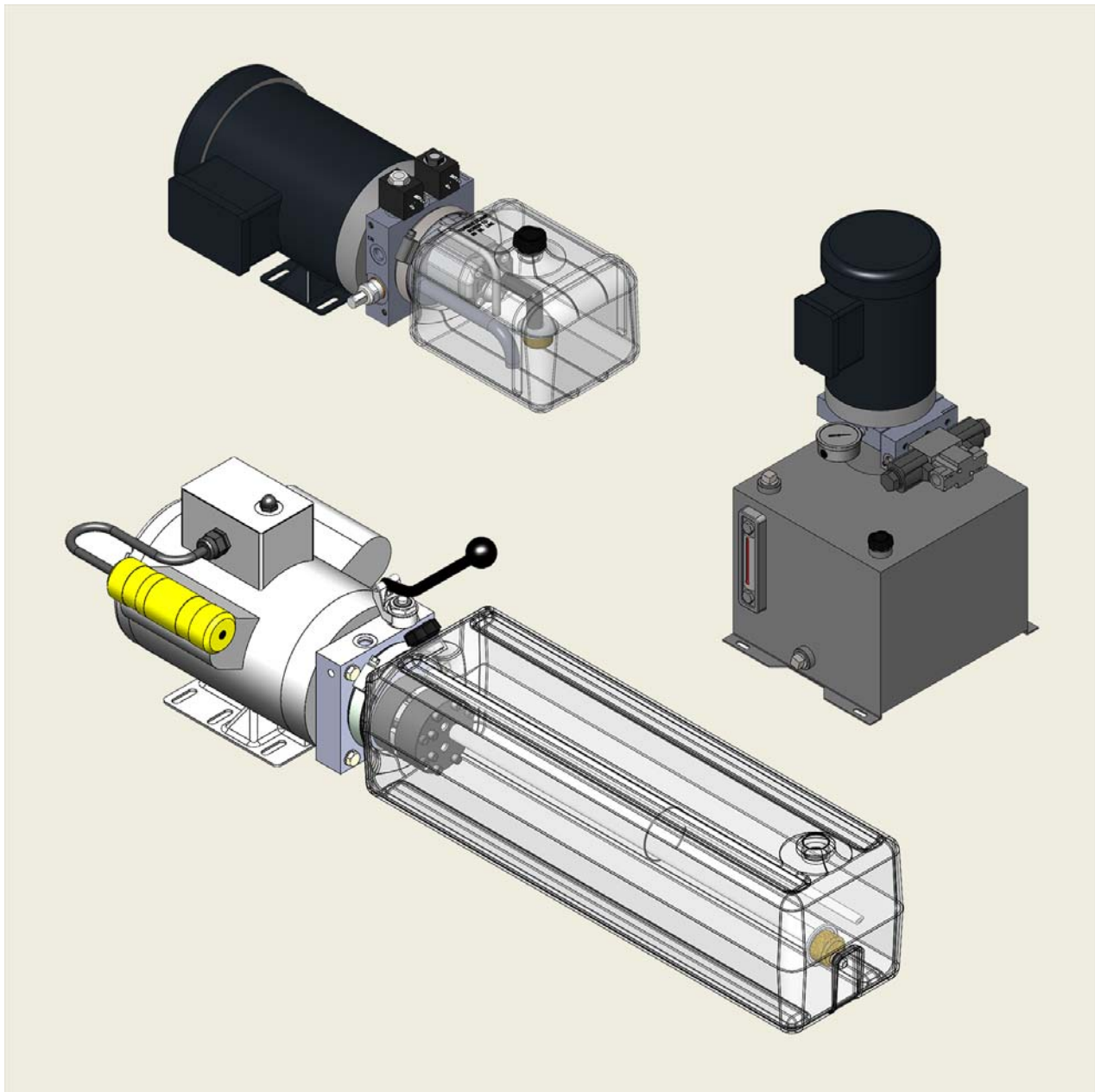


A.C. Hydraulic Power Systems

Bucher Hydraulics M-4000 Series



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1 General information

1.1 Introduction

This catalog illustrates the technical specifications for Bucher Hydraulics A.C. range of Hydraulic Power Units. Designed for compactness and durability, millions of A.C. Series systems have been sold worldwide for actuating mobile, material handling, transport, construction, defense, access, machine tool, ergonomic, and other labor saving devices.

The Bucher Hydraulic name is synonymous with precise and cost efficient designs, robust construction and rapid backup service. For over 150 years, the company continues to strive for your confidence by offering personal, reliable service and "Quality Machinery since 1856" to customers in over 37 countries.

1.2 Mission Statement

Bucher Hydraulics designs, manufactures and delivers innovative fluid power solutions and provides unparalleled support for its customers.

1.3 Quality Program

Bucher Hydraulics will provide its customers with products and services of continually improving quality to the mutual satisfaction of all parties.

1.4 Bucher Hydraulics Value Statement

- Bucher Hydraulics will be honest, moral and ethical.
- Bucher Hydraulics will accept responsibility for its actions.
- Bucher Hydraulics will treat people with equality.
- Bucher Hydraulics will make a profit.

1.5 Prototype Program

We invite you to try our Prototype Program for Solutions to Your Special Hydraulic Needs.

While Bucher Hydraulics offers a broad line of hydraulic systems and components, it is impossible to anticipate the needs of every customer, especially those developing new products. Our unique prototype program allows us to respond to your specific needs when an existing "catalog model" does not fit your application.

To participate in this program, simply submit a print, schematic, or sketch of the hydraulic power pack that you need along with a purchase order. We will review the system requirements with you and then manufacture the system that we believe will satisfy your objectives. The unit will be invoiced at an agreed upon price and marked Prototype.



ATTENTION!

- Always wear eye protection and protective clothing.
- Remove jewelry and objects that might conduct electricity while working on power units.
- Hydraulic fluid does pose a fire hazard, can cause burning or skin irritation if not properly handled.
- Fluid under pressure can pierce the skin and enter the bloodstream causing death or serious injury.
- Devices being operated by the hydraulic system should be immobilized so they cannot move and cause injury while being inspected or repaired.
- Disconnect from electrical source.
- Prior to performing any maintenance make sure the equipment is turned off and that any stored energy, for example pressure, is released. Also, extended equipment or cylinders should be lowered and mechanically locked as required.
- Bucher Hydraulics is not responsible for misuse or misapplication of product. If you have any questions about application, please contact local dealer.
- Fluids should be contained and disposed of properly.

1.6 Features and Benefits

Standard M-4300, M-4400 and M-4500 Features:

- Flexible coupling extends pump life, eliminates misalignment
- Fixed clearance gear pump option provides all powdered metal gears and hardcoated pump end plates for unmatched durability in demanding environments and severe duty applications
- Externally adjustable relief valve with lock nut
- 1 year limited warranty on system
- Bucher Hydraulics' personal customer service
- 24 hour shipment on most parts orders
- Worldwide distributor network

Options

- Pressure gauges
- SAE ports on most models
- Complete selection of NFPA D03 control valves and auxiliary valves
 - Cross port relief
 - Pressure reducing
 - Single and double flow control
 - Direct and pilot operated check
 - Sequence
 - Counterbalance
 - Relief
- Pressure switches
- Water/oil heat exchangers
- Float switches
- Reservoirs
- 56 frame air motor
- Explosion proof, 50 hertz, chemical duty, dual frequency, metric frame, high torque and special duty electric motors
- Gasoline and diesel engines
- Close coupled motors available on many systems

2 How to Use This Product Guide

1. Select the Circuit that will satisfy your design objectives (refer to page 9). Contact the Bucher Hydraulics Factory or your Distributor if you require assistance.
2. Based on the selected circuit, follow the Model number that best fits the application.
3. On the selected model number's page, follow the "How To Order Your M-4XXX Power System" provided after each Model description. Only the recommended combinations are listed for the particular system. Custom configurations are available and should be discussed with the Bucher Hydraulics Factory or your Distributor.
4. Based on the selected Model code, follow the "How to Order" instructions at the bottom of each page, to select the appropriate basic component. Basic components to choose from include:
 - Pump and Hand Pump
 - Motor
 - Reservoir
 - Valve(s)
 - Other Accessories
5. All system wiring should be completed by a certified electrician according to local codes.

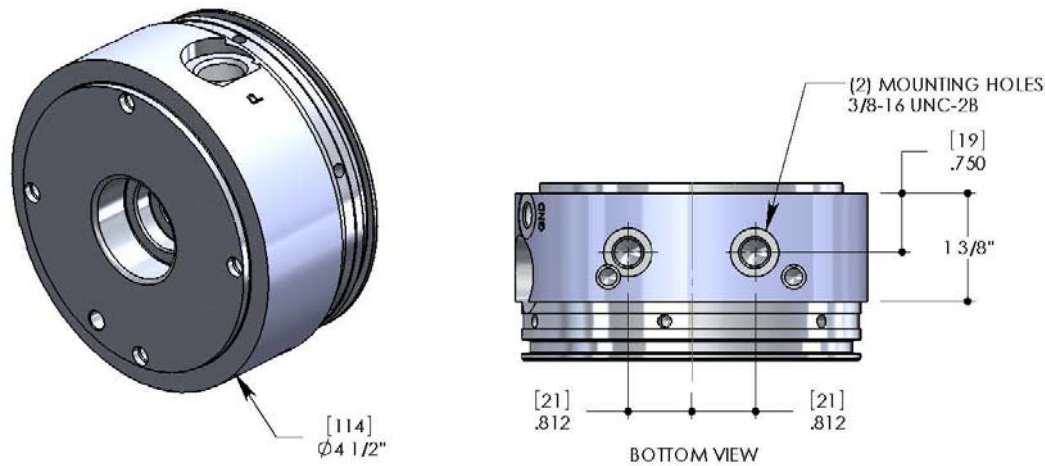
3 Model Selection Guide

3.1 Base Options associated with each Model Code

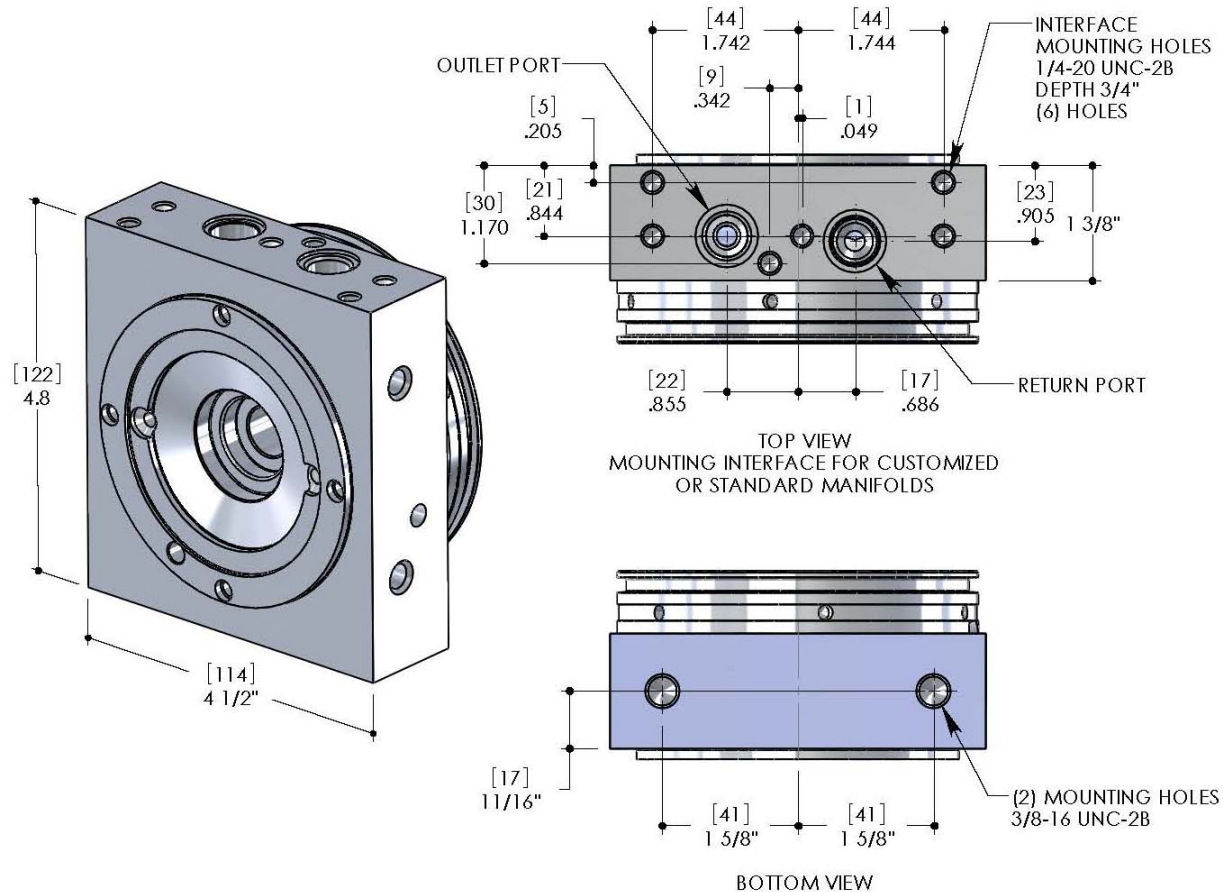
In the AC Circuit Selection Guide (page 9), each Model number (M-4XXX) corresponds with the style of base the unit has. Popular Model options are shown in the Circuit Selection Guide, however, different Models are available by selecting a different style base.

See below for the base options that each Model number represents.

Model M-4300 - Refers to the 4.5 inch [114 mm] Round Base

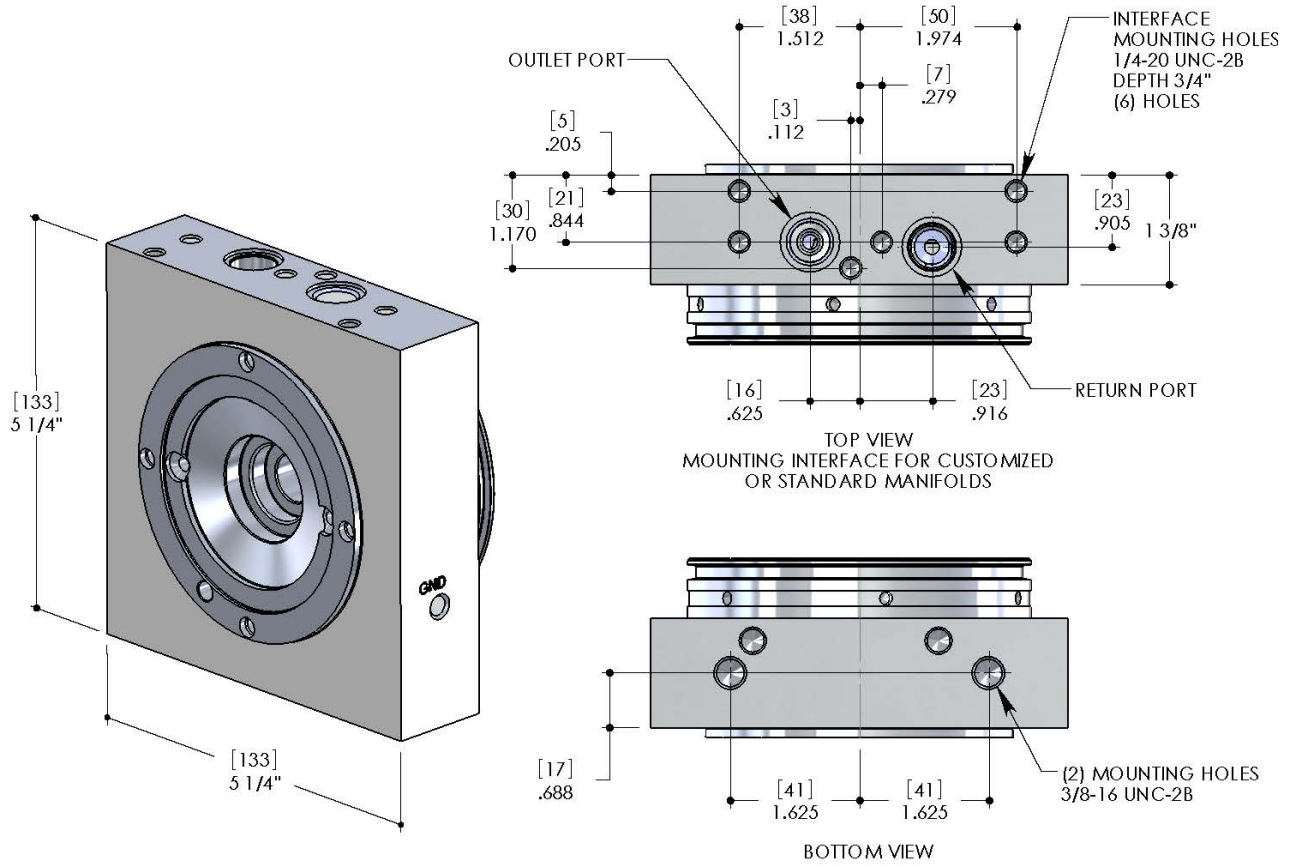


Model M-4400 - Refers to the 4.5 inch [114 mm] by 4.8 inch [122 mm] Base


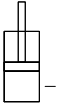
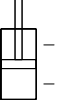
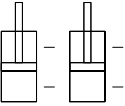
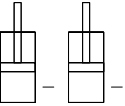
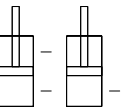


BUCHER hydraulics

Model M-4500 - Refers to the 5.25 inch [133 mm] Square Base



3.2 M Series A.C. Circuit Selection Guide

Circuit	Description	Model	Page
	Pump + Motor	M-4326	31
	Pump + Motor + Reservoir	M-4304	32
Operates Single Acting Cylinder			
	Pump + Motor + Reservoir + Manual Valve	M-4313	33
		M-4509	34
		M-4301	35
	Pump + Motor + Reservoir + Solenoid Valve	M-4319	36
		M-4519	37
		M-4303	38
Operates Double Acting Cylinder			
	Pump + Motor + Reservoir + Manual Valve	M-4310	39
	Pump + Motor + Reservoir + Solenoid Valve	M-4551	40
		M-4441	41
		M-4506	42
		M-4505	43
		M-4530	44
		M-4554	45
Operates 2 Double Acting Cylinders			
	Pump + Motor + Reservoir + Solenoid Valves	M-4328	46
		M-4328 Parallel	47
		M-4528	48
Independent Operation of 2 Single Acting Cylinders or Master / Slave			
	Pump + Motor + Reservoir + Solenoid Valves	M-4447	49
Operates 1 Double Acting and 1 Single Acting Cylinder			
	Pump + Motor + Reservoir + Solenoid Valves	M-4593	50

3.3 M-4000 Series Pump/Motor Performance Data

3.3.1 Fixed Clearance Pumps

Pump Code	Displacement In ³ / Rev (Cm ³ / Rev)	RPM	GPM	Input HP Required at Pressure (PSI)					
				500	1000	1500	2000	2500	3000
17-150	0.032 (0.524)	1800	0.25	0.20	0.30	0.35	0.50	0.55	0.75
		3600	0.51	0.40	0.60	0.70	1.00	1.10	1.50
17-270	0.054 (0.88)	1800	0.42	0.20	0.35	0.45	0.60	0.70	0.90
		3600	0.84	0.40	0.70	0.90	1.20	1.40	1.80
13-150	0.073 (1.19)	1800	0.57	0.25	0.45	0.60	0.80	1.00	1.15
		3600	1.13	0.50	0.90	1.20	1.60	2.00	2.30
13-200	0.097 (1.59)	1800	0.75	0.35	0.55	0.80	1.05	1.30	1.50
		3600	1.51	0.70	1.10	1.60	2.10	2.60	3.00
13-250	0.121 (1.98)	1800	0.94	0.45	0.75	1.10	1.40	1.70	2.15
		3600	1.89	0.90	1.50	2.20	2.80	3.40*	3.95*
13-270	0.131 (2.14)	1800	1.02	0.50	0.80	1.15	1.50	2.00	2.25
		3600	2.04	1.00	1.60	2.30	3.00	3.60*	
13-330	0.160 (2.62)	1800	1.25		1.04	1.49	1.94	2.39	2.84
		3600	2.49		2.09	2.99	3.89	4.79	5.69
13-380	0.184 (3.02)	1800	1.43	0.60	1.10	1.50	2.00	2.50	3.00
		3600	2.87	1.20	2.20	3.00	3.90**		
13-510	0.247 (4.05)	1800	1.92	1.00	1.65	2.50	3.00	3.75*	
		3600	3.85	2.00	3.30*				

* = Intermittent Service Only. Contact the Bucher Hydraulics Factory or your Distributor for operating limits.

The above pumps tested using Mobil DTE 24 at 100°F 165 SUS, 95 Viscosity. Note: kW = HP x 0.746

For fixed clearance pumps not found in this catalog, please contact factory.

Recommended Operating Conditions for M-4000 Series Fixed Clearance Pumps:

Oil Temperature Range: 10°F to 170°F (-25°C to 77°C)

Operating Temperature: 50°F to 130°F (10°C to 54°C)

Oil Viscosity:

- Optimum 100 to 350 SUS (Cst = .22 x SUS - 135/SUS)

- Minimum 100 SUS at Operating

- Maximum Start Up 4000 SUS

Recommended Filtration:

- 10 micron nominal or better

Recommended Fluid for indoor use:

- Hydraulic fluid AW32 or equal

Recommended Fluid for outdoor use:

- ATF or equal

Contact factory for use with non-petroleum based fluids and availability of special seals.

STANDARD FIXED CLEARANCE PUMP FEATURES:

- Fixed Displacement, External Tooth, Powdered Metal Gears
- Hardcoat Processed Internal Pump Surfaces Extend Service Life
- Extremely Tolerant of Fluid Contaminants and Resistant to Galling Caused by Low Viscosity Start-up
- Wide Temperature and Viscosity Operation
- Cost Effective
- 100% Tested for Volumetric Efficiency and Pressure

3.3.2 Pressure Balanced Pumps

Pump Code	Displacement in ³ /Rev (cm ³ /Rev)	RPM	GPM	Input HP Required at Pressure (PSI)					
				500	1000	1500	2000	2500	3000
AP100 1.20 cc	0.075 (1.23)	1800	0.58	0.36	0.57	0.78	1.00	1.21	1.42
		3600	1.17	0.71	1.14	1.57	1.99	2.42	2.84
AP100 1.70 cc	0.105 (1.72)	1800	0.82	0.44	0.74	1.04	1.34	1.93	1.93
		3600	1.64	0.88	1.48	2.08	2.67	3.27	3.96
AP100 2.20 cc	0.135 (2.21)	1800	1.05	0.53	0.91	1.29	1.68	2.06	2.44
		3600	2.11	1.05	1.82	2.58	3.35	4.12	4.88
AP100 2.50 cc	0.155 (2.53)	1800	1.21	0.58	1.02	1.46	1.90	2.34	2.79
		3600	2.41	1.17	2.05	2.93	3.81	4.69	5.57
AP100 3.50 cc	0.219 (3.59)	1800	1.71	0.77	1.39	2.02	2.64	3.26	3.89
		3600	3.42	1.53	2.78	4.03	5.28	6.53	7.78
AP100 4.30 cc	0.273 (4.48)	1800	2.13	0.92	1.70	2.47	3.25	4.03	4.80
		3600	4.26	1.84	3.39	4.95	6.50	8.05	9.61
AP100 5.00 cc	0.315 (5.17)	1800	2.46	1.04	1.94	2.83	3.73	4.62	5.52
		3600	4.91	2.08	3.87	5.66	7.46	9.25	11.04
AP100 6.50 cc	0.390 (6.40)	1800	3.05	1.25	2.37	3.48	4.03	5.70	6.81
		3600	6.08	2.51	4.73	6.95	9.18	11.40	13.62
AP100 8.00 cc	0.474 (7.77)	1800	3.70	1.49	2.84	4.19	5.55	6.90	8.25
		3600	7.39	2.99	5.69	8.39	11.09	13.79	16.49
AP100 10.00 cc	0.611 (10.01)	1800	4.76	1.88	3.62	5.35	7.09	8.83	10.57
		3600	9.50	3.76	7.24	10.71	14.18	17.66	21.13

For pressure balanced pumps not found in this catalog, please contact factory.

Recommended fluids/allowed temperatures

We recommend using only mineral oil-based hydraulic fluids that comply with the ISO/DIN standards.

Viscosity range:
recommended 20 + 120 mm²/s (cSt)
permitted up to 700 mm²/s (cSt)

Operating temperature

Type of seals	Temperature	
	AP05-APR05	AP100-AP200-AP300
Buna	-15 + 65 °C	-15 + 80 °C
Viton*	-10 + 85 °C	-10 + 120 °C



ATTENTION!:

Use of pumps at temperatures above 80°C must always be agreed upon with our Technical Office, and in any case this can cause a significant worsening in the volumetric efficiency. For use under conditions different from those indicated in this catalog, please contact our Sales Department.

* Viton is a brand of synthetic rubber and fluoropolymer elastomer commonly used in O-rings, chemical-resistant gloves and other molded or extruded goods. The name is a registered trademark of DuPont Performance Elastomers L.L.C.

STANDARD PRESSURE BALANCED PUMP FEATURES:

- Meticulous CAD design of the gear teeth and balancing areas
- An exacting choice of high-performance materials
- Carefully controlled heat treatments
- Increasingly tight coupling tolerances, and a high standard of surface finish.

3.4 M-4000 Series Motor Information

Part Number	Order Code	HP	RPM	Voltage	Phase	Frame	Enclosure
08740	500205008740	1/2	1725	115/230/60	1	56C	TEFC
08742	500205008742	1/2	3450	115/230/60	1	56C	TEFC
08741	500205008741	1/2	1725	230/460/60	3	56C	TEFC
08743	500205008743	1	1725	115/230/60	1	56C	TEFC
08744	500205008744	1	1725	230/460/60	3	56C	TEFC
08745	500205008745	1	3450	115/230/60	1	56C	TEFC
08746	500205008746	1	3450	230/460/60	3	56C	TEFC
08747	500205008747	1 1/2	1725	115/230/60	1	56C	TEFC
08748	500205008748	1 1/2	1725	230/460/60	3	56C	TEFC
08749	500205008749	1 1/2	3450	115/230/60	1	56C	TEFC
08750	500205008750	1 1/2	3450	230/460/60	3	56C	TEFC
08177-B	50020500817702	2 2.8	3450	208/230/60	1	56C	TENV 15 MIN DUTY @ 2.0 HP 5 MIN DUTY @ 2.8 HP
08754	500205008754	2	1725	115/230/60	1	56C	TEFC
08753	500205008753	2	1725	230/460/60	3	56C	TEFC
08751	500205008751	2	3450	115/230/60	1	56C	TEFC
08752	500205008752	2	3450	230/460/60	3	56C	TEFC
08760	500205008760	3	3450	115/230/60	1	56C	TEFC
08761	500205008761	3	3450	230/460/60	3	56C	TEFC

Bucher Hydraulics Supplied 56C Motors have the standard length NEMA shaft shortened by 1-3/16". All other frame size motors and all special ordered units are supplied with NEMA standard length drive shafts when possible. The above motors may be specified with standard NEMA 56C length drive shafts.

Special Motors commonly available for use with M-4000 units include:

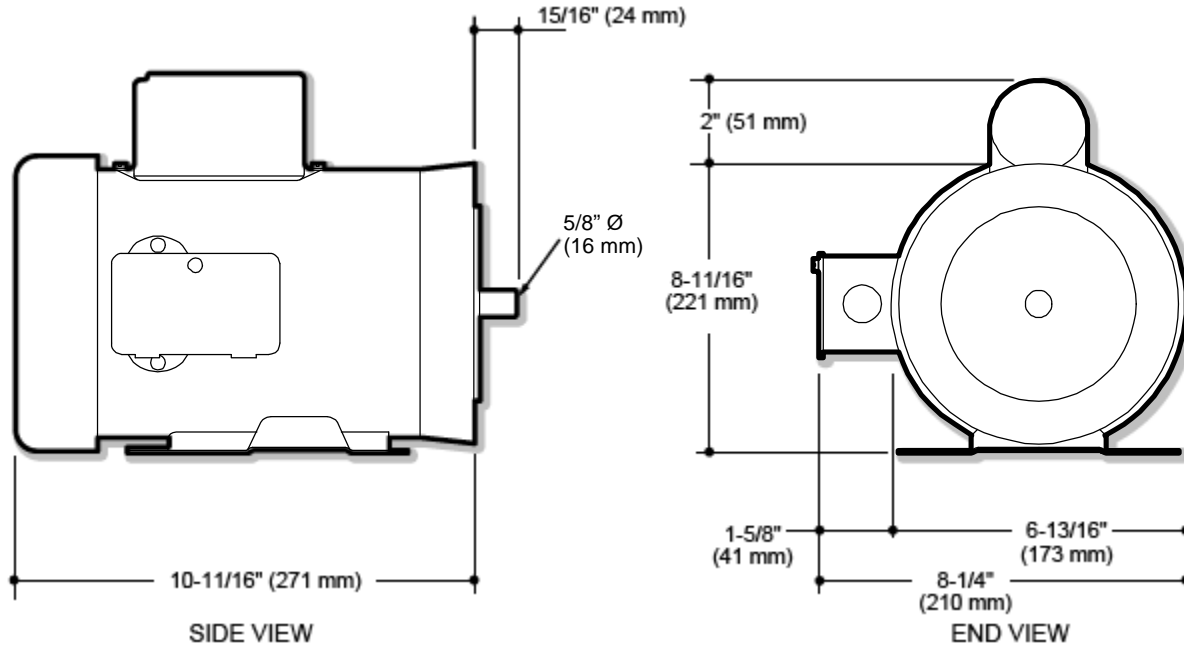
- Explosion Proof
- Dual Frequency (50/60 Hz)
- Intermittent Duty - Custom Designed
- Washdown Duty
- 575V AC
- Open Drip Proof
- Totally Enclosed Non-Ventilated
- Custom Designed Motors for Special Applications

3.5 Dimensional Information for Standard M-4000 Motors With Flexible Couplings

Motor Number 08751 is a 2 HP, 3450 RPM, 115/230 V AC, 60 Hz, 1 Phase, NEMA 56C TEFC and is shown as a general reference. Dimensions will vary according to motor output and manufacturer. Contact the Bucher Hydraulics Factory for more information.

Bucher Hydraulics standard adapter 01605 requires the NEMA motor shaft be shortened by 1-3/16". Adapter 01615 should be specified when a standard NEMA motor shaft is required.

When selecting Motor, choose the HP required or the next highest HP available.



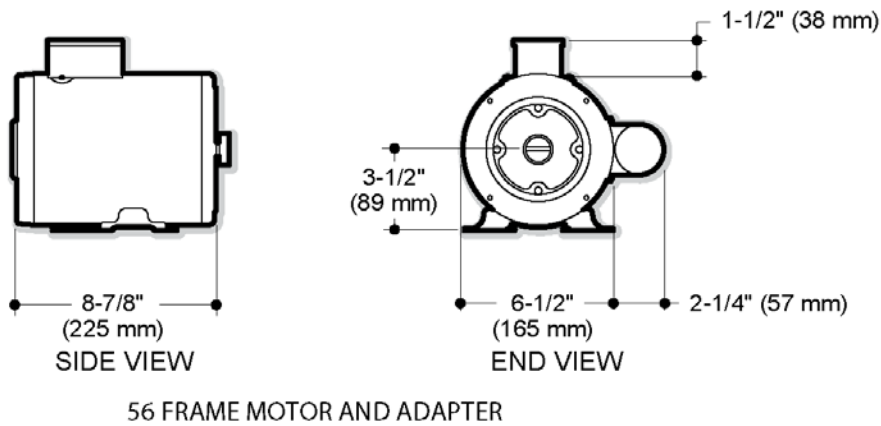
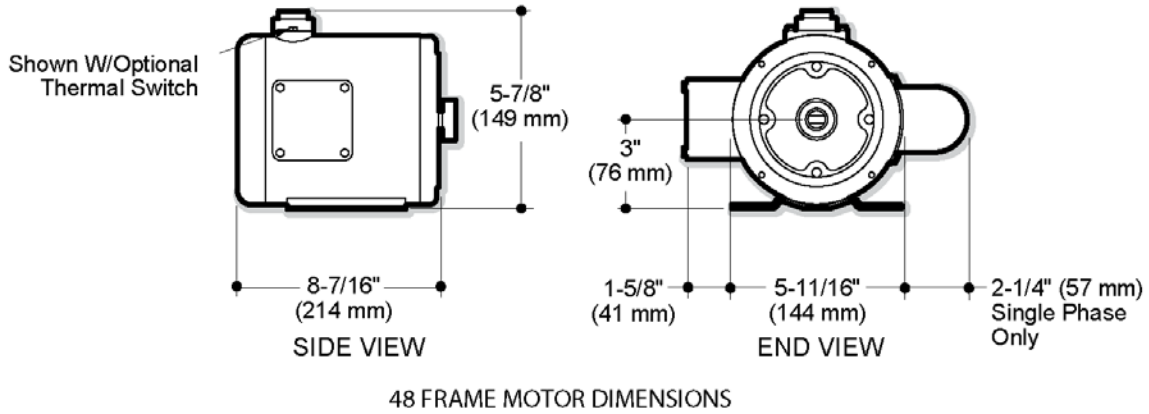
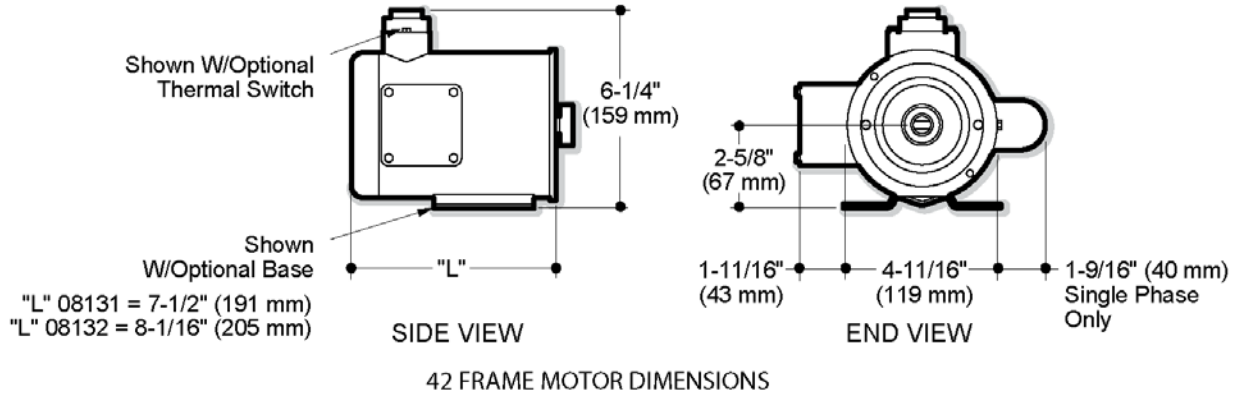
3.5.1 Close Coupled Motors For M-4000 Units

The following direct drive (partial) motors are supplied with an adapter for mounting the pump base directly to the motor. The 01605 and/or 01615 extended pump/motor adapter and flexible coupling is not required. Close coupled motors are available on certain models. Consult factory.

Part Number	Order Code	HP	Duty	RPM	Voltage	Phase	Frame	Enclosure
08131	500205008131	1/2	15 MINUTE	1725	115/230	1	42	TENV
08132	500205008132	3/4	3 MINUTE	1725	115/230	1	42	TENV
08160	500205008160	1	15 MINUTE	3450	115/230	1	48	TENV
08157	500205008157	1	15 MINUTE	3450	230/460	3	48	TENV
08156	500205008156	1	15 MINUTE	3450	575	3	48	TENV
18502-001E	500205018502105	2.5	5 MINUTE	3450	208/230	1	56	TENV

For motors not found in this catalog, please contact factory.

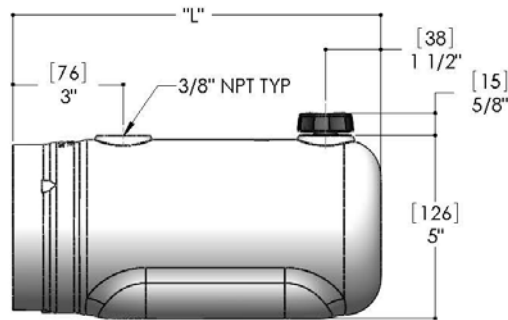
Dimensional Information for Close Coupled Motors



3.6 Reservoirs for M-4000 Units

3.6.1 Poly reservoirs

4.5 inch [114 mm] Poly



Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06102	500206406102	54.92	0.90	8.00	203.20
06103	500206406103	75.67	1.24	10.00	254.00
06104	500206406104	96.41	1.58	12.00	304.80
06105	500206406105	106.79	1.75	13.00	330.20

Vertical Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
04616	500206404616	36.61	0.60	8.00	203.20
04617	500206404617	65.91	1.08	10.00	254.00
04618	500206404618	95.20	1.56	12.00	304.80
04619	500206404619	109.84	1.80	13.00	330.20

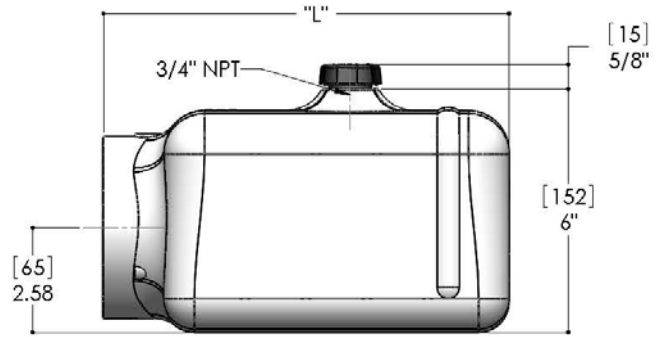
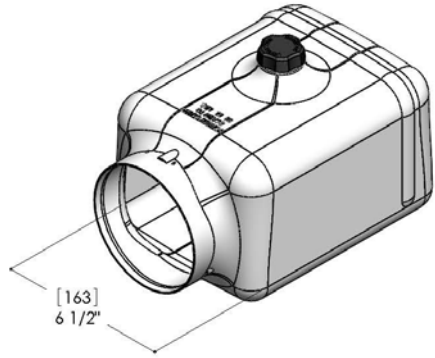
Consult factory for full product range and custom solutions

Useable volume may be increased 7.5% with the addition of suction shroud assembly 500218313082. When using an *i* pump, up to 3% reduction in useable volume should be expected.

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5.5 inch [140 mm] x 6.5 inch [165 mm] Poly



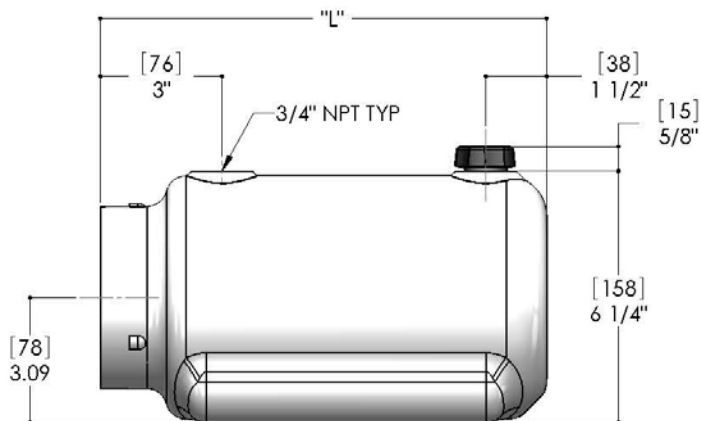
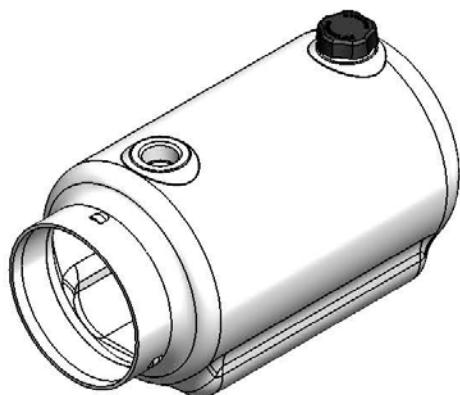
3/4 NPT Fill Port					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14157	500206414157	143.40	2.35	10.00	254.00
14158	500206414158	220.00	3.61	13.50	342.90
14159	500206414159	247.23	5.69	19.00	482.60

3/8 NPT Fill Port					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
04845	500206404845	143.40	2.35	10.00	254.00
04846	500206404846	220.00	3.61	13.50	342.90
04687	500206404687	247.23	5.69	19.00	482.60

Consult factory for full product range and custom solutions

Useable volume may be increased 8% with the addition of suction shroud assembly 500218313082. When using an *i* pump, up to 3% reduction in useable volume should be expected.

6 inch [152 mm] Centered Poly



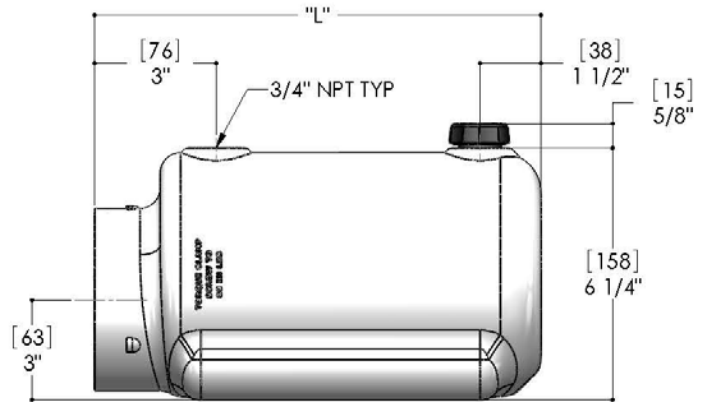
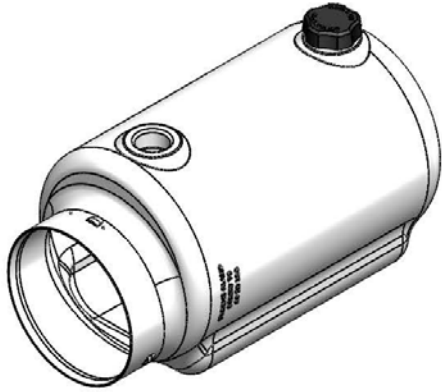
Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14128	500206414128	118.37	1.94	9.00	228.60
14121	500206414121	136.19	2.23	10.00	254.00
14122	500206414122	154.01	2.52	11.00	279.40
14123	500206414123	189.65	3.11	13.00	330.20
14124	500206414124	234.20	3.84	15.50	393.70
14125	500206414125	296.57	4.86	19.00	462.60
14126	500206414126	350.03	5.74	22.00	558.80
14127	500206414127	385.68	6.32	24.00	609.60

Vertical Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14004	500206414004	197.04	3.23	13.00	330.20
14005	500206414005	268.68	4.40	15.50	393.70

Consult factory for full product range and custom solutions

Useable volume may be increased 6% with the addition of suction shroud assembly 500218313082. When using an *i* pump, up to 3% reduction in useable volume should be expected.

6 inch [152 mm] Offset Poly



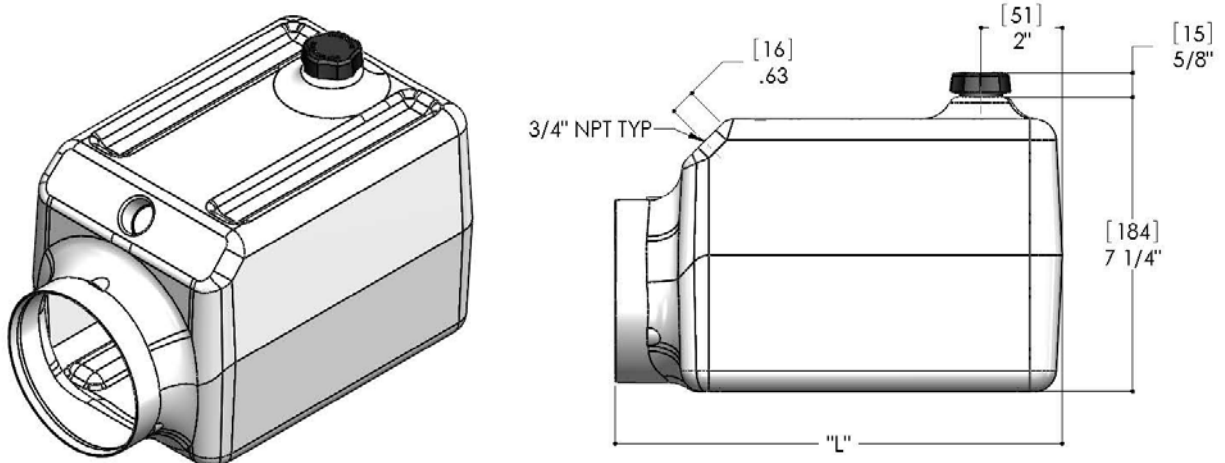
Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14009	500206414009	123.57	2.03	9.00	228.60
14010	500206414010	143.40	2.35	10.00	254.00
14011	500206414011	163.23	2.68	11.00	279.40
14012	500206414012	202.89	3.33	13.00	330.20
14013	500206414013	252.47	4.14	15.50	393.70
14014	500206414014	321.87	5.28	19.00	462.60
14015	500206414015	381.36	6.25	22.00	558.80
14016	500206414016	421.02	6.90	24.00	609.60

Vertical Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14133	500206414133	88.49	1.45	9.00	228.60
14134	500206414134	112.90	1.85	10.00	254.00
14135	500206414135	137.31	2.25	11.00	279.40
14136	500206414136	186.13	3.058	13.00	330.20
14137	500206414137	247.15	4.05	15.50	393.70
14138	500206414138	332.59	5.45	19.00	462.60
14139	500206414139	405.82	6.65	22.00	558.80
14140	500206414140	454.64	7.45	24.00	609.60

Consult factory for full product range and custom solutions

Useable volume may be increased 6% with the addition of suction shroud assembly 500218313082. When using an *i* pump, up to 3% reduction in useable volume should be expected.

6.75 inch [171 mm] x 6.75 inch [171 mm] Poly



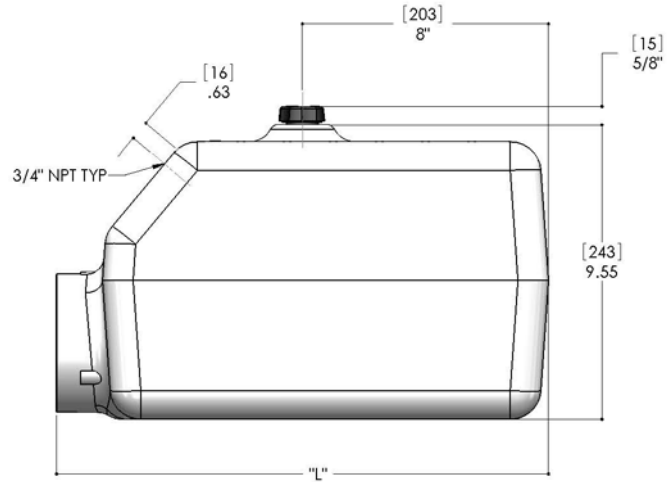
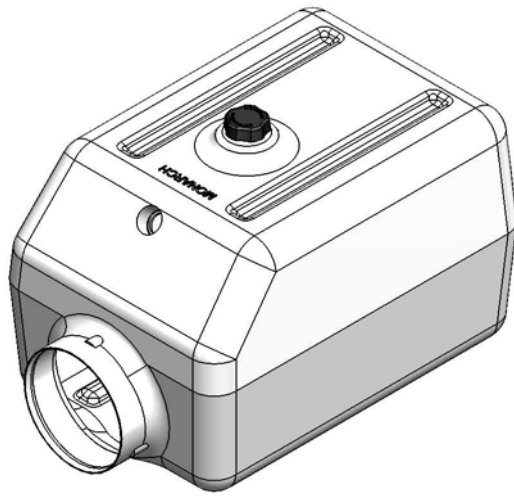
Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14164	500206414164	157.14	2.58	7.50	190.50
14165	500206414165	203.21	3.33	9.00	228.60
14166	500206414166	264.64	4.34	11.00	279.40
14167	500206414167	326.07	5.34	13.00	330.20
14168	500206414168	387.50	6.35	15.00	381.00
14169	500206414169	541.08	8.87	20.00	508.00
14170	500206414170	725.37	11.89	26.00	660.40

Vertical Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14183	500206414183	85.43	1.40	7.50	190.50
14184	500206414184	149.51	2.45	9.00	228.60
14185	500206414185	234.94	3.85	11.00	279.40
14186	500206414186	320.37	5.25	13.00	330.20
14187	500206414187	404.81	6.63	15.00	381.00
14188	500206414188	619.39	10.15	20.00	508.00
14189	500206414189	875.69	14.35	26.00	660.40

Consult factory for full product range and custom solutions

Useable volume may be increased 5% with the addition of suction shroud assembly 500218313082. When using an *i* pump, up to 3% reduction in useable volume should be expected.

9 inch [229 mm] x 10 inch [254 mm] Poly



Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14223	500206414223	909.27	14.90	16.00	406.40
14224	500206414224	1070.00	17.54	18.00	457.20
14225	500206414225	1232.09	20.19	20.00	508.00

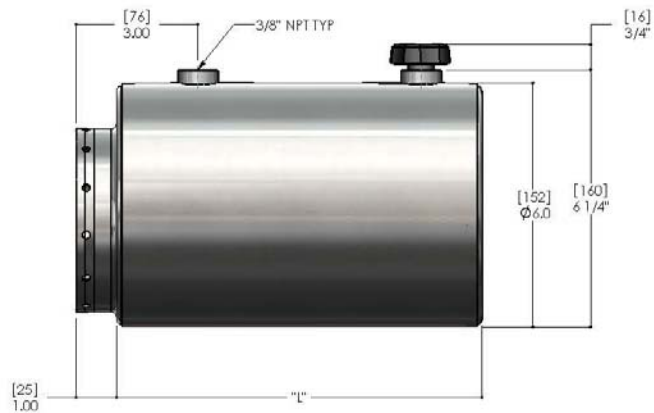
Vertical Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14226	500206414226	793.33	13.00	16.00	406.40
14227	500206414227	979.46	16.05	18.00	457.20
14228	500206414228	1165.58	19.10	20.00	508.00

Consult factory for full product range and custom solutions

Useable volume may be increased 5% with the addition of suction shroud assembly 500218313082. When using an *i* pump, up to 3% reduction in useable volume should be expected.

3.6.2 Steel reservoirs

6.25 inch [158 mm] Round Steel

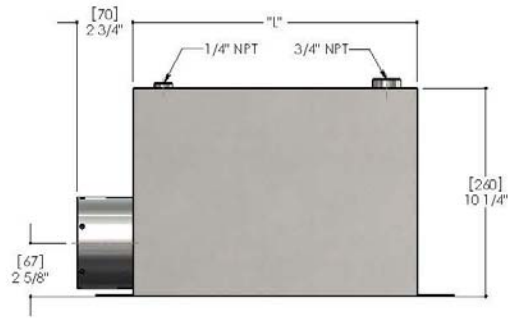
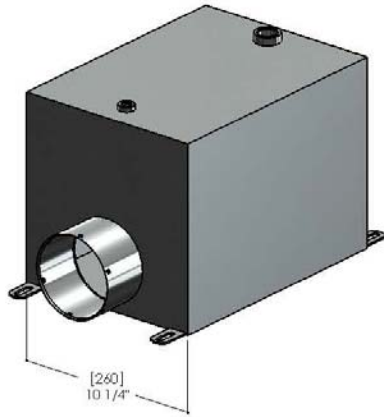


Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06042	500206406042	189.17	3.10	9.00	228.60
06043	500206406043	217.24	3.56	10.00	254.00
06044	500206406044	292.91	4.80	13.50	342.90
06045	500206406045	393.60	6.45	18.00	457.20

Vertical Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06042	500206406042	167.82	2.75	9.00	228.60
06043	500206406043	195.28	3.20	10.00	254.00
06044	500206406044	286.81	4.70	13.50	342.90
06045	500206406045	405.81	6.65	18.00	457.20

Consult factory for full product range and custom solutions

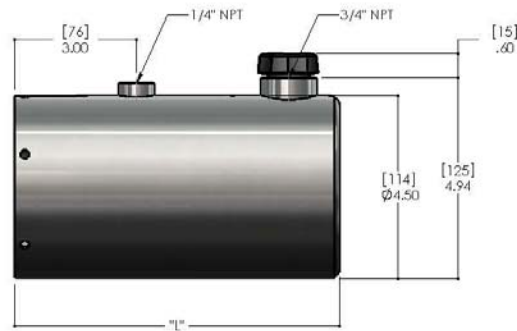
10.25 inch [260 mm] x 10.25 inch [260 mm] Steel



Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06652	500206406652	1576.24	25.83	14.00	355.60
14249	500206414249	1154.57	18.92	10.25	260.35

Consult factory for full product range and custom solutions

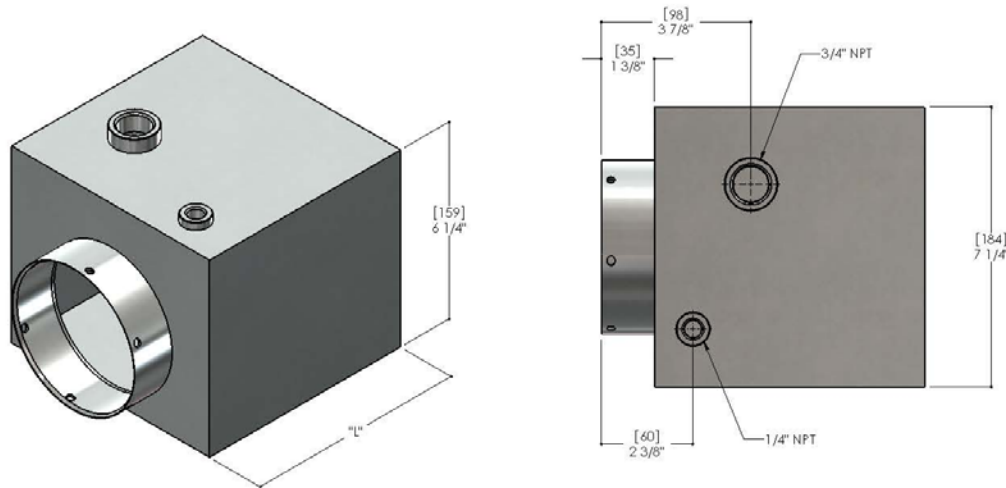
4.25 inch [114 mm] Round Steel



Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06661	500206406661	61.02	1.00	8.00	203.20
06663	500206406663	85.43	1.40	10.00	254.00
06664	500206406664	97.64	1.60	11.00	279.40
06665	500206406665	109.84	1.80	12.00	304.08

Consult factory for full product range and custom solutions

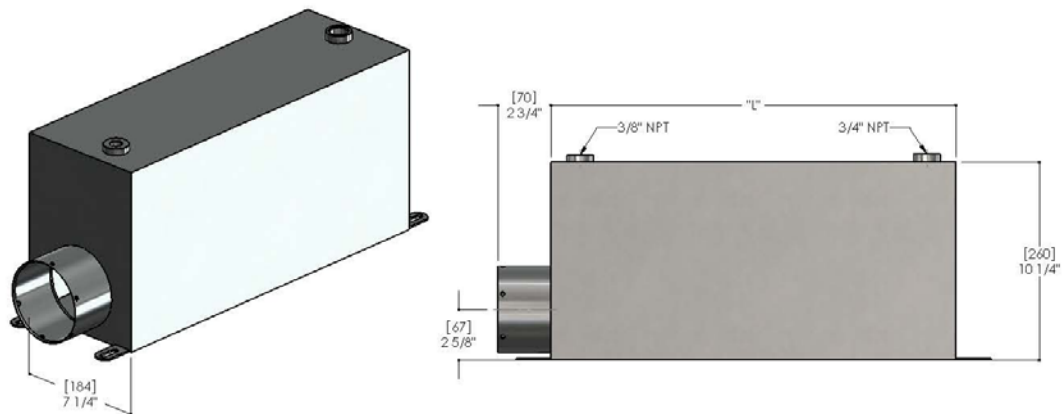
7.25 inch [184 mm] x 6.25 inch [158 mm] Steel



Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06861	500206406861	235.55	3.86	7.00	177.80
06862	500206406862	347.84	5.70	10.00	254.00
06328	500206406328	405.81	6.65	12.00	304.80

Consult factory for full product range and custom solutions

10.25 inch [260 mm] x 7.25 inch [184 mm] Steel



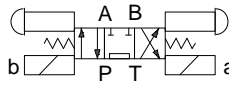
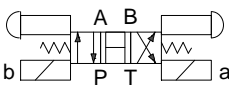
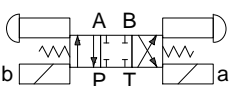
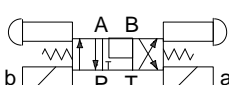
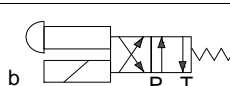
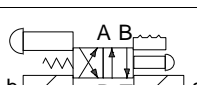
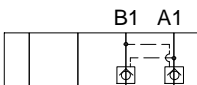
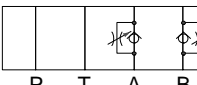
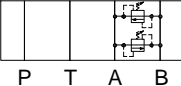
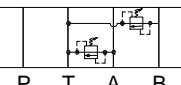
Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06982	500206406982	1193.01	19.55	21.00	533.64
06397	500206406397	1301.64	21.33	23.00	584.20

Consult factory for full product range and custom solutions

3.7 Valves for M-4000 Series Units

3.7.1 NFPA D03 Directional and Auxiliary Control Valves.

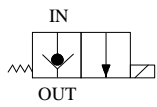
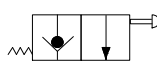
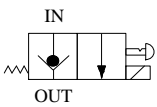
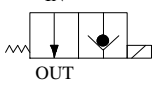
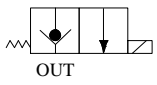

Solenoid directional and auxiliary controls are available. Consult Bucher Hydraulics factory for additional information and selection.

Part Number	Order Code	Schematic	Description
00970	500208500970		4-Way/3-Position. Solenoid Operated. Tandem Center. 110 V AC
00967	500208500967		4-Way/3-Position. Solenoid Operated. Open Center. 110 V AC
00968	500208500968		4-Way/3-Position. Solenoid Operated. Closed Center. 110 V AC
00969	500208500969		4-Way/3-Position, P Blocked. A and B to T. "Motor Spool". 110 V AC
01041	500208501041		4-Way/2-Position. P to A. Spring Offset. 110 V AC
00692	500208500692		4-Way/2-Position. P to A. Spring Offset. 110 V AC
00468	500208500468		Dual Pilot Operated Check. A and B Port.
00469	500208500469		Flow Control. Dual Meter Out. A and B Port.
00443	500208500443		Cross Port Relief. A and B Ports. Adjustable.
00474	500208500474		Dual Relief. A and B Ports to T. Adjustable.

Consult your local Bucher Hydraulics distributor or the factory about special requirements for explosion proof, shockless (soft shift) and other function and spool configurations not shown here. 12 and 24 VDC, 24 VAC and other voltages are available. Functional symbols related to solenoid identity "A" or "B" according to NFPA/ANSI standards, i.e., energizing solenoid "A" gives flow P to A, solenoid "B" gives flow P to B (As Applicable).

3.7.2 Cartridge Valves

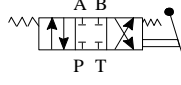
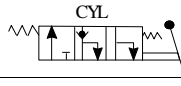
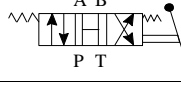
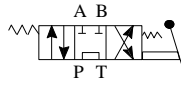
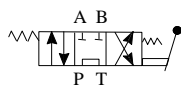
Solenoid operated cartridge valves are used in multiple M-4000 circuits. Please consult factory for more information.

Part Number	Order Code	Schematic	Description
00986	500208500986		2-Way/2-Position Normally Closed. Modified Cavity #8. 110 V AC Grounded Coil.
07144	500208507144		2-Way/2-Position Normally Closed. Modified Cavity #8. Manual Operation. Pull to Open. Spring Closed.
00708	500208500708		2-Way/2-Position Normally Closed. Modified. Cavity #8. Manual Override. 110 V AC. Conduit Connector.
00987	500208500987		2-Way/2-Position Normally Open. Modified Cavity #8. 110 V AC. Conduit Connector.
00585	500208500585		2-Way/2-Position Normally Closed. Modified Cavity #8. 220 V AC. DIN 43650 Connection.
07145	500208507145		4-Way/2-Position. Common Cavity #8. 110 V AC. Conduit Connector.

Consult Factory about many additional valve voltages, coil terminations and other options.

3.7.3 Manual Valves

Manually Operated Directional Control Valves are used in multiple M-4000 circuits. Please consult factory for more information.

Part Number	Order Code	Schematic	Description
00948	500218500948		4-Way/3-Position. Closed Center. Manually Operated.
00800	500218500800		3-Way/3-Position. Cylinder Port Checked.
00949	500218500949		4-Way/3-Position. Open Center. Manually Operated.
00806	500218500806		4-Way/3-Position. Tandem Center. Manually Operated.
00957	500208500957		4-Way/3-Position. Tandem Center. NFFPA D03.

3.8 M-4000 Series Accessories

Part Number	Order Code	Description
01436	500203701436	Sight Level/Temperature Gauge.
01516	500205901516	Reservoir Breather, Flush Mount, 3/8" NPT. Cross Scored.
03171	500205903171	Reservoir Breather, 3/8" NPT.
01143	5002059001143	Reservoir Breather, 3/4" NPT.
01670	500203701670	Sight Glass. 3/4" NPT.
03219	500203703219	Pressure Gauge, Liquid Filled. 1/4" NPT. 0-500 PSI.
01434	500203701434	Pressure Gauge, Liquid Filled. 1/4" NPT. 0-3000 PSI.
01790	500203701790	Pressure Gauge, Liquid Filled. 1/4" NPT. 0-5000 PSI.
00570	500208500570	Gauge Shutoff. 1/4" NPT.
00904	500208500904	Flow Control, Adjustable. 1/4" NPT. - 0-7 GPM
03642	500208003642	Float Switch, Electrical N.O or N.C.
01875	500213201875	Filter Only, Return Line. 15 GPM. 10 Micron Nominal, includes filterhead.
04369	500213204369	Filter, Return Line. 5 GPM. 10 Micron Nominal, includes filterhead.
01425	500203201425	Filler/Breather, Chrome Plated. Basket Strainer.

Other Available Options and Accessories Include:

- Air Motors
- Heat Exchangers
- Temperature Switches
- Pressure Switches
- Motor Controls
- Multi-Function Valve Controls - Monoblock and Sectional

Consult Factory about many additional valve voltages, coil terminations and other options.

3.9 Bucher Hydraulics Hand Pumps

Standard - Standard Displacement (0.50 in³/stroke)

High Pressure - Low Displacement (0.25 in³/stroke)

High Pressure/Heavy Duty - Standard Displacement (0.50 in³/stroke)

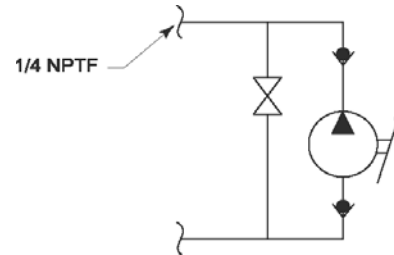
Note: It is recommended that pins and piston be periodically lubricated to prolong hand pump life.

3.10 Standard Hand Pumps

Description

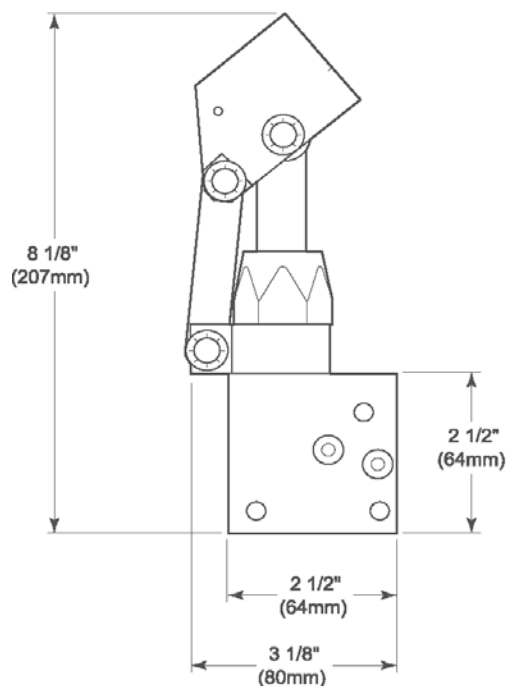
- 0.50 in³/stroke (8.20 cc/stroke)
- Single Acting
- 2000 PSI (138 Bar)
- Outlet Port: 1/4" NPTF
- Ideal For Emergency Back-Up Application in Case of Primary Pump Failure
- Horizontal or Vertical Mounting
- Designed for Mounting Directly to Bucher Hydraulics Power Units
- Handle may be positioned in any Direction
- Release Valve (Use Handle for Actuating)
- Supplied with Painted Steel "Comfort Grip" Handle
- All Exposed Materials are Aluminum or Plated Steel for Corrosion Resistance

Schematic

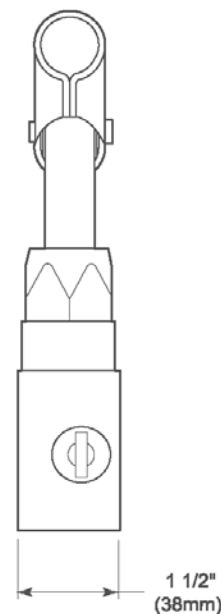


Popular Options

- Remote Mounting
- Ports (alternate styles available)
- Relief Valve
- Integral Reservoir



SIDE VIEW



END VIEW

3.11 High Pressure - Low Displacement Hand Pump

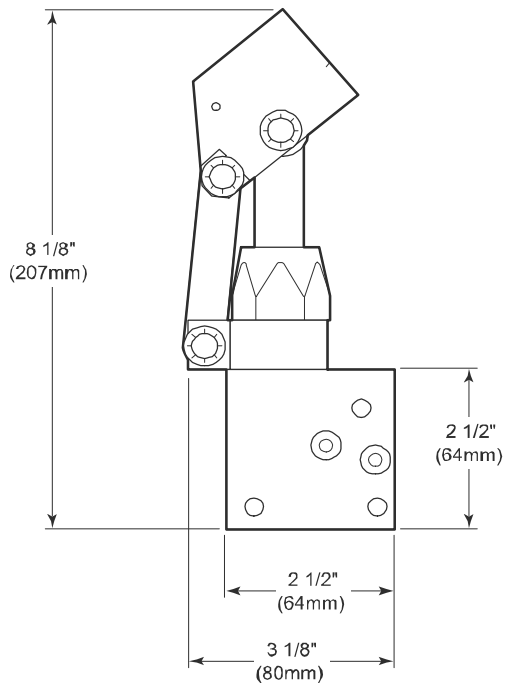
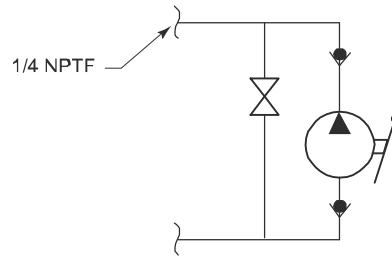
Description

- 0.25 in³/stroke (4.10 cc/stroke)
- Single Acting
- 3500 PSI (240 Bar)
- Outlet Port: 1/4" NPTF
- Ideal For Emergency Back-Up Application in Case of Primary Pump Failure
- Horizontal or Vertical Mounting
- Designed for Mounting Directly to Bucher Hydraulics Power Units
- Handle May Positioned in any Direction
- Release Valve (Use Handle for Actuating)
- Supplied with Painted Steel "Comfort Grip" Handle
- All Exposed Materials are Aluminum or Plated Steel for Corrosion Resistance

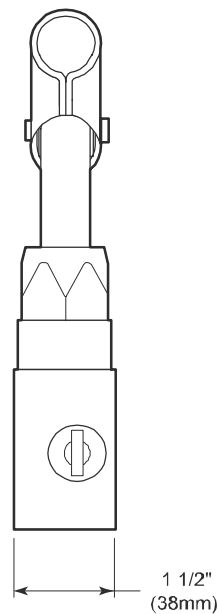
Popular Options

- Remote Mounting
- Ports (alternate styles available)
- Relief Valve

Schematic



SIDE VIEW



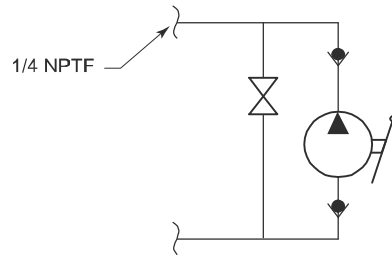
END VIEW

3.12 High Pressure - Heavy Duty Hand Pump

Description

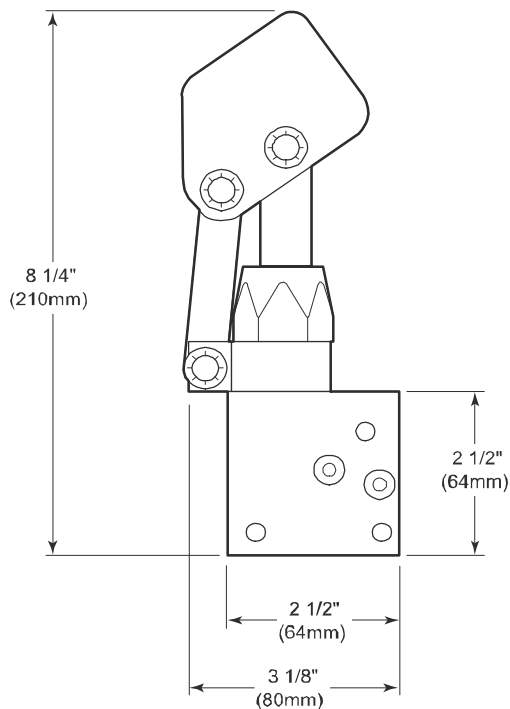
- 0.50 in³/stroke (8.20 cc/stroke)
- Single Acting
- 4000 PSI (275 Bar)
- Outlet Port: 1/4" NPTF
- Heavy Duty Plated Steel Tension Link and Extruded Aluminum Top and Bottom Brackets
- Ideal For Emergency Back-Up Application in Case of Primary Pump Failure
- Horizontal or Vertical Mounting
- Designed for Mounting Directly to Bucher Hydraulics Power Units
- Handle May Positioned in any Direction
- Release Valve (Use Handle for Actuating)
- Supplied with Painted Steel "Comfort Grip" Handle
- All Exposed Materials are Aluminum or Plated Steel for Corrosion Resistance

Schematic

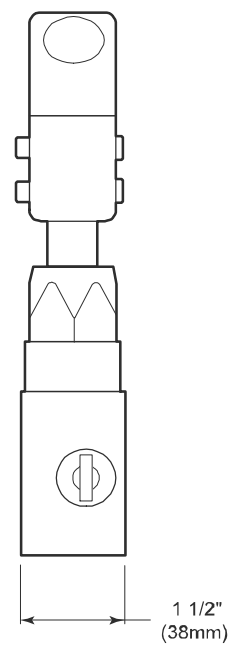


Popular Options

- Remote Mounting
- 1/4" NPTF Ports. Other Styles Available
- Relief Valve

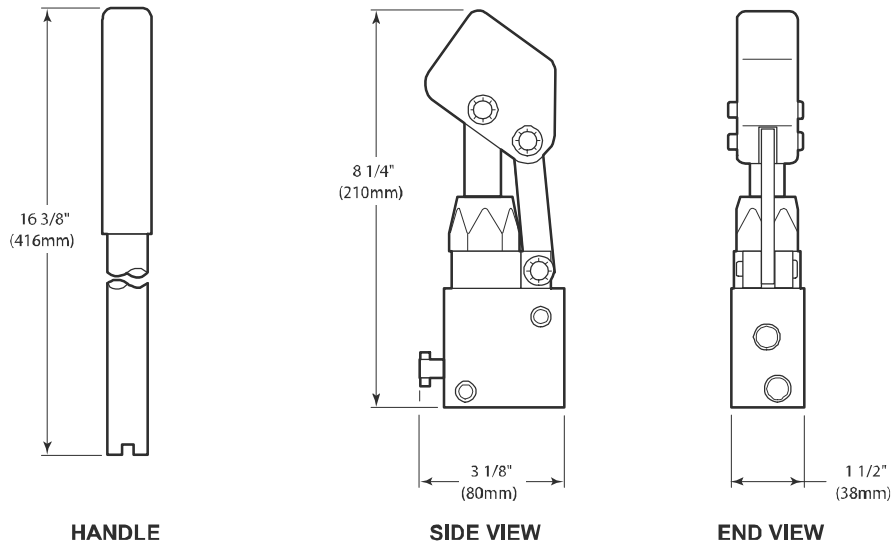


SIDE VIEW



END VIEW

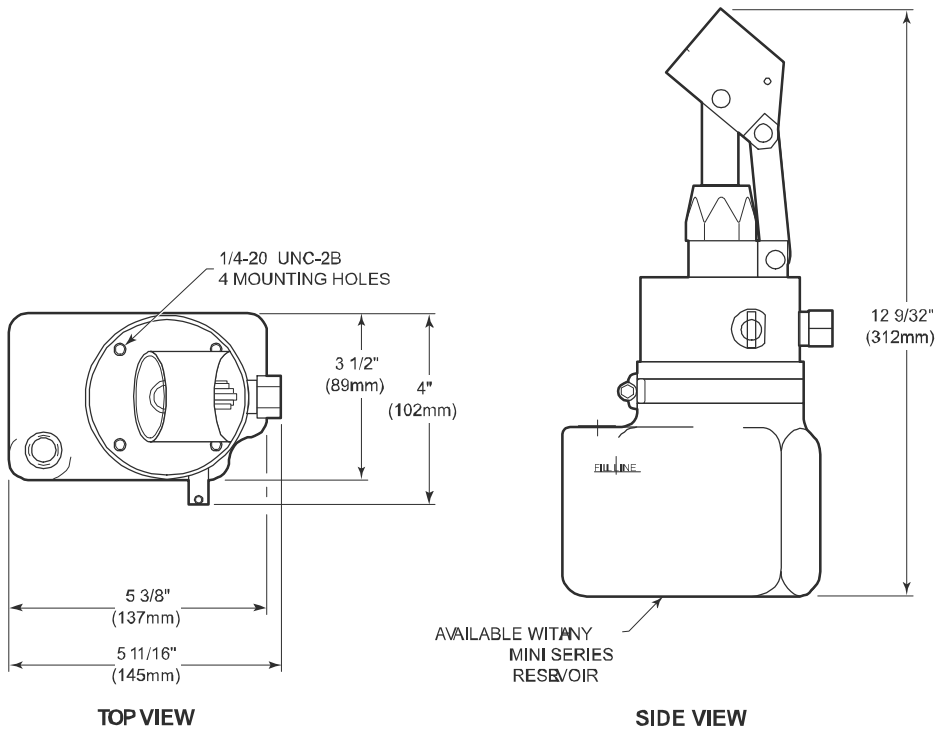
3.13 Heavy Duty Remote Hand Pump



3.14 Model H-100 Series Hand Pumps With Reservoirs

Hand Pump with Relief Valve and Reservoir

- H-100-0103 [500910010103] Standard Duty Hand Pump with Relief Valve
- 12140 [500216312140] Heavy Duty Hand Pump with Relief Valve



4 Bucher Hydraulics A.C. Hydraulic Power Systems

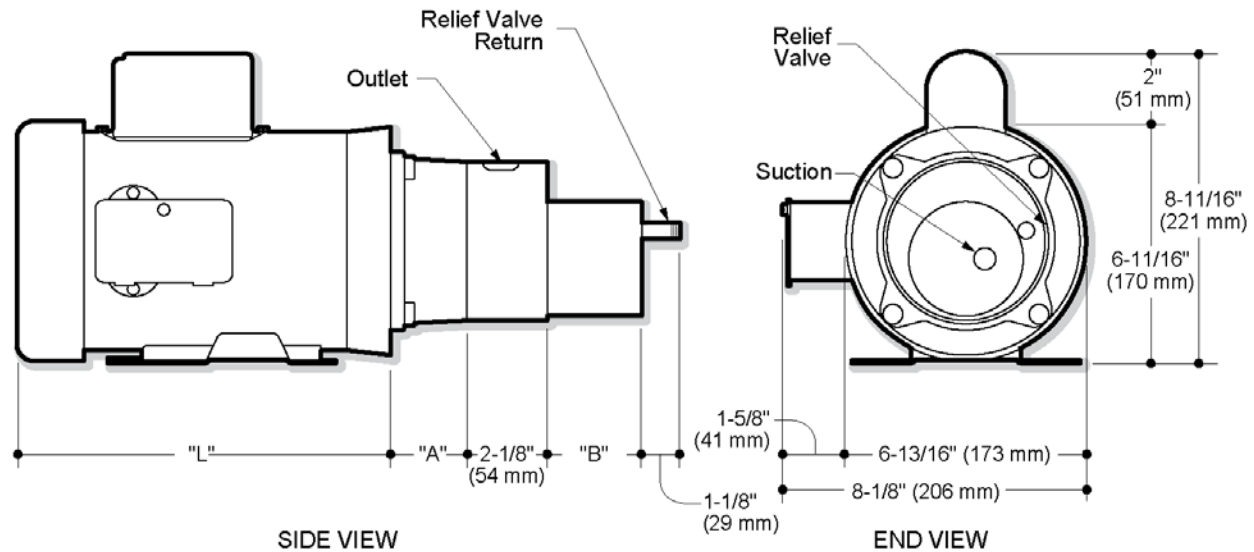
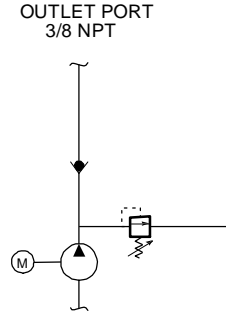
4.1 Model M-4326

Also available as M-4426 and M-4526. See page 7 for base information.

Description

- Pump / Motor Unit
- Check Valve
- Externally Adjustable Relief Valve
- 3/8 inch NPT Suction
- 3/8 inch NPT Outlet
- 1/8 inch NPT Relief Valve Return Port

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)

"A" dimension for standard 01605 adapter is 2-5/32" (55 mm)

"A" dimension for optional 01615 adapter is 3-11/32" (85 mm)

"B" pump dimensions vary depending on pump used

Dimensions will vary according to motor output and manufacturer

Nominal Dimensions are shown for all basic components. Dimensions may be found for your particular system by deleting the component shown on the unit drawing and adding the dimension for the same item you have selected.

How to Order Your M-4326 Power System

Comprehensive information may be found on the page referenced below each selection category.

Order code 50043261XXXX depending on configuration.

Pump	Motor	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12		Ref. Page 26

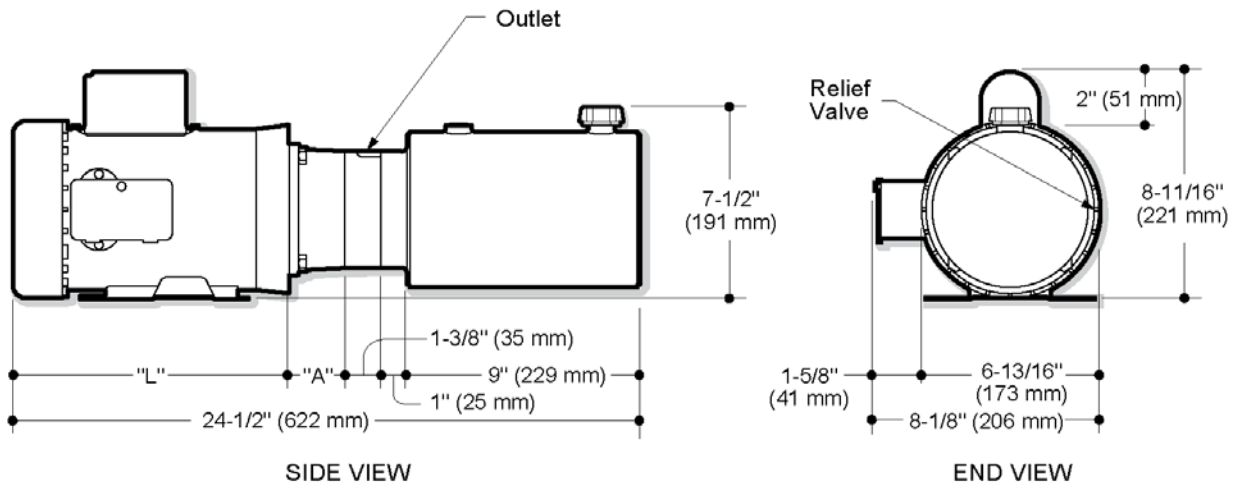
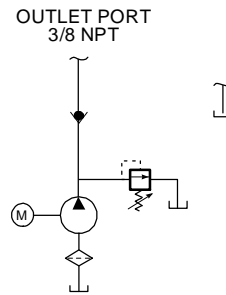
4.2 Model M-4304

Also available as M-4404 and M-4504. See page 7 for base information.

Description

- Pump / Motor / Reservoir / Unit
- Check Valve
- Externally Adjustable Relief Valve
- 3/8 inch NPT Outlet and Return
- Horizontal Mounting Standard
- Vertical Mounting / Motor Up

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4304 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50043041XXXX depending on configuration.

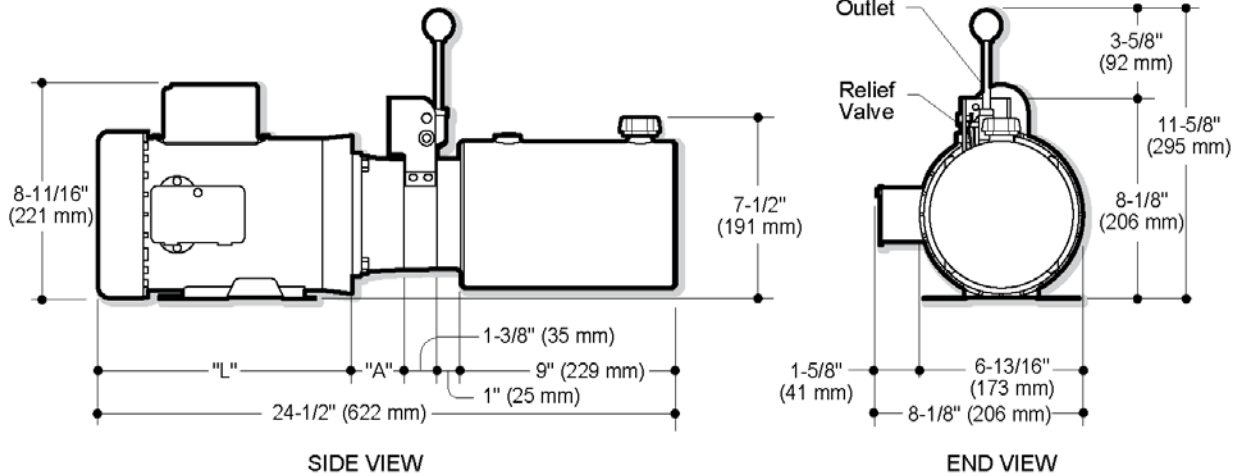
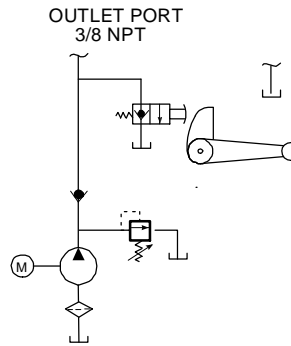
Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 26

4.3 Model M-4313

Description

- Pump / Motor / Reservoir / Unit
- Manually Operated 2-Way/2-Position Normally Closed Valve
- Externally Adjustable Relief Valve
- 3/8 inch NPT Outlet and Return
- Horizontal Mounting Standard
- Vertical Mounting / Motor Up

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4313 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 5004313XXXX depending on configuration.

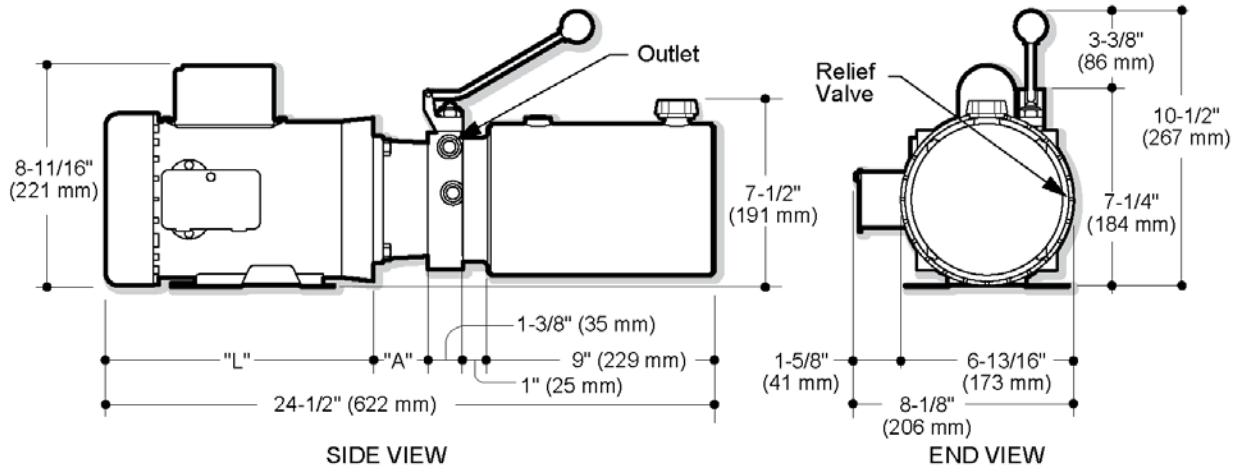
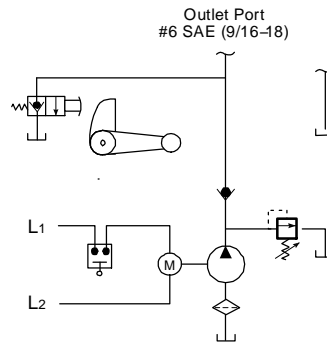
Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 26

4.4 Model M-4509

Description

- Pump / Motor / Reservoir / Valve Unit
- 3-Way Manually Operated Valve
- Externally Adjustable Relief Valve
- #6 SAE
- Vertical Mounting Standard (Motor Up)
- Snap Action Push Button Start Switch in Motor
- Kill Switch in Motor (Optional)
- Cord and Plug from Motor (Optional)

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4509 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50045091XXXX depending on configuration.

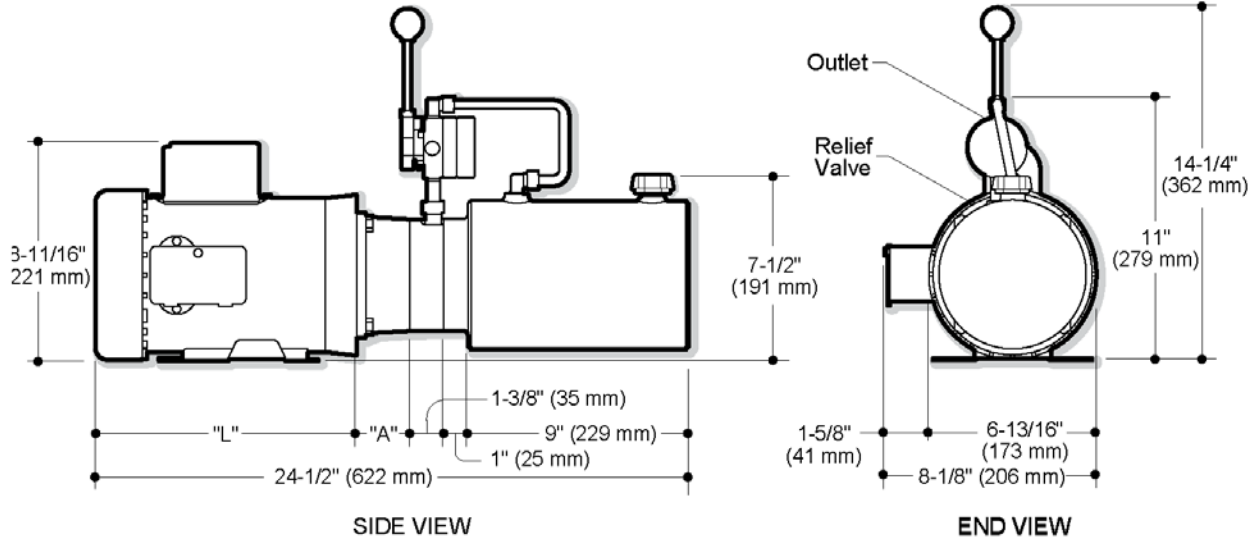
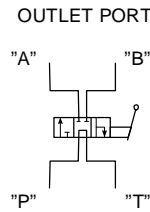
Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 26

4.5 Model M-4301

Description

- Pump / Motor / Reservoir / Unit
- 3-Way Manually Operated Valve
- Externally Adjustable Relief Valve
- 1/4 inch NPT Outlet
- Horizontal Mounting Standard
- Vertical Mounting (Motor Up) Optional

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4301 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50043011XXXX depending on configuration.

Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 26

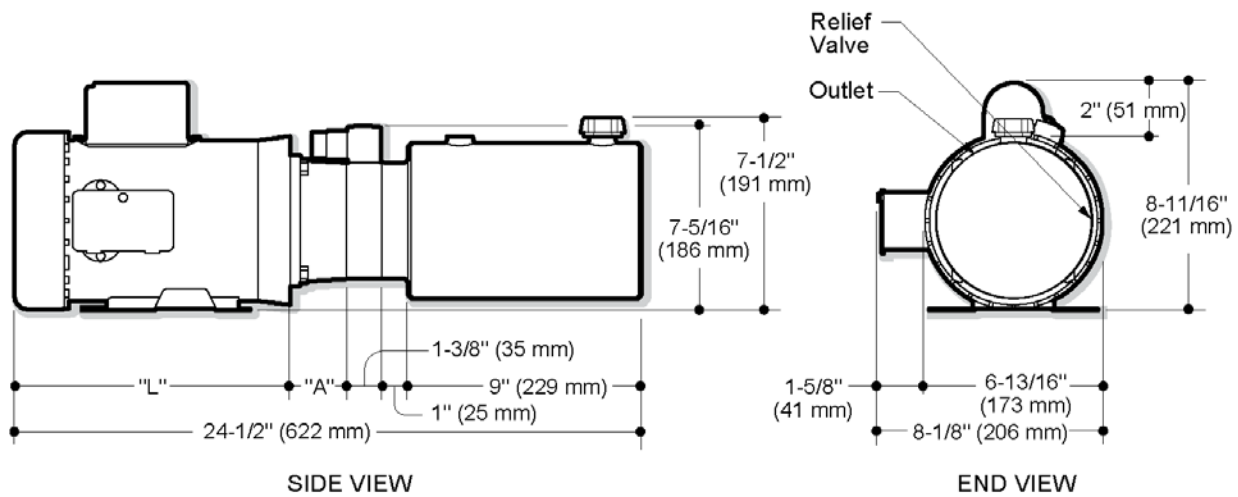
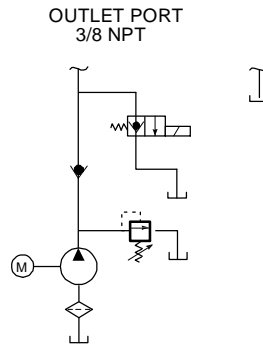
4.6 Model M-4319

Also available as M-4419. See page 7 for base information.

Description

- Pump / Motor / Reservoir / Valve Unit
- Solenoid Operated 2-Way/2-Position Normally Closed Valve
- Externally Adjustable Relief Valve
- 3/8 inch NPT Outlet
- Horizontal Mounting Standard
- Vertical Mounting (Motor Up) Optional

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)

"A" dimension for standard 01605 adapter is 2-5/32" (55 mm)

"A" dimension for optional 01615 adapter is 3-11/32" (85 mm)

Dimensions will vary according to motor output and manufacturer

How to Order Your M-4319 Power System

Comprehensive information may be found on the page referenced below each selection category.

Order code 50043191XXXX depending on configuration.

Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 26

4.7 Model M-4519

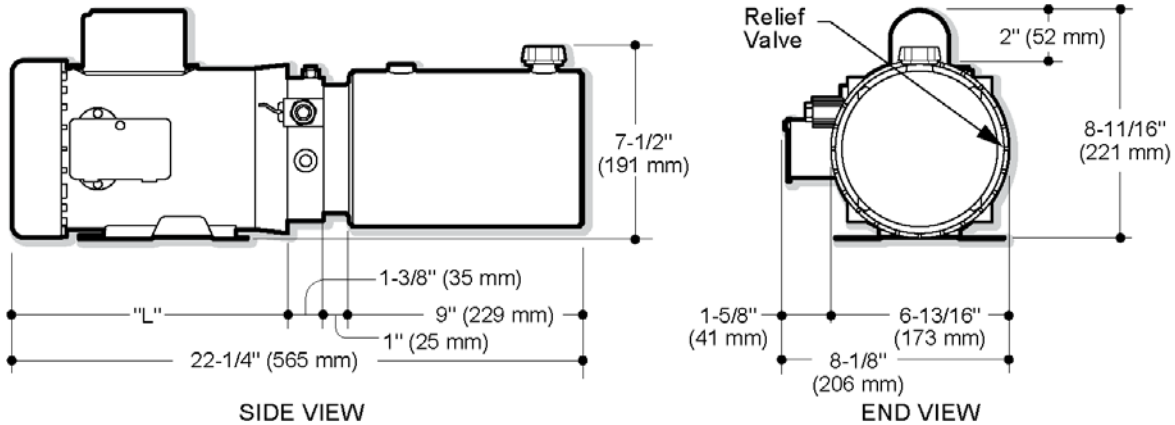
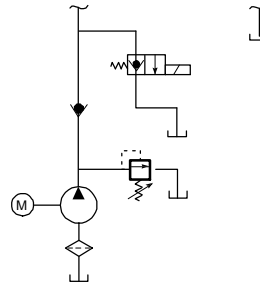
Description

- Pump / Motor / Reservoir / Valve Unit
- Check Valve
- Externally Adjustable Relief Valve
- 2-Way/2-Position Normally Closed Cartridge Valve
- #6 SAE Outlet
- Horizontal Mounting Standard

Popular Features

- Vertical Mounting / Motor Up
- Pressure Compensated Cartridge Style On Lowering Circuit
- Manual Override

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
Dimensions will vary according to motor output and manufacturer

How to Order Your M-4519 Power System

Comprehensive information may be found on the page referenced below each selection category.
Order code 50045191XXXX depending on configuration.

Pump	Adapter	Motor	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 13	Ref. Page 12	Ref. Page 15		Ref. Page 26

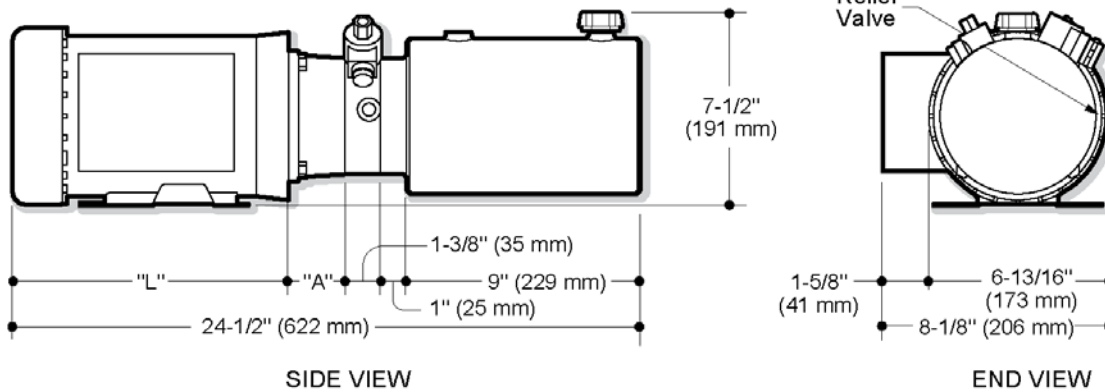
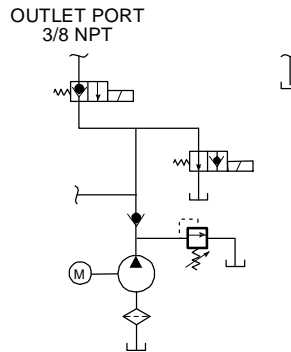
4.8 Model M-4303

Also available as M-4403 and M-4503. See page 7 for base information.

Description

- Pump / Motor / Reservoir / Valve Unit
- Solenoid Operated 2-Way/2-Position Normally Closed Valve and Solenoid Operated 2-Way/2-Position Normally Open Valve
- Externally Adjustable Relief Valve
- 3/8 inch NPT Outlet
- Horizontal Mounting Standard
- Vertical Mounting (Motor Up) Optional

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4303 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50043031XXXX depending on configuration.

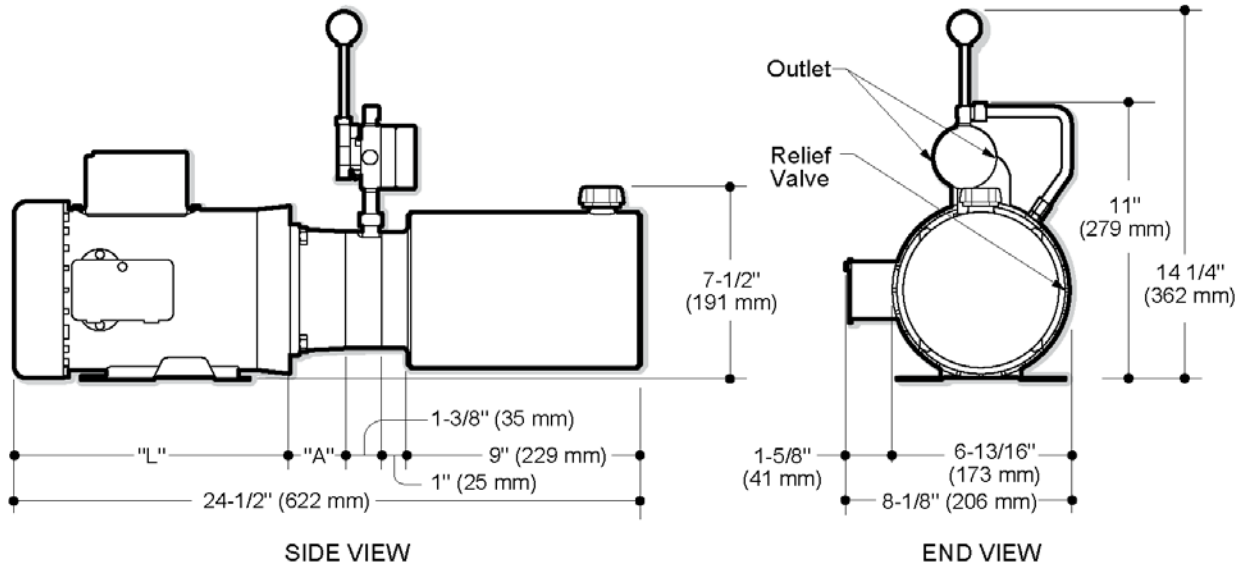
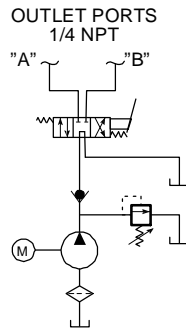
Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 26

4.9 Model M-4310

Description

- Pump / Motor / Reservoir / Valve Unit
- 4-Way Manually Operated Valve
- Externally Adjustable Relief Valve
- 1/4 inch NPT Outlets
- Horizontal Mounting Standard
- Vertical Mounting (Motor Up) Optional

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4310 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50043101XXXX depending on configuration.

Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Valves	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 24	Ref. Page 26

4.10 Model M-4551

Also available as M-4451. See page 7 for base information.

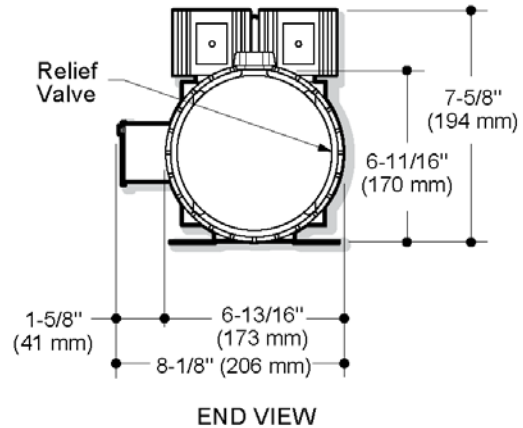
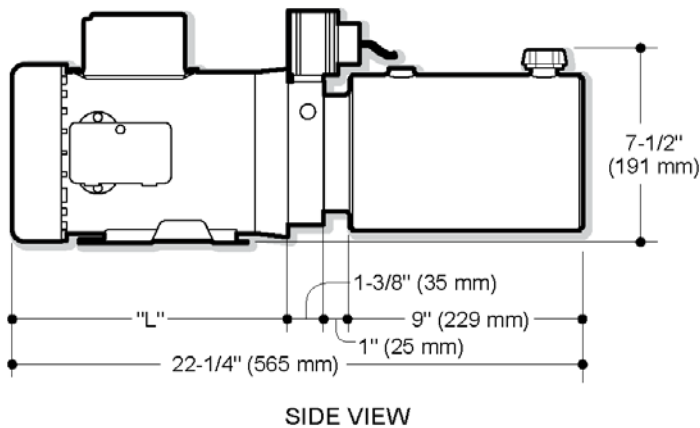
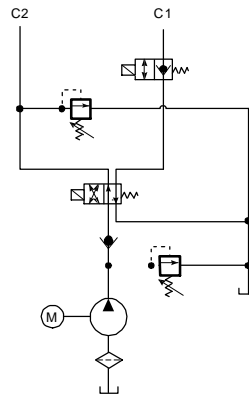
Description

- Pump / Motor / Reservoir / Valve Unit
- Check Valve
- Externally Adjustable Relief Valve
- (1) 4-Way/2-Position and (1) 2-Way/2-Position Normally Closed Solenoid Cartridge Valve Located in the Base
- C1 Port Positively Checked
- Externally Adjustable Relief Valve in C2 Port
- #6 SAE Outlets
- Horizontal Mounting Standard

Popular Features

- Pressure Compensated Cartridge Style Flow Control
- Vertical Mounting, Motor Up

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4551 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50045511XXXX depending on configuration.

Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 26

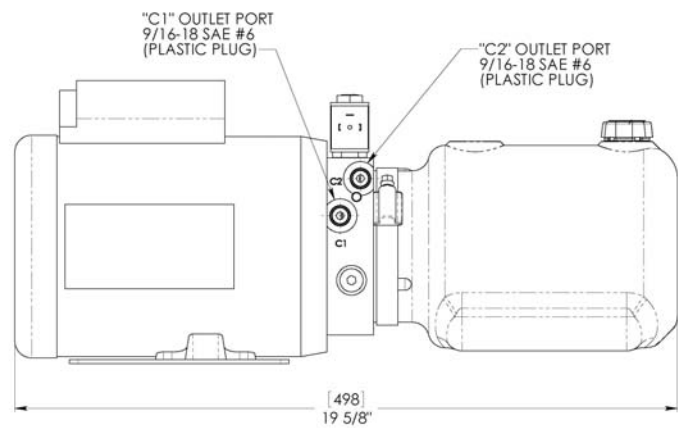
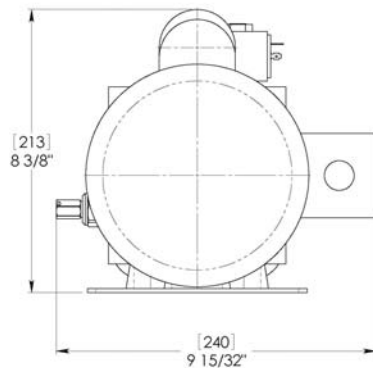
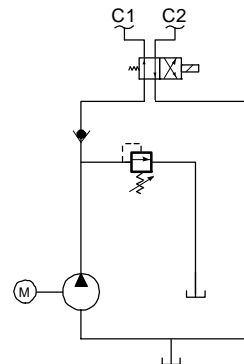
4.11 Model M-4541

Also available as M-4441. See page 7 for base information.

Description

- Pump / Motor / Reservoir / Unit
- Check Valve
- 4-Way/2-Position Solenoid Cartridge Valve Mounts Directly to Unit
- 7/16-20 SAE O-Ring Outlet
- Horizontal Mounting Standard
- Vertical Mounting (Motor Up) Optional

Schematic



How to Order Your M-4541 Power System

Comprehensive information may be found on the page referenced below each selection category.
Order code 50045411XXXX depending on configuration.

Pump	Motor	Reservoir	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 15		Ref. Page 26

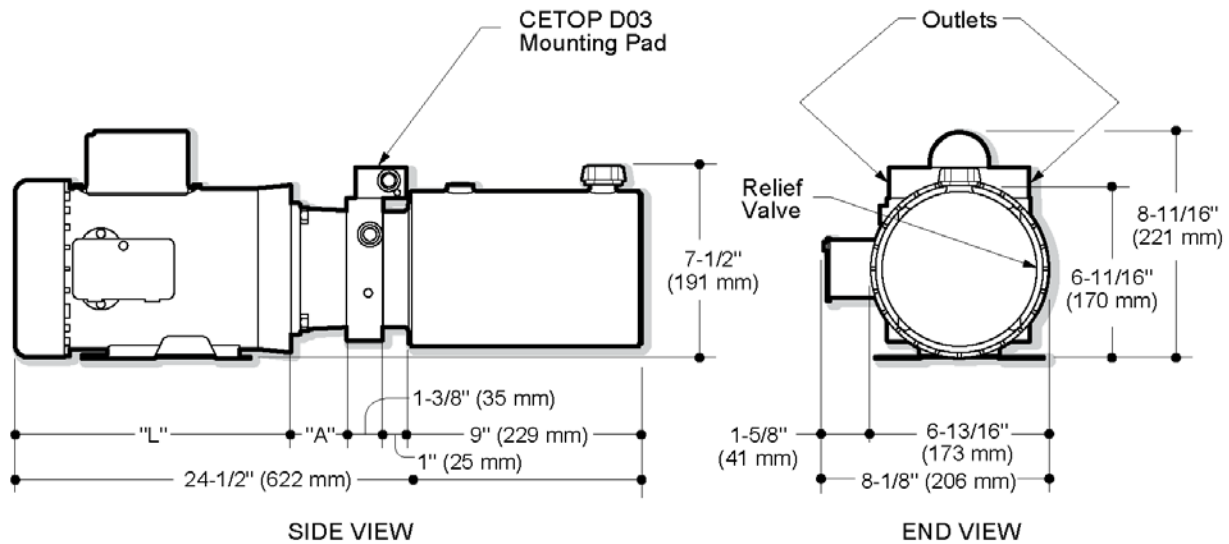
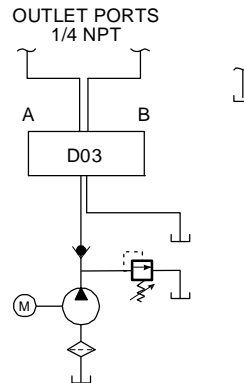
4.12 Model M-4506

Also available as M-4406. See page 7 for base information.

Description

- Pump / Motor / Reservoir / Unit
- NPFA D03 Valve Mounting Surface
- Externally Adjustable Relief Valve
- 1/4 inch NPT Outlets
- Horizontal Mounting Standard
- Vertical Mounting (Motor Up) Optional

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4506 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50045061XXXX depending on configuration.

Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Valves	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 24	Ref. Page 26

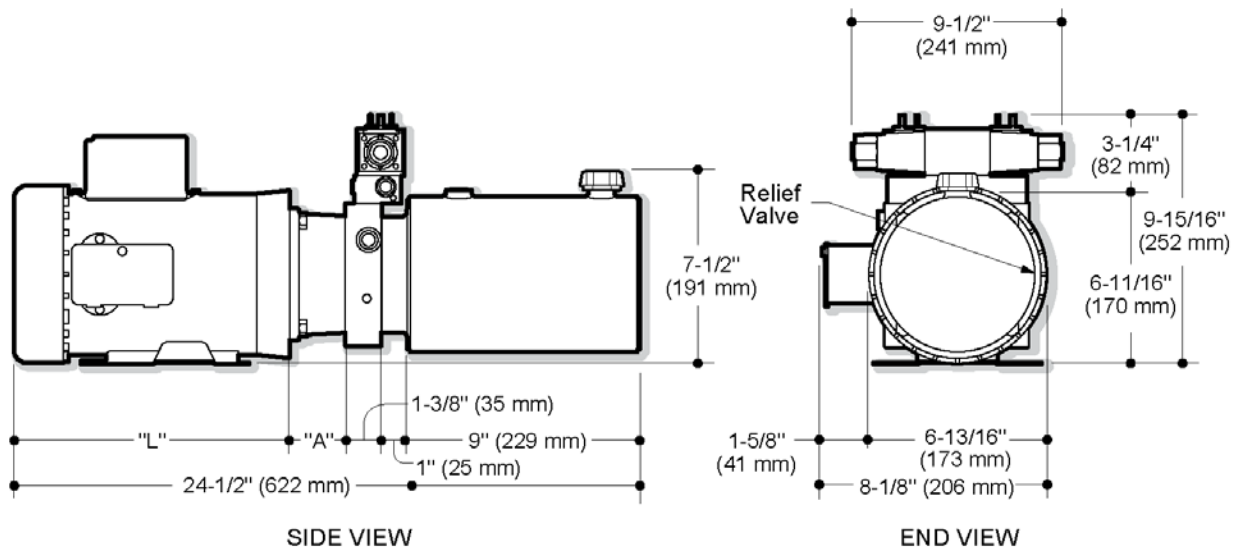
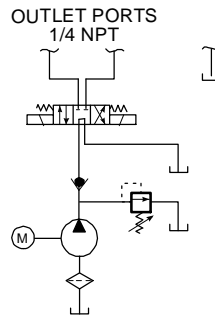
4.13 Model M-4505

Also available as M-4405. See page 7 for base information.

Description

- Pump / Motor / Reservoir / Unit
- Externally Adjustable Relief Valve
- 4-Way/3-Position Solenoid Operated D03 Valve. Standard Tandem Center Shown. Other Spool Types Available.
- 1/4 inch NPT Outlets
- Horizontal Mounting Standard
- Vertical Mounting (Motor Up) Optional

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4505 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50045051XXXX depending on configuration.

Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Valves	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 24	Ref. Page 26

4.14 Model M-4530

Also available as M-4430. See page 7 for base information.

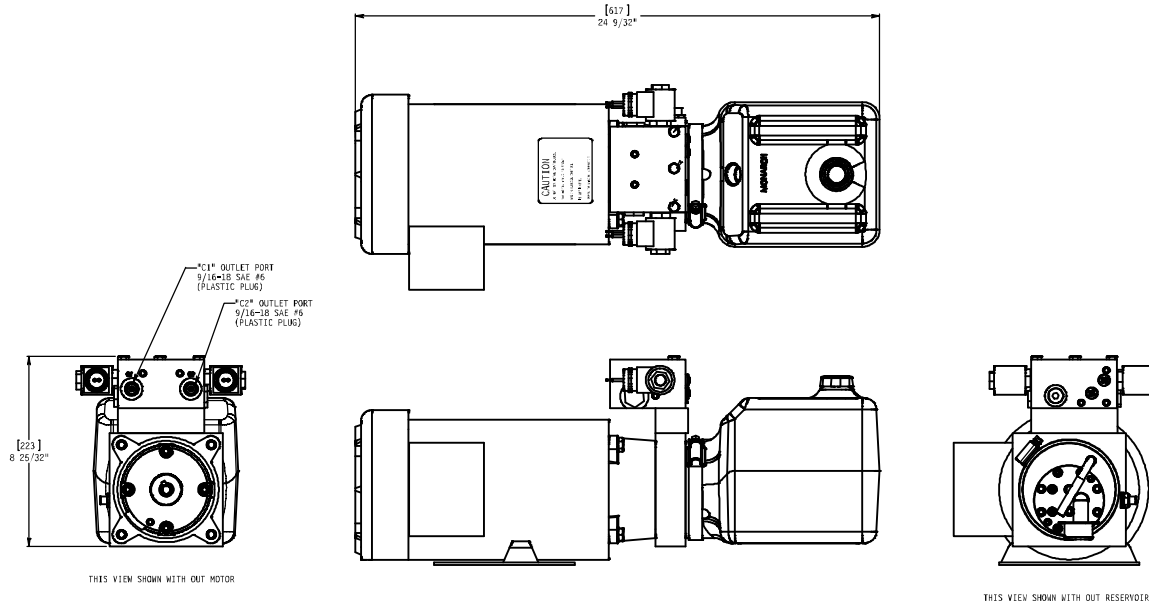
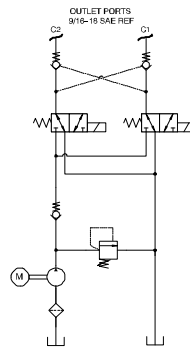
Description

- Pump / Motor / Reservoir / Valve Unit
- Check Valve
- Externally Adjustable Relief Valve
- (2) 3-Way/2-Position Solenoid Cartridge Valves with dual pilot operated check valves located in external manifold
- #6 SAE Outlets ports
- Horizontal Mounting Standard

Popular Features

- Pressure Compensated Cartridge Style Flow Controls
- Cross-port relief valves
- Stackable for multiple operations
- Vertical Mounting Available, Motor Up

Schematic



How to Order Your M-4530 Series Power System

Comprehensive information may be found on the page referenced below each selection category. Order code 50045301XXXX depending on configuration.

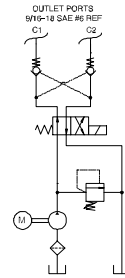
Pump	Motor	Reservoir (Length)	Mounting Position	Valves	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 15		Ref. Page 24	Ref. Page 26

4.15 Model M-4554

Description

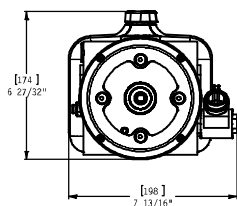
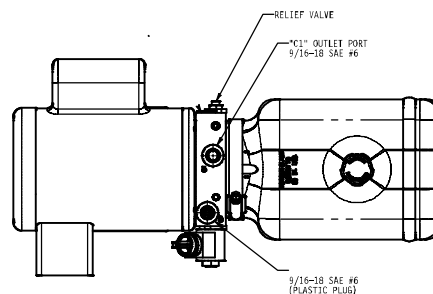
- Pump / Motor / Reservoir / Valve Unit
- Check Valve
- Externally Adjustable Relief Valve
- (1) 4-Way/2-Position for Double-Acting Solenoid Cartridge Valve located in the Base
- C1 Port Positively Checked
- Externally Adjustable Relieve Valve in C2 Port
- #6 SAE Outlets ports
- Horizontal Mounting Standard

Schematic

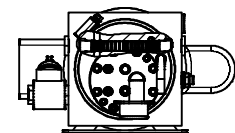
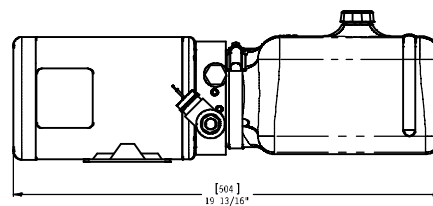


Popular Features

- Pressure Compensated Cartridge Style Flow Control Orifice
- Control Box and Cord
- Cross-port relief valves
- 4-Way/3-Position Solenoid Valve
- Vertical Mounting Available, Motor Up



VIEW SHOWN WITHOUT MOTOR



VIEW SHOWN WITHOUT RESERVOIR

How to Order Your M-4554 Series Power System

Comprehensive information may be found on the page referenced below each selection category. Order code 50045541XXXX depending on configuration.

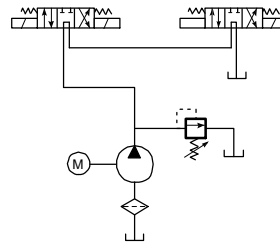
Pump	Motor	Reservoir (Length)	Mounting Position	Valves	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 15		Ref. Page 24	Ref. Page 26

4.16 Model M-4328 Series

Description

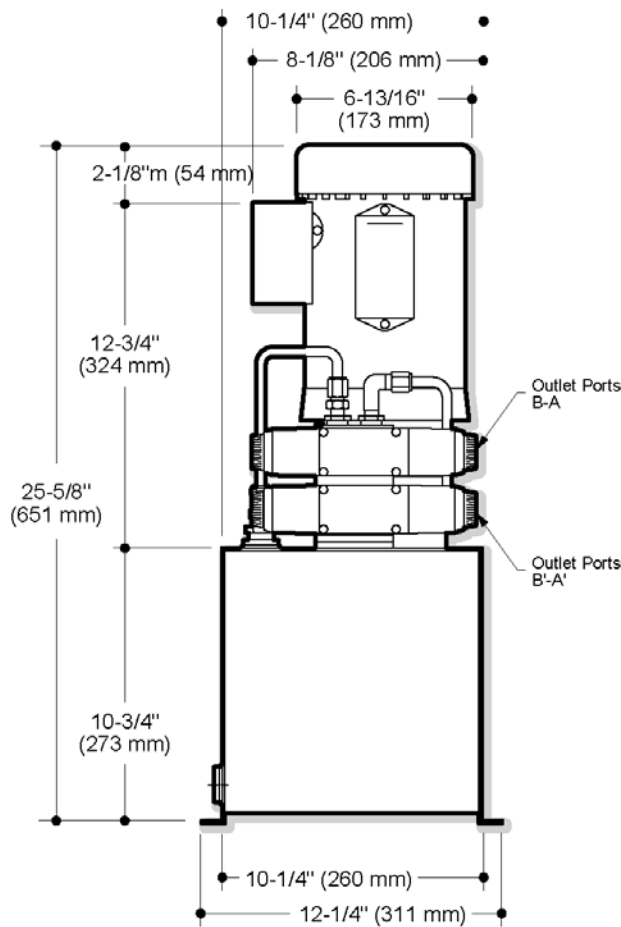
- Pump / Motor / Reservoir / Valve Unit
- Externally Adjustable Relief Valve
- Two 4-Way/3-Position Solenoid Operated Tandem Center D03 Valves in One Two Station Manifold for Series Operation
- Maximum Relief Valve Setting 1400 PSI
- 3/8 inch NPT Outlets
- Vertical Mounting

Schematic



Popular Features

- Unit Less D03 Valves



How to Order Your M-4328 Series Power System

Comprehensive information may be found on the page referenced below each selection category.
Order code 50043281XXXX depending on configuration.

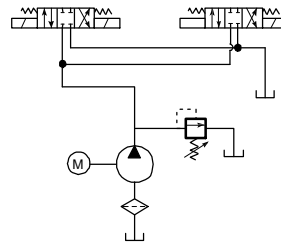
Pump	Motor	Reservoir (Length)	Mounting Position	Valves	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 15		Ref. Page 24	Ref. Page 26

4.17 Model M-4328 Parallel

Description

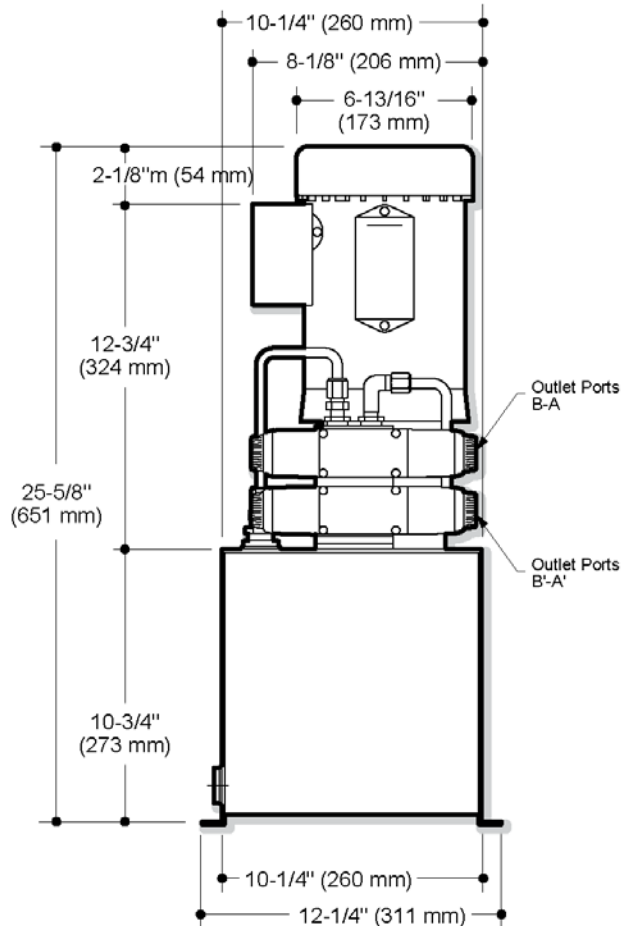
- Pump / Motor / Reservoir / Valve Unit
- Externally Adjustable Relief Valve
- Two 4-Way/3-Position Solenoid Operated Tandem Center D03 Valves in One Two Station Manifold for Parallel Operation
- 3/8 inch NPT Outlets
- Vertical Mounting

Schematic



Popular Features

- Unit Built with unloading valve
- Unit Less D03 Valves
- Vertical Mounting, Motor Up



How to Order Your M-4328 Parallel Power System

Comprehensive information may be found on the page referenced below each selection category. Order code 50043281XXXX depending on configuration.

Pump	Motor	Reservoir (Length)	Mounting Position	Valves	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 15		Ref. Page 24	Ref. Page 26

4.18 Model M-4528

Also available as M-4428. See page 7 for base information.

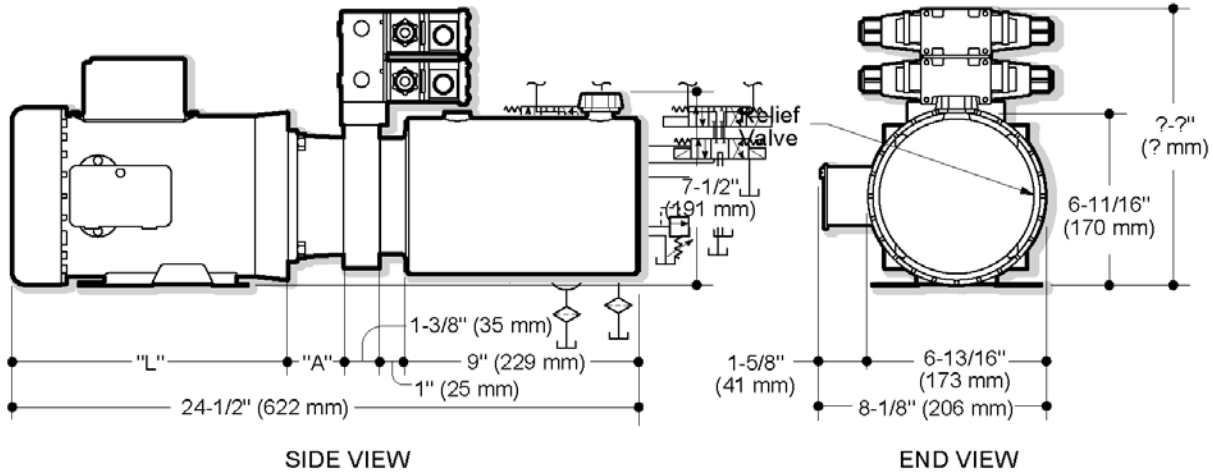
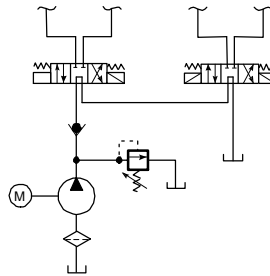
Description

- Pump / Motor / Reservoir / Valve Unit
- Check Valve in "P" Port
- Externally Adjustable Relief Valve
- (2) D03 Double Solenoid Valves
- #6 SAE Outlets
- 1/4 inch NPT Outlets

Popular Features

- Vertical Mounting, Motor Up
- Large Selection of D03/CETOP Valves and Accessories
- Parallel Circuit Available

Schematic



"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 "A" dimension for standard 01605 adapter is 2-5/32" (55 mm)
 "A" dimension for optional 01615 adapter is 3-11/32" (85 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4528 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50045281XXXX depending on configuration.

Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 14	Ref. Page 15		Ref. Page 26

4.19 Model M-4447

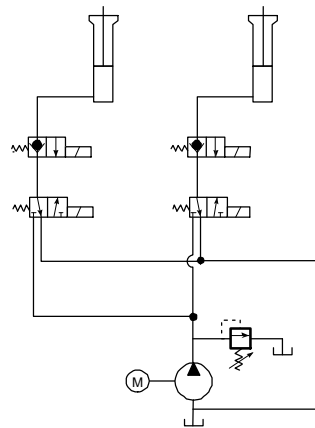
Also available as M-4547. See page 7 for base information.

Description

- Pump / Motor / Reservoir / Valve Unit
- Cartridge Valve Block Manifolded Directly to Power Unit
- Controls two Single Acting Cylinders Independently
- 1/8 inch NPT Outlets
- Horizontal Mounting Standard
- Vertical Mounting / Motor Up

NOTE: Consult factory regarding return flow limitations.

Schematic



NOTE: Please consult factory for drawing.

How to Order Your M-4447 Power System

Comprehensive information may be found on the page referenced below each selection category.
Order code 50044471XXXX depending on configuration.

Pump	Motor	Reservoir	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 15		Ref. Page 26

4.20 Model M-4593

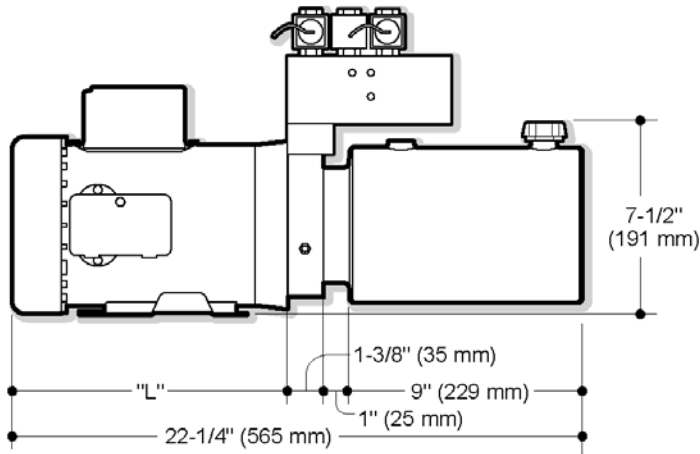
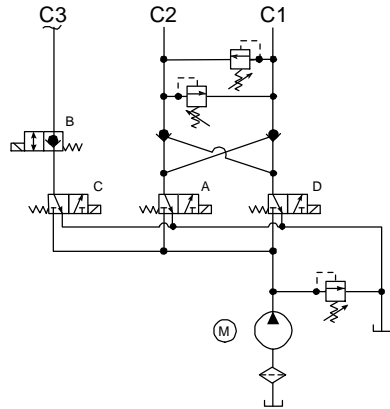
Description

- Pump / Motor / Reservoir / Valve Unit
- Externally Adjustable Relief Valve
- Solenoid Cartridge Valves, Pilot Operated
- Check Valves, and Adjustable Cross-Over Relief System Mounted in a Compact Manifold
- Horizontal Mounting Standard

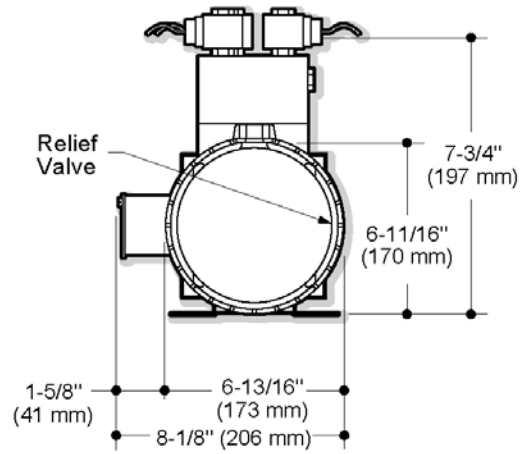
Popular Features

- Vertical Mounting, Motor Up

Schematic



SIDE VIEW



END VIEW

"L" dimension shown for 08751 motor is 10-11/16" (271 mm)
 Dimensions will vary according to motor output and manufacturer

How to Order Your M-4593 Power System

Comprehensive information may be found on the page referenced below each selection category.
 Order code 50045931XXXX depending on configuration.

Pump	Motor	Adapter	Reservoir (Length)	Mounting Position	Accessories
Ref. Page 10	Ref. Page 12	Ref. Page 13	Ref. Page 15		Ref. Page 26

5 Limited 1 Year Warranty

Bucher Hydraulics, Inc. ("Bucher") makes the following warranty to any party who purchases this Bucher Hydraulics, Inc. product directly from Bucher Hydraulics, Inc. with the intention of either reselling this Bucher Hydraulics, Inc. product or incorporating it into or attaching it to some other product ("the purchaser").

Bucher Hydraulics, Inc. warrants to the purchaser that this product is free from any substantial defects in materials and workmanship. If this product proves to be defective in materials or workmanship during the period of this warranty, Bucher Hydraulics, Inc. will repair or replace, at its option, the defective product free of charge (except for transportation charges as provided below). The period of this warranty is the (1) year period beginning from the date of shipment of this Bucher Hydraulics, Inc. product by Bucher Hydraulics, Inc. to the purchaser.

To obtain warranty service, the purchaser must call Bucher Hydraulics, Inc. to have a return goods authorization number assigned to them. The purchaser should then send the product claimed to be defective within the warranty period, transportation prepaid, to: Bucher Hydraulics, Inc., 1363 Michigan Street N.E., Grand Rapids, MI. 49503, USA. Bucher Hydraulics, Inc. will then repair or replace, at its option, items which it finds to have been defective. Bucher Hydraulics, Inc. will return such repaired or replacement items to the sender free of charge. Items claimed by the purchaser, but not found by Bucher Hydraulics, Inc., to be defective will be returned to the purchaser by a reasonably expeditious means at the purchaser's expense. This expense may include labor charges incurred from inspecting the unit.

This warranty does not extend to any failure of this Bucher Hydraulics, Inc. product to perform as warranted hereinabove which is caused by misuse, abuse or material alteration of this product, or any negligence in connection with the installation, service, or use of this product by any person other than Bucher Hydraulics, Inc.

Bucher Hydraulics, Inc. hereby expressly disclaims any liability for consequential damages to property other than this Bucher Hydraulics, Inc. product to perform as warranted hereinabove.

Note: Supersedes all former warranties written or implied.

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Classification: 440