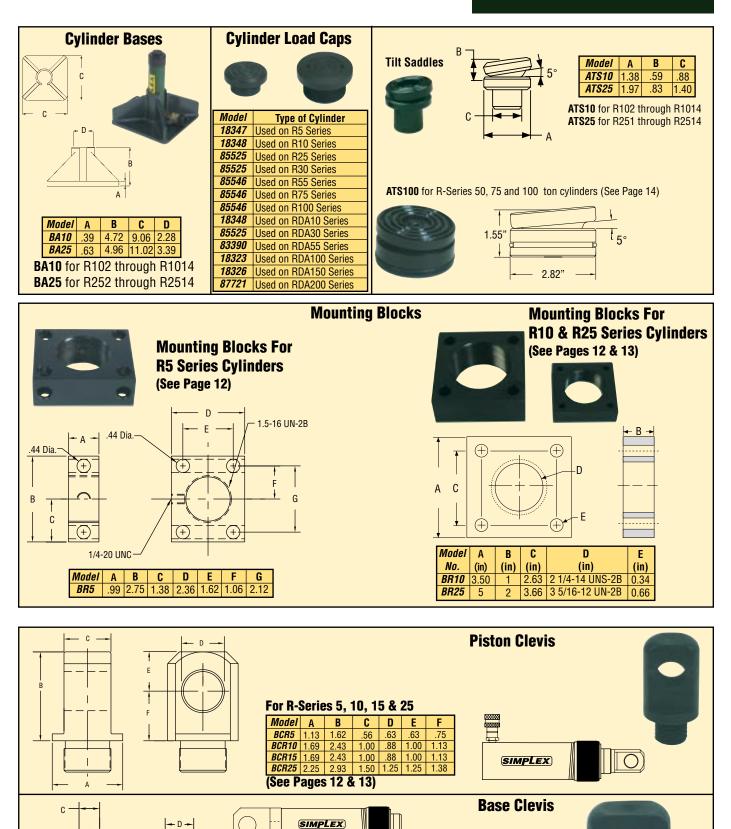
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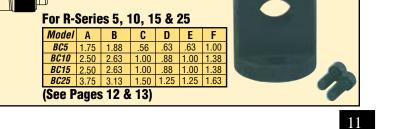
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CYLINDERS

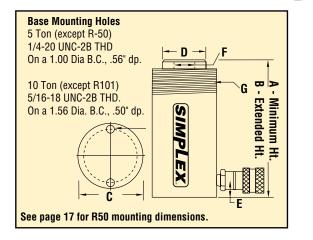




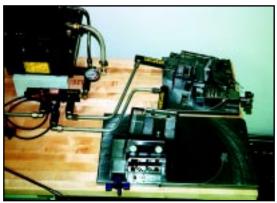
SPRING RETURN - 5-10 TON

Simplex Cylinders Improve Manufacturing Efficiencies.

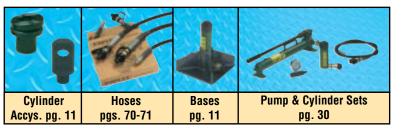




- 14 Models
- High flow quality couplers.
- Collar threads designed for full load.
- Base & piston mountings for easy fixturing.
- Removable load caps for flexibility & safety.
- Stop ring for piston blow-out protection.
- Plated piston to resist scoring & corrosion.
- Large bearings resist side load.
- Rod wiper protects inner cylinder from dirt.



Simplex spring return cylinders, used in this fabricating fixture, provide fast and accurate forming of precision metal products.



Spring Return Cylinders 5 & 10 Ton Capacities

Model Number	Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	Ram Bore Dia. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	C Body O.D. (in)		E Base To Port C/L (in)	Piston I.D. Thrds. (in)	F Piston Thrd. Depth (in)	Collar Thrds.	i Collar Thrd. Lgth. (in)	Wgt. (Ibs)	Sugstd. Hand Pump
R50		5/8		2 1/4				.6	1.6x2.3			None	None	None	None	2.5	
R51		1	4 11/32	5 11/32				1.0								2.5	P41
R53	5	3		9 1/2	1 1/8	.99	10,000	3.0	1 1/2	4		3/4 x 16	5/8	11/2 x 16		3.3	
R55	5	5		13 1/2	1 1/8	.99	10,000	5.0	1 1/2			3/4 X TU	5/0	11/2 X 10		4.0	
R5 7		7		17 5/8				7.0								5.0	
R59		9 1/8	12 3/4	21 7/8				9.1								5.5	
<u>R101</u>		1	3 17/32	4 17/32				2.2			3/4	None	None		1 1/8	3.5	
R102		2 1/8	4 25/32	6 29/32				5.22								5.2	
<u>R104</u>				10 7/8				9.2								6.3	P42
R106	10	6 1/8		15 7/8	1 11/16	2.24	8,945	13.7	2 1/4	1 1/2						8.8	
R108	10	8		19 3/4	1 11/10	2.24	0,340	18.0	L 1/4	1/2		1 - 8	3/4	21/4 x 14		10.5	
R1010				23 7/8				22.7								12.0	
R1012				27 3/4				27.0								13.5	
R1014		14	17 3/4	31 3/4				31.5								15.3	

SPRING RETURN - 15-25 TON

CYLINDERS

Simplex Cylinders Are Perfect For Heavy Maintenance.



- 13 Models
- High flow quality couplers.
- Collar threads designed for full load.
- Base & piston mountings for easy fixturing.
- Removable load caps for flexibility & safety.
- Stop ring for piston blow-out protection.
- Plated piston to resist scoring & corrosion.
- Large bearings resist side load.
- Rod wiper protects inner cylinder from dirt.



Large steel coils that were damaged in handling are reshaped using a Simplex R256 cylinder and PE70 Series pump.



Spring Return Cylinders 15 & 25 Ton Capacities

Ε

Model	Cap.		A	В	Ram	Effect	Pres.	Oil	C	D	E		F	()		Sugstd.
Number	(tons)	Stroke (in)	Min. Ht.	Ext. Ht.	Bore Dia.	Area (sq in)	@ Cap. (psi)	Cap. Req'd	Body O.D.	0.D.	-	Piston I.D. Thrds.		Collar Thrds.	Collar Thrd.	Wgt. (Ibs)	Hand
			(in)	(in)	(in)			(cu in)	(in)	(in)	(in)	(in)	Depth (in)	(in)	Lgth. (in)		
R152		2	5 7/8	7 7/8				6.3			3/4					8.3	
<u>R154</u>		4	7 7/8	11 7/8				12.6			0/1					10.8	P42
<u>R156</u>	15	6	10 11/16	16 11/16	2	3.14	9,554	19.0	2 3/4	15/8		1 x 8	1	23/4 x 16	1 3/16	14.5	
R1510		10	14 11/16	24 11/16				31.4								19.5	P140
R1514		14	18 11/16	32 11/16				44.0								24.5	F 140
R251		1	5 1/2	6 1/2				5.2								12.0	
R252		2	6 1/2	8 1/2				10.3								15.0	P42
R254		4	8 1/2	12 1/2				20.6			1					18.0	142
R256	25	6 1/4	10 3/4	17	2 9/16	5.15	9,700	32.2	3 3/8	2 1/4		1 1/2 x 16	1 1/8	35/16x12	1 15/16	23.0	
R258	23	8 1/4	12 3/4	21	2 9/10	0.15	5,700	42.5	0 3/0	2 1/4		1 1/2 X 10	1 1/0	05/10X12	1 13/10	27.0	
R2510		10 1/4	14 3/4	25				52.8								31.0	D140
R2512		12 1/4	16 3/4	29				63.1								35.0	P140
R2514		14 1/4	18 3/4	33				73.4								39.0	

SPRING RETURN - 30-100 TON

Simplex Cylinders Help Stand Up To Tough Construction Jobs.



- 9 Models
- High flow quality couplers.
- Collar threads designed for full load.
- Base & piston mountings for easy fixturing.
- Removable load caps for flexibility & safety.
- Stop rings for piston blow-out protection.
- Plated piston to resist scoring & corrosion.
- Large bearings resist side load.
- Rod wiper protects inner cylinder from dirt.
- Removable carrying handles included on models R556 through R10010.



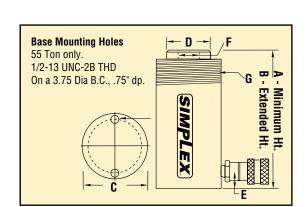
Contractors called on the brute force of Simplex R5513 cylinders to lift and position highway ramps in San Diego. PE50 power units provided the power and control in this rough outdoor application.

	100	
Power Pumps	Hoses	Cylinder Accessories
pgs. 39-62	pgs. 70-71	pg. 11

Spring Return Cylinders 30 Through 100 Ton Capacities

	Model Number	Cap. (tons)	Stroke (in)	A Min. Ht.	B Ext. Ht.	Bore	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd	C Body O.D.	0.D.	E Base To Port C/L	l Piston I.D. Thrds.	F Piston Thrd.	G Collar Thrds.	Thrd.	Wgt. (Ibs)	Sugstd. Hand Pump
				(in)	(in)	(in)			(cu in)	(in)	(in)	(in)	(in)	Depth (in)	(in)	Lgth. (in)		
	R308	30	8 1/4	15 1/4	23 1/2	2 7/8	6.49	9,245	53.6	4	2 1/4	2 1/4	11/2 x 16	1 3/16	35/16x12	1 15/16	40.0	P82
Null	R552				8 15/16				22.1								32.0	P42
	R554	55	4	8 15/16	12 15/16	3 3/4	11.05	9,955	54.0	5	3 1/8	1 3/8			5 x 12	2 1/8	42.0	P82
E.	R556		6 1/4	11 1/8	17 3/8	0 0/4		0,000	69.0	•	0.70	1 3/0			• • • •	/0	50.0	
	R5513		13 1/4	18 1/8	31 3/8				146.3				N/A	N/A			78.0	
	R756	75	6 1/8	11 1/4	17 3/8	A 1/2	15.90	9,430	97.4	5 3/4	3 3/4		N/A		53/4 x 12	1 3/4	63.0	*
11 3	R7513	10	13 1/8	19 3/8	32 1/2			3,400	208.0	0 3/4	0 3/4	1 3/16			UJ/4 A 12	1 3/4	130.0	
J. T	R1006	100	6 5/8	13 1/4	20 11/16	5 1/0	20.63	9,695	137.0	6 1/4	4 1/8	. 3/10			61/4 x 12	2 1/4	90.0	
	R10010	100	10 1/4	16 7/8	27 15/16	0 1/0	20.00	3,030	212.0	0 1/4	- 1/0				01/4 X 12	£ 1/4	110.0	

*Power pumps are suggested for these units (see pages 39-62)



50 - 150 TON ALUMINUM

CYLINDERS

Simplex Aluminum Cylinders Cut Carrying Weights By Over 40%.

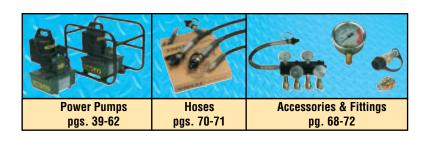


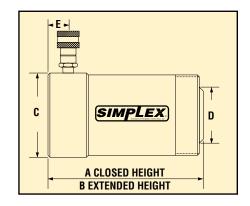


"Simplex lightweight cylinders were easy to carry and

position and the 8" stroke reduced cribbing time."

- 5 Models
- Steel Load Caps
- Spring Return
- High flow quality couplers.
- Lightweight
- Larger bearing surfaces for side load protection.
- 8" stroke for more cribbing block clearance.
- Rod wiper protects inner cylinder from dirt.





Aluminum Spring Return Cylinders 50 Through 150 Ton Capacities

Model Number	Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)			E Base To Port C/L (in)	Weight (Ibs)	Sugstd. Hand Pump
RAS502A	50	2	7.09	9.09	12.18	8.210	25	5.32	3.14	.87	18	P42
RAS508A	50	8	12.99	20.99	12.10	0,210	98	0.02	5.14	.07	28	*
RAS1002A	100	2	7.83	9.83	10 02	10.500	38	6.69	4.33	.95	30.6	P82
RAS1008A	100	8	13.74	21.74	19.03	10,500	153	0.09	4.33	.50	50	*
RAS1508A	150	8	14.45	22.45	31.18	9,620	295	8.66	5.51	1.06	82.7	

Order carrying handles separately: **For 100 ton AHA100 & for 150 ton AHA150.** *Power pumps are suggested for these units (see pages 39 - 62).

LOW PROFILE 10 - 200 TONS

"These Low Profile Cylinders Gave Us The Power We Wanted In The Compact Sizes We Needed."



- 12 Models
- Plated pistons to resist scoring & corrosion.
- High flow quality couplers.
- Available in spring or load return.
- Stop rings for piston blow-out protection.
- Rod wiper protects inner cylinder from dirt.
- Exceeds ANSI/ASME B30.1 safety standards.

	1	219
Power Pumps	Hoses	Pump & Cylinder Sets
pgs. 39-62	pgs. 70-71	pg. 30

Spring & Load Return Low Profile Cylinders 10 Through 200 Ton Capacities

Model Number Spring Return	Model Number Load Return	Cap. (tons)	A Stroke (in)	B Min. Ht. (in)	C Ext. Ht. (in)	Ram Bore Dia. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	0.D.		F Base To Port C/L (in)			Suggested Power Pump		
RLS101	RL101	10	1 1/2	3 15/32	4 31/32	1 11/16	2.23	8,940	3.4	2 3/4	1 1/2	11/16	5.8		0		
RLS201	RL201	20	1 3/4	3 7/8	5 5/8	2 3/8	4.43	9,030	7.8	3 5/8	2	11/10	10.5	P42	Simplex Suc-O-		
RLS302	RL302	30	2 7/16	4 5/8	7 1/16	2 7/8	6.49	9,250	15.8	4	2 1/4	3/4	13.8	F42	Matic™ equipped		
RLS502	RL502	50	2 3/8	4 13/16	7 3/16	3 1/2	9.62	10,400	22.8	5	2 1/4	15/16	22.8	Power Pumps are			
RLS1002	RL1002	100	2 1/4	5 9/16	7 13/16	5	19.63	10,200	44.2	6 1/2	3 5/8	1 1/4	44.5		highly recommended		
	RLR1502	150	•	7	9	6 1/4	33.18	9,041	66.4	9	5 9/16	1 15/16	117	P140	to power load return		
	RLR2002	200	2	8	10	7 1/4	44.18	9,054	88.4	10	6 9/16	2 1/16	184		cylinders.		

Simplex RLS Series provides the ideal fit & force required for most bridge lifting and pier cap maintenance jobs. Compact, light weight & tough as nails, Simplex cylinders

are at home on any construction site.

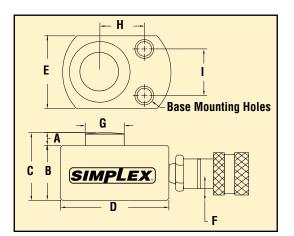
5 - 150 TON FLAT JACK

CYLINDERS

Simplex Flat Jacks, Designed To Fit In Tight Spots.



- 15 Models
- Stop rings for piston blow-out protection.
- Available in spring or load return.
- Domed piston resists side load.
- Plated pistons to resist scoring & corrosion.
- High flow quality couplers.
- Mounting holes in 5, 10, & 20 ton models.
- Rod wiper protects inner cylinder from dirt.
- Exceeds ANSI/ASME B30.1 safety standards.
- Power pumps with Suc-O-Matic[™] feature are ideal for load return cylinders.



Simplex RF & RFS Series are designed specifically for near impossible lifting, clamping or positioning jobs where space is at a premium. Ideal for break loose or start up spreading jobs. These mini-monsters pack up to 150 tons of force into a convenient, portable package.

205	21.9
Hoses	Pump & Cylinder Sets
	Hoses nas 70-71

Mounting Hole Dimensions

Capacity	H	I	Base Mounting Hole Dimensions
	(in)	(in)	(in)
5 Ton	1	1 1/8	7/32 through x 23/64 C'BORE (1/4 DEEP)
10 Ton	1 11/32	1 13/32	9/32 through x 27/64 C'BORE (5/16 DEEP)
20 Ton	1 9/16	1 15/16	25/64 through x 19/22 C'BORE (25/64 DEEP)

Spring & Load Return Flat Jacks 5 Through 150 Ton Capacities

Model Number Spring Return	Model Number Load Return	Cap. (tons)	A Stroke (in)	B Min. Ht. (in)	C Ext. Ht. (in)	Bore	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)		E Body Width (in)	F Base To Port C/L (in)	Piston O.D. Spring Ret. (in)	G Piston O.D. Load Ret. (in)		Suggested Hand Pump
R50		5	5/8	1 5/8	2 1/4	1 1/8	.99	10,000	.6	2 9/16	1 5/8		1		2.5	
RFS10	RF10	10	7/16	1 11/16	2 1/8	1 11/16	2.24	8,940	1.0	3 1/4	2 3/16		3/4	1 1/2	3.3	P41
RFS20	RF20	20	1/10	2 1/32	2 15/32	2 3/8	4.43	9,030	1.9	4	3		1 1/8	2	6.0	
RFS30	RF30	30	1/2	2 5/16	2 13/16	2 7/8	6.49	9,250	3.2	4 1/2	3 3/4	3/4	1 3/8	2	8.5	
RFS50	RF50	50		2 5/8	3 1/4	3 1/2	9.62	10,400	6.0	5 1/2	4 1/2	1	1 3/4	2 1/4	14.3	
RFS75	RF75	75	5/8	3 1/8	3 3/4	4 1/2	15.90	9,440	10.0	6 1/2	5 1/2		2 1/8	3 1/4	24.5	P42
RFS100	RF100	100		3 3/8	4	5	19.63	10,200	12.3	7	6		2 1/2	3 3/8	31.0	
RFS150	RF150	150	9/16	3 15/16	4 1/2	6 1/4	30.66	9,785	17.2	8 1/2	7 1/2	15/16	3	4 1/2	50.5	

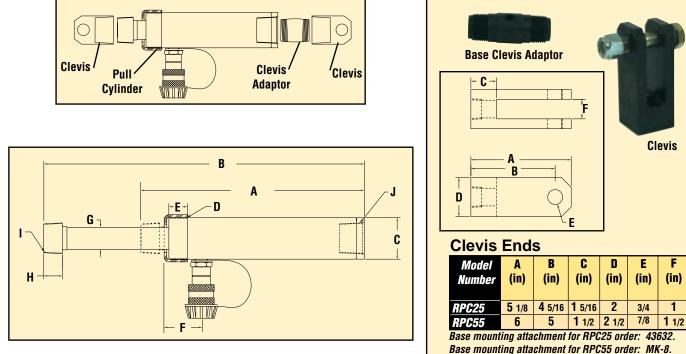


2 - 5 TON PULL CYLINDERS

Simplex Pull Cylinders Are Designed For Pulling & Tensioning Applications.



- 2 Models
- High flow quality couplers.
- Designed for pulling & tensioning applications.
- High strength all steel construction.
- Chrome plated piston rods resist corrosion.
- Rod wiper protects against contamination.
- Piston rod automatically extends when pressure is released.
- High strength compression spring provides long cycle life and quick piston extension.



Hydraulic Pull Cylinders

Model Number			A Min. Ht.	B Ext. Ht.			E Collar Thrd.				I NPTF	J NPTF		@ Cap.	(lbs)
			(in)	(in)	(in)	Thrd. (in)	Length (in)	Port (in)	Dia. (in)	Adpt. (in)	Thrd. (in)	Thrd. (in)	(cu. in.)	(psi)	
RP25	2	5	9 9/16	14 9/16	1 3/4	1 1/2-16	1	1 11/16	3/4	1	3/4-14	3/4-14	2.8	7,250	4
RP55	5	5 1/2	11 7/8	17 3/8	2 1/4	2 1/4-14	1	1 11/16	1 3/16	1 3/8	1 1/4- 11 1/2	1 1/4- 11 1/2	6.2	8,850	11

P42 is the suggested hand pump.

HARD-KOR™ INTRODUCTION

CYLINDERS

THE HARD-KOR™ HOLLOW CYLINDER

■ Wide Variety.

Hard-Kor[™] Hollow Cylinders are available from 12 through 600 tons with a variety of strokes to meet every requirement.

■ Built Solid For Maximum Durability. Hard-Kor™ cylinders are manufactured from solid alloy steel, eliminating sloppy threaded and welded tolerances, potential leak points, and weak spots that cause base blowout.

■ Fast Retraction For Speed & Efficiency. Simultaneous machining of the center tube & cylinder bore provides Hard-Kor[™] cylinders with precision alignment that significantly **improves** retraction time and minimizes seal extrusion.

■ Low Profile For Greater Flexibility. With lower profile & longer strokes, Hard-Kor™ cylinders fit in the tightest spaces.

■ Reserve Power For The Toughest Jobs. Most Hard-Kor[™] cylinders develop their cataloged capacity below their maximum pressure rating. This provides Hard-Kor[™] with reserve power that can be used for the toughest of jobs. The lower operating pressure extends pump life and reduces handle force and operator fatigue.

Exceeds ANSI/ASME B30.1 Safety Standards.

Heavy duty, heat treated load caps, Hard-Kor[™] doubles as a lifting cylinder.

Piston rods have I/D thread for special fixturing.

Rhino-Rod[™] Pistons incorporate a new finish that offers added protection from scoring & wear.

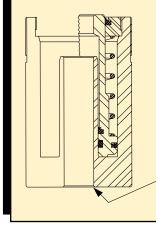
Heavy duty compression spring teams up with Hard-Kor™ precision to provide **quick & sure retraction**.

Double wiper rings protect the piston, bore & tube from contamination.

Hard-Kor™ Design provides a cylinder body with a solid base that eliminates potential leak points & protects against base blowout.

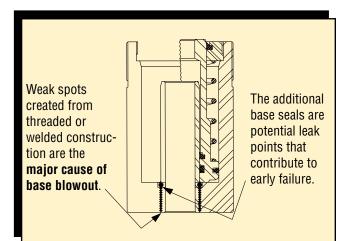
Quality high flow coupler with tough rubber dust cap.

SIMPLEX HARD-KOR™ CYLINDERS



A **one piece**, **unified body** is significantly stronger than standard hollow cylinders. Special manufacturing eliminates potential leak points at the base, enhancing the integrity & alignment of the base and center tube.

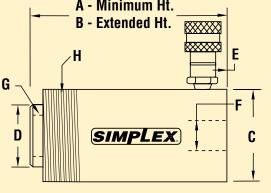
TRADITIONAL HOLLOW CYLINDER



SINGLE-ACTING HOLLOW

Simplex Hard-Kor™ Cylinders Make Light Work Of Rolling Mill Maintenance.





Base	Mounting	Holes
------	----------	-------

	Threa	ad	Bolt Circle			
Capacity	Size (in)	Dpth. (in)	Dia. (in)			
12 Ton	5/16- 18	5/16	2			
20 Ton	3/8 -16	7/16	3 1/4			
30 Ton	3/8-16	3/8	3 5/8			
60 Ton	1/2 -13	7/16	5 1/8			
100 Ton	5/8 -11	3/4	7			

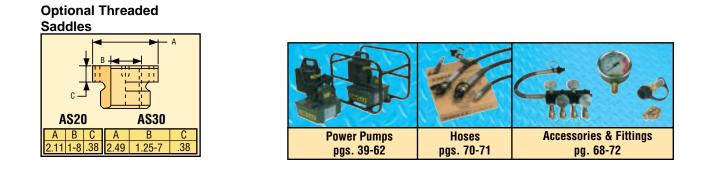
Single-Acting Hollow Cylinders 12 Through 100 Ton Capacities

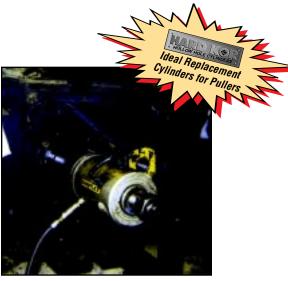
Model	Cap.	Stroke	A	В	Effect	Pres.	Oil	C	D	E	F	(3		H	
Number			Min. Ht. (in)	Ext. Ht. (in)	Area (sq in)	@ Cap. (psi)	Cap. Req'd (cu in)	Body O.D. (in)	Piston 0.D. (in)	Base To Port C/L (in)	Center Hole Dia. (in)	Collar Thrds. (in)	Collar Thrd. Lgth. (in)	Piston Thrds. (in)	Piston Thrd. Lgth. (in)	Wgt. (Ibs)
RC120		5/16	2 3/16	2 1/2			.90			7/16				3/4 - 16	5/8	3.5
<u>RCQ120</u>	10				0.00	0 000		0				0 10	4	<u> 3/4 - 10</u>		
<u>RC121</u>	12	1 5/8	4 3/4	6 3/8	2.36	8,690	4.5	2 3/4	1 3/8	25/32	49/64	2 3/4 - 16	1 13/16			6.5
<u>RC1211</u>		-	_							20/32				3/4 - 16	5/8	
<u>RC123</u>		3	7 1/4	10 1/4			8.3									10
RC202	20	2	6 3/16	8 3/16	5.30	7,545	11	4	2 1/8	51/64	1 1/16	3 7/8 - 12	1 1/2	1 9/16 - 16	3/4	17
RC206	20	6	11 3/16	17 3/16	0.00	7,040	32	-	2 1/0	51/04	1 1/10	J 1/0 - 12	1 1/2	1 9/10 - 10	3/4	31
RC302	30	2 1/2	7	9 1/2	8.64	6,950	22	5	2 1/2		1 5/16	4 1/2 - 12	1 3/4	1 13/16 - 16	7/8	26
RC306	50	6 1/8	12 1/4	18 3/8	0.04	0,550	64	J	2 1/2	13/16	1 5/10	4 1/2 - 12	1 3/4	1 13/10-10	1/0	52
RC603	60	3	8 21/32	11 21/32	14 50	0 0 0 0	44	6	4	13/10	0.40	6 4 10	0	9 av. 16		68
RC606	00		12 21/32			8,230	88	6 3/4	4		2 1/8	6 1/4 - 12	2	2 3/4 - 16	3/4	80
RC1003	100	3		12	20.60	9,700	62	8 1/4	5	1	3 1/8			4 - 16	1	99

SINGLE-ACTING HOLLOW

CYLINDERS

- 12 standard models.
- HARD-KOR[™] DESIGN!
- No potential leak points at base.
- Extra protection against base blow-out.
- Lower profiles for more versatility.
- Double wipers protect against contamination.
- Faster retraction increases productivity.
- Large center holes for greater flexibility.
- Rhino-Rod[™] pistons resist scoring & corrosion.
- Lower operating pressures.
- Doubles as lifting cylinder.
- High flow coupling with tough rubber dust cap.
- Precision construction that prevents seal extrusion.





Steel company uses the Simplex RC1003 to change worn spindles on large rolling mills. This Hard-Kor™ 100 ton capacity cylinder is mounted horizontally and uses a threaded pull rod to remove the spindle from its roller. The Hard-Kor™ design is right at home in harsh steel mill environments.



These construction crews use Simplex Hard-KorTM hollow cylinders to pre-tension steel rods in cast concrete forms. "The Hard-KorTM cylinders, with their leak-proof base and extra power, made a tough job easy."

DOUBLE-ACTING HOLLOW

Simplex Center Hole Cylinders Raise 6,000 Ton Bridge Span 170 Ft.





Engineers from around the world watched as Simplex center hole cylinders raised a 6,000 ton bridge section more than 170 ft. over the Willamette River in Portland, OR. The span was constructed up river and barged into position. Using pull rods and couplings, Simplex RCD200 Series cylinders completed the lift in 40 hours.

G F B - Extended Ht. X J I L E

C

- 11 standard models.
- HARD-KOR[™] Design for longer life.
- Relief valves protect against over pressurizing.
- High flow quality couplers.
- Large diameter center holes.
- Rhino-Rod[™] pistons resist scoring & corrosion.
- Stop ring for piston blow-out protection.
- Available in custom strokes.
- Rod wiper protects inner cylinder from dirt.

Base Mounting Holes

	Threa	ad	Bolt Circle				
Capacity	Size	Dpth.					
	(in)	(in)	(in)				
30 Ton	3/8-16	3/8	3 5/8				
60 Ton	1/2 -13	7/16	5 1/8				
100 Ton	5/8-11	3/4	7				

Double-Acting Center Hole Cylinders 30 Through 500 Ton Capacities

Model Number	Push Cap. (tons)	Pull Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	C Body O.D. (in)	0.D.	E Center Hole Dia. (in)	Collar Thrds. (in)	F Collar Thrd. Lgth. (in)	Piston Thrds. (in)	G Piston Thrd. Lgth. (in)	Wgt. (Ibs)
RCD302	30	20	2	7	9	0.0	C 050	8.6	-					1	7/8	48
RCD307	30	30	7	12 1/4	19 1/4	8.6	6,950	24.75	5	2 1/2	1 5/16	4 1/2 - 12	1 3/4	1 13/16 - 16	1/0	50
RCD6010	60	45	10	15 1/2	25 1/2	14.5	8,230	55	6 3/4	4	2 1/8					95
RCD1001			1	7	9			9.0								85
RCD1003	100	68	3	9	12	20.6	9,700	21.1	8 1/4	5	3 1/8					100
RCD1006	100	00	6	12	18	20.0	5,700	42.3	0 1/4	J	J 1/0					115
RCD10010			10	16	26			70.5								150
RCD1505C	150		5	13 1/8	18 1/8	31.60	9,491	78	10	6	3 1/8					240
RCD2006C	246			16 1/4	22 1/4	49.30		172	12	8	4 1/8					385
RCD3006C			6	18 3/4	24 3/4	91.50	10,000	296	15	9 1/2	4 1/4					720
RCD5006C	646			21 1/2	27 1/2	129.30		463	17 3/4	12	5 1/4					1230

CUSTOM STROKES AND CAPACITIES AVAILABLE CONTACT FACTORY

HIGH TONNAGE INTRODUCTION

CYLINDERS

THE SIMPLEX HIGH TONNAGE CYLINDER

■ Wide Variety

Simplex offers an extensive selection of high tonnage cylinders with capacities up to 1,000 tons. Single-acting, double-acting, and locking collar design with standard or **custom strokes** and capacities available.

Thick, Protective Bronze Inlays on All Internal Bearing Surfaces

All Simplex high tonnage cylinders incorporate thick, protective bronze inlayed bearings that are an integral part of a one piece piston. This design greatly reduces the effect of sideloading and promotes long life.

Unique Design

Simplex high tonnage cylinders use a one piece piston design that is machined to precise tolerances and is plated to resist corrosion. Cylinder housings are made of high strength alloy steel that is machined and heat treated for additional strength.

Positive Stop for Greater Safety

Most high tonnage cylinders rely on overflow ports or visual aids for piston blowout protection. At Simplex all high tonnage cylinders are built with a strong, steel positive stop, which provides complete piston blowout protection.

Built for Rugged Industrial and Construction Use

All Simplex high tonnage cylinders exceed **ANSI**/ **ASME B30.1 Safety Standards**. Heavy duty construction provides trouble free operation and long life.

Protection from Contamination

Within the stop ring a polyurethane wiper cleans the rod surface during retraction, protecting the inner cylinder assembly from dirt, moisture, and other contaminants. (Not available on lock nut cylinders.)



LOAD RETURN - 30-1000 TON

Simplex Cylinders Provided The Power & Reliability To Rearrange Our Shop Floor In One Day.





The problem was to reposition machine centers without disrupting production. "Using Simplex RLR Series cylinders and a PE70 series **Suc-O-Matic** pump, we rearranged our shop floor in one day." The low closed height and longer strokes eliminated extra jacking & blocking procedures, and the Simplex Suc-O-Matic retracted load return cylinders effortlessly.

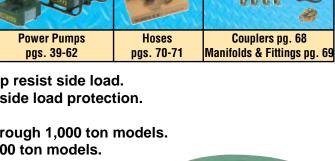
31 Models

- Rated for full duty.
- High flow quality couplers.
- Low closed heights.
- Plated pistons to resist scoring & corrosion.
- Stop rings for piston blow-out protection.
- Large bearings resist side load.
- Available in custom strokes & capacities.
- Rod wiper protects inner cylinder from dirt.
- Domed pistons on 150 to 1,000 ton capacities help resist side load.
- 9° Swivel on 30 to 100 ton capacity load caps for side load protection.
- Exceeds ANSI/ASME B30.1 safety standards.
- Optional swivel load caps are available for 150 through 1,000 ton models.
- Removable swivel lifting eyes on 100 through 1,000 ton models.



When railcar bulk heads need straightening, a 150 ton Simplex cylinder used with a SUC-O-MATIC[™] power pump can save the day. Simplex load return cylinders completely retract in any position when used with the Simplex SUC-O-MATIC[™] power pumps.

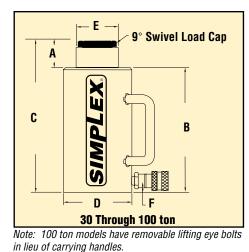


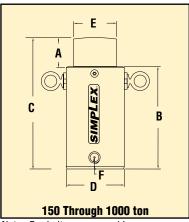




LOAD RETURN - 30-1000 TON

CYLINDERS





Note: Eye bolts are removable.

Load Return Jacking Cylinders 30 Through 1000 Ton Capacities

Model Number		A Stroke (in)	Ht. (in)	C Ext. Ht. (in)	Ram Bore Dia. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	D Body O.D. (in)	0.D. (in)	F Base To Port C/L (in)	(lbs)	Suggested Power Pump
RLR306 RLR502 RLR506 RLR5010	30 50	2 6	5 7/16	15 3/8 7 7/16 15 7/16 23 7/16	2 7/8 3 3/4	6.49 11.05	9,240 9,054	38.9 22.1 66.3 133.0	4 5 1/2	2 3	3/4 25/32	32.0 30.0 55.0 92.0	
RLR1002 RLR1006 RLR10010	100	2 6 10	6 9/16 10 9/16 14 9/16	8 9/16 16 9/16 24 9/16	5	19.63	10,200	40.0 118.0 196.0		3 3/8	1 1/4	60.0 115.0 184.0	Simplex Suc- A-M atio TM
<u>RLR1502</u> RLR1506 RLR15012 RLR2002	150	12	11 17	9 17 29 10	6 1/4	30.68	9,778	66.4 199.0 398.0 88.4		5 9/16	1 15/16	117.0 189.0 297.0 184.0	Simplex Suc-O-Matic™ equipped Power Pumps are highly recommended to
RLR2006 RLR20012 RLR3002	200	6 12 2	12 18 11 3/4	18 30 13 3/4		41.28		265.0 530.0 120.0		6 9/16	2 1/16	282.0 429.0 277.0	power load return cylinders. Unlike any other power unit, Simplex Suc-O-Matic™
RLR3006 RLR30012 RLR4002 RLR4006	300 400	12 2	19 3/4 11 13/16	19 3/4 31 3/4 11 13/16 21 13/16	8 3/4	60.13 86.59		361.0 722.0 174.0 520.0	·	7 13/16 6 9/16	2 7/16 2 1/16	405.0 597.0 455.0 612.0	equipped Pumps will fully retract load return cylinders
RLR40012 RLR5002 RLR5006	500	12 2 6	21 13/16 12 5/8 16 5/8	33 13/16 14 5/8 22 5/8		103.87		1040.0 208.0 623.0	16	10 5/16		842.0 627.0 855.0	automatically. For more information on the
RLR50012 RLR6002 RLR6006 RLR60012	600	2 6	13 1/2 17 1/2	34 5/8 15 1/2 23 1/2 35 1/2	12 1/2	122.71	9,778	1246.0 246.0 738.0 1476.0	17 1/2	6 9/16	2 1/16	1197.0 655.0 902.0 1273.0	Suc-O-Matic™ feature see pages 39-60.
RLR8002 RLR8006 RLR80012	800	2 6 12	14 7/16 18 7/16 24 7/16	16 7/16 24 7/16 36 7/16	14 1/2	165.13	9,690	330.0 991.0 1982.0	18	5 9/16	1 15/16	997.0 1256.0 1644.0	
RLR10002 RLR10006 RLR100012	1000	6	20 1/8	18 1/8 26 1/8 38 1/8	16	201.06	9,950	402.0 1206.0 2412.0	21	6 9/16	2 1/16	1523.0 1883.0 2423.0	

CUSTOM STROKES AND CAPACITIES UP TO 1,500 TONS AVAILABLE, CONTACT FACTORY

LOCK NUT - 30-1000 TON

Simplex Lock Nut Cylinders Are Used In a Variety of Different Projects.





RLN Series lock nut cylinders cut installation time on this power generator by 25%. "The locknut held the load without the extra chore of cribbing." The job was completed even quicker with the use of Simplex SUC-O-MATIC[™] power pumps.

32 Models

- Stop ring for piston blow-out protection.
- 9° Swivel load caps in 30 through 100 tons to resist side load.
- Optional swivel load caps are available for 150 through 1,000 ton models.
- Domed pistons in 150 through 1,000 tons to resist side load.
- Lock nuts for extended load holding.
- Plated pistons to resist scoring & corrosion.
- Grease fitting for added weather protection.
- High flow quality couplers.
- Available in custom strokes & capacities.
- Exceeds ANSI/ASME B30.1 safety standards.
- Removable swivel lifting eyes on 100 through 1,000 ton models.

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Power Pumps	Hoses	Couplers pg. 68
pgs. 39-62	pgs. 70-71	Manifolds & Fittings pg. 69



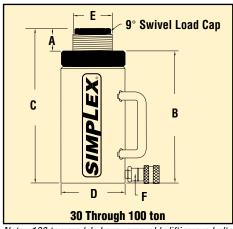
Thomas Bridge in southern California, engineers relied on Simplex lock nut cylinders. "With bronze inlaid bearings, nickel plating and ANSI/ASME B30.1 design, Simplex



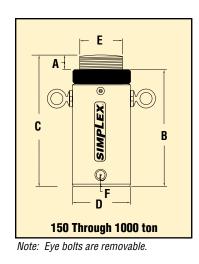


LOCK NUT 30-1000 TON

CYLINDERS



Note: 100 ton models have removable lifting eye bolts in lieu of carrying handles.



Load Return Lock Nut Cylinders 30 Through 1000 Ton Capacities

Model Number	Cap. (tons)	A Stroke (in)	B Min. Ht. (in)	C Ext. Ht. (in)	Ram Bore Dia. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	D Body O.D. (in)		F Base To Port C/L (in)	Weight (lbs)	Suggested Power Pump
<u>RLN302</u> RLN306	30		6 3/8 10 3/8	8 3/8 16 3/8	2 7/8	6.49	9,240	13.0 38.9	4	2 7/16	3/4	21.0 35.0	
RLN502 RLN506 RLN5010	50	6	6 3/4 10 3/4 14 3/4	8 3/4 16 3/4 24 3/4	3 3/4	11.05	9,054	22.1 66.2 133.0	5 1/4	3 3/16	25/32	38.0 63.0 100.0	
RLN1002 RLN1006 RLN10010	100	6	8 12 16	10 18 26	5	19.63	10,200	40.0 118.0 196.0	6 3/8	4 5/16	1 1/4	87.0 132.0 202.0	Simplex Suc-O-Matic™
RLN1502 RLN1506 RLN15012	150	6	8 12 18	10 18 30	6 1/4	30.68	9,780	66.4 199.0 398.0	9	5 9/16	1 15/16	149.0 221.0 311.0	equipped Power Pumps are highly recommended to
RLN2002 RLN2006 RLN20012	200	6	9 1/2 13 1/2 19 1/2	18 1/2 19 1/2 31 1/2	7 1/4	41.28	9,054	88.4 265.0 530.0	10	6 9/16	2 1/16	233.0 332.0 479.0	power load return cylinders. Unlike any other power unit,
RLN3002 RLN3006 RLN30012	300	6	15 1/2	13 1/2 21 1/2 33 1/2	8 3/4	60.13	9,978	120.0 361.0 722.0	12	7 13/16	2 7/16	357.0 485.0 677.0	Simplex Suc-O-Matic™ equipped Pumps will fully retract load return cylinders
RLN4002 RLN4006 RLN40012	400	6	17 13/16	5 <mark>15</mark> 13/16 523 13/16 525 13/16	10 1/2	86.59	9,238	174.0 520.0 1040.0	14	9 5/16	3	520.0 675.0 905.0	automatically.
RLN5002 RLN5006 RLN50012	500	2 6		16 3/4		103.87	9,628	208.0 623.0 1246.0	16	10 5/16	3 3/16	927.0 1041.0 1383.0	For more information on the Suc-O-Matic™ feature see
RLN6002 RLN6006 RLN60012	600	2 6	15 5/8 19 5/8	17 5/8	12 1/2	122.79	9,778	246.0	17 1/2	11 5/16	3 1/2	985.0 1232.0 1603.0	pages 39-60.
RLN8002 RLN8006 RLN80012	800	2 6	16 15/16 21 15/16	518 15/16 527 15/16 539 15/16	14 1/2	165.13	9,690	330.0 991.0 1982.0	18	13 5/16	4 1/8	1148.0 1407.0 1795.0	
RLN10002 RLN10006 RLN100012	1000	2 6	19 5/8	21 5/8 29 5/8 41 5/8	16	201.06	9,950	402.0 1206.0 2412.0	21	14 13/16	4 1/4	1818.0 2178.0 2718.0	

CUSTOM STROKES AND CAPACITIES UP TO 1,500 TONS AVAILABLE, CONTACT FACTORY

DOUBLE-ACTING - 10-1000 TON

Simplex Double-Acting Cylinders Increase Productivity.



■ 31 Models

- Available in custom strokes & sizes.
- Relief valves protect against over pressurizing.
- Standard collar threads on models up to 200 tons.
- Optional custom base & collar threads available on models 300 tons and up.
- Ideal for heavy duty applications.
- Provides force in advance & return cycles.
- High flow quality couplers.
- Plated pistons to resist scoring & corrosion.
- Stop ring for piston blow-out protection.
- Large bearings resist side load.
- Rod wiper protects inner cylinder from dirt.
- Carrying handles included on models RDA556 through RDA15012.

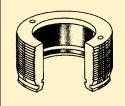


A heavy steel fabricator uses Simplex RDA10012 double acting cylinders to form large sections of I-beam. "The Simplex cylinders and pumps allow us to bend the beams to precise radiuses."

	-	
Power Pumps	Hoses	Couplers pg. 68
pgs. 39-62	pgs. 70-71	Manifolds & Fittings pg. 69

300 THROUGH 1,000 TON MODELS





Thick bronze inlay on the inner diameter of the retaining nut protects the piston rod from scoring and minimizes the effect of damaging side loads.

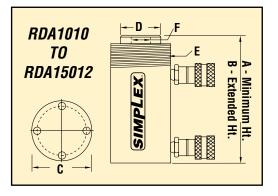


Thick bronze inlay on the piston flange virtually eliminates scoring of cylinder bore while offering the best protection against accidental side loading.



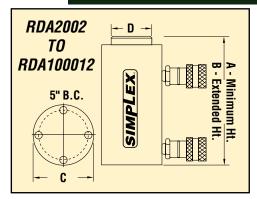
DOUBLE-ACTING - 10-1000 TON

CYLINDERS



Base Mounting Dimensions

	Th	Bolt			
Capacity	Size (in)	Depth (in)	Circle Dia.		
			(in)		
55 Ton	5/8-11	3/4	3 3/4		
100 Ton	5/8-11	1	4 1/4		
150 Ton	1-8	1 3/8	5		



RDA200 Base & Collar Dimensions

Model Number	Collar Thrds. Size (in)			Base Mounting Hole Depth (in)	Bolt Circle Diameter (in)
RDA200	9 3/4 - 12	1 7/8	1 - 8	1 1/8	5

Double-Acting Cylinders 10 Through 1000 Ton Capacities

	Model	Push	Pull	Stroke	A	В	Pull	Push	Pres.	Oil	C	D	Ram	F			E	
	Number	Cap.	Cap.	(in)	Min. Ht.	Ext. Ht.	Effect Area		@ Cap. (psi)	Cap. Reg'd	Body O.D.	Piston 0.D.	Bore Dia.	Piston I.D. Thrds.	Piston Thrd.	Collar Thrds.	Collar Thrd.	Wgt. (lbs)
		(tons)	(tons)		(in)	(in)		Area (sq in)	(hai)	(cu in)		(in)	(in)	(in)	Lgth. (in)	(in)	Lgth. (in)	
	RDA1010	10	4	10	16 1/8	26 1/8	0.80		8,960	22.33	2 7/8	1 3/8		1 - 8	1	21/4-14	1 1/16	28
1	RDA308	30	5	8 1/8	15 3/4	23 3/4	3.00	6.51	9,250	33.83	4	2 1/8		1 1/2 - 16	1	35/16-12	1 15/16	40
T	RDA3014	00	5	14 1/2	21 5/8	36 1/8	0.00	0.51	5,200	92.70	-	2 1/0		1 1/2 - 10	•	JJ/10-12	1 15/10	64
	RDA556			6 1/8		19 1/4				46								68
	RDA5512	55	17	12		31 1/8	3.40	11.05	9,955	92	5	3 1/8		1 - 12	1 1/2	5 - 12	1 3/4	114
	<u>RDA5524</u>			24		55 5/8				184								201
	<u>RDA1006</u>	100	45	6 1/16		19 15/16	9 08	21.65	9,239	77	7	4		3 1/4 - 12	2 1/2	7 - 12	2 1/2	140
	<u>RDA10012</u>	100		12		31 7/8			0,200	151		-			E 1/2	, ,,	E 1/2	187
	RDA1506	150	67	6 1/16	15 7/16		13.55	33.18	9,041	120	8 1/2	5		3 1/2 - 12	2 3/4	8 1/2- 12	2 3/16	218
	<u>RDA15012</u> RDA2002			12 2	21 1/2					236						See	See	295
	<u>RDA2002</u> RDA2006	200	72	2	11 7/16	21 7/16	15 01	44.18	9.054	66 170	10	6	7 1/2			See Chart	See Chart	232 315
	RDA2000 RDA20013	200	12	0 13	22 7/16		10.91	44.10	9,004	368	10	U	1 1/2			Above	Above	440
	RDA20010			2		15 1/4				101						ADUVC	ABOVE	277
	RDA3006	335	30	6			20.62	70.9	10.000	302	12	8	9 1/2					441
	RDA30012			12		35 1/4	-0.01	10.0	10,000	605	1		0.72					688
	RDA4002			2		14 3/8				127								530
ĺ	RDA4006	565	74	6	16 5/8	22 5/8	49.48	113	10,000	382	141/2	9	12					670
	RDA40012			12	22 7/8	34 7/8				762								880
	RDA5002			2		18 1/2				156								722
	RDA5006	664	85	6		- /	54.19	132	10,000	471	16	10	13					953
	RDA50012			12		38 1/2				942								1300
	RDA6002			2	15	17				158								917
	RDA6006	600	110	6	19		44.17	122.71	10,000	472	17	10	12 1/2					1188
	<u>RDA60012</u>			12	25	37				944								1595
	RDA8002		400	2	16	18		105 10	0.000	226	10	10						1166
	RDA8006	800	130	6	20		52.03	165.13	9,690	680	181/2	12	141/2					1440
	<u>RDA80012</u> RDA10002			12 2	<u>26</u> 16	<u>38</u> 18				1,360 354								1776 1558
	<u>RDA10002</u> RDA10006	1000	75	26	20	18 26	50.27	227	8.810	354 1.071	21	15	17					2058
	RDA10006 RDA100012	1000	75	0 12	20	20 39	50.27	221	0,010	2,142	21	15	17					2050
	TDA 1000 12			12	21	09				2,142								2000

CUSTOM STROKES, BASE & COLLAR MOUNTINGS AND CAPACITIES UP TO 1,500 TONS AVAILABLE CONTACT FACTORY



PUMP AND CYLINDER SETS

Simplex Pump & Cylinder Sets Provide Pre-Matched Hand Pump, Hose And Cylinder For Ordering Convenience.



Eliminate the hassle of matching the right hand pump to the right cylinder by ordering Simplex pre-matched pump & cylinder sets. All hand pumps have been carefully chosen to provide maximum efficiency and service, and each set comes with a 6' hose equipped with a high flow coupler.

- Maximum versatility/wide choice of cylinders.
- Maximum performance with matched cylinders.
- Use upright, inverted or horizontally.
- Maximum control & safety.
- Control the cylinder away from the lift.
- Available with single speed or two speed pump.



Low Profile Sets

Model	Model	Cap.	Stroke	Closed		Optional	Optional			
Single Speed Pump	Two Speed Pump	(tons)		Height (in)	Cylinder Model	Pump Model Single Speed	Pump Model Two Speed	Type Of Hose	Gauge	Gauge Adapter
S101	ST101	10	1 1/2	3 15/32	RLS101				GT5	
S201	ST201	20	1 3/4	3 7/8	RLS201				GT20	
S302	ST302	30	2 7/16	4 5/8	RLS302	P41	P42	HC6	GT30	GA1
<i>\$502</i>	ST502	50	2 3/8	4 13/16	RLS502				GT20	
S1002	ST1002	100	2 1/4	5 9/16	RLS1002	P70	P82		GT20	

Standard Spring Return Sets

		<u> </u>								
<i>\$102</i>	ST102	10	2 1/8	4 25/32	R102					
S106	ST106	10	6 1/8	9 3/4	R106				GT5	
<i>S1010</i>	ST1010	10	10 1/8	13 3/4	R1010	P41	P42			
S252	ST252	25	2	6 1/2	R252			1100		044
S254	ST254	25	4	8 1/2	R254			HC6	OTOF	GA1
S256	ST256	25	6 1/4	10 3/4	R256	P41			GT25	
N/A	ST2514	25	14 1/4	18 3/4	R2514	N/A	P82			
N/A	ST556	55	6 1/4	11 1/8	R556	N/A			GT25	

Hard-Kor[™] Sets

<i>S302HC ST302HC</i> 30 2 5 RC302 P41	D40			
	P42	HUC6	65	GA1
S306HC ST306HC 30 6 9 3/4 RC306 P70	P82	HLD	65	UAT

For more information on hand pump performances & cylinder speeds, see page 33.

INTRODUCTION

HAND PUMPS

THE SIMPLEX HAND PUMP



Pivoting linkage reduces wear for longer pump life.

 Adjustable pivot for the absolute lowest handle effort.

Large bronze piston for more speed and durability.

 Adjustable relief value for application flexibility and added safety.

 High efficiency automatic unloading at crossover pressure.

Fine threaded, no slip release knob for complete control.

Cast iron pump body stands up to industrial environments with minimal wear.

THE SIMPLEX PLUS

Wide Variety

Simplex offers the widest selection of hand pump, styles, reservoir sizes, and flow rates to meet your everyday needs. Each pump has specific features that make certain models better suited for particular jobs. Select a hand pump with features that best fit your application.

Built for Rugged Industrial/Construction Use

Shipyards, steel mills, construction sites and weld shops can be rough environments for hand pumps. Simplex's all metal construction withstands real world conditions.

■ Total Control of Hand Pump Operation

Simplex release valves have a **fine pitch screw and man size valve handles for maximum control.** Check ball valve design is more reliable than needle valves, and less costly to repair.

■ Lowest Handle Effort

Simplex hand pumps have low, back saving handle efforts to reduce operator fatigue & back injury.

Highest Oil Displacement Per Stroke

More oil per stroke means less handle strokes per job. Simplex pumps have the highest available oil displacement per stroke, in many cases reducing the number of handle strokes as much as 50%. ■ Adjustable Handle Efforts To Meet Your Needs Along with providing the most oil per stroke, Simplex P140 & P300 Series hand pumps are **designed with two pivot pin locations.** Front pivot allows the highest flow of oil per stroke. Rear pivot provides very low handle effort for repetitive applications at full pressure.

■ Light weight & Easy to Carry

Use pump locking handle to pickup and go.

Easy To Use/Built To Last

Pivot linkage provides uniform handle effort at all points along the arc of the pump handle stroke. The pivot **reduces piston side loading** for longer pump life. Some pump models have four-way valves for use with double-acting cylinders.

Maximum Versatility

Simplex portable high performance hand pumps incorporate an external adjustable pressure relief valve for maximum protection in a wide variety of lower pressure applications. Most pumps have mounting holes for secure mounting in fixed applications.

HAND PUMPS

PROPER SIZE & SELECTION

PORTABLE HAND PUMPS



Single Speed Compact Hand Pump: Delivers a constant flow to smaller cylinders or hydraulic powered tools regardless of load. Ideal when light weight and portability are important.

HEAVY DUTY HAND PUMPS



Two-Speed Hand Pump: With the cylinder unloaded, pump delivers a high volume of oil for fast cylinder speed. Once the load is engaged, the pump automatically switches to the high pressure stage.

PROGRESSIVE FORCE HAND PUMPS



Progressive Force Hand Pump: Delivers high volume of oil up to a crossover pressure of 3,000 PSI. Model (P140F & P140DF) are faster and require less handle strokes for applications where force increases steadily throughout the cylinder stroke, such as bending, squeezing or crimping.

HAND PUMPS WITH 4 WAY VALVES



Hand Pumps With 4 Way Valves: Are used to power double-acting cylinders.

<u>PORTABLE FOOT PUMP</u>



2 Speed Foot Pump: Great for hands free operation. Spring loaded release valve and pump handle allows the operator to advance, hold and release the load all by foot.

<u>SPECIALTY HAND PUMPS</u>



Specialty Hand Pumps: Are perfect for OEM applications or as emergency backup pumps. The pumps were designed to fit in tight spaces and are ideal for fixed bolt down applications.

PROPER SIZE & SELECTION

SIZING THE PROPER HAND PUMP TO YOUR CYLINDER

Once you have selected your cylinder, find the required reservoir capacity in the cylinder specification chart, and choose a hand pump with at least 10% more reservoir capacity per cylinder.

EXAMPLE

An R-256 cylinder (page 13) has a required oil capacity of 32.2 cu. in. The P-42 hand pump (page 34) with a reservoir capacity of 45 cu. in. can pump this cylinder to its full stroke. If two R-256 cylinders are to be raised, use a P-140 with a reservoir capacity of 140 cu. in. 1/4" I.D. hose requires .6 cu. in. oil per foot. 3/8" I.D. hose requires 1.3 cu. in. per foot.

TYPE OF CYLINDERS

Most hand pumps are designed to operate single-acting cylinders. Hand pumps with 4-way valves can operate double-acting cylinders.

QUICK REFERENCE CHART

Use this chart to match the appropriate size hand pump to your single-acting Simplex cylinders. Match your cylinder capacity (across the top) with the cylinder strokes listed (in the left hand column). The intersecting box will give you the recommended hand pump for general applications.

					CYLIN	DER CAPA	CITY (TONS	5)			
CYLINDER Stroke	5 Ton	10 Ton	15 Ton	20 Ton	25 Ton	30 Ton	50/55 Ton	60 Ton	75 Ton	100 Ton	150 Ton
1	P41	P41		P41	P42	P42	P42		P42	P42	P42
2		P42	P42	P42	P42	P42	P42			P82-P140	P140
3	P41							P82-P140			
4		P42	P42		P42						
5	P42										
6		P42	P42		P42	P82-P140	P82-P140		P82-P140	P230	P230
7	P42										
8		P42	P42		P82-P140	P82-P140				P230	P300
9	P42										
10		P42	P42		P82-P140					P230	P461
12		P42			P82-P140						
13							P230				
14		P42	P82-P140		P82-P140						

HAND PUMP/CYLINDER SPEED CHART

For higher speeds, use power pumps to operate multiple cylinder systems or long stroke cylinders over 50 tons.

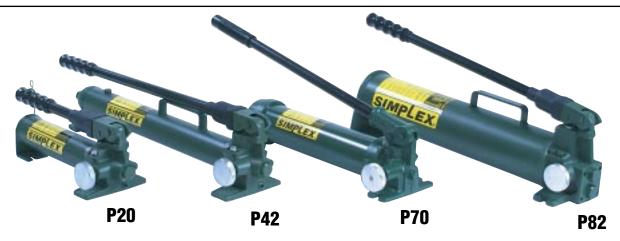
Use this chart to determine the number of full pump handle strokes required to extend a Simplex cylinder 1". You may take handle stroke per inch and multiply it by the cylinder stroke to determine the number of strokes required to fully extend the cylinder.

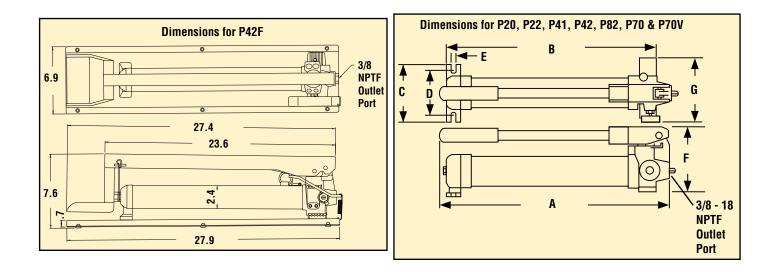
HAND PUMP	STROKES PER INCH OF				CYLI	NDER CA	PACITY (TONS)			
MODEL	CYLINDER	5	10	15	20	25	30	50/55	60	75	100
NO.	TRAVEL	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton	Ton
P41/	NO LOAD	7	15	21	31	34	43	73	88	106	137
P70	Load	7	15	21	31	34	43	73	88	106	137
P20/P42/	NO LOAD	2	3	4	6	7	8	14	17	20	26
P42F/P82	Load	7	15	21	31	34	43	73	88	106	137
P140	NO LOAD	1	1	2	2	2	3	5	5	6	8
P300	Load	4	10	14	22	22	27	46	58	66	86
P230	NO LOAD	1	1	1	1	1	1	2	2	2	3
P461	Load	3	8	11	16	18	22	38	45	54	70

HAND PUMPS

LIGHT WEIGHT HAND PUMPS

Simplex Hand Pumps Are Light Weight & Easy To Use.





Light Weight Hand Pumps For Single-Acting Cylinders

Model Number	Speed	Pressure Rating (PSI)	Oil Volume Per Stroke (cu in)	Usable Oil Capacity (cu in)	A (in)	B (in)	C (in)	D (in)	E Slot Size (in)	F (in)	G (in)	Weight (lbs)
P 20	2	1 Stage 200 2 Stage 2,850	.82 .16	20	13	11 1/2	2 5/8	1 1/2	19/32	5 3/4	4 3/4	10
P22	2	1 Stage 200 2 Stage 10,000	.23 .06	20	13 1/2	11 1/2	2 5/8	1 1/2	19/32	5 3/4	5 3/4	10
P41	1	10,000	.16	45	23	21 3/4	5			5 3/4	5 3/4	18
P42	2	1 Stage 200	.82	45	23	21 3/4	5			5 3/4	5 3/4	18
P42F	<i>-</i>	2 Stage 10,000	.16			See D	rawing o	f P42F Al	bove This	Chart		21
<u>P70</u> *P70V	1	10,000	.16	70	22	17 1/2	5 1/2	4 1/4	1/2		6	21
P82	2	1 Stage 200 2 Stage 10,000	.82 .16	145	23	17 1/2	5 1/2	5	1/2	6 5/8	5 3/4	24



*Equipped with Viton seals.

LIGHT WEIGHT HAND PUMPS

HAND PUMPS



This forms manufacturer uses Simplex hand pumps and cylinders mounted to the structure for fine positioning. "We needed a hand pump that was easy to use and reliable." Simplex P41 hand pump is the preferred choice.



Simplex hand pumps are widely known for their rugged construction and **low, back saving handle efforts.** Choose these hand pumps for maximum portability and light weight. All metal construction and man size release knobs make these pumps truly industrial grade tools.

- 8 Models for maximum versatility.
- Light weight for maximum portability.
- All metal construction for durability.
- Carrying handles for easy pick-up.
- External adjustable relief valve.
- Low handle effort for easy operation.
- Single or two speed models.
- 3/8" NPTF outlet ports.
- P70V is equipped with Viton Seals.
- P42F is foot operated.



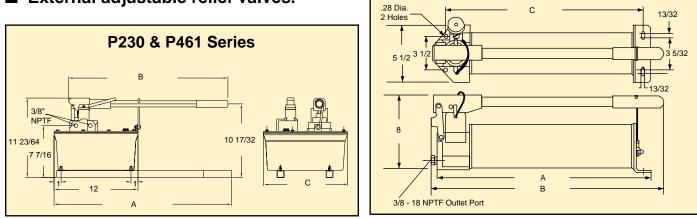


Simplex hand pumps can power a wide variety of hydraulic cylinders and tools. Light weight and portable, yet heavy duty, Simplex hand pumps are perfect for every manual pump application.





- 10 Models.
- Low, back saving handle effort.
- High displacements of oil per stroke.
- Adjustable handle effort / dual pivot points.
- Heavy duty, all metal construction for durability.
- Handle latch for easy carrying.
- Large, easy fill reservoirs.
- External adjustable relief valves.



P140, P140F & P300 Series

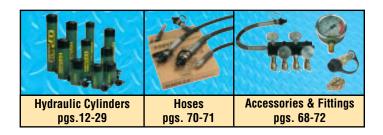
Two Speed Hand Pumps For Single & Double Acting Cylinders

Model Number	Type of Cyl.	Pressure Rating (PSI)	Oil Volume Per Stroke (cu in)	Usable Oil Capacity (cu in)	A (in)	B (in)	C (in)	Weight (Ibs)
P140			2.8	180	24 13/16	27 1/4	23 5/16	26
P300	Single	1 Stage 400	.24	300	28 1/2	31	26 1/2	37
P230	Acting	2 Stage 10,000	7.7	230	25 3/8	22 3/4	9	49
P461	Auting		.3	460	20 0/0		12	61
P140F		1 Stage 3000	.75		24 13/16	27 1/4	23 5/16	27
P140DF		2 Stage 10,000	.24	180	29 1/2	31 1/2	23 5/16	31
P140D	Double		2.8		29 1/2	31 1/2	23 5/16	30
P300D	Acting	1 Stage 400	.24	300	32 11/16	34 11/16	26 1/2	41
P230D	Actility	2 Stage 10,000	7.7	230	25 3/8	22 3/4	9	49
P461D		3 , , , , , , , , , , , , , , , , , , ,	.3	460	20 3/0	22 3/4	12	61

HEAVY DUTY HAND PUMPS

HAND PUMPS

Simplex combined high flows and low handle efforts in these larger, high performance hand pumps. Low handle efforts and fast advance are achieved through an adjustable handle pivot. In the normal setting, these pumps supply maximum flow, reducing the number of required handle strokes. For tough jobs at maximum pressure, **adjust the pivot point and reduce the handle effort by 30%. (P140 and P300 Series only).**



NO JOB IS TOO TOUGH FOR SIMPLEX HEAVY DUTY HAND



When US recovery teams needed to dismantle and remove a downed US Navy EP-3 surveillance plane from Hainan Island, China, they used Simplex P140 hand pumps and 50 ton cylinders. "We had a short time frame to complete a large job; Simplex hand pumps and cylinders gave us the speed and power we needed to get the job done."

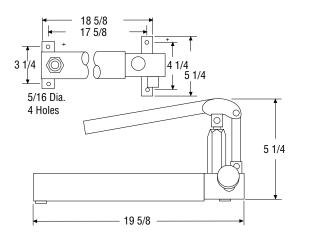


SPECIAL APPLICATION PUMPS

Build Them Into Hydraulic Systems, Or Use Them as Standby Or Back-Up Pumps.

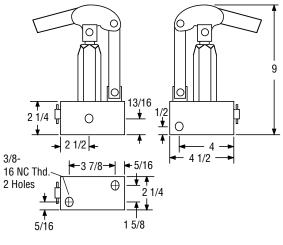


For those special applications that require **tight mounting space**, **backup manual power or lower pressure & high flows**, these special hand pumps are what you've been looking for. Ideal for fixed applications when pumps need to be bolted in place. The P-160 Series fits in an 8" x 8" space, yet still delivers 148 cu. in. of oil. The P-785 Series can be mounted vertically (head down) and the P-1000 Series can be tapped into existing system reservoirs. All metal construction, plated pistons, light weight and high flow make these pumps the right choice for long life and trouble free duty. **All pumps have 3/8" NPTF ports.**



HAND PUMPS

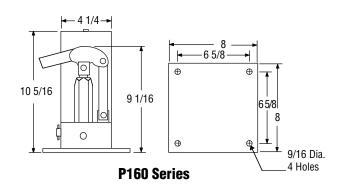




Special Application Hand Pumps

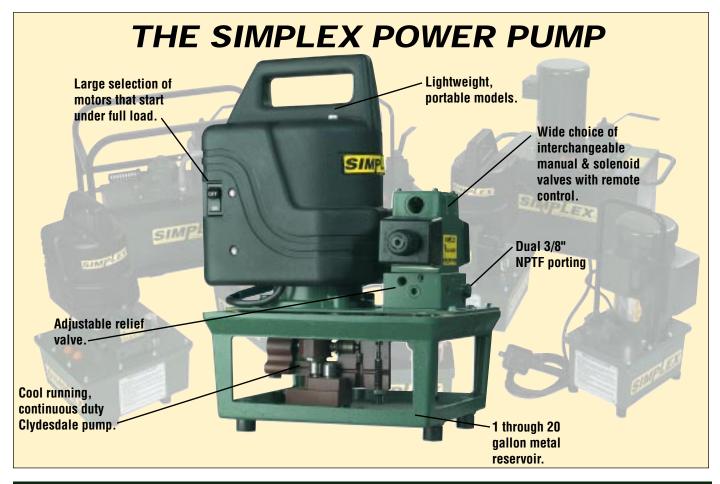
Model Number	Usable Reservoir Capacity (cu. in.)	Operating Pressure (psi)	Volume/ Stroke (cu. in.)	Maximum Handle Effort (Ibs.)	Weight (Ibs.)
P160-3	148	12,000	0.16	119	25
<u>P160-4</u>	148	6,500	0.28	115	25
P160-6	148	3,000	0.66	119	25
P785-3	50	12,000	0.16	119	15
P785-4	50	6,500	0.28	115	15
P785-6	50	3,000	0.66	119	15
P1000-3		12,000	0.16	119	11
P1000-4		6,500	0.28	115	11
P1000-6		3,000	0.66	119	11
P1000-8		1,500	1.08	106	11
P1000-12		750	2.20	79	11

Note: Contact factory for dimensional information on the P1000-12.



P1000 Series

INTRODUCTION



THE SIMPLEX PLUS

■ Wide Variety

Simplex offers more pump models, motor selections, valve styles, reservoir sizes, accessories & controls to meet your everyday needs.

Maximum Flexibility

Adjustable pressure relief valves for variable pressure settings, plus many interchangeable control valves and reservoirs for a wide range of applications. **Dual Voltage & Dual Hertz** electric motors for applications requiring alternate power sources.

Built for Long Life & Continuous Duty

Unified "Clydesdale" chassis provides high strength, **fewer potential leak points** and solid construction for severe duty.

High Performance/Fast Cycle Times

Crossover pressure up to 2000 PSI. Provides high, first stage flows well into the work cycle. This extra power provides higher speeds in **Prestressing, Bending, Crimping, Compressing & Post-Tensioning applications.** ■ Cool Running & Dependable Performance High first stage performance is achieved through field proven Gear Pump technology. In addition to gear pumps, an unloading valve passes full power to the second stage once crossover pressure is reached. No power is lost and less heat is generated.

Quiet Operation

Low motor RPM, **internally lubricated bearings**, and close coupled motor mounting make these pumps among the quietest on the market. (Approximately 80dBA at 10,000 PSI.)

Starts Under Full Load/Runs on Reduced Voltage

Simplex pump motors run well within their recommended duty factors **drawing less amps**, **creating less heat**, **and lasting longer** than competitive pump motors.

■ What Is SUC-O-MATIC[™]

A feature that draws oil out of any single-acting cylinder. In the retract position, SUC-O-MATIC[™] pumps generate a 12 psi vacuum that fully retracts any single-acting load return cylinder automatically, and provides faster retraction of spring return cylinders.

POWER PUMPS

INTRODUCTION

CLYDESDALE TECHNOLOGY IS THE HEART OF ALL SIMPLEX PUMPS!

Only Simplex Clydesdale pumps incorporate an oiler system that sprays the upper unit with oil, and keeps critical components lubricated and running cool, especially when most of the reservoir oil is being used at the tool.

Sleeved piston bores allow easy replacement of precision components without replacing the entire pump body.

High pressure ball seats are designed as replaceable cartridges rather than machined into the body. Worn or damaged seats can be easily replaced without replacing the body.

> Solid one piece pump body with internal flow paths eliminates potential leak points caused by threaded fittings, high pressure tubing and bolt together pump bodies.

High efficiency gear pump provides more first stage flow, and higher crossover pressures. Field proven gear pumps run cooler and last longer and are proven to provide years of trouble free service.

Four full size, full complement bearings add life & efficiency while contributing to cool & quiet running.

Unloading valve passes full power to the second stage at crossover. No power is lost holding relief valves open & less heat is generated.

The Clydesdale Plus

Simplex pumps are the world's only 10,000 psi pumps to offer a new standard in pump construction and reliability. Close coupled motor and the one piece Clydesdale chassis combine to offer a rigid unit with minimal flex and wear characteristics. Traditional pumps consist of various components bolted together, and are more susceptible to internal leakage, overheating and expensive repair.

The Clydesdale chassis, field proven gear pumps, replaceable piston bores and ball seats, higher crossovers, and quality motors are just a few of the extras incorporated in all Simplex pumps.



Power Pump Speed Selection Chart

Use the speed chart below and select the right size pump to obtain the cylinder speed you desire. For multiple cylinder system speeds, divide the inches per minute by number of cylinders in the system.

Cylinder		Inches Per Minute								
Capacity		10	20	30	40/70	50	60			
(Tons)		Series	Series	Series	Series	Series	Series			
10	Loaded	9	9	17	24	45	76			
	Unloaded	104	169	169	169	290	290			
20/25	Loaded	4	4	8	10	20	33			
	Unloaded	50	75	75	75	132	132			
30	Loaded	3	3	6	8 1/2	16	26			
	Unloaded	39	60	60	60	104	104			
50/55	Loaded	2	2	4	5	9	15			
	Unloaded	23	35	35	35	61	61			
60/75	Loaded	1 1/2	1 1/2	3	3 1/2	6	10			
	Unloaded	16	24	24	24	43	43			
100	Loaded	1	1	2	3	5	8 1/2			
	Unloaded	13	19	19	19	34	34			
150	Loaded	1/2	1/2	1	1 3/4	3	5			
	Unloaded	7	11	11	11	20	20			
200	Loaded	3/8	3/8	3/4	1	2	4			
	Unloaded	5	8	8	8	15	15			

Inches Per Minute

= Cylinder Speed In Seconds

APPLICATION SELECTION GUIDE

POWER PUMPS

PORTABLE & LIGHT WEIGHT ELECTRIC PUMPS



Crimping, Cutting, Pressing, Punching & Bending jobs are performed quickly and easily using 10 or 20 Series dump pumps. The motor runs only in the advancing cycle; spring return cylinders automatically retract when work is complete and motor is switched off.

PRODUCTION PUMPS

HEAVY DUTY ELECTRIC PUMPS



Multiple Cylinder System, Heavy Lifting, High Tonnage and Large Positioning Jobs that require advance, hold and retract operation are no challenge for 40, 50 & 60 Series pumps equipped with standard manual or solenoid valves.



- Production Assembly Lines are no place for light duty pumps. Add optional remote control and filtration to the 70 Series & you have a pump that can take whatever heavy industry can dish out.
- Clamping, Holding, Lifting, Positioning & Lowering applications or any job that requires advance, hold & retract operations are perfect for 30, 40 or 70 Series pumps equipped with the standard manual or solenoid valves.

RUGGED CONSTRUCTION SITE PUMPS



Construction Sites, Ship Yards, Railroads and Other Field Applications require portable pumps that start and run on less than ideal power conditions. The 70 Series pump incorporates a powerful 1.5 HP Permanent Magnet motor that will start under full load and run reliably on long extension cords & reduced voltage. This is the new standard for construction applications.

GASOLINE MOTOR PUMPS



Outdoor Jacking Systems that require high performance, large oil reservoirs and full control capabilities are ideal applications for PGM Series pumps. Add Simplex 4 port manifolds, pressure gauges or any of a wide variety of Simplex hydraulic accessories, and you are ready to power the largest systems.

POWER PUMPS

ELECTRIC .5 HP 10 SERIES

POW'R-BUDD'

PED1000

LIGHT WEIGHT AND ECONOMICAL



The Simplex Pow'r-Buddy[™] easily provides hydraulic power to this nut splitter during routine maintenance of heat treating equipment. "Our crews have to move this equipment all around the plant; the Simplex Pow'r-Buddy[™] is easy to carry and never lets us down."

5 standard models.

SIMPLE

- Two-speed operation provides fast advance.
- Light weight, only 29 lbs., & compact design.
- Adjustable relief for variable pressure settings.
- Integrated handle for easy pick-up.
- 115 VAC 50/60Hz cycle universal motor.
- 24 VAC pendant with 10' cord for user safety.
- Starts under full load & runs on as low as 60 VAC.
- Ideal for use with long extension cords.
- Ideal for use with smaller hydraulic cylinders or tools.
- Integrated gauge port for 2 way valves.
- 2 position valve includes auto retract feature.

PE-10 Series .5 HP Electric Powered Pumps - 10,000 psi capacity

	Model	Reservoir Size			Valve			Motor Specifications	Flow Rate	Weight (lbs.)
	Number	(Gal.)	Model		Style		Function	opoonioutiono		()
t	PED1000	1/2	Dump	Auto Retract			Advance/	.5 HP Single Phase	250 cu. in.	29
Α-	PED1001	1	Dump				Retract		@200 PSI	30
bu	PED1000 PED1001 PEM1020 PEM1021	1/2			2 Position	Manual	Advance/	-	@200 F 31	31
S	PEM1021	1		Standard	2 Way*	manuar	Retract	115 VAC		32
D/A	PEM1041	1	VP4	Stanuaru	3 Position 4 Way	Manual	Adv./Hold/ Retract	9 amps @ 115 VAC	19 cu. in. @10,000 PSI	34

Pow'r-Buddy pumps for single-acting cylinders come standard with motor pendant switch. *Includes auto retract feature (with valve open).

ELECTRIC .5 HP 10 SERIES

POWER PUMPS

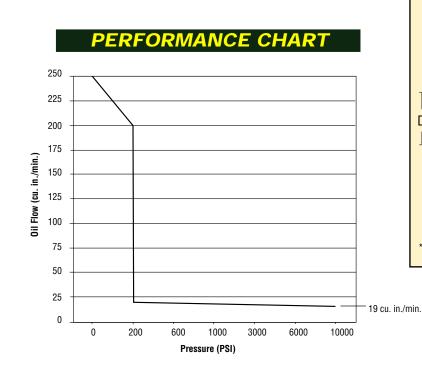


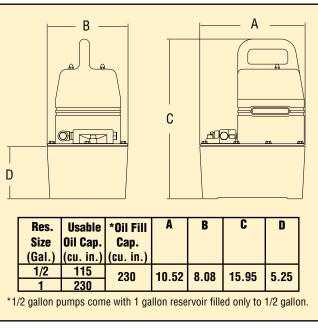
At home on any construction site, the Pow'r-Buddy[™] starts and runs reliably on long extension cords. This rebar bending application is no challenge for the Simplex industrial grade pump design. "Easy to carry and simple to use, the Pow'r-Buddy[™] helps us through tough construction jobs without problems."



The new Pow'r-Buddy[™] is the perfect pump when light weight and easy carrying is desired. The Pow'r-Buddy[™] is recommended to power all small and medium sized tools. The universal motor is well suited to start and run reliably on long extension cords and portable generators.

T. S. S.	- Sol	
Rebar Benders & Cutter	Hoses	Accessories & Fittings
pg. 74	pgs. 70-71	pgs. 68-72





POWER PUMPS

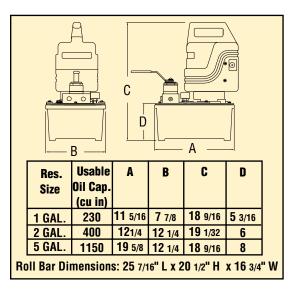
ELECTRIC .5 HP 20 SERIES



	-	
Hydraulic Cylinders	Hoses	Accessories & Fittings
pgs. 12-29	pgs. 70-71	pgs. 68-72

16 standard models.

- Rated for continuous duty.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation provides fast advance.
- Higher crossover for faster cylinder cycle.
- Starts under full load.
- Runs reliably on long extension cords.
- Maximum amperage draw 10 amps.
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.
- Quiet Running (80dBA).
- All dump pumps come standard with motor pendant switch.



PE-20 Series .5 HP Electric Powered Pumps - 10,000 psi capacity

	Model Number	Reservoir Size (Gal.)	Model		Valve Style		Function	Motor Specifications	Flow Rate @ 115 VAC	Weight (lbs.)
	PED2001	1	Dump	Aı	ıto	Remote	Advance/			56
	PED2002	2	Dump	Ret	ract	Actuated	Retract			64
5	PEM2021	1	VP2		2 Position		Advance/			56
Acting	PEM2022	2	VP2	Standard	2 Way	Manual	Retract			64
AC	PEM2031	1	VP3*	Stanuaru	Actuated 3 Position		0.5 HP	400 cu. in.	62	
Single-/	PEM2032	2	VP3*			osition H	Advance/	vance/ lold/ Single Phase	@600 PSI	70
linç	PEM2052	2	VPL3*	Locking			Hold/			71
3	PE32031	1	VPS3*	Standard			Retract			66
	PES2032	2	VPS3*	otanuaru					20 cu. in.	73
	PES2052	2	VPSL3*	Locking		Actuated		10 amps at 10,000 PSI	@10,000 PSI	74
5	PEM2041	1	VP4	Standard		Manual				62
:-Acting	PEM2042	2	VP4	Standard		Lever	Advance/			70
-Ad	PEM2062	2	VPL4	Locking	3 Position	Actuated	Hold/			71
ble	PES2041	1	VPS4	Standard	4 Way	Remote	Retract			66
Double-	PES2042	2	VPS4	Januaru		Solenoid				73
	PE32002	2	VPSL4	Locking	7 0 0 0 0	Actuated				74

For more information on valve models, see pages 63-67. * Includes Suc-O-Matic.

ELECTRIC .5 HP 20 SERIES

POWER PUMPS



Ship repair demands durable and reliable tools. This Simplex 20 Series pump provides trouble free hydraulic power to a variety of hydraulic cylinders, spreaders and tools. "Shipyards are no place for cheap, second rate pumps; Simplex tools never let us down."

PERFORMANCE 400 350 300 Oil Flow (cu. in./min.) 250 200 150 100 50 - 20 cu. in./min. 0 0 200 600 1000 3000 6000 10000 Pressure (PSI)

20 SERIES POWER PUMP OPTIONS

PUMP CONTROL DEVICES



 PPM - Motor Control Pendant
 PES - Valve Directional Control Pendant
 PPS - Motor Control & Valve Directional Control Pendant (dual switches)
 All pendants include 20' cord.



■ PFM - Motor Control Foot Switch Includes 20' cord.

PUMP PROTECTION



■ P03 - Roll Bars For 1, 2 & 5 gallon reservoirs only. Order (1) under Options in the Custom Build Chart.



■ P04 - External filter for pumps with 3 & 4 way valves. Order (4) under Options in the Custom Build Chart. Replacement filter elements, use order number P05E.

ALL PUMP OPTIONS ARE FACTORY INSTALLED

CUSTOM BUILD

Using the chart below you can add roll bars, different size reservoirs or other options.

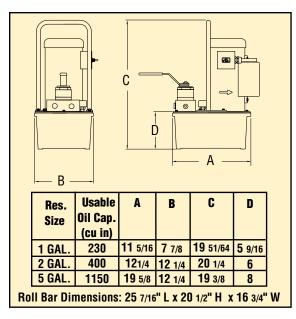
Description Model	Selections	
Product — P-	Power Pump	
Motor Control — E – Options	E = No Options P = P	endant Switch F = Foot Switch
Valve Style	D = Dump S = Solenc	id M = Manual
Pump2 Series2	.5 HP, 115 VAC 50/60	Hz, Permanent Magnet Motor
Options — 1 –	0 = No Options 1 = Roll Bars only	4 = Filter only 5 = Roll Bars & Filter
Valve	0 = Dump	4 = 4 Way 3 Position
Type <u>3</u> -	2 = 2 Way 2 Position 3 = 3 Way 3 Position	
Reservoir 2	1 = 1 Gallon 5 = 5 G 2 = 2 Gallon	allon
Motor	Blank = 115 VAC Sing	jle Phase
Voltage	A = 230 VAC Single P	hase

ELECTRIC - 1 HP 30 SERIES



POWER PUMPS

PPM3135



Quiet running 1725 RPM motors are perfect for in house production jobs. Dual voltage, dual amp induction motors fit a wide variety of applications.

- 16 standard models.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation provides fast advance.
- Higher crossover for faster cylinder cycle.
- Dual voltage 115/230 VAC 50/60 Hz cycle motor.
- Motor starts under full load.
- Runs reliably on 20 amp circuits.
- Maximum amperage draw 12.5 amps at 115 VAC.
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.
- Quiet running (80dBA).
- All dump pumps come standard with motor pendant switch.



PE-30 Series 1 HP Electric Powered Pumps - 10,000 psi capacity

	Model	Reservoir Size			Valve			Motor Specifications	Flow Rate Per Minute	Weight (lbs.)
	Number	(Gal.)	Model		Style		Function	-		
	PED3001	1	Dump	A	uto	Remote	Advance/			63
	PED3002	2	Dump	Ret	ract	Actuated	Retract			71
5	PEM3021	1	VP2		2 Position		Advance/			63
tin	PEM3022	2	VP2	Standard	2 Way Manual Lever Actuated 3 Position	Manual	Retract			71
Single-Acting	PEM3031	1	VP3*	Januaru			1 HP Single Phase	400 cu. in. @900 PSI	68	
je	PEM3032	2	VP3*						77	
linç	PEM3052	2	VPL3*	Locking			Hold/	Single Phase	@900 F31	78
3	PES3031	1	VPS3*	Standard	3 Way		Induction Motor		70	
	PES3032	2	VPS3*	otanuaru				115/230 VAC 50/60 Hz	40 cu. in. @10.000 PSI	80
	PES3052	2	VPSL3*	Locking		Actuated		12.5 amps at 10,000 PSI		81
5	PEM3041	1	VP4	Standard		Manual		(Factory Wired		68
ä	PEM3042	2	VP4	Stanuaru		Lever	Advance/			77
-Ad	PEM3062	2	VPL4	Locking	3 Position	Actuated	Hold/	@ 115 Vac.)		78
ble	PES3041	1	VPS4	Standard	4 Way	Remote	Retract			70
Double-Acting	PES3042	2	VPS4	Januaru		Solenoid				80
	PES3062	2	VPSL4	Locking	62 67	Actuated				81

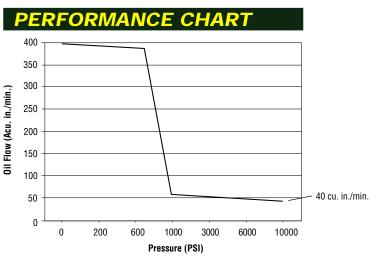
For more information on valve models, see pages 63-67. * Includes Suc-O-Matic.

ELECTRIC - 1 HP 30 SERIES





The Simplex 30 Series pump is used in this horizontal pressing application. The 30 Series pump, with its smooth operation, is ideal for indoor use. Its compact size is perfect when space is at a premium.



30 SERIES POWER PUMP OPTIONS

PUMP CONTROL DEVICES



 PPM - Motor Control Pendant
 PES - Valve Directional Control Pendant
 PPS - Motor Control & Valve Directional Control Pendant (dual switch)
 All pendants include 20' cord.



■ PFM - Motor Control Foot Switch Includes 20' cord.

PUMP PROTECTION



■ P03 - Roll Bars For 1, 2 & 5 gallon reservoirs only. Order (1) under Options in the Custom Build Chart.



■ P04 - External filter for pumps with 3 & 4 way valves. Order (4) under Options in the Custom Build Chart. Replacement filter elements, use order number P05E.

ALL PUMP OPTIONS ARE FACTORY INSTALLED

CUSTOM BUILD

Using the chart below you can add roll bars, different size reservoirs or other options.

Description Model	Selections	
Product — P-	Power Pump	
Motor Control — E Options	E = No Options P = Pen	dant Switch F = Foot Switch
Valve Style	D = Dump S = Solenoid (Dump comes with pen	
Pump Series 3	1 HP, 115,230 VAC 50/6	io Hz, Induction Motor
Options1	0 = No Options 1 = Roll Bars only	4 = Filter only 5 = Roll Bars & Filter
Valve Type 3	2 = 2 Way 2 Position	4 = 4 Way 3 Position 5 = 3 Way Locking Style 6 = 4 Way Locking Style
Reservoir Size 2	1 = 1 Gallon 5 = 5 Gal 2 = 2 Gallon	lon
Motor Voltage	Blank = 115 VAC Single A = 230 VAC Single Pha	

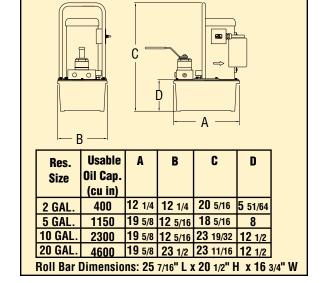
POWER PUMPS

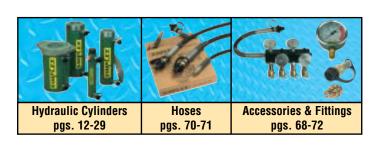
SIMPLEX

ELECTRIC 1.5 HP 40 SERIES

Quiet running 1725 RPM motors are perfect for in house production jobs. Dual voltage, dual amp induction motors fit a wide variety of applications.

- 14 standard models.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation provides fast advance.
- Higher crossover for faster cylinder cycle.
- Dual voltage 115/230 VAC 50/60 Hz Motor.
- Motor starts under full load.
- Runs reliably on 20 amp circuits.
- Maximum amperage draw 17 amps at 115 VAC.
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.
- Quiet running (80dBA).
- Optional dump pumps come standard with motor pendant switch with 20' cord.





PEM4032

PE-40 Series 1.5 HP Electric Powered Pumps - 10,000 psi capacity

	Model	Reservoir Size			Valve			Motor Specifications	Flow Rate @ 115 VAC	Weight (lbs.)
	Number	(Gal.)	Model		Style		Function			
	PEM4022	2	VP2		2 Position		Advance/			66
5	PEM4025	5	VP2	Standard	2 Way	Manual	Retract			124
tin	PEM4032	2	VP3*	Stanuaru		Lever				71
Single-Acting	PEM4035	5	VP3*		3 Way	Actuated	d Advance/ 1.5 HP		129	
je	PEM4055	5	VPL3*	Locking			Hold/	Single Phase	400 cu. in.	130
linç	PES4032	2	VPS3*	Standard		Remote Retract Solenoid	Induction Motor @12		73	
00	PES4035	5	VPS3*	otaniaara				@1200 PSI	131	
	PES4055	5	VPSL3*	Locking		Actuated		115/230 VAC 50/60 Hz		132
5	PEM4042	2	VP4	Standard		Manual		17 amps at 10,000 PSI	55 cu. in.	71
ži	PEM4045	5	VP4	otanuaru		Lever	Advance/	(Factory Wired	@10.000 PSI	129
-Ac	PEM4065	5	VPL4	Locking	3 Position	Actuated	Hold/	@ 115 VAC)	,	130
ble	PE\$4042	2	VPS4	Standard	4 Way	Remote	Retract	S I I VAU		73
Double-Acting	PES4045	5	VPS4	Standard		Solenoid				131
	PES4065	5	VPSL4	Locking		Actuated				132

For more information on valve models, see pages 63-67. * Includes Suc-O-Matic.

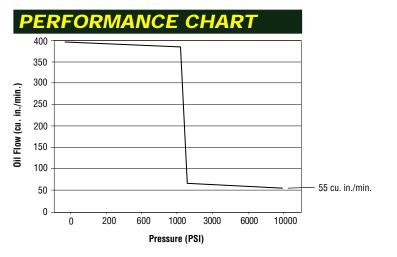
ELECTRIC 1.5 HP 40 SERIES

POWER PUMPS



This 40 Series Simplex pump is standard equipment on this large concrete processing machinery. "Our customers can't afford downtime regardless of

conditions at the job site." The Simplex 40 Series is a cool, quiet running pump that is the perfect choice for larger applications that require maximum dependability.



40 SERIES POWER PUMP OPTIONS

PUMP CONTROL DEVICES

 PPM - Motor Control Pendant
 PES - Valve Directional Control Pendant
 PPS - Motor Control & Valve Directional Control Pendant (dual switch)
 All pendants include 20' cord.



■ PFM - Motor Control Foot Switch Includes 20' cord.

PUMP PROTECTION



■ P03 - Roll Bars For 1, 2 & 5 gallon reservoirs only. Order (1) under Options in the Custom Build Chart.



■ PO4 - Heat Exchanger & Filter. Order (2) under Option in the Custom Build Chart. Replacement Filter, order number PO5E.

ALL PUMP OPTIONS ARE FACTORY INSTALLED

CUSTOM BUILD

Using the chart below you can add roll bars, different size reservoirs or other options.

Description	Model	Selections
Product - Motor	- P -	Power Pump
Control - Options	<u> </u>	E = No Options P = Pendant Switch F = Foot Switch
Valve Style	_ <u>S</u> _	S = Solenoid M = Manual D = Dump
Pump _ Series	-4-	1.5 HP, 115/230 VAC 50/60 Hz, Induction Motor
Options -	-1-	0 = No Options4 = Filter only1 = Roll Bars only5 = Roll Bars & Filter2 = Heat Exchanger & Filter3 = Roll Bars Plus Heat Exchanger & Filter
Valve Type	-3-	3 = 3 Way 3 Position 6 = 4 Way Locking Style 4 = 4 Way 3 Position 5 = 3 Way Locking Style
Reservoir Size	-5-	2 = 2 Gallon 6 = 10 Gallon 5 = 5 Gallon 7 = 20 Gallon
Motor Voltage		Blank = 115 VAC Single Phase A = 230 VAC Single Phase

POWER PUMPS

ELECTRIC 1.5 HP 70 SERIES



PES7032

				- A -		
Res. Size	Usable Oil Cap. (cu in)	A	В	C	D	
2 GAL.	400	12 1/4	12 1/4	19	5 51/64	
5 GAL.	1150	19 5/8	12 5/16	19 7/16	8	
10 GAL.	2300	19 5/8	12 5/16	18 7/8	12 1/2	
20 GAL.	4600	19 5/8	23 1/2	18 7/8	12 1/2	
						3/4" W

- 14 standard models
- Permanent magnet motor.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation provides fast advance.
- Higher crossover for faster cylinder cycle.
- Starts under full load.
- Runs reliably on long extension cords.
- Maximum amperage draw 17 amps.
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.
- Available with optional roll bars.
- Quiet running (80dBA).
- Optional dump pumps come standard with motor pendant switch with 20' cord.

Per.		Accessories & Fittings
	17	Ce. Q

PE-70 Series 1.5 HP Electric Powered Pumps - 10,000 psi capacity

						<u> </u>				
	Model	Reservoir Size			Valve			Motor Specifications	Flow Rate @ 115 VAC	Weight (lbs.)
	Number	(Gal.)	Model		Style		Function			
	PEM7022	2	VP2		2 Position		Advance/			66
5	PEM7025	5	VP2	Ctondord	2 Way	Manual	Retract			124
tim	PEM7032	2	VP3*	Standard		Lever				71
Ac	PEM7035	5	VP3*		Actuated 3 Position	Advance/			129	
Single-Acting	PEM7052	2	VPL3*	Locking		Position	Hold/	1.5 HP	400 cu. in.	130
linç	PE\$7032	2	VPS3*	Standard	3 Way	Remote	Retract		@ 1200 PSI	73
3	PE\$7035	5	VPS3*	otanuaru	Solenoid		Single Phase	@ 1200 P31	131	
	PE\$7052	2	VPSL3*	Locking		Actuated		Permanent Magnet		132
5)	PEM7042	2	VP4	Standard		Manual		115 VAC 50/60 Hz	50 cu. in.	71
tin	PEM7045	5	VP4	otanuaru		Lever	Advance/	17 amps at 10,000 PSI	@10.000 PSI	129
-Ac	PEM7062	2	VPL4	Locking	3 Position	Actuated	Hold/		,	130
ble	PES7042	2	VPS4	Standard	4 Way	Remote	Retract		73	
no	PES7052 PEM7042 PEM7045 PEM7062 PES7042 PES7045 PES7062	5	VPS4	Standard		Solenoid				131
-	PES7062	2	VPSL4	Locking		Actuated				132

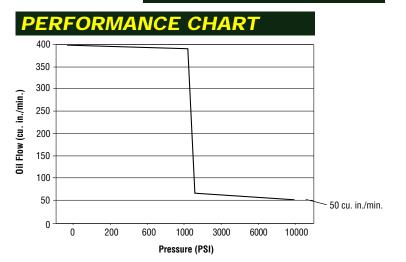
For more information on valve models, see pages 63-67. * Includes Suc-O-Matic.

ELECTRIC 1.5 HP 70 SERIES

POWER PUMPS



Simplex 70 Series pump & 50 ton flat jack cylinders makes easy work of bridge lifting. "We had to make complete bearing change outs on 90 bridges along Interstate 80. The Simplex 70 Series pump with its permanent magnet motor just kept running even with long extension cord and portable generator power."



70 SERIES POWER PUMP OPTIONS

PUMP CONTROL DEVICES

7

 PPM - Motor Control Pendant
 PES - Valve Directional Control Pendant
 PPS - Motor Control & Valve Directional Control Pendant (dual switch)
 All pendants include 20' cord.



■ PFM - Motor Control Foot Switch Includes 20' cord.

PUMP PROTECTION



■ P03 - Roll Bars For 1, 2 & 5 gallon reservoirs only. Order (1) under Options in the Custom Build Chart.



■ PO4 - Heat Exchanger & Filter. Order (2) under Option in the Custom Build Chart. Replacement Filter, order number PO5E.

PUMP PRESSURE CONTROL



Pressure Switch Order (6) under Options in the Custom Build Chart.

ALL PUMP OPTIONS ARE FACTORY INSTALLED

CUSTOM BUILD

Using the chart below you can add roll bars, different size reservoirs or other options.

Description	Model	Selections						
Product — Motor	- P -	Power Pump						
Control _ Options	- <u>E</u> -	E = No Options P = Pendant Switch F = Foot Switch						
Valve Style	-S	S = Solenoid M = Manual D = Dump						
Pump Series	-7-	1.5 115 VAC 50/60 Hz, Permanent Magnet Motor						
Options –	-0-	0 = No Options4 = Filter only1 = Roll Bars only5 = Roll Bars & Filter2 = Heat Exchanger & Filter6 = Pressure Switch3 = Roll Bars Plus Heat Exchanger & Filter7 = Pressure Switch Plus Heat Exchanger & Filter						
Valve Type –	-3	3 = 3 Way 3 Position 6 = 4 Way Locking Style 4 = 4 Way 3 Position 5 = 3 Way Locking Style						
Reservoir		2 = 2 Gallon $6 = 10$ Gallon						
Size —	-5-	5 = 5 Gallon 7 = 20 Gallon						
Motor Voltage —		Blank = 115 VAC Single Phase A = 230 VAC Single Phase						

POWER PUMPS

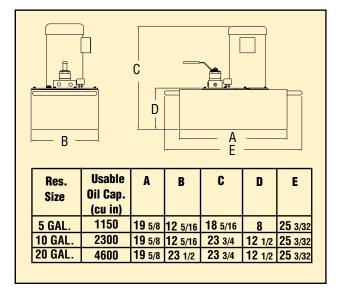
ELECTRIC 3 HP 50 SERIES



Hoses

pgs. 70-71

- 12 standard models.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation for fast advance.
- Higher crossover for faster cylinder cycle.
- 3 HP / 3 phase dual voltage motors (230/460).
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.
- Quiet running (80dBA).



PE-50 Series 3 HP Electric Powered Pumps - 10,000 psi capacity

Accessories & Fittings

pgs. 68-72

	Model	Reservoir Size			Valve			Motor Specifications	Weight (lbs.)	
	Number	(Gal.)	Model		Style		Function			
5	PEM5035	5	VE3*	Standard		Manual				162
cting	PEM5036	10	VE3*	Stanuaru	3 Way Remote	Lever				217
Ac	PEM5056	10	VPL3*	Locking		3 Position Actuated		218		
Single-Ao	PES5035	5	VPS3*	Standard		Remote				165
linç	PES5036	10	VPS3*	Stalluaru		Solenoid Advance/ Actuated Hold/ Manual Retract	3 HP	650 cu. in.	220	
60	PES5056	10	VPSL3*	Locking			Hold/	Three Phase		221
6	PES5056 PEM5045 PEM5046 PEM5066	5	VP4	Standard			Retract		@1,500 PSI	162
i i i	PEM5046	10	VP4	otanuaru		Lever		230/460 volts		217
e-Ao	PEM5066	10	VRL4	Locking	3 Position	Actuated		10 amps @ 230 volt	110 cu. in.	218
ble	PES5045	5	VRS4	Standard	4 Way	Remote			@10.000 PSI	165
Double	PES5046	10	VRS4	Stanuaru		Solenoid				220
	PES5066	10	VRSL4	Locking		Actuated				221

For more information on valve models, see pages 63-67. * Includes Suc-O-Matic

Hydraulic Cylinders

pgs. 12-29

ELECTRIC 3 HP 50 SERIES

POWER PUMPS

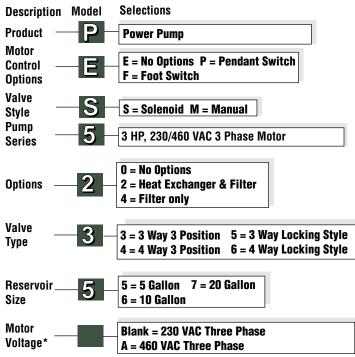


Simplex 50 Series pump & high tonnage press are used for many different pressing jobs. "The Simplex pump has been running trouble free for over six years. This is some of the most reliable equipment we have in our shop."

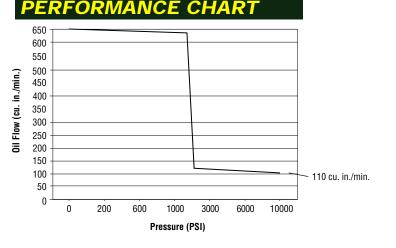
3 HP 3 phase motor comes complete with thermal overload protection, motor starter and heater elements as standard equipment.

CUSTOM BUILD

Using the chart below you can add different size reservoirs or other options.



*460 VAC pump ordered with heat exchanger requires a separate 115 VAC power source for the heat exchanger.



50 SERIES POWER PUMP OPTIONS							
PUMP CONTROL DEVICES							
 PPM - Motor Control Pendant PES - Valve Directional Control Pendant PPS - Motor Control & Valve Directional Control Pendant (dual switch) All pendants include 20' cord. 							
	- Motor Control Foot Switch 20' cord.						
·							
	 PO4 - Heat Exchanger & Filter. Order (2) under Option in the Custom Build Chart. Replacement Filter order, number PO5E. 						

ALL PUMP OPTIONS ARE FACTORY INSTALLED

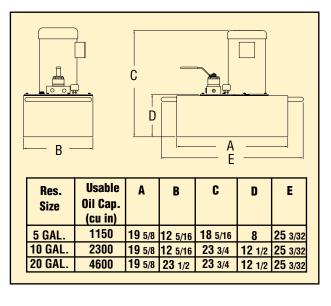
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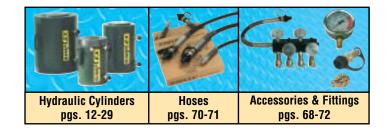
ELECTRIC 5 HP 60 SERIES

- 8 standard models.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation fast advance.
- Higher crossover means faster cylinder cycle.
- 5 HP / 3 Phase dual voltage motors (230/460).
- Dual ports for easier plumbing.

POWER PUMPS

- 2,000 PSI crossover.
- Quiet running (80dBA).
- Adjustable relief for variable pressure settings.





SIMPLEX

PEM6046

PE-60 Series 5 HP Electric Powered Pumps - 10,000 psi capacity

	Model	Reservoir Size	Valve					Motor Specifications	Flow Rate	Weight (lbs.)
	Number	(Gal.)	Model		Style		Function			
ы	PEM6035	5	VP3*			Manual				162
A-	PEM6036	10	VP3*		3 Position	Lever		5 HP	650 cu. in.	217
bu	PES6035	5	VPS3*		3 Way	Remote	Advance/	Three Phase	@2,000 PSI	165
Si	PES6036	10	VPS3*	Standard		Solenoid	Hold/		@2,000101	220
t	PEM6045	5	VP4	Stalluaru		Manual	nual Retract	230/460 volts		162
A-	PEM6046	10	VP4		3 Position	Lever		13 amps @ 230 volt	175 cu. in.	217
qn	PES6045	5	VPS4		4 Way	Remote			@10,000 PSI	165
Å	PES6046	10	VPS4			Solenoid				220

For more information on valve models, see pages 63-67.

* Includes Suc-O-Matic.

ELECTRIC 5 HP 60 SERIES

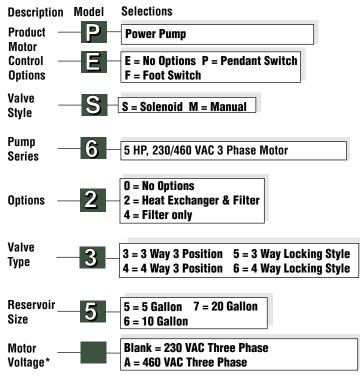
Di Flow (er. in //in

When one of the world's largest drag lines needed to be raised for roller replacement, the maintenance crew relied on the high tonnage expertise of Simplex. Weighing over 5,000 tons, this was no job for amateurs. "We used RDA50012 and PE60 Series pumps; Simplex provided all the hoses & valving, and the operation went flawlessly."

5 HP 3 phase motor comes complete with thermal overload protection, motor starter and heater elements as standard equipment.

CUSTOM BUILD

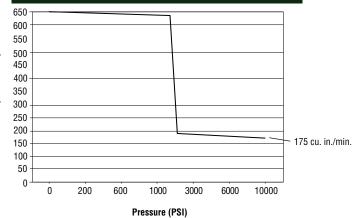
Using the chart below you can add different size reservoirs or other options.



*460 VAC pump ordered with heat exchanger requires a separate 115 VAC power source for the heat exchanger.

ERFORMANCE CHART

POWER PUMPS



60 SERIES POWER PUMP OPTIONS PUMP CONTROL DEVICES PPM - Motor Control Pendant PES - Valve Directional Control Pendant PPS - Motor Control & Valve Directional Control Pendant (dual switch) All pendants include 20' cord. PFM - Motor Control Foot Switch Includes 20' cord. Pendant & foot switch options include starter box. PUMP PROTECTION PO4 - Heat Exchanger & Filter. Order (2) under Option in the Custom Build Chart. Replacement Filter, order number P05E.

ALL PUMP OPTIONS ARE FACTORY INSTALLED

POWER PUMPS GAS POWERED HYDRAULIC PUMP



- Suc-O-Matic feature reduces retraction time.
- Two-speed operation provides fast advance.
- Higher crossover for faster cylinder cycle.
- 3 1/2 & 8 HP gas engine.
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.

PGM4042

he	10	
Hydraulic Cylinders	Hoses	Accessories & Fittings
pgs. 12-29	pgs. 70-71	pgs. 68-72

SIMPLEX

Res. Usable A B C D Size Oil Cap.							
	Oil Cap.	A	В	C	D		
Size	Oil Cap. (cu in)	A 12 1/4	_	C 20 1/4	D 6		
Size 2 GAL.	Oil Cap.		B 12 1/4 12 1/4		_		
Size	Oil Cap. (cu in) 400	12 1/4	12 1/4	20 1/4	6		
Size 2 GAL. 5 GAL.	0il Cap. (cu in) 400 1150	12 1/4 19 5/8	12 1/4 12 1/4	20 1/4 19 3/8	6		

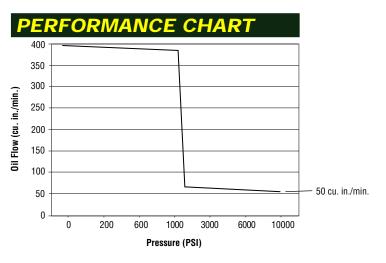
PG-40 Series 3.5 HP & PG-50 Series 8 HP Gasoline Powered Pumps - 10,000 psi capacity

Model	Reservoir Size	Valve					Motor Specifications	Flow Rate	Weight (lbs.)
Number	(Gal.)	Model	Style			Function			. ,
PGM4032	2	VP3		3 Position				400 cu. in.	53
<u>PGM4035</u>	5	VP3		3 Way	Manual Lever		Gas Engine 3 1/2 HP	@ 600 psi	108
PGM4042	2	VP4	Standard	3 Position		Advance/		50 cu. in.	53
PGM4045	5	VP4	otuniuuru	4 Way		4 Way Lever	Hold/		@10,000 psi
PGM5036	10	VP3		3P/3W		Retract	Gas Engine	680 cu. in. @1500 psi	147
PGM5046	10	VP4		3P/4W			8 HP	120 cu. in. @10,000 psi	147

For more information on valve models, see pages 63-67. Contact Factory for 8 HP Dimensions.

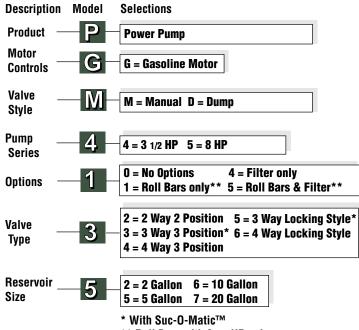


At remote job sites where air or electric power is not available, Simplex gasoline power pumps are the perfect choice. "We don't always have portable generators on these (overpass maintenance) jobs. Simplex gas pumps always come through."



CUSTOM BUILD

Using the chart below you can add roll bars, different size reservoirs or other options.



** Roll Bars with 3 1/2 HP only.

40 & 50 SERIES GAS POWER PUMP OPTIONS



■ P03 - Roll Bars For 1, 2 & 5 gallon reservoirs only. Order (1) under Options in the Custom Build Chart.



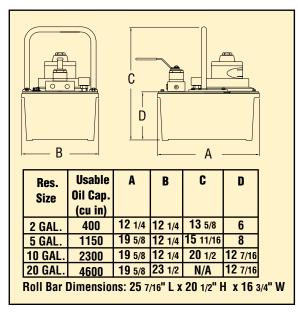
■ P04 - External filter for pumps with 3 & 4 way valves. Order (4) under Options in the Custom Build Chart. Replacement filter elements, use order number P05E.

ALL PUMP OPTIONS ARE FACTORY INSTALLED

POWER PUMPS AIR POWERED HYDRAULIC PUMP



PAM4535



- 6 standard models.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation provides fast advance.
- Higher crossover for faster cylinder cycle.
- Rotary air @ 50 cfm.
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.
- Available with remote air pendant control.
- Higher crossover for faster cycles.
- Large muffler for quieter operation.

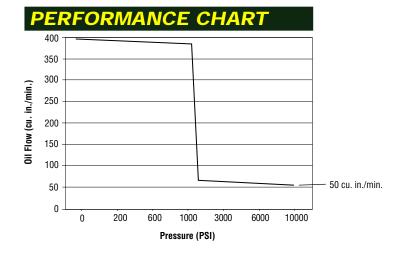
PA-40 Series 1.5 HP Air Powered Pumps - 10,000 psi capacity

	Model	Reservoir Size			Valve		Motor Specifications	Flow Rate	Weight (lbs.)	
	Number	(Gal.)	Model		Style		Function			
A	PAM4032 PAM4035	2	VP3*		3 Position	Manual				50
S	PAM4035	5	VP3*		3 Way	3 Way Lever Actuated		Rotary Air 50 cfm	400 cu. in.	108
	PAM4042	2	VP4	Clandard					@ 600 PSI	50
A/A	PAM4045 PAS4042	5	VP4	Standard	3 Position 4 Way Solenoid	Hold/	90 PSI	50 cu. in.	108	
6	PAS4042	2	VPA4			Retract		@10,000 PSI	52	
	PA\$4045	5	VPA4			Actuated				110

For more information on valve models, see pages 63-67. * Includes Suc-O-Matic.

AIR POWERED HYDRAULIC PUMP POWER PUMPS

For quieter operation where compressed air is available, or for use in explosive environments. Delivers high speed operation for a variety of medium sized cylinders, hydraulic tools or systems.





A233 Air Filter-Lubricator Provides lubricated and filtered air, and contributes to long and trouble free product life. Recommended for use with all air pumps.

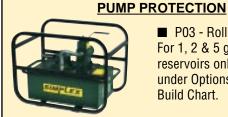


CUSTOM BUILD

Using the chart below you can add roll bars, different size reservoirs or other options.

Description	Model	Selections
Product —	- P -	Power Pump
Motor Controls	A	A = Rotary Air Motor
Valve Style	- M-	M = Manual S = Solenoid** D = Dump
Pump Series	-4 -	Rotary Air @ 50 cfm
Options —	-1 -	0 = No Options 4 = Filter only 1 = Roll Bars only 5 = Roll Bars & Filter
Valve Type	- 3 -	2 = 2 Way 2 Position 5 = 3 Way Locking Style* - 3 = 3 Way 3 Position* 6 = 4 Way Locking Style 4 = 4 Way 3 Position
Reservoir Size	5	2 = 2 Gallon 6 = 10 Gallon 5 = 5 Gallon 7 = 20 Gallon * With Suc-O-Matic™

40 SERIES AIR POWER PUMP OPTIONS



■ P03 - Roll Bars For 1, 2 & 5 gallon reservoirs only. Order (1) under Options in the Custom Build Chart.



■ P04 - External filter for pumps with 3 & 4 way valves. Order (4) under Options in the Custom Build Chart. Replacement filter elements, use order number P05E.

ALL PUMP OPTIONS ARE FACTORY INSTALLED

** Dump & 4 way valve only

POWER PUMPS AIR POWERED HYDRAULIC PUMP

The Simplex PA91 & PA95 Are The Toughest, Most Reliable Air Hydraulic Pump In The Field.



Easy Operation with Hand or Foot Control

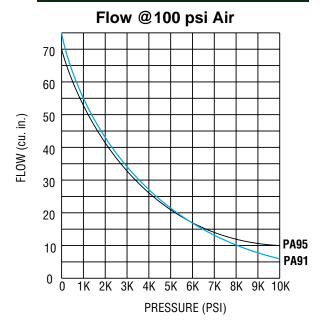
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Hydraulic Cylinders	Presses	Hydraulic Spreaders	Hoses	A233	Accessories & Fittings
pgs. 12-29	Pgs. 93-100	Pg. 83	pgs. 70-71	Filter Lubricator	pgs. 68-72

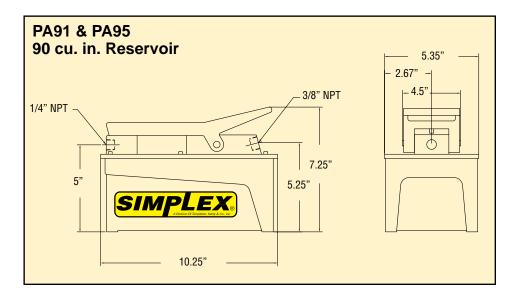
- PA91 is ideal for most applications and provides exceptional value.
- PA95 provides high performance in a compact, easy to use package
- Powers a wide variety of single-acting tools.
- Rugged all metal construction.
- High performance/fast operation.
- Pressure relief valve protects hydraulic circuit.
- Reduced noise for in house production.
- Reduced operator fatigue.
- 3 position treadle for advance, hold and retract.
- Uses standard shop air.

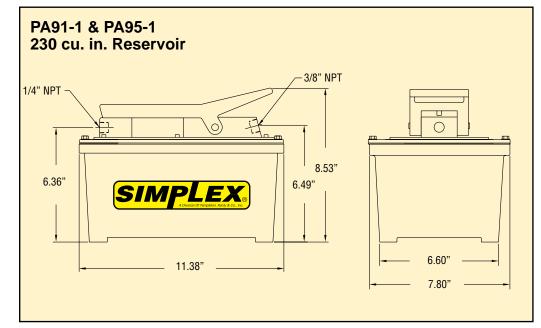
PA91 & PA95 Air Over Oil Pump

Model Number	Usable Oil Capacity (cu. in.)	Oil Flow @ 0 PSI (cu. in.)	Oil Flow @ 10,000 PSI (cu. in.)	Operating Air Pressure Range (psi)	Weight (lbs.)
PA91	90	75	6		20
PA91-1	230	75	U	60 - 150	28
PA95	90	70	10	00 - 150	20
PA95-1	230	10	10		28

PERFORMANCE CHART





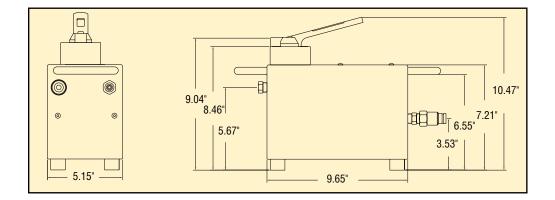




When reliable 10,000 psi power was needed to run this production line fixture, industrial engineers chose the Simplex PA91. "The three position treadle is easy to use and the pump runs on standard shop air."



- Converts on board mobile hydraulic systems into high pressure (10,000 psi) power sources.
- Converts low pressure (2,000 psi) pumps into a high pressure (10,000 psi) power source.
- Ideal for utilities, railroads, construction, riggers.
- Operates single or double-acting cylinders and tools.
- Compact, easy to carry.
- No reservoir oil level to maintain; uses low pressure system as oil supply.
- 3/8" NPTF ports with quick disconnect couplers and integrated pressure gauge.
- Ideal for use in aerial buckets and utility applications.



Model Number	Valve		Input Flow Range	Input Pressure	Output Pressure Max.	Output Flow Range	-	Output Pressure	Weight (lbs.)
	Туре	Function	(GPM)	(PSI)	(PSI)	(GPM)	Ratio	Ratio	. ,
PI2	4 Way/3 Position	Advance/Hold/Retract	0 - 10	300 - 2,000	10,000	0 - 2	1:5	5:1	30

Contact Factory for additional dimensions.

INTRODUCTION

VALVES

FULL SYSTEM CONTROL

Hydraulic valves are devices that control different aspects of your hydraulic system's operation. The most common types of valves are **directional control valves**, **flow control valves**, **check valves** and **pressure relief valves**. Once you determine your system requirements, you must select valves that will give your system the operation you desire. Valves can be **pump mounted** or **inline**. Note: All Simplex pumps come with directional control valves. When selecting a pump, be sure to choose a pump with the appropriate directional control valve. Flow control, check & adjustable pressure relief valves are mounted in line and should be specified as required to obtain the desired system operation.

DIRECTIONAL CONTROL VALVES

Simplex offers a wide variety of directional control valves. Use the valve selection guide to help determine what valve is best suited for your application.

Definition of Terms:

Manual Valve

Valves that are manually actuated by shifting a hand lever on the valve.

Solenoid Valve

Valves that are actuated by electric solenoids that can be controlled by a remote pendant switch.

Pump Mounted Valve

Valves that are mounted directly to the pump cover plate.

In-Line Valves

Valves that are installed away from the pump, "in-line" in the hydraulic system.

■ 2 or 3 Way Valves

Valves that are used to operate single-acting cylinders or tools.

4 Way Valves

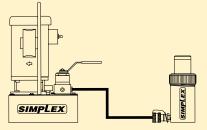
Valves that are used to operate double-acting cylinders or tools.

■ Locking Valves

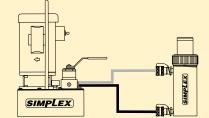
Valves that are used when pressure drop within the system cannot be tolerated while shifting.

DIRECTIONAL CONTROL VALVES SELECTION GUIDE

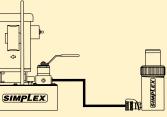
■ 2 or 3 way for single-acting cylinders or tools.



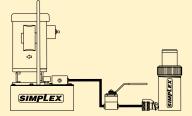
■ 4 Way for double-acting cylinders or tools.



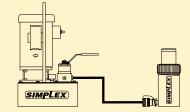
Pump Mounted.



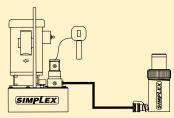
■ Inline Mounted.



Manual Operated.

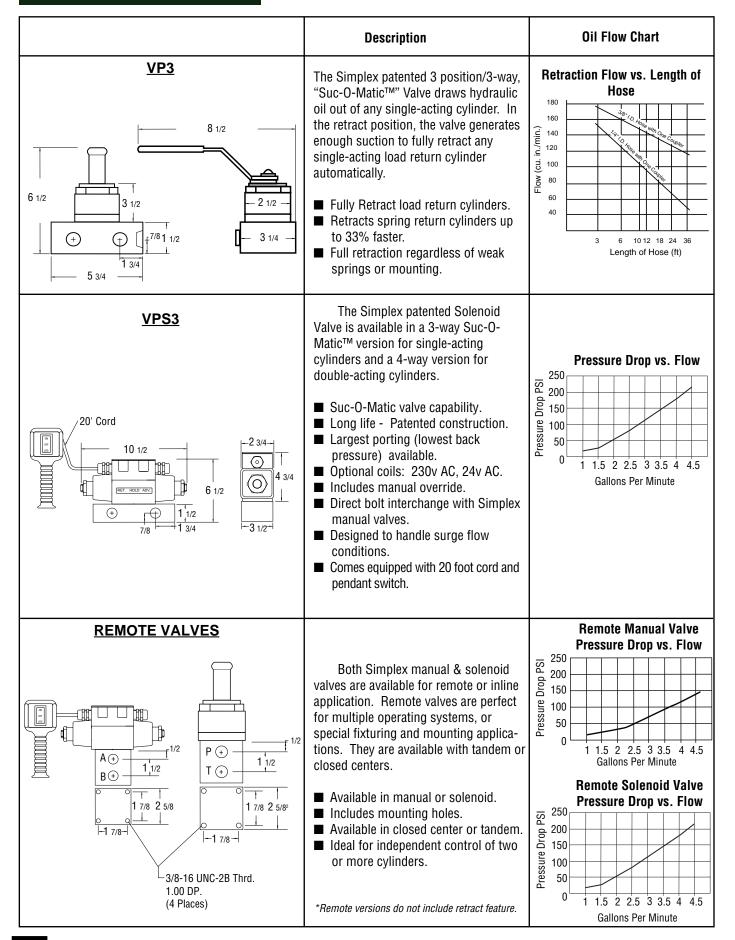


Solenoid Operated.



VALVES

SUC-O-MATIC



DIRECTIONAL 2-WAY/3-WAY

VALVES

For Single-Acting Cylinders & Tools

PUMP M	OUNTED VALVES	Hydraulic Schematic	Functional Flow Schematic
	VP2 Pump mounted 2 position 2 way valve is ideal for pressing, punching, crimping, staking or pulling applications when load holding is not needed.		Advance
	■ VP3 Pump mounted 3 position 3 way valve is commonly used with single-acting cylinders for lifting applications or production work. The center position holds the load with the pump motor on or off.		Advance
	VPL3 Pump mounted 3 position 3 way valve is the same as VP3, but with a built in pilot check valve. The VPL3 provides positive load holding in the center position, and will not allow pressure drop while shifting. Recom- mended for prestressing, post tensioning and precision holding applications.		Retract
	VPS3 Pump mounted electric solenoid actuated 3 position 3 way valve with remote pendant switch allows remote operation of system directional control.		Advance
	VPSL3 Pump mounted electric solenoid actuated 3 position 3 way valve with remote pendant switch is the same as the VPS3, but with a built in pilot operated check valve. The VPSL3 provides positive load holding in the center position, and will not allow pressure drop while shifting.		
	REMOTE MOUNTED VAI	LVES	
	 VR3 & VR3CC VR3 is the same as VP3, except for inline mounting. VR3CC is the same valve except all ports are closed in the center position. VR3 hydraulic schematic same as VP3. 		
	 VRS3 & VRS3CC VRS3 is the same as VPS3 except for inline mounting. VRS3CC is the same valve except all ports are closed in the center position. VRS3 hydraulic schematic same as VPS3. 	VRS3CC	

All remote valves have threaded mounting holes (see page 64).

VALVES

DIRECTIONAL 4 WAY

For Double-Acting Cylinders & Tools

	PUMP M	OUNTED VALVES	Hydraulic Schematic	Functional Flow Schematic
		VP4 Pump mounted 3 position 4 way valve is used with double-acting cylinders and tools. This valve controls direction of oil for advancing, holding & retracting. The center position holds the load with the pump motor running or off.		
		■ VPL4 Pump mounted 3 position 4 way valve is the same as VP4, but with a built in pilot check valve. The VPL4 provides positive load holding in the center position, and will not allow pressure drop while shifting. Recommended for prestressing and precision holding applications.		Retract
		■ VPS4 Pump mounted electric solenoid actuated 3 position 4 way valve with remote pendant switch. Same as VP4, but allows remote operation of directional control.		
		■ VPSL4 Pump mounted electric solenoid actuated 3 position 4 way valve with remote pendant switch functions the same as VPS4, but with a built in pilot operated check valve. The VPSL4 provides positive load holding in the center position, and will not allow pressure drop while shifting.		Hold Retract
The second se	AND	■ VPA4 Pump mounted air solenoid actuated 3 position 4 way valve with remote pendant switch. Same as VP4, but allows remote operation of directional control.		
		REMOTE MOUNTED VAL		
	5	VR4 & VR4CC VR4 is the same as VP4, excetp for inline mounting. VR4CC is the same valve except all ports are closed in the center position. VR4 hydraulic schematic same as VP4.	VR4CC	
		 VRS4 & VRS4CC VRS4 is the same as VPS4 except for inline mounting. VRS4CC is the same valve except all ports are closed in the center position. VRS4 hydraulic schematic same as VPS4. 	VRS4CC	

All remote valves have threaded mounting holes (see page 64).

INLINE SYSTEM VALVES

VALVES

	Description	Hydraulic Schematic
EIMPLER	V10E Check Valve automatically locks load in raised position as plunger is being extended. Protects against dropping the load due to pressure loss. Required for multiple cylinder lifting from one source. (Includes Hex Nipple).	
	V10EC Check Valve is a V10E with polarized high flow couplers for direct, rapid mounting to cylinder couplers.	
SIMPLEX	V2 Over Center Check Valve can be mounted at the cylinder to hold the load in the event of system failure. Unlike other piloted check valves, the V2 provides controlled retraction without "chatter". Note: When used in multiple cylinder systems, contact Simplex for minimum pump requirements.	
	V5B Shut-Off Valve is a needle-type valve for sustained load-holding and flow control. Use for positive shut-off or throttling.	
	V1 In-line Adjustable Relief Valve is for in- line mounting into hydraulic systems. Accurately controls maximum pressure from 800 to 10,000 psi. Turn handle until gauge indicates desired working pressure - tighten lock nut. Valve automatically opens and bypasses excess flow from system when preset pressure is reached.	
	V3 Safety Relief Valve threads into top port of double-acting cylinders, or inline on hydraulic systems, for protection against over pressurizing. Pressure rating is 10,500 psi.	

Note: All Valves Have 3/8" NPTF Ports.

COUPLERS

3/8" & 1/4" NPTF HIGH-FLOW COUPLERS



MANIFOLDS, FITTINGS & OIL

ACCESSORIES

	HIGH PRESSURE MANI	FOLDS
Model M3	• 6 Port Inline Hex Manifold: The M3 inline hex manifold features (6) - 3/8" NPTF threaded ports & mounting holes.	3/8" NPTF
Model M1	• Pump Mounted 4 Cylinder Control Manifold Kit: The M1 control manifold incorporates (4) station shut-off/flow control valves, 3' hose, gauge port and pump mounting hardware. Two or more manifolds can be coupled together for larger systems.	Equally Spaced @ 2.12 + 1 1/8
Model M2	• Pump Mounted 4 Cylinder Manifold Kit: The M2 mani- fold includes 2' hose and pump mounting hardware. Two or more manifolds can be coupled together for larger systems.	- 3/8" NPTF 6 Places

HALL DECAUDE MANUEAU

3/8" NPTF HIGH-PRESSURE 10,000 PSI FITTINGS

Hex Nipple	3" Nipple	6" Nipple	90° Elbow	90° St. Elbow	Tee	Coupling	Cross
6			See .				8
F1	F3	F6	F 7	F9	F11	F13	F15
3/8"M to 1/4"F	1/4"M to 3/8"F		-				-



Model Number	Hydraulic Oil Qty.
A01	1 Gallon
A05	5 Gallons
A012	12 Quarts
A055	55 Gallons

F16

F17

Special, high pressure formulated, premium grade oil for all Simplex hydraulic products. High viscosity index insures maximum lubricity over a wide range of operating temperatures.



Viscosity Index	100 min.
VIS, SSU @100° F	150 - 155
VIS, SSU @ 210° F	45 - 50
VIS, SSU @0° F	< 15,000
Pour Point	-50° F
Flash Point	400° F
Analine Point	204.8° F

Includes: Anti-Foam, Anti-Rust and Low Temperature Additives

ACCESSORIES

HIGH PRESSURE HOSES

All Simplex hoses have 3/8" male NPTF threads, and include end guards as standard equipment. Special lengths are available upon request.

H & HC Series industrial grade 1/4" I.D. hose is rated at 10,000 psi operating pressure and 20,000 psi minimum burst pressure. This hose is the recommended choice for hand pump & cylinder sets, as well as a wide range of other intermittent applications.

Model Number	Length (Ft.)	Hose End Hose End	I.D. (In.)
H3	3		
H6	6		
H10	10		
H20	20		
H36	36		
H50	50	3/8" NPTF Male 3/8" NPTF Male	
HC3	3		1/4
HC6	6		
<u>HC10</u>	10		
HC20	20	3/8" NPTF Male C213 Coupler*	
HC36	36		
HC50	50		
		C213 Coupler* C213 Coupler*	



*All hoses with couplers includes CR215 Dust Cap.

■ High Flow HD & HDC Series 3/8" I.D. hose is recommended to achieve higher retraction speeds and minimal flow restrictions. These heavy duty hoses are rated at 10,000 psi with a minimum burst pressure of 30,000 psi.

Model Number	Length (Ft.)	Hose End	Hose End	1.D. (In.)
HD3	3			
HD6	6	er villigebergenen		
HD10	10			
HD20	20			
HD50	50	3/8" NPTF Male	3/8" NPTF Male	
HDC3	3			
HDC6	6		MOOD AND AND AND AND AND AND AND AND AND AN	3/8
HDC10	10			
HDC20	20	3/8" NPTF Male	C213 Coupler*	
HDC50	50	C213 Coupler*	C213 Coupler*	

*All hoses with couplers includes CR215 Dust Cap. Note: Recommended for use with Suc-O-Matic Pumps.



In this fixed outdoor application Simplex hand pumps and hoses are permanently attached to this mineral processing machine. "The desert environment is tough on hydraulic equipment. Simplex gives us the reliability we need."

HIGH PERFORMANCE HOSES

ACCESSORIES

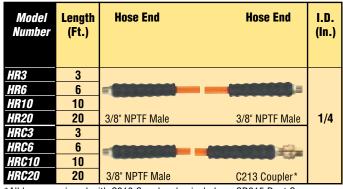


Thermo-Plastic HP & HPC Series Hoses are recommended for demanding applications. Along with their distinctive green color, the HP & HPC series hoses boast a 10,000 psi working, 40,000 psi minimum burst, (4:1 safety factor) and a tough polyurethane outer cover that resists abrasion and wear. Well suited for continuous duty, the reinforced polyester and carbon steel wire design contributes to low volume expansion, minimized fatigue and enhanced system efficiencies.

Model Number	Length (Ft.)	Hose End	Hose End	I.D. (In.)
HP3	3			
HP6	6			
HP10	10			
HP20	20			
HP36	36			
HP50	50	3/8" NPTF Male	3/8" NPTF Male	
HPC3	3			1/4
HPC6	6	- Children and Annual State		
HPC10	10			
HPC20	20	3/8" NPTF Male	C213 Coupler*	
HPC36	36			
HPC50	50	C213 Coupler*	C213 Coupler*	

*All hoses equipped with C213 Coupler also includes a CR215 Dust Cap.

■ Non-Conductive Thermo Plastic HR & HRC Series Hoses are for those special applications where non-conductivity is a must. The HR & HRC series hose operates at 10,000 psi working and 40,000 psi burst, (4:1 safety factor). Light weight and durable, the multi-layered design complies with M.H.I. I.J.100 hose specifications. Orange in color, the HR and HRC are easily identified from standard conductive hoses.



*All hoses equipped with C213 Coupler also includes a CR215 Dust Cap.

Heavy Duty HE & HEC Series Hoses are for demanding and continuous duty applications that require 10,000 psi working and 40,000 psi burst, (4:1 safety factor) but where rubber coated, steel wire braid design is preferred. These hoses are well suited in operating temperatures up to 150° F.

Model Number	Length (Ft.)	Hose End Hose End	I.D. (In.)
HE6	6		
HE10	10		
HE20	20	3/8" NPTF Male 3/8" NPTF Male	1/4
HEC6	6		
HEC10	10		
HEC20	20	3/8" NPTF Male C213 Coupler*	

*All hoses equipped with C213 Coupler also includes a CR215 Dust Cap.

ACCESSORIES ANALOG & DIGITAL GAUGES

	Description	Dimensions
G5 2 1/2" Gauge 500 PSI Increment G5 2 1/2" Gauge GA1 Gauge Adaptor	 The G5 is a high quality compact liquid filled gauge that reads in both PSI and Bar. Liquid filled to dampen needle vibration, the G5 is perfect for applications up to 10,000 PSI. Liquid filled dampens needle vibration. ,1% full scale accuracy. 500 PSI increment. Stainless steel casing. 	2.50
G6 4" Gauge G6 4" Gauge 500 PSI Increment G6 4" Gauge Adaptor	 The G6 is a larger, easy to read liquid filled gauge that's in both PSI and Bar with increments of 500 PSI. The calibrated scale reads from 0-10,000 PSI with 10,000 to 15,000 PSI as a warning zone. Liquid filled dampens needle vibration. 1% full scale accuracy. Large easy to read 4" face. Rubber blowout plugs for safety. Stainless steel casing. 	4.00 4.00 5 5 5 5 5 5 5 5 5 5 5 5 5
G7 4" Gauge G7 4" Gauge 100 PSI Increment GA1 Gauge Adaptor	 The G7 is a larger, easy to read liquid filled gauge that's in both PSI and Bar with increments of 100 PSI/10bar. The calibrated scale reads from 0-10,000 PSI. Liquid filled dampens needle vibration. ±1% full scale accuracy. Large easy to read 4" face. Rubber blowout plugs for safety. Stainless steel casing. Standard on all Simplex Torque Wrench Pumps. 	4.00 4.00
GD1 2 1/2" Digital Gauge GA1 Gauge Adaptor	 The GD1 is designed for the high cycle pressure application where mechanical gauges don't hold up. The GD1 is a direct mount, compact gauge with an all stainless steel sensor that is vibration & shock resistant. Self powered Lithium batteries. Full 4 digit display. ±.25% full scale accuracy. 10 million cycle life minimum. 	2 T 3 2 2.66 Simplex 5/8 1/4 NPT
GD2 4" Digital Gauge	 The GD2 digital gauge combines the best features of analog and digital instruments. The 0.75" high full 4 digit display is easily read at a distance and the "analog" bar graph allows instant estimation of changing pressures. The all stainless steel sensor is vibration and shock resistant. 0.75" characters and 270° bar graph "analog" readout. Splash proof phenolic housing. ±.25% full scale accuracy. Keypad enable/disable of peak high or peak low hold. 	5.45 1.33 7/8 Flats 1/4 NPT
GA1 Gauge Adaptor	GT25 0 - 25, 55, 100 All 25, 55 & R GT30 0 - 30, 50, 100 4 30 Ton Model GT100 0 - 100, 150, 200 RDA100 & 200 GTH12 0 - 12, 20, 30 12, 20 & 30 Ton	Cylinders Used With Ton Models RFS, RL & RLS 50 Ton Models F, RFS, RL & RLS 100 Ton Models s, 50 & 100 RLR & RLN D Series, RLR & RLN 150 & 200 on RC & RCD Series 0 Ton RC & RCD Series

INTRODUCTION

HYDRAULIC TOOLS

SIMPLEX HYDRAULIC TOOLS

■ Hydraulic Rebar Benders & Cutter

Simplex Portable Rebar Benders & Cutter are two of the most innovative hand tools to be introduced to the concrete and construction industries. Simplex streamlines the task of forming short lengths of rebar by quickly and easily bending and cutting the rebar in place. The light weight, compact design offers portable, one hand operation in any position and in the harshest of environments. Designed to bend and cut #3 to #6 rebar, these units are built to endure the rigors of hard work while providing reliable, trouble-free service.

■ Hydraulic Nut Splitters

Simplex nut splitters fit up to 8 nut sizes and offer greater value and versatility. The specifically designed head fits all A.P.I. and ANSI flanges and cuts hex, square and 12 point nuts. You can easily calibrate the cutting chisel so only the nut is cut without damaging the bolt or stud. Simplex splitters will cut the hardest nuts, including grade 8 and 2H (ASTMA 194/2H), Brinell hardness 248-325).

35 Ton Portable Punch

Simplex 35 Ton Portable Punch hydraulic connections rotates 360° with the top handle making the hose positioning easier in tight areas. The punch mounted motor control handle (included with SPH35SP) provides easy operation and greater operator safety. The Simplex punch is also offered in a double-acting model for increased speed and positive stripping on every punch. Punches and dies are interchange-able with competitive punches.

Hydraulic Maintenance Kits

The Simplex MK106 Maintenance Kit provides a complete assortment of attachments that greatly expands the range of applications. Using these various attachments allows you to custom build spreaders, straightening tools, clamps and a wide variety of other problem solving maintenance tools.

Hydraulic Pullers

Simplex Sure Grip Pullers are designed to provide safe, fast and reliable removal to gears, bearings, pulleys and sleeves and dozens of other pulling or pushing jobs. Drop forged alloy steel and heat treated jaws and attachments team up with Simplex field proven hydraulics to make quick work of even the toughest pulling jobs. Available in either 2 jaw version for tight clearance pulls or 3 jaw version for maximum grip. Simplex Sure Grip pullers provide 17.5, 30 or 50 tons of pulling or pushing power.

Hydraulic & Mechanical Spreaders

The Simplex S2000 (1 ton) and S3000 (1.5 ton capacity) spreaders are the perfect fit for close clearance jobs. The SF5 spreader offers 5 tons with 1/8" starting clearance and the model 610 is one of Simplex's most versatile mechanical tools for spreading and pulling.



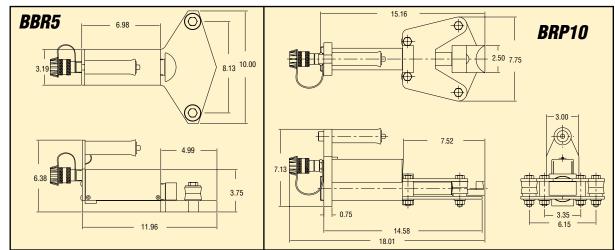
HYDRAULIC TOOLS

POW'R BENDERS & CUTTER

SIMPLE

- Bend & cut #3 to #6 grade rebar.
- Light weight compact design for use in tight areas.
- Operates in the toughest environments.
- One-hand operation makes work quick and easy.
- Adjustable cradle holds rebar steady.
- 90° rotating work head on the BRP10 is ideal for bending in-place vertical bar.
- Pump pendant integrated into the tool handle gives operator total control.



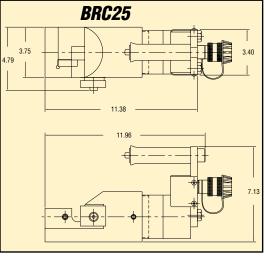


Rebar Benders & Cutter Systems

Model Number	Cap. Grade Bar	Description	Pump	Hose	Weight (Tool Only) Ibs./kg
BBR5	#3 - #6	Push Bender			12/5.5
BRC25	#3 - #6	Cutter			19/8.6
BRP10	#3 - #6	Pull Bender			24.5/11.1
BRS5		Push Bender & Pump	B2001	BRH25	
BRS10		Pull Bender & Pump	B2001	BRH25	
BRS25		Cutter & Pump	B2001	BRH25	N/A
BRS525		Push Bender, Cutter & Pump	B2001	BRH25	
BRS1025		Pull Bender, Cutter & Pump	B2001	BRH25	
BR\$51025		Push, Pull Bender, Cutter & Pump	B2001	BRH25	

Hoses

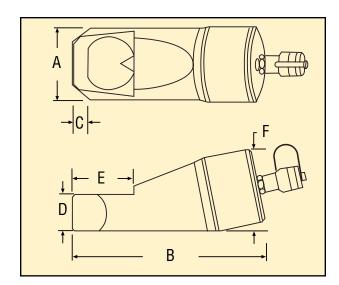
Model	Description
Number	
BRH10	10' Hose w/couplers, electrical connections in protective cover
BRH25	25' Hose w/couplers, electrical connections in protective cover



NUT SPLITTERS

HYDRAULIC TOOLS

- **7** different models.
- Cuts hardened nuts up to grade 8 & 2H.
- Safety, no sparks, no flame, no impact.
- Replacement chisel and set screws included.
- Cuts any shape nut.
- Cuts nuts from1/2" to 2 15/16" (13 to 75mm).
- Rugged carrying case included.
- Broadest Range / Best Value.
- Angled head design for easy placement on nut.



SIMPLE

Hydraulic Nut Splitters



Refineries, steel mills and power plants rely heavily on Simplex nut splitters for removing stubborn or rusted nuts easily and safely. The Simplex nut splitters offer a wide range of sizes at exceptional values.



Model Number	Stud Dia. (in.)	Nut A/F (in.)	Nut A/F Metric (mm)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Weight (lbs)	Sugstd. Hand Pump
NS1319	1/4 - 7/16	1/2 - 3/4	13 - 19	1.57	7.87	.24	.75	1.10	1.89	1.8	
NS1924	7/16 - 9/16	3/4 - 15/16	19 - 24	2.17	8.94	.32	.98	1.50	2.80	4.4	B 40
NS2432	9/16 - 3/4	15/16 - 1 1/4	24 - 32	2.60	10.24	.39	1.22	1.93	2.99	6.6	P42
NS3241	3/4 - 1	1 1/4 - 1 5/8	32 - 41	2.95	11.26	.59	1.38	2.60	3.50	9.7	
NS4150	1 - 1 1/4	1 5/8 - 2	41 - 50	3.78	12.80	.83	1.77	2.87	4.29	18.0	
NS5060	1 1/4 - 1 1/2	2 - 2 3/8	50 - 60	4.17	14.41	1.06	2.13	4.96	4.96	26.0	P140
NS6075	1 1/2 - 1 7/8	2 3/8 - 2 15/16	60 - 75	6.14	14.43	1.06	2.95	4.33	7.09	75.1	

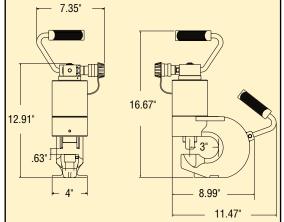
HYDRAULIC TOOLS



- Coupling port rotates 360° for work in tight areas.
- Punches .50" hole through mild steel.
- Round, square & oblong punch & die sets available.
- Uses competitive interchangeable punches & dies.
- Mounting holes for production punching.
- 10% lighter than other portable punches.
- Punch mounted motor control for safety.
- Ergonomic two handle design provides better balance and control.



Only Simplex offers 360° rotating port and a pump mounted motor control, so that work can be performed in tight areas safely and more productively as shown in this small fabricating shop.



1	Model Number	Punch	Punch & Die Set	Pump	Hose	Weight Punch Only (Ibs./kg)
	SPH35					
	SPH35S		Standard Set			
	SPH35SP	SPH35	DS-44, DS-56, DS-69, DS-81	SPH1001	HC6	32/14.5
	SPH35M		Metric Set			
	SPH35MP		DS-38, DS-44, DS-53, DS-69	SPH1001	HC6	

Contact Factory for additional dimensions.

Punch and	Standard Punch	Standard Die	Standard Punch &	Bevel Punch & Die Set	Bevel Punch & Die Set	Hole Size (in./mm)	Bolt Size (in./mm)	*N	laxin	num	Met		iickn (in.)	Iess	To B	le Pu	nch	ed
Die Type		Model #	Die Set	for I-Beams	for U-Beams	(,	(,,	A	В	C	D	Ε	F	G	H	I	J	K
Round	DP-31	DD-31	DS-31	DSB-31		.31/7.9	1/4/	.31	.31	.25	.25	.25	.25	.13	.19	.25	25	.25
Round	DP-38	DD-38	DS-38	DSB-38		.38/9.5	5/16 /M8	.38	.38	.31	.31	.31	.31	.19	.25	.31	.31	.31
Round	DP-44	DD-44	DS-44	DSB-44	DSBU-44	.44/11.1	3/8/M10	.44	.44	.38	.38	.38	.31	.19	.31	.31	.31	.31
Round	DP-53	DD-53	DS-53	DSB-53	DSBU-53	.53/13.5	7/16/M12	.50	.50	.44	.44	.44	.38	.25	.31	.38	.38	.38
Round	DP-56	DD-56	DS-56	DSB-56		.56/14.3	1/2/	.50	.50	.50	.44	.50	.44	.25	.38	.44	.44	.44
Round	DP-69	DD-69	DS-69	DSB-69	DSBU-69	.69/17.5	5/8/M16	.50	.50	.50	.44	.50	.40	.25	.31	.40	.40	.40
Round	DP-78	DD-78	DS-78			.78/19.8	/M18	.50	.50	.50	.44	.50	.38	.25	.31	.38	.39	.38
Round	DP-81	DD-81	DS-81			.81/20.6	3/4/	.50	.50	.50	.44	.50	.31	.19	.31	.31	.31	.31
Square	DP-45	DD-45	DS-45			.31/7.9	1/4/	.31	.31	.25	.25	.25	.25	.13	.19	.25	.25	.25
Square	DP-54	DD-54	DS-54			.38/9.5	5/16 /M8	.38	.38	.31	.31	.31	.31	.19	.25	.31	.31	.31
Square	DP-63	DD-63	DS-63			.44/11.1	3/8/M10	.44	.44	.38	.38	.38	.31	.19	.31	.31	.31	.31
Square	DP-72	DD-72	DS-72			.50/12.7	7/16/M12	.50	.50	.44	.44	.44	.38	.25	.31	.38	.38	.31
Oblong	DP-10	DD-10	DS-10			.31 x .75/7.9 x 19	1/4/	.31	.31	.25	.25	.25	.25	.13	.19	-	.25	.25
Oblong	DP-12	DD-12	DS-12			.38 x .75/9.5 x 19	3/16/M8	.38	.38	.31	.31	.31	.31	.19	.25	.31	.31	.31
Oblong	DP-18	DD-18	DS-18			.44 x .75/11.1 x 19	3/8/M10	.44	.44	.38	.38	.38	.31	.19	.31			.31
Oblong	DP-25	DD-25	DS-25			.50 x .75/12.7 x 19	7/16 /M12	.50	.50	.44	.44	.44	.38	.25	.31	.38	.38	.38

*QUALITY OF STEEL REFERENCE TABLE ABOVE

H: Hot Rolled C-1095 Annealed

- A: Mild A-7 B: Boiler Plate
- E: Cold Rolled C-1018 F: Hot Rolled C1050
- G: Hot Rolled C-1095
- K. Stainless
- J: Stainless 304 Hot Rolled K: Stainless 316 Cold Rolled

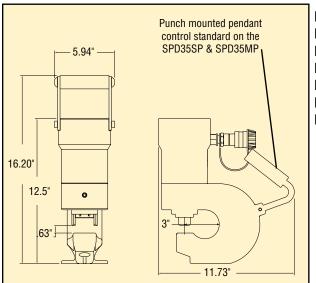
I: Stainless Annealed

Stainless 316 Cold Rolle

C: Structural A-36 D: Struct Corten (ASTM A242)

35 TON DOUBLE-ACTING PUNCH

The Simplex double acting punch provides the best of both worlds. Portable, light weight and easy to carry, this punch is ideal for work at the job site. The double acting design allows for fast high cycle and **hang-up-free stripping and punching**. The optional SPD2041 power pump has one touch hand held control. Just press and hold the advance button on the remote pendant switch to punch the hole, release the button and the punch retracts and strips automatically. The pendant can be mounted to the punch for complete control.



- Light weight, portable punch.
- Double-acting for faster cycle time.
- Hydraulic return for positive, hang-up-free stripping.
- Punch mounted pump control for easy operation.
- Integrated mounting feet for bench top production.
- Uses industry standard punches and dies.
- Ergonomic two handle design provides better balance and control.

Model Number	Punch	Punch & Die Set	Pump	Hose	Weight Punch Only (lbs./kg)
SPD35					
SPD35S		Standard Set			
SPD35SP	SPD35	DS-44, DS-56, DS-69, DS-81	SPD2041	HC6	32/14.5
SPD35M		Metric Set			
SPD35MP		DS-38, DS-44, DS-53, DS-69	SPD2041	HC6	

Contact Factory for additional dimensions.

MAINTENANCE KITS

Simplex Maintenance Kits Can Be Used In Almost Every Maintenance Job!

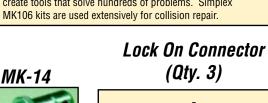


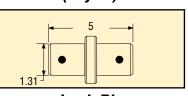
- Set includes a Simplex hand pump, cylinder & gauge with gauge adaptor.
- Heavy duty case included.

HYDRAULIC

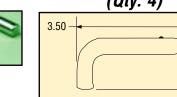
TOOLS

- Rated at 5 tons when attachments are used.
- Quick lock or threaded adaptors included.
- Order as a set or individual components.







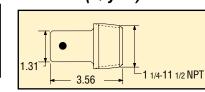


MK-15

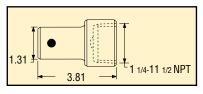
MK-16

MK-17





Female Lock On Adaptor (Qty. 1)

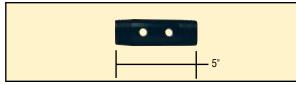


Hydraulic Maintenance Kit Includes

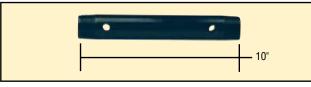
Model Number	Capacity (tons)	Cylinder	Hand Pump	Hose	Gauge	Gauge Adaptor	Attachments	Spreader	Box	Weight (lbs.)
MK106	5	R106	P42	HC6	G5	GA1	MK-4 thru MK-20	S2000	MK-21	84

R106 is rated at 10 tons at 10,000 psi. When using attachments or extensions do not exceed 5,000 psi (5 tons) reading on the gauge. Accessories & extensions are only rated at 5 tons. S2000 Spreader has an operating capacity of 1 ton.

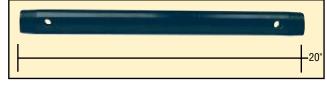
MK-18 5 Inch Extension Pipe (Qty. 1)

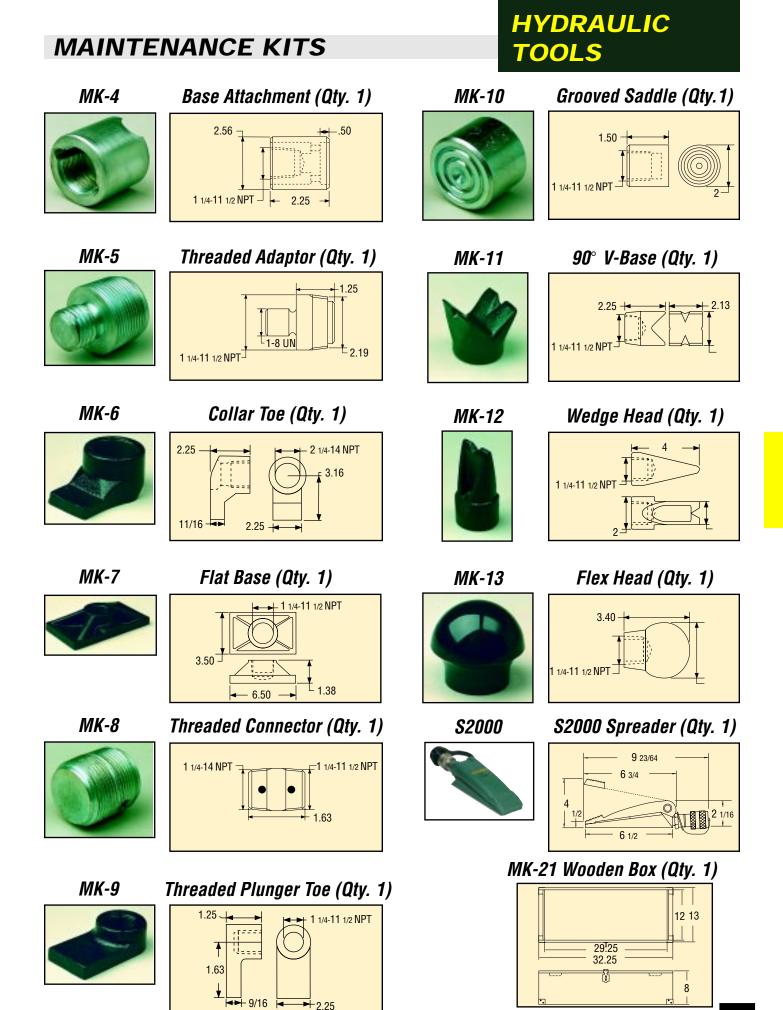


MK-19 10 Inch Extension Pipe (Qty. 1)



MK-20 20 Inch Extension Pipe (Qty. 1)





HYDRAULIC TOOLS

2 & 3 JAW SURE GRIP PULLERS

- Sure Grip features on all pullers.
- Forged alloy steel jaws.
- Rolled "V" threads.
- Hard-Kor[™] cylinders on all Sure Grip pullers.
- Adjusting speed screw on all Sure Grip pullers.
- Machined puller jaw toes.

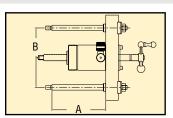
Capacity (tons)	Cap. (tons)	Type of Puller	A Reach (in.)	B Spread (in.)	Cylinder	Hand Pump	Hose	Storage Box
HP172								
HP172C		2 Jaw	11 1/2	16	RC202P			
HP172CP					RC202P	P42	HC6	HPB17
HP173	17 1/2							
HP173C		3 Jaw	11 1/2	20	RC202P			
HP173CP					RC202P	P42	HC6	HPB17
HP302			19 7/16	/16 26				
HP302C		2 Jaw			RC302P			
HP302CP					RC302P	P42	HC6	HPB30
HP303	30							
HP303C		3 Jaw	19 7/16	34	RC302P			
HP303CP					RC302P	P42	HC6	HPB30
HP503								
HP503C	50	3 Jaw	27 5/8	44	RC603P			
HP503CP					RC603P	P82	HC6	HPB50

SURE GRIP PUSH PULLERS

- Sure Grip features on all pullers.
- Heat treated alloy steel cross bolts.
- Rolled "V" threads.
- Hard-Kor[™] cylinders on all Sure Grip pullers.
- Adjusting speed screw on all Sure Grip pullers.

Auxilliary

l one

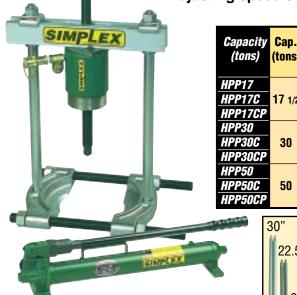


Dumn

Hand Hose Storage

Rov

Z



(tons)	(tons)	Legs	Keach	Spread		Pump		ROX
			(in.)	(in)				
PP17								
PP17C	17 1/2			3 1/8 to 11 3/4	RC202P			
PP17CP		HQA105	22.5		RC202P	P42	HC6	HPB17
PP30								
PP30C	30			7 to 16 1/4	RC302P			
PP30CP	-	HQA110	18		RC302P	P42	HC6	HPB30
PP50								
PP50C	50			8 1/2 to 20 1/2	RC603P			
PP50CP		HQA112	24		RC603P	P82	HC6	HPB50
	30" 22.5' 9.{	<i>Model</i> Length	18"	Auxilliary Legs 30 Ton Puller 8" <i>Model</i> Leng <i>Number</i> (in <u>HQA109 8</u> <u>HQA110 18</u> HQA111 28	r 34	5 24"		(in.) 2 24

В

A

Cylinder

MASTER PULLER KITS

HYDRAULIC TOOLS



HP30M

30 Ton

HP50M

50 Ton

TYPICAL APPLICATIONS
2 & 3 Jaw Puller
Push Puller
Cup Puller
Bearing Puller

Hydraulic Hand Pump P42 P42 P42 Hydraulic Ram **RC202P** RC302P RC202P Hydraulic Hose HC6 HC6 HC6 Gauge G6 G6 G6 Gauge Adapter GA1 GA1 GA1 **Pullers** HP173 & HPP17 HP303 & HPP30 HP503 & HPP50 2 Jaw Conversion Head HQA224 **HQA226** ----HQA105 & HQA106 HQA109 & HQA111 HPP Leg Sets **HQA113 Bearing Puller Attachment** HQ17 HQ30 HQ50 **Bearing Cup Puller** HQA154 **HQA166** ----Speed Crank HQC17 HQC30 HQC50 **Adjusting Screw** HQS17 HQS30 HQS50 **Pushing Adapter** HQA923 & HQA454 HQA510 & HQA511 **HQA755** Male-Female Adapters HQA20 HQA23, HQA28 & HQA36 ----Female Adapter HQA38 HQA36 ----HPB17 HPB30 HPB50 Storage Box

HP17M

17 1/2 Ton

PULLER ACCESSORIES

Male - Female Threaded Adapters

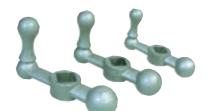
Master Puller Set Includes

Model Number	Female End (in.)	Male End (in.)	Lgth. (in.)	Model Number	Female End (in.)	Male End (in.)	Lgth. (in.)
HQA01	5/8 - 18	5/16 - 18	2 1/4	HQA15	5/8 - 18	3/4 - 10	2 1/4
HQAO2	5/8 - 18	7/16 - 14	2 1/4	HQA16	1 - 14	3/4 - 10	2 1/2
HQAO3	5/8 - 18	7/16 - 20	2 1/4	HQA17	5/8 - 18	7/8 - 14	2 1/4
HQA04	5/8 - 18	3/8 - 24	2 1/4	HQA18	5/8 - 18	7/8 - 9	2 1/4
HQA05	5/8 - 18	3/8 - 16	2 1/4	HQA19	5/8 - 18	1 - 14	2 1/4
HQAO6	5/8 - 18	1/2 - 20	2 1/4	HQA20	1-8	5/8 - 18	3
HQA07	5/8 - 18	1/2 - 13	2 1/4	HQA21	1 - 8	1 - 14	3
HQA08	5/8 - 18	9/16 - 18	2 1/4	HQA22	5/8 - 18	1/8 pipe	2 1/4
HQA09	5/8 - 18	9/16 - 12	2 1/4	HQA23	1 1/4 - 12	1 - 14	4 1/2
HQA10	5/8 - 18	5/8 - 11	2 1/4	HQA24	1 1/4 - 12	1 3/4 - 12	4 1/2
HQA11	1 - 14	5/8 - 11	2 1/2	HQA25	1 1/4 - 7	5/8 - 18	4
HQA12	1 - 14	5/8 - 18	3 3/16	HQA27	1 1/4 - 7	1 - 14	4
HQA13	5/8 - 18	3/4 - 16	2 1/4	HQA28	1 5/8 - 5 1/2	1-8	4
HQA14	1 - 14	3/4 - 16	2 1/2	HQA29	1 5/8 - 5 1/2	1 - 14	4



HYDRAULIC TOOLS

PULLER ACCESSORIES



Speed Cranks

Model Number	Description
HQC17	Speed Crank For 17 1/2 Ton Pullers.
HQC30	Speed Crank For 30 Ton Pullers.
HQC50	Speed Crank For 50 Ton Pullers.



Bearing Pulling Attachment

Model Number	Description
HQ17	Bearing Pulling Attachment For 17 1/2 Ton Puller.
HQ30	Bearing Pulling Attachment For 30 Ton Puller.
HQ50	Bearing Pulling Attachment For 50 Ton Puller.

Pushing Adapters

Model Number	Description	1
HQA923	17 1/2 Ton Puller 1/2" Dia. Shank.	
HQA454	17 1/2 Ton Puller 3/4" Dia. Shank.	
HQA510	30 Ton Puller 3/4" Dia. Shank.	
HQA511	30 Ton Puller 1" Dia. Shank	
HQA755	50 Ton Puller 1" Dia. Shank	

Step Plate Adapters

Model Number	Dia. A (in.)	Dia. B (in.)	Model Number	Dia. A (in.)	Dia. B (in.)
HQA57	1	3/4	HQA66	2 3/8	1 7/8
HQA58	1 1/8	7/8	HQA67	2 1/2	2
HQA59	1 1/4	1	HQA68	2 5/8	2 1/8
HQA60	1 3/8	1 1/8	HQA69	2 3/4	2 1/4
HQA61	1 5/8	1 1/4	HQA70	2 7/8	2 3/8
HQA62	1 3/4	1 3/8	HQA71	3	2 1/2
HQA63	1 7/8	1 1/2	HQA72	3 1/4	2 3/4
HQA64	2	1 5/8	HQA73	3 1/2	3
HQA65	2 1/8	1 3/4			





Adjusting Screws

Model Number	Description
HQA17	Adjusting Screw For 17 1/2 Ton Pullers.
HQA30	Adjusting Screw For 30 Ton Pullers.
HQA50	Adjusting Screw For 50 Ton Pullers.

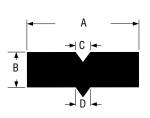


Bearing Cup Pulling Attachment

Model Number	Description
HQ17	Bearing Cup Pulling Attachment For 17 1/2 Ton Puller.
HQ30	Bearing Cup Pulling Attachment For 30 Ton Puller.

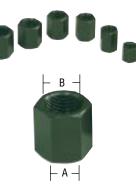
Shaft Protectors

Model Number	A (in.)	B (in.)	C 60° (in.)	D 60° (in.)
HQA50	1 1/2	3/4	3/8	7/16
HQA51	1 1/4	3/4	3/8	3/8
HQA52	1	3/4	3/8	5/16
HQA53	3/4	3/4	1/4	1/4
HQA54	5/8	5/8	1/4	1/4
HQA55	5/8	5/8	3/16	3/16



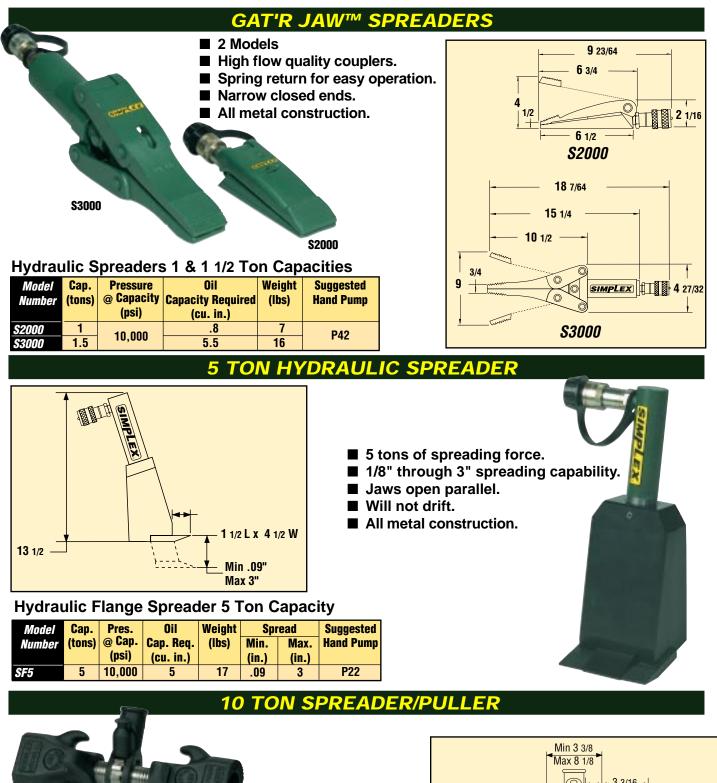
Female Threaded Adapter Set

Model Number	Female End "A"	Female End "B"
	(in.)	(in.)
HQA35	1/2 - 20	5/8 - 18
HQA36	1 - 14	1 - 14
HQA37	5/8 - 18	5/8 - 18
HQA38	5/8 - 18	3/4 - 16
HQA39	5/8 - 18	7/8 - 14
HQA40	5/8 - 18	1 - 14
HQA41	5/8 - 18	1 1/8 - 12
HQA42	5/8 - 18	1 1/4 - 12
HQA43	5/8 - 18	1 1/2 - 12



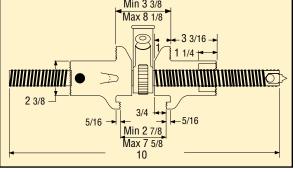
SPREADERS 1 - 10 TONS

HYDRAULIC TOOLS



Mechanical Spreader/Puller 10 Ton Capacity

Model	Cap.	Offset	Travel	Screw	Length	Wt.	Steel Lever Bars Order Length Dia Wgt.					
Number	(tons)	Cap.	(in.)	Dia.	(in)	(lbs)	Order	Length	Dia	Wgt.		
		(tons)		(in.)			Number	(in)	(in)	(lbs)		
610	10	2	4 1/2	1 1/4	10	13	10621	24	3/4	4		



JACKS

INTRODUCTION

SIMPLEX HYDRAULIC & AIR JACKS

2 Through 100 Ton Hydraulic Bottle Jacks

Simplex 2 through 100 ton capacity all purpose jacks are ideal for use in general industrial applications, and are used extensively in maintenance, construction and material handling. The versatility of the Simplex bottle jack has made it a favorite in shipyards, factories, oil fields, mines & general industries.

2 Through 25 Ton Hydraulic Toe Jacks

Simplex hydraulic toe jacks are the solution to all of your low clearance lifting problems. Choose from the widest variety of toe jacks in the industry, with both remote and self-contained units. Capacities range from 2 through 25 tons. The new Simplex TJH2 is a 2 ton self-contained toe jack utilizing 5/8" minimum toe height and over 4" of travel.

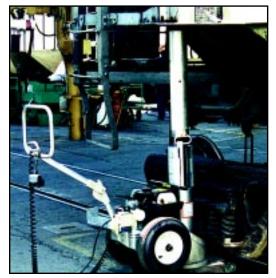
■ 1.5 Through 72 Tons Maxiforce Air Lifting Bags Thin, powerful & light weight, the Simplex Maxiforce Air Bags are the answer to the toughest industrial applications. Starting with a minimum height of 1", Simplex Maxiforce offers high capacity for clearances too small for most conventional jacks. They are ideal for use in railroads, construction, mining, shipyards and industrial applications that require safe, reliable lifting, spreading, bending or pushing. Maxiforce bags are manufactured with neoprene & Kevlar reinforced construction and are safer, stronger and more reliable than any other bag on the market.

■ Pow'r-Riser IITM 60 Through 200 Ton Capacities The Simplex Pow'r-Riser IITM Railcar & Off-Road Equipment Jack has been the industry benchmark for over a decade. Simplex now offers the second generation, the Pow'r-Riser IITM with advanced hydraulic technology and ergonomic handling that makes the jack easier and safer to operate. The Pow'r-Riser IITM is available in 60, 100, 150 & 200 ton capacities with electric or air power sources. The Pow'r-Riser IITM, mixed with the extensive line of drop-in extenders and spacers, can fit under any railcar or off-road truck in the industry. The ergonomic 3 position handle makes the Pow'r-Riser IITM the easiest jack of its kind to maneuver into and out of position. The Pow'r-Riser IITM also comes with optional u-rings to hold the load mechanically in place.



APPLICATION SELECTION GUIDE JACKS

POW'R-RISER II™ RAILCAR & OFF-ROAD TRUCK JACK

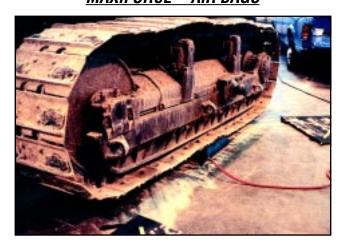


■ For Portable, Self-Contained Jacks, Nothing Beats the Simplex Pow'r-Riser IITM Railcar Jack. While short enough to fit under the lowest loads, operators can add up to 32" of drop in extenders for maximum flexibility. Dual hydraulic locking systems and mechanical lock rings make the Pow'r-Riser IITM the safest jack available.



■ When It Comes To Brute Force In a Roll Under Jack, nothing even comes close to the Simplex Pow'r-Riser IITM. With capacities up to 200 tons and powered by standard shop air or 115VAC, the Simplex Pow'r-Riser IITM is ideal for the largest maintenance jobs. From the heaviest railcar to the largest mining equipment, Pow'r-Riser IITM is the only choice.

HYDRAULIC TOE JACKS



■ Construction, Maintenance, and Safety and Rescue are just a few of the applications perfect for the Maxiforce[™] air lifting bags. Light weight, easy to position and extremely low in profile, Simplex Maxiforce[™] air bags offer solutions to the most difficult applications.



Simplex Toe Jacks Have Been a Long Time Industry Standard. Today, hydraulic toe jacks offer more power, more safety and more flexibility than ever before. Over 100 years of jacking experience goes into every toe jack Simplex supplies. When it comes to using the safest toe jack available, railroads, mines, machinery movers and heavy industry insist on Simplex.

MAXIFORCE™ AIR BAGS

JACKS

HAND JACKS

Simplex Hydraulic Jacks Prove To Be A Universal Tool.





"We needed a jack of all trades." Applications ranged from spreading, leveling, lifting and holding for the maintenance crew at a large steel fabrication plant. "The Simplex Jacks are the best utility tool for the wide variety of jobs that come up day after day."



13 Models

- Drop forged base and rugged welded construction.
- Operates in horizontal position with handle down.
- All models include over travel protection.
- Grooved saddles help prevent load slippage.
- 2 22 ton models include screw extensions.
- Piston rods are chrome plated to resist corrosion.
- 30 ton center hole model.
- Super low height jacks in 12 & 22 ton models.
- Service kits are available for all models.

HEW!		Cap. (tons)		Stroke (in)	Ext. Screw Ht. (in)	Max. Ht. (in)	Base Area (in)	Piston Dia. (in)	Center Hole Dia. (in)	Max. Handle Effort (lbs)	Weight (Ibs)
- JEW:	HJ2/L	2	21 21/32	9 21/32		40 35/64	5 9/32 x 3 1/32	1 9/64		51	19.2
Zynn	<u>HJ2</u>	2	7 1/8	4 1/2	2	13 5/8	4 3/8 x 2 5/8	3/4		64	5.3
	HJ3	3	7 1/2	4 1/2	2 3/8	14 3/8	4 1/2 x 2 7/8	7/8		64	7.3
	HJ5	5	7 7/8	4 3/4	2 3/4	15 3/8	5 1/4 x 4	1 1/4		48	8.2
	HJ8	8	7 7/8	4 3/4	2 3/4	15 3/8	4 x 3 1/2	1 3/8		69	12.8
	HJ12	12	9 1/2	5 7/8	3 1/8	18 1/2	6 1/2 x 4 1/4	1 5/8		73	19.7
	HJ12/LP	12	6 3/4	3 3/4	3	13 1/2	4 1/2 x 2 7/8	1 5/8		73	15.0
	HJ22	22	10 5/8	6 3/8		17	7 1/4 x 5 5/8	2 1/8		73	29.8
	HJ22/LP	22	7 1/8	3 3/8	1 5/8	12 1/8	7 1/4 x 5 5/8	2 1/8		73	24.3
	HJH330	30	9 1/8	3 1/4		12 3/8	5 3/8 x 6 7/8	1 1/8	1 1/8	125	32.0
	HJ35	35	11	6 3/8		17 3/8	7 5/8 x 5 5/8	2 1/2		69	45.2
	HJ55	55	12	6 3/4		18 3/4	9 3/8 x 7 3/8	3 1/4		73	97.0
J'WIF Z	HJ100	100	12	6 23/32		17 23/32	12 33/64 x 10 7/16	4 29/32		93	194.0



Note: Handles are included with all models.

TOE JACKS

JACKS

Simplex Toe Jacks Are The Heavy Haulers & Structural Movers First Choice.



Note: Handles Are Included With All Self-Contained Models.

Toe Jacks - Remote

TJH105A

TJH109A

Model Number			Minimu	m Height	Base Area	Res. Cap.	Pres. @ Cap.	Туре	Weight (lbs)
	(10110)	(,	Toe (in)	Cap (in)	(in)	Reqd. (cu in)	(psi)		
TJR109	10	9	2 1/4	22 1/8	6 1/2 x 10	53	6,500	S/A Spring Return	45
TJR159	15	9	2 1/4	17 1/8	8 1/2 x 12	33	6,225	D/A Hyd. Return	57

Note: To use Simplex Remote Jacks with existing pumps or hoses, order Coupling Adaptor #85383 separately.

JACKS

MAXIFORCE AIR LIFTING BAGS

Simplex Maxiforce Air Bags Are The Perfect Choice for Low Clearance Lifting.



1.5 Through 72.3 Ton Capacities

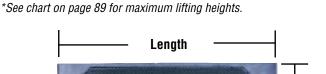
Model	Cap.	*Max.	Bag Di	mensio	ns (in)	Air Req.	Max.	West
Number	(tons)	Lifting Hts. (in)	Length (in)	Width (in)	Thick (in)	@118 PSI (Cu. Ft.)	Burst Pres. (PSI)	Wgt. (Ibs)
B1	1.5	3.4	6	6	.6	.14	(1 01)	1.1
B3	3.2	3.9	6	12	.6	.35		2.2
B5	4.8	5.6	10	10	.6	.77		3.1
B 8	7.6	7	12	12	.6	1.8	700	6
B10	11.4	7	18	12	.8	2.5		9
B12	12	8.2	15	15	.8	3.0		8
B 17	17	9.2	21	15	.8	4.9		11
B22	21.8	11.1	20	20	.8	7.3		15
B28	27.6	12	20	26	.8	11		19
B32	31.8	13.2	24	24	.8	13.8	600	21
B35	34.7	9.8	42	15	.8	11.7		22
B44	43.8	15.5	28	28	.8	21.6		29
B55	55	17.2	32	32	.8	34	475	40
B74	72.3	20	36.6	36.6	1	47		60





Here air bags are used to position casters for machine maintenance. "The Maxiforce™ air bags gave us the precise control we needed while leveling the machinery."

- 14 models with capacities ranging from 1.5 through 72.3 tons.
- Maxiforce air bags operate on standard shop air up to 118 psi.
- Maxiforce air bags will fit into the tightest areas with collapsed heights of 5/8" to 1".
- All models include 3 ply Kevlar with neoprene.
- Serrated lifting surface on each side of the air bag helps prevent load slippage.
- Multi-color hoses to keep track of bags during multi-bag lifts.
- Wide variety of safety controllers for single & multiple bag systems.
- Bright yellow "X" is molded into each side for easy center point placement.
- Light weight makes the Maxiforce air bags easy to set up.
- Most bags come with side holes for attaching bags together.



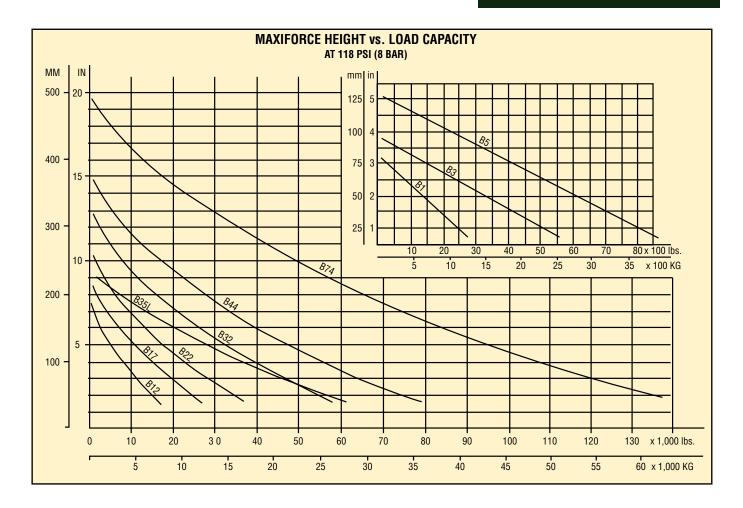


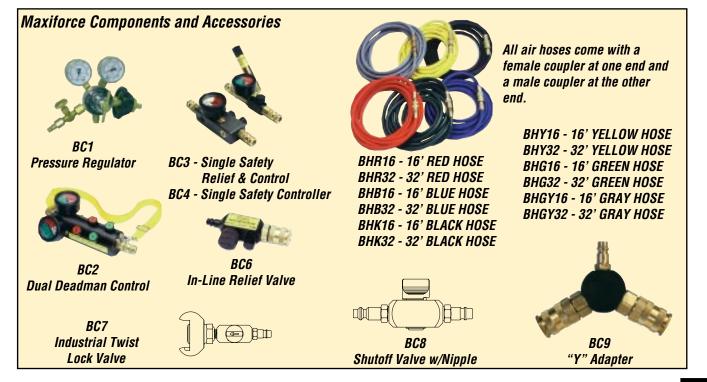


Two 72.3 ton capacity air bags are used for tire maintenance and axle inspection on off-road mining equipment.

MAXIFORCE AIR LIFTING BAGS

JACKS





JACKS

POW'R-RISER II

Simplex Pow'r-Risers Are The Ideal Choice for Railcar & Off-Road Equipment Jacking.



Simplex jack due to its

easy transport and the many optional extensions and lock rings that gives us the safe use required in mining operations."

Model Number	Capacity (tons)	Min. Height (in.)	Stroke (in.)	Motor	Max. Additional Stack Ht. Using Optional Extension System	Control Valve	Power Source	Noise Level (Db)	Weight (Ibs.)
JA6024		24	14	Air			Air Motor	89	390
<u>JA6037</u>	60	37	27		32*	Manual	50 CFM 80 PSI		600
JE6024		24	14	Electric	02		115 VAC	80	390
JE6037		37	27				50/60 Hz 20 amps		600
JA10026		26	16			Manual			510
JA10037		37	27	Air		manuar	Air Motor	89	600
JAS10026		26	16			50 CFM 80 PSI		510	
JAS10037	100	37	27		21** 20' Pe	20' Pend.			600
JE10026		26	16			Manual			510
JE10037		37	27	Electric				80	600
JEB10026		26	16				230/460 VAC		530
JEB10037		37	27				3 Phase		620
JAS15026		26	15 1/2	Air		Remote	Air Motor	89	570
JAS15037		37	26 1/2			20' Pend.	50 CFM 80 PSI	05	708
JE15026		26	15 1/2				115 VAC		570
JE15037	150	37	26 1/2	_	21**		50/60 Hz 20 amps		708
JEB15026		26	15 1/2	Electric		Manual	230/460 VAC	80	590
JEB15037		37	26 1/2				3 Phase		728
JAS20026	200	26	15 1/2	Air	Contact Eastern	Remote	Air Motor	89	640
<i>JAS20037</i>	200	37	26 1/2	AI		20' Pend.	50 CFM 80 PSI	09	825

* Based on (1) 18" and (1) 11" extension and (1) 3" spacer.

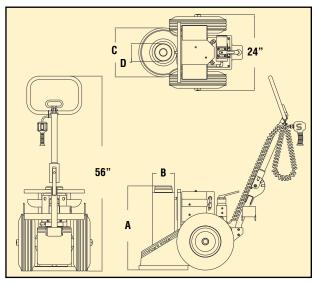
**Based on (1) 18" extension and (1) 3" spacer.

WARNING: Any two extensions may be stacked for loads up to 60 tons per jack. For loads from 60 tons to 150 tons only 1 extension and 1 spacer can be used.

POW'R-RISER II

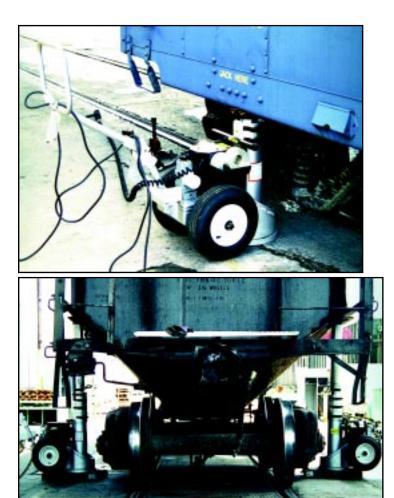
NOTHING ELSE IS EASIER OR SAFER:

- 24", 26" & 37" Minimum Heights.
- 60, 100, 150 & 200 ton capacities to handle the toughest jobs.
- Sup'r-Stack[™] extension system gives the jack a wide variety of minimum heights.
- **3** position handle for easy tilt back and rolling.
- 4" of ground clearance for rough terrain.
- Mechanical lock rings for fail safe holding.
- Easy to change external filter minimizes down time.
- Only 24" wide/fits in tight spots.
- Air pilot or 24 VAC pendant with 20' cord for remote operator safety.
- Dual hydraulic locking systems prevent creep down.
- Equipped with a pilot-operated check valve which locks the load in place to prevent accidental lowering.



JACKS

Model Number	"A" (in.)	"B" (in.)	"C" (in.)	"D" (in.)
JE6024	24	6.38	14	4
JE6037	37	6.38	14	-
JE10026	26	7	18	4
JE10037	37	7	18	-
JE15026	26	8	18	5
JE15037	37	8	18	U
JAS20026	26	10		•
JAS20037	37	10	18	6



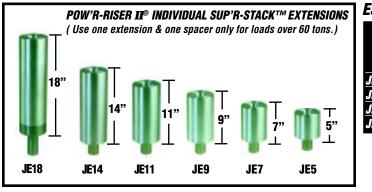
NOTHING ELSE COMES CLOSE:

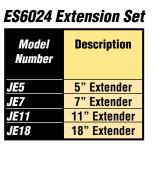
- Rugged, fully enclosed frame; no exposed fittings or hoses.
- **Runs on air or 115 VAC, 15 amp service.**
- Secondary back-up filtration system for reliability.
- Light weight for greater mobility and less back strain.
- Optional dual porting for use with remote cylinders.
- Automatically controlled, "chatter free" load lowering for maximum safety in descent.
- All Pow'r-Riser II[™] models comply with ASME/ANSI B30.1 Specifications.

JACKS

POW'R-RISER II/ACCESSORIES

The Simplex Pow'r-Riser II, When Used With Sup'r-Stack™ Extension Set and Spacer Set, Can Handle All Rail Cars and Off-Road Equipment Without Blocking.







Swivel Load Cap

Model Number	Description
JTS60	60 & 100 ton
JTS150	150 ton

Min. & Max. Height For Lifting Can Be Achieved By Using The Following Spacer/Extender Combination

Min. Height	25	26	27	29	30	31	32	33	34	35	36	37	38	40	42	43	44	45	47	48	49	50	51	52	53	54	55	56
Ext. Height	39	40	41	43	44	45	46	47	48	49	50	51	52	54	56	57	58	59	61	62	63	64	65	66	67	68	69	70
Spacer					_1		_1	₊ 2	_ 3		_1	_ 2	_ 3	_ 5		_ 1	_ 2	_ 3	_ 5	_1	_ 7	_1	_ 2	_ 3	_11	_1	₊2	_3
Drop-In Extender	1	2	3	5	5	7	7	7	7	11	11	11	11	11	18	18	18	18	18	_ 5	18	7	_ 7	_ 7	18	_11	_11	_11
Combination																				18		18	18	18		18	18	18

Use tallest extender on the bottom.

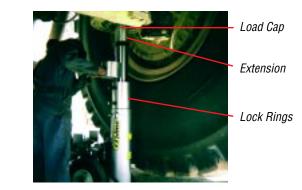
POW'R-RISER II® SPACER SET - JS4



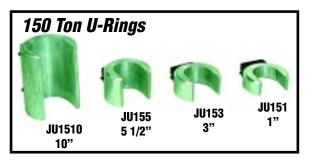
Fine tune your extension stack height by adding 1", 2" or 3" spacer.

Spacer _____

Load Cap -



60 & 100 Ton U-Rings JU14 JU13 JU11 10" JU14 3" 1"

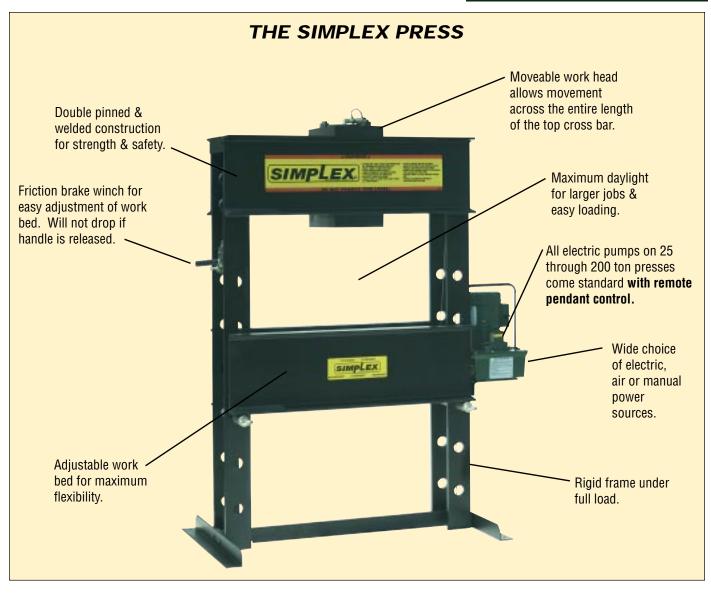


POW'R-RISER II® LOCKING U-RING SETS

Model Number	Models Used On	Contains
JUS126	60 Ton 24"/100 Ton 26"	(2) JU11 - 1", (1) JU13 - 3", (2) JU14 - 4 1/4"
JUS137	60 Ton 37"/100 Ton 37"	(2) JU11 - 1", (1) JU13 - 3", (2) JU14 - 4 1/4", (1) JU110 - 10"
JUS1526	150 Ton 26"	(2) JU151 - 1", (1) JU153 - 3", (2) JU155 - 5 1/2"
JUS1537	150 Ton 37"	(2) JU151 - 1", (1) JU1510 - 10", (2) JU155 - 5 1/2"
JUS20026	200 Ton 26"	(2) JU201 - 1", (1) JU203 - 3", (2) JU205 - 5 1/2"
JUS20037	200 Ton 37"	(2) JU201 - 1", (1) JU2010 - 10", (2) JU205 - 5 1/2"

INTRODUCTION

PRESSES



THE SIMPLEX PLUS

■ Wide Variety

Simplex offers presses with capacities from **5 through 200 tons**. Choose from a wide range of pressing, cylinder strokes & styles, and your choice of Simplex manual or power pumps. Choose from C-Frame or H-Frame designs.

■ Heavy Duty Construction/ Built for Safety

Simplex presses do not rely on "bolt together" construction for strength. Simplex H-Frames employ **double pinned and heavy duty welded construction**. This construction provides a frame that **is rigid** and provides an extra margin of safety.

Maximum Flexibility

All Simplex H-Frame Presses include a **moveable work head** that easily rolls across the **entire length** of the top cross bar. This allows the pressing force to be positioned at any point of the press bed. The **adjustable work bed** can be raised or lowered to accommodate a wide variety of jobs.

■ Maximum Daylight

Simplex presses have **large work areas** that accommodate larger jobs and makes loading and unloading easier. **Open sides** have large clearances for loading work through the side daylight.

Easy To Use

H-Frame (25 ton & up) includes a friction brake winch that **adjusts the bed height** effortlessly and will not drop the bed if the handle is released (no kick back). The wide choice of pumps & valves provides a variety of controls. Moveable work head incorporates rollers for easy positioning.

Custom Build Your Press

Along with many standard models you can build custom presses by ordering the press without a pump. Order separately any Simplex pump & pump mounting kit that meets your requirements & you're ready for operation.

PRESSES

ACCESSORIES

CYLINDER MOUNTING BLOCK KITS

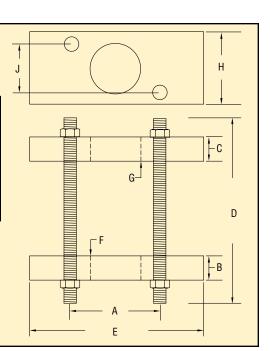
Cylinder	Presses Used On	A	В	C	D	Е	F	G	H	ſ
Mounting		(in)	(in)	(in)	(in)	(in)	Thrds.	(in)	(in)	(in)
Block Kit							UN-2B (in)			
MC25	25 Ton Single Acting	5	1 1/2	1	12	10 3/4	3 5/16 x 12	3 1/2	6	*
MCD30	30 Ton Double Acting	5	1 1/2	1	12	10 3/4	3 5/16 x 12	4 1/8	6	*
MC55	55 Ton SA & DA	5	2	1 1/4	16	13 1/4	5 x 12	5 1/4	10	5
MC100	100 Ton Single Acting	7 21/32	2 1/2	2	21	16 1/2	6 1/4 x 12	7 1/4	10	6
MCD100	100 Ton Double Acting	7 21/32	2 1/2	2	21	16 1/2	7 x 12	7 1/4	10	6
*Inline on cen	ter									

Cylinder Block Kits Contain:

(1) Top and bottom plate

(2) Threaded Rods

(2) Adjusting Nuts

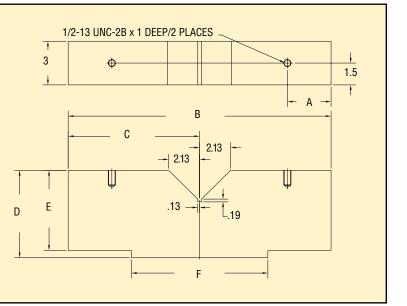


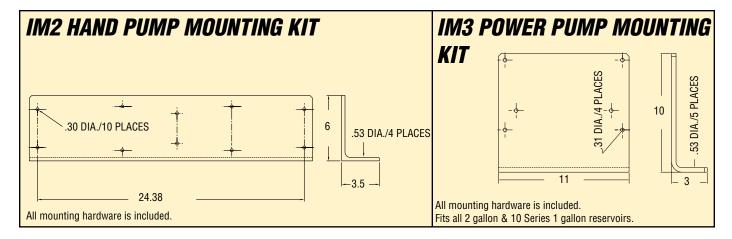
V-BLOCK KITS

Cylinder Mounting Block Kit	Presses Used On	Contains
IVB55	55 Ton Presses	
IVB100	100 Ton Presses	(2) V-Blocks

V-BLOCK DIMENSIONS

Cylinder Mounting Block Kit	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)
IVB55	2.5	14.75	7.38	5	4.5	7.63
IVB100	3	18.06	9.03	6	5.5	9.38





H-FRAME BENCH 10 & 15 TONS

Only Simplex offers Bench Presses with up to 15 ton capacities, moveable work heads and adjustable beds for maximum flexibility. For small production jobs, the adjustable bed eliminates wasted time approaching the work. IPB1010 & IPB1510 presses include a 10" stroke cylinder.

Model Number w/Cyl.	Cap. (tons)		Ram	Stroke (in.)	Model Number w/o Cyl.	Weight (lbs.)
IBP1010	10	S/A	R1010	10 1/8	IPB10	142
IBP1510	15	0/A	R1510	10	IPB15	150

- 10 or 15 ton capacities.
- Adjustable bed.
- Moveable work head.
- Wide variety of power sources.
- Large daylight.
- Heavy duty construction.

Ordered Separately

Capacity (tons)	Suggested Hand Pump	Suggested Electric Pump	Suggested Hose	Suggested Gauge	Gauge Adaptor	Weight (lbs.)
10 ton 15 ton	P42	PEM2031	HC6	G6	GA1	130

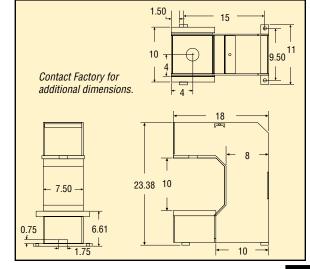
C-FRAME 5 & 10 TONS



The IPC5 & IPC10 Series hydraulic presses provide up to 5 or 10 ton capacities. Choose from a wide range of electric or air hydraulic power sources.

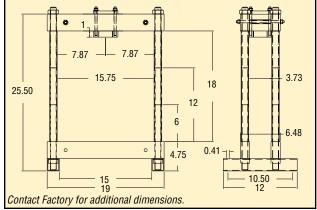
All models incorporate an open throat design that makes loading and unloading larger jobs fast and easy.

Model Number	Type of C-Frame	Capacity (tons)	Stroke (in.)	Weight (lbs.)
IPC5	R59 Cylinder Only	5	9	103
IPC10	R1010 Cylinder Only	10	10	110



- Strong welded construction.
- Open throat design for easy loading.
- Mounting holes for solid bench mounting.
- Available with air, electric or manual power sources.





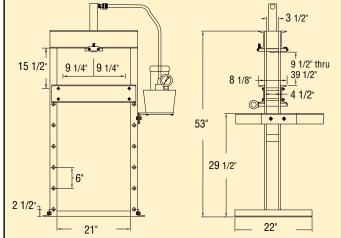
PRESSES

PRESSES

H-FRAME - 10 TONS

10 Ton Press Used In Assembly Of Manual Hoists.





10 Ton H-Frame Press

- Single or double acting models available.
- Large daylight with open sides for easy loading.
- Heavy duty welded construction.
- Rigid frame under full load.
- Moveable work head for maximum versatility.
- Adjustable work bed.
- Compact & portable.
- Includes tonnage gauge.
- IED & IES Series comes with pendant control.



A manufacturer of small hoists performs light assembly effortlessly using the Simplex IMS-1010 ten ton press. "We use the press for a variety of light work that varies from job to job. The compact size doesn't take up a lot of floor space, and we can easily move the press to different locations in the shop."

Model	Model	Type of	Cylinder	Type of	Pump	Operation	Speed (in/min)	Weight	Weight
Number Without Pump	Number With Pump	Cylinder	Stroke (in)	Pump	Model		Advance	Pressing	With Pump (Ibs)	Without Pump (Ibs)
	IA\$1010	R1010 Single		Air Powered	PA91		31	4.5	202	
IS1010	IES1010	Acting 10 Ton	10 1/8	Electric Powered	PEM1021	Advance	104	9	204	172
	IMS1010	Capacity		Manual	P42	Hold	.38*	.06*	208	
ID1010	IED1010	RDA1010 D/A	10	Electric Powered	PEM1041	Retract	104	9	226	188
	IMD1010	10 Ton Canacity		Manual	P140D		1*	.10*	236	

* Inches Per Stroke.

Custom Build Your Press by ordering press models without pumps. For foot or pendant control, higher pressing speeds or optional pump motors order separately the Simplex pump and pump mounting kit that meet your requirements, and you're ready for operation.

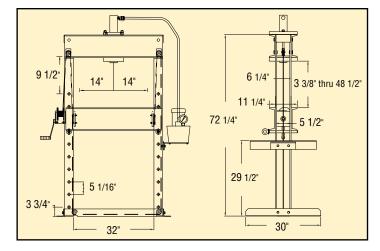
Pump Mounting Kit For Hand Pumps Model IM2 For Power Pumps Model IM3 See Page 94

H-FRAME - 25 & 30 TONS

PRESSES

Simplex 25 Ton Press Reduces Production Line Down Time.





25 and 30 Ton H-Frame Press

- Large daylight with open sides for easy loading.
- Heavy duty welded construction.
- Rigid frame under full load.
- Moveable work head for maximum versatility.
- Adjustable work bed with friction brake winch.
- Wide choice of pumps & pressing cylinders.
- Includes tonnage gauge.
- IED & IES Series comes with pendant control.



A manufacturer of industrial gear boxes used the Simplex 25 ton press in their production assembly line to press various size bearings on gear assemblies. "We can press up to 100 bearings an hour with the Simplex press. The hydraulics are reliable and easy to use and they keep working day after day."

Pump Mounting Kit							
For Hand Pumps	Model IM2						
For Power Pumps	Model IM3						
See Page 94							
Cylinder Mou	nting Kit						
Single-Acting	Model MC25						
Included with Press							
See Page 94							

Model	Model	Type of	Cylinder		Operation	Speed (in/min)	Weight	Weight	
Number Without Pump	Number With Pump	Cylinder	Stroke (in)	Pump	Model		Advance	Pressing	With Pump (Ibs)	Without Pump (Ibs)
	IAS256	R256/	6	Air	DA01		14	2	417	
	IAS2514	R2514	14	Powered	PA91		14	2	433	
IS256	IES256	Single	6	Electric	DEM4004		50	4	419	387
IS2514	IES2514	Acting	14	Powered	PEM1021	Advance			435	403
	IMS256	25 Ton	6	Manual	P140	Hold	.5*	.05*	423	
	IMS2514	Capacity	14	Powered	P140	Retract	.0	.00	439	
ID3014	IED3014	RD43014	RDA3014 14 Electric Manual	Electric	PES3042	1	40	3	462	428
100014	IMD3014			P140D		.5*	.05*	458	420	

* Inches Per Stroke.

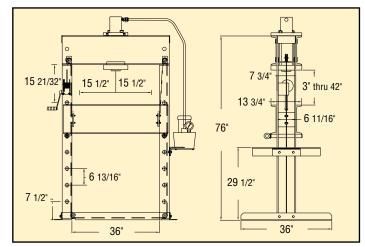
Custom Build Your Press by ordering models without pumps. For foot or pendant control, higher pressing speeds or optional pump motors order separately the Simplex pump and pump mounting kit that meet your requirements, and you're ready for operation.

PRESSES

H-FRAME - 55 TONS

Simplex 55 Ton Press Handles Hundreds Of Different Jobs At Industrial Repair Shops.





55 Ton H-Frame Press

_					•	
	l arge d	lavliaht v	with oner	eahie i	for easy	/ loading.
	Luigeu	ayngnu		1 31463	ioi cubj	, ioaanig.

- Heavy duty construction.
- Rigid frame under full load.
- Moveable work head for maximum versatility.
- Adjustable work bed with friction brake winch.
- Wide choice of pumps & pressing cylinders.
- Choose double-acting presses for fast retraction.
- Includes tonnage gauge.
- IED & IES Series comes with pendant control.



Repair personnel were faced with a variety of difficult bending, pressing, straightening and disassembly jobs. "Almost every day we have to remove bearings, straighten cylinder rods, perform wheel repair, and rebuild gear boxes. The 55 ton press is perfect; it's adjustable bed and moveable work head gives us the flexibility to work on a wide variety of jobs."

Pump Mour For Hand Pumps For Power Pumps See Page 94	Model IM2
Cylinder Mon Single & Double Ac Model MC55 See Page 94	•
Optional V Come in Pairs See Page 94	-Blocks Model IVB55

Model	Model	Type of	Cylinder	Type of	Pump	Operation	Speed (in/min)		Weight	Weight
Number Without Pump	Number With Pump	Cylinder	Stroke (in)	Pump	Model		Advance	Pressing	With Pump (Ibs)	Without Pump (Ibs)
IS556	IES556	R556 S/A	6		DEM1001		00	0	707	675
IS5513	IES5513	R5513 S/A	13	Electric	PEM1021	Advance	23	2	735	703
ID556	IED556	RDA556 D/A	6	Powered	DE0 40 40	Hold	95	F	748	710
ID5512	IED5512	RDA5512 D/A	12		PES4042	Retract	35	5	793	755
	IMS556	R556 S/A	6	Manual	P140		.25*	.02*	711	

* Inches Per Stroke.

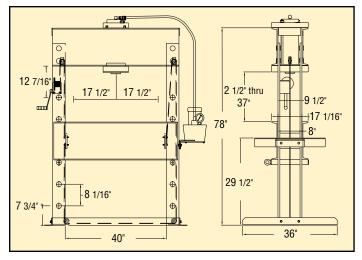
Custom Build Your Press by ordering models without pumps. For foot or pendant control, higher pressing speeds or optional pump motors order separately the Simplex pump and pump mounting kit that meet your requirements, and you're ready for operation.

H-FRAME - 100 TONS

PRESSES

Simplex Presses Enhance Safety In High Force Pressing.





100 Ton H-Frame Press

Speed (in/min) Model Model Type of Cvlinder Type of Operation Weight Pump Weight Number Stroke Model With Pump Without Number Cylinder Pump Without With (in) Advance Pressing (lbs) Pump Pump Pump (lbs) IS1006 IES1006 R1006 S/A 6 1558 1470 **PES4032** Advance 19 2 3/4 IS10010 <u>IES10010</u> R10010 S/A 10 Electric 1578 1490 Hold ID1006 **RDA1006 D/A** IED1006 6 1620 1532 Powered **PES4042** Retract 19 2 3/4 ID10012 IED10012 RDA10012 D/A 12 1655 1567

Custom Build Your Press by ordering models without pumps. For foot or pendant control, higher pressing speeds or optional pump motors order separately the Simplex pump and pump mounting kit that meet your requirements, and you're ready for operation.

- Moveable work head for maximum versatility.
- Large daylight with open sides for easy loading.
- Heavy duty construction.
- Rigid frame under full load.
- Adjustable work bed with friction brake winch.
- Wide choice of pumps & pressing cylinders.
- Choose double-acting presses for fast retraction.
- Includes tonnage gauge.
- IED & IES Series comes with pendant control.



A machine shop needed to straighten forgings prior to machining. "We needed a pressing force of 100 tons and we didn't want to cut corners when it came to safety. Simplex presses do not rely on "bolt together" construction. Heavy duty pins, plus strong, welded construction across the upper bolster, puts the strength where it needs to be."

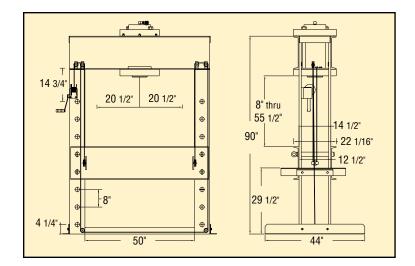
•	ounting Kit
For Power Pumps	Model IM3
See Page 94	
Cylinder N	Aounting Kit
Single-Acting	Model MC100
Double-Acting	Model MCD100
Included with pre	SS.
See Page 94	
Optiona	l V-Blocks
Come in Pairs	Model IVB100
See Page 94	

PRESSES

H-FRAME 150-200 TONS

Simplex Monster Press Used In Rail Car Maintenance.





- Remote control.
- Fast double-acting hydraulics.
- Large daylight with open sides for easy loading.
- Moveable work head for maximum versatility.
- Adjustable work bed with friction brake winch.
- Heavy duty pin & welded construction frame.
- Rigid frame under full load.
- Includes Tonnage Gauge.
- IED Series comes with pendant control.



Rail car repair shops are constantly faced with large jobs, reforming rail car components, installing and removing bolster parts and straightening or bending under-carriage assemblies. These applications require a reliable and safe high tonnage press. "The Simplex Monster Press gave us just what we were looking for, a large work area and easy operation."

> Presses ordered with pumps include remote pendant control and large 5 gallon reservoir. The pump is floor mounted.

150 & 200 Ton H-Frame Press

Model	Model	Type of	Cylinder	Type of	Pump	Operation	Speed (in/min)		Weight	Weight
Number	Number	Cylinder	Stroke	Pump	Model				With Pump	Without
Without	With		(in)	_			Advance	Pressing	(lbs)	Pump
Pump	Pump							-		(lbs)
ID15012	IED15012	RDA15012 D/A	12	Electric	PES6045	Advance, Hold	20	4.5	3035	2839
ID20013	IED20013	RDA20013 D/A	13	Powered	230 3 Ph.	Retract	14	3.5	3180	2984

Custom Build Your Press by ordering models without pumps. Order separately any Simplex pump and pump mounting kit that meet your requirements, and you're ready for operation.

INTRODUCTION

TORQUE WRENCHES

SIMPLEX HYDRAULIC TORQUE WRENCHES

Wide Variety

Simplex offers a wide variety of hydraulic torque wrenches available in light weight Square Drive design or the flattest Low Clearance wrenches available. These tools are the most versatile in the business. Optional attachments and accessories are available to complement both style wrenches.

WT-Series Square Drive Wrenches

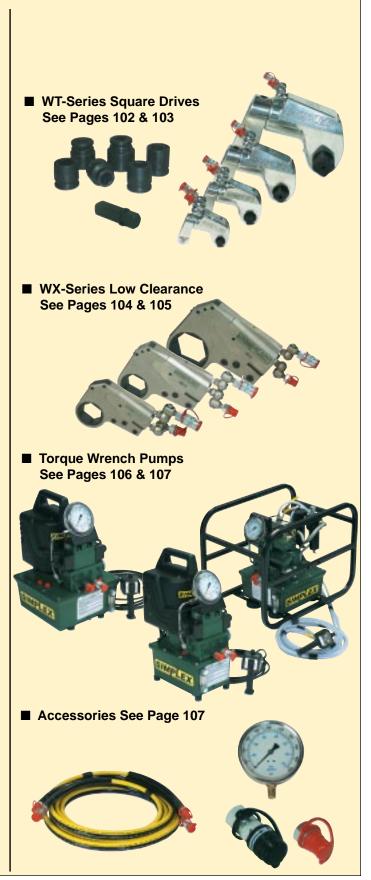
The Simplex Square Drive wrench combines strength and simplicity to handle the toughest bolting jobs. Simplex square drive wrenches come with a push through drive in the 3/4", 1" and 1 1/2" models, eliminating pulling the drive out of a wrench to change drive direction. The WT-Series wrenches can react off the wrench body for close quarter applications. Several optional accessories are available.

■ WX-Series Low Clearance Wrenches

Simplex Low Clearance wrenches are the flattest wrench available, utilizing a patented low height piston. The Simplex WX series wrenches fit in places competitive wrenches cannot. The low clearance wrenches have a wide choice of links available in 1/16" increments. Metric sizes are also available. Several optional accessories are available such as hex reducers, hex to square drive adaptors and different reaction arms.

Torque Wrench Pumps and Accessories

Simplex torque wrench pumps are available in both electric and air power. Simplex electric pumps are smooth running, continuous duty pumps with permanent magnet motors that will start and run under full load on as little as 60 VAC. An integrated auto shut-off switch, along with aluminum reservoir, keep the oil and pump cool and helps prevent pump breakdown. Hoses are twin style with a 4:1 safety factor and the pump mounted gauge reads out in 100 psi increments.



SQUARE DRIVE WRENCHES



When roller coasters at a popular theme park needed maintenance, park engineers called on Simplex for solutions. Assembly of a critical drive shaft required precision torquing and minimal down time. Simplex power units and square drive wrenches filled the park's needs, saving significant cost and down time.

Order #: WCH-1

Optional Wrench Handle Optional handles are available for the WT-5, WT-10 & WT-27. The handle can be screwed on either side of the wrench or on top of the wrench.





TORQUE

WRENCHES

require fast & accurate torquing for change out & maintenance. This rail car maintenance shop relies on a Simplex torque wrench to quickly & easily torgue bolts to demanding railroad specifications. "The compact size fits where other wrenches would not & provides more than enough power to do the job right."

Do Not React off Post SIMPLEX 0

SQUARE DRIVE WRENCH SPECIFICATIONS

Model Number	A Lenath	B Lenath	C Heiaht	D Width	E Width	F Width	G Radius	H Height	l Lenath	Wgt. (lbs.)			Available Socket	Available Socket
	(in.)	(in.)	(in.)	(in.)		(in.)	(in.)	(in.)	(in.)		,	(in.)	Size	Size
													(in.)	(mm)
WT-2	4.68	6.10	4.20	2.00	2.76	4.42	0.98	3.42	5.32	3.90	1,270	3/4	1/2 - 2 3/8	13 - 60
WT-3	6.10	8.10	5.30	2.62	3.68	5.81	1.30	4.54	6.68	9.00	3,330	1	3/4 - 4 1/2	19 - 114
WT-5	8.00	10.74	6.99	3.61	5.06	7.98	1.70	6.05	9.48	19.00	7,170	1 1/2	1 5/16 - 5 3/8	33 - 137
WT-10	9.21	12.21	7.79	3.93	5.43	8.72	1.95	6.70	10.36	29.00	11,010		I 5/10 - J 5/0	00 107
WT-27	12.29	16.29	10.19	5.26	7.73	11.63	2.43	8.82	13.87	70.00	27,200	2 1/2	1 5/8 - 9 1/4	41 - 235

Push through square drive switches from loosen to tighten instantly.

body without risk of damage.

■ Alloy square drive <u>GUARANTEED</u> not to break.

■ Torque chart & safety information engraved on the tool.

■ Slim nose radius for easy positioning in close quarters.

■ No leak couplers that swivel on double axis for easy operation.

■ Special reaction arms and reaction arm extensions available. ■ Anti-backlash mechanism prevents tool from backdriving.

■ Internal reaction arm spline allows operator to react against the tool

■ Compact Uni-Body design for maximum strength.

■ No reaction pawl, <u>ELIMINATES</u> tool lockup.

■ 27° Stroke for high performance and speed.

Custom wrenches available upon request.

■ Light weight, high torque ratio.

■ Accurate to within ⁺ 3%.

102

Rail car shock mounting bolts

SQUARE DRIVE WRENCHES

TORQUE WRENCHES

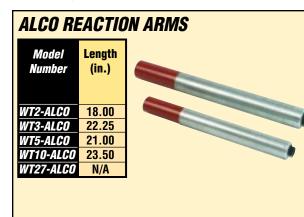


Model Model Model Model Number Socket Socket Socket Model Socket Socket Model Number Socket for 1 1/2" Drive Number for Size Number for Size Number for Size Number for Size Size for 1 1/2" Drive Size 1" Drive 3/4" Drive (in.) 1" Drive (in.) 1" Drive (in.) (in.) WT-5 & 10 (in.) WT-5 & 10 (in.) WT-2 Wrench WT-3 Wrench Wrench WT-3 Wrench WT-3 Wrench Wrench 1 x 2 1/16 WST2422 WST1212 WST1612 WST1633 WST1654 1 1/2 x 1 3/8 WST2443 1 1/2 x 2 11/16 3/4 x 3/4 1 x 3/4 1 x 3 3/8 WST1634 1 x 2 1/8 WST1655 1 x 3 7/16 WST2423 1 1/2 x 1 7/16 WST2444 WST1213 3/4 x 13/16 WST1613 1 x 13/16 1 1/2 x 2 3/4 WST1635 WST2424 WST2445 WST1214 WST1614 1 x 7/8 1 x 2 3/16 WST1656 1 x 3 1/2 1 1/2 x 1 1/2 1 1/2 x 2 13/16 3/4 x 7/8 1 x 2 1/4 1 x 3 9/16 WST2425 WST2446 WST1215 3/4 x 15/16 WST1615 1 x 15/16 WST1636 WST1657 1 1/2 x 1 9/16 1 1/2 x 2 7/8 WST1658 WST1216 3/4 x 1 WST1616 1 x 1 WST1637 1 x 2 5/16 1 x 3 5/8 WST2426 1/2 x 1 5/8 WST2447 1 1/2 x 2 15/16 WST1217 3/4 x 1 1/16 WST1617 1 x 1 1/16 WST1638 1 x 2 3/8 WST1659 1 x 3 11/16 WST2427 1 1/2 x 1 11/16 WST2448 1 1/2 x 3 WST1639 1 x 2 7/16 WST1660 WST2449 WST1618 WST2428 1 1/2 x 3 1/16 1 x 1 1/8 WST1218 3/4 x 1 1/8 1 x 3 3/4 1 1/2 x 1 3/4 WST1640 WST1219 3/4 x 1 3/16 WST1619 1 x 1 3/16 1 x 2 1/2 WST1661 1 x 3 13/16 WST2429 1 1/2 x 1 13/16 WST2450 1 1/2 x 3 1/8 1 x 1 1/4 WST1220 3/4 x 1 1/4 WST1620 WST1641 1 x 2 9/16 WST1662 WST2430 1 1/2 x 1 7/8 WST2451 1 1/2 x 3 3/16 1 x 3 7/8 WST1642 1 x 2 5/8 WST1221 3/4 x 1 5/16 WST1621 WST2431 <mark>1 1/2 x 1 15/16</mark> WST2452 1 x 1 5/16 1 1/2 x 3 1/4 WST1643 WST1644 WST1645 WST1622 1 x 1 3/8 1 x 2 11/16 WST2432 1 1/2 x 2 1 1/2 x 3 5/16 WST1222 3/4 x 1 3/8 WST2453 WST2454 WST1223 3/4 x 1 7/16 WST1623 1 x 2 3/4 WST2433 1/2 x 2 1/16 I 1/2 x 3 3/8 1 x 1 7/16 WST2434 WST1224 3/4 x 1 1/2 WST1624 1 x 1 1/2 1 x 2 13/16 1 1/2 x 2 1/8 WST2455 1 1/2 x 3 7/16 WST1646 WST2435 WST2456 WST1225 3/4 x 1 9/16 WST1625 1 x 1 9/16 1 x 2 7/8 1 1/2 x 2 3/16 1 1/2 x 3 1/2 WST1226 3/4 x 1 5/8 WST1626 1 x 1 5/8 WST1647 1 x 2 15/16 WST2436 1 1/2 x 2 1/4 WST2457 1 1/2 x 3 9/16 WST2437 1 1/2 x 2 5/16 WST2458 WST1227 3/4 x 1 11/16 WST1627 1 x 1 11/16 WST1648 1 x 3 1 1/2 x 3 5/8 <u>WST1228</u> 1 x 1 3/4 WST1649 1 x 3 1/16 WST2438 WST2459 3/4 x 1 3/4 WST1628 1 1/2 x 2 3/8 1 1/2 x 3 11/16 WST1229 WST1629 WST1650 WST2439 WST2460 3/4 x 1 13/16 1 x 1 13/16 1 x 3 1/8 1/2 x 2 7/16 1 1/2 x 3 3/4 WST2440 WST1630 WST1230 3/4 x 1 7/8 1 x 1 7/8 WST1651 1 x 3 3/16 **1** 1/2 x **2** 1/2 WST2441 <mark>1 x 1 15/16</mark> WST1652 WST1231 3/4 x 1 15/16 WST1631 1 x 3 1/4 1 1/2 x 2 9/16 WST1632 WST1653 1 x 3 5/16 WST2442 1 1/2 x 2 5/8 WST1232 3/4 x 2 1 x 2

SOCKETS FOR 3/4", 1" & 1 1/2" DRIVE WRENCHES

Impact Rated 6 point sockets are available from Simplex.

To order specify both the square drive size and the socket size or determine the Simplex part number from the chart above.





To order, specify both the type of WT-Series Wrench and the Allen head size. Additional Allen sizes are available in both imperial and metric sizes.



Model Number	Length (in.)	
WT3-EX1	1	
WT3-EX2 WT3-EX3	2 3	2" 3"
WT5-EX1 WT5-EX2	1 2	1"
WT5-EX3 WT10-EX1	3 1	
<u>WT10-EX2</u> WT10-EX3	2 3	

Allen Hex Drives
Use The Stan-
dard Reaction
Arm. No Addi-
tional Reaction
Equipment Is
Required.

ALLE	N HE	X DRI	/ES FO	R
WT-S	SERIE	S WRE	-	-

Model Number	Wrench Model	Allen Hex	Maximum Torque
		Size	(ft./lbs)
		(in.)	
WA-1208		1/2	395
WA-1210		5/8	740
WA-1212	WT-2	3/4	1,270
WA-1214		7/8	1,270
WA-1216		1	1,270
WA-1610		5/8	740
WA-1612		3/4	1,330
WA-1614	WT-3	7/8	2,070
WA-1616		1	3,100
WA-1618		1 1/8	3,330
WA-1620		1 1/4	3,330
WA-2414		7/8	2,070
WA-2416		1	3,100
WA-2418	WT-5	1 1/8	4,355
WA-2420		1 1/4	6,275
WA-2422		1 3/8	7,170
WA-2424		1 1/2	7,170
WA-2420-10		1 1/4	6,275
WA-2422-10		1 3/8	7,750
WA-2424-10	WT-10	1 1/2	10,500
WA-2426-10		1 5/8	10,500
WA-2428-10		1 3/4	10,500
WA-4024		1 1/2	10,500
WA-4026		1 5/8	13,280
WA-4028	WT 07	1 3/4	16,230
WA-4030	WT-27	1 7/8	27,200
WA-4032		2	27,200
WA-4036		2 1/4	27,200

LOW CLEARANCE WRENCHES

- Patented piston design for lower profile.
- Wide range of links in 1/16" increments.
- In-line reaction for maximum strength.
- Light weight, high torque ratio.
- Quick and easy interchangeable links requiring no tools.
- Accurate to within ⁺3%.

TORQUE

WRENCHES

- Slim nose radius for easy positioning in close quarters.
- No leak couplers that swivel on double axis for easy operation.
- Plated wrenches resist corrosion.
- Links in both imperial and metric measurements.
- Optional reducer inserts available in imperial and metric sizes.
- Custom wrenches available upon request.



Order #: WCH-1

"Simplex Low Clearance Torque Wrenches" are the lowest clearance, highest torque wrenches available. A patented "flat" cylinder design allows Simplex drive units to fit in the tightest spaces when other wrenches cannot. Light weight construction allows easy carrying and positioning.

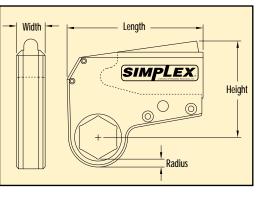


In-line reaction and compact design allows quick and easy torquing in close quarters.

LOW CLEARANCE DRIVE UNITS

Model Numbe	- 5-	Height (in.)	Radius (in.)	Max. Tool Width	Output (ft./lbs.)	*Weight (lbs.)			Link Sizes /mm)
				(in.)				From	To
WX-2	5.67	4.00	0.36	1.25	1,930	3.5	3	/4" /19 mm	2 3/8"/60
WX-4	7.80	5.60	0.46	1.63	3,950	6		1"/25mm	3 1/8"/80
WX-8	9.80	7.00	0.54	2.05	8,630	11.7	1	7/8" /50mm	4"/90m
WX-16	11.90	8.50	0.76	2.45	15,600	16	2	5/8" /65mm	4 5/8"/115
WX-32	15.30	10.90	0.93	3.24	31,600	34		1/8" /80 mm	6 1/8"/155

*Weights are for Drive Units only. Weight on Links will vary by size.



LOW CLEARANCE WRENCHES

HOW TO BUILD YOUR LOW CLEARANCE WRENCH

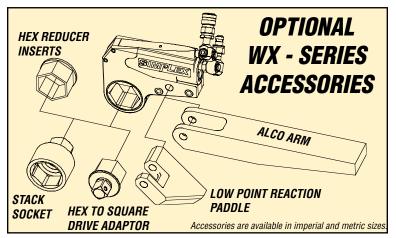


- 1. Select a WX drive unit that will give you the amount of torque you are looking for.
- 2. Couple your WX drive unit with the WXL hex link that you will need. See chart below for specific WXL link.

TORQUE WRENCHES



When this power plant needed flange maintenance, engineers called on Simplex for solutions. Changing out flange seals requires precision torquing and minimal down time. Simplex power units and low clearance wrenches filled the plant's needs, saving significant cost and down time.



LINKS FOR LOW CLEARANCE WRENCHES

Model	Hex	Model	Hex	Model	Hex	Model	Hex	Model	Hex	Model	Hex	Model	Hex	Model	Hex
Number	Size	Number	Size	Number	Size	Number	Size	Number	Size	Number	Size	Number	Size	Number	Size
for WX-2	(in.)	for WX-4	(in.)	for WX-4	(in.)	for WX-8	(in.)	for WX-8	(in.)	for WX-16	(in.)	for WX-32	(in.)	for WX-32	(in.)
Links		Links		Links		Links		Links		Links		Links		Links	
WXL2-12	3/4	WXL4-16	1	WXL4-43	2 11/16	WXL8-30	1 7/8	WXL8-57	3 9/16	WXL16-42	2 5/8	WXL32-50	3 1/8	WXL32-87	5 7/16
WXL2-13	13/16	WXL4-17	1 1/16	WXL4-44	2 3/4	WXL8-31			3 5/8	WXL16-43	2 11/16	WXL32-51			5 1/2
WXL2-14		WXL4-18		WXL4-45						WXL16-44		WXL32-52		WXL32-89	5 9/16
	15/16	WXL4-19		WXL4-46		WXL8-33	2 1/16	WXL8-60	3 3/4	WXL16-45		WXL32-53		WXL32-90	5 5/8
WXL2-16	1	-		WXL4-47	-							WXL32-54			5 11/16
		WXL4-21		WXL4-48	-							WXL32-55			5 3/4
		WXL4-22		WXL4-49						WXL16-48		WXL32-56			5 13/16
-		WXL4-23		WXL4-50				WXL8-64	4	WXL16-49		WXL32-57			5 7/8
		WXL4-24				WXL8-38				WXL16-50		WXL32-58			5 15/16
		WXL4-25				WXL8-39	-			WXL16-51		WXL32-59			
		WXL4-26	1 5/8			WXL8-40				WXL16-52		WXL32-60		WXL32-97	
			1 11/16				2 9/16					WXL32-61		WXL32-98	6 1/8
WXL2-24		WXL4-28					2 5/8			WXL16-54		WXL32-62			
-		WXL4-29					2 11/16			WXL16-55		WXL32-63			
WXL2-26		WXL4-30					2 3/4			WXL16-56		WXL32-64			
WXL2-27		WXL4-31				WXL8-45				WXL16-58		WXL32-65			
		WXL4-32				WXL8-46				WXL16-60		WXL32-66			
		WXL4-33				WXL8-47				WXL16-62		WXL32-68	-		
WXL2-30		WXL4-34					3			WXL16-64		WXL32-70			
		WXL4-35				WXL8-49				WXL16-66		WXL32-72			
WXL2-32	-	WXL4-36					3 1/8			WXL16-68		WXL32-74			
		WXL4-37					3 3/16			WXL16-70		WXL32-76			
		WXL4-38				WXL8-52				WXL16-72		WXL32-78			
		WXL4-39					3 5/16			WXL16-74	4 5/8	WXL32-80			
WXL2-36		WXL4-40					3 3/8					WXL32-82			
			2 9/16				3 7/16						5 1/4		
WXL2-38	2 3/8	WXL4-42	2 5/8			WXL8-56	3 1/2					WXL32-86	5 3/8		

TORQUE **WRENCHES**

TORQUE WRENCH PUMPS

- The PET20 Series is a light weight, two speed, easy to carry workhorse, ideal for smaller wrenches.
- The PET70 Series is a fast, two speed design with higher crossover, ideal for larger wrenches.
- Available in 4 port or 8 port configurations for 2 or 4 tool simultaneous operation.
- Auto dump relieves all pressure from hoses automatically for added safety.
- Rated for continuous duty.

1

PET2841

- PET2041 & PET7042 incorporate a psi/bar top mounted gauge at a 30° angle for accurate control.
- PET2841 & PET7842 incorporate a psi/bar flush mounted gauge for accurate control.
- Ideal for use with long extension cords.
- Quick-connect, No-Drip couplers with Safety Locking Collar.
- PET2041 & PET7042 incorporate an auto shut-off switch to prevent inadvertent overheating.
- Powerful permanent magnet motor starts at full load and runs on as little as 60 VAC.

4 Ports for 2 Tool Use

■ Pumps include one set of couplers installed for single tool use.





CTP212

0.5 HP Single Phase

400

20

65

Double Acting

*Order a CTP212 for each tool to be used simultaneously with a single pump. Retract pressure is preset at 1,300 PSI.

Solenoid 4 Way/3 Pos.



	Resvr. Size	Valve		*Manifold		Motor Specifications (Permanent Magnet)	Flow Rate @ 115 VAC		Weight (lbs.)	Type of Wrench
Number	(Gal.)	Control	Туре		•	(j,	600	10,000		
PET7042	2	Solonoid	4 Way/3 Pos.	8 Ports for 4 Tool Use	CTP212	1.5 HP Single Phase	400	50	75	Double Actina
PET7842	2	SUIEIIUIU	4 Way/3 FUS.	4 Ports for 2 Tool Use	011212	1.5 HE SHIYLE FILASE	400	50	75	Double Actility

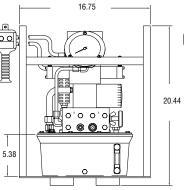
*Order a CTP212 for each tool to be used simultaneously with a single pump. Retract pressure is preset at 1,300 PSI.

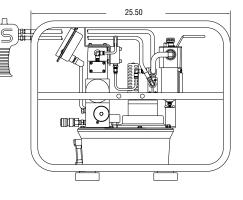
PUMP & ACCESSORIES

PAT4542 - 1.5 HP AIR POWER UNIT

TORQUE WRENCHES







- Air powered for use in hazardous environments.
- The 8 port configuration allows operation of up to 4 tools simultaneously.
- Rated for continuous duty.
- Auto dump relieves all pressure from hoses for added safety.
- Fast two speed design with higher crossover.
- Includes psi/bar pressure gauge which is top mounted at a 30° angle for accurate control.
- Quick-connect, No-Drip couplers with Safety Locking Collar.
- External filter & roll bars standard.
- Pumps include one set of couplers installed for single tool use.

Model	Resvr. Size	Valve		*Manifold	Pump Coupler Set			Rate @ n/90psi	Weight (lbs.)	Type of Wrench
Number	(Gal.)	Control	Туре		-		600	10,000		
PAT4542	2	Solenoid	4 Way/3 Pos.	8 Ports for 4 Tool Use	CTP212	1.5 HP Rotary Air	400	50	50	Double Acting

*Order a CTP212 for each tool to be used simultaneously with a single pump. Retract pressure is preset at 1,300 PSI.

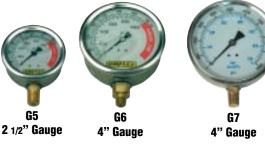
TORQUE WRENCH HOSES

Model Number	-	Hose Type
WH-20	20	20' Blue & Yellow Duplex Hose w/ Quick Disconnect Couplers
WH-40	40	40' Blue & Yellow Duplex Hose w/ Quick Disconnect Couplers

TORQUE WRENCH GAUGES

Model Number	Dia (in.)	Increments (psi/bar)	Type of Gauge					
G5	2 1/2	500/50	0 to 10,000 PSI / 0 to 700 BAR Liquid Filled Gauge					
G 6	4	000/00						
*G7	4	100/10						
*0+	*Otom david an all Oliverative Taximum Museum b Devenue							





*Standard on all Simplex Torque Wrench Pumps.

TORQUE WRENCH COUPLERS

Model Number	NPTF (in.)	Coupler Type
CT210		10,000 PSI/700 BAR Male Coupler
CT211	1/4	10,000 PSI/700 BAR Female Coupler
CT212	1/4	10,000 PSI/700 BAR Coupler Complete
CTP212*		10,000 PSI/700 BAR Pump Coupler Set



CT210

Male

Coupler

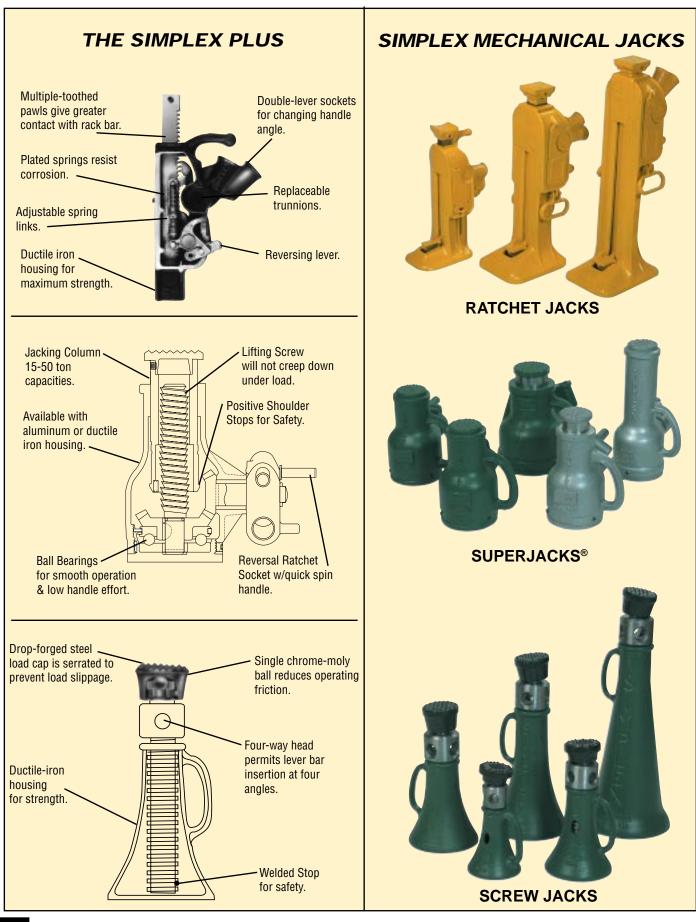


C1212 Coupler Complete

*Includes coupler complete plus pump mounting hardware.

MECHANICAL JACKS

INTRODUCTION



RATCHET JACKS

8 Models.

- Double-lever sockets for jacking in close quarters.
- Multiple-tooth pawls for strength & safety.
- Drop-forged, alloy steel, heat-treated components.
- Adjustable spring links.
- Plated springs to resist corrosion.
- Precision machining throughout.
- Large base insures a firm foundation.
- Supports full rated capacity on the toe or the cap.
- Steel lever bars sold separately.



Model 85A is used to lift a CNC machine for installation. 5 ton lifting capacity, low toe height and light weight make the models 84A, 85A, & 86A universal tools. 10 ton models 1017 & A1022 are used extensively by structural movers, riggers & maintenance crews.

5 Ton Ratchet Jacks

These units are all mechanically identical and vary only in stroke and height.

10 Ton Ratchet Jacks

The 1017 and 22B incorporate a ductile iron housing for maximum durability. The A1022, which is identical to the 22B except for an aluminum housing, is the ideal choice when portability is important. These jacks are often selected for lifts of 10 tons or less because of their low handle effort.

1017

■ A1538 Utility Pole Jack Light weight aluminum alloy housing is used for pole lining maintenance by telephone, light and power, and railroad companies. Jack pivots, I-Beam base assures firm foundation. Alloy steel chain, I-Beam base, and steel lever bar are all ordered separately.

22B

I-Beam Base Order#: 10800 Alloy Chain Order#: 10760

Ratchet Jacks

Model	Supporting	Lifting	Stroke	Handle	Cap	Toe	Base	Weight	S	teel Lev	er Bar	s
Number	Cap. (tons)	Cap. (tons)	(in)	Effort per Ton (lbs)	Min. Height (in)	Min. Height (in)	Size (in)	(Ibs)	Order Number	Length (in)	Dia. (in)	Weight (lbs)
84A			7		14			28				
85A	5	5	10	32	17	1 3/4	5 x 7 3/8	30	10640	36	1	8
86A			13		20			35				
1017			9 1/2	30	17 1/4	2	6 x 8 3/4	40				
A1022	10	10	12	30	21 5/8	2 1/4	o 10	42	10665	60	1 1/4	17
22B			12	48	215/8	Z 1/4	6 1/2 X 10 1/4	70				
A1538	15	8	22	32			8 x 8 1/4	62				
24A	20	15	13	32	23 1/4	2 1/4	8 x 10 1/4	93	10675	72	1 1/4	20
2029	20	15	18	52	28 1/4	∠ 1/4	8 x 11	104				

84A

Pivot Bases are included on model A1538. *Optional* for the A1538 are I-Beam Base (#10800) and Chain (#10760).

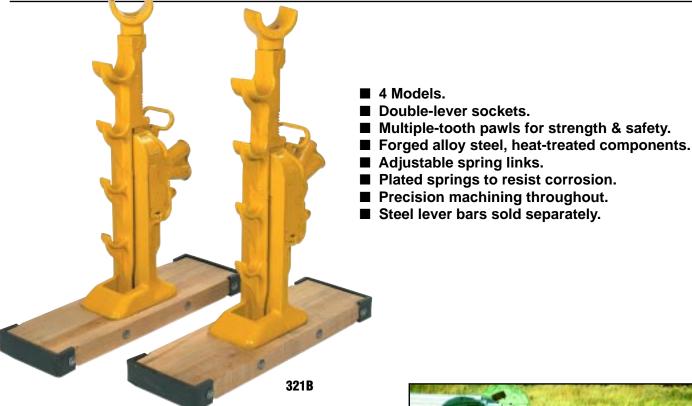
Note: 10665 & 10675 lever bars are interchangeable. The longer 10675 bar results in lower handle efforts.

MECHANICAL JACKS

MECHANICAL JACKS

REEL JACKS

Simplex Reel Jacks Are Standard Equipment At Utilities.



Model 320B

With three hooks; top fits up to 2 1/2 inch spindles; side hooks fit up to 2 inch spindles.

Model 321B (shown above)

With five hooks; top fits up to 3 1/2 inch spindles, next hook down fits up to 3 inch spindles, and lowest three fit up to 2 3/8 inch spindles. This model is recommended for use on firm surfaces.

Model A1029

The A1029 has a light weight aluminum alloy housing and three hooks; top fits up to 3 inch spindles, side hooks fit up to 2 3/8 inch spindles. Equipped with right or left-handed t-base, supported by three adjust-able steel rods to provide a sturdy, non-rocking foundation for outside use. Caps swivel for easy reel mounting. Steel lever bars are ordered separately.



Using A1029-R and A1029-L, utilities can easily handle large reels. The large wooden bases and low handle efforts enhance safety and reduce operator fatigue. Simplex Reel Jacks are also an excellent choice for wire rope and sling manufacturers.

Reel J	lacks
--------	-------

Model	Capacity per Pair		Handle Strok		Stroke Reel		Weight	Steel Lever Bars				
Number	Side Hooks (tons)	Top Hooks (tons)	Effort per Ton (lbs)	(in)	Dia. (in)	Hook Height (in)	(lbs)	Order Number	Length (in)	Dia. (in)	Weight (lbs)	
320B	5	10	32	10	20-60	21	51	10640	36	1	8	
321B				12	20-96	34 1/2	128					
A1029-R A1029-L	10	20	22	11 5/8	36-84	31 1/8	86	*10665	60	1 1/4	17	

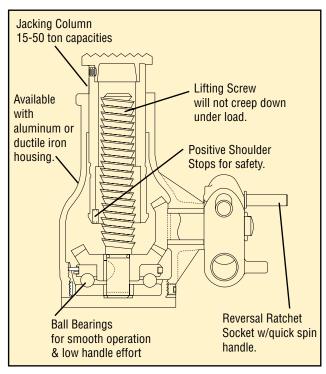
*Lever bar 10675 can be substituted resulting in lower handle effort.

SUPERJACKS®

MECHANICAL JACKS

Steel Fabricators Use Simplex Superjacks In Rough Environments.





- 8 Models.
- Holds the load indefinitely without creep down.
- Positive stop.
- High capacities.
- Low handle efforts.
- Steel lever bars sold separately.



Outdoor use and weld splatter can shorten the life of standard jacks. "We chose Simplex Superjacks for the bullet proof construction and holding power." They provide trouble-free service in the roughest applications.

Model	Cap.	Min.	Stroke	Handle	Base	Weight	S	teel Lev	er Bar	S
Number	(tons)	Height (in.)	(in.)	Effort Per Ton (Ibs.)	Dia. (in)	(lbs)	Order Number	Length (in)	Dia. (in)	Weight (lbs)
A1510C	15			9		28				
2510C		10 1/4	5			43				
A2510C	25			6	5 1/2	34	10640	36	1	8
A2515C		15	9			43				
3510D	35	10 1/4	5	5		44				
A3510D	30	10 1/4	5	5		34				
5010B	50	10 5/16	4	4	7 1/4	80			1 1/8	
A5010B	00	10 5/10	4	4	1 1/4	61	10660	56	11/8	16

Superjacks

MECHANICAL JACKS

SCREW JACKS

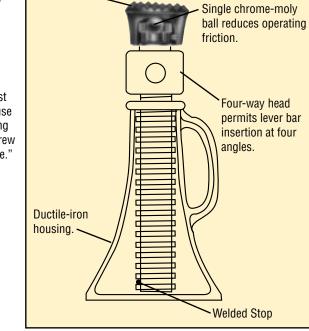


■ 9 Models.

- Ductile iron bodies for strength.
- Positive stop for safety.
- Supports loads indefinitely, and won't creep down.
- Serrated load cap.

Drop-forged steel load cap is serrated to prevent load slippage.

■ Steel lever bars sold separately.



	the this piec jack
Screw	Jacks

Simplex screw jacks are used to adjust the height of this roller fixture. "We use s fixture during the assembly of long ces of screw stock." "Simplex screw ks makes fixturing easy and precise."



ew Jacks

Model	Order	Sustaining	Closed	Stroke	Handle	Base	Weight	S	teel Leve	er Bar	S
Number	Number	Capacity (tons)	Height (in.)	(in.)	Effort Per Ton (Ibs.)	Dia. (in)	(lbs)	Order Number	Length (in)	Dia (in)	Weight (lbs)
1 1/2 x 6	<i>03060</i>		9 3/4	3 3/4	(1801)	4 3/4	10				
1 1/2 x 8	<i>03090</i>	12	11 5/8	5 3/4	16	5 1/2	12	10621	24	3/4	4
1 1/2 x 12	<i>03120</i>		15 5/8	9 3/4		6 1/4	16				
2 x 8	<i>03165</i>		11 3/4	5		6	17	10635	36	13/16	
2 x 10	<i>03195</i>	20	13 3/4	7		6 1/2	20				6
2 x 12	<i>03210</i>		15 3/4	9	15	6 3/4	24				
2 1/2 x 8	<i>03240</i>	-	13	4 1/4		6 1/2	28				
2 1/2 x 12	03255		17	8 1/4		7 1/4	37	10655	42	1 1/8	12
2 1/2 x 18	<i>03300</i>		23	14 1/4		8 1/2	52				

SCREW & CAP ASSEMBLIES

MECHANICAL JACKS

Versatile accessories for **outrigger supports**, **holding and adjusting concrete forms**, or for any application requiring special holding or shoring support.

The shouldered nut is placed into piping or another fixed form, and the screw & cap assembly is threaded through it. Four-way head assembly accommodates the lever bar at four different positions for infinite height adjustments and exact leveling.

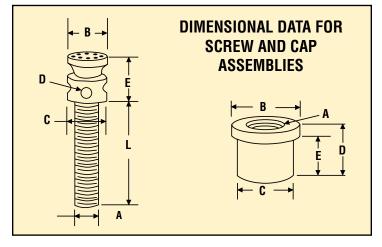
Drop forged serrated steel cap floats 9° on a chrome-moly ball reducing friction by 88%.



144 Screw and Cap assemblies support the outer wall of a large generator assembly at the Grand Coulee Dam. The assemblies also are used to exert pressure, stabilizing the generator laminations.



The shoulder nut is placed into piping, fixtures or other fixed forms supplied by the user.



Screw & Cap Assemblies

Model	Order	Sustaining	A Modified	fied Dimensions					Weight	Steel Lever Bars			
Number	Number	Capacity (tons)	Acme Thread DiaPitch	B (in.)	C (in.)	D (in.)	E (in.)	L (in.)	(lbs)	Order Number	Length (in)	Dia (in)	Weight (lbs)
1 1/2 BC-30-6	03568							5 11/16	5 1/2				
1 1/2 BC-30-8	<i>03570</i>	12	1 1/2 - 3	2 7/8	2 1/4	7/8	3 3/4	7 11/16	6 1/4	10621	24	3/4	4
1 1/2 BC-30-12	03574						_	11 11/16	7 3/4				
2 BC-30-8	03582			3 1/8	8 2 7/8	8 15/16		7 9/16	10 1/2				6
2 BC-30-10	03584	20	2 - 2 1/2				6 4	9 9/16	12	10635	36	13/16	
2 BC-30-12	03586							11 9/16	13 1/2				
2 1/2 BC-30-8	03600							7 13/16	16 3/4				
2 1/2 BC-30-12	03602	24	2 1/2 - 2 1/2	3 1/4	3 1/4	1 3/16	5 1/16	11 13/16	21 3/4	10655	42	1 1/8	12
2 1/2 BC-30-18	03608					1 0,10	-,	17 13/16	29 1/4				
Shouldor Nu	140												

Shoulder Nuts

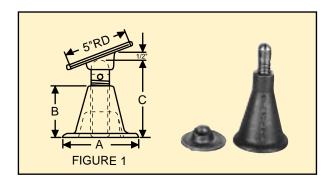
1 1/2 NS-25	03620	1 1/2 - 3	3	2 13/32	3	2 1/4	 3 1/4
2 NS-25	03625	 2 - 2 1/2	4	3	3 1/4	2 1/4	 5
2 1/2 NS-25	03630	2 1/2 - 2 1/2	5	3 15/16	4	3	 11

TANK JACKS

SIMPLEX FILTER AND STORAGE TANK JACKS

Simplex Tank Jacks offer an economical means of supporting and leveling vertical, bottom, or side-opening filter and storage tanks. Screw operation provides infinite adjustment for exact tank leveling and gravity flow. **Rated capacity for all models is 15,000 lbs.**

C1025 steel saddle is welded to the tank before being set on the jack.



Tank Jack Dimensions

Model Number	Order Number	Base Dia. (in)	Base Height "B" (in)	Min. Height "C" (in)	Max. Height "C" (in)	Weight (lbs)
4406	03820	5 3/4	4	6	8	10
4410	03840	6	8	10	12	12
4414	03860	6 1/2	12	14	16	17
4418	03880	8	16	18	20	26
Saddle	03993					2.5

Use this chart with Fig. 1 to determine the Tank Jack dimensions.

For bottom pipe connections

Tank Dia. (ft-in)	Pipe Dia. (in)	Sug. Jack Model Number	"DB" (in)	"HB" (in)	"CB" (in)	Qty. Re Under 12 Ft.	quired Over 12 Ft.
3-6	2		14	10 1/2	8		
4-0	2 1/2	4410		11 7/8	9		
4-6	2 1/2		18	12 1/4	9		
5-0	2 1/2		20	14 5/8	11		4
5-6	2 1/2	4414	22	15	11	4	
6-0	3		24	16 3/8	12		
6-6	3		26	14 5/8	10		
7-0	4		28	18 1/4	13 1/4		6
7-6	4		30	18 5/8	13 1/4		U
8-0	4		32	19	13 1/4		
8-6	5	4418	35	20	14	6	8
9-0	5		37	19 1/2	13		
9-6	5		39	20	13	0	0
10-0	6		41	21	14	8	8

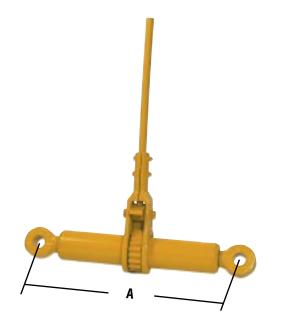
For side pipe connections

Tank	Pipe	Sug. Jack	"DB"	"HB"	"CB"	Qty. Re	quired
Dia.	Dia.	Model	(in)	(in)	(in)	Under	Over
(ft-in)	(in)	Number				12 Ft.	12 Ft.
3-6			14	6 1/2	4		
4-0			16	6 3/8	3 1/2		
4-6			18	6 3/4	3 1/2		
5-0			20	7 1/8	3 1/2		4
5-6			22	7 1/2	3 1/2	4	
6-0		4406	24	6	1 1/2		
6-6			26	6 1/8	1 1/2		
7-0			28	6 1/2	1 1/2		6
7-6			30	6 7/8	1 1/2		U
8-0			32	7 1/4	1 1/2		
8-6			34	7 5/8	1 1/2	6	8
9-0			36	8	1 1/2		
9-6		4410	38	10 3/8		-	•
10-0		4410	42	10 3/4		8	8

Use the installation data charts, with accompanying drawings, to determine the size and number of jacks your application will require.

PUSH/PULL JACKS

MECHANICAL JACKS



SIMPLEX STEAMBOAT JACK

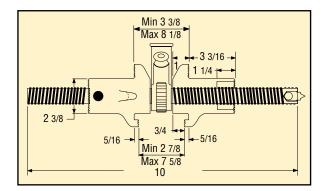
These 20 ton capacity models are used for connecting river barges, pulling forms and steel plates together and other applications in bridge construction and concrete and steel engineering projects. Units are equipped with spring activated pawls and 26 inch long attached handles. The handle effort per ton is 16 lbs. The I.D. of the eye is 1 5/16". Depth of eye is 1 7/8".

Model Number	Dim. "A" (in)	Travel (in)	Barrel Length (in)	Screw Dia. (in)	Weight (Ibs)
ER-10	23	14	18		57
ER-20	29	20	24	2	66
ER-30	35	26	30		74
ER-40	47	38	42		92

SIMPLEX 610 PUSH/PULL JACK

The model 610 is used for pushing or pulling, holding & more; **ideal for weld shops**.

For added versatility, the end nuts are designed to permit the use of chains with eye hooks. Steel lever bar is ordered separately.





The ratchet screw assembly may be custom adapted to almost any push/pull application such as adjusting forms, fixtures, doors, flues, and dampers. Incorporates 1 1/4-6 Acme class 2G, right and left hand thread.

Model	Centered	Hook/Toe	Travel	Handle	Screw	Length	Weight	S	Steel Lever Bars				
Number	Capacity (tons)	Offset Load Capacity (tons)	(in.)	Effort Per Ton (lbs.)	Dia. (in.)	(in)	(lbs)	Order Number	Length (in)	Dia (in)	Weight (lbs)		
610	10	2	4 1/2	15	1 1/4	10	13	10621	24	3/4	4		
610-15	10	2		15	1 1/4		5	10021	24	0/4	-		





BELT TENSIONING



Model	Chain	Weight
Number	Length	(lbs)
	(in)	
327.0	None	40
<i>327.3</i>	36	50
327.6	72	52
327.10	120	58

MECHANICAL

JACKS

These 5 ton capacity, ANSI B30.1 rated units have 45" of travel. They are mainly used in pairs for taking up slack on conveyor belts and controlling the tail piece. Other uses include **stretching heavy cable and wire, pulling mine posts and crib blocks, and recovering rails** from under falls.

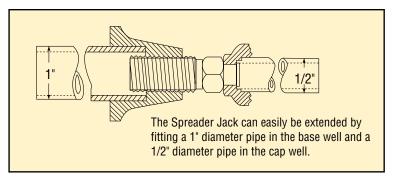
The ratchet mechanism moves on the rack bar tooth by tooth with each stroke of the lever bar. A speed trigger releases slack instantly when the jack is not under load.

Equipped with bolted-in lever bar and steel chain. Handle effort per ton is 45 lbs.

SPREADER JACK

The model 3A Spreader Jack Is used when working in close quarters.

The Spreader Jack has a closed height of only 3", with 1" stroke for adjustments, yet it **can support 3 tons.** The serrated cap rotates to prevent twist out, but does not pivot. The Spreader Jack may also be used as a planer jack.



PLANER JACKS

Four different models are available, with capacities ranging from 2 to 8 tons. They are used in leveling work on plane beds, millers and other machinery.

Screw's operation provides infinite height adjustments for exact leveling. The side-locking screw keeps the jack extended and **prevents lowering due to vibration.** The ball and socket cap swivels to center load forces. The notched base fastens easily to machine beds.

Model Number	Sustaining Cap. (tons)	Minimum Height (in)	Operable Rise (in)	A Across Flats (in)	Weight (Ibs)
1P	2	2 3/4	1	2 3/8	1 1/2
2P	4	3 3/4	1 1/2	3 1/8	3
3P	6	5 1/4	2 1/4	4	6
4P	8	7 1/2	4	5 3/8	12



Model 3A

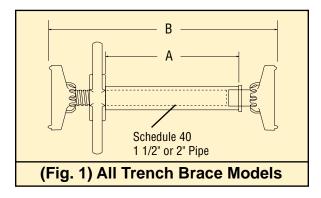


TRENCH BRACES

MECHANICAL JACKS



Simplex Trench Braces provide efficient, economical protection against cave-ins and costly redigging in construction and utility maintenance. Braces extend by turning the lever nut handle. The ball socket joints tilt for **added safety on angular mounting.** Holes on each end facilitate mounting to wood members.



Specifying Simplex Trench Braces

Simplex trench braces are designed for use with standard schedule 40 pipe. Screw end models SE-12, SE-16 and butt end model BE-25 **use 1 1/2" diameter pipe**. Model SE-18 and butt end BE-35 use **2" diameter pipe**. Pipe should be cut to length based on the chart below and drawing in Fig. 1.

Model Number	Adjust Range (in)	Pipe Size (in)	Butt End	"A" Min. Pipe Length (in)	"B" Min. Closed Ht. (in)
SE-12	7	1 1/2	BE-25	12	18
SE-16	10	I 1/2	DE-2J	16	22
SE-18		2	BE-35	18	25 1/2

Dimensions assume the use of both screw & butt ends together as an assembly.

Quick Reference Timber/Trench Brace Equivalency Tables*

The following charts are based on OSHA Timber/Trench Brace Charts* which do not consider transverse loading conditions.

	Horizontal Spacing (ft)		Cross B	race		Wa	les	Uprights (in)			
Trench Depth		Width of Trench (ft)		Vertical Spacing	Size (in)	Vertical Spacing	Max. Allowable Horizontal Spacing (Ft)				
(ft)		up to 4	up to 6	up to 8	(ft)		(ft)	4'	5'	6'	8'
	up to 6	SE12	SE12	SE18						2"x6"	
5	upioo	SE16	SE16	SE18		Not				2 80	
to	up to 8	SE12	SE12			Re	Req.				2"x6"
10	up 10 0	SE16	SE16	JETO							2 10
10	up to 10	SE18	SE18	SE18	4	8 x 8	4		2"x6"		
	up to 12	SE18	SE18			0 X 0	4			2"x6"	
10	up to 6	SE12	SE12	SE18		Not	Req.			3"x8"	
to	up 10 0	SE16	SE16							3 88	
15	up to 8	SE18	SE18			8 x 8	4	2"x6"			

Soil Type A P_a = 25 x H + 72 psf (2ft. Surcharge)

Soil Type B P_a = 45 x H + 72 psf (2ft. Surcharge)

		Cross	Brace		Wa	les	Uprights (in)
Trench	Horizontal	WIULII UI ITEIIGII (IL)		Vertical	Size	Vertical	Max. Allowable
Depth	Spacing			Spacing	(in)	Spacing	Horizontal Spacing (Ft)
(ft)	(ft)	up to 4	up to 6	(ft)		(ft)	3'
5							01-01
to	up to 6	SE-18	SE-18	5	6 x 8	5	2"x6"
10	-						

* Refer to OSHA Standard, 29CRF 1926, subpart P-Excavations (tables C-1.1 & C-1.2).

MECHANICAL JACKS

MINE ROOF SUPPORTS





Head Assembly Model 09167

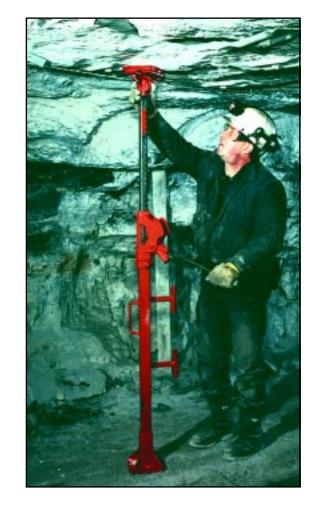
Base Assembly Model 09220



Type FS Head For support with wooden or rubber cap pieces.



Type S Head 36 square inches in support area.



A B	09233
Model "A	" " B "

Model	"A"	"B"
Number	Min. Pipe	Min. Closed
		Height (in)
MS9L-FS	20 1/2	27
MS9L-S	20 5/8	25 1/2
MS17L-FS	21 3/4	28 3/4

Simplex head assemblies are designed for roof support in mines and other areas where ceiling heights vary greatly. **Use your own pipe** to custom build a support for nearly any application.

The 8 ton MS-9 models use 2" schedule 40 pipe. The 16 ton MS-17 models require 2" schedule 80 pipe. A round base (ordered separately) is available to fit the 2" pipe. All models incorporate a lever nut handle and are available with either FS or S style heads.

For economy, use the import version. If U.S. manufacture is required, use the domestic version. Simplex quality is assured with either choice.

Mine Roof Support Head Assemblies

Model Order Order Head Sustaining Stroke *Max. Pipe Max. Dim. Weight Number **Style Extended Ht.** Between Number Number Capacity (in) Length (lbs) **Domestic** Import (tons) (in) (in) Flanges (in) MS9L-FS 09167 09267 FS **51** 3/4 73 5 3/4 19 8 MS9L-S 09233 S 15 73 1/4 93 19 -----09209 FS 16 MS17L-FS 09309 68 46 1/4 5 3/4 34 09220 16 Base MB-17 ------6 ---------------

* Maximum pipe length recommendations are based upon the following conditions:

Fully extended assemblies loaded to maximum rated capacity.

Head and base securely fixed to prevent lateral movement.

Schedule 40 pipe with a minimum yield strength of 35,000 psi/8 ton models.

Schedule 80 pipe with a minimum yield strength of 48,000 psi/16 ton model.

MINE ROOF SUPPORTS

MECHANICAL JACKS



HEAD STYLES



Type E Head For all standard work. Dimension between flanges: 8 1/8".



Type F Head For use with electrical wiring. Dimension between flanges: 10 1/4".



Type S Head 36 square inches in support area.

The A9225 Family is rated at 4 tons sustaining capacity, and is suitable for a wide range of mine maintenance applications. The aluminum alloy housing and base, coupled with a convenient carrying handle, make this unit **exceptionally light and portable**.

The A9225 Family incorporates a ratchet mechanism for speedy operation. Lever bar #10635 is ordered separately.

The 139A Family is a screw extension type roof support rated at 5 tons sustaining capacity. Designed for use as a safety prop, the 139A Family is suitable for cross timbering with wood or steel beams.

Complete Unit Ratchet Lever Series - A9225 Family

Head Style	Order Number	Minimum Height (in)	Stroke (in)	Weight (Ibs)		
Ε	09602					
F	09603	39	20	29		
S	09620					
Ε	09606					
F	09607	45	26	33		
S	09621					
Ε	09610					
F	09611	57		36		
S	09622					
Ε	09614					
F	09615	69		39		
5	09623					
Ε	09616		38			
F	09617	75		42		
S	09624					
E	09618					
F	09619	88		48		
5	09625					
		it Screw Exte	nsion Series	s - 139A Fa	mi	
E	09802					
F	09803	42	24	50		
S	09820					
E	09806					
F	09807	48	30	52		
5	09821					
E	09810					
F	09811	54		54		
S	09822			•••		
E	09814					
F	09815	66	36	58		
5	09823					
Ē	09818					
F	09819	78		64		
		10		70		

			Λ	<i>IODE</i>	EL I	NUM	BE	r inl)E)	<			
MODEL	PG.	MODEL	PG.	MODEL	PG.	MODEL	PG.	MODEL	PG.	MODEL	PG.	MODEL	PG.
NUMBER	NO.	NUMBER	NO.	NUMBER	NO.	NUMBER	No.	NUMBER	NO.	NUMBER	NO.	NUMBER	NO.
A233	57	C511	68	HDC3	70-71	HQA113	80-82	IBP1510	95	JUS2037	90-92	PEM2022	44-45
A323	11	C513	68	HDC6	70-71	HQA154	80-82	ID3014	97	M1	69	PEM2031	44-45
A326 A328	11 11	C515 C516	68	HDC10 HDC20	70-71	HQA166 HQA923	80-82 80-82	ID556 ID5512	98 98	M2 M3	69	PEM2032 PEM2041	44-45 44-45
A347	11	CR215	68 68	HDC50	70-71 70-71	HQA510	80-82	ID1006	99	MK106	69 78-79	PEM2042	44-45
A348	11	CT200	68	HE6	70-71	HQA454	80-82	ID10012	99	MK4	78-79	PEM2052	44-45
AHA100	15	CT201	68	HE10	70-71	HQA511	80-82	ID15012	100	MK5	78-79	PEM2062	44-45
AHA150	15	CT202	68	HE20	70-71	HQA224	80-82	ID20012	100	MK6	78-79	PEM3021	46-47
AO1	69	CT210	68	HEC6	70-71	HQA226	80-82	IED3014	97	MK7	78-79	PEM3022	46-47
AO5	69	CT211	68	HEC10	70-71	HQA449	80-82	IED556	98	<u>МК8</u>	78-79	PEM3031	46-47
AO12	69	CT212	68	HEC20	70-71	HQA01	80-82	IED5512	98	МК9	78-79	PEM3032	46-47
A055 AS20	69 20	DS-31 DS-38	76-77 76-77	HP3 HP6	70-71 70-71	HQA02 HQA03	80-82 80-82	IED1006 IED10012	99 99 99	MK10 MK11	78-79 78-79	PEM3041 PEM3042	46-47 46-47
AS30	20	DS-44	76-77	HP10	70-71	HQA04	80-82	IED15012	100	MK12	78-79	PEM3052	46-47
ATS10	11	DS-53	76-77	HP20	70-71	HQA05	80-82	IED20012	100	MK13	78-79	PEM3062	46-47
ATS25	11	DS-56	76-77	HP36	70-71	HQA06	80-82	IES1010	96	MK14	78-79	PEM4022	48-49
ATS100	11	DS-69	76-77	HP50	70-71	HQA07	80-82	IES256	97	MK15	78-79	PEM4025	48-49
B1	88-89	DS-78	76-77	HPC3	70-71	HQA08	80-82	IES2514	97	MK16	78-79	PEM4032	48-49
B3	88-89	DS-81	76-77	HPC6	70-71	HQA09	80-82	IES556	98	MK17	78-79	PEM4035	48-49
B5	88-89	DS-45	76-77	HPC10	70-71	HQA10	80-82	IES5513	98	MK18	78-79	PEM4042	48-49
B8 B10	88-89 88-89	DS-54 DS-63	76-77	HPC20	70-71	HQA11	80-82	IES1006	99	MK19	78-79	PEM4045	48-49
B12	88-89	DS-72	76-77 76-77	HPC36 HPC50	70-71 70-71	HQA12 HQA13	80-82 80-82	IES10010 IM2	99 94	MK20 MK21	78-79 78-79	PEM4052 PEM4055	48-49 48-49
B17	88-89	DS-10	76-77	HR3	70-71	HQA14	80-82	IM3	94	NS1319	75	PEM4062	48-49
B22	88-89	DS-12	76-77	HR6	70-71	HQA15	80-82	IMS1010	96	NS1924	75	PEM4065	48-49
B28	88-89	DS-18	76-77	HR10	70-71	HQA16	80-82	IMS256	97	NS2432	75	PEM5035	52-53
B32	88-89	DS-25	76-77	HR20	70-71	HQA17	80-82	IMS2514	97	NS3241	75	PEM5036	52-53
B35	88-89	DSB-31	76-77	HRC3	70-71	HQA18	80-82	IMS556	98	NS4150	75	PEM5045	52-53
B44	88-89	DSB-38	76-77	HRC6	70-71	HQA19	80-82	IMS1006	99	NS5060	75	PEM5046	52-53
B55 B74	88-89	DSB-44 DSB-53	76-77	HRC10 HRC20	70-71	HQA20	80-82	IPC5 IPC10	95	NS6075 P20	75	PEM5055 PEM5056	52-53
BA10	88-89 11	DSB-56	76-77 76-77	HJ1.5/L	70-71 86	HQA22 HQA23	80-82 80-82	IS256	95 97	P22	34-35 34-35	PEM5065	52-53 52-53
BA25	11	DSB-69	76-77	HJ2	86	HQA24	80-82	IS2514	97	P41	34-35	PEM5066	52-53
BC1	88-89	DSBU-44	76-77	HJ3	86	HQA25	80-82	IS556	98	P42	34-35	PEM6035	54-55
BC2	88-89	DSBU-53	76-77	HJ5	86	HQA26	80-82	IS5513	98	P42F	34-35	PEM6036	54-55
BC3	88-89	DSBU-69	76-77	HJ8	86	HQA27	80-82	IS1006	99	P70	34-35	PEM6045	54-55
BC4	88-89	ES6024	92	HJ12	86	HQA28	80-82	IS10012	99	P140	36-37	PEM6046	54-55
BC5	88-89	F1	69	HJ12/LP	86	HQA29	80-82	IVB55	94	P140D	36-37	PEM6055	54-55
BC6	88-89	F3	69	HJ22	86	HQA35	80-82	IVB10010	94	P140DF	36-37	PEM6056	54-55
BC7	88-89	F6	69	HJ22/LP	86	HQA36	80-82	JE6024	90-92	P140F	36-37	PEM6065	54-55
BC8	88-89	F7	69	HJ35	86	HQA37	80-82	JA6024	90-92	P82	34-35	PEM6066	54-55
BC9	88-89	F9	69	HJ55	86	HQA38	80-82	JE6037	90-92	P160-3	38	PEM7022	50-51
BC10	11	F11	69	HJ100	86	HQA39	80-82	JA6037	90-92	P160-4	38	PEM7025	50-51
BC15	11	F13	69	HJH330	86	HQA40	80-82	JE10026	90-92	P160-6	38	PEM7032	50-51
BC25	11	F15	69	HP172	80-82	HQA41	80-82	JA10026	90-92	P230	36-37	PEM7035	50-51
BCR5	11	F16	69	HP173	80-82	HQA42	80-82	JA10037	90-92	P230D	36-37	PEM7052	50-51
BCR10	11	F17	69	HP172C	80-82	HQA43	80-82	JE10037	90-92	P300	36-37	PEM7042	50-51
BCR15	11	G5	72	HP173C	80-82	HQA50	80-82	JAS10026	90-92	P300D	36-37	PEM7045 PEM7062	50-51
BCR25	11	G6	72	HP172CP	80-82	HQA51	80-82	JAS10037	90-92	P461	36-37	PES2031	50-51
BHK16	88-89	G7	72	HP173CP	80-82	HQA52	80-82	JEB10026	90-92	P461D	36-37		44-45
BHB16	88-89	GA1	72	HP302	80-82	HQA53	80-82	JEB10037	90-92	P785-3	38	PES2032	44-45
BHR16	88-89	GD1	72	HP303	80-82	HQA54	80-82	JE15026	90-92	P785-4	38	PES2041	44-45
BHG16	88-89	GD2	72	HP302C	80-82	HQA55	80-82	JA15026	90-92	P785-6	38	PES2042	44-45
BHGY16	88-89	GT5	72	HP303C	80-82	HQA57	80-82	JE15037	90-92	P1000-3	38	PES2052	44-45
BHK32 BHB32	88-89 88-89	GT20 GT25	72 72 72	HP302CP HP303CP	80-82 80-82	HQA58 HQA59	80-82 80-82	JA15037 JAS15026	90-92 90-92	P1000-4 P1000-6	38 38	PES2062 PES3031	44-45 46-47
BHR32	88-89 88-89	GT30	72	HP503	80-82	HQA60	80-82	JAS15037	90-92	P1000-8 P1000-12	38	PES3032 PES3041	46-47
BHY32 BHG32	88-89	GT100 GTH12	72 72	HP503C HP503CP	80-82 80-82	HQA61 HQA62	80-82 80-82	JEB15026 JEB15037	90-92 90-92	PA91	38 60-61	PES3042	46-47 46-47
BHGY32	88-89	GTH60	72	HPP17	80-82	HQA63	80-82	JAS20026	90-92	PA91-1	60-61	PES3052	46-47
BRA5	11	H3	70-71	HPP17C	80-82	HQA64	80-82	JAS20037	90-92	PA95	60-61	PES3062	46-47
BRA10	11	H6	70-71	HPP17CP	80-82	HQA65	80-82	JE5	90-92	PA95-1	60-61	PES4032	48-49
BRA25	11	H10	70-71	HPP30	80-82	HQA66	80-82	JE7	90-92	PAM4032	58-59	PES4035	48-49
BBR5	74	H20	70-71	HPP30C	80-82	HQA67	80-82	JE9	90-92	PAM4035	58-59	PES4042	48-49
BRC25	74	H36	70-71	HPP30CP	80-82	HQA69	80-82	JE11	90-92	PAM4042	58-59	PES4045	48-49
BRH10 BRH25	74	H50	70-71	HPP50	80-82	HQA70	80-82	JE14	90-92	PAM4045	58-59	PES4052	48-49
BRP10	74	HC3	70-71	HPP50C	80-82	HQA71	80-82	JE18	90-92	PAT4542	107	PES4055	48-49
	74	HC6	70-71	HPP50CP	80-82	HQA72	80-82	JS4	90-92	PED1000	42-43	PES4062	48-49
BRS5	74	HC10	70-71	HP17M	80-82	HQA73	80-82	JS3	90-92	PED1001	42-43	PES4065	48-49
BRS10	74	HC20	70-71	HP30M	80-82	HQC17	80-82	JS2	90-92	PED2001	44-45	PES5035	52-53
BRS25	74	HC36	70-71	HP50M	80-82	HQC30	80-82	JS1	90-92	PED2002	44-45	PES5036	52-53
BRS525	74	HC50	70-71	HQ17	80-82	HQC50	80-82	JTS60	90-92	PED3001	46-47	PES5045	52-53
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C211	68	HD20	70-71	HQA106	80-82	IAS256	97	JUS1526	90-92	PEM1021	42-43	PES5065	52-53
C213	68	HD50	70-71	HQA109	80-82	IAS2514	97	JUS1537	90-92	PEM1041	42-43	PES5066	52-53
<i>C509</i>	68	HD75	70-71	HQA111	80-82	IBP1010	95	JUS2026	90-92	PEM2021	44-45	PES6035	54-55

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4-55 RC606 4-55 RC1003	20-21 20-21	RLN3006 RLN30012	26-27 26-27	ST102 ST106	30 30	WST1618 WST1619	103 103	WST2458 WST2459	103 103	1P 2P	116 116
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106 RCD500 106 RDA101	6C 22 0 28-29	RLN8006 RLN80012	26-27 26-27	TJH5 TJH10	87 87	WST1630 WST1631	103 103	WT2-EX1 WT2-EX2	103 103	ER-40 610	115 115 83 & 115
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6-57 RDA552	4 28-29	RLR306 RLR506 RLR5010	24-25 24-25 24-25	TJR109 TJR159 V1	87 87 67	WST1635 WST1636 WST1637	103 103 103	WT3-EX3 WT5-EX1 WT5-EX2	103 103 103	MS17L-FS MB-17 MS9L-S	118-119 118-119 118-119
6-57 RDA100	12 28-29	RLR1006 RLR10010 RLR1502	24-25 24-25 24-25	V2 V3 V5B	67 67 67	WST1638 WST1639 WST1640	103 103 103	WT5-EX3 WT10-EX1 WT10-EX2	103 103 103	MS9L-FS MS17L-FS A9225-E-39/59	118-119 118-119 118-119
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14 RL201 14 RL302 14 RL502	16 16 16	S256 S302	30 30	WST1220 WST1221	103 103 103	WST2440 WST2441	103 103 103	21/2BC-30-12 21/2BC-30-18	113	327.3 327.6	116 116 116
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57 RD</td><td>55 RCD302 22 RLN4002 26-27 55 RCD1001 22 RLN40012 26-27 51 RCD1001 22 RLN5002 26-27 51 RCD1001 22 RLN50012 26-27 51 RCD1006 22 RLN6002 26-27 51 RCD10010 22 RLN6002 26-27 51 RCD10010 22 RLN8002 26-27 66 RD3006C 22 RLN8002 26-27 766 RD3006C 22 RLN8002 26-27 766 RDA308 28-29 RLN10002 26-27 766 RDA308 28-29 RLN10002 26-27 766 RDA3014 28-29 RLN10002 26-27 766 RDA3014 28-29 RLN10002 26-27 766 RDA3014 28-29 RLR10010 24-25 77 RDA1506 28-29 RLR1502 24-25 77</td><td>55 R.C.007 22 RLN4002 26-27 ST201 55 R.CD6010 22 RLN40012 26-27 ST252 51 R.CD1001 22 RLN5002 26-27 ST254 51 R.CD1003 22 RLN50012 26-27 ST256 51 R.CD1005 22 RLN50012 26-27 ST356 51 R.CD1505C 22 RLN6002 26-27 ST356 66 R.CD3006C 22 RLN8002 26-27 TJH10 66 R.CD3006C 22 RLN80012 26-27 TJH109 66 R.DA3014 28-29 RLN10002 26-27 TJH109 66 R.DA3014 28-29 RLN10001 26-27 TJH109 67 R.DA3014 28-29 RLN10001 26-27 TJH109 67 R.DA1001 28-29 RLN10010 24-25 TJR159 77 RDA1001 28-29 RLN10101 24-25 V78</td></td<> <td>55 RCD307 22 RLM4002 26-27 ST1010 30 51 RCD0010 22 RLM40012 26-27 ST252 30 51 RCD1001 22 RLM8002 26-27 ST254 30 51 RCD1003 22 RLN8006 26-27 ST256 30 51 RCD10010 22 RLN8006 26-27 ST556 30 51 RCD1006C 22 RLN8002 26-27 TJ425 87 66 RCD2006C 22 RLN8002 26-27 TJH10 87 66 RDA304 28-29 RLN100012 26-27 TJH109 87 66 RDA304 28-29 RLN100012 26-27 TJH109A 87 67 RDA308 28-29 RLN100012 26-27 TJH109A 87 68 RDA3014 28-29 RLR306 24-25 TJH109A 87 77 RDA1001 28-29 RLR30</td> <td>55 FCD302 22 RLM4002 26-27 ST1010 30 WST1621 51 RCD0101 22 RLM4006 26-27 ST252 30 WST1621 51 RCD1001 22 RLM5002 26-27 ST254 30 WST1623 51 RCD1001 22 RLM6002 26-27 ST256 30 WST1625 51 RCD10010 22 RLM6002 26-27 ST356 30 WST1627 64 RCD2006C 22 RLM6002 26-27 TJH2 87 WST1629 66 RCD3006C 22 RLM8000 26-27 TJH10 87 WST1631 66 RDA3014 29-29 RLM100012 26-27 TJH108 87 WST1633 67 RDA512 29-29 RLM100012 24-25 TJH108 87 WST1634 66 RDA5512 29-29 RLM10010 24-25 TJH108 87 WST1635 75<td>55 RCD202 22 RLM4002 29-27 ST1010 30 WST1621 103 51 RCD2010 22 RLM40012 29-27 ST284 30 WST1621 103 51 RCD1003 22 RLM5002 29-27 ST284 30 WST1621 103 51 RCD1006 22 RLM5002 29-27 ST284 30 WST1622 103 51 RCD1006 22 RLW5002 29-27 ST284 30 WST1622 103 66 RCD2006C 22 RLW5002 29-27 TLH2 87 WST1629 103 66 RCD2006C 22 RLW5002 29-27 TLH10 87 WST1631 103 67 RDA3014 28-29 RLW10002 29-27 TLH10A 87 WST1633 103 67 RDA5162 28-29 RLM10002 28-27 TLH10A 87 WST1631 103 103 103 <td< td=""><td>55 FC2302 22 RLM4002 26-27 ST1010 30 WST1620 103 WST240 51 RCD6010 22 RLM40012 26-27 ST252 30 WST1622 103 WT-2 51 RCD1000 22 RLM5002 26-27 ST256 30 WST1621 103 WT-3 51 RCD1006 22 RLM5002 26-27 ST256 30 WST1621 103 WT-2 51 RCD10010 22 RLM6002 26-27 ST356 30 WST1628 103 WT-4L00 66 RCD2006C 22 RLM6002 26-27 TLH2 87 WST1630 103 WT-2-K2 66 RD4306 22-29 RLM8002 26-27 TLH108 87 WST1630 103 WT-2-K2 67 RD4306 22-29 RLM8002 26-27 TLH108 87 WST1630 103 WT-2-K2 68 RD4306 22-29</td><td>55 RCD302 22 RLM4002 28-27 STC010 30 WSTE400 103 55 RCD307 22 RLM4002 28-27 STC22 30 WST622 103 WT-2 102 51 RCD1003 22 RLM5002 28-27 STC26 30 WST627 103 WT-3 102 51 RCD1003 22 RLM5002 28-27 STC264 30 WST627 103 WT-4 102 51 RCD1001C 22 RLM6012 28-27 STC264 30 WST627 103 WT-4LC0 103 64 RCD3006C 22 RLM8002 28-27 TLH2 87 WST680 103 WT-4LC0 103 66 RDA304 28-29 RLM8002 28-27 TLH108 7 WST630 103 WT3-4X2 103 67 RDA3014 28-29 RLM8002 28-27 TLH108 7 WST630 103 WT3-4X2</td><td>55 RCD202 22 RLMM02 26.27 ST1010 00 WSTR67 103 WT-2 00 4P 51 RCD2017 22 RLMM012 26.27 ST221 30 WSTR67 103 WT-3 103 65.12 65.12 51 RCD1006 22 RLMM012 26.27 ST224 30 WSTR67 103 WT-7 102 65.12 51 RCD1006 22 RLMB012 26.27 ST2544 30 WSTR67 103 WT-7 102 65.25 51 RCD1006 22 RLMB006 26.27 ST042 30 WSTR67 103 WT-7 103 E7.40 103 E7.40 103 E7.40 103 E7.40 103 E7.40 103 E7.40 103 WT-7 103 WT-7</td></td<></td></td>	55 RCD302 22 55 RCD307 22 55 RCD307 22 51 RCD1001 22 51 RCD1003 22 51 RCD1006 22 51 RCD1006 22 51 RCD1505C 22 66 RCD2006C 22 66 RCD5006C 22 66 RDA308 28-29 66 RDA551 28-29 57 RDA5524 28-29 57 RDA551 28-29 57 RDA5524 28-29 57 RDA5524 28-29 57 RDA1506 28-29 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