

Pumps and Directional Control Valves Section Overview

Power Source	Pump Types	Maximum Reservoir Capacity	Max. Flow at Rated Pressure (in ³ /min)	Series	Page	
Manual	Lightweight Hand Pumps Exclusively from Enerpac	155 in ³	.15 (in ³ /stroke)	P		62 ▶
	Steel Hand Pumps	453 in ³	.29 (in ³ /stroke)	P		64 ▶
	Low Pressure Hand Pumps	200 in ³	.58 (in ³ /stroke)	P		66 ▶
	Foot Pump For Hands Free Operation	38 in ³	.15 (in ³ /stroke)	P		68 ▶
	Multifluid Hand Pumps Pumping Fluids up to 14,500 psi	38 in ³	1.28 (in ³ /stroke)	MP		69 ▶
	Ultra-High Pressure Hand Pumps Pressure up to 40,000 psi	60 in ³	.15 (in ³ /stroke)	P/11		70 ▶
Electric	Battery Powered Hydraulic Pump Cordless Hydraulic Power	1 gal.	15	BP		72 ▶
	Economy Series Compact and Portable	1 gal.	20	PU		74 ▶
	Submerged Series Powerful and Low-Noise	1.5 gal.	20	PE		76 ▶
	Z-Class Pumps, ZU4 and ZE3 to ZE6-Series Portable and Powerful	10 gal.	60 200	ZU ZE		82 ▶
	8000-Series The Maximum Flow Pump	25 gal.	462	PE		94 ▶
Air	XA-Series XVARI® Technology for Productivity and Ergonomics	122 in ³	15	XA		96 ▶
	Turbo II Air Hydraulic Pumps Compact Air Over Hydraulic	305 in ³	10	PA		98 ▶
	Air Hydraulic Pumps Single and Twin-Air Motor	2 gal.	9	PA PAM		100 ▶
	ZA4 Air Hydraulic Pumps The Standard for Air-Hydraulic Pumps	10 gal.	80	ZA		102 ▶
	ATP-Series Air Pump High Pressure Air Pump	1 gal.	4	ATP		104 ▶
Gasoline	Atlas Series Small and Lightweight	2 gal.	40	PGM		105 ▶
	ZG5/ZG6 Gasoline Hydraulic Pumps Gas Powered High Flow Pumps	10 gal.	200	ZG5/ ZG6		106 ▶
	8000-Series Gasoline Pumps For the Largest Jobs	25 gal.	1.5 (gal/min)	EGM		108 ▶
Directional Control Valves						109 ▶

P-Series, Lightweight Hand Pumps

▼ Pumps shown, from top to bottom: P-802, P-842, P-202, P-142



Exclusively from Enerpac



Cylinder Matching Chart

For help in selecting the correct hand pump for your application, please refer to the Cylinder Matching Chart located in the “Yellow Pages”.

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Speed Chart

To determine how a specific pump will operate your cylinder, see the Pump/Cylinder Speed Chart in the “Yellow Pages”.

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Tank Kits

When a return-to-tank port is required, the Tank Kits provide a 7/16-20 port at the rear of the reservoir.

PC-20	Fits P-141, P-142
PC-25	Fits P-202, P-391, P-392



LX-101 Hand Pump Oil

A medium viscosity oil specially formulated for hand pumps. Performs well in low temperatures and requires less pumping effort than standard Enerpac HF blue oil.

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- Lightweight and compact design
- Durable glass-filled nylon reservoir and nylon encapsulated aluminum pump base for maximum corrosion resistance
- Two-speed operation on most models reduces handle strokes by as much as 78% over single speed pumps
- Lower handle effort to minimize operator fatigue
- Integral 4-way valve on P-842 for operation of double-acting cylinders
- Handle lock and lightweight construction for easy carrying
- Large oil capacities to power a wide range of cylinders or tools
- Non-conductive fiberglass handle for operator safety
- Internal pressure relief valve for overload protection

▼ P-392 in action with RSM-500 cylinders.



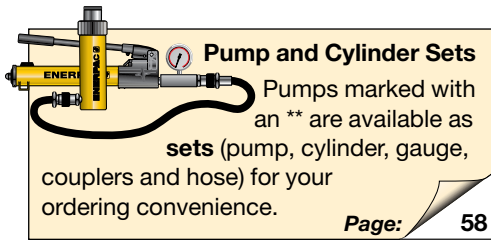
Pump Type	Usable Oil Capacity (in³)	Model Number	Pressure Rating*		Oil Displacement per Stroke		Max. Handle Effort (lbs)
			(psi)		(in³)		
			1 st stage	2 nd stage	1 st stage	2 nd stage	
Single-speed	20	P-141	N/A	10,000	N/A	.055	72
	55	P-391	N/A	10,000	N/A	.151	85
Two-speed	20	P-142**	200	10,000	.221	.055	78
	55	P-202	200	10,000	.221	.055	63
	55	P-392**	200	10,000	.687	.151	93
	155	P-802	400	10,000	2.40	.151	95
	155	P-842***	400	10,000	2.40	.151	95

* Contact Enerpac for applications where operating pressure is less than 10% of pressure rating.

** Available as set, see note on top of next page.

*** For use with double-acting cylinders.

Lightweight Hand Pumps



P Series



Reservoir Capacity:

20-155 in³

Flow at Rated Pressure:

.055-.15 in³/stroke

Maximum Operating Pressure:

10,000 psi

Hoses



Enerpac offers a complete line of high-quality hydraulic hoses. To ensure the integrity of your system, specify only genuine Enerpac hydraulic hoses.

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Gauges



Minimize the risk of overloading and ensure long, dependable service from your equipment. Refer to the

System Components section for a full range of gauges.

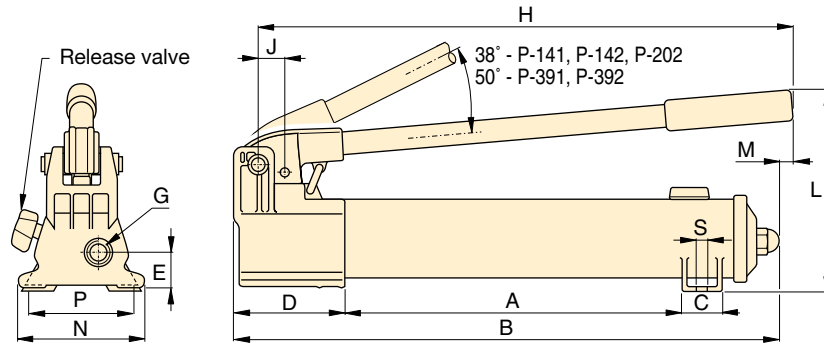
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Aluminum Reservoir

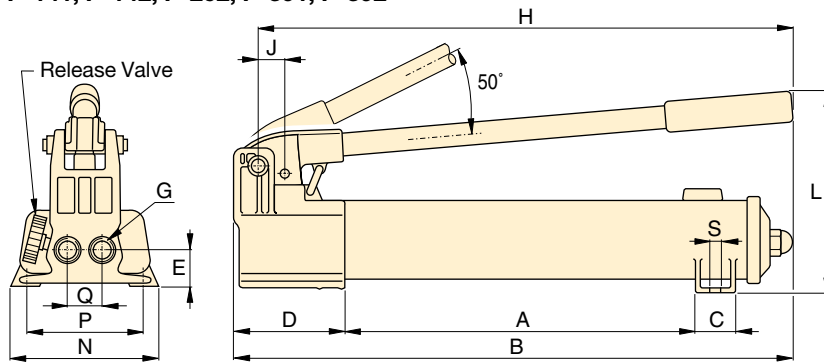


For applications where composite reservoirs may not be suitable, the **P-392AL** utilizes an

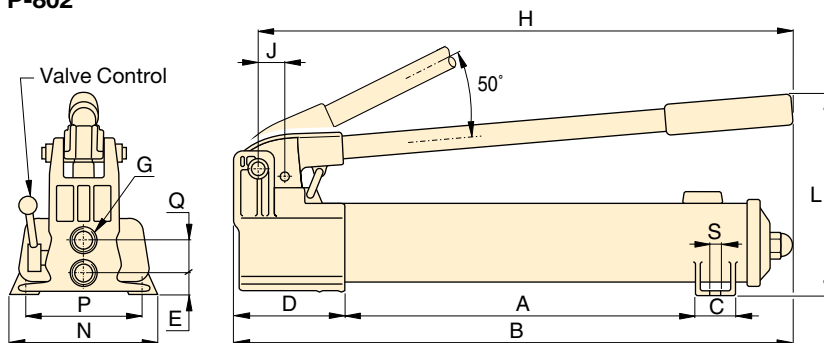
extruded aluminum reservoir. Also included is a second handle for two-hand use. Contact Enerpac for details.



P-141, P-142, P-202, P-391, P-392



P-802



P-842

	Piston Stroke	Dimensions (in)														Weight	Model Number
		(in)	A	B	C	D	E	G	H	J	L	M	N	P	Q		
	.50	7.31	13.25	1.13	3.37	1.13	¼"-18 NPTF	12.56	.75	5.63	—	3.75	3.25	—	.28	5.3	P-141
	1.00	13.56	21.00	1.44	3.93	1.31	⅜"-18 NPTF	20.56	1.19	7.00	.63	4.75	—	—	—	9.0	P-391
	.50	7.31	13.25	1.13	3.37	1.13	¼"-18 NPTF	12.56	.75	5.63	—	3.75	3.25	—	.28	5.3	P-142**
	.50	13.56	20.06	1.44	3.37	1.13	¼"-18 NPTF	15.75	.75	5.69	.63	3.75	—	—	—	7.5	P-202
	1.00	13.56	21.00	1.44	3.93	1.31	⅜"-18 NPTF	20.56	1.19	7.00	.63	4.75	4.75	—	—	9.0	P-392**
	1.00	13.30	21.75	1.78	5.25	1.39	⅜"-18 NPTF	20.75	2.19	9.00	—	7.12	4.75	1.40	.41	18.0	P-802
	1.00	13.30	21.75	1.78	5.25	.81	⅜"-18 NPTF	20.75	2.19	9.00	—	7.12	4.75	1.44	.41	22.0	P-842**

▼ Shown from left to right: P-462, P-84, P-801, P-77, P-80, P-39



- Two-speed operation for reduced operator fatigue (except P-39)
- 4-way valving on the P-84 and P-464 for operation of double-acting cylinders
- External load release valve on remaining models for single-acting cylinder operation
- Internal pressure relief valve for overload protection
- Large oil capacity to power a wide range of cylinders or tools

▼ In the absence of a power supply, the P-80 Hand Pump offers a powerful solution.



The Solution for Tough Jobs



Two Speed

Recommended for applications where cylinder plunger must advance rapidly to contact load, and applications where greater oil capacities are required, such as multiple cylinder hook-ups.



Foot Pump Conversion Kits

Convert your P-39 to foot power with the PC-10 Kit. Includes instructions for easy conversion.



Gauges

Minimize the risk of overloading and ensure long, dependable service from your equipment. Refer to the System Components section for a full range of gauges.

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4-Way Control Valve

P-84 and P-464 feature a manual 4-way control valve, designed for use with one double-acting or two single-acting cylinders. For system set-up information:

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Pump Type	Usable Oil Capacity (in ³)	Model Number	Pressure Rating*		Oil Displacement per Stroke (in ³)		Max. Handle Effort (lbs)
			1 st stage	2 nd stage	1 st stage	2 nd stage	
Single	40	P-39	N/C	10,000	N/C	.16	111
Two-speed	47	P-77	200	10,000	.97	.15	94
	134	P-80**	350	10,000	.99	.15	104
	249	P-801	350	10,000	.99	.15	104
	134	P-84***	350	10,000	.99	.15	104
	453	P-462	200	10,000	7.69	.29	110
	453	P-464***	200	10,000	7.69	.29	110

* Contact Enerpac for applications where operating pressure is less than 10% of pressure rating.

** Available as a set, see note on next page.

*** For use with double-acting cylinders.

Steel Hand Pumps

P Series



Reservoir Capacity:

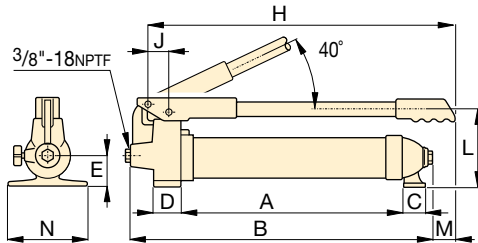
40-453 in³

Flow at Rated Pressure:

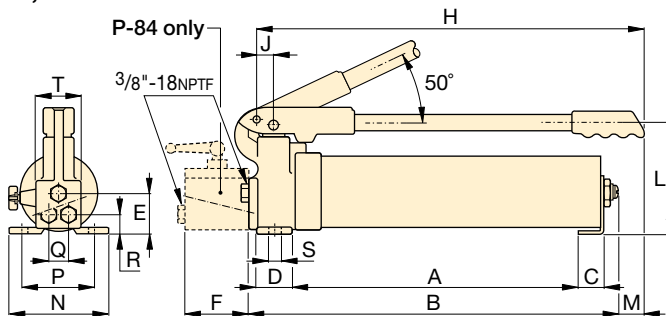
.15-.29 in³/stroke

Maximum Operating Pressure:

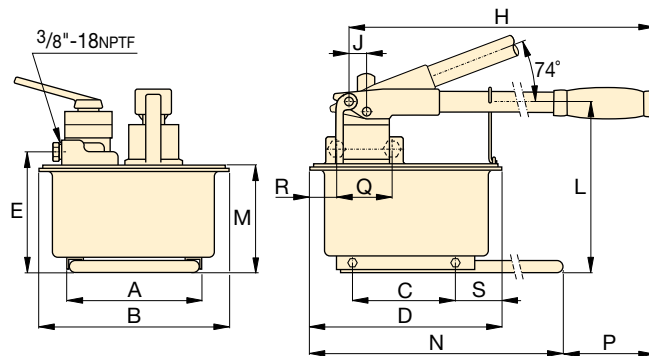
10,000 psi



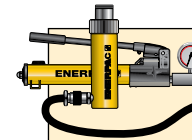
P-39, P-77



P-80, P-801, P-84



P-462, P-464



Pump and Cylinder Sets

P-80 is also available as a **set** (pump, cylinder, gauge, couplers and hose) for your ordering convenience.

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Speed Chart

To determine how a specific pump will operate your cylinder, see the Pump/Cylinder Speed Chart in the "Yellow Pages".

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Cylinder Matching Chart

For help in selecting the correct hand pump for your application, please refer to the Cylinder Matching Chart located in the "Yellow Pages."

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Piston Stroke	Dimensions (in)																	Weight (lbs)	Model Number
	(in)	A	B	C	D	E	F	H	J	L	M	N	P	Q	R	S	T		
.81	.81	15.50	20.47	1.28	1.50	1.25	—	18.25	1.18	4.69	2.56	5.25	—	—	—	—	—	13	P-39
1.00	1.00	16.46	20.67	1.30	1.57	2.04	—	22.04	1.34	4.57	1.97	4.72	—	—	—	—	—	15	P-77
1.00	1.00	16.75	21.22	1.00	1.75	2.13	—	20.75	1.14	6.88	.75	5.75	4.76	—	.83	.31	—	24	P-80**
1.00	1.00	25.94	30.78	1.00	1.75	2.13	—	30.43	1.14	6.88	—	5.75	4.76	—	.83	.31	—	31	P-801
1.00	1.00	16.75	21.22	1.00	1.75	—	2.52	20.75	1.14	6.88	.75	5.75	4.76	1.50	1.69	.31	2.64	29	P-84***
1.50	1.50	8.25	12.13	6.42	12.63	7.68	—	26.44	.98	10.63	6.89	25.6	3.63	—	—	3.13	—	61	P-462
1.50	1.50	8.35	12.13	6.42	12.63	7.68	—	26.44	.98	10.63	6.89	25.6	3.63	3.50	2.68	3.13	—	61	P-464***

▼ Shown from left to right: P-25, P-51, P-18



When Less Than 10,000 psi is All You Need

- P-25 and P-50 pump oil in both forward and reverse handle movement improving overall efficiency, ideal when mounting space is restricted
- External load-release valve
- Internal pressure-relief valve for overload protection
- P-51 can be operated in horizontal and vertical position with pump head and oil outlet facing downwards



LX-101 Hand Pump Oil

A medium viscosity oil specially formulated for hand pumps. Performs well in low temperatures and requires less pumping effort than standard Enerpac HF blue oil.

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Gauges

Minimize the risk of overloading and ensure long, dependable service from your equipment. Refer to the

System Components section for a full range of gauges.

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▼ P-18 hand pump used for locking the rotating table for marble polishing.



Pump Type	Usable Oil Capacity (in ³)	Model Number	Pressure Rating (psi)	Oil Displacement per Stroke (in ³)	Max. Handle Effort (lbs)
Single-speed	18	P-18	2,850	0.16	57
	200	P-25	2,500	0.58	60
	200	P-50	5,000	0.29	60
	50	P-51	3,000	0.25	61

Low Pressure Hand Pumps

P Series



Reservoir Capacity:

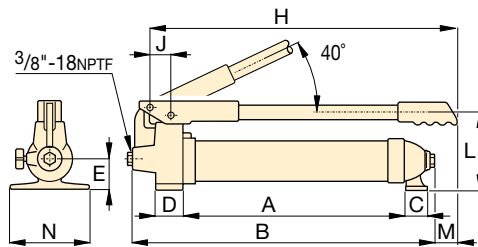
18-200 in³

Flow at Rated Pressure:

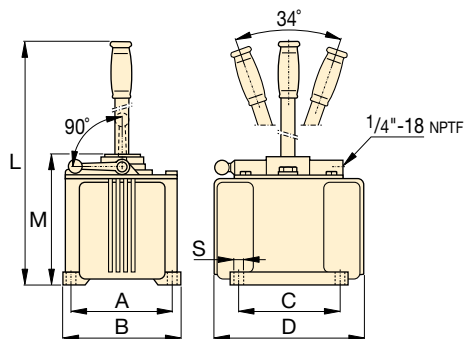
.16-.58 in³/stroke

Maximum Operating Pressure:

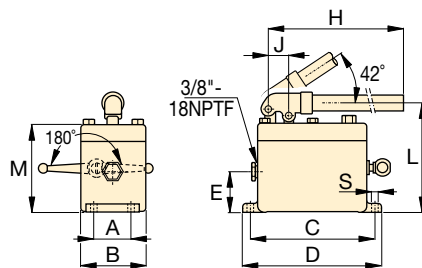
2,500-5,000 psi



P-18



P-25, P-50



P-51

P-51 hand pumps used with RC-series cylinders to keep wooden layers under pressure during lamination of plates.



Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only genuine Enerpac hydraulic hoses.

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Piston Stroke	Dimensions (in)																	Weight (lbs)	Model Number
	(in)	A	B	C	D	E	F	H	J	L	M	N	P	Q	R	S	T		
.81	.81	8.25	12.88	1.28	1.50	1.88	—	8.50	1.18	4.38	.51	5.25	—	—	—	—	—	11	P-18
1.50	1.50	6.00	6.82	6.00	9.43	—	—	—	—	26.94	7.88	—	—	—	—	.40	—	36	P-25
1.50	1.50	6.00	6.82	6.00	9.43	—	—	—	—	26.94	7.88	—	—	—	—	.40	—	37	P-50
1.00	1.00	2.06	3.63	7.12	7.88	2.25	—	24.00	1.16	6.31	5.06	—	—	—	—	.34	—	12	P-51

Lightweight Hydraulic Foot Pump

ENERPAC 
POWERFUL SOLUTIONS. GLOBAL FORCE.

▼ Shown: **P-392FP**

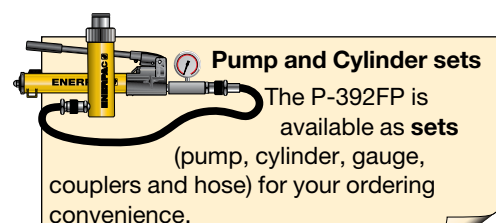


P Series

Flow at Rated Pressure:
.15 in³/stroke

Reservoir Capacity:
38 in³

Maximum Operating Pressure:
10,000 psi



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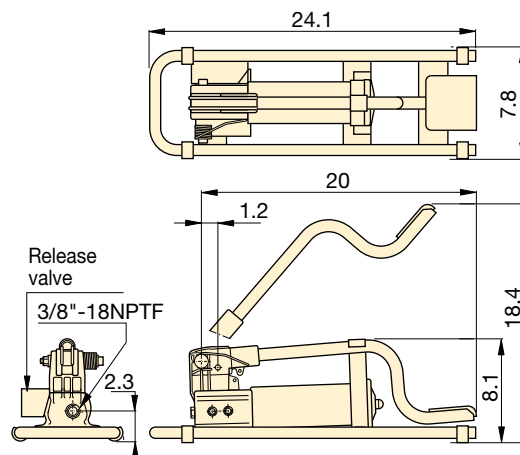
Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only genuine Enerpac hydraulic hoses.

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- Robust, durable and compact
 - Steel frame for maximum stability
 - Steel pumping handle
 - Aluminium reservoir
- Foot pedal lock and lightweight construction for portability
- Two-speed operation reduces foot pedal strokes
- Large foot-pad release valve for controlling load descent
- Internal pressure relief valve for overload protection

▼ P-392FP offers the advantage of hands free operation to handle and control the tool or cylinder.



Usable Oil Capacity (in ³)	Model Number	Pressure Rating (psi)		Oil Displacement per Stroke (in ³)		Max. Handle Effort (lbs)	Piston Stroke (in)	Weight (lbs)
		1st stage	2nd stage	1st stage	2nd stage			
38	P-392FP *	200	10,000	.687	.151	125	1	16

* Available as set, see note on this page.

Multifluid Hand Pumps

▼ Shown: **MP-110**



- Superior corrosion resistance
- Impregnated aluminium anodized pump housing with stainless steel internal pumping components
- Standard Nitrile seals – excellent for demineralized water, oil/water emulsions, water glycols, mineral oils, hydraulic fluids
- Custom EPDM seals available for use with Skydrol® or brake fluids
- Two speed pumps up to 14,500 psi pressure
- Externally adjustable pressure relief valve
- 1/4" NPTF gauge port

▼ MP-Series pumps are ideal for testing and filling applications.



MP Series

Reservoir Capacity:

2 gal. (optional)

Flow at Rated Pressure:

.12-1.28 in³/stroke

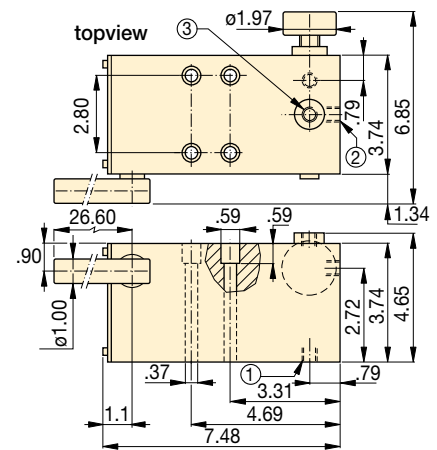
Maximum Operating Pressure:

1,500-14,500 psi



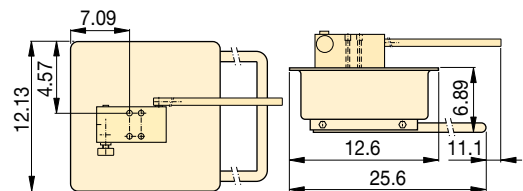
Optional Reservoir Kit

The 2 gallon reservoir kit **MP-10T** includes tank with skid frame, top plate with reservoir seal, suction pipe and mounting bolts. Useable oil capacity is 1.5 gal.



MP-110, 350, 700, 1000

- ① Suction / Tank return port 3/8"-18 NPTF
- ② Pressure port 3/8"-18 NPTF
- ③ Gauge port 1/4"-18 NPTF



MP-10T

Pump Type	Usable Oil Capacity (in ³)	Model Number	Pressure Rating (psi)		Oil Displacement per Stroke (in ³)		Max. Handle Effort (lbs)	Piston Stroke (in)	Weight (lbs)
			1st stage	2nd stage	1st stage	2nd stage			
Two Speed	*	MP-110	500	1500	3.2	1.28	99	1.04	14.5
	*	MP-350	500	5000	3.2	.43	99	1.04	14.5
	*	MP-700	500	10,000	3.2	.18	99	1.04	14.5
	*	MP-1000	500	14,500	3.2	.12	99	1.04	14.5

Note: MP-Pump includes .060 in. thick gasket for reservoir mounting.

* MP-Series pumps require the use of an external reservoir.

▼ Shown from left to right: 11-100, P-2282



Ultra-High Pressure up to 40,000 psi



2-Way Shut-Off Valve 72-750

For 40,000 psi applications requiring a shut-off valve or gauge snubber. Made of 318 Stainless Steel and utilizing .38 inch cone fittings, it is the perfect selection for use with your Ultra-High Pressure Hand Pump.

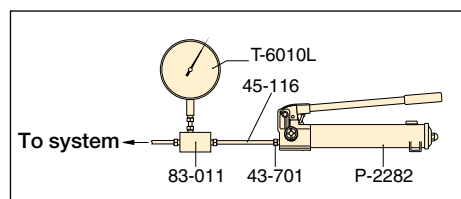


Test System Gauges

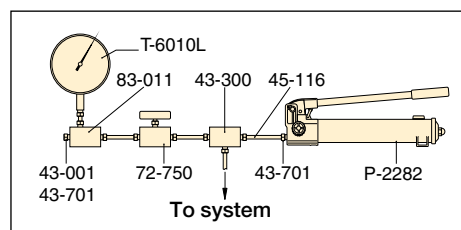
Ideal for monitoring pressure in your hydraulic circuit, Test System Gauges, such as the T-6010L, are available with cone threads or NPTF threads and in a variety of pressure ranges.

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- Two-speed operation on the P-2282 allows for faster fill, reducing cycle times for many testing applications
- 303 Stainless steel construction on the 11-100 and 11-400 models enable use with many different fluids, such as distilled water, alcohol, diesters, silicones, soluble oils and petroleum
- Large release knob for improved control of pressure release
- Outlet ports are 3/4"-16 cone for 40,000 psi rating



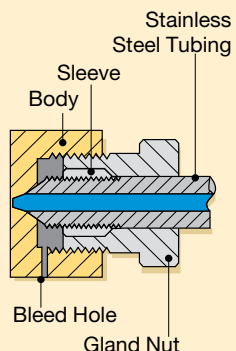
▲ Typical Test System



▲ Test System with Gauge and Snubber

Cone Seal

Stainless Steel High Pressure fittings seal on a "cone" surface and do not require pipe sealer. The Gland Nut holds the sleeve and tubing tight against the cone surface to provide a 40,000 psi seal.



Pump Type	Usable Oil Capacity (in ³)	Model Number	Pressure Rating* (psi)		Oil Displacement per Stroke (in ³)		Max. Handle Effort (lbs)
			1st stage	2nd stage	1st stage	2nd stage	
Two-speed	60	P-2282	200	40,000	.99	.037	106
Single-speed	45	11-100	N/C	10,000	N/C	.152	120
	45	11-400	N/C	40,000	N/C	.038	120

* Contact Enerpac for applications where operating pressure is less than 10% of pressure rating.

Ultra-High Pressure Hand Pumps

▼ Optional Ultra-High Pressure Fittings and Tubing

Description	Connection	Model No.
40,000 psi		
Gland Nut Plug	 .38" cone	43-001
Elbow	 .38" cone	43-200
Tee	 .38" cone	43-300
Gauge Tee	 .38" cone side/ .25" cone gauge port	43-301
Gauge Adaptor	 .38" cone side/ .25" cone gauge port	83-011
Coupling	 .38" cone	43-400
Cross	 .38" cone	43-600
Gland Nut with Sleeve	 .38" cone	43-701
Gauge Connector	 .25" cone	43-704
Tubing	 4" tube, O.D. .38" * 8" tube, O.D. .38" * 12" tube, O.D. .38" *	45-116 45-126 45-136
10,000 psi only		
Adaptor	 .38" F cone to 1/4" M NPTF .38" F cone to 3/8" M NPTF	41-146 41-166
Adaptor	 .38" F cone to 1/4" F NPTF .38" F cone to 3/8" F NPTF	41-246 41-266
Adaptor	 .38" M cone to 3/8" F NPTF	41-366

Note: .25" cone fittings use 3/16"-18 threads, 3/8" cone fittings use 1/4"-16 threads.

* Actual tubing lengths are .75" less than nominal size shown. These dimensions make distance between centers of valves and fittings multiples of 4" spaces.

P/11 Series



Reservoir Capacity:

45-60 in³

Flow at Rated Pressure:

.037-.152 in³/stroke

Maximum Operating Pressure:

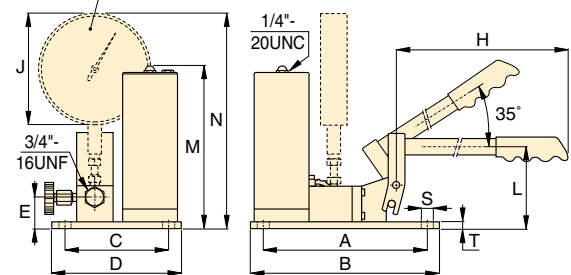
10,000-40,000 psi



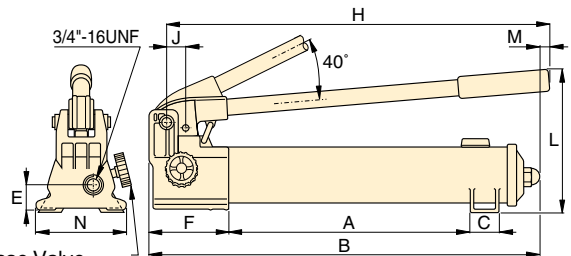
Stainless Steel Construction

Ultra-high Pressure Fittings feature all stainless steel construction except adaptor 41-366, which features nickel plated carbon steel construction.

Optional T-Series gauge and fitting



11-100, 11-400



Release Valve
P-2282

Piston Stroke	Dimensions (in)														Weight (lbs)	Model Number
	(in)	A	B	C	D	E	F	H	J	L	M	N	S	T		
1.00	1.00	13.56	22.00	1.40	—	1.24	5.25	20.75	1.16	9.00	.28	4.74	—	—	14	P-2282
.78	.78	9.45	10.50	5.98	7.00	1.77	—	25.00	6.41	4.50	9.33	12.38	.31	.37	22	11-100
.78	.78	9.45	10.50	5.98	7.00	1.77	—	25.00	6.41	4.50	9.33	12.38	.31	.37	22	11-400