

## 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.

## PORTABLE FOOT PUMP



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

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

### TYPE OF CYLINDERS

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

### QUICK REFERENCE CHART

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

CYLINDER STROKE	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	P41		P41	P42	P42	P42		P42	P42	P42
2		P42	P42	P42	P42	P42	P42			P82-P140	P140
3	P41							P82-P140			
4		P42	P42		P42						
5	P42										
6		P42	P42		P42	P82-P140	P82-P140		P82-P140	P230	P230
7	P42										
8		P42	P42		P82-P140	P82-P140				P230	P300
9	P42										
10		P42	P42		P82-P140					P230	P461
12		P42			P82-P140						
13							P230				
14		P42	P82-P140		P82-P140						

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

### HAND PUMP/CYLINDER SPEED CHART

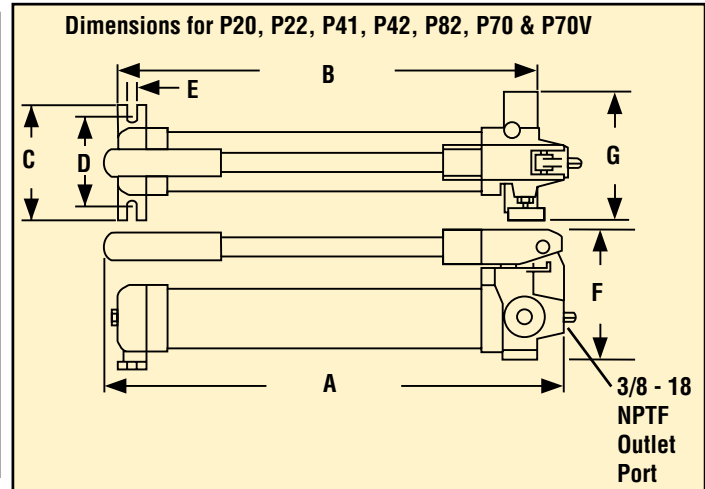
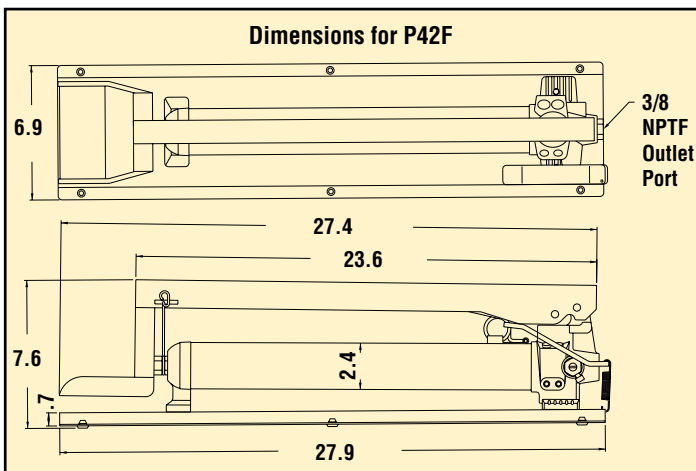
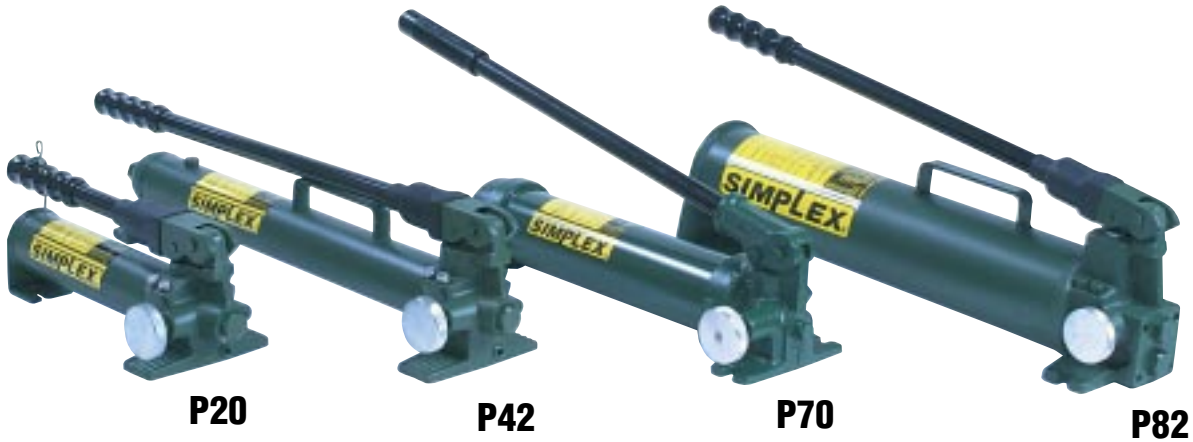
Use this chart to determine the number of full pump handle strokes required to extend a Simplex cylinder 1". You may take handle stroke per inch and multiply it by the cylinder stroke to determine the number of strokes required to fully extend the cylinder.

HAND PUMP MODEL NO.	STROKES PER INCH 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/ P70	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/ P42F/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.



## 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
P22		2 Stage 2,850	.16									
P41	1	10,000	.16	45	23	21 3/4	5	---	---	5 3/4	5 3/4	18
P42	2	1 Stage 200	.82	45	23	21 3/4	5	---	---	5 3/4	5 3/4	18
P42F	2 Stage 10,000	.16	See Drawing of P42F Above This Chart									
P70 *P70V	1	10,000	.16	70	22	17 1/2	5 1/2	4 1/4	1/2	---	6	21
P82	2	1 Stage 200	.82	145	23	17 1/2	5 1/2	5	1/2	6 5/8	5 3/4	24
	2 Stage 10,000	.16										

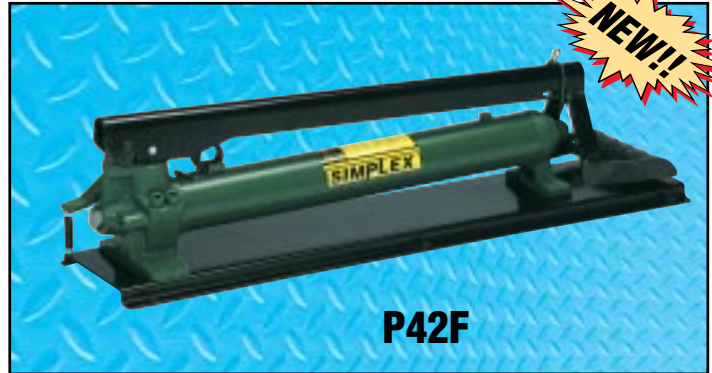
**NEW!**

**NEW!**

\*Equipped 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.



P42F

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

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

<p>Hydraulic Cylinders pgs. 012-29</p>	<p>Hoses pgs. 70-71</p>	<p>Accessories &amp; Fittings pgs. 68-72</p>



P82

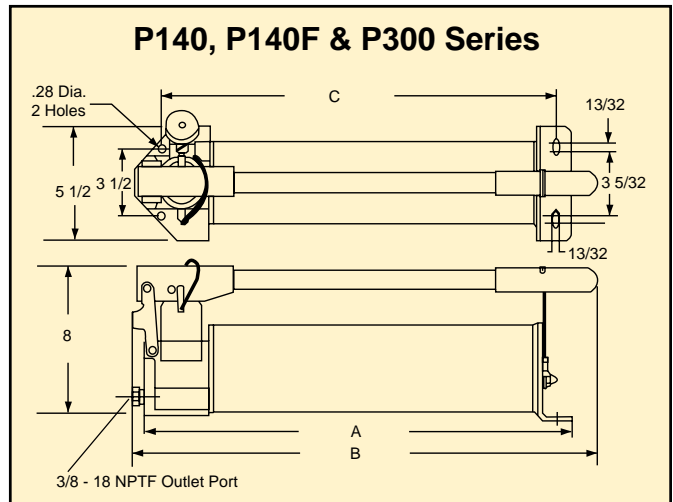
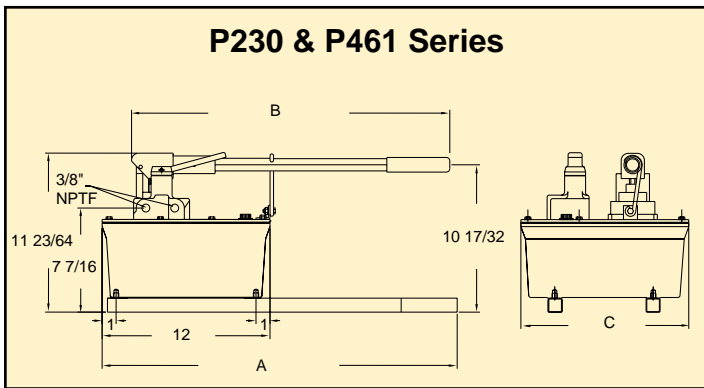


Simplex hand pumps can power a wide variety of hydraulic cylinders and tools. Light weight and portable, yet heavy duty, Simplex hand pumps are perfect for every manual pump application.

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	B	C	Weight (lbs)
					(in)	(in)	(in)	
P140	Single Acting	1 Stage 400	.24	180	24 13/16	27 1/4	23 5/16	26
P300					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					12	61		
P140F	Double Acting	1 Stage 3000	.75	180	24 13/16	27 1/4	23 5/16	27
P140DF		2 Stage 10,000	.24		29 1/2	31 1/2	23 5/16	31
P140D		1 Stage 400	.24	300	29 1/2	31 1/2	23 5/16	30
P300D					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					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).**

		
<b>Hydraulic Cylinders</b> pgs. 12-29	<b>Hoses</b> pgs. 70-71	<b>Accessories &amp; Fittings</b> pgs. 68-72

## 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.”

# HAND PUMPS

# SPECIAL APPLICATION PUMPS

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



P160



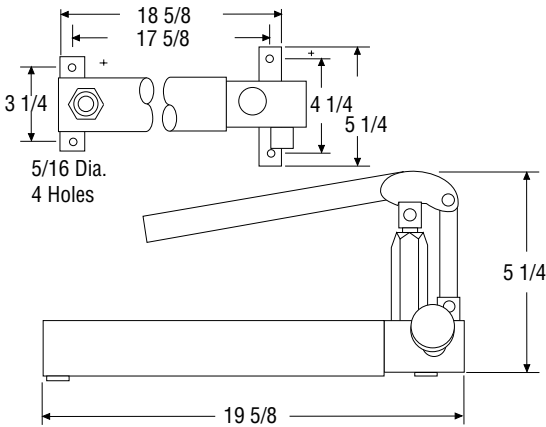
P1000-8



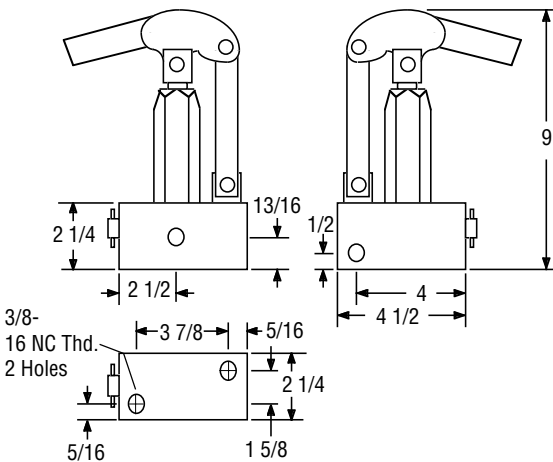
P1000-4

P785

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



P785 Series

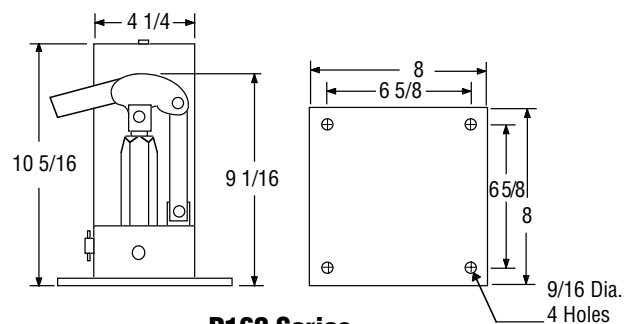


P1000 Series

## 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	0.16	119	25
P160-4	148	6,500	0.28	115	25
P160-6	148	3,000	0.66	119	25
P785-3	50	12,000	0.16	119	15
P785-4	50	6,500	0.28	115	15
P785-6	50	3,000	0.66	119	15
P1000-3	----	12,000	0.16	119	11
P1000-4	----	6,500	0.28	115	11
P1000-6	----	3,000	0.66	119	11
P1000-8	----	1,500	1.08	106	11
P1000-12	----	750	2.20	79	11

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



P160 Series