



















Pumps and Directional Control Valves Section Overview

Power Source	Pump Types	Maximum Reservoir Capacity (litres)	Max. Flow at Rated Pressure (l/min)	Max. Power Consumption	Series		Page
Manual	Lightweight Hand Pumps Exclusively from Enerpac	2,5	2,50 (cm ³ /stroke)	–	P		▶▶▶
	Steel Hand Pumps	7,4	4,75	–	P		▶▶▶
	Low Pressure Hand Pumps	3,3	9,50	–	P		▶▶▶
	Multifluid Hand Pumps Pumping Fluids up to 1000 bar	–	21,8 (cm ³ /stroke)	–	MP		▶▶▶
	Foot Pump For Hands Free Operation	0,5	2,47 (cm ³ /stroke)	–	P		▶▶▶
	Ultra-High Pressure Hand Pumps Pressure up to 2800 bar	1,0	2,49 (cm ³ /stroke)	–	P 11		▶▶▶
Electric	Battery Powered Hydraulic Pumps Cordless Hydraulic Power	3,8	0,25	0,37 (kW)	BP		▶▶▶
	Economy Series Compact and Portable	3,8	0,32	0,37 (kW)	PU		▶▶▶
	Submerged Series Powerful and Low-Noise	5,5	0,27	0,37 (kW)	PE		▶▶▶
	Z-Class Pumps, Portable ZU-Series	40	1,0	1,25 (kW)	ZU		▶▶▶
	Z-Class Pumps, Heavy-Duty ZE-Series	40	2,73	5,60 (kW)	ZE		▶▶▶
	8000 and 9000-Series High Flow and Split Flow Pumps	80	8,0	9,50 (kW)	PP		▶▶▶
Air	XA-Series Pumps, with XVARI® Technology For Productivity and Ergonomics	2,0	0,25	991 (l/min)	XA		▶▶▶
	Turbo II Air Hydraulic Pumps Compact Air Over Hydraulic	5,0	0,16	340 (l/min)	PAT		▶▶▶
	Air Hydraulic Pumps Single and Twin-Air Motor	1,3	0,13	255 (l/min)	PA		▶▶▶
		8,0	0,15	510 (l/min)	PAM		▶▶▶
	Z-Class Air Hydraulic Pumps Modular Air Pumps	40,0	1,31	2840 (l/min)	ZA		▶▶▶
	ATP-Series Air Pump High Pressure Air Pump up to 1500 bar	3,8	0,07	590 (l/min)	ATP		▶▶▶
Gasoline	Atlas PGM-Series Small and Lightweight	8,0	0,66	2,2 (kW)	PGM		▶▶▶
	Z-Class Gasoline Hydraulic Pumps Gas Powered High Flow Pumps	40,0	1,64	4,8 (kW)	ZG5		▶▶▶
		40,0	3,30	9,7 (kW)	ZG6		▶▶▶
Directional Control Valves					VM, VC VE		▶▶▶

P-Series, Lightweight Hand Pumps

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



- Lightweight and compact design
- Durable glass-filled nylon reservoir and nylon encapsulated aluminium pump base for maximum corrosion resistance
- Two-speed operation 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.

▼ Cylinder-pump set SCR-254H used to support the construction while monitoring pressure and load with the gauge.



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'.



Speed Chart

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



Tank Kits:

When a return-to-tank port is required, the Tank Kits provide a $\frac{7}{16}$ "-20 UN port at the rear of the reservoir.

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



High Temperature and Corrosion Resistant Hand Pumps

The P-142 and P-392 hand pumps are available with Viton® seals, stainless steel pistons and anodized aluminium reservoir for use in extreme environments.

Pump Type	Usable Oil Capacity (cm ³)	Model Number	Pressure Rating** (bar)		Oil Displacement per Stroke (cm ³)		Max. Handle Effort (kg)
			1 st stage	2 nd stage	1 st stage	2 nd stage	
			Single-Speed	327	P-141	-	
	901	P-391	-	700	-	2,47	38,6
Two-Speed	327	P-142*	13	700	3,62	0,90	35,4
	901	P-202	13	700	3,62	0,90	28,6
	901	P-392*	13	700	11,26	2,47	42,2
	2540	P-802	27	700	39,33	2,47	43,1
	2540	P-842	27	700	39,33	2,47	43,1

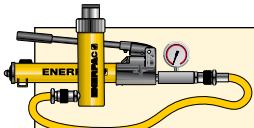
* Available as set, see note on next page.

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



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Lightweight Hand Pumps



Pump-Cylinder Sets

All pumps marked with an * are available as **sets** (pump, cylinder, gauge, couplers and hose) for your ordering convenience.

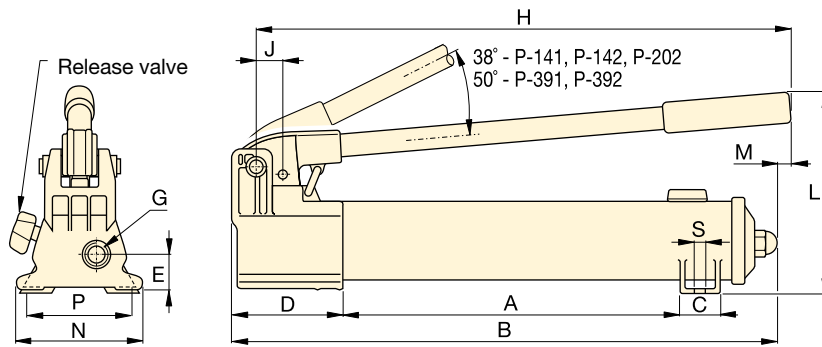
P Series



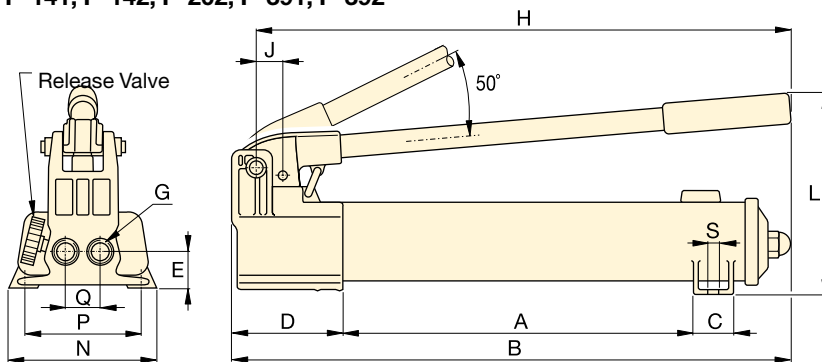
Reservoir Capacity:
327 - 2540 cm³

Flow at Rated Pressure:
0,90 - 2,47 cm³/stroke

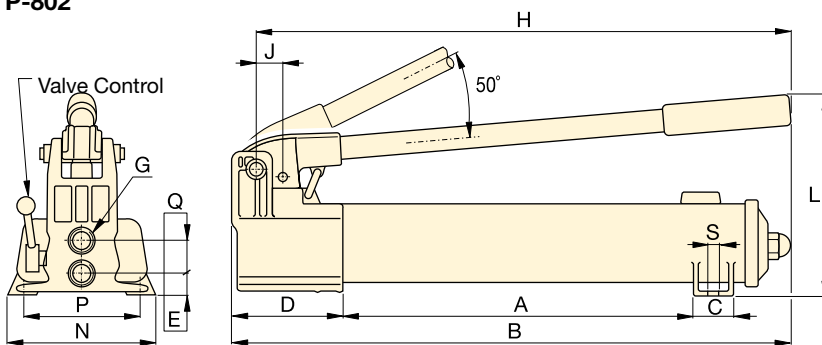
Operating Pressure:
700 bar



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



P-802



P-842



Hoses

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



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.



Foot Pump P-392FP

For handsfree operation the lightweight and robust **P-392FP** Foot Pump is the perfect choice.

Piston Stroke	Dimensions (mm)															Model Number
	(mm)	A	B	C	D	E	G	H	J	L	M	N	P	Q	S	
12,7	185	336	28	85	28	1/4"-18 NPTF	319	19	143	-	95	80	-	7	2,4	P-141
25,4	344	533	36	99	33	3/8"-18 NPTF	522	30	177	16	120	-	-	-	4,1	P-391
12,7	185	336	28	85	28	1/4"-18 NPTF	319	19	143	-	95	80	-	7	2,4	P-142*
12,7	344	509	36	85	28	1/4"-18 NPTF	400	19	144	16	95	-	-	-	3,4	P-202
25,4	344	533	36	99	33	3/8"-18 NPTF	522	30	177	16	120	-	-	-	4,1	P-392*
25,4	337	552	45	133	35	3/8"-18 NPTF	527	30	228	-	181	153	35	10	8,2	P-802
25,4	337	552	45	133	20	3/8"-18 NPTF	527	30	228	-	181	153	36	10	10,0	P-842



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P-Series, Steel Hand Pumps

▼ Shown from top to bottom: 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 Pumps

Recommended for applications where cylinder plunger must advance rapidly to load contact, 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.



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:

Pump Type	Usable Oil Capacity (cm ³)	Model Number	Pressure Rating** (bar)		Oil Displacement per Stroke (cm ³)		Max. Handle Effort (kg)
			1 st stage	2 nd stage	1 st stage	2 nd stage	
Single	655	P-39	-	700	-	2,62	50
Two-Speed	770	P-77	14	700	16,00	2,41	43
	2200	P-80*	25	700	16,22	2,46	47
	4080	P-801	25	700	16,22	2,46	47
	2200	P-84	25	700	16,22	2,46	47
	7423	P-462	14	700	126,20	4,75	49
	7423	P-464	14	700	126,20	4,75	49

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

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



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Steel Hand Pumps

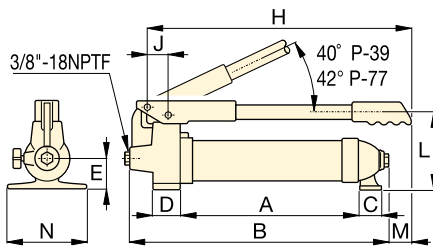
P Series



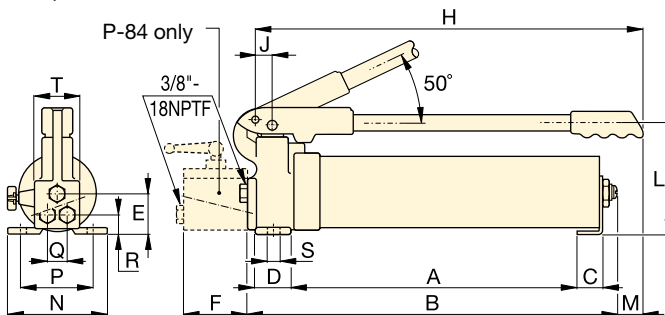
Reservoir Capacity:
655 - 7423 cm³

Flow at Rated Pressure:
2,46 - 4,75 cm³/stroke

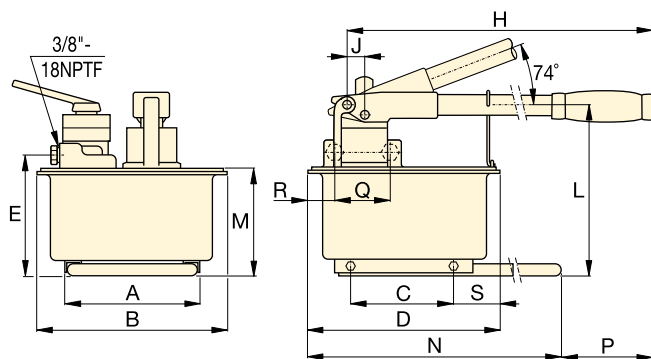
Maximum Operating Pressure:
700 bar



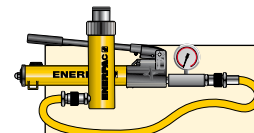
P-39, P-77



P-80, P-801, P-84



P-462, P-464



Pump-Cylinder Sets

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



Speed Chart

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



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'.

Piston Stroke (mm)	Dimensions (mm)																(kg)	Model Number
	A	B	C	D	E	F	H	J	L	M	N	P	Q	R	S	T		
20,6	393	520	33	38	32	-	464	30	119	65	133	-	-	-	-	-	5,9	P-39
25,4	418	525	33	40	52	-	560	34	115	50	120	-	-	-	-	-	6,8	P-77
25,4	425	539	25	44	54	-	527	29	174	19	146	121	-	21	8	67	10,9	P-80*
25,4	659	782	25	44	54	-	772	29	174	-	146	121	-	21	8	67	14,1	P-801
25,4	425	539	25	44	-	64	527	29	174	19	146	121	38	43	8	67	13,2	P-84
38,1	210	308	163	320	195	-	671	25	270	175	650	92	-	-	80	-	27,7	P-462
38,1	210	308	163	320	195	-	671	25	270	175	650	92	89	68	80	-	27,7	P-464



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P-Series, Low Pressure Hand Pumps

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



- 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.

When Less Than 700 Bar is All You Need



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.



Hoses

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

specify only genuine Enerpac hydraulic hoses.

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



Pump Type	Usable Oil Capacity (cm ³)	Model Number	Pressure Rating (bar)	Oil Displacement per Stroke (cm ³)	Max. Handle Effort (kg)
Single-Speed	295	P-18	200	2,62	26
	3277	P-25	175	9,50	27
	3277	P-50	350	4,75	27
	819	P-51	200	4,10	27



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Low Pressure Hand Pumps

P Series



Reservoir Capacity:

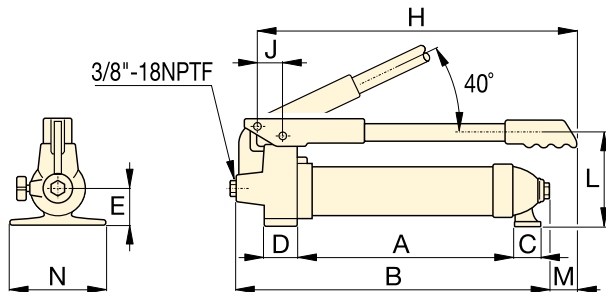
295 - 3277 cm³

Flow at Rated Pressure:

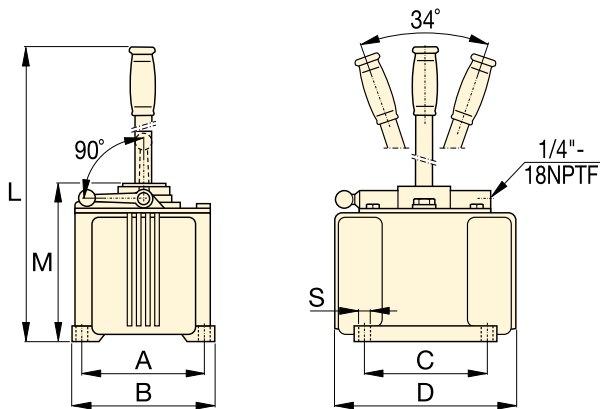
2,62 - 9,50 cm³/stroke

Maximum Operating Pressure:

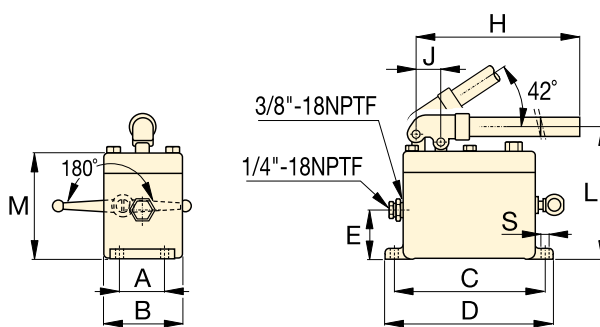
175 - 350 bar



P-18



P-25, P-50



P-51



MP-Series Multifluid Hand Pumps

Corrosion resistant hand pumps for low pressure filling and high pressure testing applications, suitable for a wide range of fluids.

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



Piston Stroke (mm)	Dimensions (mm)											Model Number	
	A	B	C	D	E	H	J	L	M	N	S		
20,6	210	327	33	38	48	216	30	111	13	133	-	5,0	P-18
38,1	152	173	152	240	-	-	-	684	200	-	10	16,3	P-25
38,1	152	173	152	240	-	-	-	684	200	-	10	16,8	P-50
25,4	52	92	181	200	57	610	29	160	129	-	9	5,4	P-51



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MP-Series, Multifluid Hand Pumps

▼ Shown: **MP-110**



- Unbeatable corrosion resistance
- Standard supplied with Nitrile seals – can be used for a wide range of fluids such as demineralised water, oil/water emulsions, waterglycols, mineral oils
- Two speed pumps up to 1000 bar pressure
- Buna Nitrile seals can be exchanged with optional EPDM seal for use with Skydrol or brake fluids
- Impregnated aluminium anodized pump housing with stainless steel internal pumping components
- Externally adjustable pressure relief valve
- 1/4" NPTF gauge port.

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



MP Series

Flow at Rated Pressure:

2,2 - 21,8 cm³/stroke

Maximum Operating Pressure:

110 - 1000 bar



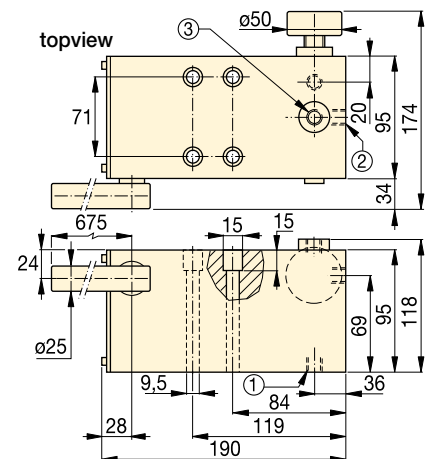
Multifluid Pump Applications

- Filling and testing of aircraft systems as shock absorbers
- Testing of aircraft systems using Skydrol fluid
- Testing of pressure vessels
- Operation of single-acting hydraulic tools and cylinders.



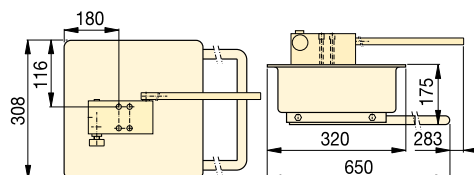
Optional Reservoir Kit

Includes 10 litres tank with skid frame, top plate with reservoir seal, suction pipe and mounting bolts. Useable oil capacity is 7,4 litres. For use for mineral oil applications only.
Order model number: **MP-10T**.



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

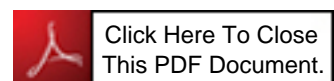


MP-10T

Pump Type	Usable Oil Capacity ¹⁾ (cm ³)	Model Number	Pressure Rating (bar)		Oil Displacement per Stroke (cm ³)		Max. Handle Effort (kg)	Piston Stroke (mm)	Piston Weight (kg)
			1st stage	2nd stage	1st stage	2nd stage			
Two Speed	*	MP-110	35	110	52,6	21,8	45	26,5	6,6
	*	MP-350	35	350	52,6	7,8	45	26,5	6,6
	*	MP-700	35	700	52,6	3,1	45	26,5	6,6
	*	MP-1000	35	1000	52,6	2,2	45	26,5	6,6

Note: MP-Pump includes 1,5 mm thick gasket for reservoir mounting.

¹⁾ MP-Series pumps requires the use of an external reservoir.



Lightweight Hydraulic Foot Pump

▼ Shown: **P-392FP**



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

P Series



Reservoir Capacity:

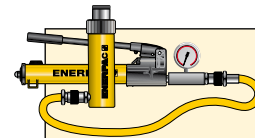
492 cm³

Flow at Rated Pressure:

2,47 cm³/stroke

Maximum Operating Pressure:

700 bar



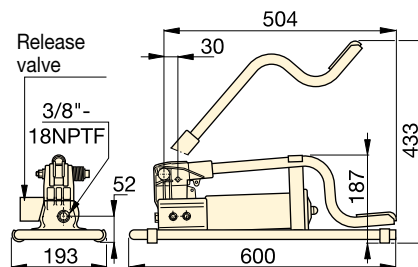
Pump-Cylinder Sets

The P-392FP is available as **set** (pump, cylinder, gauge, couplers and hose) for your ordering convenience.



Hoses

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



Usable Oil Capacity (cm ³)	Model Number	Pressure Rating (bar)		Oil Displacement per Stroke (cm ³)		Max. Handle Effort (kg)	Piston Stroke (mm)	Piston Stroke (kg)
		1st stage	2nd stage	1st stage	2nd stage			
492	P-392FP *	15	700	11,26	2,47	42	25,4	7,0

* Available as set, see note on this page.

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



P, 11-Series, Ultra-High Pressure Hand Pumps

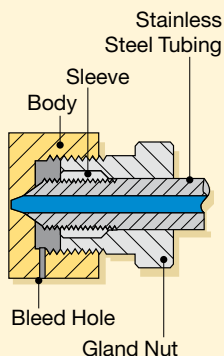
▼ Shown from left to right: 11-100, P-2282



- Two-speed operation on the P-2282 allows for faster fill operation, 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, diesters, silicones, soluble oils and petroleum
- Large release knob for improved control of pressure release
- Outlet ports are 3/4"-16 cone for 2800 bar rating
- Ultra-high pressure fittings feature all stainless steel construction except adaptor 41-366 which features nickel plated carbon steel construction.

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 2800 bar seal.



Ultra-High Pressure up to 2800 bar



2-Way Shut-Off Valve Model Nr. 72-750

For 2800 bar applications requiring a shut-off valve or gauge snubber.

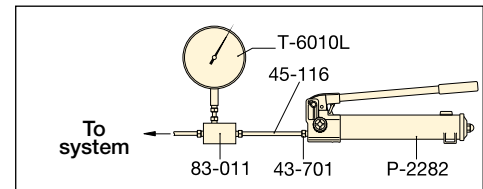
Made of 318 Stainless Steel and utilizing .38 inch cone fittings, it is the perfect selection for use with your ultra-high pressure hand pump.



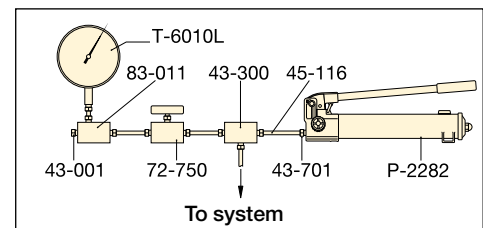
Test System Gauges

Ideal for monitoring pressure in your hydraulic circuit.

Test System Gauges, such as the T6010L, are available with cone threads or NPTF threads and a variety of pressure ranges.



▲ Typical Test System



▲ Test System with Gauge and Snubber

Pump Type	Usable Oil Capacity (cm ³)	Model Number	Pressure Rating* (bar)		Oil Displacement per Stroke (cm ³)		Max. Handle Effort (kg)
			1 st stage	2 nd stage	1 st stage	2 nd stage	
Two-Speed	983	P-2282	13	2800	16,22	0,61	48,1
Single-Speed	737	11-100	-	700	-	2,49	54,4
	737	11-400	-	2800	-	0,62	54,4









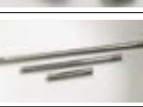


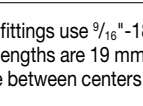
* Contact Enerpac for applications where operating pressure is less than 10% of pressure rating.



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Ultra-High Pressure Hand Pumps

▼ Optional Ultra-High Pressure Fittings and Tubings

Description	Connection	Model Nr.
2800 bar		
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
Tubing	 100 mm tube, O.D. .38" * 200 mm tube, O.D. .38" * 300 mm tube, O.D. .38" *	45-116 45-126 45-136
700 bar only		
Adaptor	 .38" F cone to 1/4" M NPTF	41-146
	 .38" F cone to 3/8" M NPTF	41-166
Adaptor	 .38" F cone to 1/4" F NPTF	41-246
	 .38" F cone to 3/8" F NPTF	41-266
Adaptor	 .38" M cone to 3/8" F NPTF	41-366

Note: .25" cone fittings use 9/16"-18 threads, 3/8" cone fittings use 3/4"-16 threads.
* Actual tubing lengths are 19 mm less than nominal size shown. These dimensions make distance between centers of valves and fittings multiples of 100 mm spaces.

P 11 Series

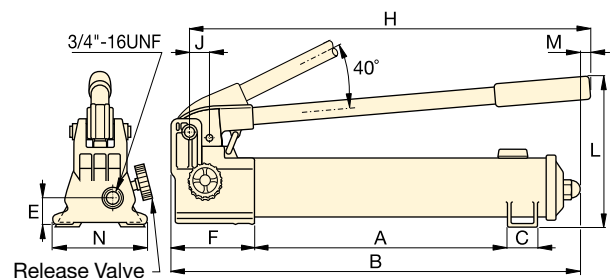
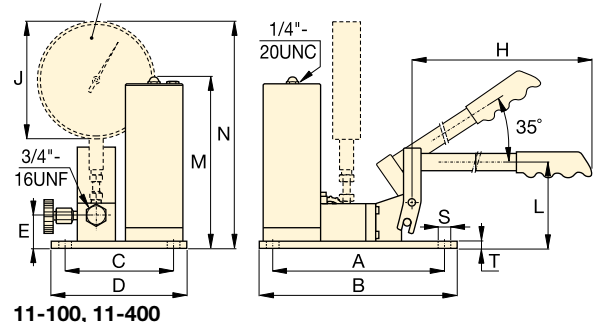


Reservoir Capacity:
737 - 983 cm³

Flow at Rated Pressure:
0,61 - 2,49 cm³/stroke

Maximum Operating Pressure:
700 - 2800 bar

Optional T-Series gauge and fitting



Piston Stroke (mm)	Dimensions (mm)													Model Number	
	A	B	C	D	E	F	H	J	L	M	N	S	T		
25,4	344	558	35	-	31	133	527	29	228	7	120	-	-	6,4	P-2282
19,8	240	266	151	177	45	-	635	162	114	237	314	7	9	10,0	11-100
19,8	240	266	151	177	45	-	635	162	114	237	314	7	9	10,0	11-400