

# SIMPLEX®

A Division Of Templeton, Kenly & Co., Inc.

## HYDRAULIC AND MECHANICAL PRODUCTS SINCE 1899



CYLINDERS

PUMPS

VALVES AND ACCESSORIES

HYDRAULIC TOOLS

HYDRAULIC JACKS

PRESSES

TORQUE WRENCHES

MECHANICAL JACKS

ENGINEERED FOR EXCELLENCE

SC103A  
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 email [TechnicalService@tksimplex.com](mailto:TechnicalService@tksimplex.com)

# NEW PRODUCTS FROM SIMPLEX

## HYDRAULIC INTENSIFIER

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## AIR OVER OIL HYDRAULIC PUMPS

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## ALUMINUM HAND PUMPS

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## ALUMINUM CYLINDERS

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## POW'R-BUDDY POWER PUMP

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## 35 TON DOUBLE ACTING PORTABLE HYDRAULIC PUNCH

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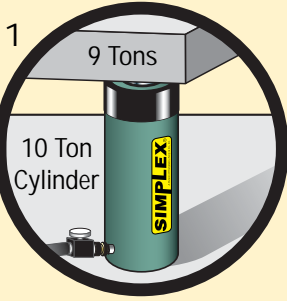


## HYDRAULIC TORQUE WRENCHES & POWER PUMPS

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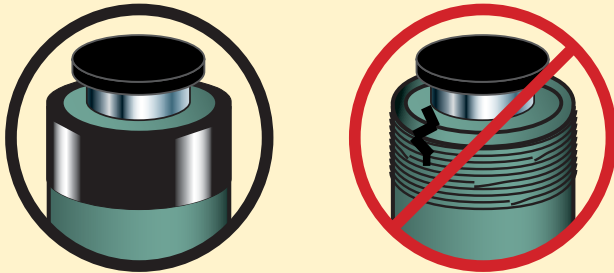


# HELPFUL HYDRAULIC SAFETY TIPS



**1 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.**



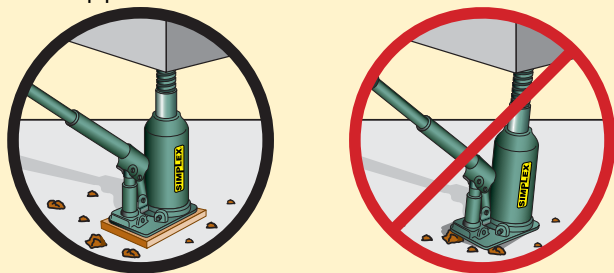
Check each component before you set up your hydraulic system. Do not use damaged or worn components. Turn them in for repair or replacement.

**3 Safety Instructions.**



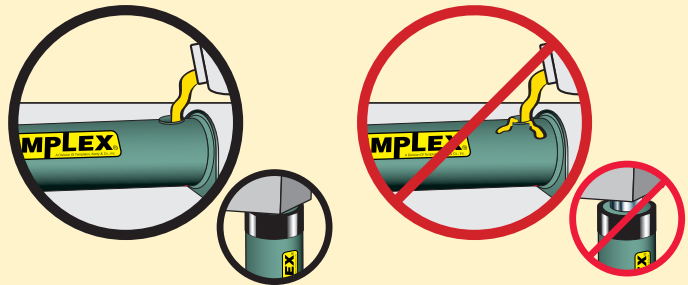
Read all warning labels and instructions. Operating instructions must be understood before using equipment. Never remove labels from equipment. Replace missing, worn, or damaged labels. Always wear safety goggles and protective clothing when using hydraulic equipment.

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



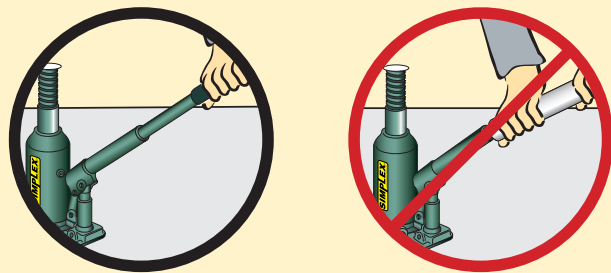
Every jack or ram, whether used individually or in a system, should be completely supported on a solid, firm, non-sliding foundation capable of supporting the load.

**5 Fill Oil Reservoirs With Cylinder Retracted.**



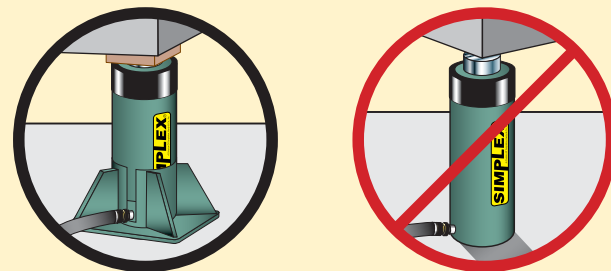
Only fill pump to recommended level, and fill only when connected cylinder is fully retracted.

**6 Know How Your Hydraulics Work.**



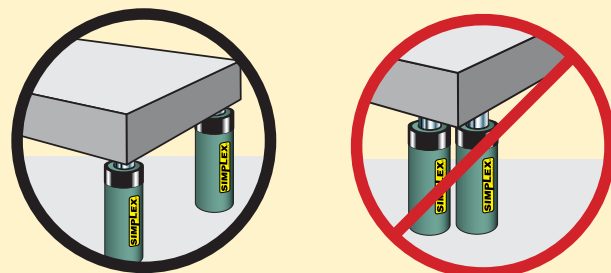
Do not use extensions or cheater bars on hydraulic jacks or hand pumps to raise a load.

**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.

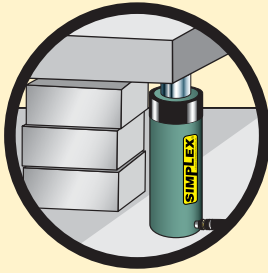
**8 When Using Multiple Rams, Distribute the Load Evenly.**



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 be considered in order to correctly determine load balance.

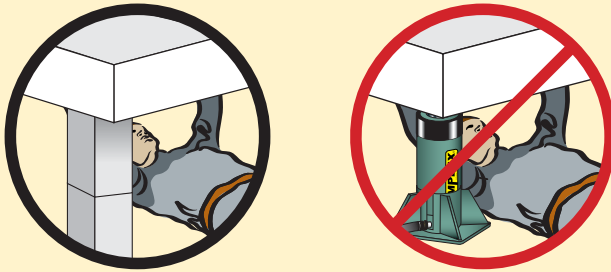
# HELPFUL HYDRAULIC SAFETY TIPS

## 9 Block or Crib Your Load as it Raises.



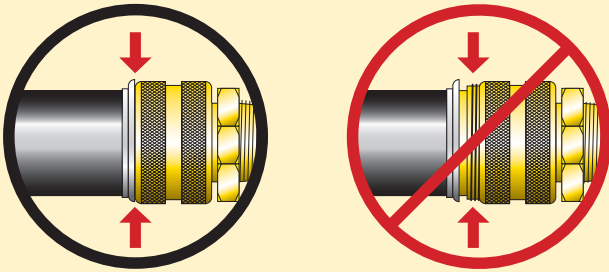
Place blocking or cribbing under the loads as you raise it. Each time you raise it higher, insert more blocking. Position yourself in a manner that will keep you clear of the load, and will not allow your hands or other body parts between the load and the cribbing.

## 10 Do Not Use Rams as Permanent Supports.



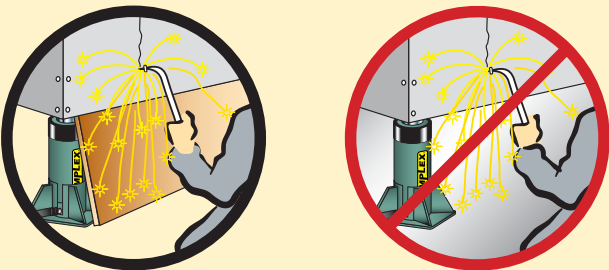
Hydraulic rams are not meant to be used as permanent supports. They are designed to lift and lower. If you need to hold the load for any length of time, cribbing or Simplex locknut cylinders should be used.

## 11 Hydraulic Connections.



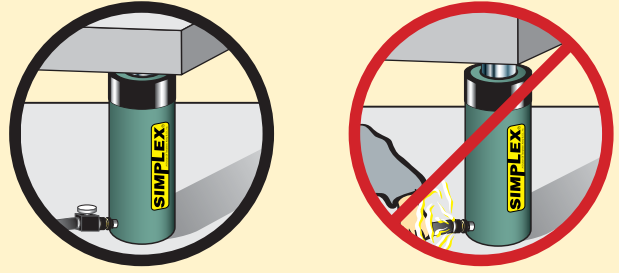
When making connections with quick couplers, make sure the couplings are fully engaged. Threaded connections such as fittings, gauges, etc. must be securely tightened and leak free. Never use excessive tightening force that may distort the fittings or strip the thread profile.

## 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.



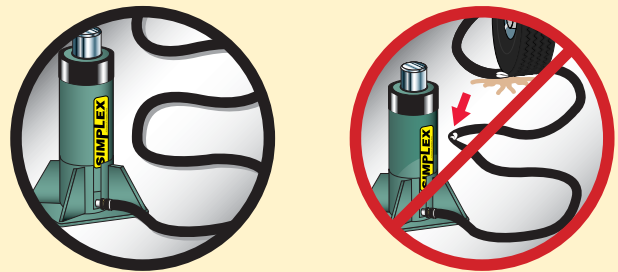
Never attempt to disconnect hydraulic hoses, fittings or couplers under pressure. Unload the ram, open the release screw on the hand pump and shift or open all hydraulic controls several times. If system includes a gauge, double check the gauge to insure pressure has been completely released.

## 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.



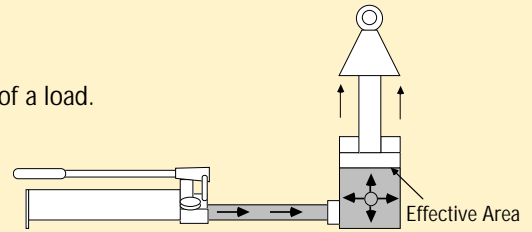
Do not drop sharp or heavy objects on hose. Keep hose out of heavy traffic areas. This will cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture. Avoid sharp bends and kinks when routing hydraulic hoses.



# HYDRAULIC PRINCIPLES AND SYSTEMS

**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:

$$\frac{\text{bar} \times \text{Cylinder Effective Area} \times \text{No. of Cylinders}}{2,000} = \text{TONS}$$

**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:

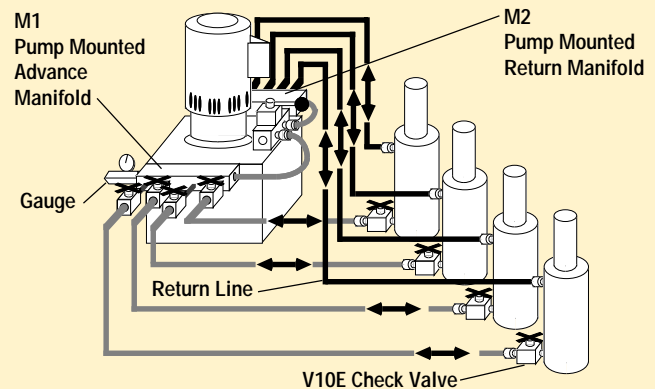
$$\frac{\text{Pump Flow Per Minute}}{\text{Cylinder Effective Area} \times \text{No. of Cylinders}} = \frac{\text{in./min.}}{\text{Piston Travel}}$$

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

## METRIC CONVERSION CHART

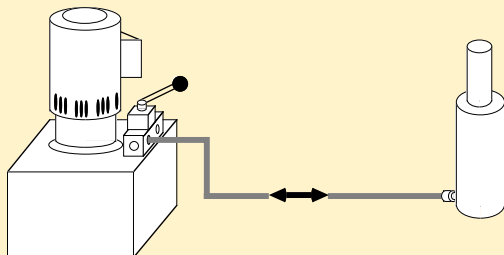
1 U.S. Gallon = 3.785 Liters	1 kPa = 6.9 psi
= 3.785 cu./cm	1 Inch = 2.54 cm
	= 25.4 mm
1 Cubic Inch = 16.39 cu./cm	1 Meter = 39.37 in.
1 Bar = 14.7 psi	1 Horsepower = 745.7 Watts
	Centigrade = 5/9 (F-32)
1 Metric Ton = 2,205 lbs.	Fahrenheit = 9/5 (C+32)
= 1,000 kg	
1 Ton (Short) = 2,000 lbs.	
= 907.18 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 double-acting cylinders.

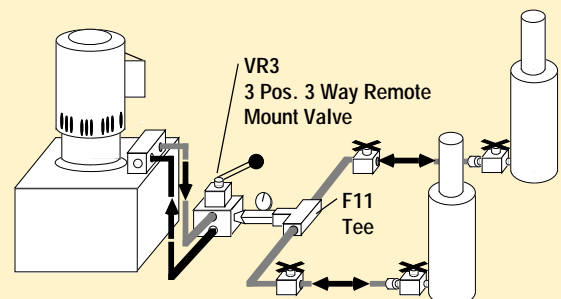


## BASIC HYDRAULIC CONFIGURATIONS

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.



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.



## 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.

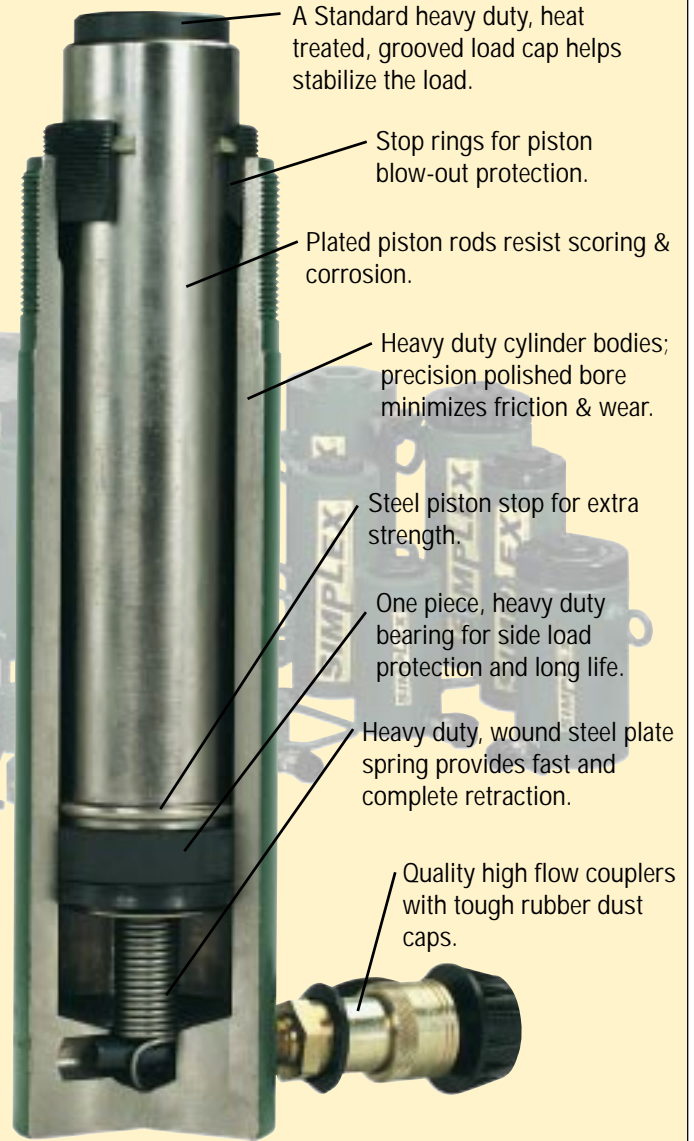
### ■ Piston Blow-Out Protection

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.

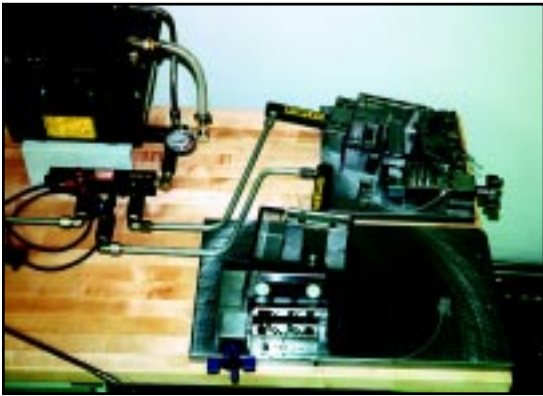
### ■ Exceeds ANSI/ASME B30.1 Safety Standards.



## SIMPLEX CYLINDERS AT A GLANCE CHART

Cylinders Series	Description/Applications	Cylinder Type	Plunger Type	Capacity (Tons)	Strokes (in.)	Page No.(s)		
<b>R</b>	General purpose spring return for fast retraction	Single-Acting	Solid	5 - 100	5/8 - 14 1/4	10 - 12		
<b>RAS</b>	Lightweight for easy carrying and positioning			30 - 150	2 - 10	13		
<b>RAL</b>	Lightweight load holding locknut - spring return			50 - 150	2 - 10	14		
<b>RLS</b>	Low height - spring return			10 - 100	1 - 2	15		
<b>RFS</b>	Very low height - spring return			5 - 150	5/8 - 11/16	16		
<b>RP</b>	Pull cylinder spring return			2 - 5	5 - 5 1/2	17		
<b>RLR</b>	Jacking cylinders - load return			30 - 1,000	2 - 12	22 - 23		
<b>RLN</b>	Mechanical load holding/lock nut - load return			30 - 1,000	2 - 12	24 - 25		
<b>RC</b>	Hard-Kor cylinders are used for pulling applications, prestressing & post tensioning			Double-Acting	Hollow	12 - 100	5/16 - 6 1/8	19
<b>RCD</b>					Solid	30 - 660	1 - 10	20
<b>RDA</b>	Double-acting controlled retraction/fast cycling	Solid	10 - 1,000		2 - 24	26 - 27		

## SINGLE-ACTING SPRING RETURN CYLINDERS



- 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 10 - 12.

## 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 13 - 14.

## DOUBLE-ACTING CYLINDERS



- Choose double-acting cylinders for higher cycle production work or when complete control of larger cylinders is desired. The 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 26 - 27.

## LOCKNUT CYLINDERS



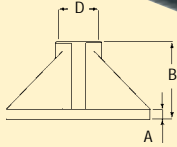
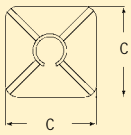
- Choose locknut cylinders when the load must be lifted and held in place for a period of time. In this application Simplex RLN-Series cylinders cut installation time on this power generator by 25%. "The locknut held the load without installing cribbing." See pages 24 - 25.



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



## Cylinder Bases



Model	A	B	C	D
BA10	.39	4.72	9.06	2.28
BA25	.63	4.96	11.02	3.39

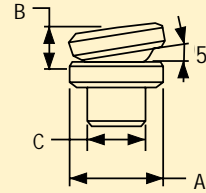
BA10 for R102 through R1014  
BA25 for R252 through R2514

## Cylinder Load Caps



Model	Type of Cylinder
18347	Used on R5 Series
18348	Used on R10 Series
85525	Used on R25 Series
85525	Used on R30 Series
85546	Used on R55 Series
85546	Used on R75 Series
85546	Used on R100 Series
18348	Used on RDA10 Series
85525	Used on RDA30 Series
88390	Used on RDA55 Series
18323	Used on RDA100 Series
18326	Used on RDA150 Series
87721	Used on RDA200 Series

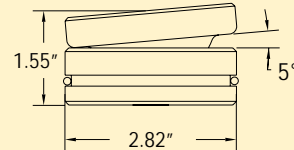
## Tilt Saddles



Model	A	B	C
ATS10	1.38	.59	.88
ATS25	1.97	.83	1.40

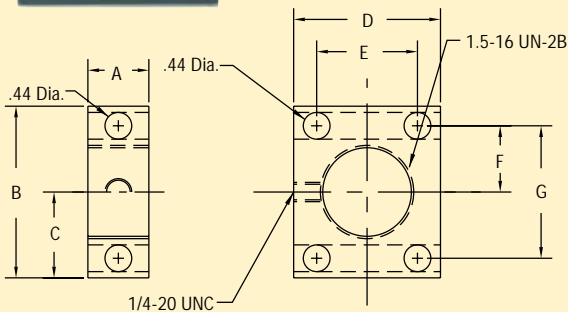
ATS10 for R102 through R1014  
ATS25 for R251 through R2514

ATS100 for R-Series 50, 75 and 100 ton cylinders (See Page 12)



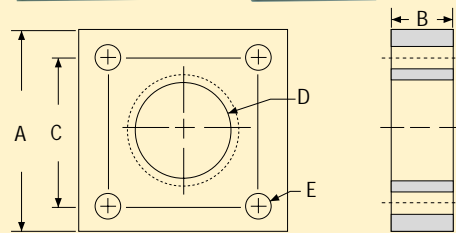
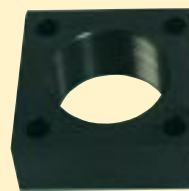
## Mounting Blocks

### Mounting Blocks For R5 Series Cylinders (See Page 10)



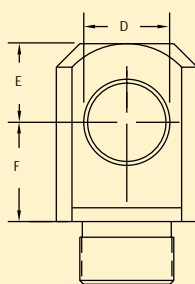
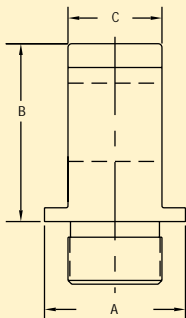
Model	A	B	C	D	E	F	G
BR5	.99	2.75	1.38	2.36	1.62	1.06	2.12

### Mounting Blocks For R10 & R25 Series Cylinders (See Pages 10 & 11)



Model No.	A (in)	B (in)	C (in)	D (in)	E (in)
BR10	3.50	1	2.63	2 1/4-14 UNS-2B	0.34
BR25	5	2	3.66	3 5/16-12 UN-2B	0.66

## Piston Clevis



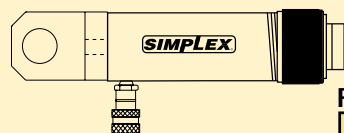
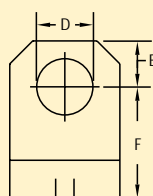
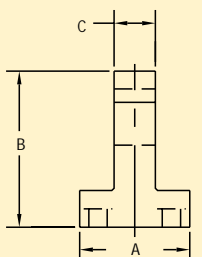
For R-Series 5, 10, 15 & 25

Model	A	B	C	D	E	F
BCR5	1.13	1.62	.56	.63	.63	.75
BCR10	1.69	2.43	1.00	.88	1.00	1.13
BCR15	1.69	2.43	1.00	.88	1.00	1.13
BCR25	2.25	2.93	1.50	1.25	1.25	1.38

(See Pages 10 & 11)



## Base Clevis



For R-Series 5, 10, 15 & 25

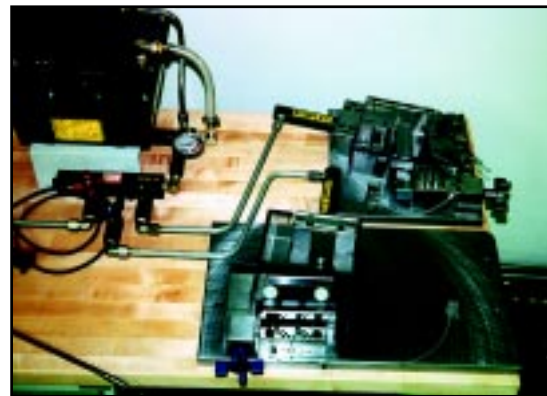
Model	A	B	C	D	E	F
BC5	1.75	1.88	.56	.63	.63	1.00
BC10	2.50	2.63	1.00	.88	1.00	1.38
BC15	2.50	2.63	1.00	.88	1.00	1.38
BC25	3.75	3.13	1.50	1.25	1.25	1.63

(See Pages 10 & 11)

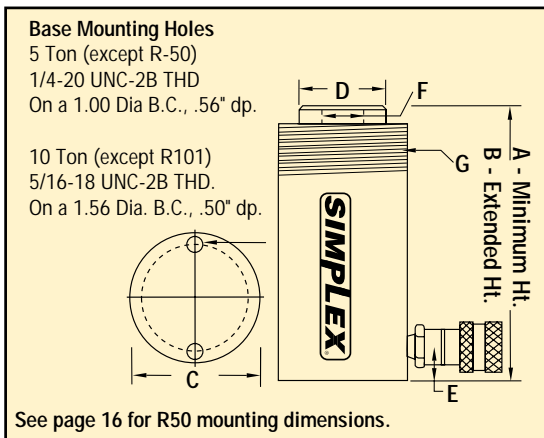
Simplex Cylinders Improve Manufacturing Efficiencies.



- 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.



Cylinder Accs. pg. 9	Bases pg. 9	Hoses pgs. 66-67	Pump & Cylinder Sets pg. 28

## 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)	D Piston O.D. (in)	E Base To Port C/L (in)	F		G		Wgt. (lbs)	Sugstd. Hand Pump							
												Piston I.D. Thrds. (in)	Piston Thrd. Depth (in)	Collar Thrds. (in)	Collar Thrd. Lgth. (in)									
R50	5	5/8	1 5/8	2 1/4	1 1/8	.99	10,000	.6	1.6x2.3	1	3/4	None	None	None	None	2.5	P41							
R51		1	4 11/32	5 11/32				1.0										3/4 x 16	5/8	11/2 x 16	2.5			
R53		3	6 1/2	9 1/2				3.0														3.5		
R55		5	8 1/2	13 1/2				5.0															4.0	
R57		7	10 5/8	17 5/8				7.0																5.5
R59		9 1/8	12 3/4	21 7/8				9.1																
R101	1	3 17/32	4 17/32	2.2	3.5	11/8	3.5																	
R102	2 1/8	4 25/32	6 29/32	5.22				5.2																
R104	4 1/8	6 3/4	10 7/8	9.2					6.3															
R106	6 1/8	9 3/4	15 7/8	13.7						8.8														
R108	8	11 3/4	19 3/4	18.0							10.5													
R1010	10 1/8	13 3/4	23 7/8	22.7								12.0												
R1012	12	15 3/4	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

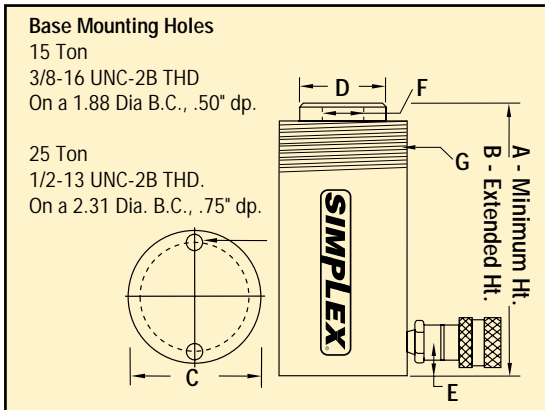
Simplex Cylinders Are Perfect For Heavy Maintenance.



- 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.



Cylinder Accys. pg. 9	Bases pg. 9	Hoses pgs. 66-67	Pump & Cylinder Sets pg. 28

## Spring Return Cylinders 15 & 25 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)	D Piston O.D. (in)	E Base To Port C/L (in)	F		G		Wgt. (lbs)	Sugstd. Hand Pump
												Piston I.D. Thrds. (in)	Piston Thrd. Depth (in)	Collar Thrds. (in)	Collar Thrd. Lgth. (in)		
R152	15	2	5 7/8	7 7/8	2	3.14	9,554	6.3	2 3/4	15/8	3/4	1 x 8	1	23/4 x 16	1 3/16	8.3	P42
R154		4	7 7/8	11 7/8				12.6								10.8	
R156		6	10 11/16	16 11/16				19.0								14.5	
R1510		10	14 11/16	24 11/16				31.4								19.5	
R1514		14	18 11/16	32 11/16				44.0								24.5	
R251	25	1	5 1/2	6 1/2	2 9/16	5.15	9,700	5.2	3 3/8	2 1/4	1	1 1/2 x 16	1 1/8	35/16x12	1 15/16	12.0	P42
R252		2	6 1/2	8 1/2				10.3								15.0	
R254		4	8 1/2	12 1/2				20.6								18.0	
R256		6 1/4	10 3/4	17				32.2								23.0	
R258		8 1/4	12 3/4	21				42.5								27.0	
R2510		10 1/4	14 3/4	25				52.8								31.0	
R2512		12 1/4	16 3/4	29				63.1								35.0	
R2514		14 1/4	18 3/4	33				73.4								39.0	

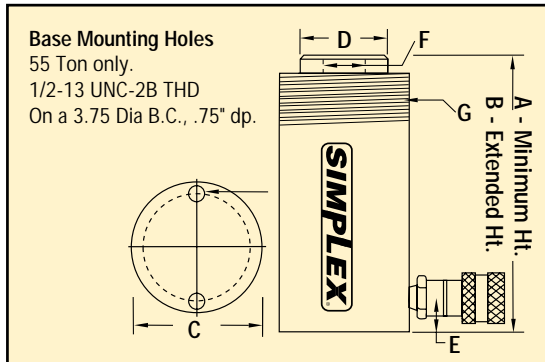
Simplex Cylinders Help Stand Up To Tough Construction Jobs.



- 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.



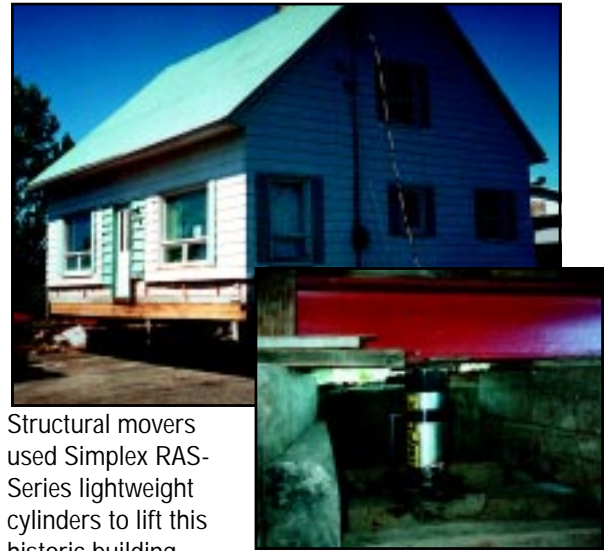
		
Power Pumps pgs. 40-58	Hoses pgs. 66-67	Cylinder Accessories pg. 9

## Spring Return Cylinders 30 Through 100 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)	D Piston O.D. (in)	E Base To Port C/L (in)	F		G		Wgt. (lbs)	Sugstd. Hand Pump
												Piston I.D. Thrds. (in)	Piston Thrd. Depth (in)	Collar Thrds. (in)	Collar Thrd. 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	1 1/2 x 16	1 3/16	35/16x12	1 15/16	40.0	P82
R552	55	2	6 15/16	8 15/16	3 3/4	11.05	9,955	22.1	5	3 1/8	1 3/8	N/A	N/A	5 x 12	2 1/8	32.0	P42
R554		4	8 15/16	12 15/16				54.0								42.0	P82
R556		6 1/4	11 1/8	17 3/8				69.0								50.0	
R5513		13 1/4	18 1/8	31 3/8				146.3								78.0	
R756	75	6 1/8	11 1/4	17 3/8	4 1/2	15.90	9,430	97.4	5 3/4	3 3/4	1 3/16	N/A	N/A	5 3/4 x 12	1 3/4	63.0	*
R7513		13 1/8	19 3/8	32 1/2				208.0								130.0	
R1006	100	6 5/8	13 1/4	20 11/16	5 1/8	20.63	9,695	137.0	6 1/4	4 1/8	1 3/16	N/A	N/A	6 1/4 x 12	2 1/4	90.0	
R10010		10 1/4	16 7/8	27 15/16				212.0								110.0	

\*Power pumps are suggested for these units (see pages 40-58)

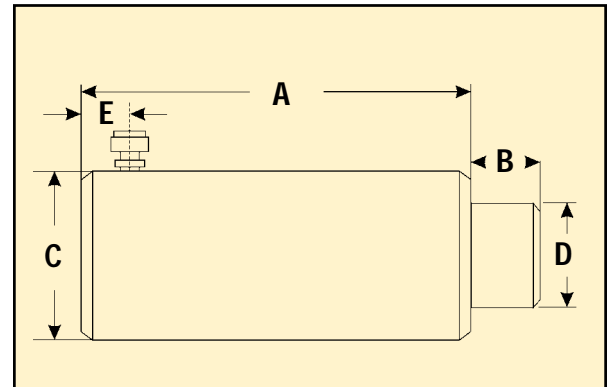
Simplex Silver Lite Aluminum Cylinders Cut Carrying Weights Up To 60%.



Structural movers used Simplex RAS-Series lightweight cylinders to lift this historic building.

"Simplex lightweight cylinders were easy to carry."

- 13 Standard Models from 30 through 150 tons.
- Up to 60% lighter than steel cylinders.
- Carry handles standard on all models.
- High flow quality couplers.
- Large bearing surfaces for side load protection.
- Hard anodized housing & piston reduce wear & corrosion.
- Heavy duty spring for fast & full retraction.
- Rod wiper protects inner cylinder from dirt.
- Complies with ANSI/ASME B30.1 safety standards.



## Aluminum Spring Return Cylinders 30 Through 150 Ton Capacities

Model Number	Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	Effect Area (sq in)	Oil Cap. Req'd (cu in)	C Body O.D. (in)	D Piston O.D. (in)	E Base To Port C/L (in)	Weight (lbs)	Sugstd. Hand Pumps
RAS302B	30	2	6.5	8.5	6.5	13	4.5	2.5	1.5	14	P42/P72
RAS306B		6	10.5	16.5		39				18	P72/P82
RAS502B	50	2	6.5	8.5	11	22.1	5.5	3.12	1.5	13	P72/P82
RAS504B		4	8.5	12.5		44.2				17	P72/P82
RAS506B		6	10.5	16.5		66.2				28	P140
RAS5010B		10	14.5	24.5		110.4				36	*
RAS1002B		2	6.5	8.5		20.7				41.2	8
RAS1004B	4	8.5	12.5	82.4	45		P140				
RAS1006B	6	10.5	16.5	123.7	50		*				
RAS10010B	10	14.5	24.5	206	68		*				
RAS1502B	2	6.5	8.5	30.7	61.4		10	4.875	1.5	58	
RAS1506B	6	10.5	16.5		184.1	86				*	
RAS15010B	10	14.5	24.5		306.8	110				*	

\*Power pumps are suggested for these units (see pages 40 - 58).

CUSTOM STROKES AND CAPACITIES AVAILABLE, CONTACT FACTORY

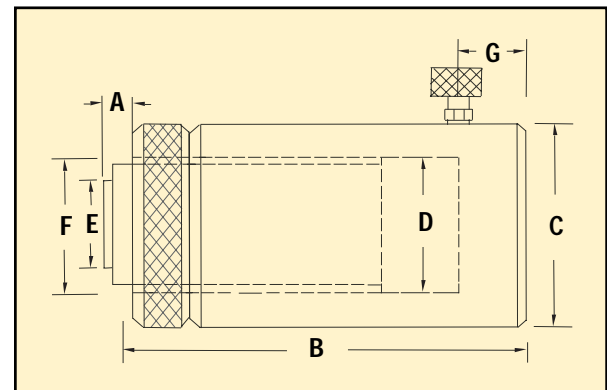
# CYLINDERS

# 50 - 150 TON ALUMINUM LOCKNUT

Simplex Silver Lite Aluminum Cylinders Cut Carrying Weights Up To 60%.



- 11 standard models from 50 through 150 tons.
- Heat treated steel load caps.
- Hard anodized housing & piston reduce wear & corrosion.
- Stop ring for piston blow-out protection.
- Heavy duty spring for fast & full retraction.
- Carry handles standard on all models.
- High flow quality couplers.
- Complies with ANSI/ASME B30.1 safety standards.



		
Power Pumps pgs. 40-58	Hoses pgs. 66-67	Accessories & Fittings pg. 64-68

## Aluminum Lock Nut Spring Return Cylinders 50 Through 150 Ton Capacities

Model Number	Cap. (tons)	A Stroke (in)	B Min. Ht. (in)	Ext. Ht. (in)	Effect Area (sq in)	Oil Cap. Req'd (cu in)	C Body O.D. (in)	D Cyl. Bore Dia. (in)	E Saddle Dia. (in)	F Piston O.D. (in)	G Base To Port C/L (in)	Weight (lbs)	Sugstd. Hand Pumps
RAL502	50	2	8.125	10.125	11.04	21.65	5.5	3.75	2.50	3.125	1.5	22	P42/P72
RAL504		4	10.125	14.125		43.30						38	P72/P82
RAL506		6	12.125	18.125		64.92						32	P72/P82
RAL5010		10	16.125	26.125		108.20						40	P140
RAL1002	100	2	8.375	10.375	20.68	40.51	8	5.125	3.5	4.25	1.5	45	P72/P82
RAL1004		4	10.375	14.375		81.00						55	P82
RAL1006		6	12.375	18.375		121.50						64	P140
RAL10010		10	16.375	26.375		202.50						82	*
RAL1502	150	2	8.375	10.375	30.68	60.60	10	6.25	4.5	5	1.5	65	P140
RAL1506		6	12.375	18.375		181.80						101	*
RAL15010		10	16.375	26.375		303.00						156	*

\*Power pumps are suggested for these units (see pages 40 - 58).

CUSTOM STROKES AND CAPACITIES AVAILABLE, CONTACT FACTORY

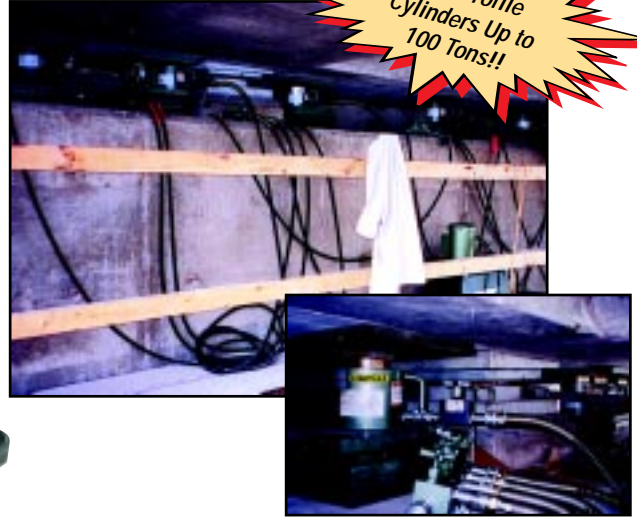
# LOW PROFILE 10 - 100 TONS

# CYLINDERS

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

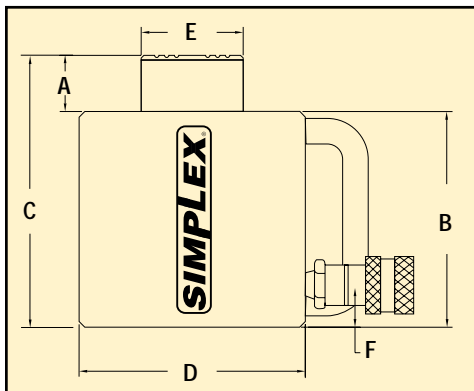


Low Profile Cylinders Up to 100 Tons!!



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



Power Pumps pgs. 40-58	Hoses pgs. 66-67	Pump & Cylinder Sets pg. 28

## Spring Return Low Profile Cylinders 10 Through 100 Ton Capacities

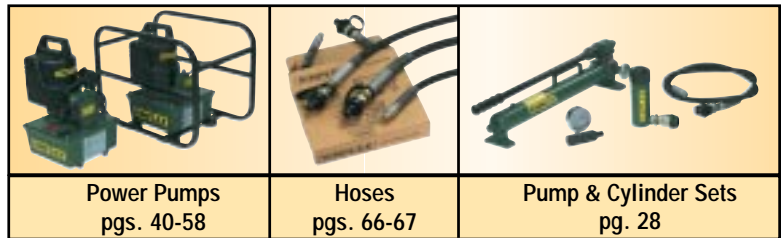
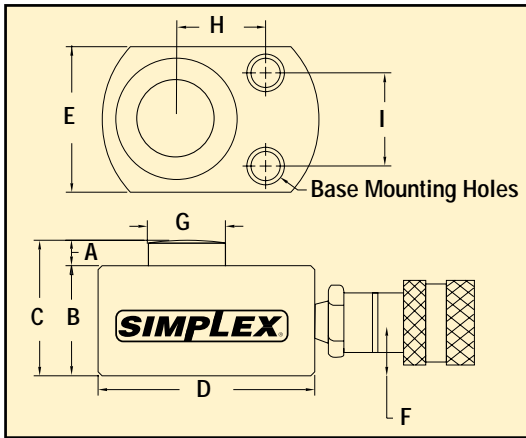
Model Number	Cap. (tons)	A Stroke (in)	B Min. Ht. (in)	C Ext. Ht. (in)	Ram Bore Dia. (in)	Effect Area (sq.in.)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu.in.)	D Body O.D. (in)	E Piston O.D. (in)	F Base To Port C/L (in)	Wgt. (lbs)	Sugstd. Hand Pump
RLS101	10	1 1/2	3 15/32	4 31/32	1 11/16	2.23	8,940	3.4	2 3/4	1 1/2	1 1/16	5.8	P42/ P72
RLS201	20	1 3/4	3 7/8	5 5/8	2 3/8	4.43	9,030	7.8	3 5/8	2		10.5	
RLS302	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	
RLS502	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	P140
RLS1002	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	

Simplex Flat Jacks, Designed To Fit In Tight Spots.



- 8 Models
- Stop rings for piston blow-out protection.
- Bronze plated 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.

Simplex 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.



Power Pumps pgs. 40-58      Hoses pgs. 66-67      Pump & Cylinder Sets pg. 28

### Mounting Hole Dimensions

Capacity	H (in)	I (in)	Base Mounting Hole Dimensions (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 Return Flat Jacks 5 Through 150 Ton Capacities

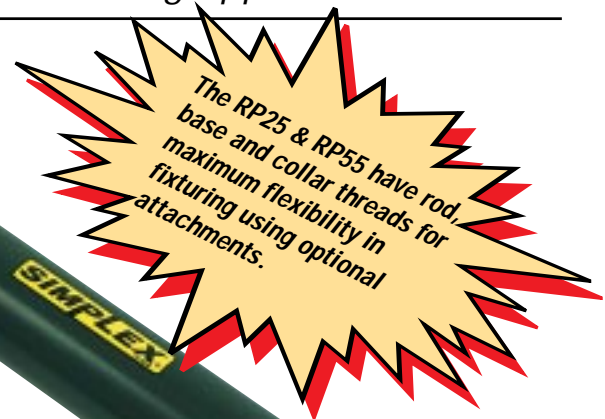
Model Number	Cap. (tons)	A Stroke (in)	B Min. Ht. (in)	C Ext. Ht. (in)	Ram Bore Dia. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	D Body Length (in)	E Body Width (in)	F Base To Port C/L (in)	G		Suggested Hand Pump
												Piston O.D. Spring Ret. (in)	Wgt. (lbs)	
R50	5	5/8	1 5/8	2 1/4	1 1/8	.99	10,000	.6	2 9/16	1 5/8	3/4	1	2.5	P41/P71
RFS10	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	3.3	
RFS20	20		2 1/32	2 15/32	2 3/8	4.43	9,030	1.9	4	3		1 1/8	6.0	
RFS30	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	8.5	P42/P72
RFS50	50	5/8	2 5/8	3 1/4	3 1/2	9.62	10,400	6.0	5 1/2	4 1/2		1 3/4	14.3	
RFS75	75		3 1/8	3 3/4	4 1/2	15.90	9,440	10.0	6 1/2	5 1/2		2 1/8	24.5	
RFS100	100		3 3/8	4	5	19.63	10,200	12.3	7	6		2 1/2	31.0	
RFS150	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	50.5	



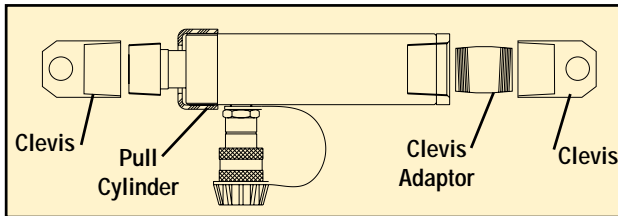
# 2 - 5 TON PULL CYLINDERS

# CYLINDERS

Simplex Pull Cylinders Are Designed For Pulling & Tensioning Applications.

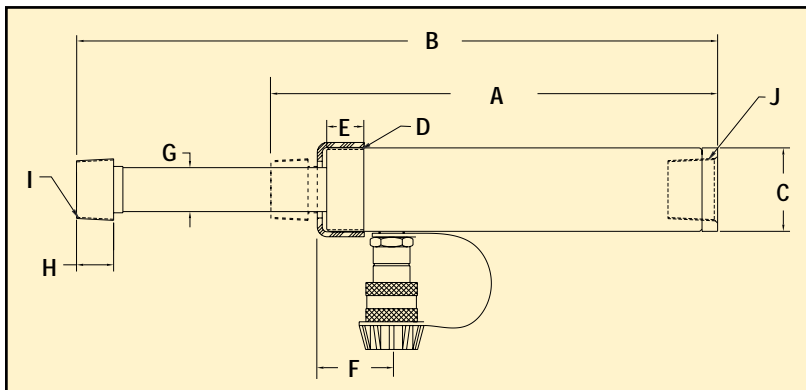


- 2 Models
- High flow quality couplers.
- Designed for pulling & tensioning applications.
- High strength all steel construction.
- Chrome plated piston rods resist corrosion.
- Rod wiper protects against contamination.
- Piston rod automatically extends when pressure is released.
- High strength compression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



**Clevis Ends**

Model Number	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)
RPC25	5 1/8	4 5/16	1 5/16	2	3/4	1
RPC55	6	5	1 1/2	2 1/2	7/8	1 1/2



## Hydraulic Pull Cylinders

Model Number	Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	C O.D. (in)	D Collar Thrd. (in)	E Collar Length (in)	F Cyl. to Port (in)	G Piston Dia. (in)	H Piston Adpt. (in)	I NPTF Thrd. (in)	J NPTF Thrd. (in)	Oil Cap. (cu. in.)	Pres. @ Cap. (psi)	Wgt. (lbs)
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.

## 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.

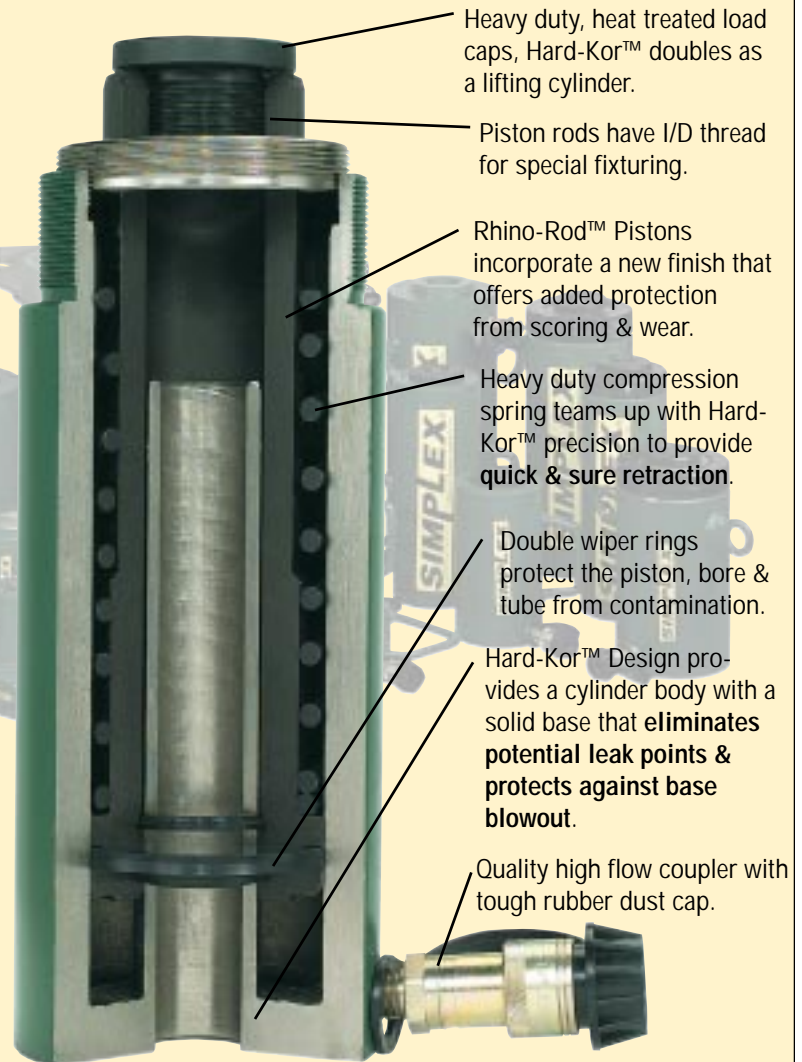
### ■ Low Profile For Greater Flexibility.

With lower profile & longer strokes, Hard-Kor™ cylinders fit in the tightest spaces.

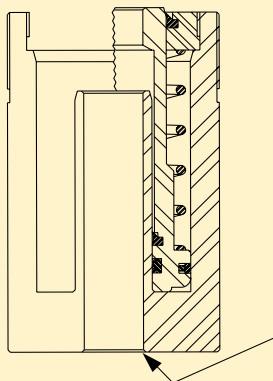
### ■ Reserve Power For The Toughest Jobs.

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.

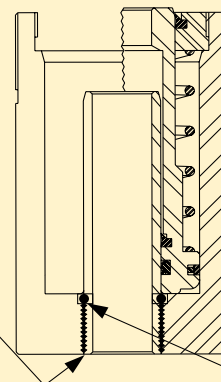


## SIMPLEX HARD-KOR™ CYLINDERS



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



Weak spots created from threaded or welded construction are the **major cause of base blowout.**

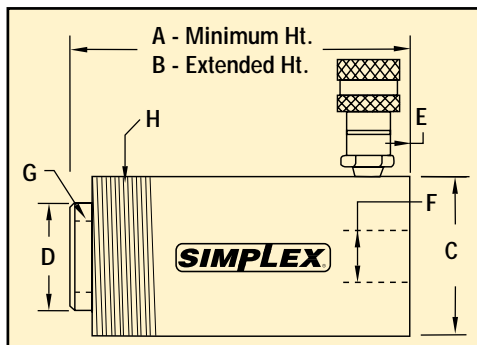
The additional base seals are potential leak points that contribute to early failure.

Simplex Hard-Kor™ Cylinders Make Light Work Of Structural Reconstruction.



Damage from earthquakes and age, caused the roof of the Mission San Juan Capistrano to be in need of repair. 24 Simplex RC121 cylinders were used to transfer the load, so repairs could be made.

- 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.



### Base Mounting Holes

Capacity	Thread		Bolt Circle Dia. (in)
	Size (in)	Dpth. (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

### Optional Threaded Saddles

AS20			AS30		
A	B	C	A	B	C
54	1-8	.38	63	1.25-7	.38

## Single-Acting Hollow Cylinders 12 Through 100 Ton Capacities

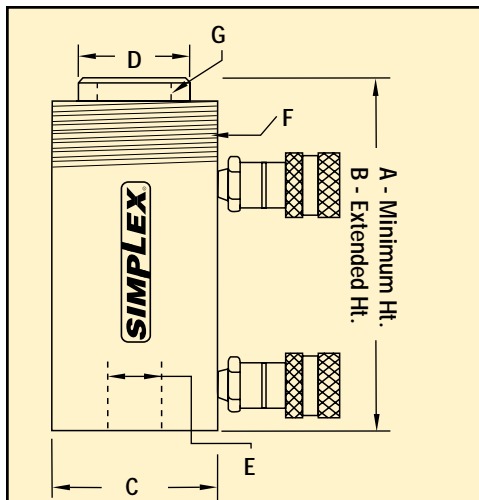
Model Number	Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	C Body O.D. (in)	D Piston O.D. (in)	E Base To Port C/L (in)	F Center Hole Dia. (in)	H		G		Wgt. (lbs)						
												Collar Thrds. (in)	Collar Thrd. Lgth. (in)	Piston Thrds. (in)	Piston Thrd. Lgth. (in)							
RC120	12	5/16	2 3/16	2 1/2	2.36	10,185	.90	2 3/4	1 3/8	7/16	49/64	2 3/4 - 16	1 13/16	3/4 - 16	5/8	3.5						
RCQ120														3/4 - 10								
RC121		1 5/8	4 3/4	6 3/8			8.3		4.5	5 1/8				25/32	49/64		2 3/4 - 16	1 13/16	----	5/8		
RC1211																			3/4 - 16			
RC123	3	7 1/4	10 1/4	8.64	6,950	64	5	2 1/2	13/16	1 5/16	4 1/2 - 12	1 3/4	1 13/16 - 16	7/8	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																	6	11 3/16	17 3/16	32	2 1/8	51/64
RC302	30	2 1/2	7	9 1/2			8.64		6,950	22				5	2 1/2	13/16	1 5/16	4 1/2 - 12	1 3/4	1 13/16 - 16	7/8	26
RC306																						
RC603	60	3	8 21/32	11 21/32	14.58	8,230		44		6 3/4	4	1	2 1/8		6 1/4 - 12	2				2 3/4 - 16	3/4	68
RC606																						
RC1003	100	3	9	12			20.60	9,700	62		8 1/4	5		1			3 1/8	----	----	4 - 16	1	99

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



Engineers from around the world watched as Simplex hollow 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.

- 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

Capacity	Thread		Bolt Circle Dia. (in)
	Size (in)	Dpth. (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 Hollow Hole Cylinders 30 Through 500 Ton Capacities

Model Number	Push Cap. (tons)	Pull Cap. (tons)	Stroke (in)	A		Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	C Body O.D. (in)	D Piston O.D. (in)	E Center Hole Dia. (in)	F		G		Wgt. (lbs)
				Min. Ht. (in)	Ext. Ht. (in)							Collar Thrds. (in)	Collar Thrd. Lgth. (in)	Piston Thrds. (in)	Piston Thrd. Lgth. (in)	
RCD302	30	30	2	7	9	8.6	6,950	8.6	5	2 1/2	1 5/16	4 1/2 - 12	1 3/4	1 13/16 - 16	7/8	48
RCD307			7	12 1/4	19 1/4			24.75								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	100	68	1	7	9	20.6	9,700	9.0	8 1/4	5	3 1/8	----	----	----	----	85
RCD1003			3	9	12			21.1				100				
RCD1006			6	12	18			42.3				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	----	6	16 1/4	22 1/4	49.30	10,000	172	12	8	4 1/8	----	----	----	----	385
RCD3006C	434	----		18 3/4	24 3/4	91.50		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

## 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 inlaid 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.)

### ■ RLR Series 30 to 1,000 Tons Pages 22 - 23



### ■ RLN Series 30 to 1,000 Tons Pages 24 - 25



### ■ RDA Series 10 to 1,000 Tons Pages 26 - 27



# 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.

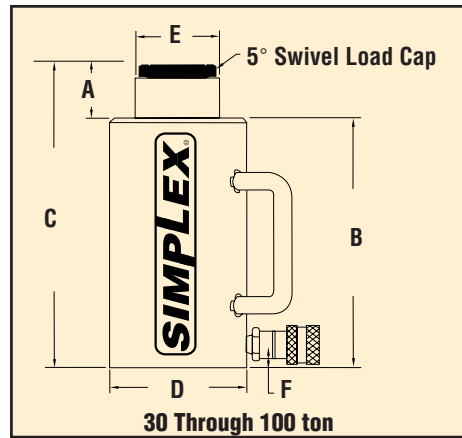
- 31 Models
- Rated for full duty.
- High flow quality couplers.
- Low closed heights.
- Plated pistons to resist scoring & corrosion.
- Stop rings for piston blow-out protection.
- Large bearings resist side load.
- Available in custom strokes & capacities.
- Rod wiper protects inner cylinder from dirt.
- 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.

		
Power Pumps pgs. 40-58	Hoses pgs. 66-67	Couplers pg. 64 Manifolds & Fittings pg. 65

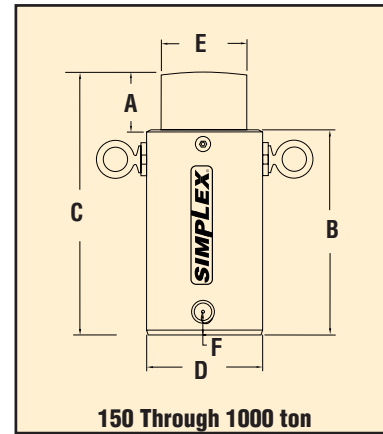


When railcar bulk heads need straightening, a 150 ton Simplex cylinder used with a SUC-O-MATIC™ power pump can save the day. Simplex load return cylinders completely retract in any position when used with the Simplex SUC-O-MATIC™ power pumps.





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



Note: Swivel eye bolts are removable.

## Load Return Jacking 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)	E Piston O.D. (in)	F Base To Port C/L (in)	Weight (lbs)	Suggested Power Pump
RLR306	30	6	9 3/8	15 3/8	2 7/8	6.49	9,240	38.9	4	2	3/4	32.0	Simplex Suc-O-Matic™ equipped Power Pumps are highly recommended to power load return cylinders. Unlike any other power unit, Simplex Suc-O-Matic™ equipped Pumps will fully retract load return cylinders automatically.
RLR502		2	5 7/16	7 7/16				22.1				30.0	
RLR506	50	6	9 7/16	15 7/16	3 3/4	11.05	9,054	66.3	5	3	25/32	55.0	
RLR5010		10	13 7/16	23 7/16				133.0				92.0	
RLR1002		2	6 9/16	8 9/16				40.0				60.0	
RLR1006	100	6	10 9/16	16 9/16	5	19.63	10,200	118.0	6 3/8	3 3/8	1 1/4	90.0	
RLR10010		10	14 9/16	24 9/16				196.0				126.0	
RLR1502		2	7	9				66.4				117.0	
RLR1506	150	6	11	17	6 1/4	30.68	9,778	199.0	9	5 9/16	1 15/16	189.0	
RLR15012		12	17	29				398.0				297.0	
RLR2002		2	8	10				88.4				184.0	
RLR2006	200	6	12	18	7 1/4	41.28	9,054	265.0	10	6 9/16	2 1/16	282.0	
RLR20012		12	18	30				530.0				429.0	
RLR3002		2	11 3/4	13 3/4				120.0				277.0	
RLR3006	300	6	13 3/4	19 3/4	8 3/4	60.13	9,978	361.0	12	7 13/16	2 7/16	405.0	
RLR30012		12	19 3/4	31 3/4				722.0				597.0	
RLR4002		2	11 13/16	11 13/16				174.0				455.0	
RLR4006	400	6	15 13/16	21 13/16	10 1/2	86.59	9,238	520.0	14	6 9/16	3	612.0	
RLR40012		12	21 13/16	33 13/16				1040.0				842.0	
RLR5002		2	12 5/8	14 5/8				208.0				627.0	
RLR5006	500	6	16 5/8	22 5/8	11 1/2	103.87	9,628	623.0	16	10 5/16	3 3/16	855.0	
RLR50012		12	22 5/8	34 5/8				1246.0				1197.0	
RLR6002		2	13 1/2	15 1/2				246.0				655.0	
RLR6006	600	6	17 1/2	23 1/2	12 1/2	122.71	9,778	738.0	17 1/2	11 5/16	3 1/2	902.0	
RLR60012		12	23 1/2	35 1/2				1476.0				1273.0	
RLR8002		2	14 7/16	16 7/16				330.0				997.0	
RLR8006	800	6	18 7/16	24 7/16	14 1/2	165.13	9,690	991.0	18	13 5/16	4 1/8	1256.0	
RLR80012		12	24 7/16	36 7/16				1982.0				1644.0	
RLR10002		2	16 1/8	18 1/8				402.0				1523.0	
RLR10006	1000	6	20 1/8	26 1/8	16	201.06	9,950	1206.0	21	14 15/16	4 1/4	1883.0	
RLR100012		12	26 1/8	38 1/8				2412.0				2423.0	

Simplex Suc-O-Matic™ equipped Power Pumps are highly recommended to power load return cylinders. Unlike any other power unit, Simplex Suc-O-Matic™ equipped Pumps will fully retract load return cylinders automatically.

For more information on the Suc-O-Matic™ feature see page 60.

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

# CYLINDERS



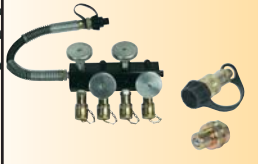
# LOCK NUT - 30-1000 TON

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

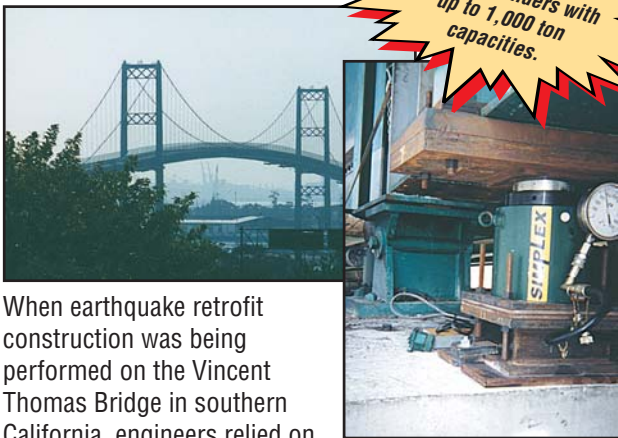


RLN Series lock nut cylinders cut installation time on this power generator by 25%. "The locknut held the load without the extra chore of cribbing." The job was completed even quicker with the use of Simplex SUC-O-MATIC™ power pumps.

- 32 Models
- Stop ring for piston blow-out protection.
- 5° 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.

		
Power Pumps pgs. 40-58	Hoses pgs. 66-67	Couplers pg. 64 Manifolds & Fittings pg. 65

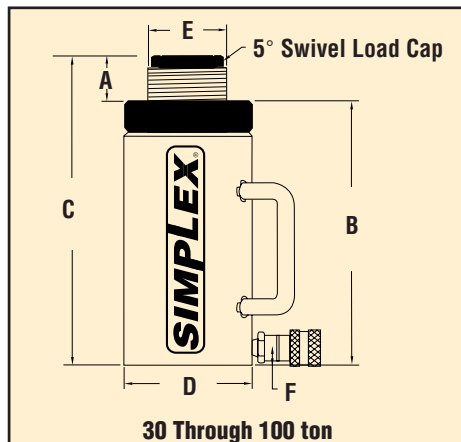
*Simplex supplies custom cylinders with up to 1,000 ton capacities.*



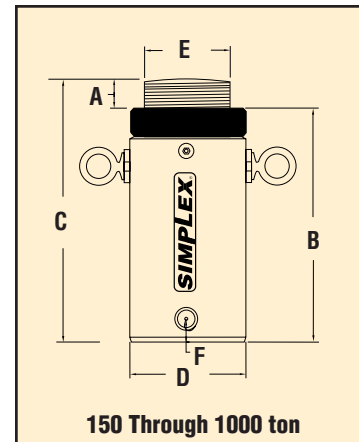
When earthquake retrofit construction was being performed on the Vincent Thomas Bridge in southern California, engineers relied on Simplex lock nut cylinders. "With bronze inlaid bearings, nickel plating and ANSI/ASME B30.1 design, Simplex cylinders were the only choice."







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



Note: Swivel eye bolts are removable.

## 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)	E Piston O.D. (in)	F Base To Port C/L (in)	Weight (lbs)	Suggested Power Pump
RLN302	30	2	6 3/8	8 3/8	2 7/8	6.49	9,240	13.0	4	2 7/16	3/4	21.0	Simplex Suc-O-Matic™ equipped Power Pumps are highly recommended to power load return cylinders. Unlike any other power unit, Simplex Suc-O-Matic™ equipped Pumps will fully retract load return cylinders automatically.  For more information on the Suc-O-Matic™ feature see page 60.
RLN306		6	10 3/8	16 3/8				38.9				35.0	
RLN502	50	2	6 3/4	8 3/4	3 3/4	11.05	9,054	22.1	5	3 3/16	25/32	38.0	
RLN506		6	10 3/4	16 3/4				66.2				63.0	
RLN5010		10	14 3/4	24 3/4				133.0				100.0	
RLN1002	100	2	8	10	5	19.63	10,200	40.0	6 3/8	4 5/16	1 1/4	87.0	
RLN1006		6	12	18				118.0				132.0	
RLN10010		10	16	26				196.0				202.0	
RLN1502	150	2	8	10	6 1/4	30.68	9,780	66.4	9	5 9/16	1 15/16	149.0	
RLN1506		6	12	18				199.0				221.0	
RLN15012		12	18	30				398.0				311.0	
RLN2002	200	2	9 1/2	11 1/2	7 1/4	41.28	9,054	88.4	10	6 9/16	2 1/16	233.0	
RLN2006		6	13 1/2	19 1/2				265.0				332.0	
RLN20012		12	19 1/2	31 1/2				530.0				479.0	
RLN3002	300	2	11 1/2	13 1/2	8 3/4	60.13	9,978	120.0	12	7 13/16	2 7/16	357.0	
RLN3006		6	15 1/2	21 1/2				361.0				485.0	
RLN30012		12	21 1/2	33 1/2				722.0				677.0	
RLN4002	400	2	13 13/16	15 13/16	10 1/2	86.59	9,238	174.0	14	9 5/16	3	520.0	
RLN4006		6	17 13/16	23 13/16				520.0				675.0	
RLN40012		12	23 13/16	25 13/16				1040.0				905.0	
RLN5002	500	2	14 3/4	16 3/4	11 1/2	103.87	9,628	208.0	16	10 5/16	3 3/16	927.0	
RLN5006		6	18 3/4	24 3/4				623.0				1041.0	
RLN50012		12	24 3/4	36 3/4				1246.0				1383.0	
RLN6002	600	2	15 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	
RLN6006		6	19 5/8	25 5/8				738.0				1232.0	
RLN60012		12	27 5/8	39 5/8				1476.0				1603.0	
RLN8002	800	2	16 15/16	18 15/16	14 1/2	165.13	9,690	330.0	18	13 5/16	4 1/8	1148.0	
RLN8006		6	21 15/16	27 15/16				991.0				1407.0	
RLN80012		12	27 15/16	39 15/16				1982.0				1795.0	
RLN10002	1000	2	19 5/8	21 5/8	16	201.06	9,950	402.0	21	14 13/16	4 1/4	1818.0	
RLN10006		6	23 5/8	29 5/8				1206.0				2178.0	
RLN100012		12	29 5/8	41 5/8				2412.0				2718.0	

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

# CYLINDERS

# DOUBLE-ACTING - 10-1000 TON

Simplex Double-Acting Cylinders Increase Productivity.



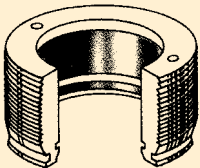
- 31 Models
- Available in custom strokes & sizes.
- Relief valves protect against over pressurizing.
- Standard collar threads on models up to 200 tons.
- Optional custom base & collar threads available on models 300 tons and up.
- Ideal for heavy duty applications.
- Provides force in advance & return 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.

Maintenance crews relied on Simplex RDA15018 cylinders to help lift, transport and launch a U.S. Navy research ship from dry dock to the ships launch site. "Simplex cylinders were key to a successful operation."

		
Power Pumps pgs. 40-58	Hoses pgs. 66-67	Couplers pg. 64 Manifolds & Fittings pg. 65

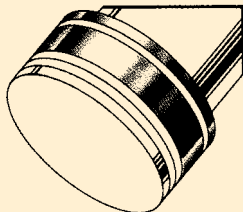
## 300 THROUGH 1,000 TON MODELS

### RETAINING NUT



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.

### PISTON FLANGE

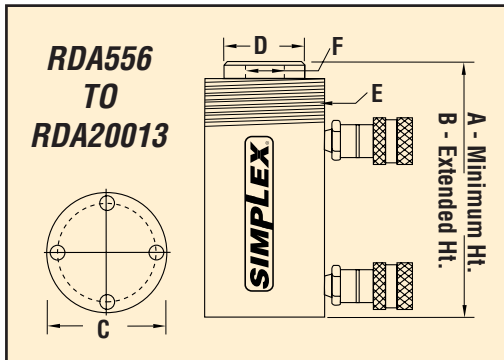


Thick bronze inlay on the piston flange virtually eliminates scoring of cylinder bore while offering the best protection against accidental side loading.



# DOUBLE-ACTING - 10-1000 TON

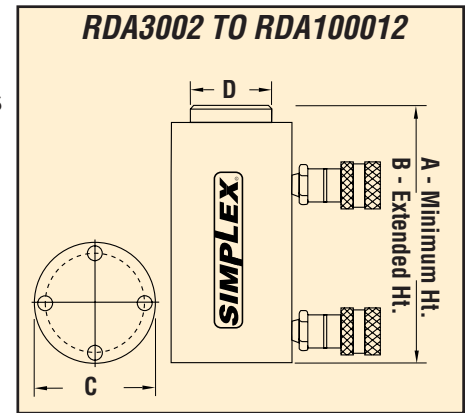
# CYLINDERS



Base Mounting Dimensions

Capacity	Thread		Bolt Circle Dia. (in)
	Size (in)	Depth (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
200 Ton	1-8	1 1/8	5

10 & 30 Ton Cylinders do not have base mounting holes.



## Double-Acting Cylinders 10 Through 1000 Ton Capacities

Model Number	Push Cap. (tons)	Pull Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	Pull Effect Area (sq in)	Push Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	C Body O.D. (in)	D Piston O.D. (in)	Ram Bore Dia. (in)	F		E		Wgt. (lbs)
													Piston I.D. Thrds. (in)	Piston Thrd. Lgth. (in)	Collar Thrds. (in)	Collar Thrd. Lgth. (in)	
RDA1010	10	4	10	16 1/8	26 1/8	0.80	2.23	8,960	22.33	2 7/8	1 3/8	---	1 - 8	1	21/4-14	1 1/16	28
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
RDA3014			14 1/2	21 5/8	36 1/8				92.70								64
RDA556	55	17	6 1/8	13 1/8	19 1/4	3.40	11.05	9,955	46	5	3 1/8	---	1 - 12	1 1/2	5 - 12	1 3/4	68
RDA5512			12	19 1/8	31 1/8				92								114
RDA5524			24	31 5/8	55 5/8				184								201
RDA1006	100	45	6 1/16	13 7/8	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
RDA10012			12	19 7/8	31 7/8				151								187
RDA1506	150	67	6 1/16	15 7/16	21 1/2	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
RDA15012			12	21 1/2	33 1/2				236								295
RDA2002	200	72	2	11 7/16	13 7/16	15.91	44.18	9,054	66	10	6	7 1/2	---	---	9 3/4-12	1 7/8	232
RDA2006			6	15 7/16	21 7/16				170								315
RDA20013			13	22 7/16	35 7/16				368								440
RDA3002	335	30	2	13 1/4	15 1/4	20.62	70.9	10,000	101	12	8	9 1/2	---	---	---	---	277
RDA3006			6	17 1/4	23 1/4				302								441
RDA30012			12	23 1/4	35 1/4				605								688
RDA4002	565	74	2	12 3/8	14 3/8	49.48	113	10,000	127	14 1/2	9	12	---	---	---	---	530
RDA4006			6	16 5/8	22 5/8				382								670
RDA40012			12	22 7/8	34 7/8				762								880
RDA5002	664	85	2	16 1/2	18 1/2	54.19	132	10,000	156	16	10	13	---	---	---	---	722
RDA5006			6	20 1/2	26 1/2				471								953
RDA50012			12	26 1/2	38 1/2				942								1300
RDA6002	600	110	2	15	17	44.17	122.71	10,000	158	17	10	12 1/2	---	---	---	---	917
RDA6006			6	19	25				472								1188
RDA60012			12	25	37				944								1595
RDA8002	800	130	2	16	18	52.03	165.13	9,690	226	18 1/2	12	14 1/2	---	---	---	---	1166
RDA8006			6	20	26				680								1440
RDA80012			12	26	38				1,360								1776
RDA10002	1000	75	2	16	18	50.27	227	8,810	354	21	15	17	---	---	---	---	1558
RDA10006			6	20	26				1,071								2058
RDA100012			12	27	39				2,142								2808

**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 foot 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 Single Speed Pump	Model Two Speed Pump	Cap. (tons)	Stroke (in)	Closed Height (in)	Included In Set				Optional Gauge	Optional Gauge Adapter
					Cylinder Model	Pump Model Single Speed	Pump Model Two Speed	Type Of Hose		
S101	ST101	10	1 1/2	3 15/32	RLS101	P41	P42	HC6	GT5	GA1
S201	ST201	20	1 3/4	3 7/8	RLS201					
S302	ST302	30	2 7/16	4 5/8	RLS302					
S502	ST502	50	2 3/8	4 13/16	RLS502					
N/A	ST1002	100	2 1/4	5 9/16	RLS1002	N/A	P82		GT20	

## Standard Spring Return Sets

S102	ST102	10	2 1/8	4 25/32	R102	P41	P42	HC6	GT5	GA1
S106	ST106	10	6 1/8	9 3/4	R106					
S1010	ST1010	10	10 1/8	13 3/4	R1010					
S252	ST252	25	2	6 1/2	R252					
S254	ST254	25	4	8 1/2	R254	N/A	P82	HC6	GT25	GA1
N/A	ST256	25	6 1/4	10 3/4	R256					
N/A	ST2514	25	14 1/4	18 3/4	R2514					
N/A	ST556	55	6 1/4	11 1/8	R556				GT25	

## Hard-Kor™ Sets

N/A	ST302HC	30	2 1/2	7	RC302	N/A	P42	HC6	G5	GA1
N/A	ST306HC	30	6 1/8	12 1/4	RC306	N/A	P82			

For more information on hand pump performances & cylinder speeds, see page 31.

## THE SIMPLEX HAND PUMP



## 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.

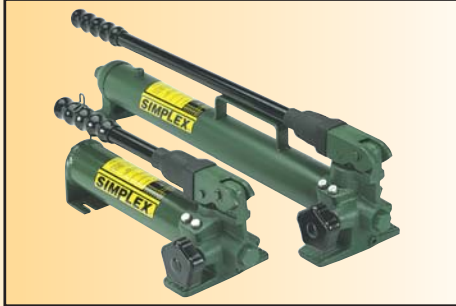
### ■ Easy To Use/Built To Last

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.

## 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.

## ALUMINUM HAND PUMPS



- **Aluminum Hand Pumps:** The perfect choice when a light weight pump is required. The alloy construction resists corrosion and stands up to heat, welding sparks and other environments whereas composite pumps may not be suited.

## SPECIALTY HAND PUMPS



- **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.

## -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 11) has a required oil capacity of 32.2 cu. in. The P-42 hand pump (page 32) 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 180 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.

CYLINDER STROKE (in)	CYLINDER CAPACITY (TONS)										
	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/P71	P41/P71		P41/P71	P42/P72	P42/P72	P42/P72		P42/P72	P42/P72	P42/P72
2		P42/P72	P42/P72	P42/P72	P42/P72	P42/P72	P42/P72			P82-P140	P140
3	P41/P71								P82-P140		
4		P42/P72	P42/P72		P42/P72						
5	P42/P72										
6		P42/P72	P42/P72		P42/P72	P82-P140	P82-P140		P82-P140	P230	P230
7	P42/P72										
8		P42/P72	P42/P72		P82-P140	P82-P140				P230	P300
9	P42/P72										
10		P42/P72	P42/P72		P82-P140					P230	P461
12		P42/P72			P82-P140						
13								P230			
14		P42/P72	P82-P140		P82-P140						

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

### HAND PUMP/CYLINDER SPEED CHART

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 MODEL NO.	STROKES PER 1 in. OF CYLINDER TRAVEL	CYLINDER CAPACITY (TONS)									
		5 Ton	10 Ton	15 Ton	20 Ton	25 Ton	30 Ton	50/55 Ton	60 Ton	75 Ton	100 Ton
P41/P71	NO LOAD	7	15	21	31	34	43	73	88	106	137
	LOAD	7	15	21	31	34	43	73	88	106	137
P20/P42/P72/P82	NO LOAD	2	3	4	6	7	8	14	17	20	26
	LOAD	7	15	21	31	34	43	73	88	106	137
P140/P300	NO LOAD	1	1	2	2	2	3	5	5	6	8
	LOAD	4	10	14	22	22	27	46	58	66	86
P230/P461	NO LOAD	1	1	1	1	1	1	2	2	2	3
	LOAD	3	8	11	16	18	22	38	45	54	70

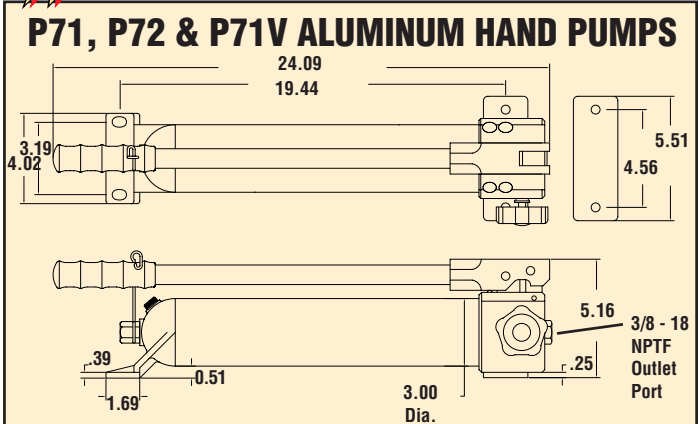
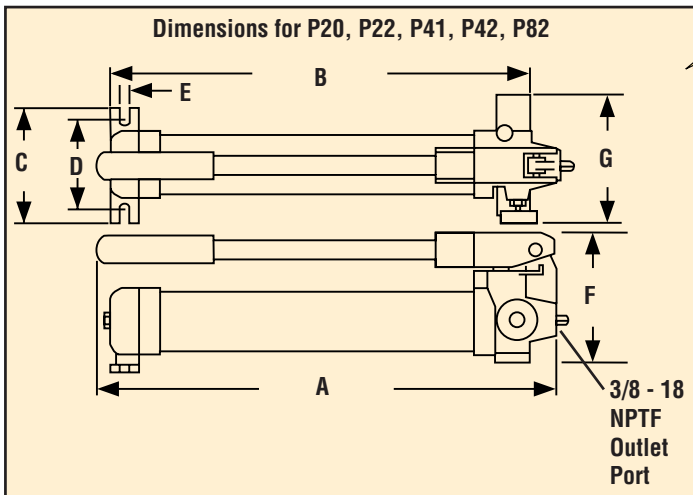
# HAND PUMPS

# LIGHT WEIGHT HAND PUMPS

Simplex Hand Pumps Are Light Weight & Easy To Use.



**NEW!!**



## 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)
P20	2	1 Stage 200	.82	20	13	11 1/2	2 5/8	1 1/2	19/32	5 3/4	4 3/4	10
		2 Stage 2850	.16									
P22	2	1 Stage 200	.23	45	13 1/2	11 1/2	2 5/8	1 1/2	19/32	5 3/4	5 3/4	18
		2 Stage 10,000	.06									
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
		2 Stage 10,000	.16									
P71	1	10,000	.19	70	SEE DRAWING ABOVE						9	
P71V*												
P72	2	1 Stage 200	.91	145	23	17 1/2	5 1/2	5	1/2	6 5/8	5 3/4	24
		2 Stage 10,000	.19									
P82	2	1 Stage 200	.82	145	23	17 1/2	5 1/2	5	1/2	6 5/8	5 3/4	24
		2 Stage 10,000	.16									

**NEW!!**

\* P71V come with Viton Seals



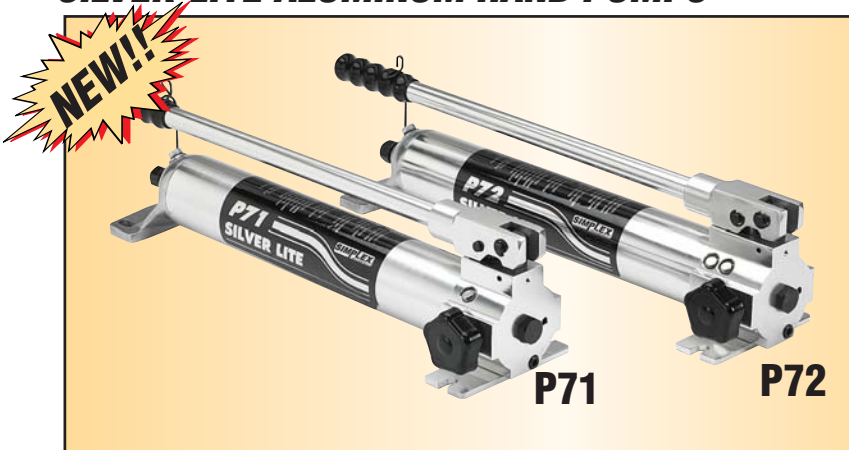


This forms manufacturer uses Simplex hand pumps and cylinders mounted to the structure for fine positioning. "We needed a hand pump that was easy to use and reliable." Simplex P41 hand pump is the preferred choice.

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.

## SILVER-LITE ALUMINUM HAND PUMPS



**SILVER-LITE HAND PUMPS** offer an ultra light weight construction (at just 9 lbs.) with more reservoir capacity (70 cu. in.) than other light weight pumps. The alloy aluminum construction resists corrosion and stands up to harsh environments where composite pumps may not be suitable.

<p>Hydraulic Cylinders pgs. 10-27</p>	<p>Hoses pgs. 66-67</p>	<p>Accessories &amp; Fittings pgs. 63-68</p>



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.

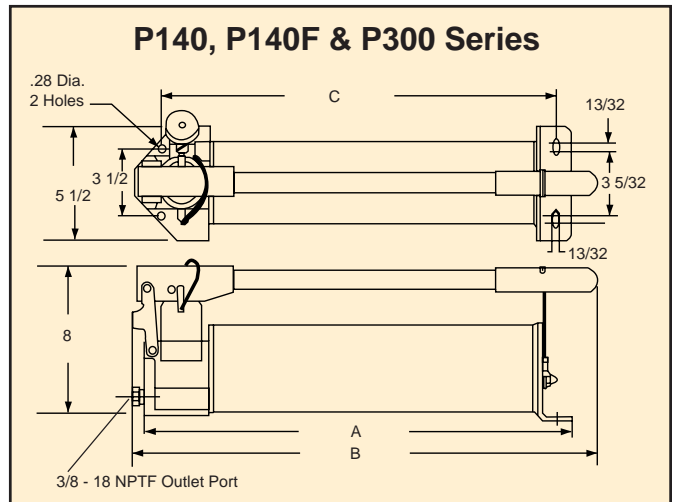
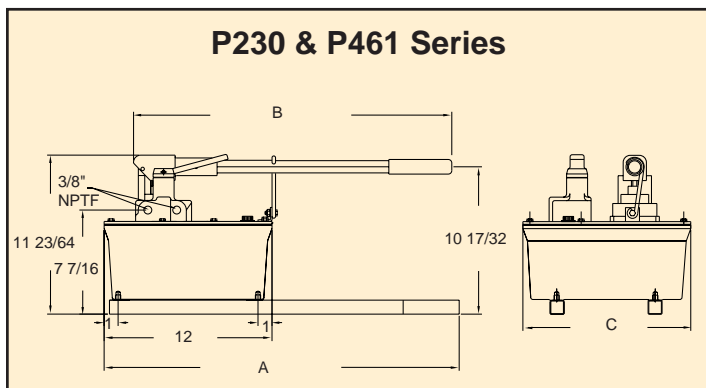
# HAND PUMPS

# HEAVY DUTY HAND PUMPS

Simplex Hand Pumps Set New Safety & Performance Standards.






- 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.



## 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 (lbs)
P140	Single Acting	1 Stage 400	2.8	180	24 13/16	27 1/4	23 5/16	26
P300			.24	300	28 1/2	31	26 1/2	37
P230		2 Stage 10,000	7.7	230	25 3/8	22 3/4	9	49
P461			.3	460			12	61
P140F	Double Acting	1 Stage 3000	.75	180	24 13/16	27 1/4	23 5/16	27
P140DF			.24		29 1/2	31 1/2	23 5/16	31
P140D		2 Stage 10,000	2.8		29 1/2	31 1/2	23 5/16	30
P300D			.24	300	32 11/16	34 11/16	26 1/2	41
P230D	2 Stage 10,000	7.7	230	25 3/8	22 3/4	9	49	
P461D		.3	460			12	61	

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).

		
Hydraulic Cylinders pgs. 10-27	Hoses pgs. 66-67	Accessories & Fittings pgs. 63-68

## **NO JOB IS TOO TOUGH FOR SIMPLEX HEAVY DUTY HAND PUMPS**



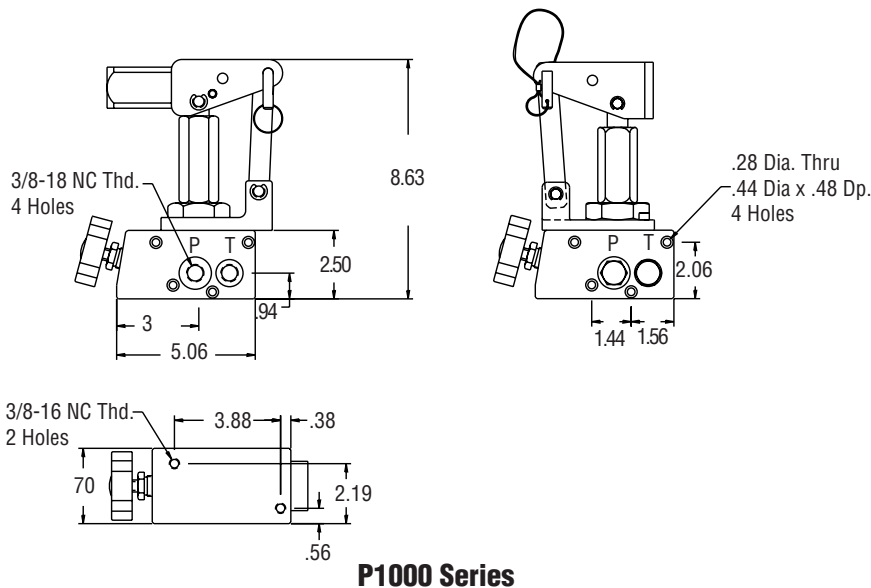
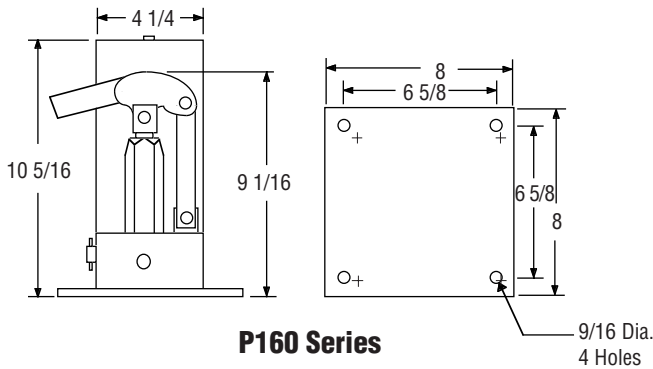
When US recovery teams needed to dismantle and remove a downed US Navy EP-3 surveillance plane from Hainan Island, China, they used Simplex P140 hand pumps and 50 ton cylinders. “We had a short time frame to complete a large job; Simplex hand pumps and cylinders gave us the speed and power we needed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

*Place Them Into Hydraulic Systems, Or Use Them As Standby Or Back-Up Pumps.*

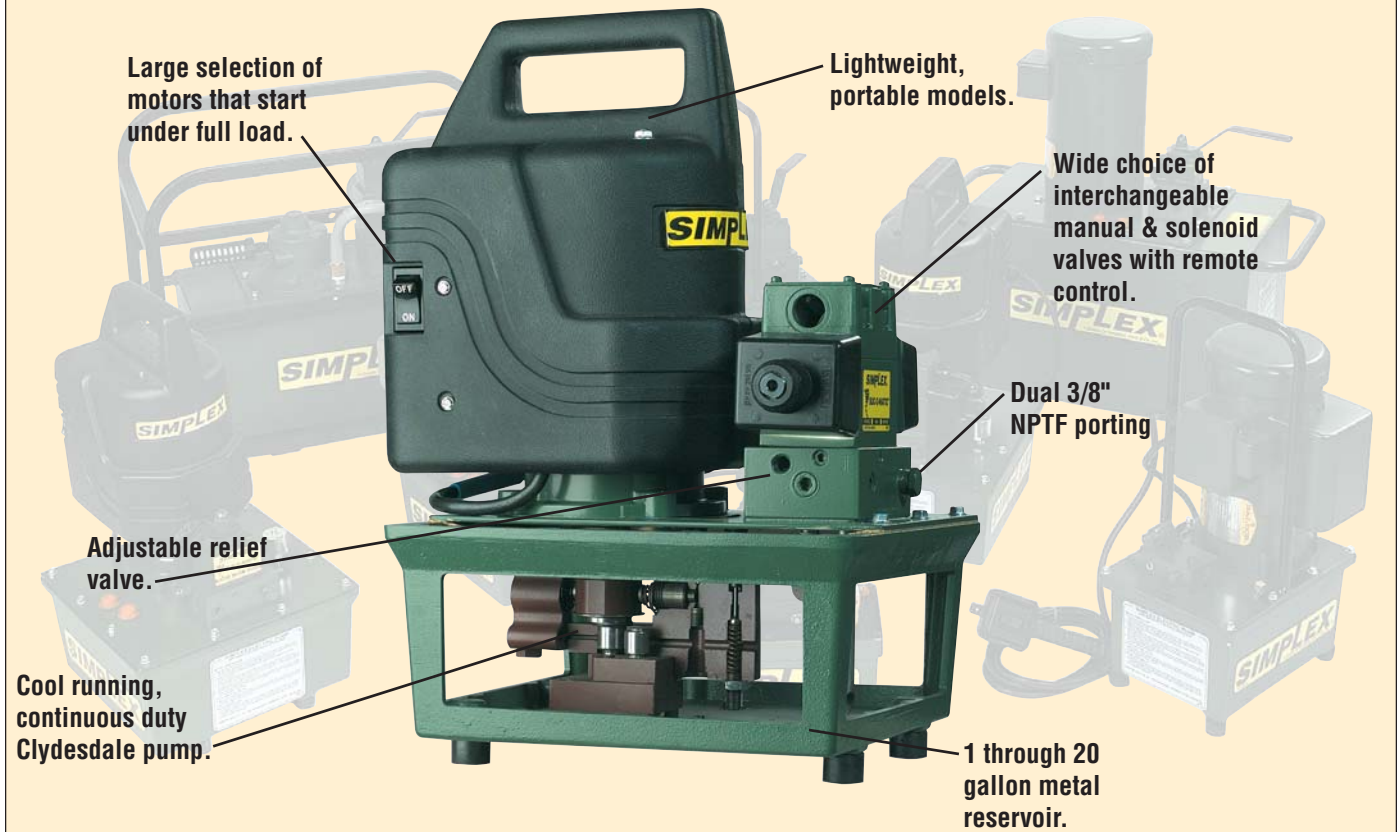
For those special applications that require **tight mounting space, backup manual power or lower pressure & high flows**, these special hand pumps are what you've been looking for. Ideal for fixed applications when pumps need to be bolted in place. The P-160 Series fits in an 8" x 8" space, yet still delivers 148 cu in. of oil. The P-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.**

### Special Application Hand Pumps

Model Number	Usable Reservoir Capacity (cu. in.)	Operating Pressure (PSI)	Volume/Stroke (cu. in.)	Maximum Handle Effort (lbs)	Weight (lbs)
P160-3	148	12,000	.12	119	25
P160-4	148	6,500	.28	115	25
P160-6	148	3,000	.66	119	25
P10003A	----	12,000	.30	119	9
P10004A	----	6,500	.53	116	9
P10006A	----	3,000	1.33	119	9
P10008A	----	1,000	2.11	106	11
P100012A	----	750	4.56	79	11



## THE SIMPLEX POWER PUMP



## 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 2,000 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™

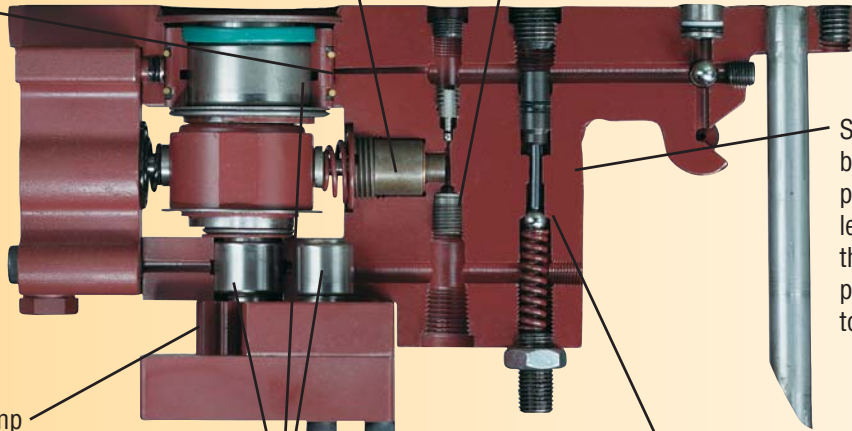
A feature that draws oil out of any single-acting cylinder. In the retract position, SUC-O-MATIC™ pumps generate a 12 psi vacuum that fully retracts any single-acting load return cylinder automatically, and provides faster retraction of spring return cylinders.

## 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

### Power Pump Speed Selection Chart

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.

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



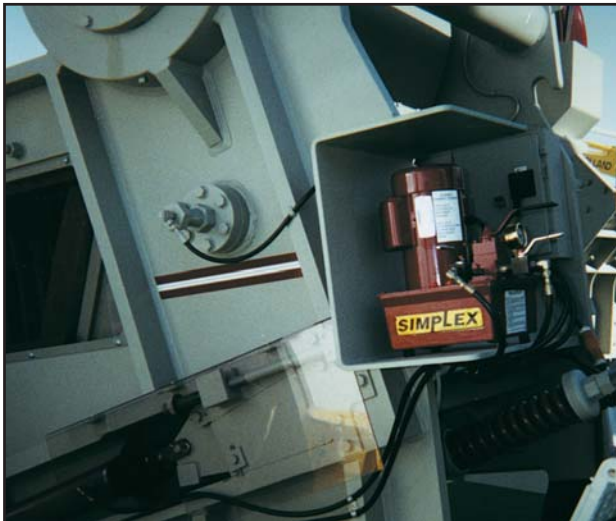
$$\frac{\text{Inches Per Minute}}{60} = \text{Cylinder Speed In Seconds}$$

## 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.

## HEAVY DUTY ELECTRIC PUMPS



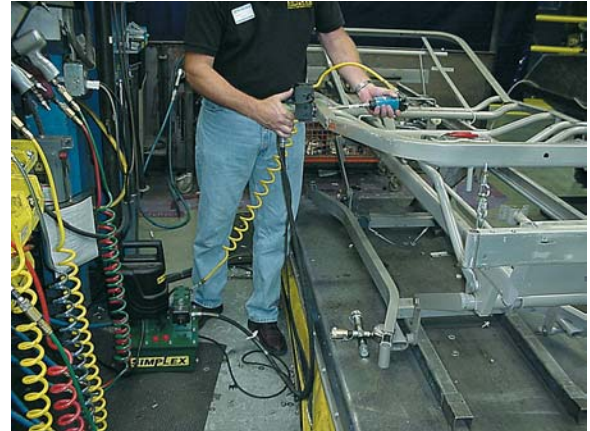
- **Multiple Cylinder System, Heavy Lifting, High Tonnage and Large Positioning Jobs** that require **advance, hold and retract** operation are no challenge for 40, 50 & 60 Series pumps equipped with standard manual or solenoid valves.

## 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.

## PRODUCTION PUMPS



- **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 40 or 70 Series pumps equipped with the standard manual or solenoid valves.

## 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.



PEM1021

**LIGHT WEIGHT AND ECONOMICAL**



- 6 standard models.
- 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.
- 12 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 on PED1021 only.

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."

**PE-10 Series 0.5 HP Electric Powered Pumps - 10,000 psi capacity**

	Model Number	Reservoir Size (Gal.)	Valve			Motor Specifications	Flow Rate	Weight (lbs)	
			Model	Style	Function				
Single-Acting	PED1000	1/2	Dump	Auto Retract		0.5 HP Single Phase 115 VAC 9 amps @ 115 VAC	250 cu. in. @200 PSI	29	
	PED1001	1	Dump					Advance/Retract	30
	PEM1020	1/2	VP2	Standard	2 Position 2 Way			Manual	31
	PEM1021	1	VP2						Advance/Retract
D/A	PEM1031	1	VP3	Standard	3 Position 3 Way	Manual	19 cu. in. @10,000 PSI	34	
	PEM1041	1	VP4						3 Position 4 Way




Pow'r-Buddy pumps for single-acting cylinders come standard with motor pendant switch.



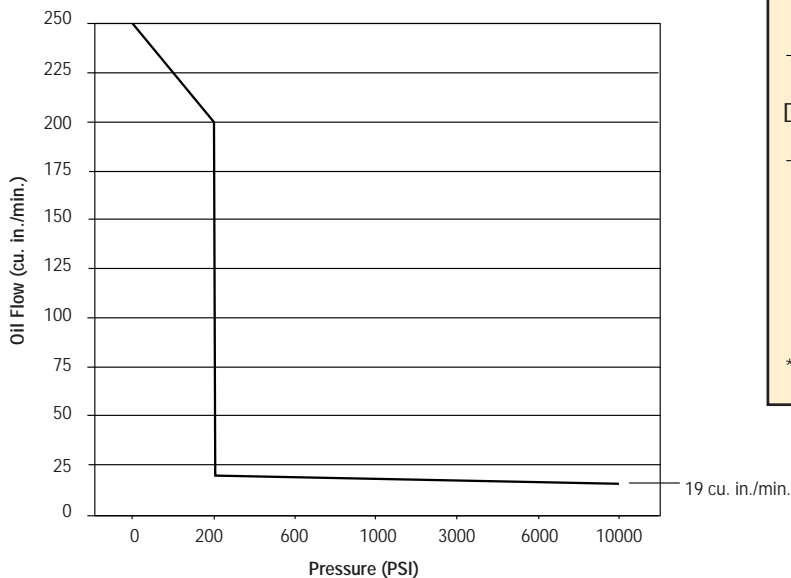


At home on any construction site, the Pow'r-Buddy™ starts and runs reliably on long extension cords. This rebar bending application is no challenge for the Simplex industrial grade pump design. "Easy to carry and simple to use, the Pow'r-Buddy™ helps us through tough construction jobs without problems."

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.

		
<b>35 Ton Portable Punch</b> pg. 72	<b>Hoses</b> pgs. 66-67	<b>Accessories &amp; Fittings</b> pgs. 64-68

## PERFORMANCE CHART



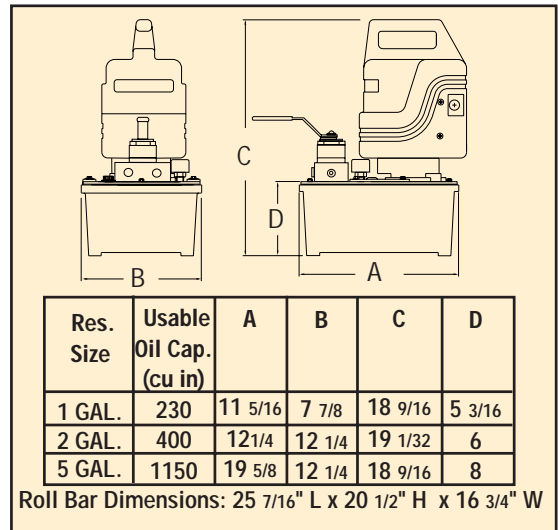
Res. Size (Gal.)	Usable Oil Cap. (cu. in.)	*Oil Fill Cap. (cu. in.)	A (in)	B (in)	C (in)	D (in)
1/2	115	230	10.52	8.08	15.95	5.25
1	230					

\*1/2 gallon pumps come with 1 gallon reservoir filled only to 1/2 gallon.



PEM2022

- 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.



Hydraulic Cylinders pgs. 10-27	Hoses pgs. 66-67	Accessories & Fittings pgs. 64-68

## PE-20 Series 0.5 HP Electric Powered Pumps - 10,000 psi capacity

	Model Number	Reservoir Size (Gal.)	Valve			Motor Specifications	Flow Rate @ 115 VAC	Weight (lbs)	
			Model	Style	Function				
Single-Acting	PED2001	1	Dump	Auto Retract	Remote Actuated	0.5 HP Single Phase Permanent Magnet 115 VAC 50/60 Hz 10 amps at 10,000 PSI	400 cu. in. @600 PSI	56	
	PED2002	2	Dump					64	
	PEM2021	1	VP2	Standard	2 Position 2 Way			Manual Lever Actuated	56
	PEM2022	2	VP2						64
	PEM2031	1	VP3*	Locking	3 Position 3 Way			Remote Solenoid Actuated	62
	PEM2032	2	VP3*						70
	PEM2052	2	VPL3*	Standard	3 Position 4 Way			Manual Lever Actuated	71
	PES2031	1	VPS3*						66
	PES2032	2	VPS3*	Locking	3 Position 4 Way			Remote Solenoid Actuated	73
PES2052	2	VPSL3*	74						
Double-Acting	PEM2041	1	VP4	Standard	3 Position 4 Way	10 amps at 10,000 PSI	@10,000 PSI	62	
	PEM2042	2	VP4					70	
	PEM2062	2	VPL4	Locking	3 Position 4 Way			Manual Lever Actuated	71
	PES2041	1	VPS4						Standard
	PES2042	2	VPS4	73					
	PES2062	2	VPSL4	Locking	74				

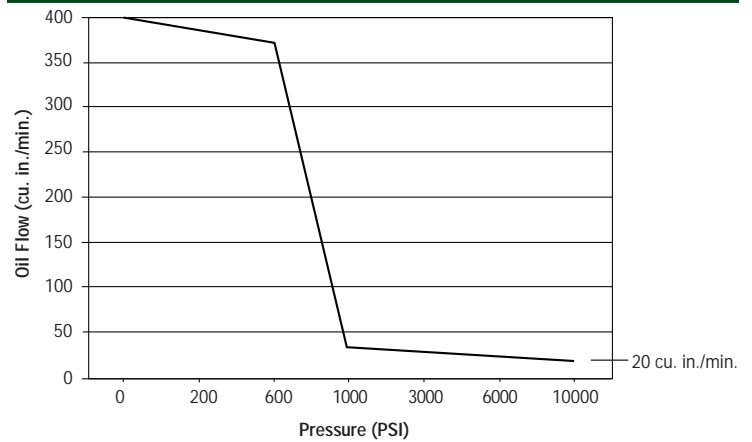
For more information on valve models, see pages 60-62.

\* Includes Suc-O-Matic.



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 CHART



## 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.

## CUSTOM BUILD

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

Description	Model	Selections
Product	<b>P</b>	Power Pump
Motor Control Options	<b>E</b>	E = No Options P = Pendant Switch F = Foot Switch
Valve Style	<b>S</b>	D = Dump S = Solenoid M = Manual
Pump Series	<b>2</b>	0.5 HP, 115VAC 50/60 Hz, Permanent Magnet Motor
Options	<b>1</b>	0 = No Options                      4 = Filter only 1 = Roll Bars only                      5 = Roll Bars & Filter
Valve Type	<b>3</b>	0 = Dump                      4 = 4 Way 3 Position 2 = 2 Way 2 Position                      5 = 3 Way Locking Style 3 = 3 Way 3 Position                      6 = 4 Way Locking Style
Reservoir Size	<b>2</b>	1 = 1 Gallon    5 = 5 Gallon 2 = 2 Gallon
Motor Voltage		Blank = 115 VAC Single Phase A = 230 VAC Single Phase

**ALL PUMP OPTIONS ARE FACTORY INSTALLED**



PPS4032

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.

Res. Size	Usable Oil Cap. (cu in)	A	B	C	D
2 GAL.	400	12 1/4	12 1/4	20 5/16	5 51/64
5 GAL.	1150	19 5/8	12 5/16	18 5/16	8
10 GAL.	2300	19 5/8	12 5/16	23 19/32	12 1/2
20 GAL.	4600	19 5/8	23 1/2	23 11/16	12 1/2

Roll Bar Dimensions: 25 7/16" L x 20 1/2" H x 16 3/4" W

Hydraulic Cylinders pgs. 10-27	Hoses pgs. 66-67	Accessories & Fittings pgs. 64-68

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

	Model Number	Reservoir Size (Gal.)	Valve			Motor Specifications	Flow Rate @ 115 VAC	Weight (lbs)		
			Model	Style	Function					
Single-Acting	PEM4022	2	VP2	2 Position 2 Way	Manual Lever Actuated	1.5 HP Single Phase Induction Motor 115/230 VAC 50/60 Hz 17 amps at 10,000 PSI (Factory Wired @ 115 VAC)	400 cu. in. @1,200 PSI	66		
	PEM4025	5	VP2					124		
	PEM4032	2	VP3*	3 Position 3 Way	Remote Solenoid Actuated			71		
	PEM4035	5	VP3*					129		
	PEM4055	5	VPL3*					Locking	130	
	Double-Acting	PES4032	2	VPS3*	Standard			Advance/ Hold/ Retract	55 cu. in. @10,000 PSI	73
		PES4035	5	VPS3*						131
PES4055		5	VPSL3*	Locking	132					
PEM4042		2	VP4	Standard	Manual Lever Actuated	71				
PEM4045		5	VP4			129				
PEM4065		5	VPL4	Locking	130					
PES4042		2	VPS4	Standard	Remote Solenoid Actuated	73				
PES4045	5	VPS4	131							
PES4065	5	VPSL4	Locking			132				

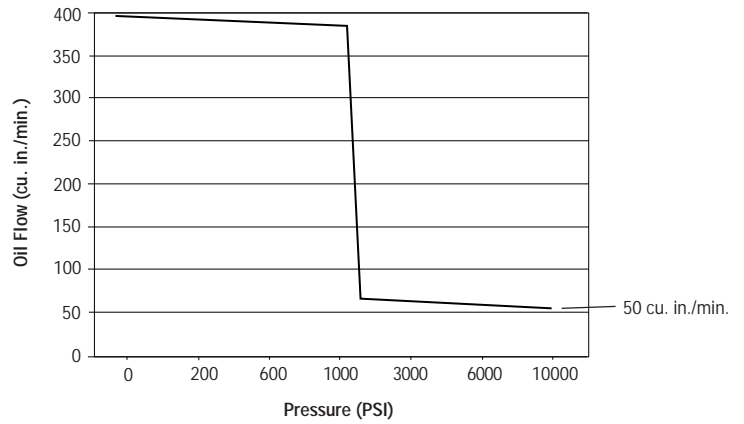
For more information on valve models, see pages 60-62.

\* Includes Suc-O-Matic.



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.

## PERFORMANCE CHART



## 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.



- P04 - 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

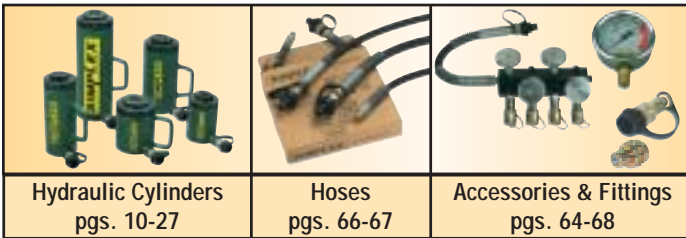
Using the chart below you can add roll bars, different size reservoirs or other options.

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



PEM7042

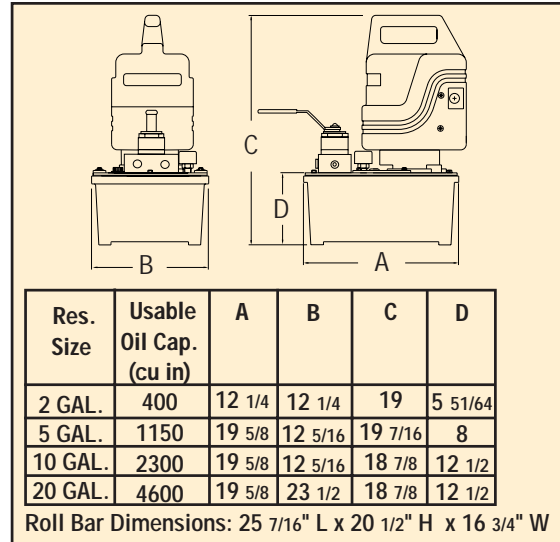
- 14 standard models
- Permanent magnet motor.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation provides fast advance.
- Higher crossover for faster cylinder cycle.
- Starts under full load.
- Runs reliably on long extension cords.
- Maximum amperage draw 17 amps.
- Adjustable relief 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.



Hydraulic Cylinders  
pgs. 10-27

Hoses  
pgs. 66-67

Accessories & Fittings  
pgs. 64-68



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

	Model Number	Reservoir Size (Gal.)	Valve			Motor Specifications	Flow Rate @ 115 VAC	Weight (lbs)		
			Model	Style	Function					
Single-Acting	PEM7022	2	VP2	2 Position 2 Way	Manual Lever Actuated	1.5 HP Single Phase Permanent Magnet 115 VAC 50/60 Hz 17 amps at 10,000 PSI	400 cu. in. @ 1,200 PSI	66		
	PEM7025	5	VP2					124		
	PEM7032	2	VP3*	3 Position 3 Way	Remote Solenoid Actuated			71		
	PEM7035	5	VP3*					129		
	PEM7052	2	VPL3*					Locking	130	
	Double-Acting	PES7032	2	VPS3*	Standard			Remote Solenoid Actuated	50 cu. in. @10,000 PSI	73
		PES7035	5	VPS3*						131
PES7052		2	VPSL3*	Locking	132					
PEM7042		2	VP4	Standard	Manual Lever Actuated	71				
PEM7045		5	VP4			129				
PEM7062		2	VPL4	Locking	130					
PES7042		2	VPS4	Standard	Remote Solenoid Actuated	73				
PES7045	5	VPS4	131							
PES7062	2	VPSL4	Locking			132				

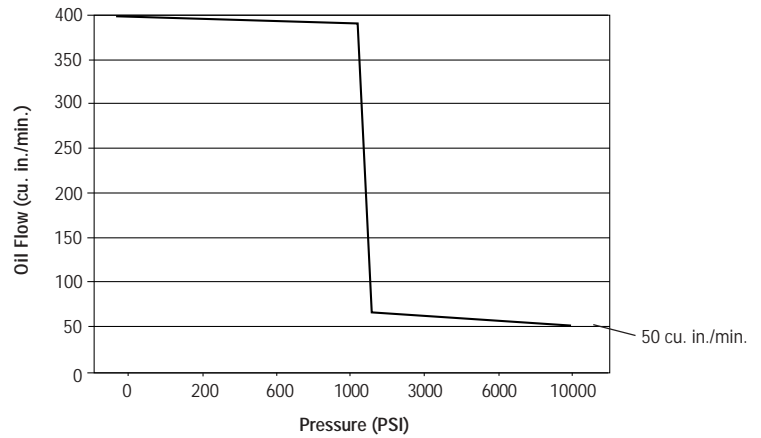
For more information on valve models, see pages 60-62.

\* Includes Suc-O-Matic.



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."

## PERFORMANCE CHART



## 70 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 - 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	<b>P</b>	Power Pump										
Motor Control Options	<b>E</b>	E = No Options P = Pendant Switch F = Foot Switch										
Valve Style	<b>S</b>	S = Solenoid M = Manual D = Dump										
Pump Series	<b>7</b>	1.5 HP 115 VAC 50/60 Hz, Permanent Magnet Motor										
Options	<b>0</b>	<table border="0"> <tr> <td>0 = No Options</td> <td>4 = Filter only</td> </tr> <tr> <td>1 = Roll Bars only</td> <td>5 = Roll Bars &amp; Filter</td> </tr> <tr> <td>2 = Heat Exchanger &amp; Filter</td> <td></td> </tr> <tr> <td>3 = Roll Bars Plus Heat Exchanger &amp; Filter</td> <td></td> </tr> <tr> <td>7 = Pressure Switch Plus Heat Exchanger &amp; Filter</td> <td></td> </tr> </table>	0 = No Options	4 = Filter only	1 = Roll Bars only	5 = Roll Bars & Filter	2 = Heat Exchanger & Filter		3 = Roll Bars Plus Heat Exchanger & Filter		7 = Pressure Switch Plus Heat Exchanger & Filter	
0 = No Options	4 = Filter only											
1 = Roll Bars only	5 = Roll Bars & Filter											
2 = Heat Exchanger & Filter												
3 = Roll Bars Plus Heat Exchanger & Filter												
7 = Pressure Switch Plus Heat Exchanger & Filter												
Valve Type	<b>3</b>	<table border="0"> <tr> <td>3 = 3 Way 3 Position</td> <td>6 = 4 Way Locking Style</td> </tr> <tr> <td>4 = 4 Way 3 Position</td> <td></td> </tr> <tr> <td>5 = 3 Way Locking Style</td> <td></td> </tr> </table>	3 = 3 Way 3 Position	6 = 4 Way Locking Style	4 = 4 Way 3 Position		5 = 3 Way Locking Style					
3 = 3 Way 3 Position	6 = 4 Way Locking Style											
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Reservoir Size	<b>5</b>	<table border="0"> <tr> <td>2 = 2 Gallon</td> <td>6 = 10 Gallon</td> </tr> <tr> <td>5 = 5 Gallon</td> <td>7 = 20 Gallon</td> </tr> </table>	2 = 2 Gallon	6 = 10 Gallon	5 = 5 Gallon	7 = 20 Gallon						
2 = 2 Gallon	6 = 10 Gallon											
5 = 5 Gallon	7 = 20 Gallon											
Motor Voltage	<b>Blank</b>	Blank = 115 VAC Single Phase A = 230 VAC Single Phase										



PEM5046

- 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).
- Starter box standard on all models.
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.
- Quiet running (80dBA).

Res. Size	Usable Oil Cap. (cu in)	A	B	C	D	E
5 GAL.	1150	19 5/8	12 5/16	18 5/16	8	25 3/32
10 GAL.	2300	19 5/8	12 5/16	23 3/4	12 1/2	25 3/32
20 GAL.	4600	19 5/8	23 1/2	23 3/4	12 1/2	25 3/32

Hydraulic Cylinders pgs. 10-27	Hoses pgs. 66-67	Accessories & Fittings pgs. 64-68

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

	Model Number	Reservoir Size (Gal.)	Valve			Motor Specifications	Flow Rate	Weight (lbs)	
			Model	Style	Function				
Single-Acting	PEM5035	5	VP3*	Standard	Manual Lever	3 HP Three Phase 230/460 volts 10 amps @ 230 volt	650 cu. in. @1,500 PSI	162	
	PEM5036	10	VP3*					217	
	PEM5056	10	VPL3*	Locking	3 Position 3 Way			Remote Solenoid Actuated	218
	PES5035	5	VPS3*						Standard
	PES5036	10	VPS3*	Locking	3 Position 3 Way			Remote Solenoid Actuated	
	PES5056	10	VPSL3*						221
Double-Acting	PEM5045	5	VP4	Standard	Manual Lever	3 HP Three Phase 230/460 volts 10 amps @ 230 volt	110 cu. in. @10,000 PSI	162	
	PEM5046	10	VP4					Locking	3 Position 4 Way
	PEM5066	10	VPL4	Standard	Remote Solenoid Actuated				
	PES5045	5	VRS4					Locking	3 Position 4 Way
	PES5046	10	VRS4	Locking	3 Position 4 Way				
	PES5066	10	VRSL4					221	

For more information on valve models, see pages 60-62.

\* Includes Suc-O-Matic

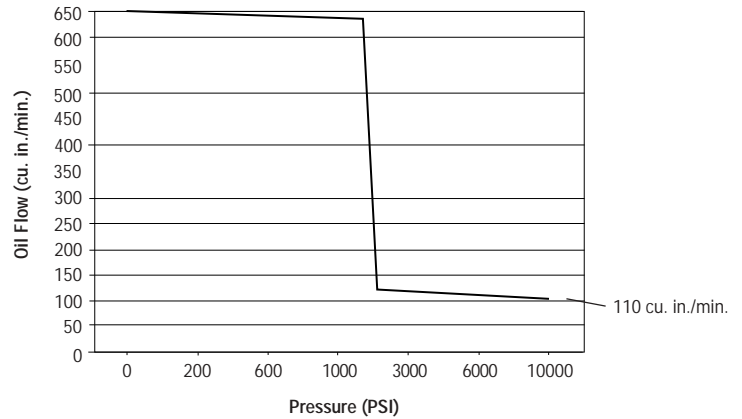




Simplex 50 Series pump & high tonnage press are used for many different pressing jobs. "The Simplex pump has been running trouble free for over six years. This is some of the most reliable equipment we have in our shop."

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

## PERFORMANCE CHART



## CUSTOM BUILD

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

Description	Model	Selections
Product	<b>P</b>	Power Pump
Motor Control Options	<b>E</b>	E = No Options P = Pendant Switch F = Foot Switch
Valve Style	<b>S</b>	S = Solenoid M = Manual
Pump Series	<b>5</b>	3 HP, 230/460 VAC 3 Phase Motor/w Starter Box
Options	<b>2</b>	0 = No Options 2 = Heat Exchanger & Filter 4 = Filter only
Valve Type	<b>3</b>	3 = 3 Way 3 Position 5 = 3 Way Locking Style 4 = 4 Way 3 Position 6 = 4 Way Locking Style
Reservoir Size	<b>5</b>	5 = 5 Gallon 7 = 20 Gallon 6 = 10 Gallon
Motor Voltage*		Blank = 230 VAC Three Phase A = 460 VAC Three Phase

\*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.



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

Pendant & foot switch options include starter box.

### PUMP PROTECTION



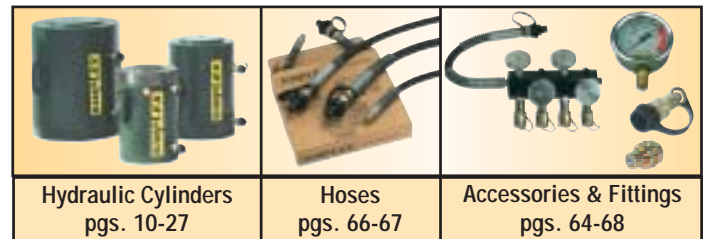
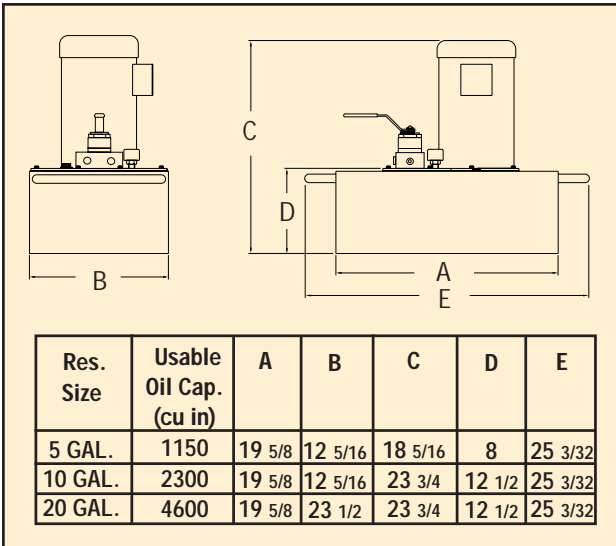
- P04 - Heat Exchanger & Filter.
- Order (2) under Option in the Custom Build Chart.  
Replacement Filter order, number P05E.

**ALL PUMP OPTIONS ARE FACTORY INSTALLED**

- 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).
- Starter box standard on all models.
- Dual ports for easier plumbing.
- 138 bar crossover.
- Quiet running (80dBA).
- Adjustable relief for variable pressure settings.



PEM6045



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

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

For more information on valve models, see pages 60-62.

\* Includes Suc-O-Matic.

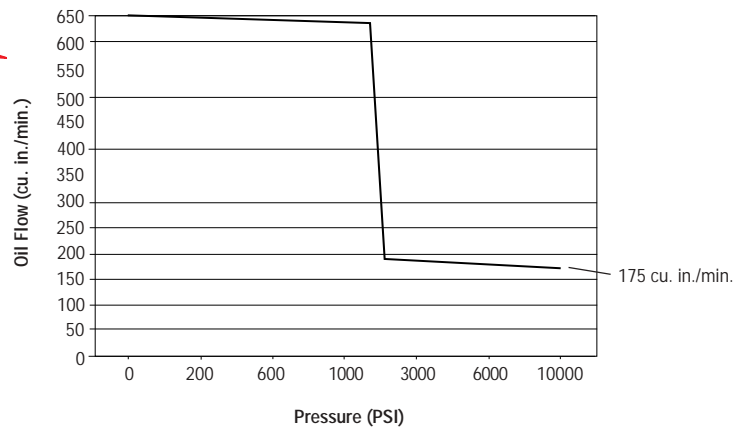
Simplex supplies custom cylinders with up to 1,500 ton capacities.



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.

## PERFORMANCE CHART



## CUSTOM BUILD

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

Description	Model	Selections
Product	<b>P</b>	Power Pump
Motor Control Options	<b>E</b>	E = No Options P = Pendant Switch F = Foot Switch
Valve Style	<b>S</b>	S = Solenoid M = Manual
Pump Series	<b>6</b>	5 HP, 230/460 VAC 3 Phase Motor/w Starter Box
Options	<b>2</b>	0 = No Options 2 = Heat Exchanger & Filter 4 = Filter only
Valve Type	<b>3</b>	3 = 3 Way 3 Position 5 = 3 Way Locking Style 4 = 4 Way 3 Position 6 = 4 Way Locking Style
Reservoir Size	<b>5</b>	5 = 5 Gallon 7 = 20 Gallon 6 = 10 Gallon
Motor Voltage*		Blank = 230 VAC Three Phase A = 460 VAC Three Phase

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

## 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

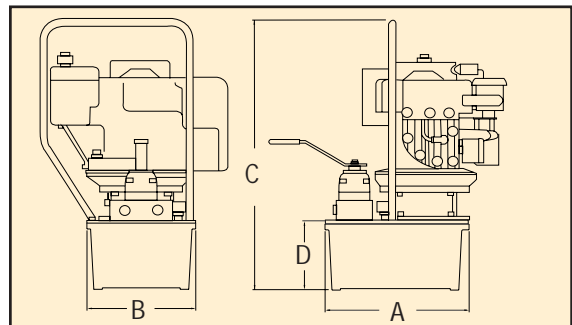


- P04 - Heat Exchanger & Filter.
- Order (2) under Option in the Custom Build Chart. Replacement Filter, order number PO5E.

**ALL PUMP OPTIONS ARE FACTORY INSTALLED**




- 6 standard models.
- Suc-O-Matic feature reduces retraction time.
- Two-speed operation provides fast advance.
- Higher crossover for faster cylinder cycle.
- 3.75 & 8 HP gas engine.
- Adjustable relief for variable pressure settings.
- Dual ports for easier plumbing.



Res. Size	Usable Oil Cap. (cu in)	A	B	C	D
2 GAL.	400	12 1/4	12 1/4	20 1/4	6
5 GAL.	1150	19 5/8	12 1/4	19 3/8	8
10 GAL.	2300	19 5/8	12 1/4	23 7/8	12 1/2
20 GAL.	4600	19 5/8	23 1/2	N/A	12 1/2

Roll Bar Dimensions: 25 7/16" L x 20 1/2" H x 16 3/4" W  
(For 3 1/2 H.P. pumps only.)

		
Hydraulic Cylinders pgs. 10-27	Hoses pgs. 66-67	Accessories & Fittings pgs. 64-68

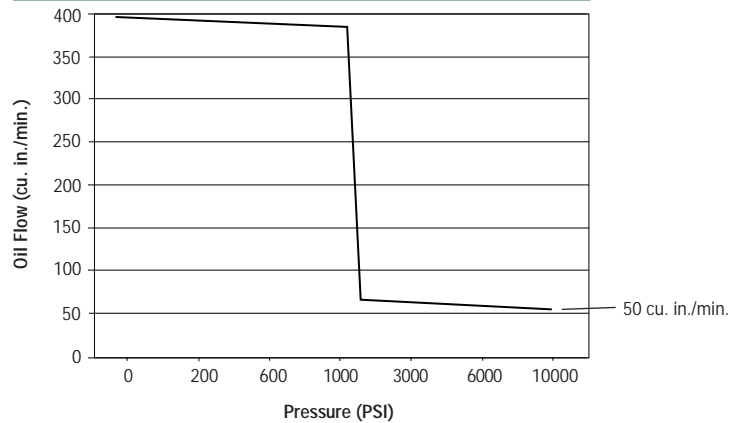
### PG-40 Series 3.75 HP & PG-50 Series 8 HP Gasoline Powered Pumps - 10,000 PSI capacity

Model Number	Reservoir Size (Gal.)	Valve			Motor Specifications	Flow Rate	Weight (lbs)
		Model	Style	Function			
PGM4032	2	Standard	3 Position	Manual Lever	Gas Engine 3.75 HP	400 cu. in. @ 600 psi 50 cu. in. @10,000 psi	53
PGM4035	5		3 Way				108
PGM4042	2		3 Position				53
PGM4045	5		4 Way				108
PGM5036	10	Standard	3P/3W	Manual Lever	Gas Engine 8 HP	680 cu. in. @1500 psi 120 cu. in. @10,000 psi	147
PGM5046			3P/4W				147

For more information on valve models, see pages 60-62.  
Contact Factory for 8 HP Dimensions.



## PERFORMANCE CHART



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.

Description	Model	Selections
Product	<b>P</b>	Power Pump
Motor Controls	<b>G</b>	G = Gasoline Motor
Valve Style	<b>M</b>	M = Manual D = Dump
Pump Series	<b>4</b>	4 = 3.75 HP 5 = 8 HP
Options	<b>1</b>	0 = No Options 4 = Filter only 1 = Roll Bars only** 5 = Roll Bars & Filter**
Valve Type	<b>3</b>	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	<b>5</b>	2 = 2 Gallon 6 = 10 Gallon 5 = 5 Gallon 7 = 20 Gallon

\* With Suc-O-Matic™

\*\* Roll Bars with 3.75 HP only.

## 40 & 50 SERIES GAS POWER PUMP OPTIONS

### 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**



PAM4042

Res. Size	Usable Oil Cap. (cu in)	A	B	C	D
2 GAL.	400	12 1/4	12 1/4	13 5/8	6
5 GAL.	1150	19 5/8	12 1/4	15 11/16	8
10 GAL.	2300	19 5/8	12 1/4	20 1/2	12 7/16
20 GAL.	4600	19 5/8	23 1/2	N/A	12 7/16

Roll Bar Dimensions: 25 7/16" L x 20 1/2" H x 16 3/4" W

- 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.

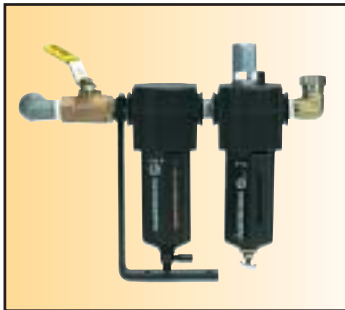
### PA-40 Series 1.5 HP Air Powered Pumps - 10,000 psi capacity

	Model Number	Reservoir Size (Gal.)	Valve			Motor Specifications	Flow Rate	Weight (lbs)	
			Model	Style	Function				
S/A	PAM4032	2	Standard	3 Position 3 Way	Manual Lever Actuated	Rotary Air 50 cfm 90 PSI	400 cu. in. @ 600 PSI 50 @10,000 PSI	50	
	PAM4035	5						108	
D/A	PAM4042	2		3 Position 4 Way	Solenoid Actuated			Advance/ Hold/ Retract	50
	PAM4045	5							108
	PAS4042	2		5	VPA4				52
	PAS4045	5							110

For more information on valve models, see pages 60-62.

\* Includes Suc-O-Matic.

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.

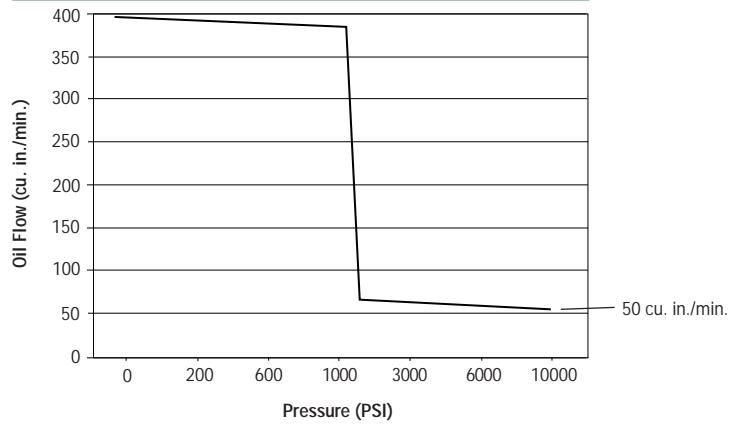




**A233**

**Air Filter-Lubricator**

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

## PERFORMANCE CHART



		
<b>Hydraulic Cylinders</b> pgs. 10-27	<b>Hoses</b> pgs. 66-67	<b>Accessories &amp; Fittings</b> pgs. 64-68

## CUSTOM BUILD

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

Description	Model	Selections
Product	<b>P</b>	Power Pump
Motor Controls	<b>A</b>	A = Rotary Air Motor
Valve Style	<b>M</b>	M = Manual S = Solenoid** D = Dump
Pump Series	<b>4</b>	Rotary Air @ 50 cfm
Options	<b>1</b>	0 = No Options 4 = Filter only 1 = Roll Bars only 5 = Roll Bars & Filter
Valve Type	<b>3</b>	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	<b>5</b>	2 = 2 Gallon 6 = 10 Gallon 5 = 5 Gallon 7 = 20 Gallon

\* With Suc-O-Matic™

\*\* Dump & 4 way valve only

## 40 SERIES AIR POWER PUMP OPTIONS

### 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 PO5E.

**ALL PUMP OPTIONS ARE FACTORY INSTALLED**

The Simplex PA91, PA95 & PA91-R Are The Toughest, Most Reliable Air Hydraulic Pumps In The Field.



PA95-1

PA95

PA91

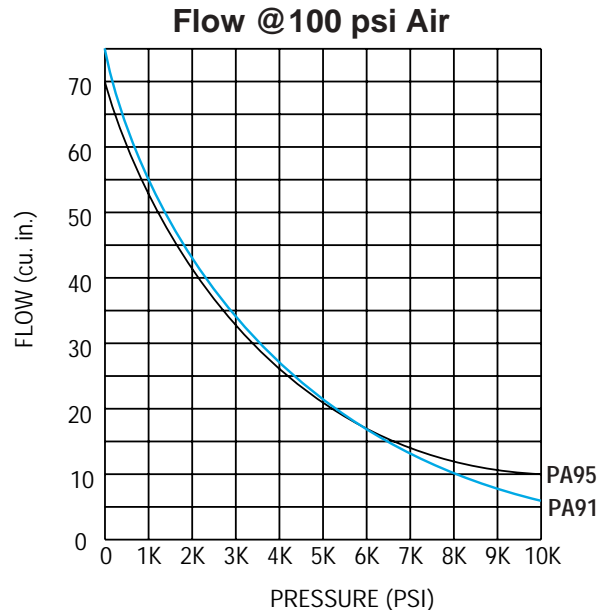
The PA91-R & PA91-1R utilize a hand pendant remote with 12' hose.

## Easy Operation with Hand or Foot Control

					
Hydraulic Cylinders pgs. 10-27	Presses Pgs. 87-92	Hydraulic Spreaders Pg. 71	Hoses pgs. 66-67	A233 Filter Lubricator	Accessories & Fittings pgs. 64-68

- 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.

## PERFORMANCE CHART

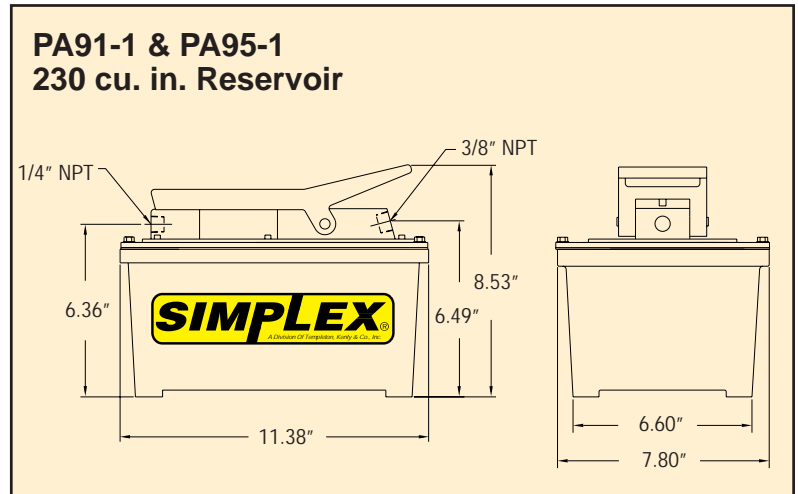
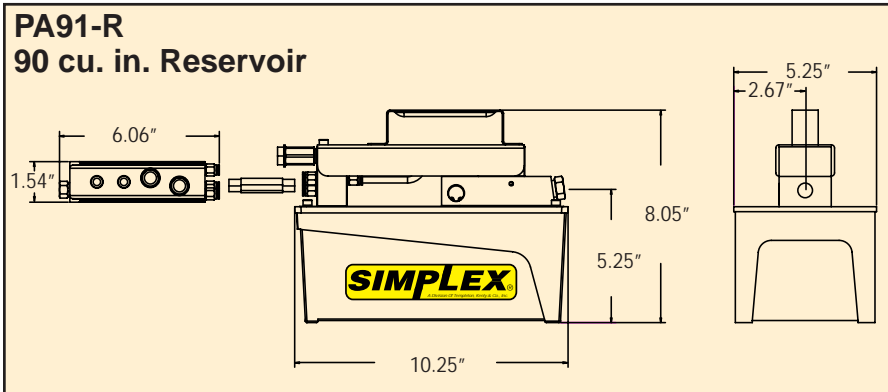
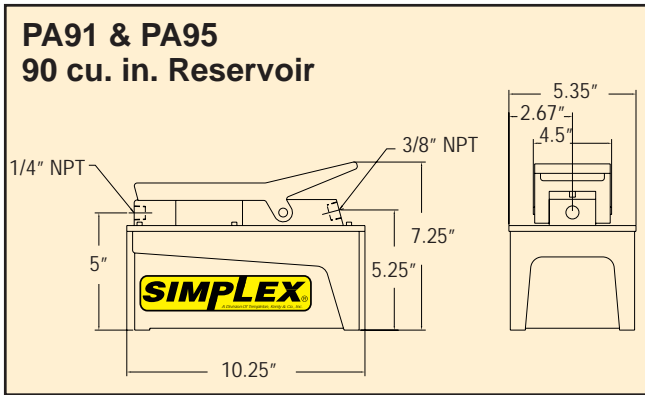


### PA91 & PA95 Air Over Oil Pump

Model Number	Usable Oil Capacity (cu. in.)	Oil Flow @ 0 bar (cu. in.)	Oil Flow @ 700 bar (cu. in.)	Operating Air Pressure Range (psi)	Weight (lbs)
PA91	90	75	6	60 - 150	20
PA91-R					21
PA91-1					28
PA91-1R	230	70	10		29
PA95					20
PA95-1					28



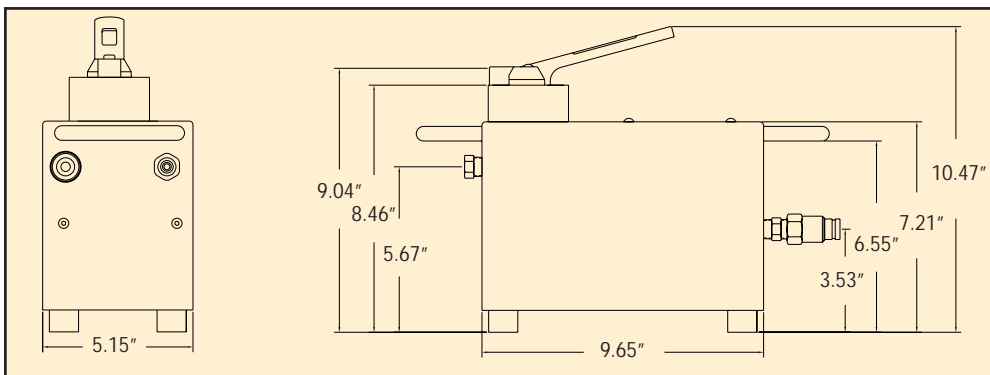




Engineers selected the Simplex air pump when reliable 10,000 psi power was needed to run this production line fixture, industrial engineers chose the Simplex PA91. "The three position treadle is easy to use and the pump runs on standard shop air."



- 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 (GPM)	Input Pressure (PSI)	Output Pressure Max. (PSI)	Output Flow Range (GPM)	Output Flow Ratio	Output Pressure Ratio	Weight (lbs)
	Type	Function							
PI2	4 Way/3 Position	Advance/Hold/Retract	0 - 10	300-2,000	10,000	0 - 2	1:5	5:1	30
PI3	3 Way/3 Position								

Contact Factory for additional dimensions.

## 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 **in-line**. 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

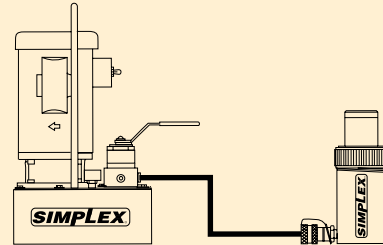
Valves that are used to operate double-acting cylinders or tools.

#### ■ Locking Valves

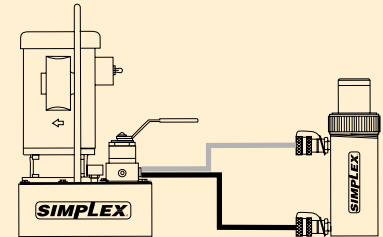
Valves that are used when pressure drop within the system cannot be tolerated while shifting.

## DIRECTIONAL CONTROL VALVES SELECTION GUIDE

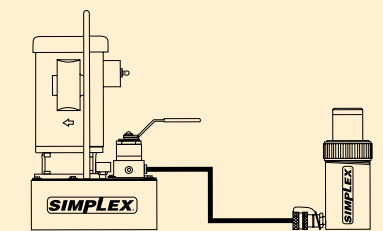
### ■ 2 or 3 way for single-acting cylinders or tools.



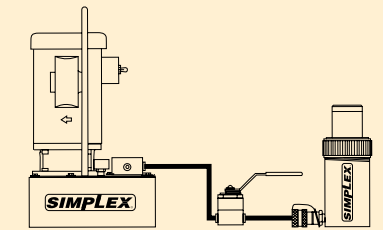
### ■ 4 Way for double-acting cylinders or tools.



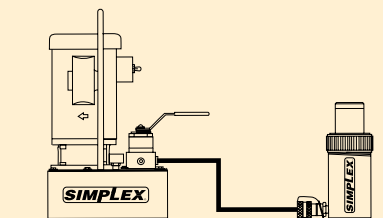
### ■ Pump Mounted.



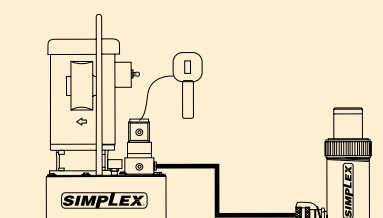
### ■ Inline Mounted.

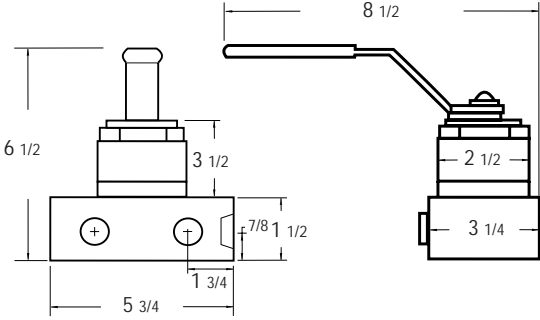
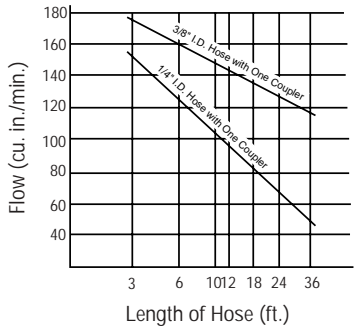
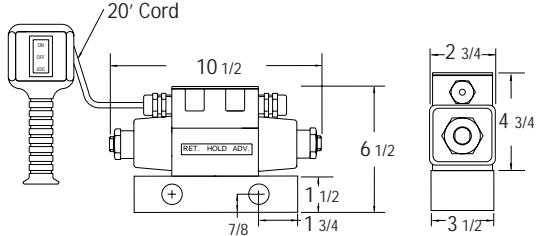
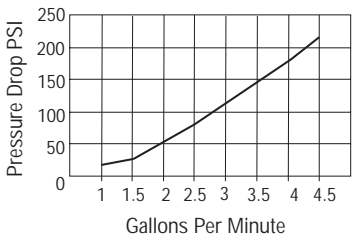
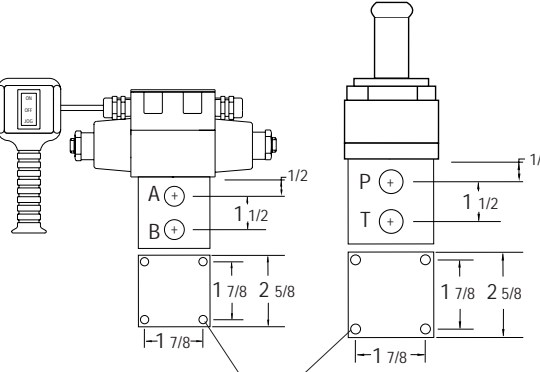
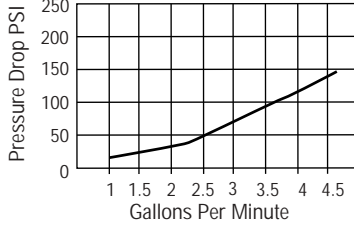
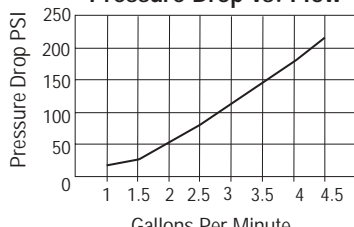


### ■ Manual Operated.


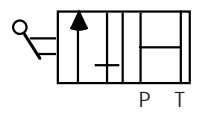
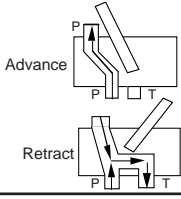

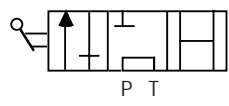
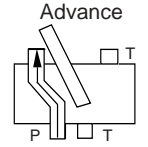

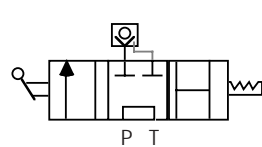
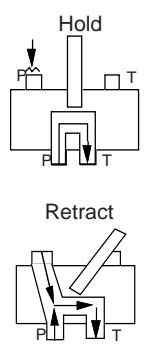

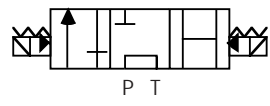
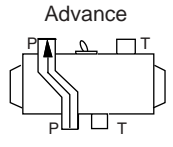

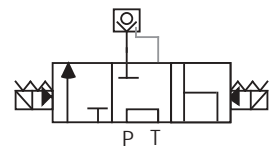
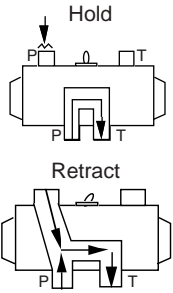

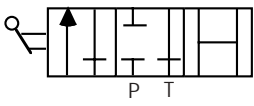
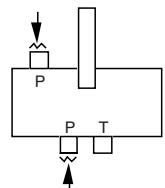

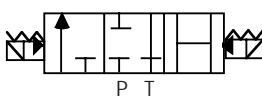
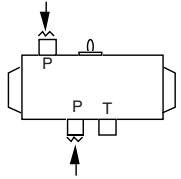


### ■ Solenoid Operated.




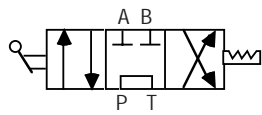
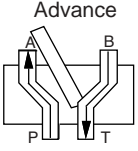
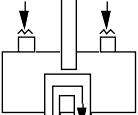
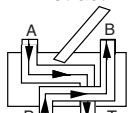

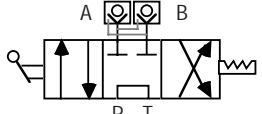
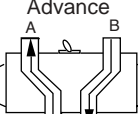
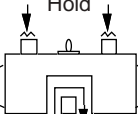
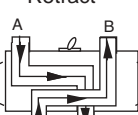

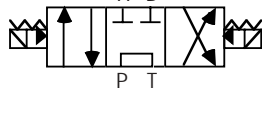
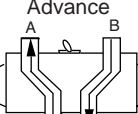
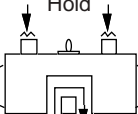
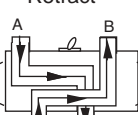

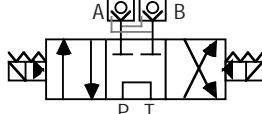
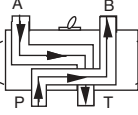

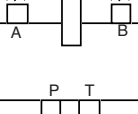

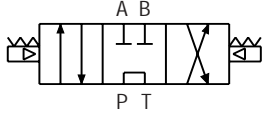
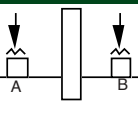
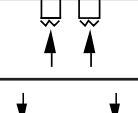
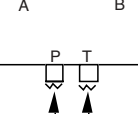

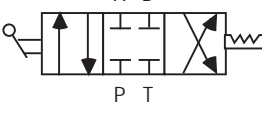
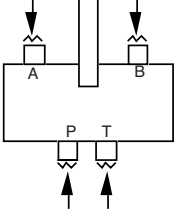

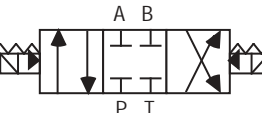
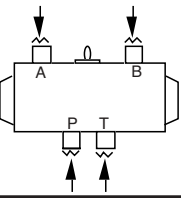
	Description	Oil Flow Chart
<p style="text-align: center;"><b>VP3</b></p> 	<p>The Simplex patented 3 position/3-way, "Suc-O-Matic™" Valve draws hydraulic oil out of any single-acting cylinder. In the retract position, the valve generates enough suction to fully retract any single-acting load return cylinder automatically.</p> <ul style="list-style-type: none"> <li>■ Fully Retract load return cylinders.</li> <li>■ Retracts spring return cylinders up to 33% faster.</li> <li>■ Full retraction regardless of weak springs or mounting.</li> </ul>	<p style="text-align: center;"><b>Retraction Flow vs. Length of Hose</b></p> 
<p style="text-align: center;"><b>VPS3</b></p> 	<p>The Simplex patented Solenoid Valve is available in a 3-way Suc-O-Matic™ version for single-acting cylinders and a 4-way version for double-acting cylinders.</p> <ul style="list-style-type: none"> <li>■ Suc-O-Matic valve capability.</li> <li>■ Long life - Patented construction.</li> <li>■ Largest porting (lowest back pressure) available.</li> <li>■ Optional coils: 230v, 12v.</li> <li>■ Includes manual override.</li> <li>■ Direct bolt interchange with Simplex manual valves.</li> <li>■ Designed to handle surge flow conditions.</li> <li>■ Comes equipped with 6 meter cord and pendant switch.</li> </ul>	<p style="text-align: center;"><b>Pressure Drop vs. Flow</b></p> 
<p style="text-align: center;"><b>REMOTE VALVES</b></p>  <p style="text-align: center;">3/8-16 UNC-2B Thrd. 1.00 DP. (4 Places)</p>	<p>Both Simplex manual &amp; solenoid valves are available for remote or inline application. Remote valves are perfect for multiple operating systems, or special fixturing and mounting applications. They are available with tandem or closed centers.</p> <ul style="list-style-type: none"> <li>■ Available in manual or solenoid.</li> <li>■ Includes mounting holes.</li> <li>■ Available in closed center or tandem.</li> <li>■ Ideal for independent control of two or more cylinders.</li> </ul> <p style="text-align: center;"><i>*Remote versions do not include retract feature.</i></p>	<p style="text-align: center;"><b>Remote Manual Valve Pressure Drop vs. Flow</b></p>  <p style="text-align: center;"><b>Remote Solenoid Valve Pressure Drop vs. Flow</b></p> 

## For Single-Acting Cylinders & Tools


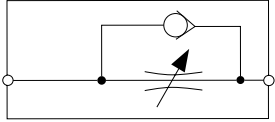

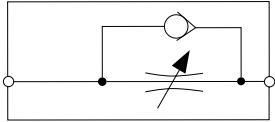

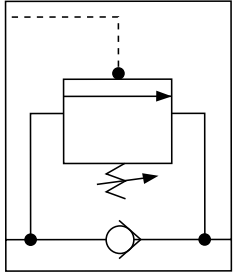

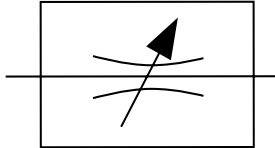

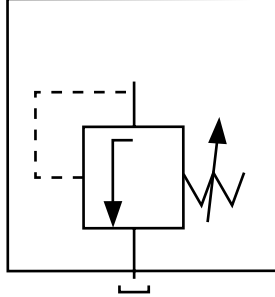

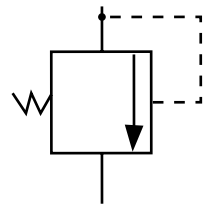
PUMP MOUNTED VALVES		Hydraulic Schematic	Functional Flow Schematic
	<ul style="list-style-type: none"> <li>VP2 Pump mounted 2 position 2 way valve is ideal for pressing, punching, crimping, staking or pulling applications when load holding is not needed.</li> </ul>		
	<ul style="list-style-type: none"> <li>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.</li> </ul>		
	<ul style="list-style-type: none"> <li>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. Recommended for prestressing, post tensioning and precision holding applications.</li> </ul>		
	<ul style="list-style-type: none"> <li>VPS3 Pump mounted electric solenoid actuated 3 position 3 way valve with remote pendant switch allows remote operation of system directional control.</li> </ul>		
	<ul style="list-style-type: none"> <li>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.</li> </ul>		
REMOTE MOUNTED VALVES			
	<ul style="list-style-type: none"> <li>VR3 &amp; 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.</li> </ul>	<p>VR3CC</p> 	
	<ul style="list-style-type: none"> <li>VRS3 &amp; 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.</li> </ul>	<p>VRS3CC</p> 	

All remote valves have threaded mounting holes (see page 60).

## For Double-Acting Cylinders & Tools

PUMP MOUNTED VALVES		Hydraulic Schematic	Functional Flow Schematic
	<p>■ <b>VP4</b> Pump mounted 3 position 4 way valve is used with double-acting cylinders and tools. This valve controls direction of oil for advancing, holding &amp; retracting. The center position holds the load with the pump motor running or off.</p>		<p>Advance</p>  <p>Hold</p>  <p>Retract</p> 
	<p>■ <b>VPL4</b> 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 <b>prestressing and precision holding applications</b>.</p>		<p>Advance</p>  <p>Hold</p>  <p>Retract</p> 
	<p>■ <b>VPS4</b> Pump mounted electric solenoid actuated 3 position 4 way valve with remote pendant switch. Same as VP4, but allows remote operation of directional control.</p>		<p>Advance</p>  <p>Hold</p>  <p>Retract</p> 
	<p>■ <b>VPSL4</b> 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.</p>		<p>Advance</p>  <p>Hold</p>  <p>Retract</p> 
	<p>■ <b>VPA4</b> Pump mounted air solenoid actuated 3 position 4 way valve with remote pendant switch. Same as VP4, but allows remote operation of directional control.</p>		<p>Advance</p>  <p>Hold</p>  <p>Retract</p> 
REMOTE MOUNTED VALVES			
	<p>■ <b>VR4 &amp; VR4CC</b> VR4 is the same as VP4, except for inline mounting. VR4CC is the same valve except all ports are closed in the center position. <i>VR4 hydraulic schematic same as VP4.</i></p>	<p><b>VR4CC</b></p> 	
	<p>■ <b>VRS4 &amp; VRS4CC</b> VRS4 is the same as VPS4 except for inline mounting. VRS4CC is the same valve except all ports are closed in the center position. <i>VRS4 hydraulic schematic same as VPS4.</i></p>	<p><b>VRS4CC</b></p> 	

All remote valves have threaded mounting holes (see page 60).

	Description	Hydraulic Schematic
	<ul style="list-style-type: none"> <li>■ <b>V10E Check Valve</b> 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).</li> </ul>	
	<ul style="list-style-type: none"> <li>■ <b>V10EC Check Valve</b> is a V10E with polarized high flow couplers for direct, rapid mounting to cylinder couplers.</li> </ul>	
	<ul style="list-style-type: none"> <li>■ <b>V2 Over Center Check Valve</b> 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". <b>Note: When used in multiple cylinder systems, contact Simplex for minimum pump requirements.</b></li> </ul>	
	<ul style="list-style-type: none"> <li>■ <b>V5B Shut-Off Valve</b> is a needle-type valve for sustained load-holding and flow control. Use for positive shut-off or throttling.</li> </ul>	
	<ul style="list-style-type: none"> <li>■ <b>V1 In-line Adjustable Relief Valve</b> 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.</li> </ul>	
	<ul style="list-style-type: none"> <li>■ <b>V3 Safety Relief Valve</b> threads into top port of double-acting cylinders, or inline on hydraulic systems, for protection against over pressurizing. Pressure rating is 10,500 psi.</li> </ul>	

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

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

### 3/8" NPTF



C213-Hose Half Coupler



C211-Ram Half Coupler



CR215 Dust Cap



C209 Coupler Complete with 2 Dust Caps

These premium grade couplers provide maximum fluid flow and are plated to resist corrosion. Cylinder Half Couplers have male 3/8" NPTF threads & high strength rubber dust caps; Hose Half Couplers have female 3/8" NPTF threads.

### 1/4" NPTF



CT201-Ram Half Coupler



CT202 Hose Half Coupler



CT200 Coupler Complete with 2 Dust Caps

For use on smaller tools, pumps and any tool with 1/4" threads. These couplers are plated to resist corrosion. Cylinder Half Couplers have male 1/4" NPTF threads; Hose Half Couplers have female 1/4" NPTF threads.

## 3/8" & 1/4" NPTF FLUSH FACE/NO SPILL COUPLERS

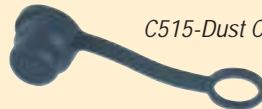
### 3/8" NPTF



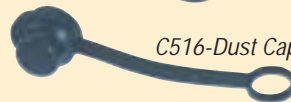
C513-Hose Half Coupler



C511-Ram Half Coupler



C515-Dust Cap Ram Half



C516-Dust Cap Hose Half



C509 Coupler Complete with 2 Dust Caps

Unique flush face design features push to connect operation with a sleeve lock, and non-spill "dry" disconnect operation. Easy cleaning minimizes system contamination. This coupler should be used wherever oil spillage constitutes a safety or environmental hazard. Couplers have 3/8" NPTF threads.

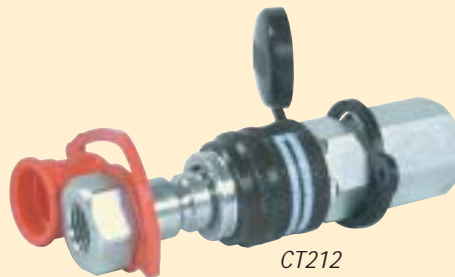
### 1/4" NPTF



CT210 Hose Half Coupler with Dust Cap



CT211 Ram Half Coupler with Dust Cap


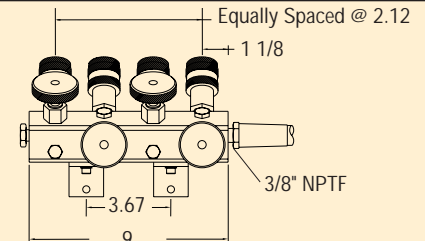

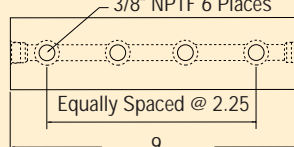

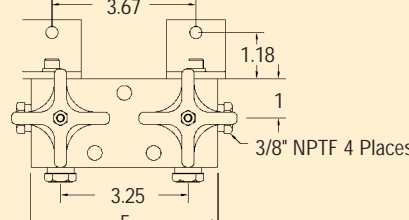

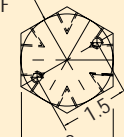

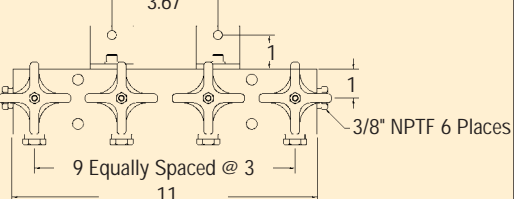


CT212 Coupler Complete with 2 Dust Caps











Unique flush face design features push to connect operation with an auto lock sleeve on the CT211, and non-spill "dry" disconnect operation. Easy cleaning minimizes system contamination. This coupler should be used wherever oil spillage constitutes a safety or environmental hazard. Couplers have 1/4" NPTF threads.



HIGH PRESSURE MANIFOLDS

<p><b>Model M1</b></p> 	<p>• <b>Pump Mounted 4 Cylinder Control Manifold Kit:</b> The M1 control manifold incorporates (4) station shut-off/flow control valves, 3' hose, gauge port, (4) high flow couplers and pump mounting hardware. Two or more manifolds can be coupled together for larger systems.</p>	 <p>Equally Spaced @ 2.12 + 1 1/8 3/8" NPTF 3.67 9</p>
<p><b>Model M2</b></p> 	<p>• <b>Pump Mounted 4 Cylinder Manifold Kit:</b> The M2 manifold includes 2' hose and pump mounting hardware. Two or more manifolds can be coupled together for larger systems.</p>	 <p>3/8" NPTF 6 Places Equally Spaced @ 2.25 9</p>
<p><b>Model M2A</b></p> 	<p>• <b>Pump Mounted 2 Cylinder Control Manifold Kit:</b> The M2A control manifold incorporates (2) station shut-off/flow control valves. Two or more manifolds can be coupled together for larger systems.</p>	 <p>3.67 1.18 1 3/8" NPTF 4 Places 3.25 5</p>
<p><b>Model M3</b></p> 	<p>• <b>6 Port Inline Hex Manifold:</b> The M3 inline hex manifold features (6) - 3/8" NPTF threaded ports &amp; mounting holes.</p>	 <p>3/8" NPTF 1.5 2</p>
<p><b>Model M4</b></p> 	<p>• <b>Pump Mounted 4 Cylinder Control Manifold Kit:</b> The M4 control manifold incorporates (4) station shut-off/flow control valves. Two or more manifolds can be coupled together for larger systems.</p>	 <p>3.67 1 1 3/8" NPTF 6 Places 9 Equally Spaced @ 3 11</p>

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

Hex Nipple	3" Nipple	6" Nipple	90° Elbow	90° St. Elbow	Tee	Coupling	Cross	3/8"M to 1/4"F	1/4"M to 3/8"F
									
F1	F3	F6	F7	F9	F11	F13	F15	F16	F17

SIMPLEX HYDRAULIC OIL

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

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	

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			1/4
H6	6			
H10	10			
H20	20			
H36	36			
H50	50	3/8" NPTF Male	3/8" NPTF Male	
HC3	3			1/4
HC6	6			
HC10	10			
HC20	20			
HC36	36	3/8" NPTF Male	C213 Coupler*	
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	I.D. (in)
HD3	3			3/8
HD6	6			
HD10	10			
HD20	20			
HD50	50			
HDC3	3			3/8
HDC6	6			
HDC10	10			
HDC20	20			
HDC50	50	3/8" NPTF Male	C213 Coupler*	
		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."







■ **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			1/4	
HP6	6				
HP10	10				
HP20	20				
HP36	36				
HP50	50	3/8" NPTF Male	3/8" NPTF Male		
HPC3	3				
HPC6	6				
HPC10	10				
HPC20	20				3/8" NPTF Male
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.

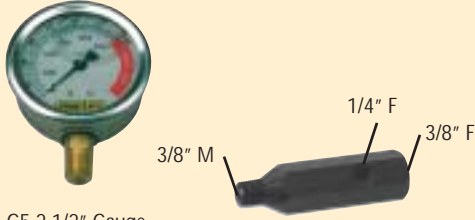
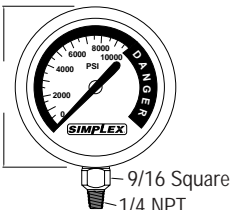

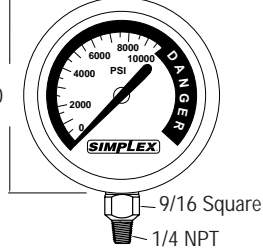

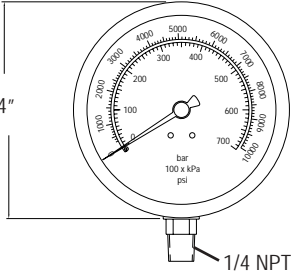

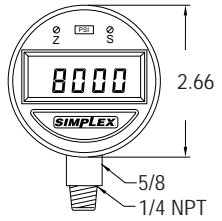

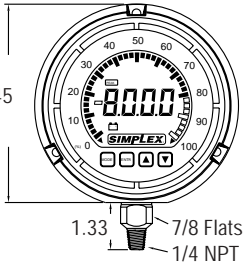
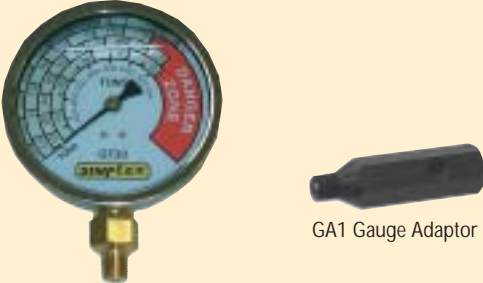
Model Number	Length (Ft.)	Hose End	Hose End	I.D. (in)
HR3	3			1/4
HR6	6			
HR10	10			
HR20	20			
HRC3	3			
HRC6	6			
HRC10	10			
HRC20	20			

\*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			1/4
HE10	10			
HE20	20			
HEC6	6			
HEC10	10			
HEC20	20			

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

 <p>G5 2.1/2" Gauge 500 PSI Increment</p> <p>GA1 Gauge Adaptor</p>	<p><b>Description</b></p> <p>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.</p> <ul style="list-style-type: none"> <li>■ Liquid filled dampens needle vibration.</li> <li>■ ±1% full scale accuracy.</li> <li>■ 500 psi increment.</li> <li>■ Stainless steel casing.</li> </ul>		<p><b>Dimensions</b></p>  <p>2.50</p> <p>9/16 Square 1/4 NPT</p>																								
 <p>G6 4" Gauge 500 PSI Increment</p> <p>GA1 Gauge Adaptor</p>	<p>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 psi to 15,000 psi as a warning zone.</p> <ul style="list-style-type: none"> <li>■ Liquid filled dampens needle vibration.</li> <li>■ ±1% full scale accuracy.</li> <li>■ Large easy to read 4" face.</li> <li>■ Rubber blowout plugs for safety.</li> <li>■ Stainless steel casing.</li> </ul>		<p><b>Dimensions</b></p>  <p>4.00</p> <p>9/16 Square 1/4 NPT</p>																								
 <p>G7 4" Gauge 100 PSI Increment</p> <p>GA1 Gauge Adaptor</p>	<p>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.</p> <ul style="list-style-type: none"> <li>■ Liquid filled dampens needle vibration.</li> <li>■ ±1% full scale accuracy.</li> <li>■ Large easy to read 4" face.</li> <li>■ Rubber blowout plugs for safety.</li> <li>■ Stainless steel casing.</li> <li>■ Standard on all Simplex Torque Wrench Pumps.</li> </ul>		<p><b>Dimensions</b></p>  <p>4"</p> <p>1/4 NPT</p>																								
 <p>GD1 2 1/2" Digital Gauge</p> <p>GA1 Gauge Adaptor</p>	<p>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 &amp; shock resistant.</p> <ul style="list-style-type: none"> <li>■ Self powered Lithium batteries.</li> <li>■ Full 4 digit display.</li> <li>■ ±.25% full scale accuracy.</li> <li>■ 10 million cycle life minimum.</li> </ul>		<p><b>Dimensions</b></p>  <p>2.66</p> <p>5/8 1/4 NPT</p>																								
 <p>GD2 4" Digital Gauge</p> <p>GA1 Gauge Adaptor</p>	<p>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.</p> <ul style="list-style-type: none"> <li>■ 0.75" characters and 270° bar graph "analog" readout.</li> <li>■ Splash proof phenolic housing.</li> <li>■ ±.25% full scale accuracy.</li> <li>■ Keypad enable/disable of peak high or peak low hold.</li> </ul>		<p><b>Dimensions</b></p>  <p>5.45</p> <p>1.33 7/8 Flats 1/4 NPT</p>																								
 <p>Tonnage Gauge</p> <p>GA1 Gauge Adaptor</p>	<table border="1"> <thead> <tr> <th>Model Number</th> <th>Calibrated Range (0-10,000 psi) and Tons</th> <th>Face Dia. (in)</th> </tr> </thead> <tbody> <tr> <td>GT5</td> <td>0 - 5, 10, 15</td> <td rowspan="7">4</td> </tr> <tr> <td>GT20</td> <td>0 - 20, 50</td> </tr> <tr> <td>GT25</td> <td>0 - 25, 55, 100</td> </tr> <tr> <td>GT30</td> <td>0 - 30, 50, 100</td> </tr> <tr> <td>GT100</td> <td>0 - 100, 150, 200</td> </tr> <tr> <td>GTH12</td> <td>0 - 12, 20, 30</td> </tr> <tr> <td>GTH60</td> <td>0 - 60, 100, 150</td> </tr> </tbody> </table>	Model Number	Calibrated Range (0-10,000 psi) and Tons	Face Dia. (in)	GT5	0 - 5, 10, 15	4	GT20	0 - 20, 50	GT25	0 - 25, 55, 100	GT30	0 - 30, 50, 100	GT100	0 - 100, 150, 200	GTH12	0 - 12, 20, 30	GTH60	0 - 60, 100, 150	<p><b>Cylinders Used With</b></p> <table border="1"> <tbody> <tr> <td>All 5, 10 &amp; 15 Ton Models</td> </tr> <tr> <td>All 20 &amp; RF, RFS, RL &amp; RLS 50 Ton Models</td> </tr> <tr> <td>All 25, 55 &amp; RF, RFS, RL &amp; RLS 100 Ton Models</td> </tr> <tr> <td>30 Ton Models, 50 &amp; 100 RLR &amp; RLN</td> </tr> <tr> <td>RDA100 &amp; 200 Series, RLR &amp; RLN 150 &amp; 200</td> </tr> <tr> <td>12, 20 &amp; 30 Ton RC &amp; RCD Series</td> </tr> <tr> <td>60, 100, &amp; 150 Ton RC &amp; RCD Series</td> </tr> </tbody> </table>	All 5, 10 & 15 Ton Models	All 20 & RF, RFS, RL & RLS 50 Ton Models	All 25, 55 & RF, RFS, RL & RLS 100 Ton Models	30 Ton Models, 50 & 100 RLR & RLN	RDA100 & 200 Series, RLR & RLN 150 & 200	12, 20 & 30 Ton RC & RCD Series	60, 100, & 150 Ton RC & RCD Series
Model Number	Calibrated Range (0-10,000 psi) and Tons	Face Dia. (in)																									
GT5	0 - 5, 10, 15	4																									
GT20	0 - 20, 50																										
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GT30	0 - 30, 50, 100																										
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GTH12	0 - 12, 20, 30																										
GTH60	0 - 60, 100, 150																										
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12, 20 & 30 Ton RC & RCD Series																											
60, 100, & 150 Ton RC & RCD Series																											

## SIMPLEX HYDRAULIC TOOLS

### ■ 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).

### ■ 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.

### ■ 35 Ton Portable Punch

Simplex 35 Ton Portable 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 interchangeable 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 Nut Splitters

See Page 70



### ■ Hydraulic & Mechanical Spreaders

See Page 71



### ■ 35 Ton Single & Double Acting Portable Punch

See Pages 72 & 73



### ■ Hydraulic Maintenance Kit

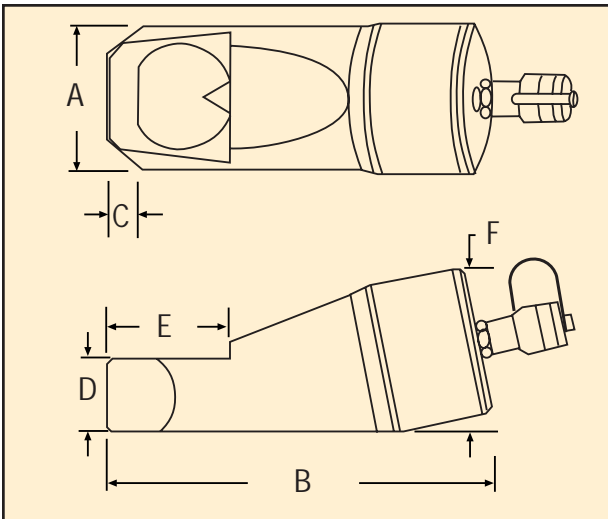
See Pages 74 & 75






- 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 from 1/2" to 2 15/16" (13 to 75mm).
- Rugged carrying case included.
- Broadest Range / Best Value.
- Angled head design for easy placement on nut.



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.



			
Torque Wrenches pgs. 94-99	Hand Pumps pgs. 32-35	Hoses pgs. 66-67	Pow'r-Buddy pgs. 40-41

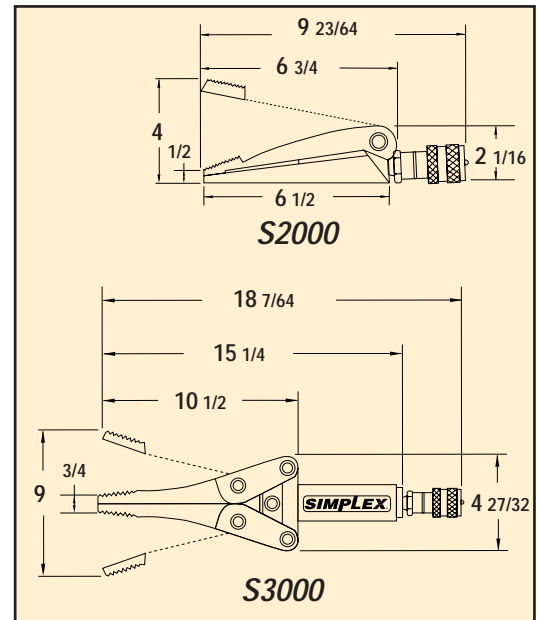
### Hydraulic Nut Splitters

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	P42/P72
NS1924	7/16 - 9/16	3/4 - 15/16	19 - 24	2.17	8.94	.32	.98	1.50	2.80	4.4	
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	
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	P140
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	
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	

## GAT'R JAW™ SPREADERS



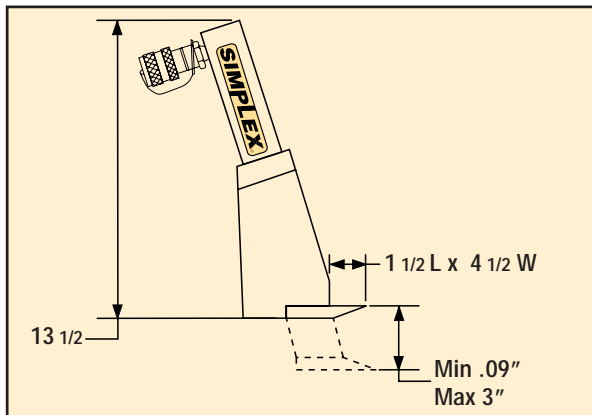
- 2 Models
- High flow quality couplers.
- Spring return for easy operation.
- Narrow closed ends.
- All metal construction.



### Hydraulic Spreaders 1 & 1 1/2 Ton Capacities

Model Number	Cap. (tons)	Pressure @ Capacity (PSI)	Oil Capacity Required (cu. in.)	Width (in)	Weight (lbs)	Suggested Hand Pump
S2000	1	10,000	.8	1.97	7	P42
S3000	1.5		5.5	2	16	

## 5 TON HYDRAULIC SPREADER



- 5 tons of spreading force.
- 1/8" through 3" spreading capability.
- Jaws open parallel.
- Will not drift.
- All metal construction.



### Hydraulic Flange Spreader 5 Ton Capacity

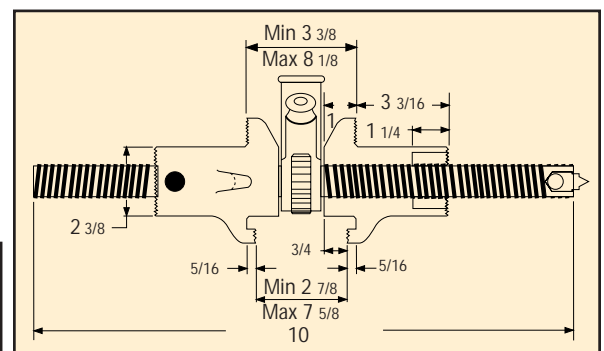
Model Number	Cap. (tons)	Pres. @ Cap. (PSI)	Oil Cap. Req. (cu. in.)	Weight (lbs)	Spread		Suggested Hand Pump
					Min. (in)	Max. (in)	
SF5	5	10,000	5	17	.09	3	P22

## 10 TON SPREADER/PULLER



### Mechanical Spreader/Puller 10 Ton Capacity

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



# HYDRAULIC TOOLS

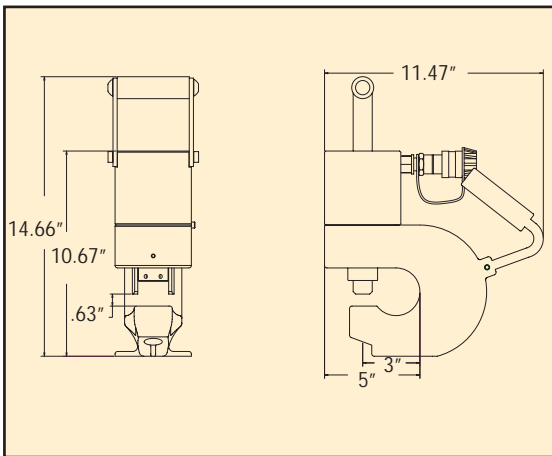
## 35 TON SINGLE-ACTING PUNCH



- 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.



Simplex offers a punch mounted motor control, so that work can be performed safely and more productively as shown in this small fabricating shop.



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

Contact Factory for additional dimensions.

Punch and Die Type	Standard Punch Model#	Standard Die Model #	Standard Punch & Die Set	Bevel Punch & Die Set for I-Beams	Bevel Punch & Die Set for U-Beams	Hole Size (in./mm)	Bolt Size (in./mm)	*Maximum Metal Thickness To Be Punched (in.)										
								A	B	C	D	E	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	.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	.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

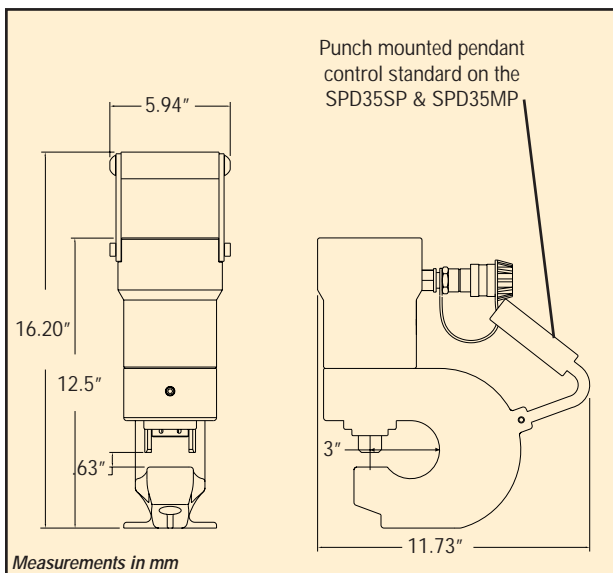
A: Mild A-7	E: Cold Rolled C-1018	I: Stainless Annealed
B: Boiler Plate	F: Hot Rolled C1050	J: Stainless 304 Hot Rolled
C: Structural A-36	G: Hot Rolled C-1095	K: Stainless 316 Cold Rolled
D: Struct Corten (ASTM A242)	H: Hot Rolled C-1095 Annealed	



## 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		----	----	----	45/20.45
SPD35S		Standard Set	----	----	
SPD35SP	SPD35	DS-44, DS-56, DS-69, DS-81	SPD2041	HC6	
SPD35M		Metric Set	----	----	
SPD35MP		DS-38, DS-44, DS-53, DS-69	SPD2041	HC6	

Contact Factory for additional dimensions.

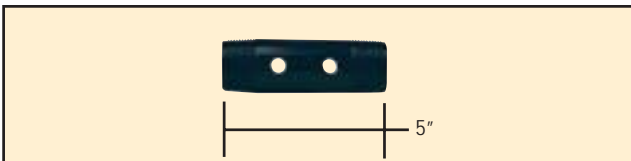
*Simplex Maintenance Kits Can Be Used In Almost Every Maintenance Job!*



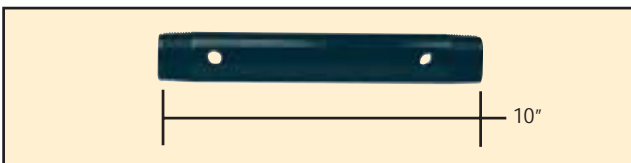
**Maximum Operating Pressure 5,000 PSI  
When Using Extension Pipe**

- Set includes a Simplex hand pump, cylinder & gauge with gauge adaptor.
- Heavy duty case included.
- Rated at 5 tons when attachments are used.
- Quick lock or threaded adaptors included.
- Order as a set or individual components.

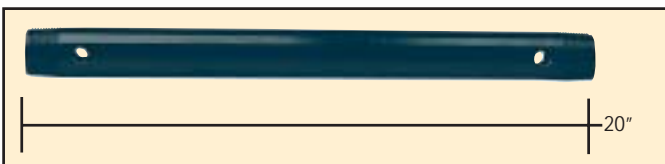
**MK-18 5 Inch Extension Pipe (Qty. 1)**



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



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



Add collar toe and flat base to build custom spreader or toe jack.

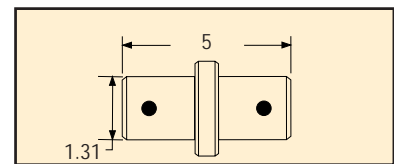
Add a V-base and flat base for special spreading, holding and bending jobs.

Extensions, custom heads and adaptors allows you to create tools that solve hundreds of problems. Simplex MK106 kits are used extensively for collision repair.

**MK-14**



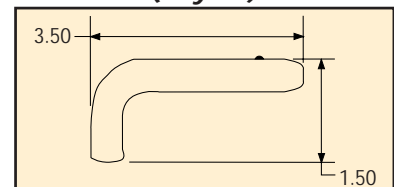
**Lock On Connector (Qty. 3)**



**MK-15**



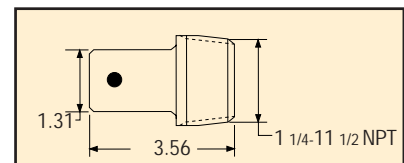
**Lock Pin (Qty. 4)**



**MK-16**



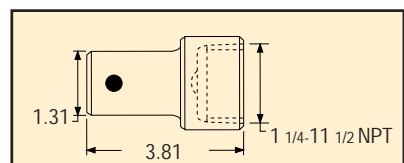
**Male Lock On Adaptor (Qty. 1)**



**MK-17**



**Female Lock On Adaptor (Qty. 1)**



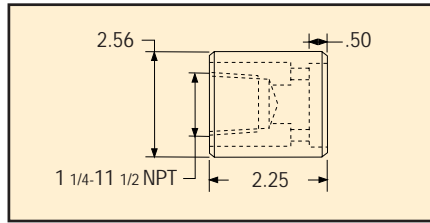
### Hydraulic Maintenance Kit Includes

Model Number	Capacity (tons)	Cylinder	Hand Pump	Hose	Gauge	Gauge Adaptor	Attachments	Spreader	Box	Weight (lbs)
MK106	10	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.

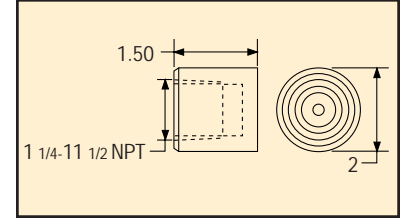
**MK-4**

**Base Attachment (Qty. 1)**



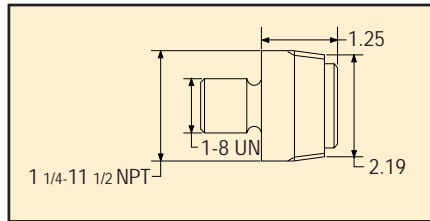
**MK-10**

**Grooved Saddle (Qty. 1)**



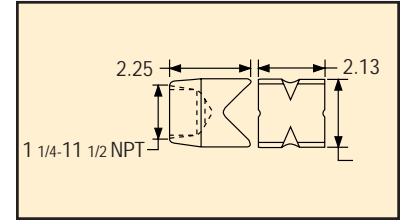
**MK-5**

**Threaded Adaptor (Qty. 1)**



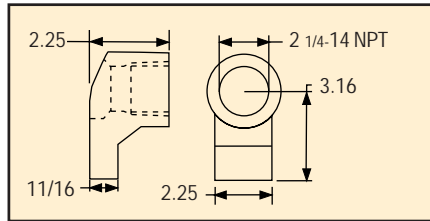
**MK-11**

**90° V-Base (Qty. 1)**



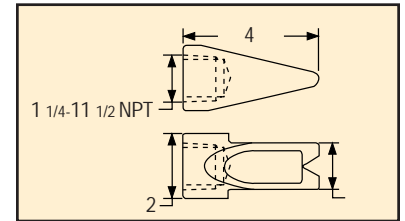
**MK-6**

**Collar Toe (Qty. 1)**



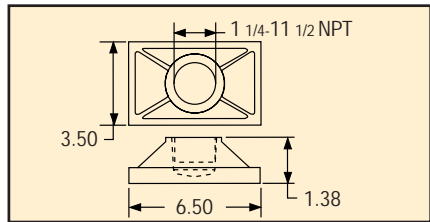
**MK-12**

**Wedge Head (Qty. 1)**



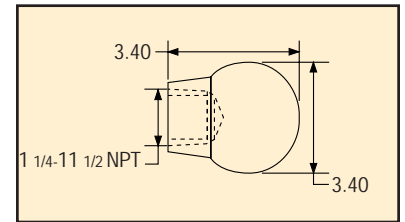
**MK-7**

**Flat Base (Qty. 1)**



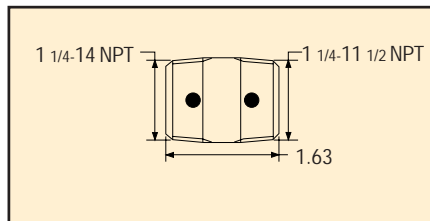
**MK-13**

**Flex Head (Qty. 1)**



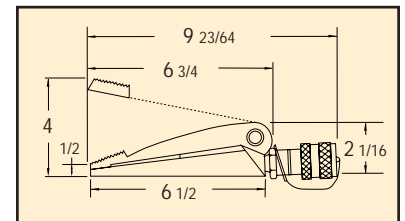
**MK-8**

**Threaded Connector (Qty. 1)**



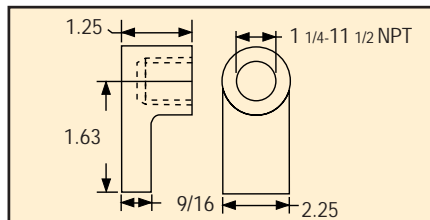
**S2000**

**S2000 Spreader (Qty. 1)**

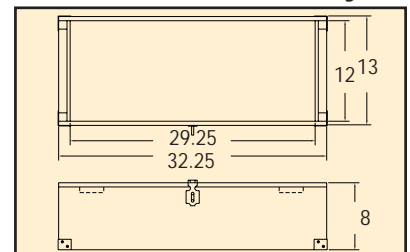


**MK-9**

**Threaded Plunger Toe (Qty. 1)**



**MK-21 Wooden Box (Qty. 1)**



## 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.

### ■ 1.1 Through 70.22 Tons Air Lifting Bags

Thin, powerful & light weight, the Simplex Air Bags are the answer to the toughest industrial applications. Starting with a minimum height of 1.1", Simplex lifting bags offer 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. Simplex air lifting bags are manufactured with neoprene & Kevlar reinforced construction and are safer, stronger and more reliable than other bags on the market.

### ■ Pow'r-Riser II™ 60 Through 200 Ton Capacities

The Simplex Pow'r-Riser II™ Railcar & Off-Road Equipment Jack has been the industry benchmark for over a decade. Simplex now offers the second generation, the Pow'r-Riser II™ with advanced hydraulic technology and ergonomic handling that makes the jack easier and safer to operate. The Pow'r-Riser II™ is available in 60, 100, 150 & 200 ton capacities with electric or air power sources. The Pow'r-Riser II™, 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 II™ the easiest jack of its kind to maneuver into and out of position. The Pow'r-Riser II™ also comes with optional u-rings to hold the load mechanically in place.

### ■ Hydraulic Bottle Jacks

See Page 78



### ■ Hydraulic Toe Jacks

See Page 79



### ■ Air Lifting Bags

See Pages 80 - 81



### ■ Air & Electric Pow'r-Riser II™

See Pages 82 to 84



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



■ **For Portable, Self-Contained Jacks, Nothing Beats the Simplex Pow'r-Riser II™ 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 II™ 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 II™. With capacities up to 200 tons and powered by standard shop air or 115VAC, the Simplex Pow'r-Riser II™ is ideal for the largest maintenance jobs. From the heaviest railcar to the largest mining equipment, Pow'r-Riser II™ is the only choice.

***AIR LIFTING BAGS***



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

***HYDRAULIC TOE JACKS***



■ **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.

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."

- 11 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.
- Super low height jacks in 12 & 22 ton models.
- Service kits are available for all models.

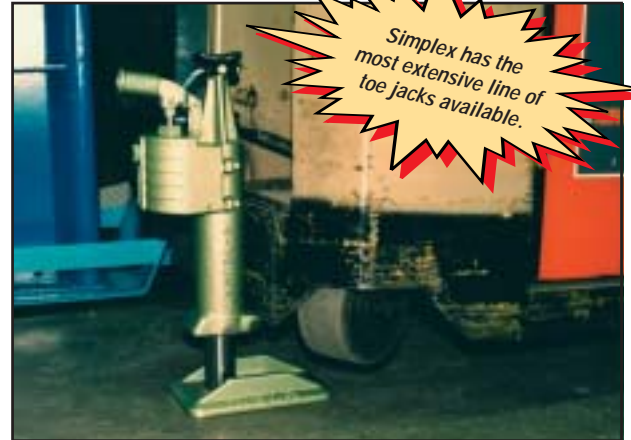
Model Number	Cap. (tons)	Min. Ht. (in)	Stroke (in)	Ext. Screw Ht. (in)	Max. Ht. (in)	Base Area (in)	Piston Dia. (in)	Max. Handle Effort (lbs)	Weight (lbs)
HJ2	2	7 1/8	4 1/2	2	13 5/8	4 3/8 x 2 5/8	3/4	64	5.3
HJ3	3	7 1/2	4 1/2	2 3/8	14 3/8	4 1/2 x 2 7/8	7/8	64	7.3
HJ5	5	7 7/8	4 3/4	2 3/4	15 3/8	5 1/4 x 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
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
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.



Simplex has the most extensive line of toe jacks available.

Heavy equipment movers have long realized the benefits of Simplex toe jacks. Truly a universal tool, hydraulic toe jacks can do a wide variety of jobs faster & safer than standard jacks. With toe heights starting at 1" and capacities up to 25 tons, Simplex hydraulic toe jacks are the first choice for transformer maintenance, heavy hauling, structural moving, and rigging.

**NEW!!**



TJH109LS

Simplex offers the largest selection of toe jacks to fit your needs.

- 8 Models
- Self-contained or remote models for maximum versatility.
- Low toe heights fit in tight clearances.
- The lowest handle effort for easy operation.
- The lowest weights for reduced back injuries.
- Swivel sockets for access in close quarters. (TJH5 & TJH10 Only)
- New light weight TJH109LS and TJH105A.

## Toe Jacks

Model Number	Cap. (tons)	Stroke (in)	Minimum Height		Base Area (in)	Max. Handle Effort (lbs)	Method Of Return	Weight (lbs)
			Toe (in)	Cap (in)				
TJH2	2	4 7/16	5/8	9 1/4	4 59/64 x 7	51	Load	18
TJH5	5	4 5/8	1	11 3/4	7 1/4 x 10 5/8	33		53
TJH10	10	5 7/8	1 1/4	13 1/8	9 1/2 x 11 1/4	38	Spring	85
TJH109		9	2 1/4	22	6 1/2 x 10	80		56
TJH105A		5	2 11/64	11 1/2	6 x 9	73		37
TJH109LS		9		16 1/8				41
TJA25	25	6 1/2	2 1/4	13 3/4	9 1/2 x 12	100	Load	130

**NEW!!**

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

## Toe Jacks - Remote

Model Number	Cap. (tons)	Stroke (in)	Minimum Height		Base Area (in)	Res. Cap. Reqd. (cu. in.)	Pres. @ Cap. (PSI)	Type	Weight (lbs)
			Toe (in)	Cap (in)					
TJR109	10	9	2 1/4	22 1/8	6 1/2 x 10	53	6,500	S/A Spring Return	45

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

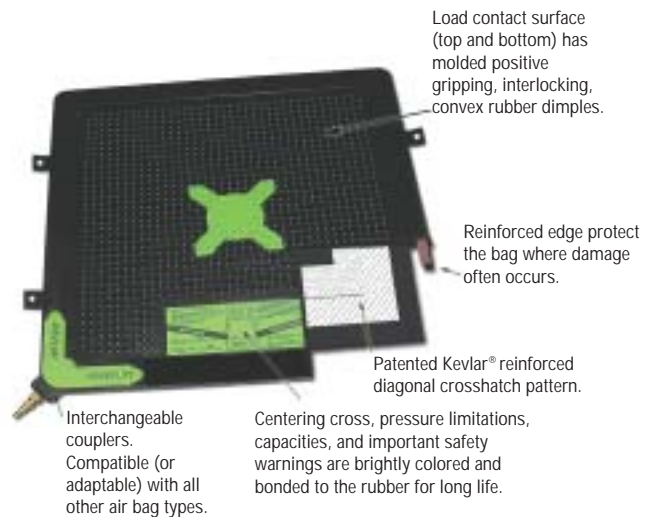
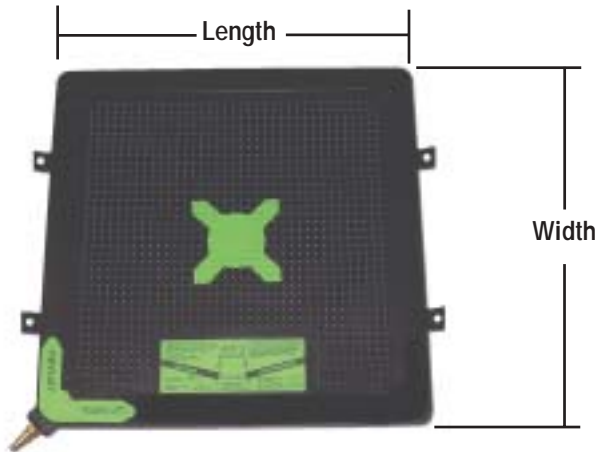
Simplex Air Bags Are The Perfect Choice for Low Clearance Lifting.



## 1.1 Through 70.22 Ton Capacities

Model Number	Cap. (tons)	*Max. Lifting Hts. (in)	Bag Dimensions (in)			Air Req. @116 PSI (cu. ft.)	Max. Burst Pres. (PSI)	Wgt. (lbs)
			Length (in)	Width (in)	Thick (in)			
B1A	1.1	2.7	6	6	1.1	.18	464	1.32
B3A	3.1	5.1	9	9	1.1	.53		2.8
B6A	6.4	5.9	12	12	1.1	1.48		5.3
B11A	10.8	7.0	15	15	1.1	3.04		8.8
B14A	14.2	8.6	18	18	1.1	5.37		11.6
B23A	22.05	10.6	22	22	1.1	10.45		17.8
B28A	27.7	11.8	24	24	1.2	14.7		24.6
B35A	35.3	14.1	27	27	1.2	21.9		29.9
B46A	46.4	16.5	31	31	1.2	32.5		40.1
B59A	58.8	17.7	35	35	1.2	46.8		49.6
B74A	70.22	20	36	36	1.2	53.1	348	55.8

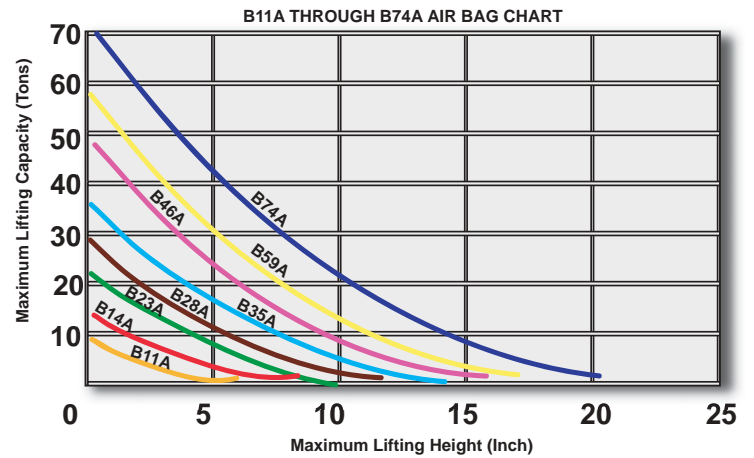
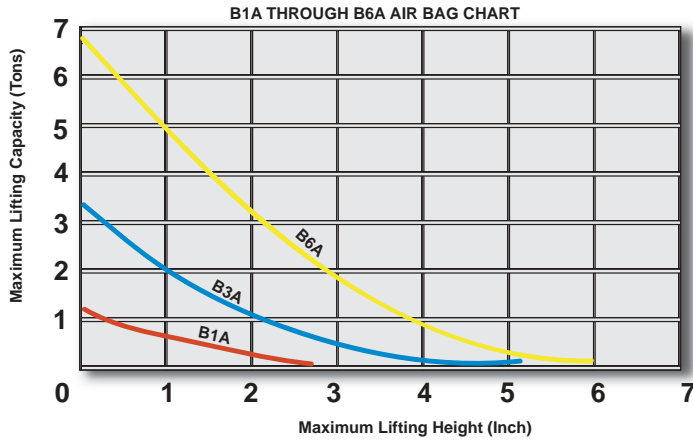
All Simplex Air Bags have a maximum working pressure of 116 PSI.  
\*See chart on page 81 for maximum lifting heights.



- 11 models with capacities ranging from 1.1 through 70.22 tons.
- Simplex air bags operate on standard shop air up to 116 psi.
- Simplex air bags will fit into the tightest areas with collapsed heights of 1.1" to 1.2".
- All models include 2 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 "X" is molded into each bag for easy center point placement.
- Light weight makes the Simplex air bags easy to set up.
- Most bags come with side holes for attaching bags together.



HEIGHT vs. LOAD CAPACITY @ 116 PSI (8 BAR)



## Components and Accessories



- BHR16A - 16' Red Hose
- BHR32A - 32' Red Hose
- BHB16A - 16' Blue Hose
- BHB32A - 32' Blue Hose
- BHY16A - 16' Yellow Hose
- BHY32A - 32' Yellow Hose



BC4A - Single Safety Controller



BC11  
Dual Safety Control



BC12  
Deluxe Dual Deadman  
Control



BC2A - Dual Deadman Control



BC8A  
Shutoff Valve w/Nipple



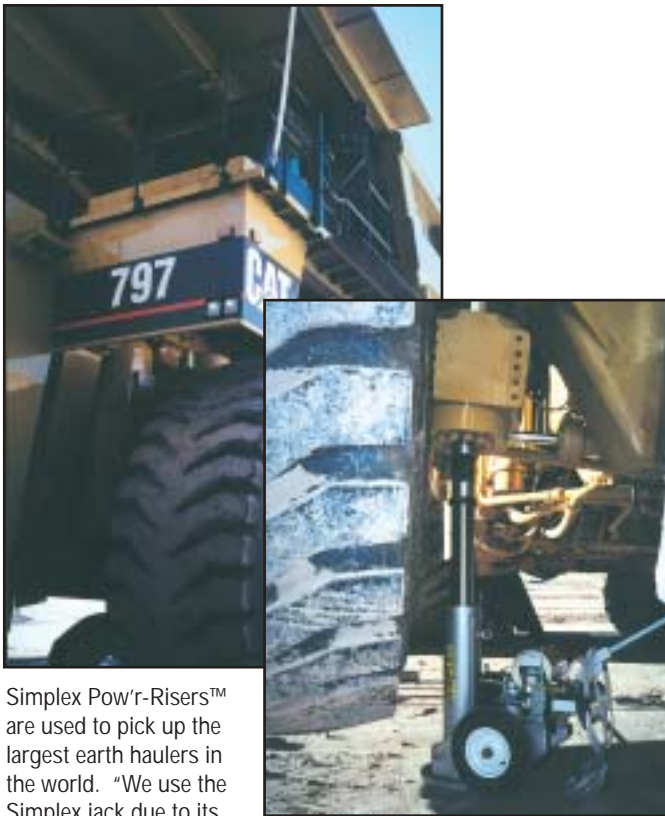
BC6A  
In-Line Relief Valve

BC3A - Single Deadman Control



BC1A  
Pressure Regulator

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



Simplex Pow'r-Risers™ are used to pick up the largest earth haulers in the world. "We use the 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."

**200 Ton Version**



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 (lbs.)								
JA6024	60	24	14	Air	32*	Manual	Air Motor 50 CFM 80 PSI	89	390								
JA6037		37	27														
JE6024		24	14	Electric			115 VAC 50/60 Hz 20 amps	80	390								
JE6037		37	27														
JA10026	100	26	16	Air	21**	Manual	Air Motor 50 CFM 80 PSI	89	510								
JA10037		37	27														
JAS10026		26	16							Electric	115 VAC 50/60 Hz 20 amps	80	510				
JAS10037		37	27														
JE10026		26	16	Manual		230/460 VAC 3 Phase	80	530									
JE10037		37	27														
JEB10026		26	16	Air		21**	Remote 20' Pend.	Air Motor 50 CFM 80 PSI	89	570							
JEB10037		37	27														
JAS15026	150	26	15 1/2	Air	21**						Manual	115 VAC 50/60 Hz 20 amps 230/460 VAC 3 Phase	80	570			
JAS15037		37	26 1/2														
JE15026		26	15 1/2	Electric			50/60 Hz 20 amps 230/460 VAC 3 Phase	80	570								
JE15037		37	26 1/2														
JEB15026		26	15 1/2							Manual					50/60 Hz 20 amps 230/460 VAC 3 Phase	80	590
JEB15037		37	26 1/2														
JAS20026	200	26	15 1/2	Air	Contact Factory	Remote 20' Pend.				Air Motor 50 CFM 80 PSI	89	640					
JAS20037		37	26 1/2														

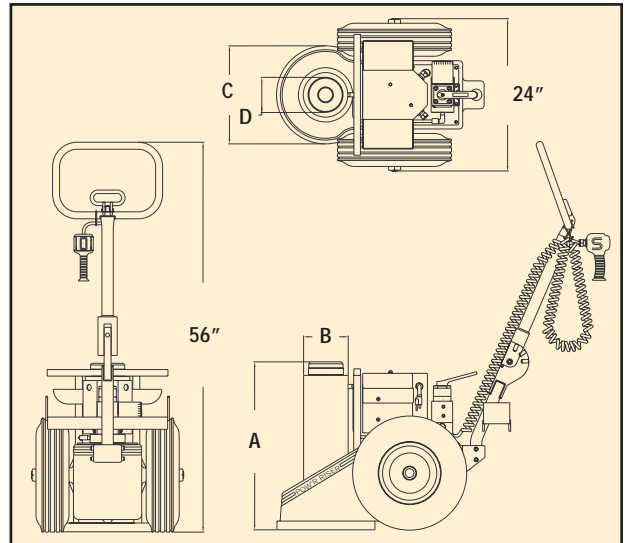
\* Based on (1) 18" and (1) 11" extension and (1) 3" spacer.

\*\*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.

**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 12 VAC pendant with 6 meter 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.



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



**NOTHING ELSE COMES CLOSE:**

- Rugged, fully enclosed frame; no exposed fittings or hoses.
- Runs on air or 115 or 230VAC, 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.

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.

**POW'R-RISER II® INDIVIDUAL SUP'R-STACK™ EXTENSIONS**  
(Use one extension & one spacer only for loads over 60 tons.)

JE18    JE14    JE11    JE9    JE7    JE5

### ES6024 Extension Set

Model Number	Description
JE5	5" Extender
JE7	7" Extender
JE11	11" Extender
JE18	18" Extender



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 Combination	1	2	3	5	5	7	7	7	7	11	11	11	11	11	18	18	18	18	18	18	18	18	18	18	18	18	18	18

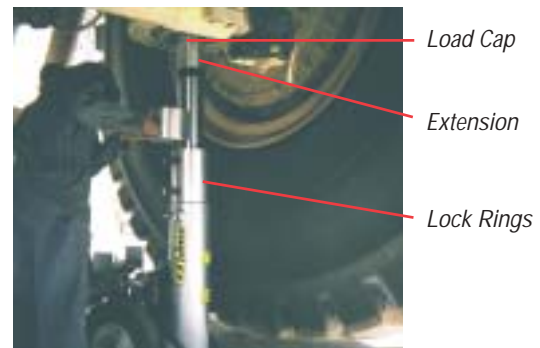
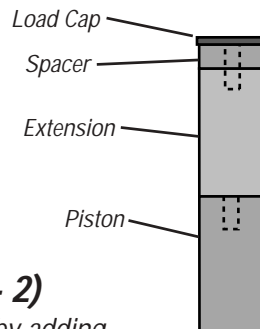
Use tallest extender on the bottom.

### POW'R-RISER II® SPACER SET - JS4



JS-3    JS-2    JS-1 (Qty. - 2)

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



### 60 & 100 Ton U-Rings

JU110 10"    JU14 4 1/2"    JU13 3"    JU11 1"

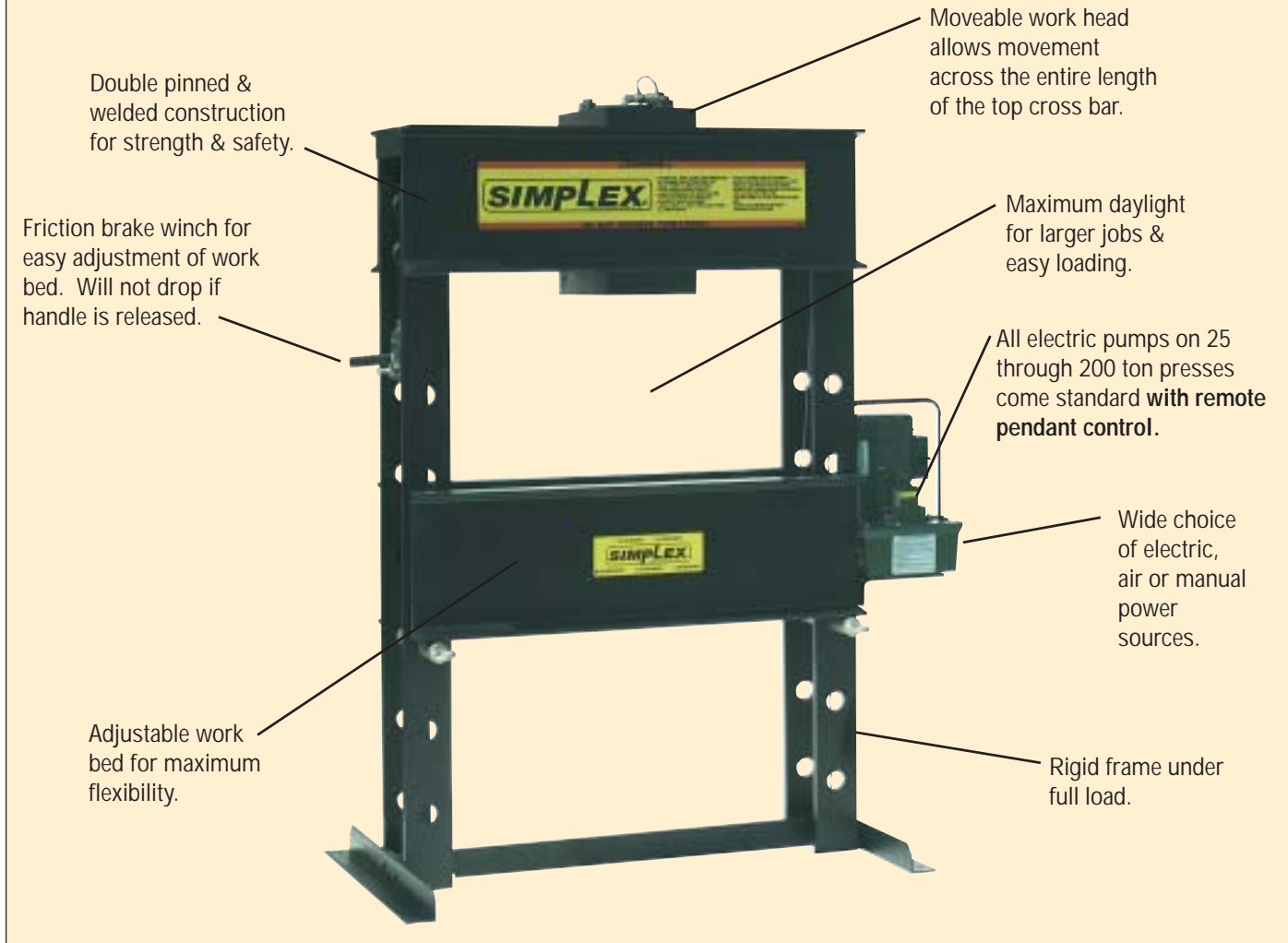
### 150 Ton U-Rings

JU1510 10"    JU155 5 1/2"    JU153 3"    JU151 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"

## THE SIMPLEX PRESS



## 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.

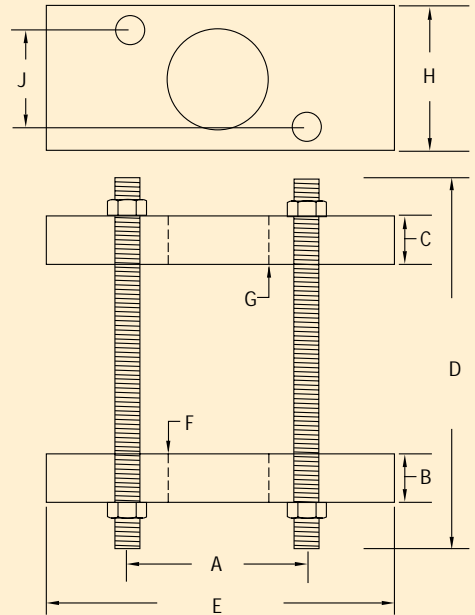
**CYLINDER MOUNTING BLOCK KITS**

Cylinder Mounting Block Kit	Presses Used On	A (in)	B (in)	C (in)	D (in)	E (in)	F Thrds. UN-2B (in)	G (in)	H (in)	J (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

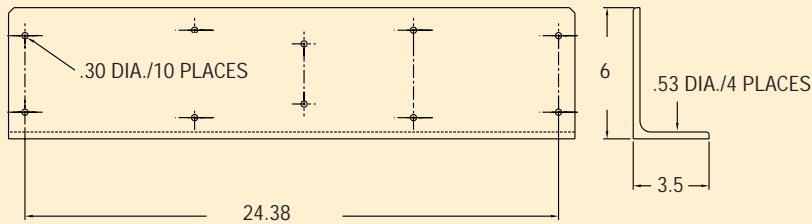
\*Inline on center

**Cylinder Block Kits Contain:**

- (1) Top and bottom plate
- (2) Threaded Rods
- (2) Adjusting Nuts

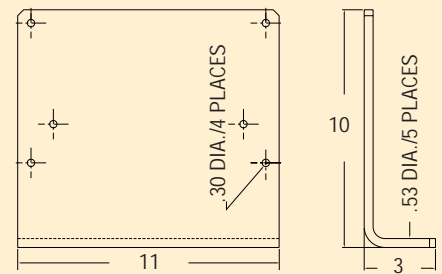


**IM2 HAND PUMP MOUNTING KIT**



All mounting hardware is included.

**IM3 POWER PUMP MOUNTING KIT**



All mounting hardware is included.  
Fits all 2 gallon & 10 Series 1 gallon reservoirs.

# H-FRAME BENCH 10 & 15 TONS

# PRESSES

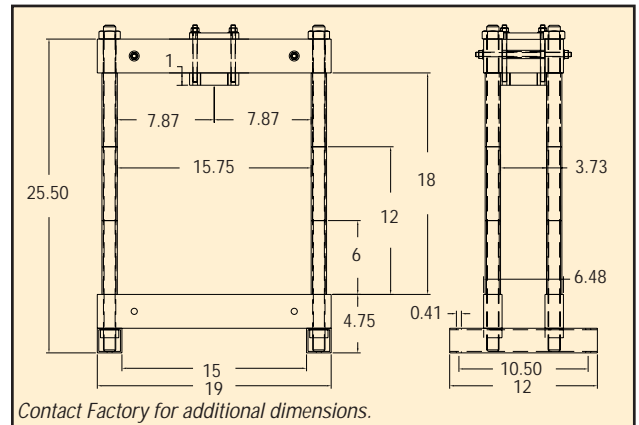
Only Simplex offers Bench Presses with up to 15 ton capacities, moveable work heads and adjustable beds for maximum flexibility. For small production jobs, the adjustable bed eliminates wasted time approaching the work. IPB1010 & IPB1510 presses include a 10" stroke cylinder.

Model Number w/Cyl.	Cap. (tons)	Type	Ram	Stroke (in.)	Model Number w/o Cyl.	Weight (lbs)
IBP1010	10	S/A	R1010	10	IPB10	142
IBP1510	15		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	P42	PEM2031	HC6	G6	GA1	130
15 ton						



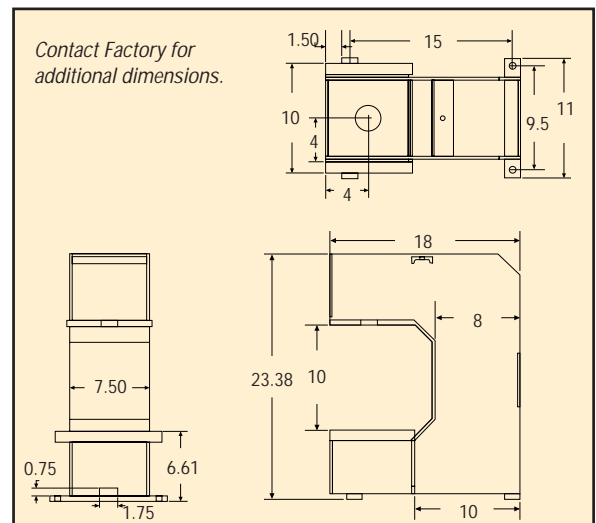
# C-FRAME 5 & 10 TONS



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

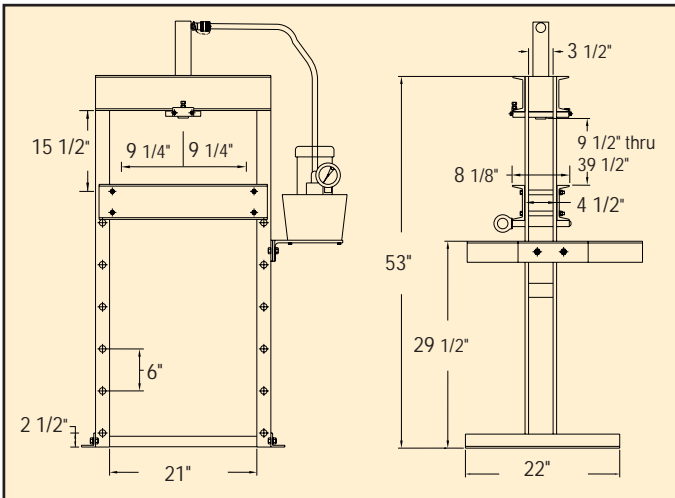


- Strong welded construction.
- Open throat design for easy loading.
- Mounting holes for solid bench mounting.
- Available with air, electric or manual power sources.

10 Ton Press Used In Assembly Of Manual Hoists.



- 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.
- 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."

### 10 Ton H-Frame Press

Model Number Without Pump	Model Number With Pump	Type of Cylinder	Cylinder Stroke (in)	Type of Pump	Pump Model	Operation	Speed (in/min)		Weight With Pump (lbs)	Weight Without Pump (kg)
							Advance	Pressing		
IS1010	IAS1010	R1010 Single Acting 10 Ton Capacity	10 1/8	Air Powered	PA91	Advance Hold Retract	31	4.5	202	172
	IES1010			Electric Powered	PEM1021		104	9	204	
				Manual	P42		.38*	.06*	208	
ID1010	IED1010	RDA1010 D/A	10	Electric Powered	PEM1041		104	9	226	188
	IMD1010	10 Ton Capacity		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.

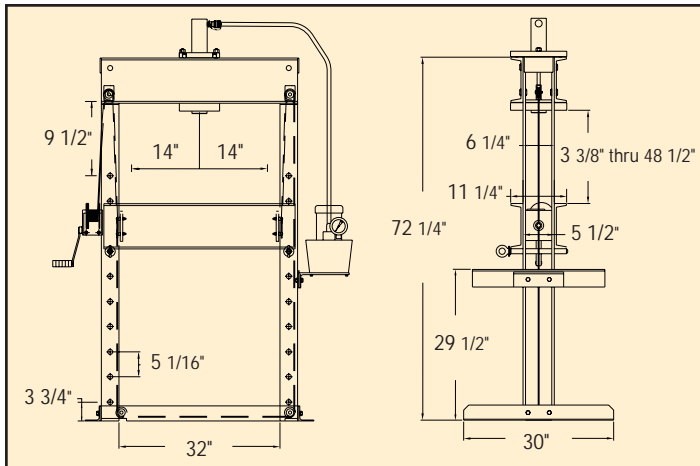
Pump Mounting Kit	
For Hand Pumps	Model IM2
For Power Pumps	Model IM3
See Page 86	



Simplex 25 Ton Press Reduces Production Line Down Time.



- 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 86	
Cylinder Mounting Kit	
Single-Acting	Model MC25
Included with Press	
See Page 86	

## 25 and 30 Ton H-Frame Press

Model Number Without Pump	Model Number With Pump	Type of Cylinder	Cylinder Stroke (in)	Type of Pump	Pump Model	Operation	Speed (in/min)		Weight With Pump (lbs)	Weight Without Pump (lbs)
							Advance	Pressing		
IS256 IS2514	IAS256 IAS2514	R256/ R2514	6	Air Powered	PA91	Advance Hold Retract	14	2	417	----
	IS256 IS2514	IES256 IES2514	14	Electric Powered	PEM1021		50	4	433	387
ID3014	IED3014 IMD3014	Single Acting 25 Ton Capacity	6	Manual Powered	P82		.5*	.05*	419	403
	IED3014 IMD3014	RDA3014	14	Electric Manual	PES4042 P140D		40	3	423	439
							.5*	.05*	428	428
									458	

\* 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.

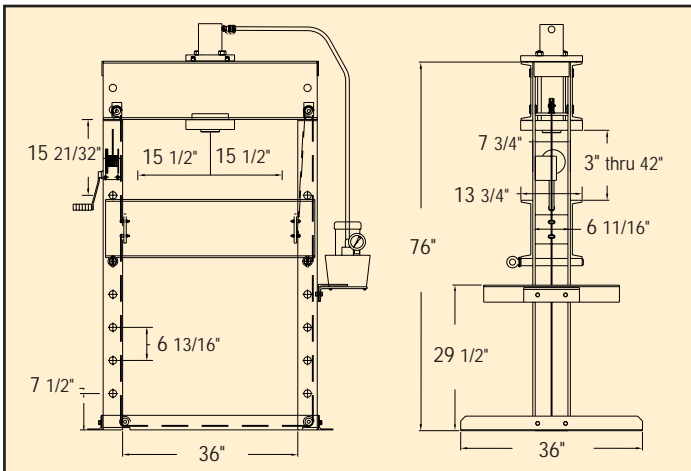
Simplex 55 Ton Press Handles Hundreds Of Different Jobs At Industrial Repair Shops.



- Large daylight with open sides for easy loading.
- 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 Mounting Kit	
For Hand Pumps	Model IM2
For Power Pumps	Model IM3
See Page 86	
Cylinder Mounting Kit	
Single & Double Acting	
Model MC55	
See Page 86	

### 55 Ton H-Frame Press

Model Number Without Pump	Model Number With Pump	Type of Cylinder	Cylinder Stroke (in)	Type of Pump	Pump Model	Operation	Speed (in/min)		Weight With Pump (lbs)	Weight Without Pump (lbs)
							Advance	Pressing		
IS556	IES556	R556 S/A	6	Electric Powered	PEM1021	Advance Hold Retract	23	2	707	675
IS5513	IES5513	R5513 S/A	13						735	703
ID556	IED556	RDA556 D/A	6		PES4042		35	5	748	710
ID5512	IED5512	RDA5512 D/A	12	793		755				
	IMS556	R556 S/A	6	Manual	P82	.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.

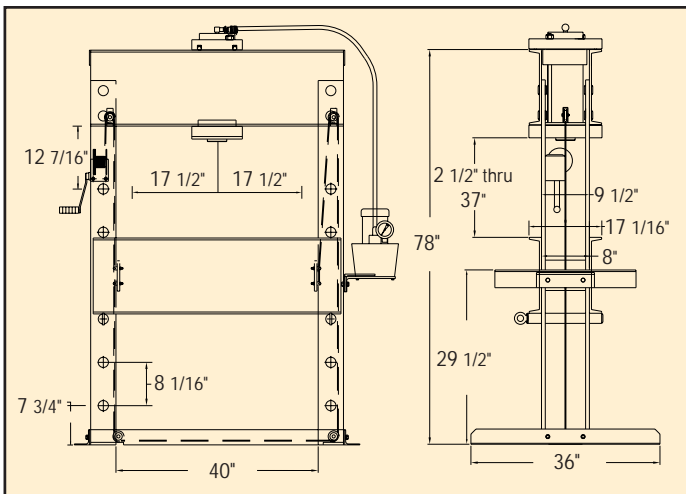
Simplex Presses Enhance Safety In High Force Pressing.



- 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."



<b>Pump Mounting Kit</b>	
For Power Pumps	Model IM3
See Page 86	
<b>Cylinder Mounting Kit</b>	
Single-Acting	Model MC100
Double-Acting	Model MCD100
Included with press.	
See Page 86	

## 100 Ton H-Frame Press

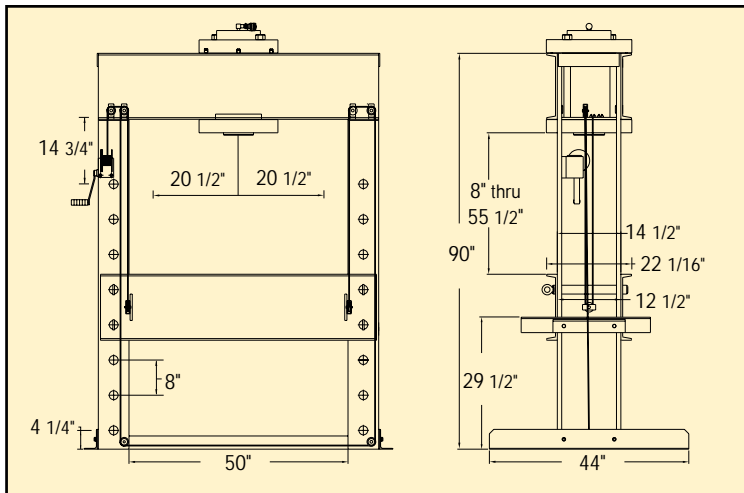
Model Number Without Pump	Model Number With Pump	Type of Cylinder	Cylinder Stroke (in)	Type of Pump	Pump Model	Operation	Speed (in/min)		Weight With Pump (lbs)	Weight Without Pump (lbs)
							Advance	Pressing		
IS1006	IES1006	R1006 S/A	6	Electric Powered	PES4032	Advance	19	2 3/4	1558	1470
IS10010	IES10010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

■ 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.

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

## 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.

### ■ WT-Series Square Drives See Pages 94 & 95



### ■ WX-Series Low Clearance See Pages 96 & 97



### ■ Torque Wrench Pumps See Pages 98 & 99



### ■ Accessories See Page 99



# TORQUE WRENCHES

## 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.

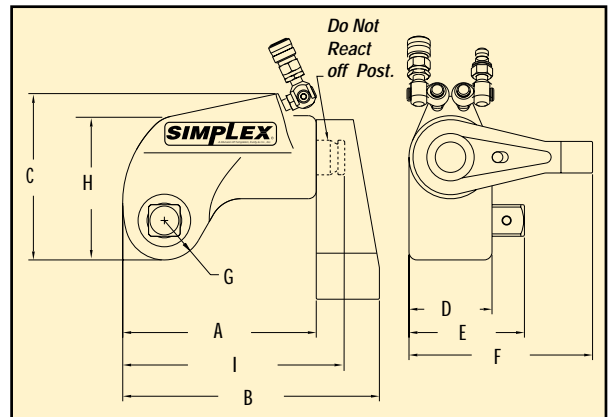
- Harden alloy square drive provide long life.
- No reaction pawl, **ELIMINATES** tool lockup.
- 27° Stroke for high performance and speed.
- Torque chart & safety information engraved on the tool.
- Push through square drive switches from loosen to tighten instantly.
- Light weight, high torque ratio.
- Compact Uni-Body design for maximum strength.
- Accurate to within  $\pm 3\%$ .
- Slim nose radius for easy positioning in close quarters.
- No leak couplers that swivel on double axis for easy operation.
- Custom wrenches available upon request.
- 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 body without risk of damage.

**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.

Order #: WCH-1



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



### SQUARE DRIVE WRENCH SPECIFICATIONS

Model Number	A Length (in.)	B Length (in.)	C Height (in.)	D Width (in.)	E Width (in.)	F Width (in.)	G Radius (in.)	H Height (in.)	I Length (in.)	Wgt. (lbs.)	Output (ft./lbs.)	Square Drive (in.)	Available Socket Size (in.)	Available Socket Size (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			
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

# SQUARE DRIVE WRENCHES

# TORQUE WRENCHES



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

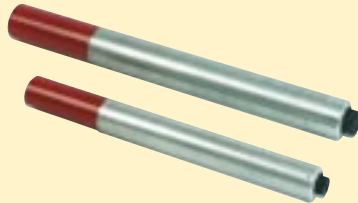
Model Number for 3/4" Drive WT-2 Wrench	Socket Size (in.)	Model Number for 1" Drive WT-3 Wrench	Socket Size (in.)	Model Number for 1" Drive WT-3 Wrench	Socket Size (in.)	Model Number for 1" Drive WT-3 Wrench	Socket Size (in.)	Model Number for 1 1/2" Drive WT-5 & 10 Wrench	Socket Size (in.)	Model Number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

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.

## ALCO REACTION ARMS

Model Number	Length (in)
WT2-ALCO	18.00
WT3-ALCO	22.25
WT5-ALCO	21.00
WT10-ALCO	23.50
WT27-ALCO	N/A



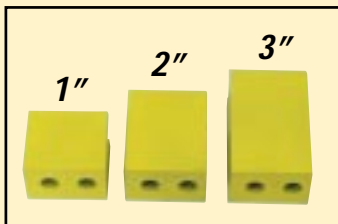
To order, specify both the type of WT-Series Wrench and the Allen head size. Additional Allen sizes are available in both imperial and metric sizes.

## ALLEN HEX DRIVES FOR WT-SERIES WRENCHES

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

## 1", 2" & 3" REACTION ARM EXTENSIONS

Model Number	Length (in)
WT3-EX1	1
WT3-EX2	2
WT3-EX3	3
WT5-EX1	1
WT5-EX2	2
WT5-EX3	3
WT10-EX1	1
WT10-EX2	2
WT10-EX3	3



**Allen Hex Drives Use The Standard Reaction Arm. No Additional Reaction Equipment Is Required.**



- 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  $\pm 3\%$ .
- 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.

### Optional Wrench Handle

Optional handles are available for the WX-8, WX-16 & WX-32. The handle can be screwed on either side of the wrench or on top of the wrench.



Order #: WCH-1

"Simplex Low Clearance Torque Wrenches" are the thinnest while having the highest torque output available on the market. 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.

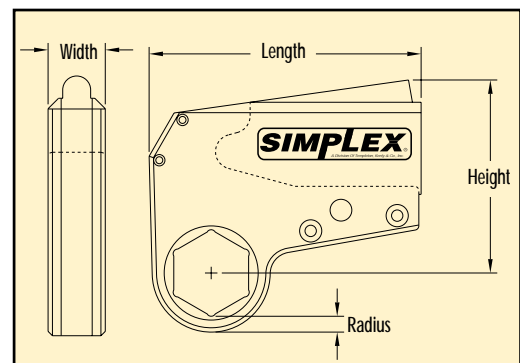


In-line reaction and compact design allows quick and easy torquing in close quarters.

### LOW CLEARANCE DRIVE UNITS

Model Number	Length (in.)	Height (in.)	Radius (in.)	Max. Tool Width (in.)	Output (ft./lbs.)	*Weight (lbs.)
WX-2	5.67	4.00	0.36	1.25	1,930	3.5
WX-4	7.80	5.60	0.46	1.63	3,950	6
WX-8	9.80	7.00	0.54	2.05	8,630	11.7
WX-16	11.90	8.50	0.76	2.45	15,600	16
WX-32	15.30	10.90	0.93	3.24	31,600	34

Available Link Sizes (in./mm)	
From	To
3/4"/19mm	2 3/8"/60mm
1"/25mm	3 1/8"/80mm
1 7/8"/50mm	4"/90mm
2 5/8"/65mm	4 5/8"/115mm
3 1/8"/80mm	6 1/8"/155mm



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



# LOW CLEARANCE WRENCHES

# TORQUE 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.



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.

**HEX REDUCER INSERTS**

**STACK SOCKET**

**HEX TO SQUARE DRIVE ADAPTOR**

**OPTIONAL WX - SERIES ACCESSORIES**

**ALCO ARM**

**LOW POINT REACTION PADDLE**

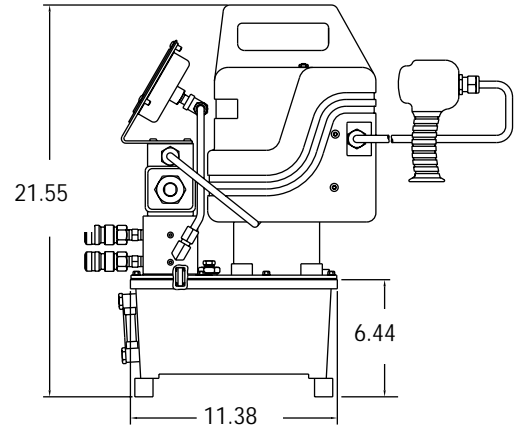
Accessories are available in imperial and metric sizes.

## LINKS FOR LOW CLEARANCE WRENCHES

Model Number for WX-2 Links	Hex Size (in.)	Model Number for WX-4 Links	Hex Size (in.)	Model Number for WX-4 Links	Hex Size (in.)	Model Number for WX-8 Links	Hex Size (in.)	Model Number for WX-8 Links	Hex Size (in.)	Model Number for WX-16 Links	Hex Size (in.)	Model Number for WX-32 Links	Hex Size (in.)	Model Number for WX-32 Links	Hex Size (in.)
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	1 15/16	WXL8-58	3 5/8	WXL16-43	2 11/16	WXL32-51	3 3/16	WXL32-88	5 1/2
WXL2-14	7/8	WXL4-18	1 1/8	WXL4-45	2 13/16	WXL8-32	2	WXL8-59	3 11/16	WXL16-44	2 3/4	WXL32-52	3 1/4	WXL32-89	5 9/16
WXL2-15	15/16	WXL4-19	1 3/16	WXL4-46	2 7/8	WXL8-33	2 1/16	WXL8-60	3 3/4	WXL16-45	2 13/16	WXL32-53	3 5/16	WXL32-90	5 5/8
WXL2-16	1	WXL4-20	1 1/4	WXL4-47	2 15/16	WXL8-34	2 1/8	WXL8-61	3 13/16	WXL16-46	2 7/8	WXL32-54	3 3/8	WXL32-91	5 11/16
WXL2-17	1 1/16	WXL4-21	1 5/16	WXL4-48	3	WXL8-35	2 3/16	WXL8-62	3 7/8	WXL16-47	2 15/16	WXL32-55	3 7/16	WXL32-92	5 3/4
WXL2-18	1 1/8	WXL4-22	1 3/8	WXL4-49	3 1/16	WXL8-36	2 1/4	WXL8-63	3 15/16	WXL16-48	3	WXL32-56	3 1/2	WXL32-93	5 13/16
WXL2-19	1 3/16	WXL4-23	1 7/16	WXL4-50	3 1/8	WXL8-37	2 5/16	WXL8-64	4	WXL16-49	3 1/16	WXL32-57	3 9/16	WXL32-94	5 7/8
WXL2-20	1 1/4	WXL4-24	1 1/2			WXL8-38	2 3/8			WXL16-50	3 1/8	WXL32-58	3 5/8	WXL32-95	5 15/16
WXL2-21	1 5/16	WXL4-25	1 9/16			WXL8-39	2 7/16			WXL16-51	3 3/16	WXL32-59	3 11/16	WXL32-96	6
WXL2-22	1 3/8	WXL4-26	1 5/8			WXL8-40	2 1/2			WXL16-52	3 1/4	WXL32-60	3 3/4	WXL32-97	6 1/16
WXL2-23	1 7/16	WXL4-27	1 11/16			WXL8-41	2 9/16			WXL16-53	3 5/16	WXL32-61	3 13/16	WXL32-98	6 1/8
WXL2-24	1 1/2	WXL4-28	1 3/4			WXL8-42	2 5/8			WXL16-54	3 3/8	WXL32-62	3 7/8		
WXL2-25	1 9/16	WXL4-29	1 13/16			WXL8-43	2 11/16			WXL16-55	3 7/16	WXL32-63	3 15/16		
WXL2-26	1 5/8	WXL4-30	1 7/8			WXL8-44	2 3/4			WXL16-56	3 1/2	WXL32-64	4		
WXL2-27	1 11/16	WXL4-31	1 15/16			WXL8-45	2 13/16			WXL16-58	3 5/8	WXL32-65	4 1/16		
WXL2-28	1 3/4	WXL4-32	2			WXL8-46	2 7/8			WXL16-60	3 3/4	WXL32-66	4 1/8		
WXL2-29	1 13/16	WXL4-33	2 1/16			WXL8-47	2 15/16			WXL16-62	3 7/8	WXL32-68	4 1/4		
WXL2-30	1 7/8	WXL4-34	2 1/8			WXL8-48	3			WXL16-64	4	WXL32-70	4 3/8		
WXL2-31	1 15/16	WXL4-35	2 3/16			WXL8-49	3 1/16			WXL16-66	4 1/8	WXL32-72	4 1/2		
WXL2-32	2	WXL4-36	2 1/4			WXL8-50	3 1/8			WXL16-68	4 1/4	WXL32-74	4 5/8		
WXL2-33	2 1/16	WXL4-37	2 5/16			WXL8-51	3 3/16			WXL16-70	4 3/8	WXL32-76	4 3/4		
WXL2-34	2 1/8	WXL4-38	2 3/8			WXL8-52	3 1/4			WXL16-72	4 1/2	WXL32-78	4 7/8		
WXL2-35	2 3/16	WXL4-39	2 7/16			WXL8-53	3 5/16			WXL16-74	4 5/8	WXL32-80	5		
WXL2-36	2 1/4	WXL4-40	2 1/2			WXL8-54	3 3/8					WXL32-82	5 1/8		
WXL2-37	2 5/16	WXL4-41	2 9/16			WXL8-55	3 7/16					WXL32-84	5 1/4		
WXL2-38	2 3/8	WXL4-42	2 5/8			WXL8-56	3 1/2					WXL32-86	5 3/8		

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

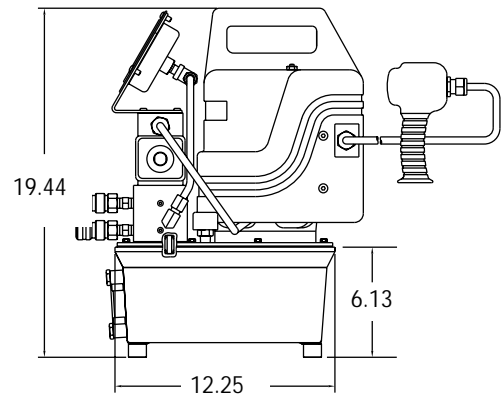
## PET2041 - .5 HP ELECTRIC POWER UNIT



Model Number	Resrv. Size (Gal.)	Valve		*Manifold	Pump Coupler Set	Motor Specifications (Permanent Magnet)	Flow Rate @ 115 VAC		Weight (lbs)	Type of Wrench
		Control	Type				600	10,000		
PET2041	1	Solenoid	4 Way/3 Pos.	8 Ports for 4 Tool Use	CTP212	0.5 HP Single Phase	400	20	65	Double Acting
PET2841				4 Ports for 2 Tool Use						

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

## PET7042 - 1.5 HP ELECTRIC POWER UNIT

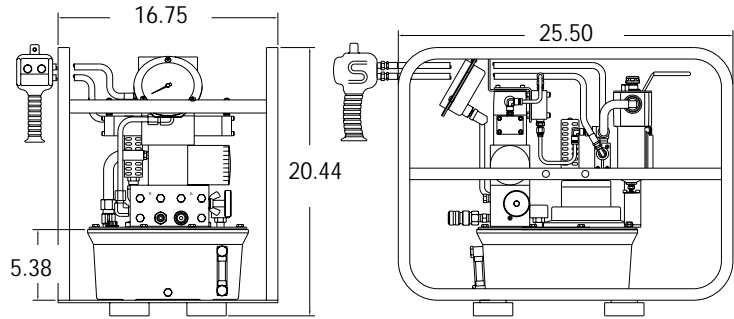


Model Number	Resrv. Size (Gal.)	Valve		*Manifold	Pump Coupler Set	Motor Specifications (Permanent Magnet)	Flow Rate @ 115 VAC		Weight (lbs)	Type of Wrench
		Control	Type				600	10,000		
PET7042	2	Solenoid	4 Way/3 Pos.	8 Ports for 4 Tool Use	CTP212	1.5 HP Single Phase	400	50	75	Double Acting
PET7842				4 Ports for 2 Tool Use						

\*Order a CTP212 for each additional 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



- 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 Number	Resrv. Size (Gal.)	Valve		*Manifold	Pump Coupler Set	Motor Specifications	Flow Rate @ 50 cfm/90 psi		Weight (lbs)	Type of Wrench
		Control	Type				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 INTENSIFIER

Model Number	Valve		Input Flow Range (GPM)	Input Pres. (PSI)	Output Pres. Max. (PSI)	Output Flow Range (GPM)	Output Flow Ratio	Output Pres. Ratio	Weight (lbs)
	Type	Function							
PIT4	4 Way/3 Position	Advance/Hold/Retract	0 - 10	300-2,000	10,000	0 - 2	1:5	5:1	30



### TORQUE WRENCH HOSES

Model Number	Length (Ft.)	Hose Type
WH-15	15	15' Blue & Yellow Duplex Hose w/ Quick Disconnect Couplers
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
G7	4	100/10	0 to 10,000 PSI / 0 to 700 BAR Liquid Filled Gauge



G7  
4" Gauge

Standard on all Simplex Torque Wrench Pumps.

### TORQUE WRENCH COUPLERS

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



\*Includes coupler complete plus pump mounting hardware.

### THE SIMPLEX PLUS

Multiple-toothed pawls give greater contact with rack bar.

Double-lever sockets for changing handle angle.

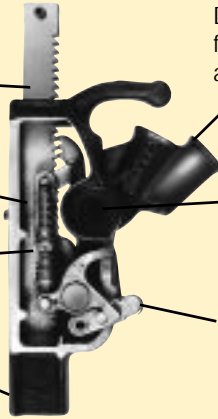
Plated springs resist corrosion.

Replaceable trunnions.

Adjustable spring links.

Reversing lever.

Ductile iron housing for maximum strength.



### SIMPLEX MECHANICAL JACKS



**RATCHET JACKS**

Jacking Column 15-50 ton capacities.

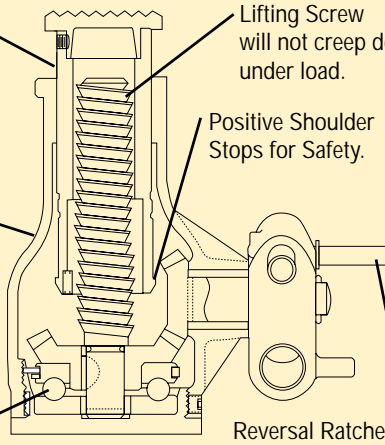
Lifting Screw will not creep down under load.

Available with aluminum or ductile iron housing.

Positive Shoulder Stops for Safety.

Ball Bearings for smooth operation & low handle effort.

Reversal Ratchet Socket w/quick spin handle.



**SUPERJACKS®**

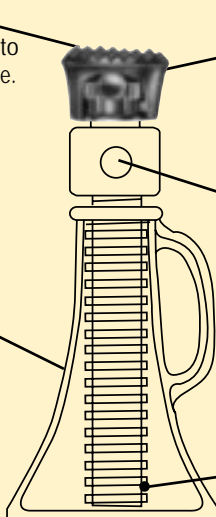
Drop-forged steel load cap is serrated to prevent load slippage.

Single chrome-moly ball reduces operating friction.

Ductile-iron housing for strength.

Four-way head permits lever bar insertion at four angles.

Welded Stop for safety.



**SCREW JACKS**

## 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.



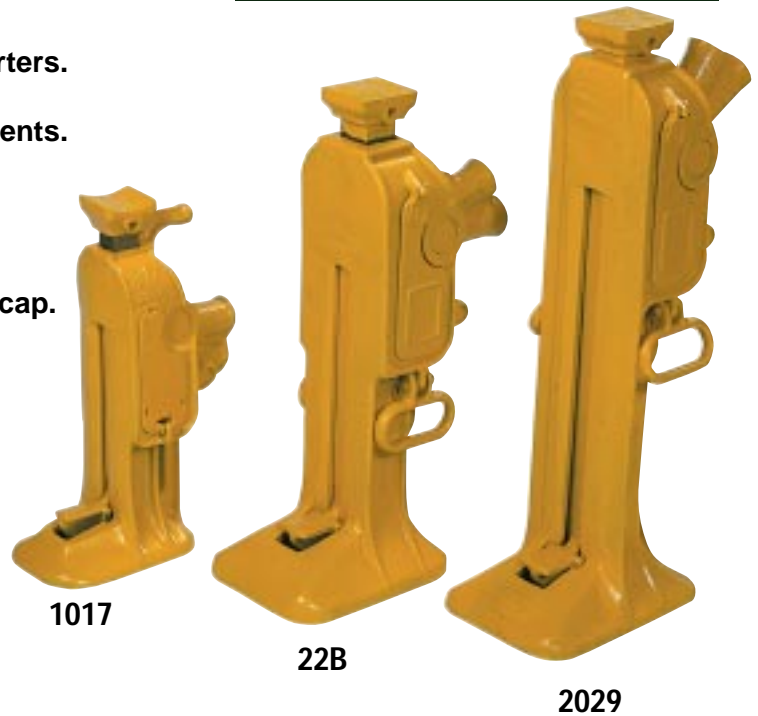
Model 85A is used to lift a CNC machine for installation. 5 ton lifting capacity, low toe height and light weight make the models 84A, 85A, & 86A universal tools. 10 ton models 1017 & A1022 are used extensively by structural movers, riggers & maintenance crews.

### 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.



### 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.

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

### Ratchet Jacks

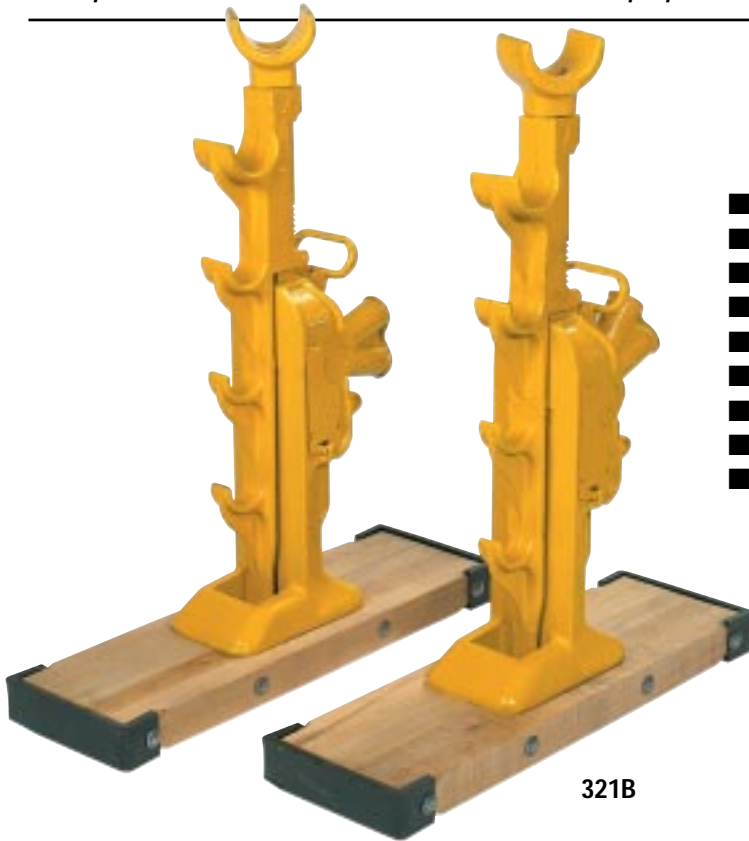
Model Number	Supporting Cap. (tons)	Lifting Cap. (tons)	Stroke (in)	Handle Effort per Ton (lbs)	Cap Min. Height (in)	Toe Min. Height (in)	Base Size (in)	Weight (lbs)	Steel Lever Bars						
									Order Number	Length (in)	Dia. (in)	Weight (lbs)			
84A	5	5	7	32	14	1 3/4	5 x 7 3/8	28	10640	36	1	8			
85A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

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.

Simplex Reel Jacks Are Standard Equipment At Utilities.



321B

- 4 Models.
- Double-lever sockets.
- Multiple-tooth pawls for strength & safety.
- Forged alloy steel, heat-treated components.
- Adjustable spring links.
- Plated springs to resist corrosion.
- Precision machining throughout.
- Steel lever bars sold separately.
- Tough hardwood bases laminated for extra strength.

■ **Model 320B**

With three hooks; top fits up to 64mm spindles; side hooks fit up to 2" spindles.

■ **Model 321B (shown above)**

With five hooks; top fits up to 3 1/2" spindles, next hook down fits up to 3" spindles, and lowest three fit up to 2 3/8" 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" spindles, side hooks fit up to 2 3/8" inch spindles. Equipped with right or left-handed t-base, supported by three adjustable steel rods to provide a sturdy, non-rocking foundation for outside use. Caps swivel for easy reel mounting. Steel lever bars are ordered separately.



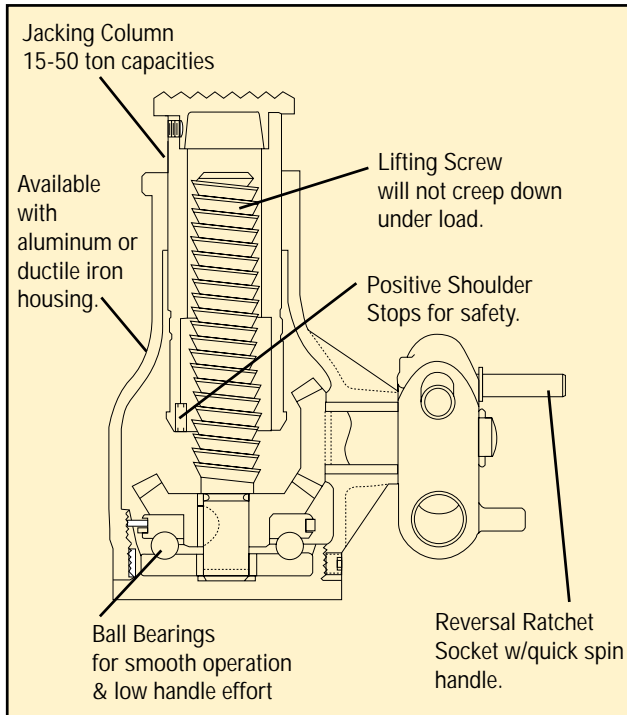
Using A1029-R and A1029-L, utilities can easily handle large reels. The large wooden bases and low handle efforts enhance safety and reduce operator fatigue. Simplex Reel Jacks are also an excellent choice for wire rope and sling manufacturers.

### Reel Jacks

Model Number	Capacity per Pair		Handle Effort per Ton (lbs)	Stroke (in)	Reel Dia. (in)	Top Hook Height (in)	Weight (lbs)	Steel Lever Bars			
	Side Hooks (tons)	Top Hooks (tons)						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	10	20	22	11 5/8	36-84	31 1/8	86	*10665	60	1 1/4	17
A1029-L											

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

*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.

**Superjacks**

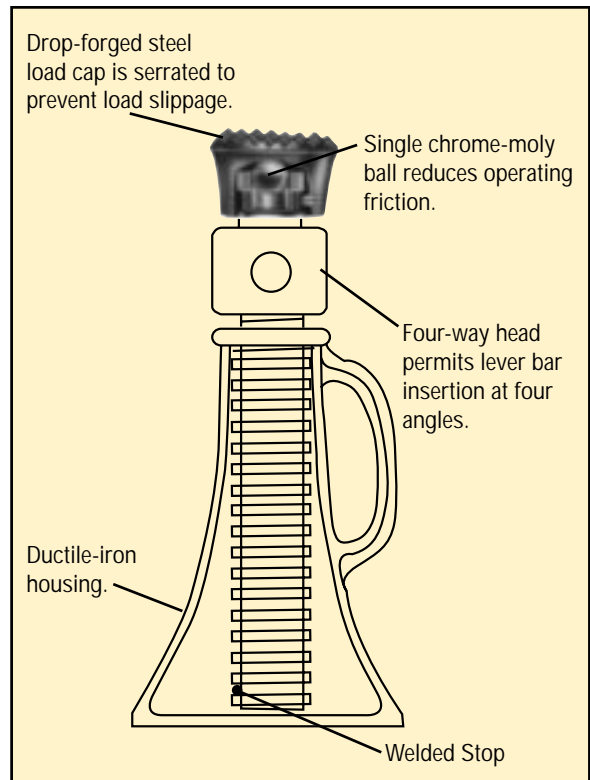
Model Number	Cap. (tons)	Min. Height (in.)	Stroke (in.)	Handle Effort Per Ton (lbs.)	Base Dia. (in)	Weight (lbs)	Steel Lever Bars			
							Order Number	Length (in)	Dia. (in)	Weight (lbs)
A1510C	15	10 1/4	5	9	5 1/2	28	10640	36	1	8
2510C						43				
A2510C		15	9	6		34				
A2515C						43				
3510D	35	10 1/4	5	5	44	10660	56	1 1/8	16	
A3510D					34					
5010B					50					10 5/16
A5010B	61									



- 9 Models.
- Ductile iron bodies for strength.
- Positive stop for safety.
- Supports loads indefinitely, and won't creep down.
- Serrated load cap.
- Steel lever bars sold separately.



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



### Screw Jacks

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

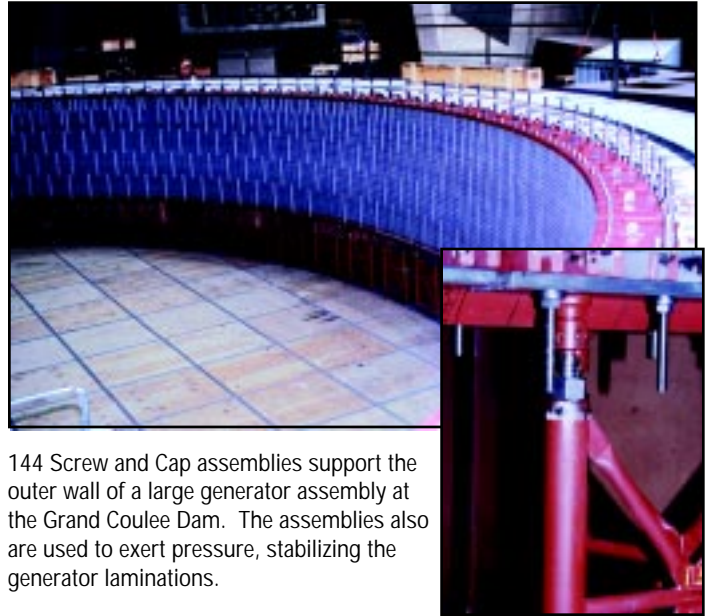


## SCREW & CAP ASSEMBLIES

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.

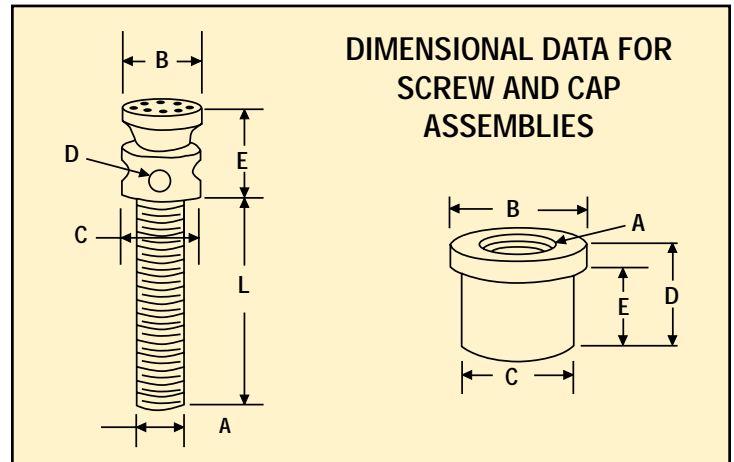
Drop forged serrated steel cap floats 9° on a chrome-moly ball reducing friction by 88%.



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

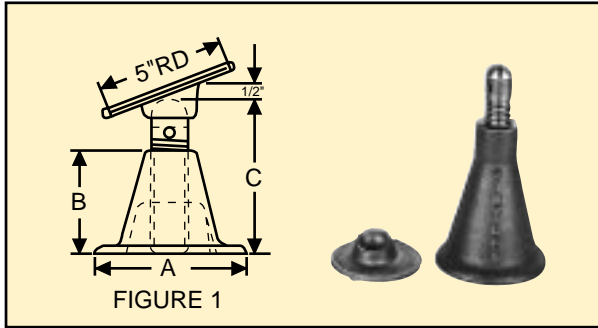
### Shoulder Nuts

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

## 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.



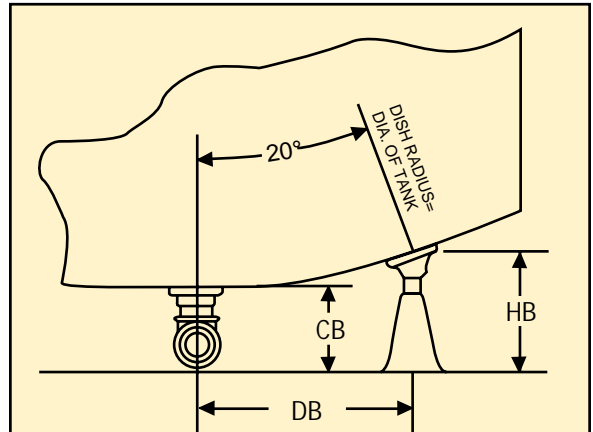
### Tank Jack Dimensions

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.

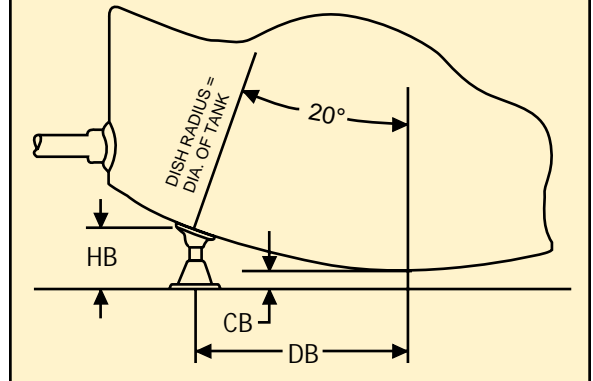
### For bottom pipe connections

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

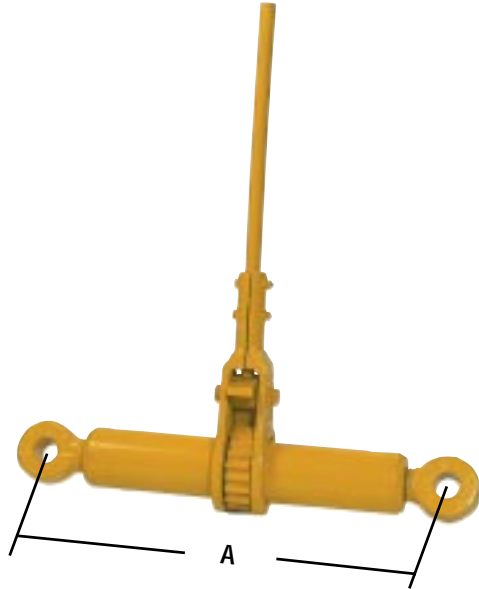


### For side pipe connections

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



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



## SIMPLEX STEAMBOAT JACK

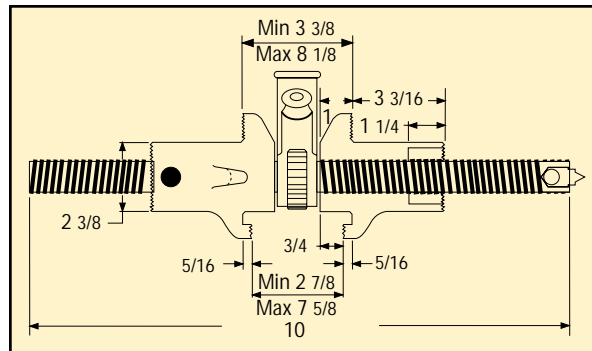
These 20 ton capacity models are used for connecting river barges, pulling forms and steel plates together and other applications in bridge construction and concrete and steel engineering projects. Units are equipped with spring activated pawls and 26" long attached handles. The handle effort per ton 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 (lbs)
ER-10	23	14	18	2	57
ER-20	29	20	24		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.



## SIMPLEX 610-15 RATCHET SCREW ASSEMBLY

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 Number	Centered Capacity (tons)	Hook/Toe Offset Load Capacity (tons)	Travel (in)	Handle Effort Per Ton (lbs)	Screw Dia. (in)	Length (in)	Weight (lbs)	Steel Lever Bars			
								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				

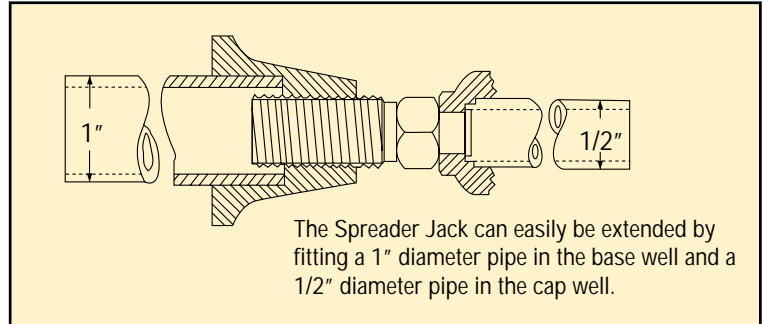
## SPREADER JACK



Model 3A

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



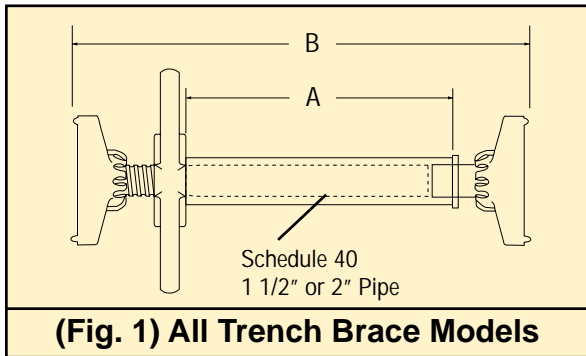
Four different models are available, with capacities ranging from 2 to 8 tons. They are used in leveling work on plane beds, millers and other machinery.

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 (lbs)
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



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			16	22
SE-18			2	BE-35	18

*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.

**Soil Type A**  $P_a = 25 \times H + 72$  psf (2ft. Surcharge)

Trench Depth (ft)	Horizontal Spacing (ft)	Cross Brace			Vertical Spacing (ft)	Wales		Uprights (in)			
		Width of Trench (ft)				Size (in)	Vertical Spacing (ft)	Max. Allowable Horizontal Spacing (Ft)			
		up to 4	up to 6	up to 8				4'	5'	6'	8'
5 to 10	up to 6	SE12 SE16	SE12 SE16	SE18	4	8 x 8	4			2"x6"	
	up to 8	SE12 SE16	SE12 SE16	SE18							2"x6"
	up to 10	SE18	SE18	SE18					2"x6"		
	up to 12	SE18	SE18							2"x6"	
10 to 15	up to 6	SE12 SE16	SE12 SE16	SE18					3"x8"		
	up to 8	SE18	SE18		8 x 8	4	2"x6"				

**Soil Type B**  $P_a = 45 \times H + 72$  psf (2ft. Surcharge)

Trench Depth (ft)	Horizontal Spacing (ft)	Cross Brace		Vertical Spacing (ft)	Wales		Uprights (in)	
		Width of Trench (ft)			Size (in)	Vertical Spacing (ft)	Max. Allowable Horizontal Spacing (Ft)	
		up to 4	up to 6				3'	
5 to 10	up to 6	SE-18	SE-18	5	6 x 8	5	2"x6"	

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

# MECHANICAL JACKS

## MINE ROOF SUPPORTS



Head Assembly  
Model 09167



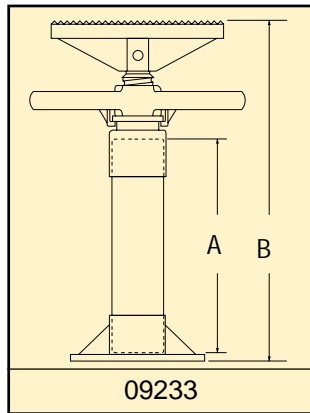
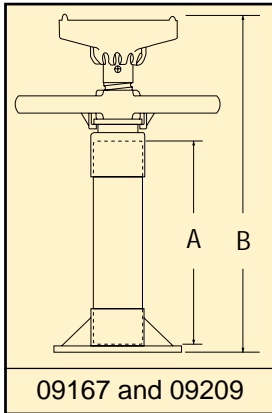
Base Assembly  
Model 09220



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



Type S Head  
36 square inches  
in support area.



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



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.

## 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.

### Complete Unit Ratchet Lever Series - A9225 Family

Head Style	Order Number	Minimum Height (in)	Stroke (in)	Weight (lbs)
E	09602	39	20	29
F	09603			
S	09620			
E	09606	45	26	33
F	09607			
S	09621			
E	09610	57	38	36
F	09611			
S	09622			
E	09614	69		39
F	09615			
S	09623			
E	09616	75		42
F	09617			
S	09624			
E	09618	88	48	
F	09619			
S	09625			

### Complete Unit Screw Extension Series - 139A Family

E	09802	42	24	50
F	09803			
S	09820			
E	09806	48	30	52
F	09807			
S	09821			
E	09810	54	36	54
F	09811			
S	09822			
E	09814	66		58
F	09815			
S	09823			
E	09818	78		64
F	09819			
S	09824			

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MODEL NUMBER	PG. NO.	MODEL NUMBER	PG. NO.	MODEL NUMBER	PG. NO.	MODEL NUMBER	PG. NO.	MODEL NUMBER	PG. NO.	MODEL NUMBER	PG. NO.	MODEL NUMBER	PG. NO.
A233	55	DS-18	72-73	HR10	66-67	JAS20037	82-84	PA91-1R	56-57	PES5056	48-49	RAL1006	14
A323	9	DS-25	72-73	HR20	66-67	JE5	82-84	PA95	56-57	PES5065	48-49	RAL10010	14
A326	9	DSB-31	72-73	HRC3	66-67	JE7	82-84	PA95-1	56-57	PES5066	48-49	RAL1502	14
A328	9	DSB-38	72-73	HRC6	66-67	JE9	82-84	PAM4032	54-55	PES6035	50-51	RAL1506	14
A347	9	DSB-44	72-73	HRC10	66-67	JE11	82-84	PAM4035	54-55	PES6036	50-51	RAL15010	14
A348	9	DSB-53	72-73	HRC20	66-67	JE14	82-84	PAM4042	54-55	PES6045	50-51	RAS302B	13
AO1	65	DSB-56	72-73	HJ2	78	JE18	82-84	PAM4045	54-55	PES6046	50-51	RAS306B	13
AO5	65	DSB-69	72-73	HJ3	78	JS4	82-84	PAT4542	99	PES6055	50-51	RAS502B	13
AO12	65	DSBU-44	72-73	HJ5	78	JS3	82-84	PED1000	40-41	PES6056	50-51	RAS504B	13
AO55	65	DSBU-53	72-73	HJ8	78	JS2	82-84	PED1001	40-41	PES6065	50-51	RAS506B	13
AS20	19	DSBU-69	72-73	HJ12	78	JS1	82-84	PED2001	42-43	PES6066	50-51	RAS5010B	13
AS30	19	ES6024	84	HJ12/LP	78	JTS60	82-84	PED2002	42-43	PES7032	46-47	RAS1002B	13
ATS10	9	F1	65	HJ22	78	JTS100	82-84	PED7002	46-47	PES7035	46-47	RAS1004B	13
ATS25	9	F3	65	HJ22/LP	78	JUS126	82-84	PEM1020	40-41	PES7042	46-47	RAS1006B	13
ATS100	9	F6	65	HJ35	78	JUS137	82-84	PEM1021	40-41	PES7045	46-47	RAS10010B	13
B1A	80-81	F7	65	HJ55	78	JUS1526	82-84	PEM1031	40-41	PES7052	46-47	RAS1502B	13
B3A	80-81	F9	65	HJ100	78	JUS1537	82-84	PEM1041	40-41	PES7062	46-47	RAS1506B	13
B6A	80-81	F11	65	IAS256	89	JUS2026	82-84	PEM2021	42-43	PET2041	98	RAS15010B	13
B11A	80-81	F13	65	IAS2514	89	JUS2037	82-84	PEM2022	42-43	PET2041A	98	RC120	19
B14A	80-81	F15	65	IBP1010	87	M1	65	PEM2031	42-43	PET2841	98	RC0120	19
B23A	80-81	F16	65	IBP1510	87	M2	65	PEM2032	42-43	PET2841A	98	RC121	19
B28A	80-81	F17	65	ID3014	89	M2A	65	PEM2041	42-43	PET7042	98	RC1211	19
B35A	80-81	G5	68	ID556	90	M3	65	PEM2042	42-43	PET7042A	98	RC123	19
B46A	80-81	G6	68	ID5512	90	M4	65	PEM2052	42-43	PET7842	98	RC202	19
B59A	80-81	G7	68	ID1006	91	MK106	74-75	PEM2062	42-43	PET7842A	98	RC206	19
B74A	80-81	GA1	68	ID10012	91	MK4	74-75	PEM4022	44-45	PGM4032	52-53	RC302	19
BA10	9	GD1	68	ID15012	92	MK5	74-75	PEM4025	44-45	PGM4035	52-53	RC306	19
BA25	9	GD2	68	ID20012	92	MK6	74-75	PEM4032	44-45	PGM4042	52-53	RC603	19
BC1A	80-81	GT5	68	IED3014	89	MK7	74-75	PEM4035	44-45	PGM4045	52-53	RC606	19
BC2A	80-81	GT20	68	IED556	90	MK8	74-75	PEM4042	44-45	PGM5035	52-53	RC1003	19
BC3A	80-81	GT25	68	IED5512	90	MK9	74-75	PEM4045	44-45	PGM5036	52-53	RCD302	20
BC4A	80-81	GT30	68	IED1006	91	MK10	74-75	PEM4052	44-45	PGM5045	52-53	RCD307	20
BC6A	80-81	GT100	68	IED10012	91	MK11	74-75	PEM4055	44-45	PGM5046	52-53	RCD6010	20
BC8A	80-81	GTH12	68	IED15012	92	MK12	74-75	PEM4062	44-45	PI2	58	RCD1001	20
BC11	80-81	GTH60	68	IED20012	92	MK13	74-75	PEM4065	44-45	PI3	58	RCD1003	20
BC12	80-81	H3	66-67	IES1010	88	MK14	74-75	PEM5035	48-49	PI4	98	RCD1006	20
BC10	9	H6	66-67	IES256	89	MK15	74-75	PEM5036	48-49	R50	10&16	RCD10010	20
BC15	9	H10	66-67	IES2514	89	MK16	74-75	PEM5045	48-49	R51	10	RCD1505C	20
BC25	9	H20	66-67	IES556	90	MK17	74-75	PEM5046	48-49	R53	10	RCD2006C	20
BCR5	9	H36	66-67	IES5513	90	MK18	74-75	PEM5055	48-49	R55	10	RCD3006C	20
BCR10	9	H50	66-67	IES1006	91	MK19	74-75	PEM5056	48-49	R57	10	RCD5006C	20
BCR15	9	HC3	66-67	IES10010	91	MK20	74-75	PEM5065	48-49	R59	10	RD1010	26-27
BCR25	9	HC6	66-67	IM2	86	MK21	74-75	PEM5066	48-49	R101	10	RD1308	26-27
BHB16A	80-81	HC10	66-67	IM3	85	NS1319	70	PEM6035	50-51	R102	10	RD13014	26-27
BHR16A	80-81	HC20	66-67	IMS1010	88	NS1924	70	PEM6036	50-51	R104	10	RD1556	26-27
BHY16A	80-81	HC36	66-67	IMS256	89	NS2432	70	PEM6045	50-51	R106	10	RD15512	26-27
BHB32A	80-81	HC50	66-67	IMS2514	89	NS3241	70	PEM6046	50-51	R108	10	RD15524	26-27
BHR32A	80-81	HD3	66-67	IMS556	90	NS4150	70	PEM6055	50-51	R1010	10	RD1001	26-27
BHY32A	80-81	HD6	66-67	IMS1006	91	NS5060	70	PEM6056	50-51	R1012	10	RD1006	26-27
C209	64	HD10	66-67	IPC5	87	NS6075	70	PEM6065	50-51	R1014	10	RD10012	26-27
C211	64	HD20	66-67	IPC10	87	P20	32-33	PEM6066	50-51	R152	11	RD1506	26-27
C213	64	HD50	66-67	IS256	89	P22	32-33	PEM7022	46-47	R154	11	RD15012	26-27
C509	64	HD75	66-67	IS2514	89	P41	32-33	PEM7025	46-47	R156	11	RD2006	26-27
C511	64	HDC3	66-67	IS556	90	P42	32-33	PEM7032	46-47	R1510	11	RD20013	26-27
C513	64	HDC6	66-67	IS5513	90	P71	32-33	PEM7035	46-47	R1514	11	RD3002	26-27
C515	64	HDC10	66-67	IS1006	91	P72	32-33	PEM7052	46-47	R251	11	RD3006	26-27
C516	64	HDC20	66-67	IS10012	91	P140	34-35	PEM7042	46-47	R252	11	RD30012	26-27
CR215	64	HDC50	66-67	JE6024	82-84	P140D	34-35	PEM7045	46-47	R254	11	RD4002	26-27
CT200	64	HE6	66-67	JA6024	82-84	P140DF	34-35	PEM7062	46-47	R256	11	RD4006	26-27
CT201	64	HE10	66-67	JE6037	82-84	P140F	34-35	PES2031	42-43	R258	11	RD40012	26-27
CT202	64	HE20	66-67	JA6037	82-84	P82	34-35	PES2032	42-43	R2510	11	RD45002	26-27
CT210	64	HEC6	66-67	JE10026	82-84	P160-3	36	PES2041	42-43	R2512	11	RD45006	26-27
CT211	64	HEC10	66-67	JA10026	82-84	P160-4	36	PES2042	42-43	R2514	11	RD45012	26-27
CT212	64	HEC20	66-67	JA10037	82-84	P160-6	36	PES2052	42-43	R308	12	RD46002	26-27
DS-31	72-73	HP3	66-67	JE10037	82-84	P230	34-35	PES2062	42-43	R552	12	RD46006	26-27
DS-38	72-73	HP6	66-67	JAS10026	82-84	P230D	34-35	PES4032	44-45	R554	12	RD46012	26-27
DS-44	72-73	HP10	66-67	JAS10037	82-84	P300	34-35	PES4035	44-45	R556	12	RD48002	26-27
DS-53	72-73	HP20	66-67	JEB10026	82-84	P300D	34-35	PES4042	44-45	R5513	12	RD48006	26-27
DS-56	72-73	HP36	66-67	JEB10037	82-84	P461	34-35	PES4045	44-45	R756	12	RD48012	26-27
DS-69	72-73	HP50	66-67	JE15026	82-84	P461D	34-35	PES4052	44-45	R7513	12	RD410002	26-27
DS-78	72-73	HPC3	66-67	JA15026	82-84	P10003A	36	PES4055	44-45	R1006	12	RD410006	26-27
DS-81	72-73	HPC6	66-67	JE15037	82-84	P10004A	36	PES4062	44-45	R10010	12	RD4100012	26-27
DS-45	72-73	HPC10	66-67	JA15037	82-84	P10006A	36	PES4065	44-45	RAL502	14	RFS10	16
DS-54	72-73	HPC20	66-67	JAS15026	82-84	P10008A	36	PES5035	48-49	RAL504	14	RFS20	16
DS-63	72-73	HPC36	66-67	JAS15037	82-84	P100012A	36	PES5036	48-49	RAL506	14	RFS30	16
DS-72	72-73	HPC50	66-67	JEB15026	82-84	PA91	56-57	PES5045	48-49	RAL5010	14	RFS50	16
DS-10	72-73	HR3	66-67	JEB15037	82-84	PA91-1	56-57	PES5046	48-49	RAL1002	14	RFS75	16
DS-12	72-73	HR6	66-67	JAS20026	82-84	PA91-R	56-57	PES5055	48-49	RAL1004	14	RFS100	16



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RFS150	16	S2000	71	WST1224	95	WST2444	95	212NS-25	105	10675	101
RLN302	24-25	S3000	71	WST1225	95	WST2445	95	4406	106		
RLN306	24-25	SF5	71	WST1226	95	WST2446	95	4410	106		
RLN502	24-25	SPD35	73	WST1227	95	WST2447	95	4414	106		
RLN506	24-25	SPD35S	73	WST1228	95	WST2448	95	4418	106		
RLN5010	24-25	SPD35SP	73	WST1229	95	WST2449	95	4846	106		
RLN1002	24-25	SPD35M	73	WST1230	95	WST2450	95	A1510C	103		
RLN1006	24-25	SPD35MP	73	WST1232	95	WST2451	95	2510C	103		
RLN10010	24-25	SPH35	72	WST1612	95	WST2452	95	A2510C	103		
RLN1502	24-25	SPH35S	72	WST1613	95	WST2453	95	A2515C	103		
RLN1506	24-25	SPH35SP	72	WST1614	95	WST2454	95	3510D	103		
RLN15012	24-25	SPH35M	72	WST1615	95	WST2455	95	A3510D	103		
RLN2002	24-25	SPH35MP	72	WST1616	95	WST2456	95	5010B	103		
RLN2006	24-25	ST101	28	WST1617	95	WST2457	95	A5010B	103		
RLN20012	24-25	ST102	28	WST1618	95	WST2458	95	1P	108		
RLN3002	24-25	ST106	28	WST1619	95	WST2459	95	2P	108		
RLN3006	24-25	ST1010	28	WST1620	95	WST2460	95	3P	108		
RLN30012	24-25	ST201	28	WST1621	95	WT-2	94	4P	108		
RLN4002	24-25	ST252	28	WST1622	95	WT-3	94	SE-12	109		
RLN4006	24-25	ST254	28	WST1623	95	WT-5	94	SE-16	109		
RLN40012	24-25	ST256	28	WST1624	95	WT-10	94	SE-18	109		
RLN5002	24-25	ST2514	28	WST1625	95	WT-27	94	BE-25	109		
RLN5006	24-25	ST556	28	WST1626	95	WT2-ALCO	95	BE-35	109		
RLN50012	24-25	ST1002	28	WST1627	95	WT3-ALCO	95	ER-10	107		
RLN6002	24-25	TJA25	79	WST1628	95	WT5-ALCO	95	ER-20	107		
RLN6006	24-25	TJH2	79	WST1629	95	WT10-ALCO	95	ER-30	107		
RLN60012	24-25	TJH5	79	WST1630	95	WT2-EX1	95	ER-40	107		
RLN8002	24-25	TJH10	79	WST1631	95	WT2-EX2	95	610	71 & 107		
RLN8006	24-25	TJH109	79	WST1632	95	WT2-EX3	95	610-15	107		
RLN80012	24-25	TJH105A	79	WST1633	95	WT3-EX1	95	MS9L-FS	110-111		
RLN10002	24-25	TJH109LS	79	WST1634	95	WT3-EX2	95	MS17L-FS	110-111		
RLN10006	24-25	TJR109	79	WST1635	95	WT3-EX3	95	MB-17	110-111		
RLN100012	24-25	V1	63	WST1636	95	WT5-EX1	95	MS9L-S	110-111		
RLR306	22-23	V2	63	WST1637	95	WT5-EX2	95	MS9L-FS	110-111		
RLR506	22-23	V3	63	WST1638	95	WT5-EX3	95	MS17L-FS	110-111		
RLR5010	22-23	V5B	63	WST1639	95	WT10-EX1	95	A9225-E-39/59	110-111		
RLR1006	22-23	V10E	63	WST1640	95	WT10-EX2	95	A9225-F-39/59	110-111		
RLR10010	22-23	V10EC	63	WST1641	95	WT10-EX3	95	A9225-E-45/71	110-111		
RLR1502	22-23	VP2	61	WST1642	95	WX-2	96	A9225-F-45/71	110-111		
RLR1506	22-23	VP3	61	WST1643	95	WX-4	96	A9225-E-57/95	110-111		
RLR15012	22-23	VP4	62	WST1644	95	WX-8	96	A9225-F-57/95	110-111		
RLR2002	22-23	VPA4	62	WST1645	95	WX-16	96	A9225-E-69/107	110-111		
RLR2006	22-23	VPL3	61	WST1646	95	WX-32	96	A9225-F-69/107	110-111		
RLR20012	22-23	VPL4	62	WST1647	95	WXL2	97	A9225-E-75/113	110-111		
RLR3002	22-23	VP3L3	61	WST1648	95	WXL4	97	A9225-F-75/113	110-111		
RLR3006	22-23	VP3L4	62	WST1649	95	WXL8	97	A9225-E-88/126	110-111		
RLR30012	22-23	VPS3	61	WST1650	95	WXL16	97	A9225-F-88/126	110-111		
RLR4002	22-23	VPS4	62	WST1651	95	WXL32	97	A9225-S39/59	110-111		
RLR4006	22-23	VPS4-230	62	WST1652	95	84A	100	A9225-S-45/71	110-111		
RLR40012	22-23	VR3	61	WST1653	95	85A	100	A9225-S-57/95	110-111		
RLR5002	22-23	VR3CC	61	WST1654	95	86A	100	A9225-S-69/107	110-111		
RLR5006	22-23	VR4	62	WST1655	95	1017	100	A9225-S-75/113	110-111		
RLR50012	22-23	VR4CC	62	WST1656	95	A1022	100	A9225-S-88/126	110-111		
RLR6002	22-23	VRS3	61	WST1658	95	22B	100	139A-E-42/66	110-111		
RLR6006	22-23	VRS3CC	61	WST1660	95	24A	100	139A-F-42/66	110-111		
RLR60012	22-23	VRS4	62	WST1662	95	2029	100	139A-E-48/78	110-111		
RLR8002	22-23	VRS4CC	62	WST2422	95	A1538	104	139A-F-48/78	110-111		
RLR8006	22-23	WA12XX	95	WST2423	95	1 1/2 X 6	104	139A-E-54/90	110-111		
RLR80012	22-23	WA16XX	95	WST2424	95	1 1/2 X 8	104	139A-F-54/90	110-111		
RLR10002	22-23	WA24XX	95	WST2425	95	1 1/2 X 12	104	139A-E-66/102	110-111		
RLR10006	22-23	WA24-10XX	95	WST2426	95	2 X 8	104	139A-F-66/102	110-111		
RLR100012	22-23	WA40XX	95	WST2427	95	2 X 10	104	139A-E-78/114	110-111		
RP25	17	WCH-1	94	WST2428	95	2 X 12	104	139A-F-78/114	110-111		
RP55	17	WH-15	99	WST2429	95	2 1/2 X 8	104	139A-S-42/66	110-111		
RLS101	15	WH-20	99	WST2430	95	2 1/2 X 12	104	139A-S-48/78	110-111		
RLS201	15	WH-40	99	WST2431	95	2 1/2 X 18	104	139A-S-54/90	110-111		
RLS302	15	WST1212	95	WST2432	95	3A	108	139A-S-66/102	110-111		
RLS502	15	WST1213	95	WST2433	95	1 1/2BC-30-6	105	139A-S-78/114	110-111		
RLS1002	15	WST1214	95	WST2434	95	1 1/2BC-30-8	105	320B	102		
S101	28	WST1215	95	WST2435	95	1 1/2BC-30-12	105	321B	102		
S102	28	WST1216	95	WST2436	95	2BC-30-8	105	A1029R	102		
S106	28	WST1217	95	WST2437	95	2BC-30-10	105	A1029L	102		
S1010	28	WST1218	95	WST2438	95	2BC-30-12	105	10621	104		
S201	28	WST1219	95	WST2439	95	2 1/2BC-30-8	105	10635	104		
S252	28	WST1220	95	WST2440	95	2 1/2BC-30-12	105	10640	101		
S254	28	WST1221	95	WST2441	95	2 1/2BC-30-18	105	10655	104		
S302	28	WST1222	95	WST2442	95	1 1/2NS-25	105	10660	103		
S502	28	WST1223	95	WST2443	95	2NS-25	105	10665	101		



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