

D.C. Hydraulic Power Systems

Bucher Hydraulics M-3000 Series

Compact designs, integrated and manifold valve circuits



1	General information	4
1.1	Introduction	4
1.2	Mission Statement	4
1.3	Quality Policy	4
1.4	Bucher Hydraulics Value Statement	4
1.5	Prototype Program	4
1.6	Features and Benefits	4

2	How to Use This Product Guide	5
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3	Model Selection Guide	6
3.1	Base Options associated with each Model Code	6
3.2	M Series D.C. Circuit Selection Guide	8

4	D.C. Hydraulic Power Systems	10
4.1	Model M-3226 Mini System	10
4.2	Model M-3326	11
4.3	Model M-9300	12
4.4	Model M-3304	13
4.5	Model M-3504	14
4.6	Model M-3301	15
4.7	Model M-3311	16
4.8	Model M-3313	17
4.9	Model M-721	18
4.10	Model M-3219 Mini System	19
4.11	Model M-3319	20
4.12	Model M-3519	21
4.13	Model M-3505	22
4.14	Model M-3506	23
4.15	Model M-3314	24
4.16	Model M-719	25
4.17	Model M-3310	26
4.18	Model M-3541	27
4.19	Model M-3542	28
4.20	Model M-3534	29
4.21	Model M-3547	30
4.22	Model M-3551	31
4.23	Model M-3554	32
4.24	Model M-3552	33
4.25	Model M-642	34
4.26	Model M-500-4W/3W	35

4.27	Model M-683	36
4.28	Model M-3528	37
4.29	Model M-3529	38
4.30	Model M-3593	39
4.31	Modular Power Units	40
4.32	How to Order Your Modular Power Unit	42
<hr/>		
5	Dimensional Information for Standard D.C. Motors with Performance Curves	43
5.1	Pump Displacements - Fixed Clearance Gear Pumps	43
5.2	D.C. Motor Performances - Fixed Clearance Gear Pumps	44
5.3	Pump Displacement - Pressure Balanced Gear Pumps	77
5.4	DC Motor Performances - Pressure Balanced Gear Pumps	78
<hr/>		
6	Dimensional Information for Bi-rotational D.C. Motors with Performance Curves	113
6.1	Bi-rotational i-pumps	113
6.2	Model B-3108	114
6.3	Model B-3504	115
6.4	Model B-3530	116
6.5	Model B-3547	117
<hr/>		
7	Accessories for M-Series D.C. Power Systems	118
7.1	Reservoirs for M-3000 Units	118
7.2	Valves for DC Systems	129
7.3	Motor Start Switches for D.C. Power Systems	131
7.4	Control Stations	132
7.5	Mounting Brackets	136
7.6	Hand Pumps for Remote or Direct Mounting	138
7.7	Model H-100 Series Hand Pumps With Reservoirs	139
7.8	Battery Cables	140
7.9	Popular Accessories For DC Power Systems	141
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8	Limited 1 Year Warranty	144

1 General information

1.1 Introduction

This catalog illustrates the technical specifications for Bucher Hydraulics D.C. range of Hydraulic Power Units. Designed for compactness and durability, millions of M 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 Hydraulics 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 Policy

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-3200, M-3300, M-3400 and M-3500 series:

- Wide selection of power unit sizes and performance to satisfy most O.E.M. applications.
- Fixed clearance gear pump option with hardcoated pump end plates for unmatched durability in demanding environments and severe duty applications
- Bucher Hydraulics prototype program.
- Pressure balanced gear pump option for high efficiency applications
- 1 year limited warranty on pump & motor.
- Bucher Hydraulics personal customer service.
- 24 Hour shipment on most parts orders.

Options

- Custom motors, valves, reservoirs, control stations and circuits.
- Valve manifolds - remote or mounted directly to the power unit.

2 How to Use This Product Guide

1. Select the Circuit that will satisfy your design objectives (refer to page LEERER MERKER).
2. Based on the selected circuit, follow the Model number that best fits the application.
3. On the selected Model numbers' page, follow the "How To Order Your M-3XXX Power System" provided after each model description. Only the most popular 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 components. Basic components to choose from include:
 - Motor
 - Reservoir
 - Pump
 - Other Accessories

Note: Not all options are available on every D.C. System. Contact the Factory for assistance.

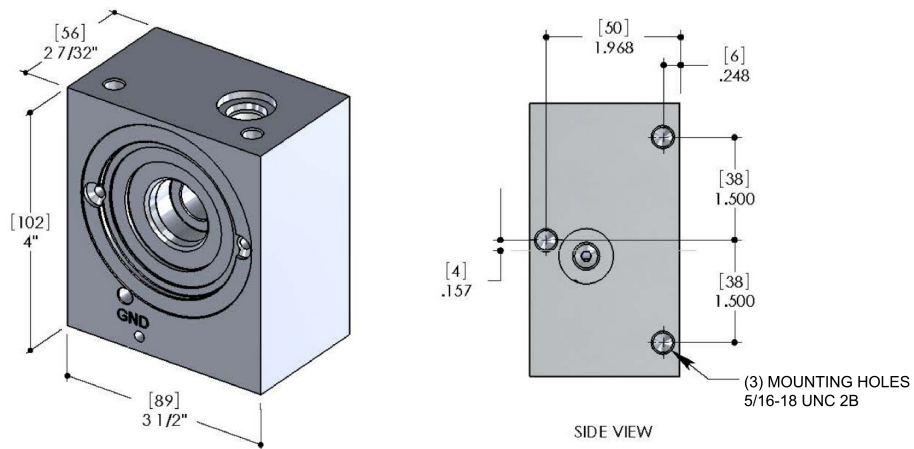
3 Model Selection Guide

3.1 Base Options associated with each Model Code

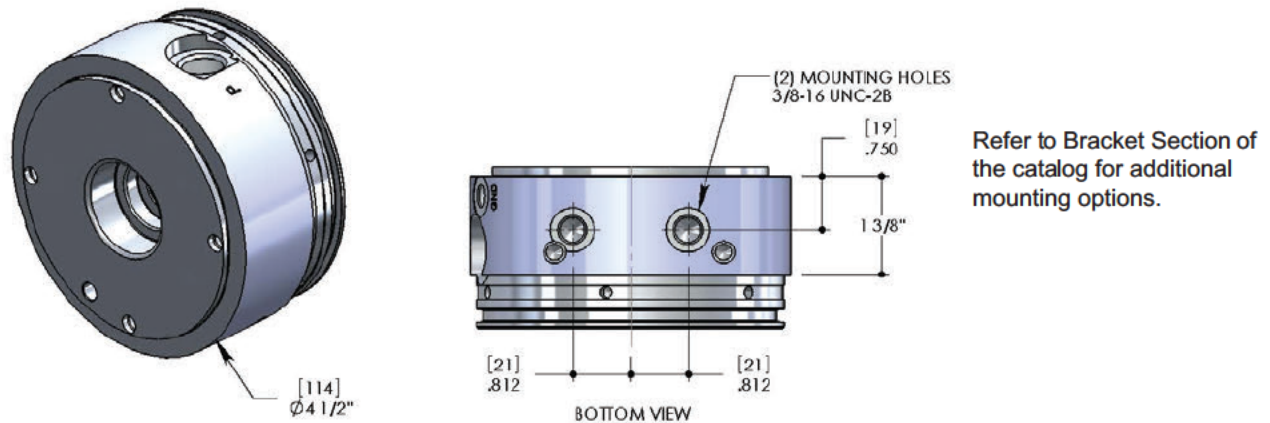
In the DC Circuit Selection Guide (page 8), each Model number (M-3XXX) corresponds with the style of base the unit has. Popular Model options are shown in the Circuit Selection Guide, however, different Models are available by selecting a different style base.

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

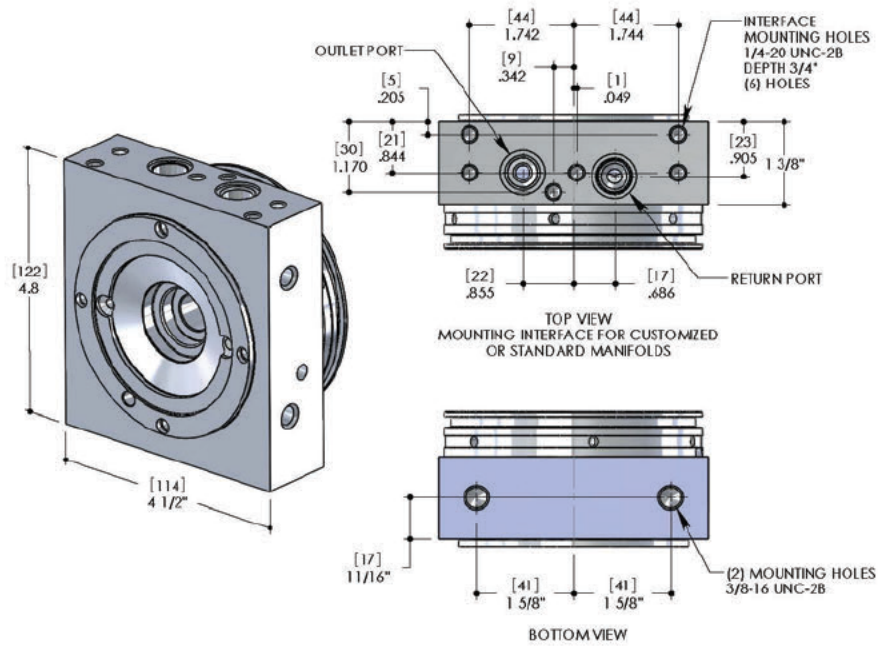
Model M-3200 - Refers to the 3.5 inch [89 mm] Mini Base



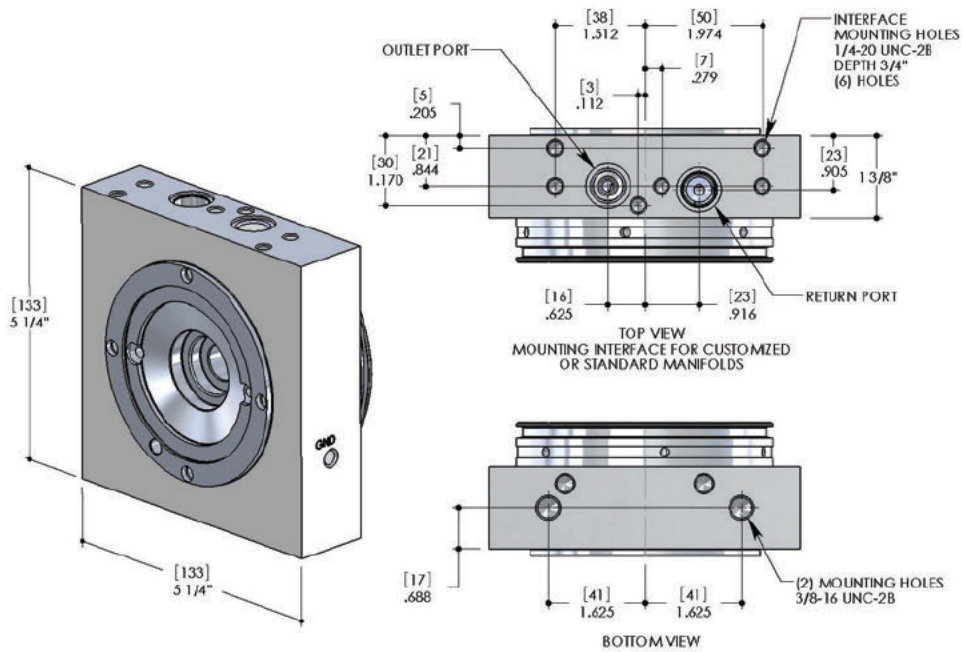
Model M-3300 - Refers to the 4.5 inch [114 mm] Round Base




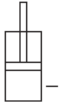
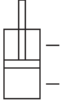

Model M-3400 - Refers to the 4.5inch [114 mm] by 4.8 inch [122 mm] Base

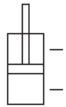
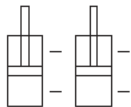
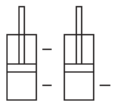


Model M-3500 - Refers to the 5.25.inch [133 mm] Square Base



3.2 M Series D.C. Circuit Selection Guide

Circuit	Description	Model	Page
	Pump + Motor	M-3226	10
		M-3326	11
		M-9300	12
	Pump + Motor + Reservoir	M-3304	13
		M-3504	14
		M-3598*	
		M-3204	
Operates Single Acting Cylinder			
	Pump + Motor + Reservoir + Manual Valve	M-3301	15
		M-3311	16
		M-3313	17
		M-721	18
	Pump + Motor + Reservoir + Solenoid Valve	M-3219	19
		M-3319	20
		M-3519*	21
		M-3314	24
		M-719	25
	Operates Double Acting Cylinder		
	Pump + Motor + Reservoir + Manual Valve	M-3310	26
	Pump + Motor + Reservoir + Solenoid Valve	M-3551	31
		M-642	34
		M-3505	22
		M-3506	23
		M-3541	27
		M-3542	28
	Pump + Motor + Reservoir + Solenoid Valve	M-3534	29
		M-3552*	33
		M-3554	32
		M-3530*	40
		M-3547*	30

Circuit	Description	Model	Page
	Pump + Motor + Reservoir Birotational Units	B-3108	114
		B-3504	115
		B-3530	116
		B-3547	117
Operates Two Double Acting Cylinders			
	Pump + Motor + Reservoir + Solenoid Valves	M-3528*	37
		M-3529*	38
Operates One Double Acting and One Single Acting Cylinder			
	Pump + Motor + Reservoir + Manual Valves	M-500-4W/3W	35
	Pump + Motor + Reservoir + Solenoid Valves	M-683	36
		M-3593*	39

* = Modular

Many other circuits are available. Please contact Bucher Hydraulics direct so we can design a special circuit for your requirements.

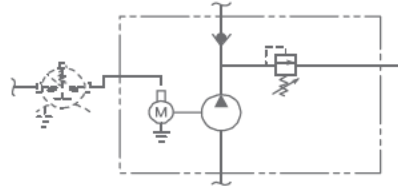
4 D.C. Hydraulic Power Systems

4.1 Model M-3226 Mini System

Description

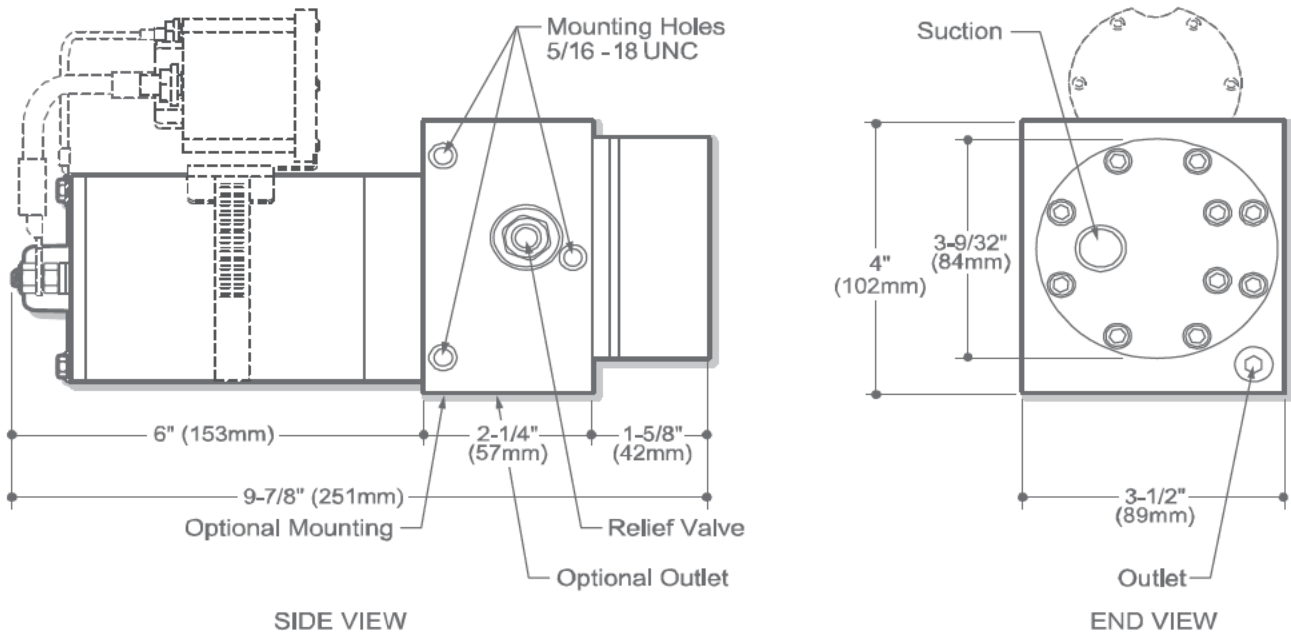
- Pump / Motor Unit
- Check Valve
- Externally Adjustable Relief Valve
- 3/8 inch NPT Suction
- 7/16-20 SAE Outlet Port

Schematic



Popular Options

- Motor Start Solenoid and Cable



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3226 Mini System

Unit shown standard with components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50032261XXXX depending on configuration.

Pump	Motor	Voltage	Motor Start Switch	Accessories
i-pump (req'd.)	08053	12		
Ref. Page 43	Ref. Page 44		Ref. Page 131	Ref. Page 141

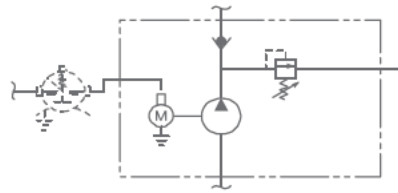
4.2 Model M-3326

Also available as M-3426 and M-3526. See page 6 for base information.

Description

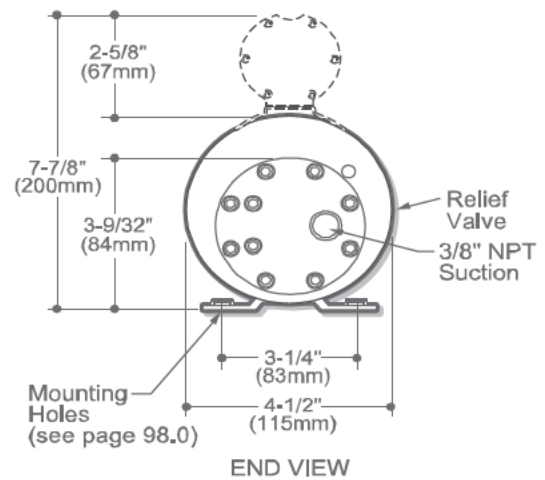
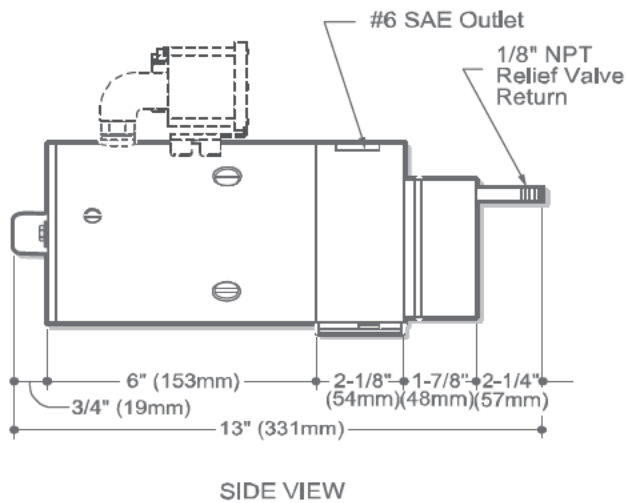
- Pump / Motor Unit
- Check Valve
- Externally Adjustable Relief Valve
- 3/8 inch NPT Suction
- #6 SAE Outlet
- 1/8 inch NPT Relief Valve Return Port

Schematic



Popular Options

- Suction and Outlet on Pump End Plate
- Motor Start Solenoid and Bus Bar



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3326

Unit shown standard with components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50033261XXXX depending on configuration.

Pump	Motor	Voltage	Motor Start Switch	Mounting Bracket	Accessories
	08111	12		04560	
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 131	Ref. Page 136	Ref. Page 141

4.3 Model M-9300

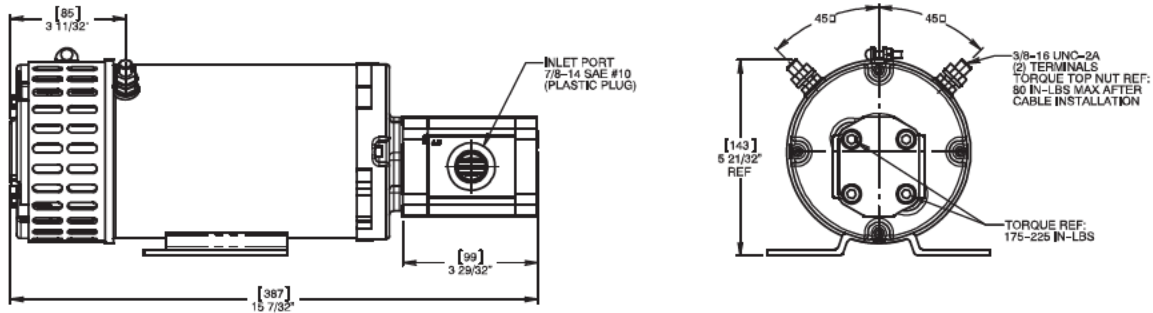
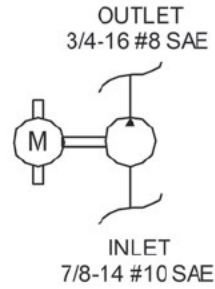
Description

- Pump / Motor Unit
- #10 SAE Inlet
- #8 SAE Outlet
- 1/8 inch NPT Relief Valve Return Port

Popular Options

- Motor Start Solenoid and Cable
- Check Valve
- Relief Valve
- Solenoid Lowering Valve
- BSPP Ports
- Metric Ports

Schematic



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-9300

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50039001XXXX depending on configuration.

Pump	Motor	Voltage	Motor Start Switch
AP100	22349 (Ref 08007 Motor curves)	12 / 24	17744 / 17764
Ref. Page 77	Ref. Page 78		Ref. Page 131

4.4 Model M-3304

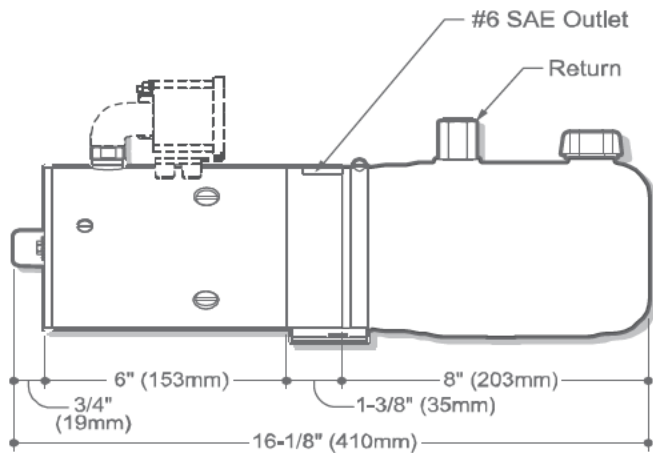
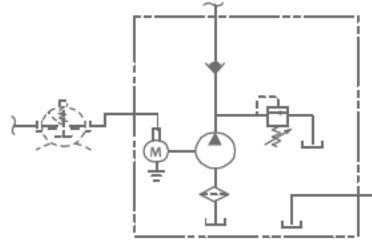
Description

- Pump / Motor / Reservoir / Unit
- Check Valve
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- 1/4 inch NPT Return
- Horizontal Mounting Standard

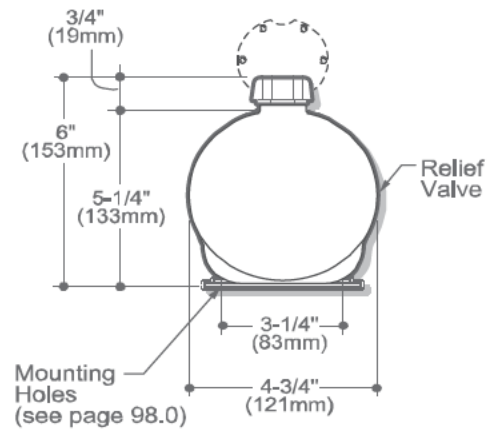
Popular Options

- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3304

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50033041XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Bracket	Mounting Position	Accessories
	08111	12	06102		04560	Horizontal	
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131	Ref. Page 136		Ref. Page 141

4.5 Model M-3504

Also available as M-3404. See page 6 for base information.

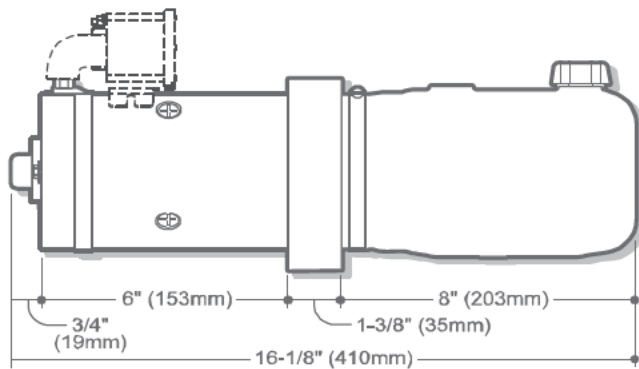
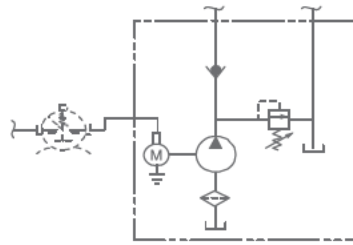
Description

- Pump / Motor / Reservoir / Unit
- Check Valve
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- #6 SAE Return
- Horizontal Mounting Standard

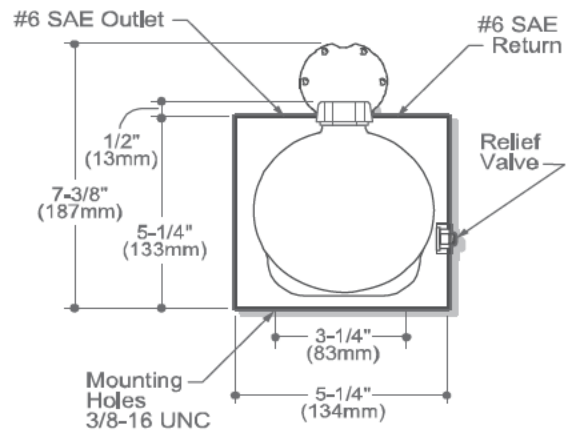
Popular Options

- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3504

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035041XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories
	08111	12	06102		Horizontal	
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141

4.6 Model M-3301

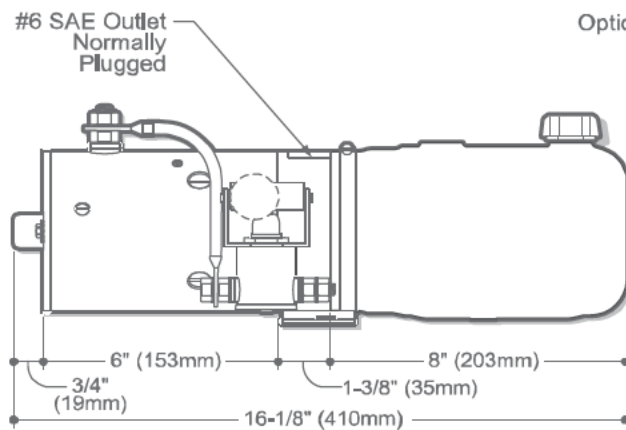
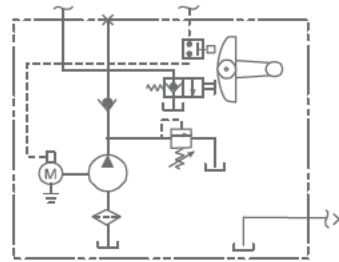
Description

- Pump / Motor / Reservoir / Unit
- Manually Operated 2-Way/2-Position Normally Closed Valve With Motor Start Switch
- Check Valve
- Externally Adjustable Relief Valve
- #4 SAE Outlet
- Horizontal Mounting Standard

Popular Options

- Vertical Mounting / Motor Up

Schematic

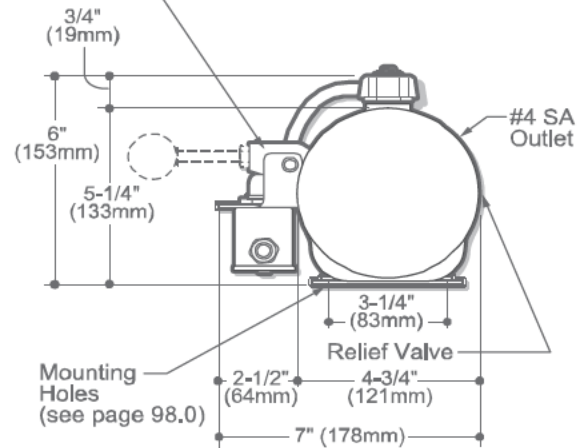


SIDE VIEW

Optional Eye-Bolt



Optional Handle Location



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3301

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50033011XXXX depending on configuration.

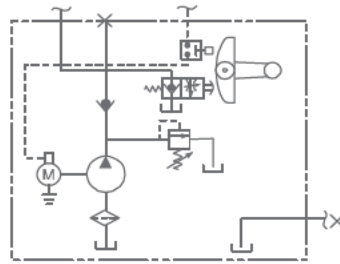
Pump	Motor	Voltage	Reservoir (Length)	Mounting Bracket	Mounting Position	Accessories
	08111	12	06102	04560	Horizontal	
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 136		Ref. Page 141

4.7 Model M-3311

Description

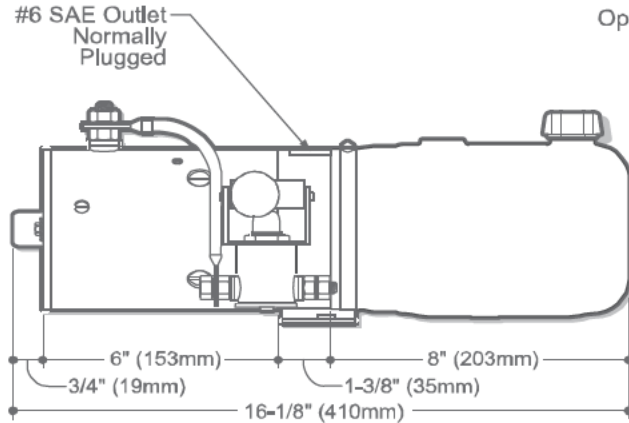
- Pump / Motor / Reservoir / Valve
- Manually Operated 2-Way/2-Position Normally Closed Valve With Motor Start Switch
- Metered Spool for Fine Control of Lowering Speed
- Check Valve
- Externally Adjustable Relief Valve
- #4 SAE Outlet
- Horizontal Mounting Standard

Schematic

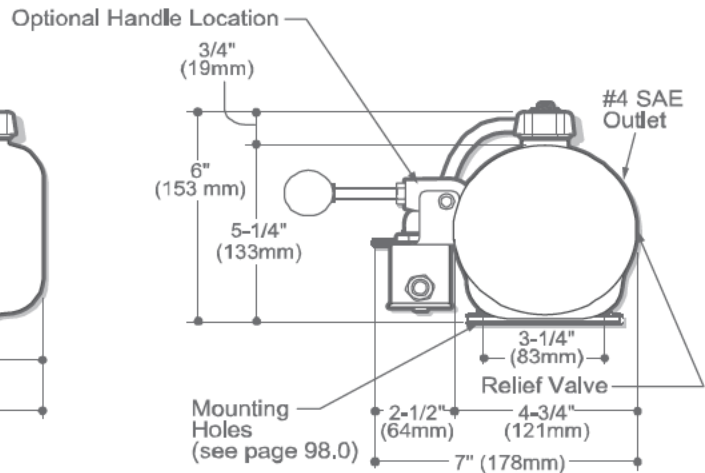


Popular Options

- Non-Metered Lowering Spool
- Vertical Mounting / Motor Up



SIDE VIEW



END VIEW

Optional Eye-Bolt



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3311

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50033111XXXX depending on configuration.

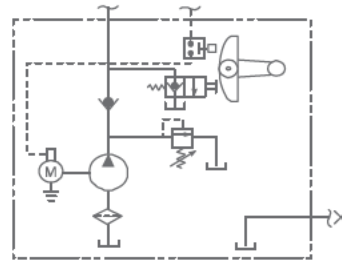
Pump	Motor	Voltage	Reservoir (Length)	Mounting Bracket	Accessories
	08111	12	06102	04560	
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 136	Ref. Page 141

4.8 Model M-3313

Description

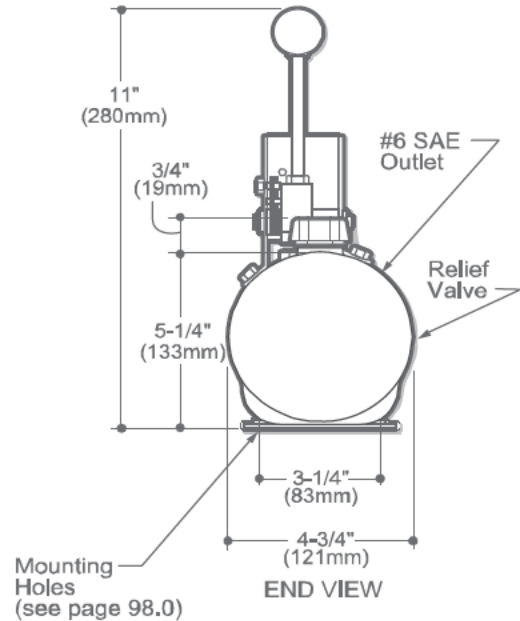
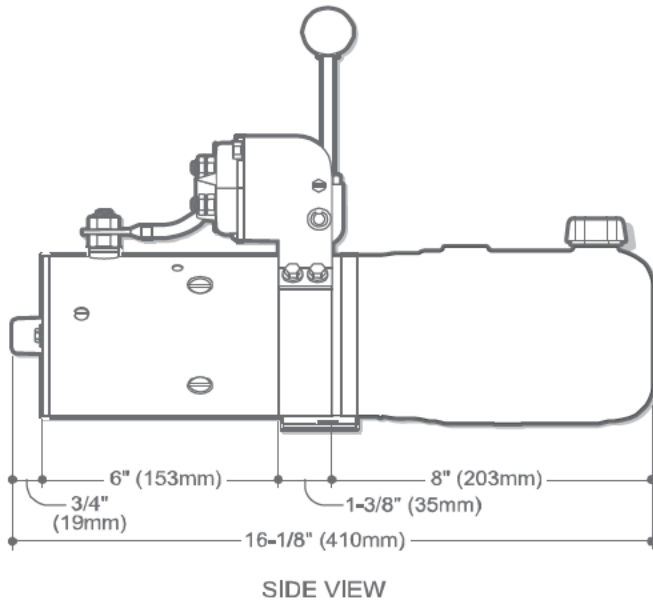
- Pump / Motor / Reservoir / Valve
- Manually Operated 2-Way/2-Position Normally Closed Valve With Motor Start Switch. Valve Handle Travel Is Inline With Motor
- Check Valve
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- Horizontal Mounting Standard

Schematic



Popular Options

- Metered Lowering Valve Housing For Fine Control of Lowering Speed
- 1/4 inch NPT Outlet
- Vertical Mounting / Motor Up



Optional Eye-Bolt



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3313

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50033131XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Mounting Bracket	Mounting Position	Accessories
	08111	12	06102	04560	Horizontal	
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 136		Ref. Page 141

4.9 Model M-721

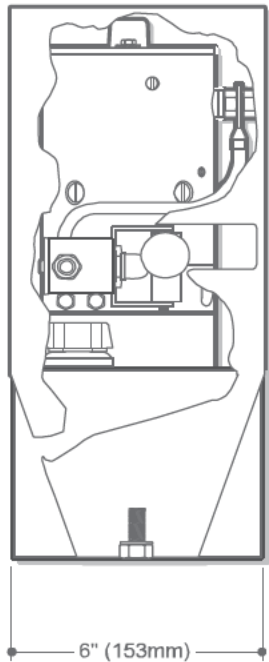
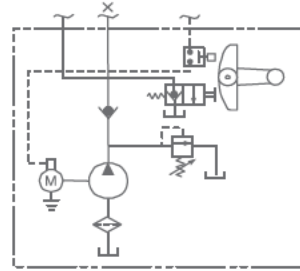
Description

- Pump / Motor / Reservoir / Valve
- Manually Operated 2-Way/2-Position Normally Closed Valve With Motor Start Switch
- Externally Adjustable Relief Valve
- 1/4 inch NPT and 3/8 inch NPT Outlets
- Vertical Mounting Only
- Includes Protective Steel Cover

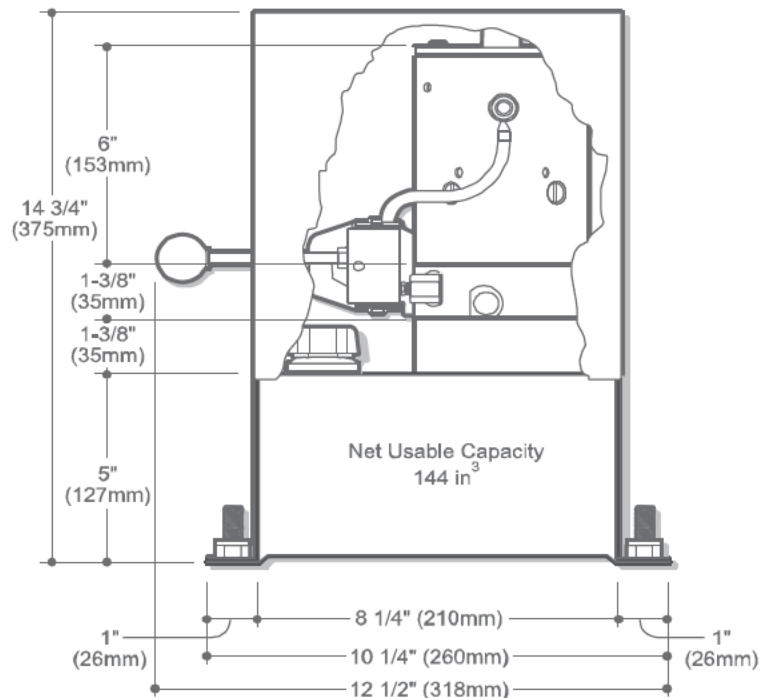
Typical Application:

- Controls Discharge Chute on Cement Delivery Truck

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-721

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50097211XXXX depending on configuration.

Pump	Motor	Voltage	Mounting Position	Accessories
13-270	08111	12	Vertical	
Ref. Page 43	Ref. Page 44			Ref. Page 141

4.10 Model M-3219 Mini System

Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- 2-Way/2-Position Normally Closed Solenoid Operated Lowering Valve
- Externally Adjustable Relief Valve
- Outlet Port Options:
Check Valve Port: 7/16-20 SAE O-Ring or
Face Port: 7/16-20 SAE O-Ring
- Horizontal Mounting Standard

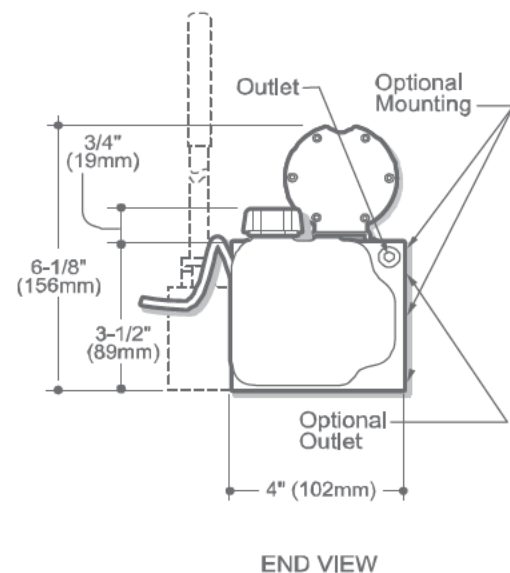
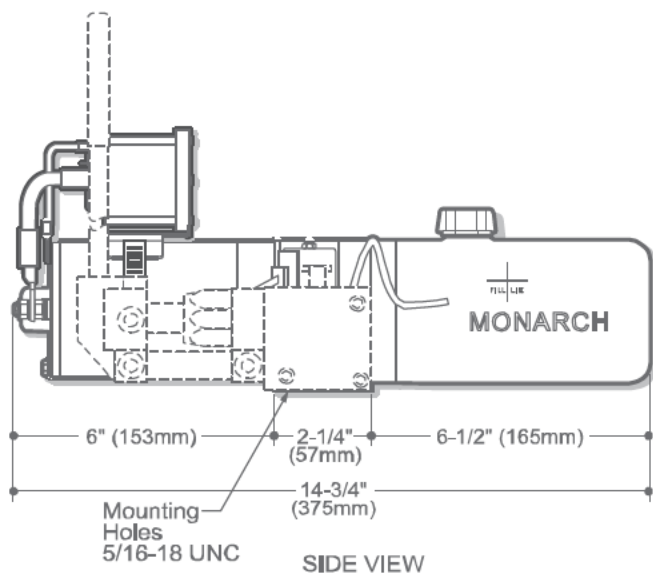
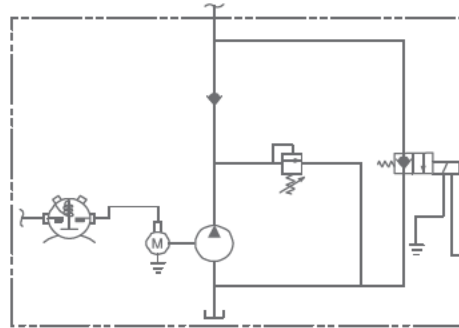
Popular Feature:

- Solenoid Lowering Valve is Recessed Into Base and Protected from Abuse

Popular Options

- Pressure Compensated (Cartridge Style) Orifice on Lowering Circuit
- Hand Pump Manifold Directly to Base. (Shown in Dashed Lines)
- 1/4 inch NPT Outlet
- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3219 Mini System

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50032191XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Control Stations	Optional Hand Pump	Accessories
	08053	12	06230	17757	Horizontal			
Ref. Page 43	Ref. Page 44		Ref. Page 118	Ref. Page 131		Ref. Page 132	Ref. Page 138	Ref. Page 141

4.11 Model M-3319

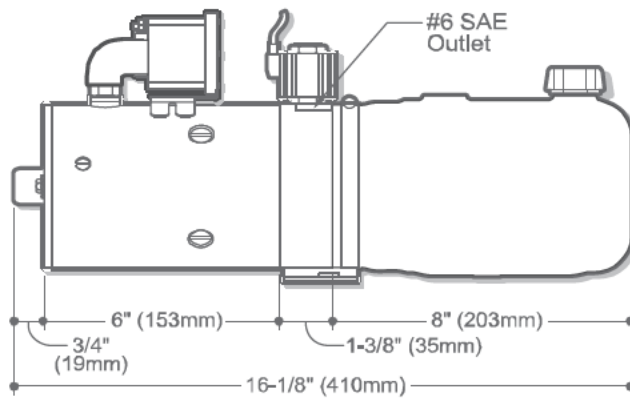
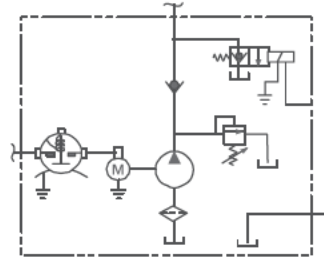
Description

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

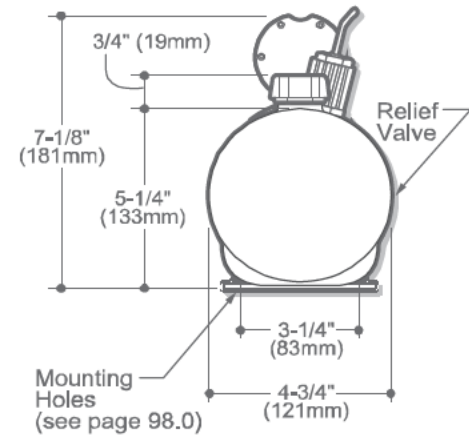
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3319

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50033191XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Bracket	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	04560	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131	Ref. Page 136		Ref. Page 141	Ref. Page 132

4.12 Model M-3519

Also available as M-3419. See page 6 for base information.

Description

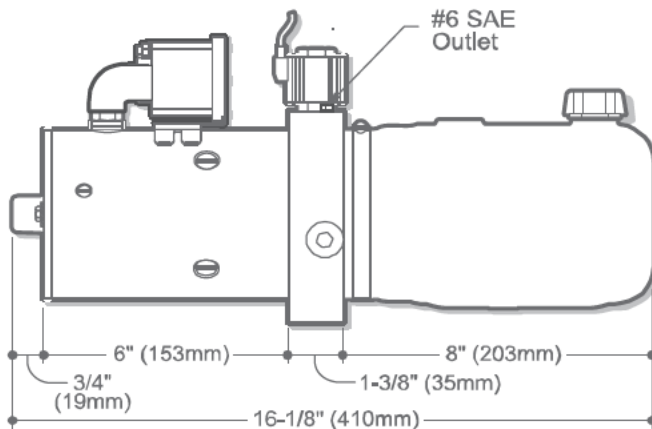
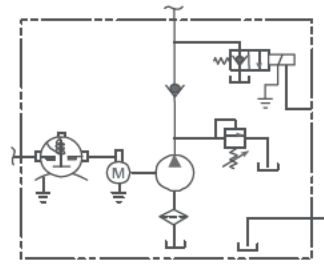
- Pump / Motor / Reservoir / Valve
- Check Valve
- Externally Adjustable Relief Valve
- 2-Way/2-Position Normally Closed Solenoid Cartridge Valve
- #6 SAE Outlet
- Horizontal Mounting Standard

Popular Options

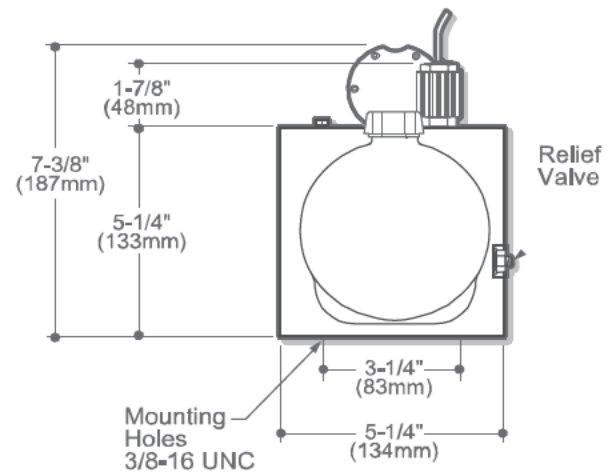
- High Flow option available
- Control Box and Cord
- Vertical Mounting / Motor Up
- Pressure Compensated (Cartridge Style) Orifice On Lowering Circuit*
- Manual Override*
- Hand Pump Manifold Mounts Directly to Base*

* Option Requires Power Unit Dimensions and Features Different Than Those Shown Below

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3519

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035191XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.13 Model M-3505

Also available as M-3205 and M-3405. See page 6 for base information.

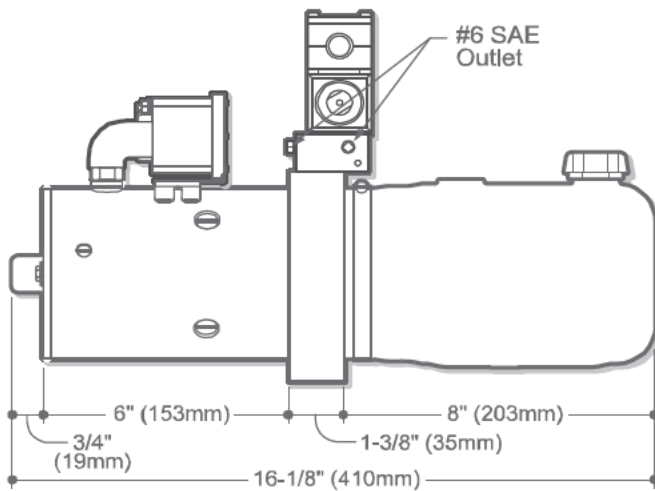
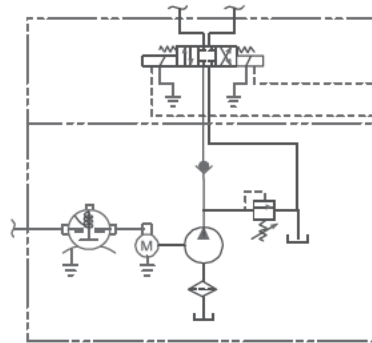
Description

- Pump / Motor / Reservoir / Valve
- Check Valve in "P" Port
- Externally Adjustable Relief Valve
- D03 Solenoid Valve
- #6 SAE Outlet
- Horizontal Mounting Standard

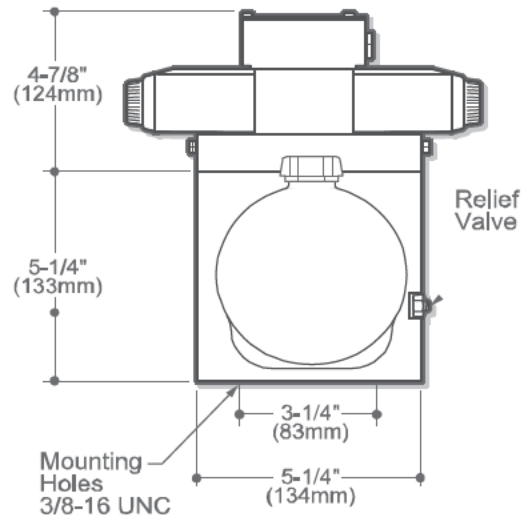
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up
- Large Selection of D03/CETOP Valves and Accessories

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3505

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035051XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.14 Model M-3506

Also available as M-3206 and M-3406. See page 6 for base information.

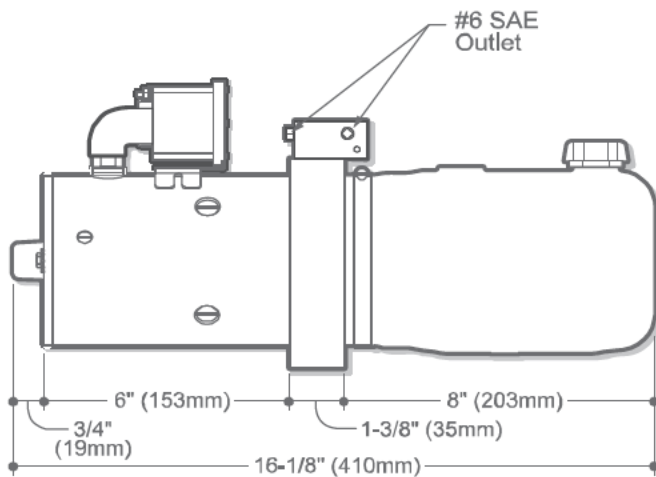
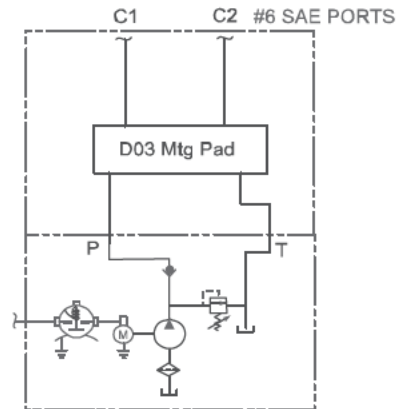
Description

- Pump / Motor / Reservoir
- Check Valve in "P" Port
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- Horizontal Mounting Standard

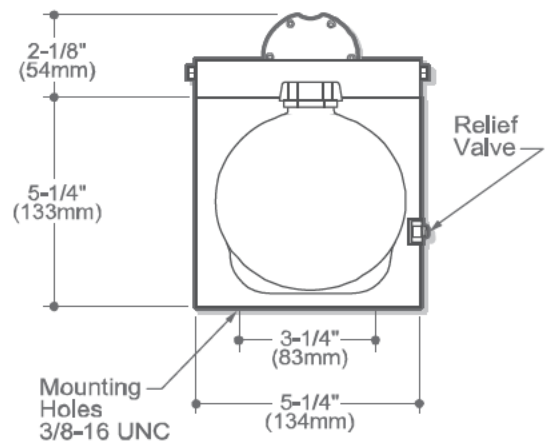
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3506

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035061XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.15 Model M-3314

Also available as M-3414 and M-3514. See page 6 for base information.

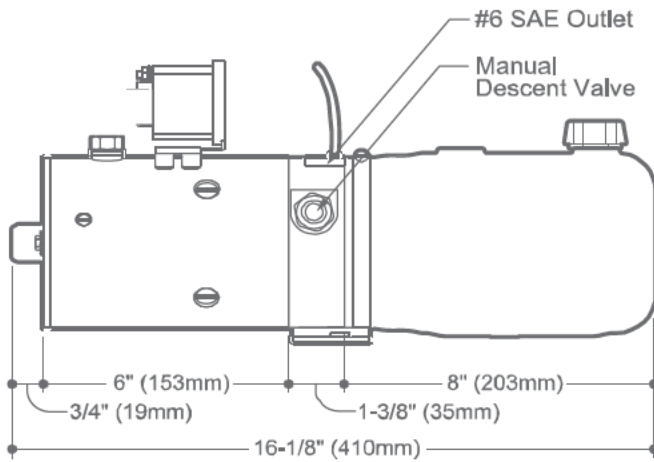
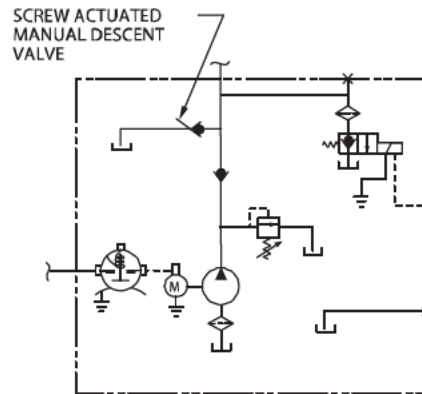
Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- 2-Way/2-Position Normally Closed Solenoid Operated Lowering Valve and Return Filter Installed in Reservoir
- Manual Override for Emergency Lowering During Power Loss
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- Horizontal Mounting Standard

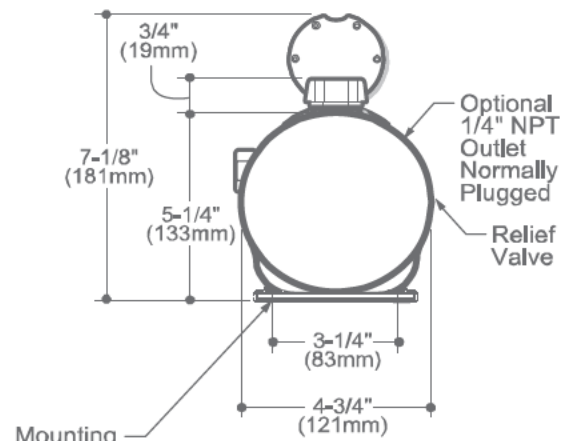
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



Mounting Holes (see page 98.0)

END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3314

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50033141XXXX depending on configuration.

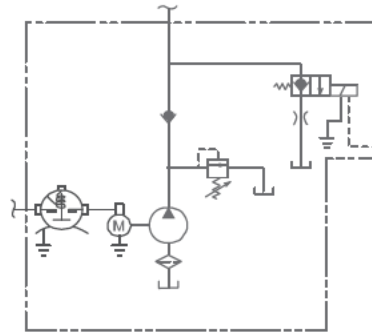
Pump	Motor	Voltage	Reservoir (Length)	Cartridge Valve	Motor Start Switch	Mounting Bracket	Mounting Position	Accessories	Control Stations
	08111	12	06102		17757	04560	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 129	Ref. Page 131	Ref. Page 136		Ref. Page 141	Ref. Page 132

4.16 Model M-719

Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- 2-Way/2-Position Normally Closed Solenoid Operated Lowering Valve
- Externally Adjustable Relief Valve
- 3/8 inch NPT Outlet
- Fixed Orifice in Lowering Circuit. Externally Cleanable
- Vertical Mounting
- Includes Protective Steel Cover

Schematic

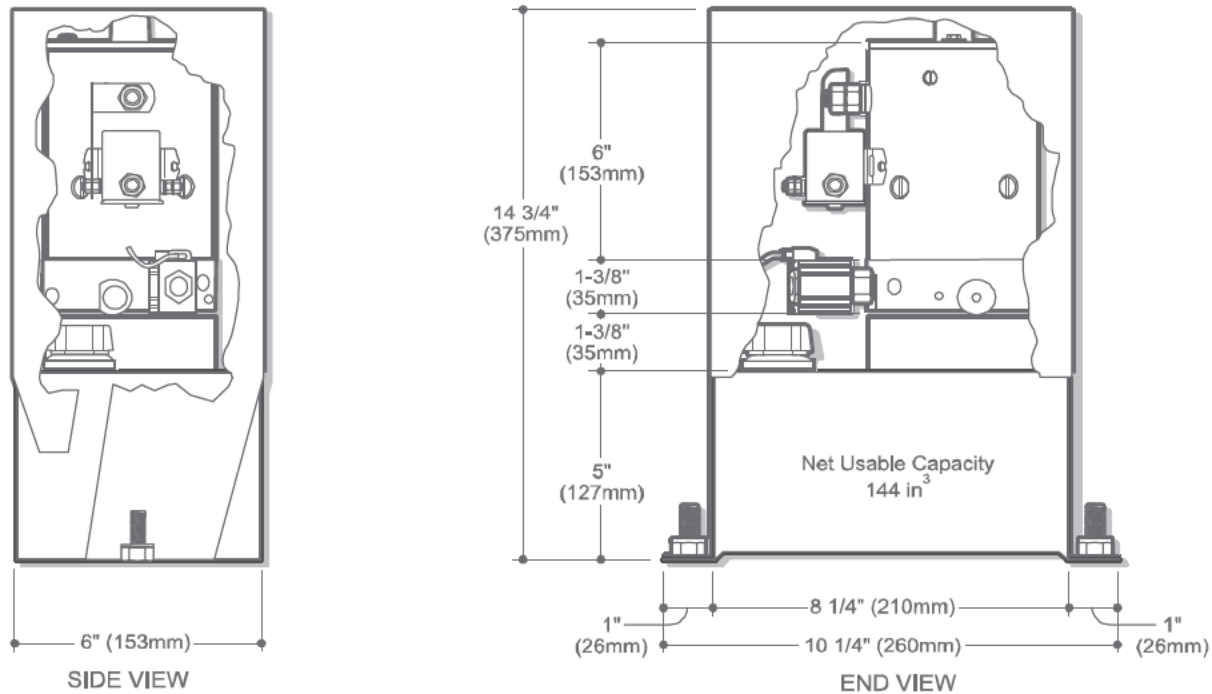


Popular Options

- Control Box and Cord

Typical Application:

- Control Discharge Chute on Cement Delivery Truck



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-719

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50097191XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Mounting Position	Accessories
13-270	08111	12	06385	Horizontal	04560
Ref. Page 43	Ref. Page 44		Ref. Page 118		Ref. Page 141

4.17 Model M-3310

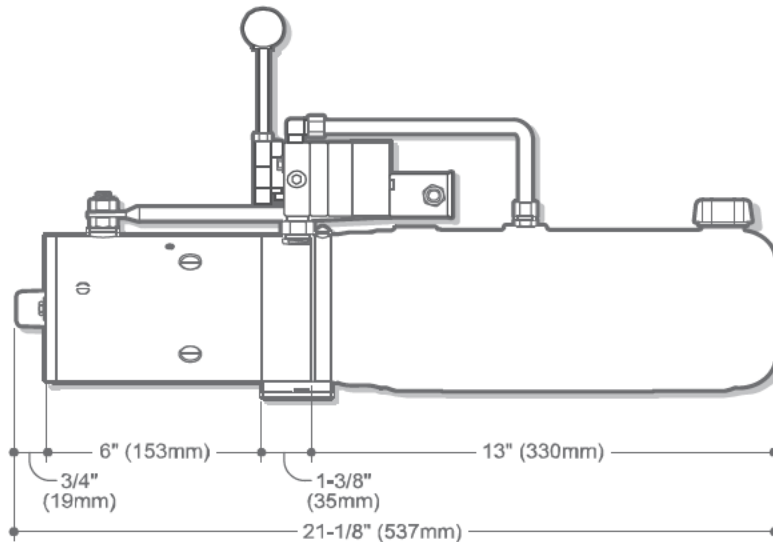
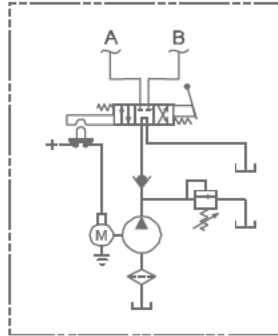
Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- 4-Way Manually Operated Valve With Cam Actuated Motor Start Switch
- Externally Adjustable Relief Valve
- 1/4 inch NPT Outlets
- Horizontal Mounting Standard

Popular Options

- Orifice For Controlling Pressure on A and/or B Ports Available
- Vertical Mounting / Motor Up
- #4 SAE Outlet

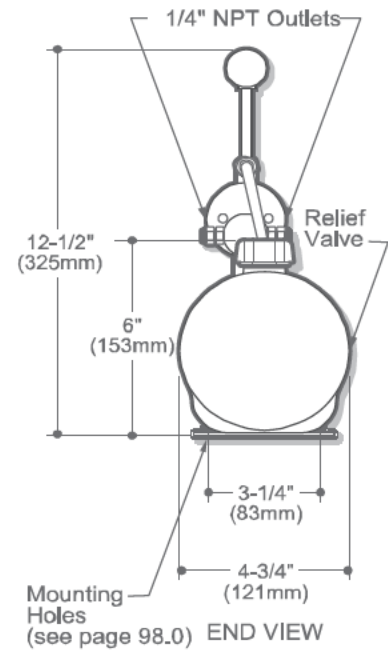
Schematic



Optional Eye-Bolt



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3310

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50033101XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Mounting Bracket	Mounting Position	Accessories
	08111	12	06105	04560	Horizontal	
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 136		Ref. Page 141

4.18 Model M-3541

Also available as M-3241 and M-3441. See page 6 for base information.

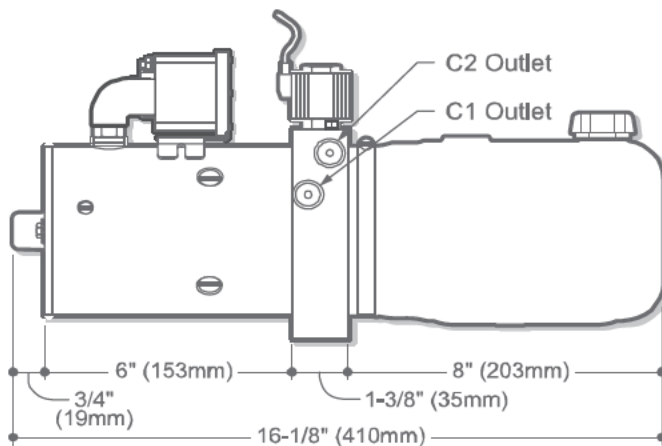
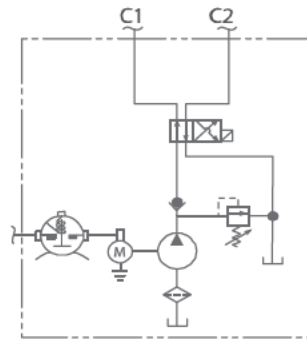
Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- Externally Adjustable Relief Valve
- 4-Way/2-Position Solenoid Cartridge Valve located in the base
- #6 SAE Outlet
- Horizontal Mounting Standard

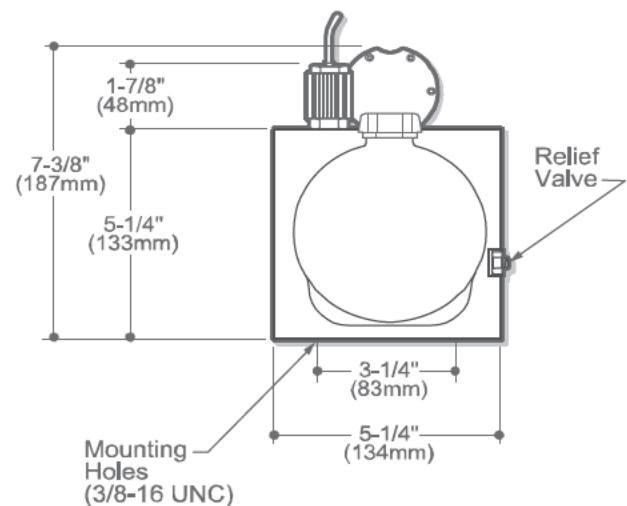
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up
- 4-Way/3-Position valve

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3541

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035411XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Bracket	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	04560	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131	Ref. Page 136		Ref. Page 141	Ref. Page 132

BUCHER hydraulics

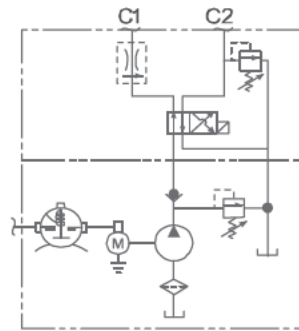
4.19 Model M-3542

Also available as M-3242 and M-3442. See page 6 for base information.

Description

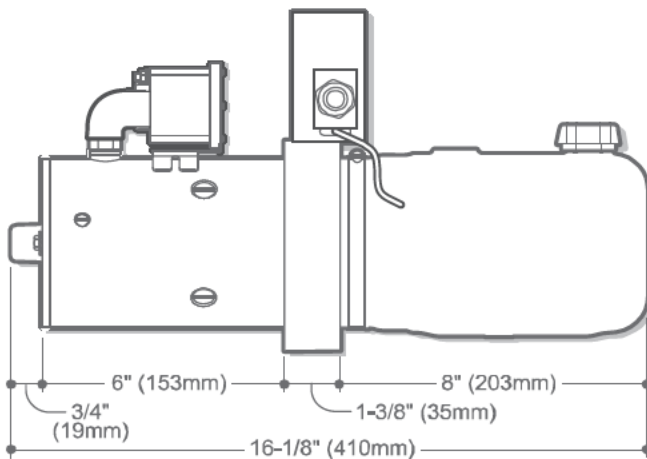
- Pump / Motor / Reservoir / Valve
- Check Valve
- Externally Adjustable Relief Valve
- 4-Way/2-Position Solenoid Cartridge Valve Located Externally. Manifolder Directly To Unit
- C1 Port Positively Checked
- Externally Adjustable Relief Valve in C2 Port
- #6 SAE Outlet
- Horizontal Mounting Standard

Schematic

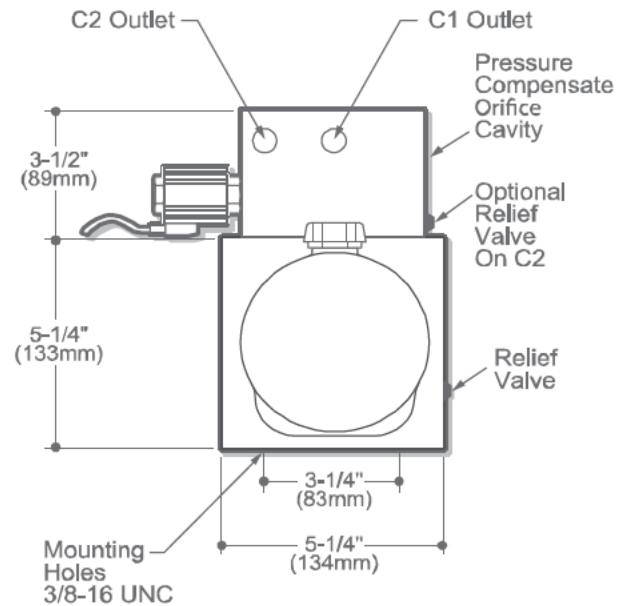


Popular Options

- Pressure Compensated (Cartridge Style) Flow Control In C1 Port
- Control Box and Cord
- Vertical Mounting / Motor Up



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3542

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035421XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.20 Model M-3534

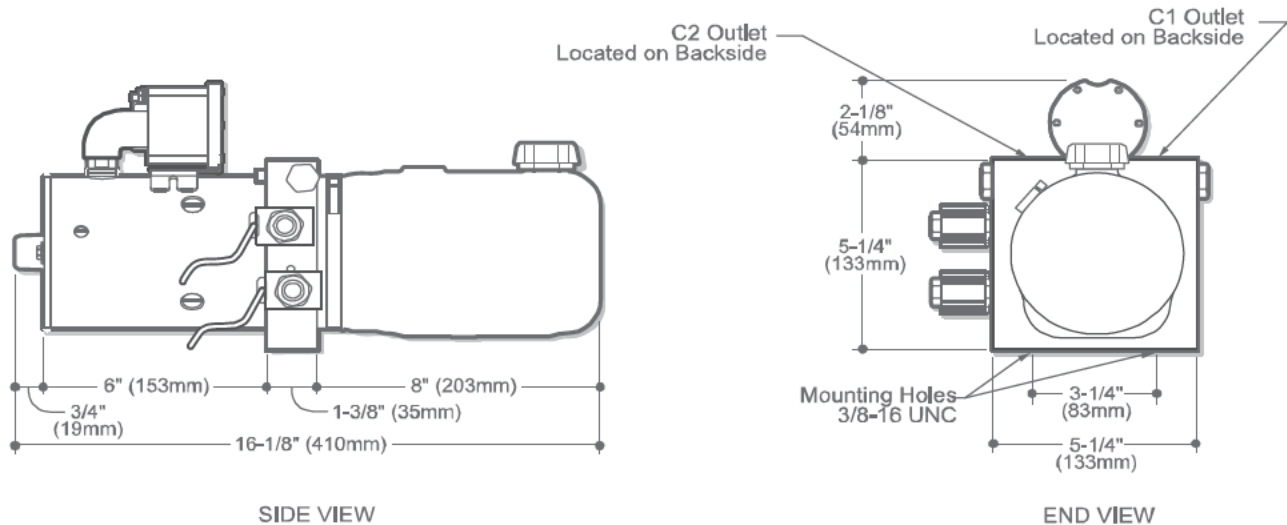
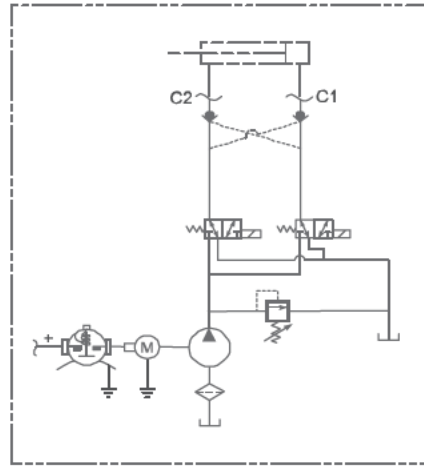
Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- Externally Adjustable Relief Valve
- Dual 3-Way/2-Position Valves located in the base
- Load holding on C1 and C2
- Horizontal Mounting Standard
- #6 SAE Outlet

Popular Options

- Hand Pump and Manual Override Controls
- Vertical Mounting, Motor up
- Control Box and Cord
- Slide out in Case of Electrical Failure

Schematic



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3534

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035341XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.21 Model M-3547

Also available as M-3247 and M-3447. See page 6 for base information.

Description

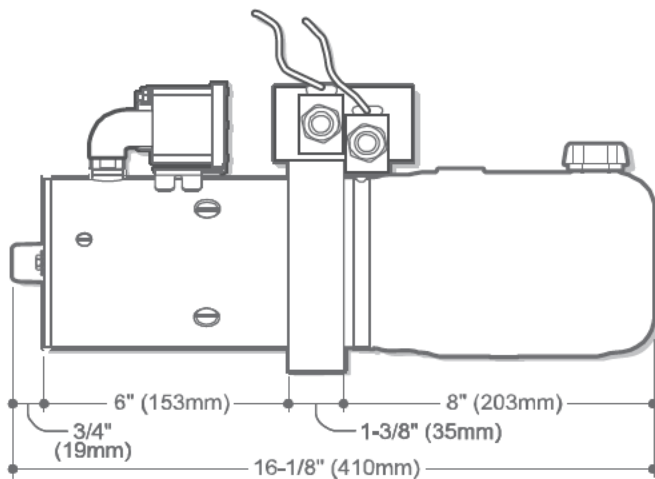
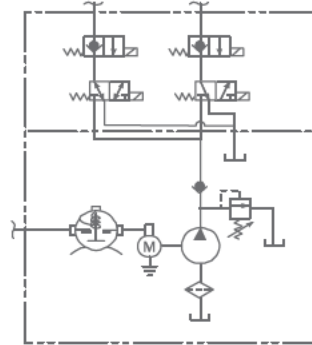
- Pump / Motor / Reservoir / Valve
- Check Valve
- Two 2-Way/2-Position and Two 3-Way/2-Position Solenoid Operated Cartridge Valves Located Externally and Manifolded Directly to Power Unit. Circuit Operates One Double Acting Cylinder With Both Ports Positively Checked
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- Horizontal Mounting Standard

Popular Options

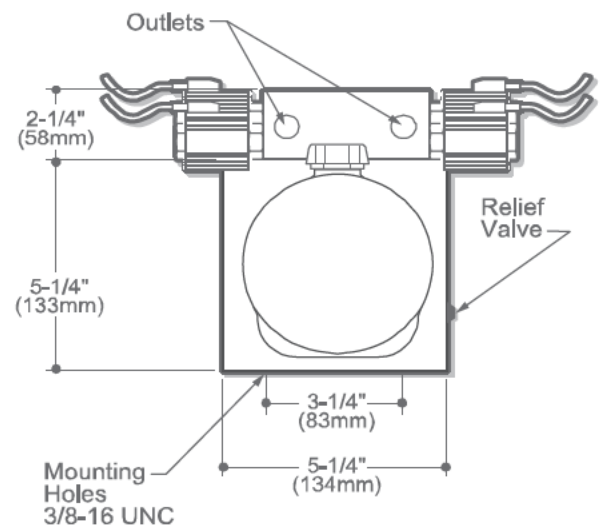
- Unit May be Wired to Independently Operate Two Single Acting Cylinders. Consult Factory For Proper Control Station
- Externally Adjustable Relief Valve May Be Installed In C1 or C2 Port

- 04286 Valve Spacer is Available to Provide Additional Clearance for Large Reservoirs when Required
- Vertical Mounting / Motor Up
- Stackable Sections available

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3547

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035471XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.22 Model M-3551

Also available as M-3251 and M-3451. See page 6 for base information.

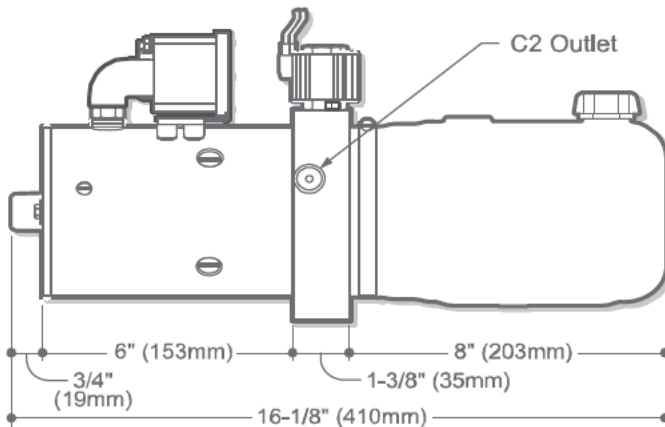
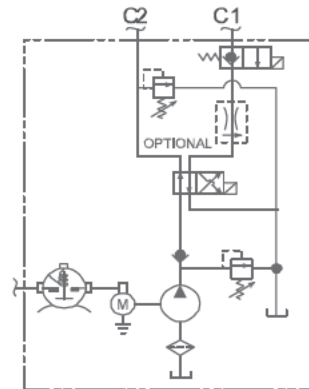
Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- Externally Adjustable Relief Valve
- 4-Way/2-Position and 2-Way/2-Position Normally Closed Solenoid Cartridge Valve Located in the Base
- Externally Adjustable Relief Valve in C2 Port
- #6 SAE Outlet
- Horizontal Mounting Standard

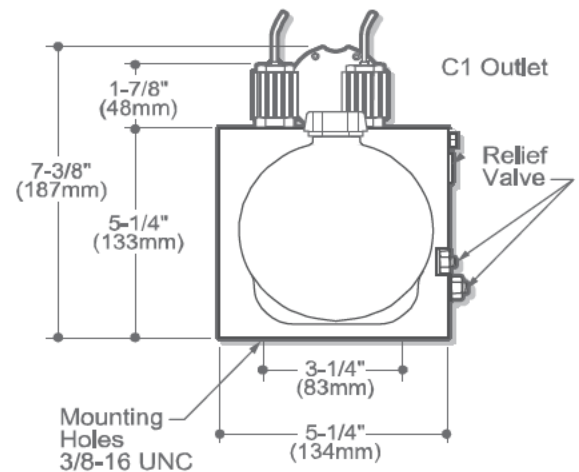
Popular Options

- High Flow option available
- Pressure Compensated (Cartridge Style) Flow Control Orifice In C1 Port
- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3551

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035511XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		07995
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.23 Model M-3554

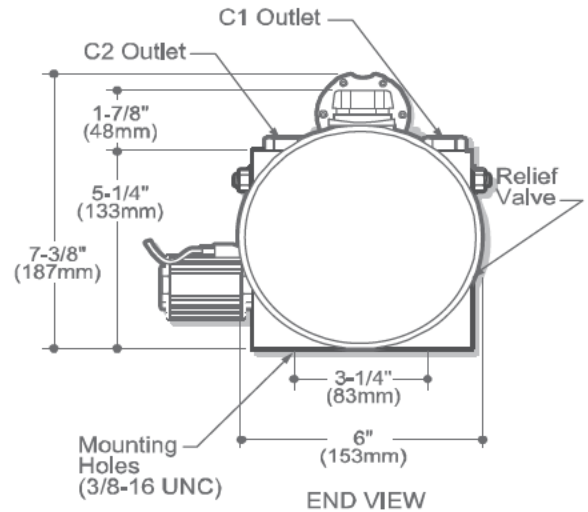
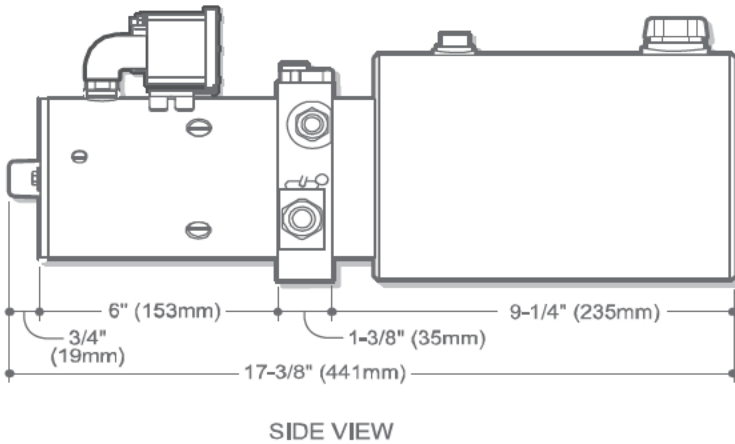
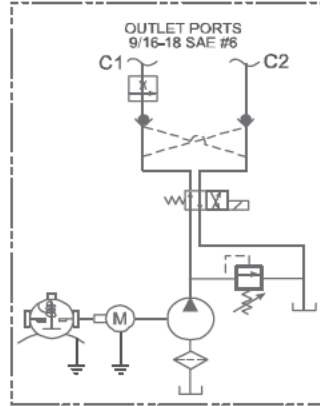
Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- Externally Adjustable Relief Valve
- 4-Way/2-Position for Double-Acting Solenoid Cartridge Valve Located in the Base
- C1 and C2 Port Positively Checked
- Horizontal Mounting Standard
- #6 SAE Outlet

Popular Options

- Pressure Compensated (Cartridge Style) Flow Control Orifice In C1 Port
- Control Box and Cord
- Vertical Mounting / Motor Up
- 4-Way/3-Position Valve

Schematic



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3554

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035541XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06042	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.24 Model M-3552

Also available as M-3252 and M-3452. See page 6 for base information.

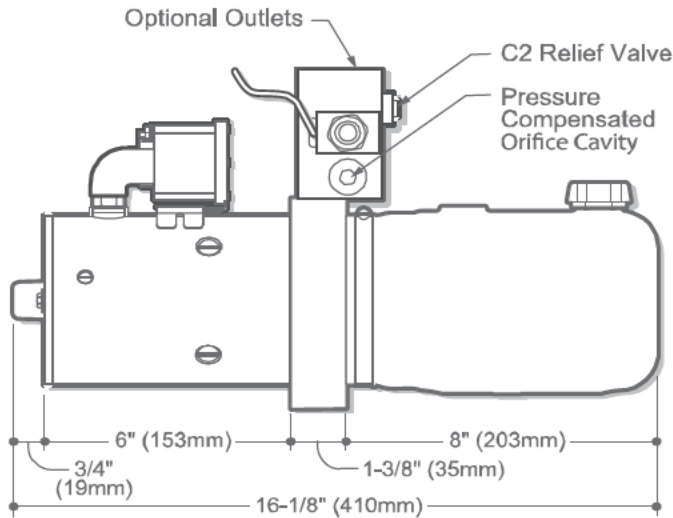
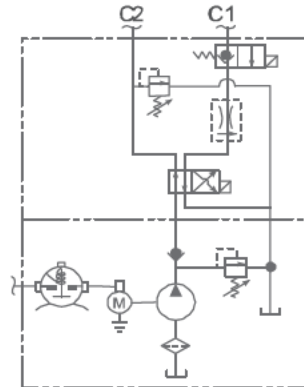
Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- Externally Adjustable Relief Valve
- 4-Way/2-Position Solenoid Cartridge Valve and 2-Way/2-Position Solenoid Cartridge Valve Located Externally. Manifolded Directly To Unit
- C1 Port Positively Checked
- Externally Adjustable Relief Valve in C2 Port
- #6 SAE Outlet
- Horizontal Mounting Standard

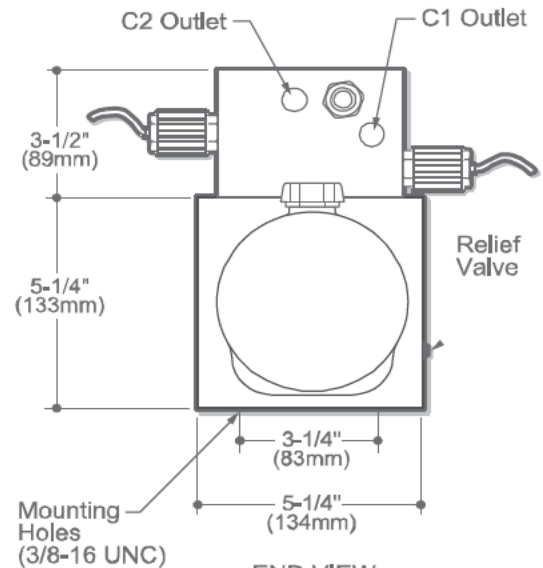
Popular Options

- Pressure Compensated (Cartridge Style) Flow Control In C1 Port
- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3552

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035521XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.25 Model M-642

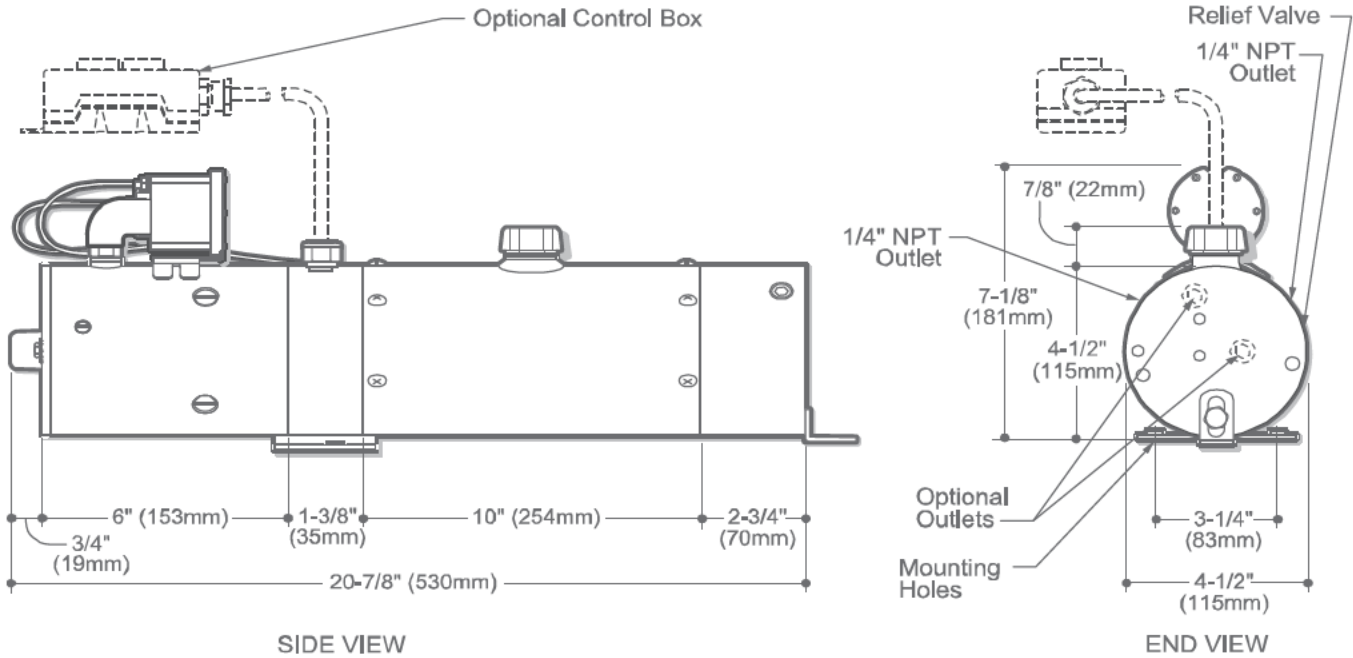
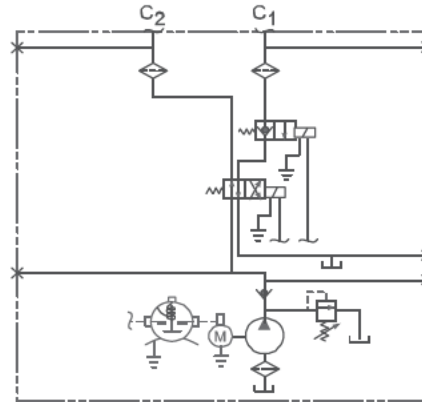
Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- 4-Way/2-Position and 2-Way/2-Position Normally Closed Solenoid Cartridge Valves Located Inside Reservoir
- C1 Port Positively Checked
- C1 and C2 Ports are Filtered
- Externally Adjustable Relief Valve
- 1/4 inch NPT Outlets
- Horizontal Mounting Standard

Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-642

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50096421XXXX depending on configuration.

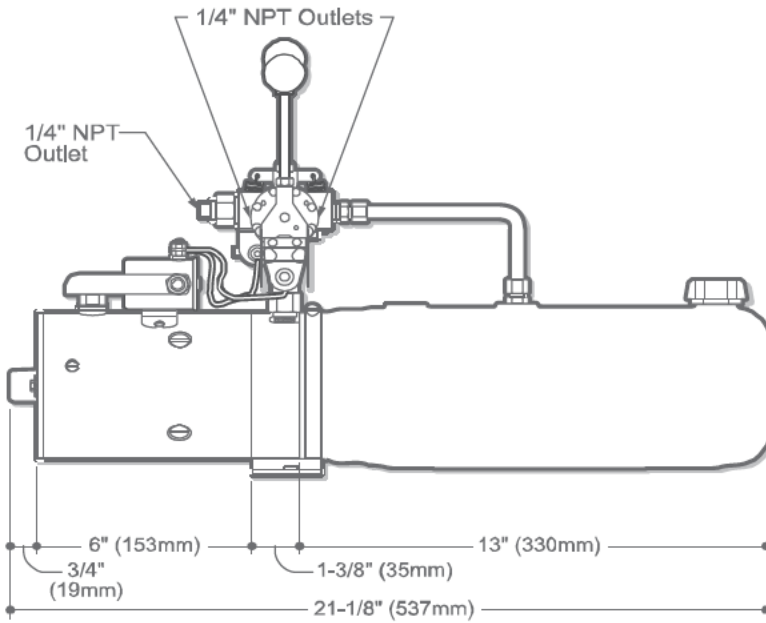
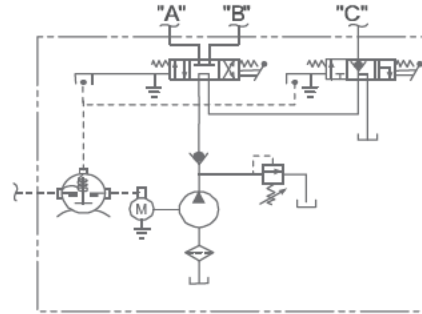
Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Control Stations	Mounting Bracket	Mounting Position	Accessories
	08111	12	06657	17757	07995		Horizontal	
Ref. Page 43	Ref. Page 44		Ref. Page 118	Ref. Page 131	Ref. Page 132	Ref. Page 136		Ref. Page 141

4.26 Model M-500-4W/3W

Description

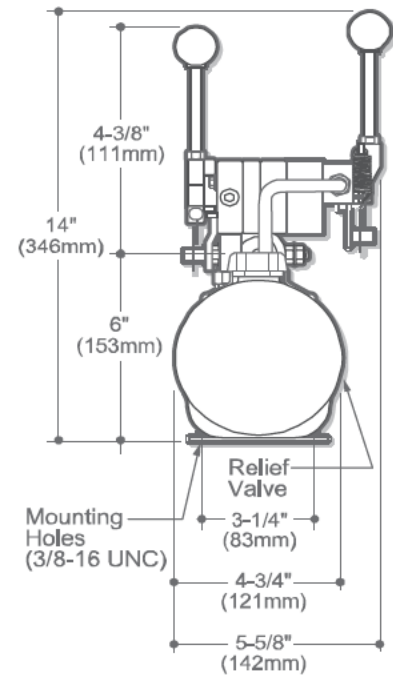
- Pump / Motor / Reservoir / Valve
- Check Valve
- Manually Operated 3-Way Valve (Outlet Port Checked) and 4-Way Valve. Electrical Contacts for Starting Motor When Valve Is Actuated
- Externally Adjustable Relief Valve
- 1/4 inch NPT Outlets
- Horizontal Mounting Standard

Schematic



SIDE VIEW

Optional Eye-Bolt



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-500-4W/3W

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50095001XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Bracket	Mounting Position	Accessories
	08111	12	06105	03336	04560	Horizontal	
Ref. Page 43	Ref. Page 44		Ref. Page 118	Ref. Page 131	Ref. Page 136		Ref. Page 141

4.27 Model M-683

Description

- Pump / Motor / Reservoir / Valve
- Check Valve
- One 4-Way/2-Position and Three 2-Way/2-Position Normally Closed Solenoid Cartridge Valves Located Inside Reservoir provide 4W/3W Function
- All Ports Filtered
- By-Pass (Also Referred to as Cross-Over) Relief Valves Are Located Between C1 and C2 Ports
- Cord with Connector Plug
- Externally Adjustable Relief Valve
- 1/4 inch NPT Outlets
- Horizontal Mounting Standard

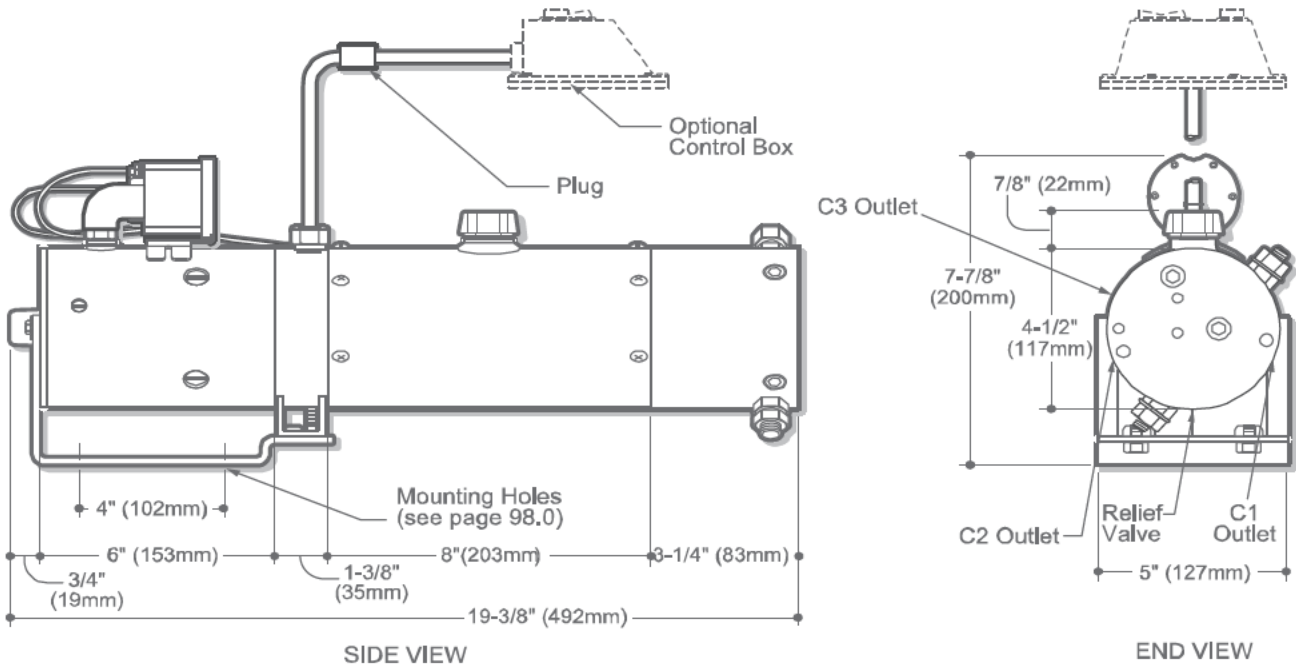
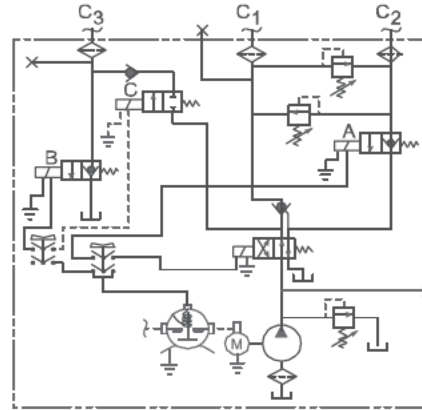
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up

Typical Application

- Snow Plow. Up. Down. Float; Left. Right
(One single-acting and one double-acting circuit)

Schematic



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-683

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50096831XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Control Stations	Mounting Bracket	Mounting Position	Accessories
	08111	12	06703	17757	03197	02238	Horizontal	
Ref. Page 43	Ref. Page 44		Ref. Page 118	Ref. Page 131	Ref. Page 132	Ref. Page 136		Ref. Page 141

4.28 Model M-3528

Also available as M-3228 and M-3428. See page 6 for base information.

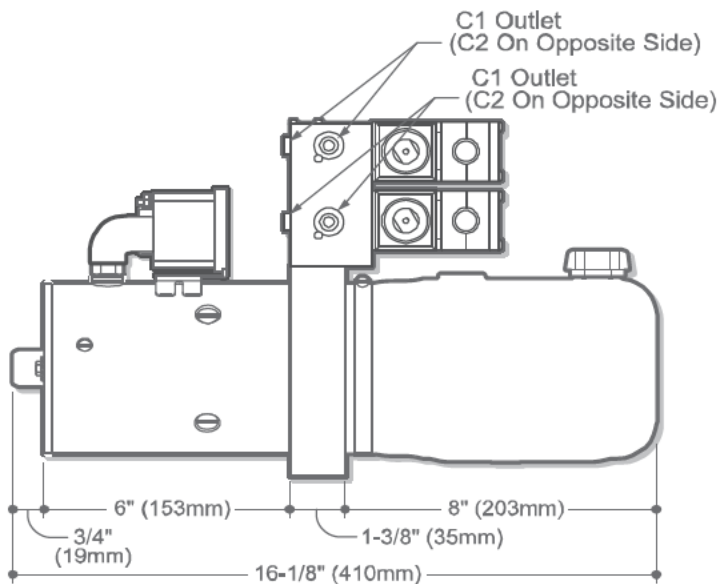
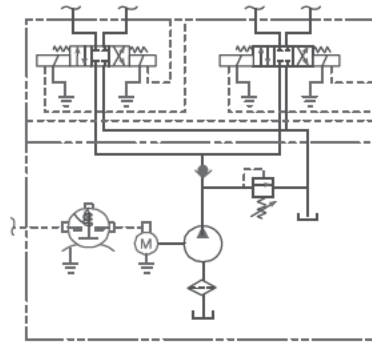
Description

- Pump / Motor / Reservoir / Valve
- Check Valve in "P" Port
- Externally Adjustable Relief Valve
- Two D03 Solenoid Valves
- #6 SAE Outlet
- Horizontal Mounting Standard

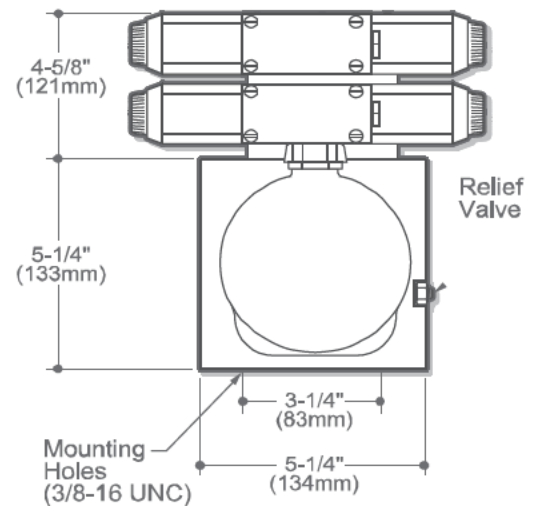
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up
- Large Selection of D03/CETOP Valves and Accessories

Schematic



SIDE VIEW



END VIEW

NOTE:
An Adapter May Be Required With Certain Reservoirs - Consult Factory.

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3528

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035281XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.29 Model M-3529

Also available as M-3229 and M-3429. See page 6 for base information.

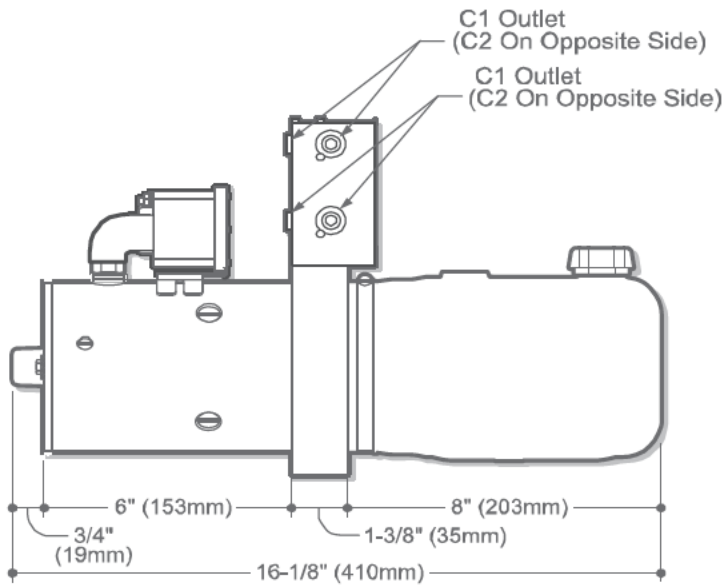
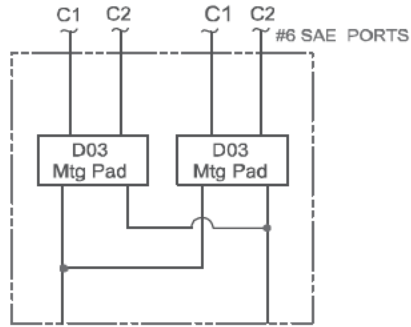
Description

- Pump / Motor / Reservoir / Manifold
- Check Valve in "P" Port
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- Horizontal Mounting Standard

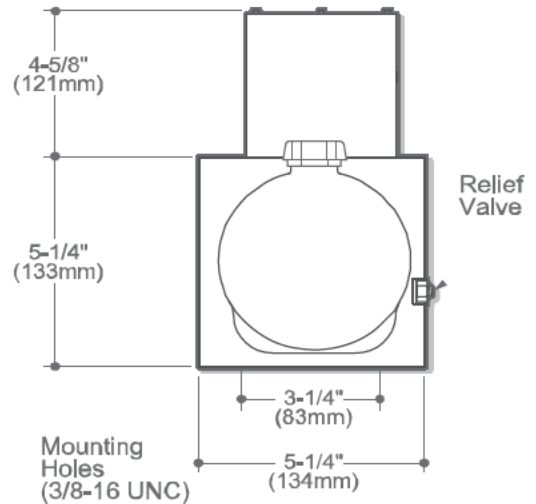
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



END VIEW

NOTE:
An Adapter May Be Required With Certain Reservoirs - Consult Factory.

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3529

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035291XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

4.30 Model M-3593

Also available as M-3293 and M-3493. See page 6 for base information.

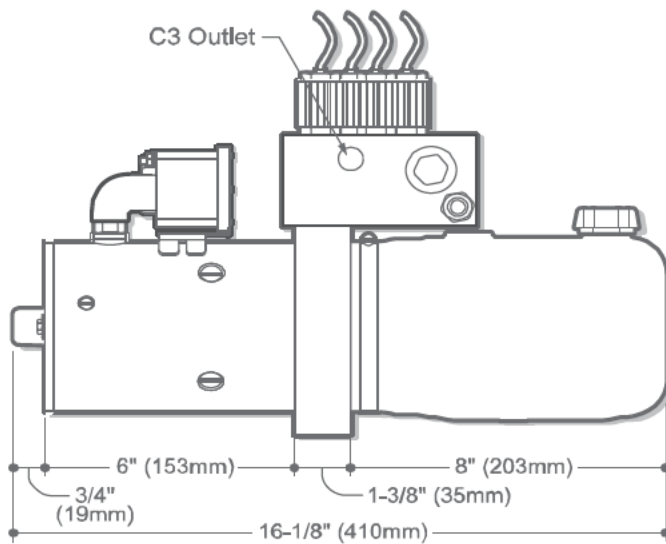
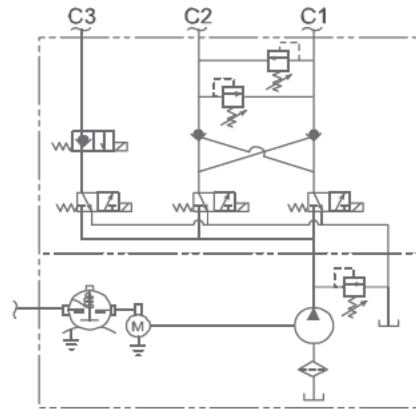
Description

- Pump / Motor / Reservoir / Valve
- Externally Adjustable Relief Valve
- Solenoid Cartridge Valves, Pilot Operated Check Valves and Adjustable Cross-Over Relief System Mounted In a Compact Manifold
- Ideal System For Operating a Snow Plow. Power Up, Hold, Gravity Down, Left, Right (One single-acting and one double-acting circuit)
- Horizontal Mounting Standard

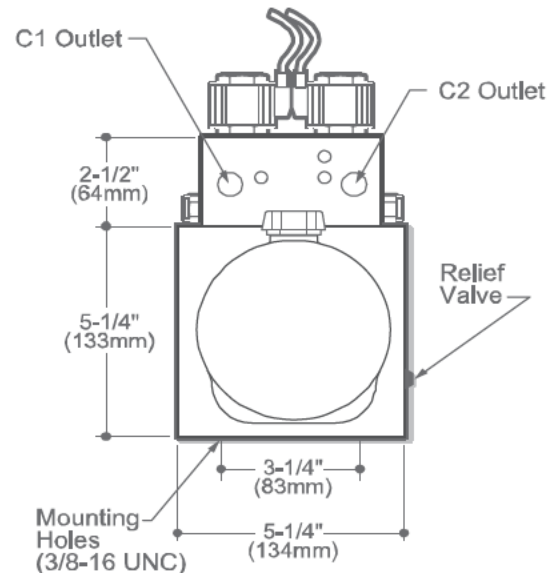
Popular Options

- Control Box and Cord
- Vertical Mounting / Motor Up

Schematic



SIDE VIEW



END VIEW

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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

How to Order Your M-3593

Unit shown standard using components referenced in the table below. To build model using other basic components, please reference the page number of the product section also in the table. Order code 50035931XXXX depending on configuration.

Pump	Motor	Voltage	Reservoir (Length)	Motor Start Switch	Mounting Position	Accessories	Control Stations
	08111	12	06102	17757	Horizontal		
Ref. Page 43 or 77	Ref. Page 44 or 78		Ref. Page 118	Ref. Page 131		Ref. Page 141	Ref. Page 132

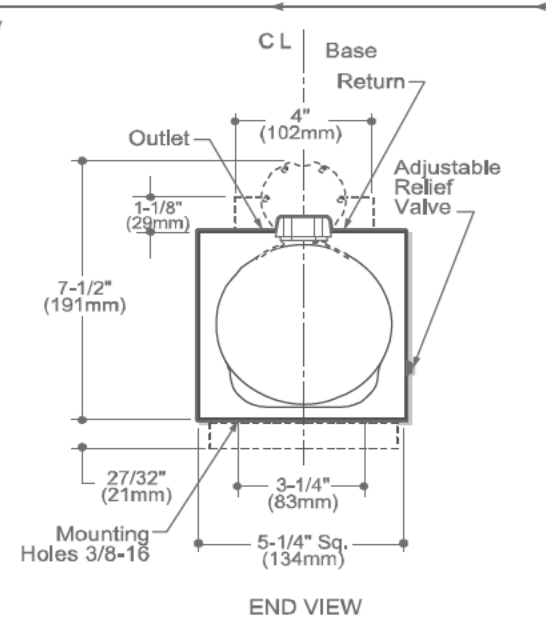
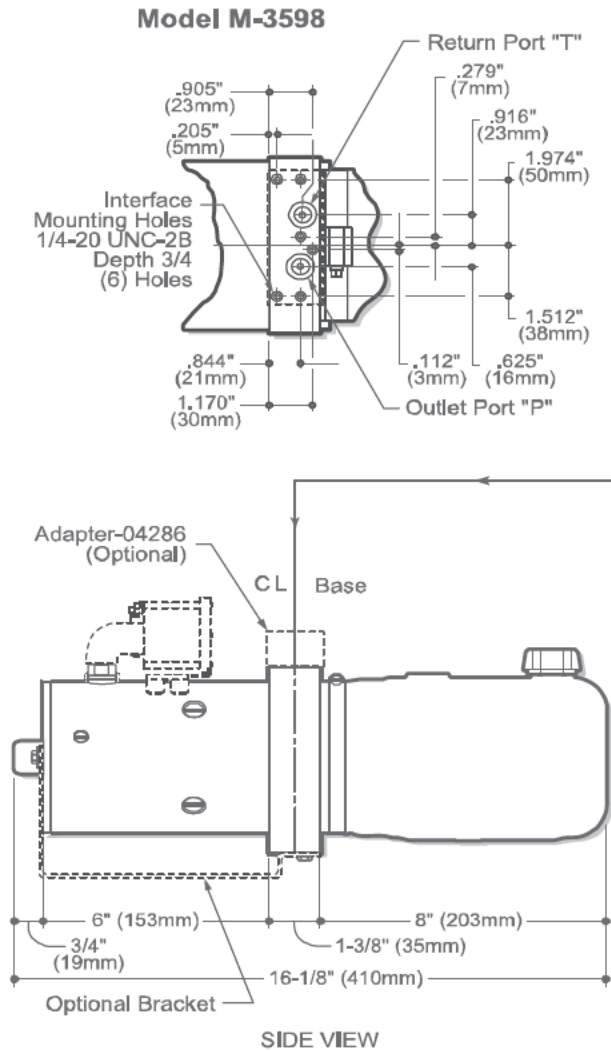
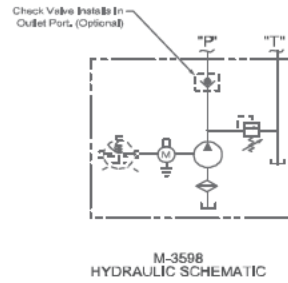
4.31 Modular Power Units

Description

Take the building block approach: Create a custom unit using standard components and the M-3598 Power unit

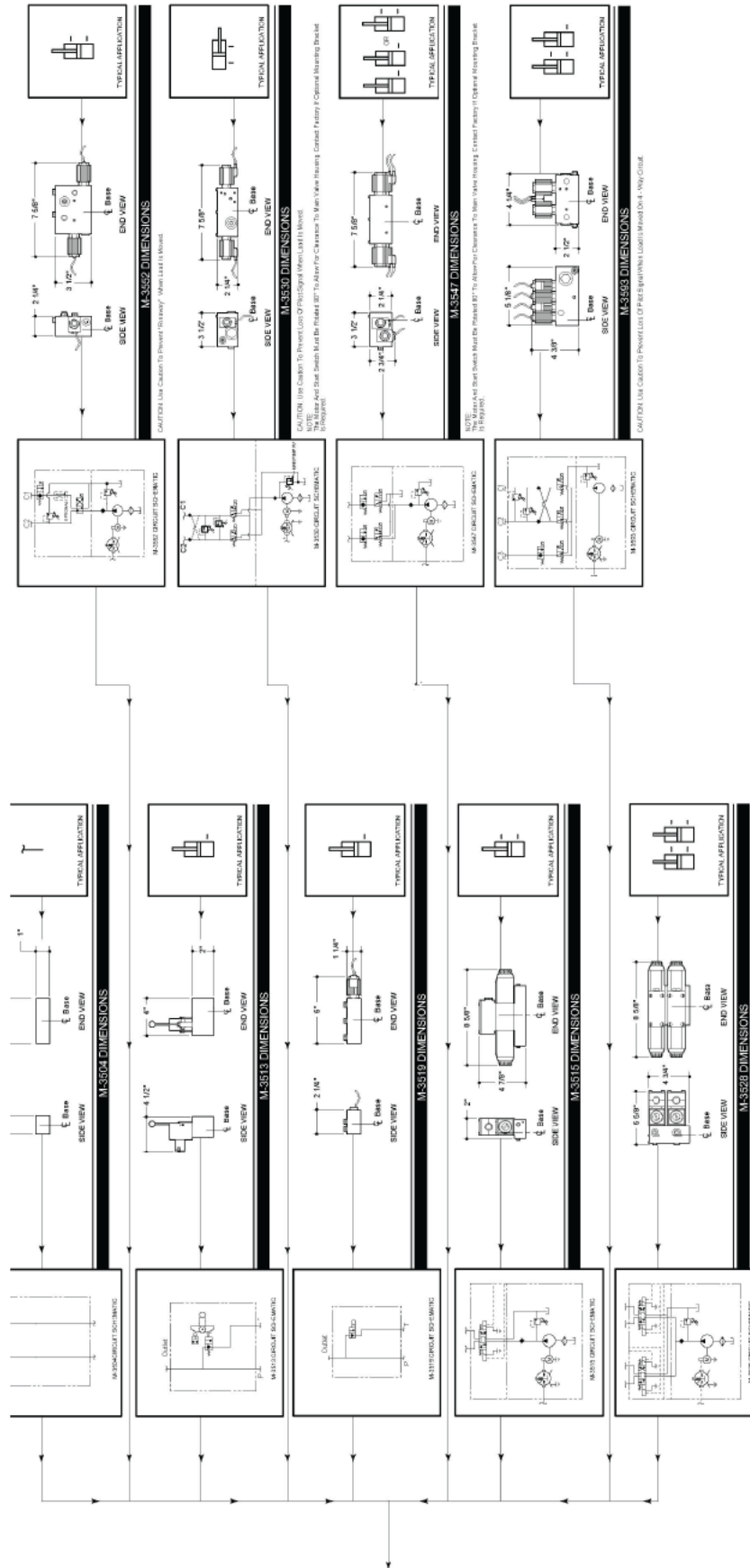
- Modular Manifolds Mount to Standard Pad, allowing for power unit flexibility and circuit design.
- For Use With All Bucher Hydraulics Pumps, Motors, and Reservoirs. Note - A spacer may be required with certain reservoirs, on others the valve package may cover reservoir fill and return ports - consult factory.
- See the following diagrams for manifold options. Custom designs available upon request.

Schematic



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. Note: Dimensions may vary slightly and should be confirmed by the factory if unit is to be installed in space with minimum clearance.

Add Any Of The Following Circuits To The M-3598 Power Unit



4.32 How to Order Your Modular Power Unit

Select from the following options. To create unit with other basic components, please follow the page number indicated.

Select Model	Pump	Motor	Voltage	Reservoir (Length)	Control Stations	Motor Start Switch	Mounting Bracket	Mounting Position
	Ref. Page 43	Ref. Page 44		Ref. Page 118	Ref. Page 132	Ref. Page 131	Ref. Page 136	
M-3598	17-150	08053	12	4.5x8	07793	17757	Optional	Horizontal
M-3504	17-190	08111	12	4.5x10	07795	17744	02238	
M-3513	17-270	08058	12	4.5x12	Specify Cord Length Inches	17744	01289	Vertical
M-3519	13-150	08058	12	4.5x13		Start Switch to Motor Cable		
M-3515	13-200					Bus Bar		
M-3528	13-250			6x9				
M-3542	13-200			6x10				
M-3552	13-380			6x13.5				
M-3530		08196	12	6x8				
M-3547		08050	12					
M-3593		08163	12	5.5x6.5x10				
		08051	24	5.5x6.5x13.5				
		08120	24	5.5x6.5x19				
		08035	24	6.25x7x7				
		08055	36	6.25x7x7				
		08168	36	6.25x7x12				
		08055	48	6.25x7x15				
		08174	72	6.25x7x15				
				6.25x7x21				

*Max Flow
= 2.75 GPM

5 Dimensional Information for Standard D.C. Motors with Performance Curves

5.1 Pump Displacements - Fixed Clearance Gear Pumps

Nominal Pump Performance - Fixed Clearance Pumps

Pump	Displacement		No Load Flow in gpm	
	in ³ /rev	cm ³ /rev	1800 rpm	3600 rpm
*17-100	0.022	0.35	0.17	0.34
*17-120	0.026	0.43	0.20	0.40
*17-150	0.032	0.53	0.25	0.51
*17-190	0.038	0.62	0.29	0.59
*17-270	0.054	0.88	0.42	0.84
13-150	0.073	1.19	0.57	1.13
13-200	0.097	1.59	0.75	1.51
13-250	0.121	1.98	0.94	1.89
13-270	0.131	2.14	1.02	2.04
13-330	0.160	2.62	1.25	2.49
13-380	0.184	3.02	1.43	2.87
13-510	0.247	4.05	1.92	3.85
13-630	0.305	5.00	2.38	4.76

* Denotes f_{pump}

Recommended Operating Conditions for Fixed Clearance Pumps:

- Operating Temperature: 20°F to 130°F (29°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 Fluid for indoor use: Mobile DTE 24 or equal
- Recommended Fluid for outdoor use: ATF Dexron II or equal

Standard Fixed Displacement Pump Features:

- Fixed Displacement, External Tooth Gears
- Hardcoat Processed Internal Pump Surfaces Extend Service Life
- Extremely Tolerant of Fluid Contaminants and Resistant to Galling Caused by Low Temperature Start-up
- Wide Temperature and Viscosity Operation
- Cost Effective

5.2 D.C. Motor Performances - Fixed Clearance Gear Pumps

12 Volt

Part Number	Order Code	Performance Data Page No.	Insulation Class	Number of Terminals	Housing Diameter Inch (mm)	UL Listed	Description *See Key
08111	500205008111	45	F	1	4.5" (114 mm)	No	SW / ID
08053	500205008053	47	F	1	3" (80 mm)	No	PM / ID
08196	500205008196	49	F	1	4.5" (114 mm)	No	SW / HD
08050	500205008050	51	H	2	5.5" (140 mm)	No	SW / ID
08163	500205008163	53	H	2	5.5" (140 mm)	No	PM / ID
08004	500205008004	55	F	1	3" (80 mm)	No	PM / ID
22368	500205022368	57	F	1	4.5" (114 mm)	No	SW / MD

24 Volt

08051	500205008051	59	F	2	3" (80 mm)	No	PM / ID
08007	500205008007	61	H	2	5" (125 mm)	No	SW / ID
08120	500205008120	63	F	2	4.5" (114 mm)	Yes	SW / ID
08035	500205008035	65	H	2	5.5" (140 mm)	No	PM / ID

36 Volt

08055	500205008055	67	F	2	4.5" (114 mm)	No	SW / ID
08168	500205008168	69	H	2	5.5" (140 mm)	No	PM / ID

48 Volt

08055	500205008055	71	F	2	4.5" (114 mm)	No	SW / ID
08040	500205008040	73	H	2	5.5" (140 mm)	No	PM / ID

72 Volt

08174	500205008174	75	H	2	5.5" (140 mm)	No	PM / ID
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* Key to Abbreviations
 PM = Permanent Magnet
 ID = Intermittent Duty
 SW = Series Wound
 CW = Compound Wound
 ED = Extended Duty
 HD = Heavy Duty
 MD = Medium Duty

Bucher Hydraulics purchases motors from several qualified suppliers to ensure availability. Minor dimensional and cosmetic differences may exist.

5.2.1 08111 Motor



Order code	500205008111
Voltage	12 VDC
Power	1.6 kW
Insulation	F
Number of Terminals	1
Diameter	4.5" (114 mm)
Overall Length Dimension	6.75" (172 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field

Fixed Clearance Amp Draw for 08111 Motor												
Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	75	75	77	77	79	79	82	82	84	85	86	90
250 (17)	77	78	80	81	85	87	92	96	98	102	106	117
500 (34)	80	81	85	86	92	97	106	112	116	124	130	150
750 (51)	83	85	89	92	100	107	119	128	133	145	154	181
1000 (68)	86	89	94	97	107	117	131	144	150	165	177	211
1250 (86)	89	92	98	102	114	127	144	160	167	185	200	239
1500 (103)	92	96	103	107	121	136	156	175	183	204	222	266
1750 (121)	95	99	107	112	128	146	169	190	199	223	243	293
2000 (138)	98	103	111	117	136	155	181	204	215	242	263	317
2250 (155)	101	106	116	122	143	164	193	219	230	259	283	-
2500 (172)	104	110	120	127	149	173	204	233	245	277	302	-
2750 (190)	107	113	124	132	156	182	216	246	259	293	-	-
3000 (207)	-	117	129	137	163	191	227	260	273	-	-	-
3250 (224)	-	-	133	142	170	200	238	273	287	-	-	-

Current values are DC Amps

Fixed Clearance Flows for 08111 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.64	2.41	0.76	2.88	0.93	3.53	1.09	4.11	1.51	5.71	2.03	7.67	2.64	9.98	3.27	12.38	3.46	13.11	4.20	15.91	4.80	18.18	6.12	23.18	
250 (17)	0.61	2.33	0.73	2.78	0.89	3.38	1.03	3.91	1.41	5.33	1.85	7.01	2.35	8.88	2.84	10.74	2.98	11.27	3.50	13.26	3.91	14.79	4.72	17.87	
500 (34)	0.59	2.23	0.70	2.65	0.84	3.20	0.97	3.67	1.30	4.91	1.67	6.30	2.05	7.77	2.41	9.14	2.51	9.51	2.87	10.88	3.14	11.88	3.64	13.77	
750 (51)	0.56	2.14	0.67	2.52	0.80	3.03	0.91	3.45	1.20	4.54	1.51	5.70	1.81	6.87	2.09	7.92	2.16	8.19	2.42	9.18	2.61	9.89	2.97	11.24	
1000 (68)	0.54	2.05	0.64	2.40	0.76	2.86	0.86	3.25	1.11	4.20	1.37	5.19	1.62	6.14	1.84	6.97	1.90	7.18	2.10	7.94	2.24	8.49	2.53	9.58	
1250 (86)	0.52	1.95	0.60	2.29	0.72	2.71	0.81	3.06	1.03	3.90	1.25	4.74	1.46	5.53	1.64	6.21	1.69	6.40	1.85	7.00	1.97	7.46	2.22	8.39	
1500 (103)	0.49	1.86	0.57	2.17	0.68	2.56	0.76	2.87	0.96	3.62	1.15	4.35	1.33	5.03	1.48	5.61	1.52	5.77	1.65	6.26	1.76	6.67	1.97	7.44	
1750 (121)	0.47	1.77	0.54	2.06	0.64	2.41	0.71	2.70	0.89	3.37	1.06	4.01	1.21	4.60	1.35	5.11	1.39	5.25	1.50	5.67	1.59	6.03	1.73	6.57	
2000 (138)	0.44	1.67	0.51	1.94	0.60	2.27	0.67	2.53	0.83	3.13	0.98	3.70	1.12	4.23	1.24	4.69	1.27	4.82	1.37	5.17	1.44	5.46	1.50	5.68	
2250 (155)	0.42	1.57	0.48	1.83	0.56	2.13	0.63	2.37	0.77	2.92	0.91	3.43	1.03	3.90	1.14	4.32	1.18	4.45	1.25	4.71	1.30	4.94	-	-	
2500 (172)	0.39	1.47	0.45	1.71	0.53	1.99	0.58	2.21	0.72	2.71	0.84	3.17	0.95	3.61	1.06	4.00	1.09	4.11	1.13	4.29	1.16	4.41	-	-	
2750 (190)	0.36	1.36	0.42	1.59	0.49	1.85	0.54	2.05	0.66	2.51	0.78	2.94	0.88	3.35	0.98	3.70	1.00	3.80	1.02	3.86	-	-	-	-	
3000 (207)	-	-	0.39	1.46	0.45	1.71	0.50	1.90	0.61	2.32	0.72	2.71	0.82	3.10	0.90	3.42	0.92	3.50	-	-	-	-	-	-	
3250 (224)	-	-	-	-	0.41	1.56	0.46	1.74	0.56	2.13	0.66	2.50	0.76	2.86	0.83	3.14	0.84	3.19	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08111 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.038 in ³ (0.62 cc)		0.054 in ³ (0.88 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	14.0	31%	14.0	31%	14.0	31%	14.0	31%	13.9	31%	13.8	31%	13.7	31%	13.6	30%	13.6	30%	13.4	30%	13.3	30%	13.1	30%	
250 (17)	13.6	31%	13.6	30%	13.4	30%	13.3	30%	13.0	29%	12.6	29%	12.1	28%	11.7	27%	11.5	27%	11.0	26%	10.6	25%	9.6	23%	
500 (34)	13.2	30%	13.0	29%	12.7	29%	12.5	29%	11.9	28%	11.2	26%	10.4	25%	9.7	24%	9.4	23%	8.6	21%	8.1	20%	6.7	18%	
750 (51)	12.7	29%	12.5	29%	12.1	28%	11.8	27%	11.0	26%	10.1	24%	9.0	22%	8.1	20%	7.8	20%	6.9	18%	6.2	16%	4.8	13%	
1000 (68)	12.3	28%	12.0	28%	11.5	27%	11.1	26%	10.1	24%	9.0	22%	7.8	20%	6.8	18%	6.5	17%	5.5	15%	4.9	13%	3.6	10%	
1250 (86)	11.9	28%	11.5	27%	10.9	26%	10.5	25%	9.3	23%	8.1	20%	6.8	18%	5.8	15%	5.4	15%	4.5	12%	3.9	11%	2.7	8%	
1500 (103)	11.5	27%	11.1	26%	10.4	25%	9.9	24%	8.6	21%	7.3	19%	6.0	16%	4.9	13%	4.6	13%	3.7	10%	3.1	9%	2.1	6%	
1750 (121)	11.1	26%	10.6	25%	9.9	24%	9.4	23%	8.0	20%	6.6	17%	5.3	14%	4.2	12%	3.9	11%	3.1	9%	2.5	7%	1.6	5%	
2000 (138)	10.8	26%	10.2	25%	9.4	23%	8.9	22%	7.4	19%	6.0	16%	4.6	13%	3.7	10%	3.3	9%	2.6	7%	2.1	6%	-	-	
2250 (155)	10.4	25%	9.8	24%	9.0	22%	8.4	21%	6.8	18%	5.4	15%	4.1	11%	3.2	9%	2.9	8%	2.2	6%	1.7	5%	-	-	
2500 (172)	10.1	24%	9.4	23%	8.6	21%	7.9	20%	6.3	17%	4.9	13%	3.7	10%	2.8	8%	2.5	7%	1.8	5%	-	-	-	-	
2750 (190)	9.8	24%	9.1	22%	8.2	21%	7.5	19%	5.9	16%	4.5	12%	3.3	9%	2.4	7%	2.2	6%	-	-	-	-	-	-	
3000 (207)	9.4	23%	8.7	22%	7.8	20%	7.1	18%	5.5	15%	4.1	11%	2.9	8%	2.1	6%	1.9	5%	-	-	-	-	-	-	
3250 (224)	9.1	22%	8.4	21%	7.5	19%	6.8	18%	5.1	14%	3.8	10%	2.6	7%	1.9	5%	1.7	5%	-	-	-	-	-	-	
3500 (240)	8.9	22%	8.1	20%	7.1	18%	6.4	17%	4.8	13%	3.4	10%	2.4	7%	1.7	5%	-	-	-	-	-	-	-	-	
3750 (260)	8.6	21%	7.8	20%	6.8	18%	6.1	16%	4.5	12%	3.2	9%	2.1	6%	-	-	-	-	-	-	-	-	-	-	
4000 (280)	8.3	21%	7.5	19%	6.5	17%	5.8	15%	4.2	12%	2.9	8%	1.9	5%	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.2 08053 Motor



Order code	500205008053
Voltage	12 VDC
Power	0.8 kW
Insulation	F
Number of Terminals	1
Diameter	3" (80 mm)
Overall Length Dimension	5.265" (134 mm)
IP Ratings	IP54
UL Listed	No
Type	Permanent Magnet

Fixed Clearance Amp Draw for 08053 Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	28	28	31	32	35	36	40	42	-	-	-	-
250 (17)	32	33	38	39	47	52	61	67	-	-	-	-
500 (34)	38	40	47	49	61	71	87	100	-	-	-	-
750 (51)	44	47	55	59	75	90	113	133	-	-	-	-
1000 (68)	49	54	64	69	89	110	139	166	-	-	-	-
1250 (86)	55	61	72	80	104	130	166	-	-	-	-	-
1500 (103)	61	68	81	90	119	150	-	-	-	-	-	-
1750 (121)	67	75	90	100	133	170	-	-	-	-	-	-
2000 (138)	72	82	98	110	148	-	-	-	-	-	-	-
2250 (155)	78	89	107	120	163	-	-	-	-	-	-	-
2500 (172)	84	95	116	131	178	-	-	-	-	-	-	-
2750 (190)	90	102	125	141	-	-	-	-	-	-	-	-
3000 (207)	-	110	134	151	-	-	-	-	-	-	-	-
3250 (224)	-	-	143	162	-	-	-	-	-	-	-	-

Current values are DC Amps

Fixed Clearance Flows for 08053 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.75	2.84	0.90	3.40	1.09	4.14	1.27	4.82	1.76	6.64	2.35	8.91	3.04	11.50	3.76	14.24	-	-	-	-	-	-	-	-	-
250 (17)	0.72	2.73	0.86	3.24	1.03	3.91	1.19	4.51	1.61	6.09	2.10	7.94	2.63	9.96	3.16	11.95	-	-	-	-	-	-	-	-	-
500 (34)	0.68	2.59	0.81	3.06	0.96	3.65	1.10	4.18	1.45	5.51	1.85	7.00	2.26	8.54	2.64	9.98	-	-	-	-	-	-	-	-	-
750 (51)	0.65	2.46	0.76	2.88	0.90	3.42	1.03	3.88	1.33	5.02	1.65	6.26	1.97	7.48	2.26	8.56	-	-	-	-	-	-	-	-	-
1000 (68)	0.62	2.33	0.72	2.72	0.85	3.21	0.96	3.62	1.22	4.61	1.49	5.65	1.75	6.62	1.96	7.41	-	-	-	-	-	-	-	-	-
1250 (86)	0.59	2.21	0.68	2.57	0.80	3.01	0.89	3.38	1.12	4.26	1.36	5.14	1.55	5.88	-	-	-	-	-	-	-	-	-	-	-
1500 (103)	0.55	2.10	0.64	2.43	0.75	2.83	0.84	3.17	1.04	3.94	1.24	4.68	-	-	-	-	-	-	-	-	-	-	-	-	-
1750 (121)	0.52	1.99	0.61	2.29	0.70	2.66	0.78	2.96	0.96	3.65	1.12	4.26	-	-	-	-	-	-	-	-	-	-	-	-	-
2000 (138)	0.49	1.87	0.57	2.16	0.66	2.50	0.73	2.78	0.89	3.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2250 (155)	0.47	1.76	0.54	2.03	0.62	2.34	0.69	2.59	0.82	3.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2500 (172)	0.43	1.65	0.50	1.90	0.58	2.19	0.64	2.42	0.76	2.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2750 (190)	0.40	1.53	0.47	1.76	0.54	2.03	0.59	2.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3000 (207)	-	-	0.43	1.63	0.50	1.88	0.55	2.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3250 (224)	-	-	-	-	0.45	1.72	0.50	1.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08053 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	17.1	37%	17.0	37%	16.9	37%	16.8	36%	16.6	36%	16.2	35%	15.8	34%	15.4	33%	-	-	-	-	-	-	-	-	-
250 (17)	15.7	33%	15.3	32%	14.8	31%	14.4	30%	13.2	27%	11.9	24%	10.5	21%	9.2	18%	-	-	-	-	-	-	-	-	-
500 (34)	14.0	29%	13.3	28%	12.5	25%	11.8	24%	9.9	20%	8.0	16%	6.1	13%	4.5	10%	-	-	-	-	-	-	-	-	-
750 (51)	12.5	25%	11.6	24%	10.4	21%	9.6	19%	7.3	15%	5.2	11%	3.4	8%	2.1	6%	-	-	-	-	-	-	-	-	-
1000 (68)	11.1	22%	10.1	20%	8.7	18%	7.7	16%	5.3	11%	3.4	8%	1.8	5%	0.9	4%	-	-	-	-	-	-	-	-	-
1250 (86)	9.8	20%	8.7	18%	7.3	15%	6.2	13%	3.9	9%	2.1	6%	0.9	4%	-	-	-	-	-	-	-	-	-	-	-
1500 (103)	8.7	18%	7.5	15%	6.0	13%	5.0	11%	2.7	7%	1.3	5%	-	-	-	-	-	-	-	-	-	-	-	-	-
1750 (121)	7.7	16%	6.5	13%	5.0	11%	4.0	9%	1.9	6%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000 (138)	6.8	14%	5.6	12%	4.1	9%	3.1	8%	1.3	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2250 (155)	6.0	13%	4.8	10%	3.3	8%	2.4	7%	0.9	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2500 (172)	5.3	11%	4.1	9%	2.7	7%	1.9	6%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2750 (190)	4.7	10%	3.5	8%	2.2	6%	1.5	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3000 (207)	4.1	9%	2.9	7%	1.8	5%	1.1	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3250 (224)	3.6	8%	2.5	7%	1.4	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.3 08196 Motor



Order code	500205008196
Voltage	12 VDC
Power	1.9 kW
Insulation	F
Number of Terminals	1
Diameter	4.5" (114 mm)
Overall Length Dimension	7" (178 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field, Heavy-Duty

Fixed Clearance Amp Draw for 08196 Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	86	86	88	88	90	90	92	93	94	95	96	100
250 (17)	88	89	91	92	95	97	102	105	108	111	114	125
500 (34)	91	92	95	96	102	107	114	120	124	131	137	154
750 (51)	94	95	99	101	109	116	126	135	140	150	159	183
1000 (68)	96	99	103	106	115	125	138	149	155	169	180	211
1250 (86)	99	102	107	111	122	133	149	164	170	187	201	238
1500 (103)	102	105	111	115	128	142	161	178	185	205	221	263
1750 (121)	105	108	115	120	135	151	172	191	200	223	241	288
2000 (138)	107	112	119	125	141	159	183	205	215	240	260	312
2250 (155)	110	115	123	129	148	168	194	218	229	257	279	-
2500 (172)	113	118	127	134	154	176	205	231	243	273	297	-
2750 (190)	115	121	131	138	161	185	216	244	257	289	315	-
3000 (207)	-	124	135	143	167	193	226	257	270	304	332	-
3250 (224)	-	-	139	147	173	201	237	269	283	320	-	-

Current values are DC Amps

Fixed Clearance Flows for 08196 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.59	2.22	0.70	2.66	0.87	3.28	1.01	3.82	1.41	5.34	1.90	7.19	2.49	9.42	3.09	11.71	3.29	12.47	4.01	15.16	4.59	17.37	5.93	22.45	
250 (17)	0.57	2.17	0.68	2.59	0.84	3.18	0.97	3.68	1.34	5.08	1.78	6.73	2.29	8.65	2.79	10.55	2.95	11.15	3.50	13.26	3.94	14.91	4.88	18.46	
500 (34)	0.55	2.10	0.66	2.50	0.80	3.05	0.93	3.51	1.26	4.78	1.64	6.22	2.07	7.83	2.47	9.34	2.59	9.81	3.01	11.39	3.32	12.58	3.96	15.00	
750 (51)	0.54	2.03	0.64	2.41	0.77	2.92	0.89	3.35	1.19	4.50	1.52	5.77	1.88	7.12	2.21	8.36	2.31	8.73	2.63	9.94	2.86	10.84	3.34	12.63	
1000 (68)	0.52	1.95	0.61	2.31	0.74	2.80	0.85	3.20	1.12	4.24	1.42	5.36	1.72	6.52	1.99	7.54	2.07	7.84	2.33	8.81	2.52	9.52	2.90	10.96	
1250 (86)	0.50	1.88	0.59	2.22	0.71	2.68	0.81	3.05	1.06	4.00	1.32	4.99	1.58	5.99	1.81	6.86	1.88	7.11	2.09	7.90	2.25	8.50	2.57	9.75	
1500 (103)	0.48	1.81	0.56	2.13	0.68	2.56	0.77	2.91	1.00	3.78	1.23	4.66	1.46	5.54	1.66	6.28	1.72	6.50	1.89	7.16	2.03	7.69	2.33	8.82	
1750 (121)	0.46	1.73	0.54	2.04	0.64	2.44	0.73	2.77	0.94	3.56	1.15	4.36	1.36	5.13	1.53	5.79	1.58	5.99	1.73	6.55	1.86	7.03	2.14	8.09	
2000 (138)	0.44	1.65	0.51	1.94	0.61	2.32	0.69	2.63	0.89	3.36	1.08	4.08	1.26	4.77	1.42	5.37	1.47	5.55	1.60	6.04	1.71	6.49	1.97	7.46	
2250 (155)	0.41	1.57	0.49	1.85	0.58	2.20	0.66	2.49	0.84	3.17	1.01	3.82	1.18	4.45	1.32	5.00	1.37	5.17	1.48	5.60	1.59	6.02	-	-	
2500 (172)	0.39	1.48	0.46	1.74	0.55	2.08	0.62	2.35	0.79	2.98	0.95	3.58	1.10	4.16	1.23	4.67	1.28	4.83	1.38	5.21	1.48	5.60	-	-	
2750 (190)	0.36	1.38	0.43	1.64	0.52	1.96	0.58	2.21	0.74	2.79	0.88	3.35	1.03	3.89	1.15	4.37	1.20	4.53	1.28	4.85	1.38	5.21	-	-	
3000 (207)	-	-	0.40	1.52	0.48	1.82	0.54	2.06	0.69	2.61	0.83	3.13	0.96	3.64	1.08	4.09	1.12	4.25	1.19	4.51	1.28	4.83	-	-	
3250 (224)	-	-	-	-	0.45	1.69	0.50	1.91	0.64	2.42	0.77	2.91	0.90	3.39	1.01	3.83	1.05	3.98	1.10	4.18	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08196 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	21.9	37%	21.8	37%	21.8	37%	21.8	37%	21.8	37%	21.7	37%	21.6	37%	21.6	37%	21.5	37%	21.5	37%	21.4	37%	21.2	37%	
250 (17)	21.6	37%	21.5	37%	21.4	37%	21.4	37%	21.1	37%	20.9	36%	20.5	36%	20.2	35%	20.1	35%	19.7	35%	19.4	34%	18.5	33%	
500 (34)	21.3	37%	21.2	37%	21.0	36%	20.8	36%	20.4	36%	19.9	35%	19.2	34%	18.6	33%	18.3	33%	17.6	32%	17.0	32%	15.6	30%	
750 (51)	21.0	36%	20.8	36%	20.5	36%	20.3	36%	19.7	35%	18.9	34%	18.0	33%	17.1	32%	16.7	31%	15.7	30%	14.9	29%	13.0	26%	
1000 (68)	20.7	36%	20.4	36%	20.1	35%	19.8	35%	18.9	34%	18.0	33%	16.8	31%	15.7	30%	15.3	29%	14.0	28%	13.1	26%	10.8	23%	
1250 (86)	20.4	36%	20.1	35%	19.6	35%	19.3	34%	18.3	33%	17.1	32%	15.7	30%	14.4	28%	13.9	27%	12.5	26%	11.4	24%	8.9	20%	
1500 (103)	20.1	35%	19.7	35%	19.2	34%	18.8	34%	17.6	32%	16.2	31%	14.6	28%	13.1	26%	12.6	26%	11.0	24%	9.9	22%	7.3	18%	
1750 (121)	19.8	35%	19.4	34%	18.8	34%	18.3	33%	16.9	31%	15.4	29%	13.6	27%	12.0	25%	11.4	24%	9.7	22%	8.5	20%	5.9	16%	
2000 (138)	19.5	35%	19.0	34%	18.4	33%	17.8	33%	16.3	31%	14.6	28%	12.7	26%	10.9	23%	10.3	23%	8.6	20%	7.3	18%	4.7	14%	
2250 (155)	19.2	34%	18.7	34%	18.0	33%	17.4	32%	15.7	30%	13.9	27%	11.8	25%	10.0	22%	9.3	21%	7.5	18%	6.3	16%	3.7	12%	
2500 (172)	18.9	34%	18.4	33%	17.6	32%	16.9	31%	15.1	29%	13.1	26%	10.9	23%	9.1	21%	8.4	20%	6.6	17%	5.3	15%	-	-	
2750 (190)	18.6	34%	18.0	33%	17.2	32%	16.5	31%	14.5	28%	12.5	26%	10.2	22%	8.2	19%	7.5	18%	5.7	15%	4.5	13%	-	-	
3000 (207)	18.4	33%	17.7	32%	16.8	31%	16.0	30%	14.0	28%	11.8	25%	9.4	21%	7.4	18%	6.7	17%	5.0	14%	3.8	12%	-	-	
3250 (224)	18.1	33%	17.4	32%	16.4	31%	15.6	30%	13.4	27%	11.2	24%	8.7	20%	6.7	17%	6.0	16%	4.3	13%	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.4 08050 Motor



Order code	500205008050
Voltage	12 VDC
Power	2.5 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.25" (261 mm)
IP Ratings	IP20
UL Listed	No
Type	Wound Field

Fixed Clearance Amp Draw for 08050 Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	58	58	59	59	60	61	62	62	63	64	64	67
250 (17)	60	60	61	62	64	65	68	70	72	74	76	83
500 (34)	61	62	64	65	68	71	76	80	82	87	90	102
750 (51)	63	64	67	68	72	77	84	89	92	99	105	121
1000 (68)	65	66	69	71	77	83	91	99	102	111	119	139
1250 (86)	66	68	72	74	81	88	99	108	112	123	133	157
1500 (103)	68	70	74	77	85	94	106	117	122	135	146	175
1750 (121)	70	72	77	80	89	100	113	126	132	147	159	192
2000 (138)	72	74	79	83	94	105	121	135	142	159	173	209
2250 (155)	73	76	82	86	98	111	128	144	151	170	185	225
2500 (172)	75	79	84	89	102	116	135	153	161	181	198	-
2750 (190)	77	81	87	92	106	122	142	162	170	193	211	-
3000 (207)	-	83	90	95	110	127	150	170	179	203	223	-
3250 (224)	-	-	92	98	114	133	157	179	188	214	235	-

Current values are DC Amps

Fixed Clearance Flows for 08050 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.37	1.40	0.44	1.68	0.55	2.08	0.64	2.42	0.90	3.40	1.21	4.58	1.59	6.02	1.98	7.50	2.12	8.01	2.58	9.76	2.96	11.19	3.85	14.59	
250 (17)	0.36	1.37	0.43	1.64	0.53	2.02	0.62	2.35	0.86	3.27	1.15	4.35	1.49	5.63	1.82	6.90	1.94	7.33	2.32	8.78	2.62	9.91	3.29	12.46	
500 (34)	0.35	1.33	0.42	1.59	0.51	1.95	0.60	2.26	0.82	3.10	1.08	4.08	1.37	5.19	1.65	6.26	1.74	6.61	2.05	7.74	2.28	8.61	2.76	10.45	
750 (51)	0.34	1.28	0.40	1.53	0.50	1.88	0.57	2.17	0.78	2.95	1.01	3.83	1.27	4.80	1.51	5.70	1.58	5.98	1.82	6.89	2.00	7.57	2.36	8.95	
1000 (68)	0.33	1.24	0.39	1.47	0.48	1.80	0.55	2.08	0.74	2.80	0.95	3.59	1.17	4.45	1.38	5.21	1.44	5.45	1.63	6.18	1.78	6.72	2.06	7.80	
1250 (86)	0.31	1.19	0.37	1.41	0.46	1.73	0.52	1.98	0.70	2.66	0.89	3.38	1.09	4.13	1.26	4.79	1.32	4.99	1.47	5.58	1.59	6.02	1.83	6.91	
1500 (103)	0.30	1.13	0.36	1.35	0.44	1.65	0.50	1.89	0.67	2.52	0.84	3.17	1.01	3.84	1.17	4.41	1.21	4.58	1.34	5.06	1.44	5.44	1.64	6.21	
1750 (121)	0.28	1.08	0.34	1.29	0.42	1.57	0.48	1.80	0.63	2.39	0.79	2.98	0.94	3.58	1.08	4.08	1.12	4.23	1.22	4.61	1.31	4.95	1.49	5.63	
2000 (138)	0.27	1.02	0.32	1.22	0.39	1.49	0.45	1.71	0.60	2.25	0.74	2.80	0.88	3.33	1.00	3.77	1.03	3.91	1.12	4.22	1.19	4.52	1.36	5.16	
2250 (155)	0.25	0.95	0.30	1.15	0.37	1.40	0.43	1.61	0.56	2.12	0.69	2.62	0.82	3.10	0.92	3.50	0.96	3.62	1.02	3.87	1.10	4.15	1.25	4.75	
2500 (172)	0.23	0.88	0.28	1.07	0.35	1.31	0.40	1.51	0.52	1.99	0.65	2.45	0.76	2.88	0.86	3.25	0.89	3.36	0.94	3.56	1.01	3.81	-	-	
2750 (190)	0.21	0.80	0.26	0.98	0.32	1.22	0.37	1.40	0.49	1.85	0.60	2.27	0.71	2.68	0.80	3.01	0.82	3.11	0.86	3.26	0.93	3.51	-	-	
3000 (207)	-	-	0.24	0.89	0.29	1.12	0.34	1.29	0.45	1.71	0.56	2.10	0.65	2.48	0.74	2.79	0.76	2.88	0.79	2.98	0.85	3.22	-	-	
3250 (224)	-	-	-	-	0.27	1.01	0.31	1.17	0.41	1.57	0.51	1.93	0.60	2.28	0.68	2.57	0.70	2.66	0.72	2.72	0.78	2.94	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08050 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	94.1	95%	
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	96.2	97%	86.3	89%	65.7	71%	
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	95.5	96%	90.1	92%	76.0	80%	66.1	71%	46.8	53%	
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	95.5	96%	79.8	83%	74.4	79%	60.5	66%	51.2	57%	33.9	39%	
1500 (103)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	82.7	86%	67.1	72%	61.8	67%	48.6	55%	40.1	46%	25.0	29%		
1750 (121)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	92.1	94%	71.9	76%	56.6	62%	51.6	58%	39.4	45%	31.7	37%	18.8	21%		
2000 (138)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	82.7	86%	62.6	68%	48.0	54%	43.3	49%	32.1	37%	25.3	29%	14.3	16%		
2250 (155)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	95.6	96%	74.4	79%	54.8	61%	40.9	47%	36.5	42%	26.4	31%	20.4	23%	11.0	12%		
2500 (172)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	88.2	90%	67.1	72%	48.0	54%	35.0	40%	31.0	36%	21.8	25%	16.5	19%	8.6	9%		
2750 (190)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	81.5	85%	60.5	66%	42.2	48%	30.0	35%	26.4	31%	18.1	21%	13.5	15%	6.8	6%		
3000 (207)	Cont	Cont	Cont	Cont	Cont	Cont	100.0	100%	75.3	80%	54.8	61%	37.2	43%	25.9	30%	22.6	26%	15.2	17%	11.2	12%	-	-	
3250 (224)	Cont	Cont	Cont	Cont	Cont	Cont	94.4	95%	69.7	75%	49.6	56%	32.9	38%	22.4	26%	19.4	22%	12.8	14%	9.3	9%	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.5 08163 Motor



Order code	500205008163
Voltage	12 VDC
Power	1.9 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Fixed Clearance Amp Draw for 08163 Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.35 cc	0.43 cc	0.53 cc	0.62 cc	0.88 cc	1.19 cc	1.59 cc	1.98 cc	2.14 cc	2.62 cc	3.01 cc	4.05 cc
	0.022 in	0.026 in	0.032 in	0.038 in	0.054 in	0.073 in	0.097 in	0.121 in	0.131 in	0.160 in	0.184 in	0.247 in
50 (3)	34	35	37	37	40	41	44	45	48	49	50	57
250 (17)	38	39	42	43	49	52	59	64	68	74	79	96
500 (34)	42	44	49	51	59	67	79	88	94	106	115	144
750 (51)	47	49	55	58	70	81	98	112	120	137	151	191
1000 (68)	51	54	62	66	81	96	117	135	145	167	185	236
1250 (86)	55	59	68	73	91	110	135	159	170	197	220	281
1500 (103)	59	65	75	81	102	124	154	182	195	227	254	325
1750 (121)	64	70	81	88	112	138	172	204	219	256	287	-
2000 (138)	68	75	87	96	123	152	191	227	243	285	320	-
2250 (155)	72	80	94	103	133	166	209	249	267	314	-	-
2500 (172)	77	85	100	111	143	179	227	271	291	342	-	-
2750 (190)	81	90	106	118	154	193	245	293	314	-	-	-
3000 (207)	85	95	113	125	164	207	262	314	337	-	-	-
3250 (224)	89	100	119	133	174	220	280	336	-	-	-	-
3500 (240)	94	105	125	140	184	234	297	-	-	-	-	-
3750 (260)	98	111	132	147	195	247	314	-	-	-	-	-
4000 (280)	102	116	138	154	205	260	332	-	-	-	-	-

Current values are DC Amps

Fixed Clearance Flows for 08163 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.43	1.65	0.52	1.97	0.65	2.45	0.75	2.86	1.06	4.03	1.43	5.43	1.90	7.18	2.37	8.96	2.54	9.61	3.10	11.74	3.56	13.48	4.70	17.77	
250 (17)	0.43	1.62	0.51	1.94	0.64	2.41	0.74	2.80	1.04	3.93	1.39	5.26	1.82	6.90	2.25	8.53	2.41	9.12	2.91	11.02	3.31	12.54	4.28	16.20	
500 (34)	0.42	1.58	0.50	1.90	0.62	2.35	0.72	2.73	1.01	3.81	1.34	5.06	1.74	6.58	2.13	8.05	2.26	8.57	2.70	10.22	3.05	11.53	3.84	14.54	
750 (51)	0.41	1.55	0.49	1.85	0.61	2.29	0.70	2.66	0.98	3.69	1.29	4.87	1.66	6.27	2.01	7.60	2.13	8.08	2.51	9.51	2.81	10.63	3.46	13.08	
1000 (68)	0.40	1.51	0.48	1.80	0.59	2.23	0.68	2.59	0.94	3.58	1.24	4.69	1.58	5.99	1.90	7.20	2.01	7.61	2.34	8.86	2.59	9.80	3.10	11.72	
1250 (86)	0.39	1.46	0.46	1.76	0.57	2.17	0.66	2.51	0.91	3.46	1.19	4.52	1.51	5.72	1.80	6.81	1.90	7.18	2.18	8.24	2.38	9.02	2.74	10.38	
1500 (103)	0.37	1.42	0.45	1.70	0.56	2.11	0.64	2.44	0.88	3.35	1.15	4.34	1.44	5.46	1.70	6.44	1.79	6.76	2.02	7.63	2.18	8.25	2.38	9.02	
1750 (121)	0.36	1.37	0.43	1.65	0.54	2.04	0.62	2.36	0.85	3.23	1.10	4.17	1.37	5.20	1.61	6.08	1.68	6.36	1.86	7.04	1.97	7.48	-	-	
2000 (138)	0.35	1.31	0.42	1.59	0.52	1.97	0.60	2.28	0.82	3.12	1.06	4.01	1.31	4.95	1.51	5.72	1.57	5.95	1.70	6.43	1.77	6.69	-	-	
2250 (155)	0.33	1.25	0.40	1.52	0.50	1.89	0.58	2.19	0.79	3.00	1.01	3.84	1.24	4.70	1.42	5.37	1.46	5.54	1.54	5.82	-	-	-	-	
2500 (172)	0.31	1.19	0.38	1.45	0.48	1.81	0.56	2.10	0.76	2.87	0.97	3.66	1.17	4.44	1.32	5.01	1.36	5.13	-	-	-	-	-	-	
2750 (190)	0.29	1.11	0.36	1.37	0.46	1.72	0.53	2.01	0.73	2.75	0.92	3.49	1.11	4.19	1.22	4.64	1.24	4.71	-	-	-	-	-	-	
3000 (207)	-	-	0.34	1.28	0.43	1.63	0.50	1.90	0.69	2.61	0.87	3.30	1.04	3.92	1.12	4.26	1.13	4.27	-	-	-	-	-	-	
3250 (224)	-	-	-	-	0.40	1.52	0.47	1.79	0.65	2.47	0.82	3.11	0.96	3.65	1.02	3.86	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08163 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510			
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)			
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	78.2	90%	30.4	53%
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	90.5	98%	50.5	71%	31.1	54%	8.9	26%		
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	59.8	78%	46.9	68%	22.7	45%	12.4	32%	2.6	12%			
1500 (103)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	67.6	83%	32.6	55%	24.4	47%	10.3	28%	5.0	18%	0.8	5%			
1750 (121)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	97.4	Cont	41.6	64%	17.9	39%	12.7	32%	4.7	17%	2.0	10%	-	-	-	-	
2000 (138)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	67.6	83%	25.6	48%	9.8	27%	6.7	22%	2.1	11%	0.8	6%	-	-	-	-	
2250 (155)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	46.9	68%	15.8	37%	5.4	19%	3.5	15%	1.0	6%	-	-	-	-	-	-	
2500 (172)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	8.41	94%	32.6	55%	9.8	27%	3.0	13%	1.9	10%	-	-	-	-	-	-	-	-	
2750 (190)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	64.2	81%	22.7	45%	6.1	21%	1.6	9%	1.0	6%	-	-	-	-	-	-	-	-	
3000 (207)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	49.0	70%	15.8	37%	3.8	15%	0.9	6%	-	-	-	-	-	-	-	-	-	-	
3250 (224)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	37.5	60%	11.0	30%	2.3	11%	-	-	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.6 08004 Motor



Order code	500205008004
Voltage	12 VDC
Power	0.8 kW
Insulation	F
Number of Terminals	1
Housing Diameter	3" (80 mm)
Length Dimension	5.860" (149 mm)
IP Ratings	IP54
UL Listed	No
Type	Permanent Magnet

Fixed Clearance Amp Draw for 08004 Motor												
Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	26	26	29	29	32	33	36	37	-	-	-	-
250 (17)	30	30	34	35	41	45	52	57	-	-	-	-
500 (34)	34	36	41	43	52	60	73	83	-	-	-	-
750 (51)	39	41	48	51	64	76	94	109	-	-	-	-
1000 (68)	43	47	55	59	75	91	115	136	-	-	-	-
1250 (86)	48	52	61	67	87	107	136	163	-	-	-	-
1500 (103)	52	58	68	75	98	123	157	190	-	-	-	-
1750 (121)	57	63	75	83	110	139	179	-	-	-	-	-
2000 (138)	61	69	82	91	122	155	201	-	-	-	-	-
2250 (155)	66	74	89	100	133	171	-	-	-	-	-	-
2500 (172)	71	80	96	108	145	187	-	-	-	-	-	-
2750 (190)	75	85	103	116	157	204	-	-	-	-	-	-
3000 (207)	80	91	110	124	169	-	-	-	-	-	-	-
3250 (224)	85	97	117	133	181	-	-	-	-	-	-	-

Current values are DC Amps

Fixed Clearance Flows for 08004 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.48	1.82	0.58	2.18	0.71	2.69	0.83	3.13	1.16	4.38	1.56	5.89	2.04	7.73	2.54	9.61	-	-	-	-	-	-	-	-	-
250 (17)	0.47	1.77	0.56	2.12	0.69	2.60	0.80	3.02	1.10	4.17	1.46	5.53	1.88	7.12	2.29	8.68	-	-	-	-	-	-	-	-	-
500 (34)	0.45	1.71	0.54	2.04	0.66	2.50	0.76	2.88	1.04	3.93	1.35	5.12	1.70	6.44	2.03	7.68	-	-	-	-	-	-	-	-	-
750 (51)	0.44	1.65	0.52	1.97	0.63	2.39	0.73	2.75	0.98	3.70	1.25	4.74	1.54	5.83	1.79	6.79	-	-	-	-	-	-	-	-	-
1000 (68)	0.42	1.59	0.50	1.89	0.61	2.29	0.69	2.62	0.92	3.48	1.16	4.38	1.39	5.27	1.58	5.98	-	-	-	-	-	-	-	-	-
1250 (86)	0.40	1.53	0.48	1.81	0.58	2.19	0.66	2.50	0.86	3.27	1.07	4.05	1.25	4.74	1.38	5.22	-	-	-	-	-	-	-	-	-
1500 (103)	0.39	1.47	0.46	1.73	0.55	2.09	0.63	2.37	0.81	3.07	0.99	3.73	1.12	4.24	1.19	4.51	-	-	-	-	-	-	-	-	-
1750 (121)	0.37	1.40	0.44	1.65	0.52	1.98	0.59	2.25	0.76	2.87	0.90	3.42	0.99	3.76	-	-	-	-	-	-	-	-	-	-	-
2000 (138)	0.35	1.32	0.41	1.57	0.50	1.87	0.56	2.12	0.71	2.67	0.82	3.12	0.87	3.30	-	-	-	-	-	-	-	-	-	-	-
2250 (155)	0.33	1.25	0.39	1.48	0.47	1.76	0.53	1.99	0.65	2.47	0.74	2.82	-	-	-	-	-	-	-	-	-	-	-	-	-
2500 (172)	0.31	1.16	0.37	1.38	0.44	1.65	0.49	1.86	0.60	2.28	0.67	2.52	-	-	-	-	-	-	-	-	-	-	-	-	-
2750 (190)	0.28	1.07	0.34	1.28	0.40	1.53	0.45	1.72	0.55	2.07	0.59	2.23	-	-	-	-	-	-	-	-	-	-	-	-	-
3000 (207)	0.26	0.98	0.31	1.17	0.37	1.40	0.42	1.57	0.49	1.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3250 (224)	0.23	0.87	0.28	1.06	0.34	1.27	0.38	1.42	0.44	1.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08004 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	18.9	43%	18.9	42%	18.8	42%	18.7	42%	18.5	41%	18.2	40%	17.8	39%	17.5	38%	-	-	-	-	-	-	-	-	-
250 (17)	17.7	39%	17.3	38%	16.9	37%	16.5	36%	15.5	33%	14.3	30%	12.9	26%	11.6	24%	-	-	-	-	-	-	-	-	-
500 (34)	16.1	35%	15.6	33%	14.8	31%	14.1	29%	12.3	25%	10.4	21%	8.4	17%	6.8	14%	-	-	-	-	-	-	-	-	-
750 (51)	14.8	31%	14.0	29%	12.9	26%	12.0	24%	9.7	20%	7.5	15%	5.4	12%	3.8	9%	-	-	-	-	-	-	-	-	-
1000 (68)	13.5	28%	12.5	26%	11.2	23%	10.2	21%	7.7	16%	5.4	12%	3.4	8%	2.0	6%	-	-	-	-	-	-	-	-	-
1250 (86)	12.3	25%	11.2	23%	9.7	20%	8.6	17%	6.0	13%	3.8	9%	2.0	6%	1.0	4%	-	-	-	-	-	-	-	-	-
1500 (103)	11.2	23%	10.0	20%	8.4	17%	7.2	15%	4.6	10%	2.6	7%	1.2	4%	0.5	3%	-	-	-	-	-	-	-	-	-
1750 (121)	10.2	20%	8.9	18%	7.2	15%	6.1	13%	3.5	8%	1.8	5%	0.7	3%	0.2	2%	-	-	-	-	-	-	-	-	-
2000 (138)	9.2	19%	7.9	16%	6.2	13%	5.1	11%	2.7	7%	1.2	4%	0.4	3%	-	-	-	-	-	-	-	-	-	-	-
2250 (155)	8.4	17%	7.0	14%	5.3	11%	4.2	10%	2.0	6%	0.8	4%	0.2	2%	-	-	-	-	-	-	-	-	-	-	-
2500 (172)	7.6	15%	6.2	13%	4.6	10%	3.5	8%	1.5	5%	0.5	3%	-	-	-	-	-	-	-	-	-	-	-	-	-
2750 (190)	6.9	14%	5.5	12%	3.9	9%	2.9	7%	1.1	4%	0.3	2%	-	-	-	-	-	-	-	-	-	-	-	-	-
3000 (207)	6.2	13%	4.9	11%	3.3	8%	2.4	6%	0.8	4%	0.2	2%	-	-	-	-	-	-	-	-	-	-	-	-	-
3250 (224)	-	-	4.3	10%	2.8	7%	1.9	6%	0.6	3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.7 22368 Motor



Order code	500205022368
Voltage	12 VDC
Power	1.9 kW
Insulation	F
Number of Terminals	1
Housing Diameter	4.5" (114 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field Medium Duty

Fixed Clearance Amp Draw for 22368 Motor												
Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.038 in ³ (0.62 cc)	0.054 in ³ (0.88 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	74	75	76	76	78	78	80	80	82	82	83	87
250 (17)	76	77	79	79	82	84	88	91	93	96	99	108
500 (34)	79	80	82	83	88	92	99	104	107	114	119	135
750 (51)	81	83	86	88	94	100	109	117	121	131	138	161
1000 (68)	83	85	89	92	100	108	120	130	135	148	158	186
1250 (86)	86	88	93	96	106	116	130	143	149	164	177	212
1500 (103)	88	91	96	100	111	124	140	156	163	181	196	237
1750 (121)	91	94	100	104	117	131	151	168	177	198	215	262
2000 (138)	93	97	103	108	123	139	161	181	190	214	234	286
2250 (155)	95	99	107	112	129	147	171	194	204	230	252	310
2500 (172)	98	102	110	116	134	154	181	206	217	246	270	-
2750 (190)	100	105	114	120	140	162	191	218	230	262	289	-
3000 (207)	102	108	117	124	146	170	201	231	243	278	306	-
3250 (224)	-	-	121	128	152	177	211	243	257	294	324	-

Current values are DC Amps

Fixed Clearance Flows for 22368 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.038 in ³ (0.62 cc)		0.054 in ³ (0.88 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.62	2.35	0.74	2.80	0.91	3.44	1.06	4.01	1.47	5.56	1.97	7.46	2.56	9.69	3.18	12.04	3.36	12.72	4.08	15.44	4.66	17.64	5.94	22.49	
250 (17)	0.60	2.27	0.71	2.69	0.87	3.29	1.00	3.79	1.37	5.19	1.80	6.81	2.27	8.59	2.75	10.41	2.88	10.90	3.39	12.83	3.78	14.31	4.56	17.26	
500 (34)	0.57	2.16	0.68	2.57	0.82	3.10	0.94	3.56	1.26	4.77	1.61	6.09	1.98	7.50	2.33	8.80	2.43	9.0	2.78	10.52	3.04	11.51	3.54	13.40	
750 (51)	0.55	2.08	0.65	2.46	0.77	2.91	0.88	3.33	1.16	4.39	1.46	5.53	1.76	6.66	2.03	7.68	2.10	7.95	2.36	8.93	2.55	9.65	2.92	11.05	
1000 (68)	0.52	1.97	0.62	2.35	0.73	2.76	0.83	3.14	1.07	4.05	1.32	5.00	1.57	5.94	1.79	6.78	1.85	7.00	2.05	7.76	2.21	8.37	2.52	9.54	
1250 (86)	0.50	1.89	0.58	2.20	0.69	2.61	0.78	2.95	0.99	3.75	1.21	4.58	1.42	5.38	1.60	6.06	1.65	6.25	1.82	6.89	1.96	7.42	2.24	8.48	
1500 (103)	0.48	1.82	0.55	2.08	0.65	2.46	0.73	2.76	0.92	3.48	1.11	4.20	1.29	4.88	1.45	5.49	1.50	5.68	1.65	6.25	1.77	6.70	2.02	7.65	
1750 (121)	0.45	1.70	0.52	1.97	0.61	2.31	0.69	2.61	0.86	3.26	1.03	3.90	1.19	4.50	1.33	5.03	1.38	5.22	1.50	5.68	1.61	6.09	1.84	6.97	
2000 (138)	0.43	1.63	0.49	1.85	0.58	2.20	0.65	2.46	0.80	3.03	0.95	3.60	1.10	4.16	1.23	4.66	1.27	4.81	1.38	5.22	1.48	5.60	1.67	6.32	
2250 (155)	0.40	1.51	0.46	1.74	0.54	2.04	0.60	2.27	0.75	2.84	0.88	3.33	1.02	3.86	1.14	4.32	1.18	4.47	1.28	4.85	1.37	5.19	1.50	5.68	
2500 (172)	0.37	1.40	0.43	1.63	0.51	1.93	0.56	2.12	0.69	2.61	0.82	3.10	0.95	3.60	1.07	4.05	1.10	4.16	1.18	4.47	1.26	4.77	-	-	
2750 (190)	0.35	1.32	0.40	1.51	0.47	1.78	0.52	1.97	0.64	2.42	0.76	2.88	0.88	3.33	1.00	3.79	1.03	3.90	1.09	4.13	1.15	4.35	-	-	
3000 (207)	0.32	1.21	0.37	1.40	0.43	1.63	0.48	1.82	0.60	2.27	0.71	2.69	0.82	3.10	0.93	3.52	0.96	3.63	0.99	3.75	1.04	3.94	-	-	
3250 (224)	-	-	-	-	0.39	1.48	0.44	1.67	0.55	2.08	0.65	2.46	0.77	2.91	0.86	3.26	0.89	3.37	0.90	3.41	0.93	3.52	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 22368 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.038 in ³ (0.62 cc)		0.054 in ³ (0.88 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	13.0	28%	12.9	28%	12.9	28%	12.9	28%	12.8	28%	12.7	28%	12.6	28%	12.5	27%	12.5	27%	12.3	27%	12.2	27%	12.0	27%	
250 (17)	12.6	27%	12.5	27%	12.3	27%	12.2	27%	11.9	27%	11.5	27%	11.1	26%	10.6	26%	10.5	26%	10.0	25%	9.7	25%	8.8	24%	
500 (34)	12.1	27%	11.9	27%	11.7	27%	11.5	27%	10.9	26%	10.3	26%	9.5	25%	8.9	24%	8.6	24%	8.0	23%	7.5	23%	6.4	21%	
750 (51)	11.7	27%	11.4	27%	11.1	26%	10.8	26%	10.0	25%	9.2	25%	8.3	24%	7.6	23%	7.3	22%	6.6	21%	6.0	20%	5.0	18%	
1000 (68)	11.3	27%	10.9	26%	10.5	26%	10.2	26%	90.2	25%	8.3	24%	7.3	22%	6.5	21%	6.2	21%	5.5	19%	5.0	18%	4.0	15%	
1250 (87)	10.9	26%	10.5	26%	10.0	25%	9.6	25%	8.6	24%	7.6	23%	6.5	21%	5.7	20%	5.4	19%	4.7	17%	4.2	16%	3.3	13%	
1500 (103)	10.5	26%	10.1	26%	9.5	25%	9.1	24%	8.0	23%	6.9	22%	5.9	20%	5.0	18%	4.8	18%	4.1	16%	3.6	14%	2.8	11%	
1750 (121)	10.2	26%	9.7	25%	9.1	24%	8.6	24%	7.4	22%	6.3	21%	5.3	19%	4.5	17%	4.2	16%	3.6	14%	3.2	13%	2.4	9%	
2000 (138)	9.8	25%	9.3	25%	8.7	24%	8.2	23%	7.0	22%	5.9	20%	4.8	18%	4.0	16%	3.8	15%	3.2	13%	2.8	11%	2.1	7%	
2250 (155)	9.5	25%	9.0	24%	8.3	24%	7.8	23%	6.5	21%	5.4	19%	4.4	17%	3.7	14%	3.4	14%	2.8	11%	2.5	10%	1.8	6%	
2500 (172)	9.2	25%	8.7	24%	7.9	23%	7.4	22%	6.1	20%	5.0	18%	4.0	16%	3.3	13%	3.1	12%	2.6	10%	2.2	8%	-	-	
2750 (190)	8.9	24%	8.4	24%	7.6	23%	7.1	22%	5.8	20%	4.7	17%	3.7	15%	3.1	12%	2.8	11%	2.3	9%	2.0	7%	-	-	
3000 (207)	8.7	24%	8.1	23%	7.3	22%	6.8	21%	5.5	19%	4.4	17%	3.5	14%	2.8	11%	2.6	10%	2.1	8%	1.8	6%	-	-	
3250 (224)	-	-	-	-	7.0	22%	6.5	21%	5.2	18%	4.1	16%	3.2	13%	2.6	10%	2.4	9%	2.0	7%	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.8 08051 Motor



Order code	500205008051
Voltage	24 VDC
Power	0.8 kW
Insulation	F
Number of Terminals	1
Diameter	3" (80 mm)
Overall Length Dimension	5.265" (134 mm)
IP Ratings	IP54
UL Listed	No
Type	Permanent Magnet

Fixed Clearance Amp Draw for 08051 Motor												
Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	25	25	26	27	28	29	30	31	-	-	-	-
250 (17)	27	27	29	30	33	35	39	42	-	-	-	-
500 (34)	29	30	33	34	39	44	51	57	-	-	-	-
750 (51)	32	33	37	39	45	52	63	72	-	-	-	-
1000 (68)	34	36	40	43	52	61	75	88	-	-	-	-
1250 (86)	37	39	44	47	59	70	88	105	-	-	-	-
1500 (103)	39	42	48	52	65	80	101	-	-	-	-	-
1750 (121)	42	45	52	57	72	90	115	-	-	-	-	-
2000 (138)	44	48	56	61	79	100	-	-	-	-	-	-
2250 (155)	47	51	60	66	86	110	-	-	-	-	-	-
2500 (172)	49	55	64	71	94	-	-	-	-	-	-	-
2750 (190)	52	58	68	76	101	-	-	-	-	-	-	-
3000 (207)	55	61	72	81	109	-	-	-	-	-	-	-
3250 (224)	-	64	77	86	-	-	-	-	-	-	-	-

Current values are DC Amps

Fixed Clearance Flows for 08051 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.73	2.76	0.87	3.30	1.06	4.01	1.23	4.66	1.70	6.42	2.27	8.60	2.93	11.08	3.62	13.71	-	-	-	-	-	-	-	-	-
250 (17)	0.70	2.64	0.83	3.13	1.00	3.77	1.15	4.35	1.55	5.85	2.01	7.63	2.52	9.54	3.02	11.44	-	-	-	-	-	-	-	-	-
500 (34)	0.66	2.50	0.78	2.94	0.93	3.51	1.06	4.01	1.39	5.27	1.77	6.69	2.15	8.16	2.52	9.54	-	-	-	-	-	-	-	-	-
750 (51)	0.62	2.36	0.73	2.77	0.87	3.28	0.98	3.72	1.27	4.80	1.58	5.98	1.89	7.14	2.16	8.19	-	-	-	-	-	-	-	-	-
1000 (68)	0.59	2.24	0.69	2.61	0.81	3.07	0.91	3.46	1.16	4.40	1.43	5.40	1.67	6.34	1.87	7.08	-	-	-	-	-	-	-	-	-
1250 (86)	0.56	2.12	0.65	2.46	0.76	2.88	0.85	3.23	1.07	4.06	1.30	4.91	1.49	5.63	1.59	6.03	-	-	-	-	-	-	-	-	-
1500 (103)	0.53	2.01	0.61	2.32	0.71	2.70	0.80	3.02	0.99	3.76	1.18	4.48	1.30	4.94	-	-	-	-	-	-	-	-	-	-	-
1750 (121)	0.50	1.89	0.58	2.19	0.67	2.54	0.75	2.83	0.92	3.49	1.07	4.06	1.12	4.23	-	-	-	-	-	-	-	-	-	-	-
2000 (138)	0.47	1.78	0.54	2.06	0.63	2.38	0.70	2.64	0.85	3.23	0.97	3.66	-	-	-	-	-	-	-	-	-	-	-	-	-
2250 (155)	0.44	1.67	0.51	1.93	0.59	2.23	0.65	2.47	0.79	2.98	0.86	3.24	-	-	-	-	-	-	-	-	-	-	-	-	-
2500 (172)	0.41	1.56	0.48	1.80	0.55	2.08	0.61	2.30	0.72	2.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2750 (190)	0.38	1.45	0.44	1.67	0.51	1.93	0.56	2.13	0.65	2.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3000 (207)	0.35	1.33	0.41	1.54	0.47	1.78	0.52	1.96	0.58	2.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3250 (224)	-	-	0.37	1.40	0.43	1.62	0.47	1.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

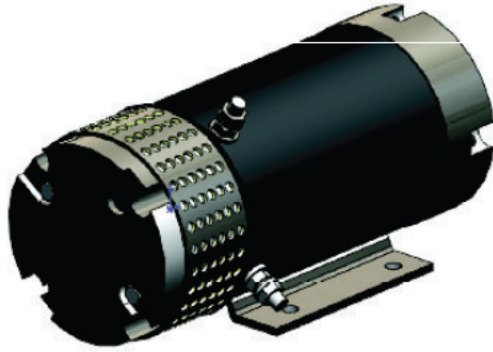
Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08051 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	10.7	25%	10.6	24%	10.5	24%	10.5	24%	10.3	24%	10.1	23%	9.8	22%	9.5	22%	-	-	-	-	-	-	-	-	-
250 (17)	9.6	22%	9.4	21%	9.0	20%	8.8	20%	8.0	18%	7.1	16%	6.1	13%	5.3	12%	-	-	-	-	-	-	-	-	-
500 (34)	8.5	19%	8.1	18%	7.4	17%	7.0	15%	5.7	13%	4.5	10%	3.3	8%	2.4	6%	-	-	-	-	-	-	-	-	-
750 (51)	7.4	17%	6.9	15%	6.1	13%	5.5	12%	4.1	9%	2.8	7%	1.7	4%	1.0	3%	-	-	-	-	-	-	-	-	-
1000 (68)	6.5	14%	5.9	13%	5.0	11%	4.3	10%	2.8	7%	1.7	4%	0.8	3%	0.4	2%	-	-	-	-	-	-	-	-	-
1250 (86)	5.7	13%	5.0	11%	4.0	9%	3.4	8%	2.0	5%	1.0	3%	0.4	2%	-	-	-	-	-	-	-	-	-	-	-
1500 (103)	5.0	11%	4.2	9%	3.3	7%	2.6	6%	1.3	4%	0.6	2%	0.2	-	-	-	-	-	-	-	-	-	-	-	-
1750 (121)	4.3	10%	3.6	8%	2.6	6%	2.0	5%	0.9	3%	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000 (138)	3.8	9%	3.0	7%	2.1	5%	1.5	4%	0.6	2%	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2250 (155)	3.3	7%	2.5	6%	1.7	4%	1.2	3%	0.4	2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2500 (172)	2.8	7%	2.1	5%	1.3	4%	0.9	3%	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2750 (190)	2.4	6%	1.7	5%	1.0	3%	0.7	2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3000 (207)	2.1	5%	1.4	4%	0.8	3%	0.5	2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3250 (224)	-	-	1.2	3%	0.6	2%	0.4	2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.9 08007 Motor



Order code	500205008007
Voltage	24 VDC
Power	4.5 kW
Insulation	H
Number of Terminals	2
Diameter	5" (125 mm)
Overall Length Dimension	11" (280 mm)
IP Ratings	IP20
UL Listed	No
Type	Wound Field

Fixed Clearance Amp Draw for 08007 Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	51	51	52	52	53	53	54	54	55	55	56	58
250 (17)	52	52	53	54	55	57	59	60	62	64	65	70
500 (34)	53	54	55	56	59	61	65	68	70	74	77	86
750 (51)	55	55	57	58	62	66	71	76	78	84	88	101
1000 (68)	56	57	60	61	66	70	77	83	86	94	100	116
1250 (86)	57	59	62	63	69	75	83	91	95	103	111	131
1500 (103)	59	60	64	66	72	80	89	98	103	113	122	146
1750 (121)	60	62	66	68	76	84	95	106	111	123	133	161
2000 (138)	62	64	68	70	79	89	101	113	119	133	144	175
2250 (155)	63	65	70	73	83	93	107	121	127	142	155	190
2500 (172)	64	67	72	75	86	98	113	128	134	152	166	204
2750 (190)	66	69	74	78	89	102	119	135	142	161	177	218
3000 (207)	-	70	76	80	93	107	125	143	150	171	188	232
3250 (224)	-	-	78	82	96	111	131	150	158	180	198	-

Current values are DC Amps

Fixed Clearance Flows for 08007 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.61	2.29	0.73	2.75	0.90	3.40	1.05	3.97	1.47	5.58	1.99	7.52	2.62	9.91	3.26	12.35	3.49	13.21	4.26	16.11	4.88	18.48	6.40	24.21	
250 (17)	0.59	2.25	0.71	2.70	0.88	3.33	1.02	3.87	1.43	5.40	1.90	7.21	2.48	9.38	3.05	11.54	3.25	12.29	3.90	14.76	4.42	16.73	5.62	21.28	
500 (34)	0.58	2.20	0.69	2.63	0.86	3.24	0.99	3.75	1.37	5.19	1.81	6.84	2.32	8.78	2.81	10.65	2.98	11.29	3.52	13.33	3.94	14.92	4.87	18.43	
750 (51)	0.57	2.15	0.68	2.56	0.83	3.14	0.96	3.63	1.32	4.98	1.72	6.50	2.18	8.24	2.61	9.87	2.75	10.42	3.20	12.12	3.55	13.43	4.29	16.23	
1000 (68)	0.55	2.09	0.66	2.49	0.81	3.05	0.93	3.52	1.26	4.79	1.63	6.19	2.05	7.75	2.43	9.19	2.55	9.66	2.93	11.10	3.22	12.20	3.84	14.53	
1250 (86)	0.54	2.03	0.64	2.42	0.78	2.96	0.90	3.40	1.21	4.60	1.56	5.89	1.93	7.31	2.27	8.58	2.38	9.00	2.70	10.23	2.95	11.18	3.48	13.18	
1500 (103)	0.52	1.97	0.62	2.35	0.76	2.86	0.87	3.29	1.17	4.42	1.48	5.62	1.82	6.90	2.12	8.04	2.22	8.41	2.50	9.48	2.72	10.31	3.20	12.10	
1750 (121)	0.50	1.91	0.60	2.27	0.73	2.77	0.84	3.17	1.12	4.24	1.41	5.35	1.73	6.53	2.00	7.56	2.08	7.89	2.33	8.83	2.53	9.58	2.96	11.22	
2000 (138)	0.49	1.84	0.58	2.19	0.71	2.67	0.81	3.06	1.07	4.06	1.35	5.10	1.63	6.19	1.88	7.12	1.96	7.43	2.18	8.26	2.36	8.95	2.77	10.49	
2250 (155)	0.47	1.76	0.56	2.11	0.68	2.57	0.78	2.94	1.03	3.89	1.28	4.86	1.55	5.87	1.78	6.73	1.85	7.01	2.05	7.75	2.22	8.39	2.61	9.87	
2500 (172)	0.45	1.69	0.53	2.02	0.65	2.46	0.74	2.82	0.98	3.72	1.22	4.63	1.47	5.56	1.68	6.37	1.75	6.63	1.93	7.29	2.09	7.90	2.46	9.32	
2750 (190)	0.42	1.60	0.51	1.92	0.62	2.35	0.71	2.69	0.94	3.55	1.16	4.41	1.39	5.28	1.59	6.03	1.66	6.28	1.82	6.87	1.97	7.46	2.33	8.82	
3000 (207)	-	-	0.48	1.82	0.59	2.23	0.68	2.56	0.89	3.38	1.11	4.19	1.32	5.01	1.51	5.72	1.57	5.96	1.71	6.48	1.86	7.05	2.21	8.35	
3250 (224)	-	-	-	-	0.56	2.11	0.64	2.42	0.85	3.20	1.05	3.97	1.25	4.74	1.43	5.42	1.49	5.65	1.62	6.12	1.76	6.67	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08007 Motor																										
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510			
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)			
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont		
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont		
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont		
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont		
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont		
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont		
1500 (103)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	85.4	94%		
1750 (121)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	56.9	71%		
2000 (138)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	86.9	95%	39.3	56%	
2250 (155)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	92.1	99%	63.9	76%	27.9	45%	
2500 (172)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	70.2	81%	48.0	63%	20.4	38%	
2750 (190)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	92.1	99%	54.4	68%	36.7	53%	15.2	32%
3000 (207)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	89.8	97%	73.7	84%	42.7	59%	28.5	46%	11.6	28%		
3250 (224)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	73.1	84%	59.6	73%	34.0	51%	22.4	40%	-	-		

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.10 08120 Motor



Order code	500205008120
Voltage	24 VDC
Power	2.1 kW
Insulation	F
Number of Terminals	2
Diameter	4.5" (114 mm)
Overall Length Dimension	6.75" (172 mm)
IP Ratings	IP54
UL Listed	Yes
Type	Wound Field

Fixed Clearance Amp Draw for 08120 Motor												
Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	48	48	48	48	49	50	51	51	52	52	52	54
250 (17)	49	49	50	50	52	53	55	57	58	60	61	66
500 (34)	50	51	52	53	55	58	61	64	66	70	72	81
750 (51)	51	52	54	55	59	62	67	72	74	79	84	96
1000 (68)	53	54	56	57	62	66	73	79	82	89	94	111
1250 (86)	54	55	58	60	65	71	79	86	90	98	105	125
1500 (103)	55	57	60	62	68	75	85	93	97	108	116	139
1750 (121)	57	58	62	64	72	80	90	100	105	117	127	153
2000 (138)	58	60	64	66	75	84	96	108	113	126	137	167
2250 (155)	59	62	66	69	78	88	102	115	120	135	148	181
2500 (172)	61	63	68	71	81	93	108	122	128	144	158	194
2750 (190)	62	65	70	73	85	97	113	129	135	154	168	207
3000 (207)	-	66	72	76	88	101	119	136	143	162	179	220
3250 (224)	-	-	74	78	91	105	124	142	150	171	189	-

Current values are DC Amps

Fixed Clearance Flows for 08120 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.58	2.19	0.69	2.63	0.86	3.25	1.00	3.78	1.40	5.30	1.89	7.14	2.48	9.37	3.08	11.66	3.29	12.44	4.00	15.15	4.59	17.36	5.96	22.56	
250 (17)	0.57	2.15	0.68	2.57	0.83	3.16	0.97	3.66	1.34	5.08	1.78	6.75	2.30	8.71	2.82	10.66	2.99	11.30	3.56	13.49	4.02	15.21	5.02	19.02	
500 (34)	0.55	2.08	0.66	2.48	0.80	3.04	0.93	3.52	1.27	4.82	1.66	6.30	2.11	7.98	2.53	9.59	2.67	10.10	3.12	11.79	3.46	13.09	4.17	15.78	
750 (51)	0.53	2.02	0.64	2.40	0.77	2.93	0.89	3.38	1.21	4.57	1.56	5.89	1.94	7.35	2.29	8.68	2.40	9.10	2.76	10.44	3.02	11.44	3.55	13.45	
1000 (68)	0.52	1.96	0.61	2.32	0.75	2.82	0.86	3.24	1.15	4.34	1.46	5.52	1.79	6.79	2.09	7.91	2.18	8.26	2.47	9.33	2.68	10.13	3.10	11.72	
1250 (86)	0.50	1.89	0.59	2.24	0.72	2.71	0.82	3.10	1.09	4.12	1.37	5.19	1.66	6.29	1.92	7.25	1.99	7.54	2.23	8.42	2.40	9.09	2.75	10.41	
1500 (103)	0.48	1.82	0.57	2.16	0.69	2.61	0.79	2.97	1.03	3.91	1.29	4.87	1.55	5.85	1.77	6.68	1.83	6.93	2.02	7.67	2.17	8.23	2.48	9.39	
1750 (121)	0.46	1.75	0.55	2.07	0.66	2.50	0.75	2.84	0.98	3.71	1.21	4.58	1.44	5.45	1.63	6.19	1.69	6.41	1.86	7.02	1.99	7.52	2.26	8.57	
2000 (138)	0.44	1.67	0.52	1.98	0.63	2.39	0.72	2.71	0.93	3.52	1.14	4.31	1.35	5.09	1.52	5.75	1.57	5.95	1.71	6.47	1.83	6.92	2.08	7.87	
2250 (155)	0.42	1.59	0.50	1.89	0.60	2.27	0.68	2.58	0.88	3.33	1.07	4.06	1.26	4.77	1.42	5.36	1.46	5.54	1.58	5.98	1.69	6.40	1.92	7.25	
2500 (172)	0.40	1.51	0.47	1.79	0.57	2.16	0.65	2.45	0.83	3.15	1.01	3.82	1.18	4.46	1.32	5.01	1.37	5.17	1.47	5.55	1.57	5.94	1.76	6.68	
2750 (190)	0.37	1.42	0.45	1.69	0.54	2.04	0.61	2.31	0.78	2.97	0.95	3.59	1.10	4.18	1.24	4.68	1.28	4.84	1.36	5.15	1.46	5.51	1.62	6.12	
3000 (207)	-	-	0.42	1.58	0.51	1.91	0.57	2.17	0.74	2.78	0.89	3.36	1.03	3.91	1.16	4.38	1.20	4.53	1.26	4.78	1.35	5.11	1.46	5.54	
3250 (224)	-	-	-	-	0.47	1.78	0.54	2.03	0.69	2.60	0.83	3.14	0.97	3.66	1.08	4.10	1.12	4.24	1.17	4.43	1.25	4.71	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08120 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	9.7	24%	9.7	24%	9.7	24%	9.7	24%	9.7	24%	9.7	24%	9.6	24%	9.6	24%	9.6	24%	9.6	24%	9.5	24%	9.5	23%	
250 (17)	9.6	24%	9.6	24%	9.6	24%	9.5	24%	9.4	23%	9.3	23%	9.2	23%	9.0	23%	9.0	23%	8.8	22%	8.7	22%	8.3	22%	
500 (34)	9.5	23%	9.5	23%	9.4	23%	9.3	23%	9.1	23%	8.9	23%	8.6	22%	8.4	22%	8.3	22%	8.0	21%	7.7	21%	7.1	20%	
750 (51)	9.4	23%	9.3	23%	9.2	23%	9.1	23%	8.8	22%	8.5	22%	8.1	21%	7.7	21%	7.6	20%	7.2	20%	6.9	19%	6.1	18%	
1000 (68)	9.2	23%	9.1	23%	9.0	23%	8.9	22%	8.5	22%	8.1	21%	7.6	20%	7.2	20%	7.0	19%	6.5	18%	6.1	18%	5.2	16%	
1250 (86)	9.1	23%	9.0	23%	8.8	22%	8.7	22%	8.2	21%	7.7	21%	7.2	20%	6.6	19%	6.4	18%	5.9	17%	5.4	16%	4.4	14%	
1500 (103)	9.0	23%	8.8	22%	8.6	22%	8.4	22%	7.9	21%	7.4	20%	6.7	19%	6.1	18%	5.9	17%	5.3	16%	4.8	15%	3.8	13%	
1750 (121)	8.9	22%	8.7	22%	8.4	22%	8.2	21%	7.7	21%	7.1	19%	6.3	18%	5.7	17%	5.4	16%	4.8	15%	4.3	14%	3.2	11%	
2000 (138)	8.7	22%	8.6	22%	8.3	22%	8.1	21%	7.4	20%	6.7	19%	5.9	17%	5.2	16%	5.0	15%	4.3	14%	3.8	13%	2.7	10%	
2250 (155)	8.6	22%	8.4	22%	8.1	21%	7.9	21%	7.2	20%	6.4	18%	5.6	17%	4.8	15%	4.6	15%	3.9	13%	3.4	12%	2.3	9%	
2500 (172)	8.5	22%	8.3	22%	7.9	21%	7.7	21%	6.9	19%	6.1	18%	5.2	16%	4.5	14%	4.2	14%	3.5	12%	3.0	11%	2.0	8%	
2750 (190)	8.4	22%	8.1	21%	7.8	21%	7.5	20%	6.7	19%	5.9	17%	4.9	15%	4.1	14%	3.9	13%	3.1	11%	2.6	10%	1.7	7%	
3000 (207)	-	-	8.0	21%	7.6	20%	7.3	20%	6.5	18%	5.6	17%	4.6	15%	3.8	13%	3.6	12%	2.8	10%	2.3	9%	1.4	6%	
3250 (224)	-	-	-	-	7.5	20%	7.1	20%	6.2	18%	5.3	16%	4.3	14%	3.5	12%	3.3	11%	2.5	10%	2.1	8%	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.11 08035 Motor



Order code	500205008035
Voltage	24 VDC
Power	2.7 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Fixed Clearance Amp Draw for 08035 Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	13	14	15	15	16	16	18	18	19	20	20	23
250 (17)	15	15	17	17	20	21	24	27	28	31	33	40
500 (34)	17	18	20	21	24	28	33	37	40	45	49	62
750 (51)	19	20	23	24	29	34	41	48	51	59	65	84
1000 (68)	21	22	25	27	34	40	50	58	63	73	81	106
1250 (86)	22	24	28	31	38	47	58	69	74	87	98	127
1500 (103)	24	27	31	34	43	53	67	80	86	101	114	149
1750 (121)	26	29	34	37	48	59	75	90	97	115	130	171
2000 (138)	28	31	37	40	53	66	84	101	109	129	147	194
2250 (155)	30	33	39	44	57	72	92	112	120	144	163	216
2500 (172)	32	36	42	47	62	79	101	122	132	158	179	238
2750 (190)	34	38	45	50	67	85	109	133	144	172	196	0
3000 (207)	-	40	48	54	71	91	118	144	155	186	212	0
3250 (224)	-	-	51	57	76	98	127	155	167	201	229	0

Current values are DC Amps

Fixed Clearance Flows for 08035 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.38	1.42	0.45	1.71	0.56	2.13	0.65	2.48	0.93	3.51	1.25	4.73	1.66	6.28	2.07	7.84	2.23	8.44	2.73	10.33	3.14	11.87	4.17	15.78	
250 (17)	0.37	1.40	0.44	1.68	0.55	2.10	0.65	2.45	0.91	3.45	1.23	4.65	1.52	6.15	2.02	7.64	2.17	8.21	2.64	9.98	3.02	11.42	3.97	15.01	
500 (34)	0.36	1.38	0.44	1.66	0.55	2.06	0.63	2.40	0.90	3.39	1.20	4.55	1.58	5.98	1.95	7.39	2.09	7.93	2.53	9.57	2.88	10.90	3.74	14.14	
750 (51)	0.36	1.35	0.43	1.62	0.54	2.03	0.62	2.36	0.88	3.32	1.17	4.44	1.54	5.82	1.89	7.16	2.03	7.67	2.43	9.19	2.75	10.42	3.53	13.37	
1000 (68)	0.35	1.32	0.42	1.59	0.52	1.99	0.61	2.31	0.86	3.26	1.15	4.34	1.50	5.67	1.83	6.94	1.96	7.42	2.33	8.83	2.63	9.97	3.35	12.68	
1250 (86)	0.34	1.29	0.41	1.55	0.51	1.94	0.60	2.37	0.84	3.19	1.12	4.24	1.46	5.51	1.78	6.73	1.90	7.18	2.24	8.49	2.52	9.55	3.18	12.03	
1500 (103)	0.33	1.25	0.40	1.51	0.50	1.90	0.58	2.21	0.82	3.11	1.09	4.14	1.42	5.36	1.72	6.52	1.84	6.95	2.16	8.16	2.42	9.16	3.02	11.44	
1750 (121)	0.32	1.21	0.39	1.47	0.49	1.85	0.57	2.16	0.80	3.04	1.07	4.03	1.38	5.21	1.67	6.32	1.78	6.73	2.07	7.85	2.32	8.78	2.87	10.87	
2000 (138)	0.31	1.16	0.37	1.42	0.47	1.79	0.55	2.10	0.78	2.96	1.04	3.93	1.34	5.07	1.62	6.12	1.72	6.51	1.99	7.55	2.22	8.41	2.73	10.32	
2250 (155)	0.29	1.11	0.36	1.36	0.46	1.73	0.54	2.03	0.76	2.88	1.01	3.82	1.30	4.92	1.57	5.93	1.66	6.30	1.91	7.25	2.13	8.05	2.58	9.77	
2500 (172)	0.28	1.05	0.34	1.30	0.44	1.66	0.52	1.96	0.74	2.79	0.98	3.70	1.26	4.76	1.52	5.74	1.61	6.09	1.84	6.95	2.03	7.70	2.44	9.24	
2750 (190)	0.26	0.98	0.33	1.23	0.42	1.59	0.50	1.88	0.71	2.69	0.95	3.58	1.22	4.61	1.46	5.54	1.55	5.87	1.76	6.65	1.94	7.34	2.30	8.69	
3000 (207)	-	-	0.31	1.16	0.40	1.51	0.47	1.80	0.68	2.59	0.91	3.46	1.18	4.45	1.41	5.34	1.49	5.66	1.68	6.34	1.84	6.98	2.15	8.13	
3250 (224)	-	-	-	-	0.38	1.42	0.45	1.70	0.66	2.48	0.88	3.33	1.13	4.29	1.36	5.14	1.44	5.44	1.59	6.03	1.75	6.61	2.00	7.56	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08035 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	89.1	94%	51.4	79%	20.6	48%	
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	81.0	92%	38.9	69%	25.2	55%	11.5	28%	
1500 (103)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	53.9	80%	41.3	71%	22.4	51%	15.3	38%	7.5	16%		
1750 (121)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	70.0	88%	32.3	63%	25.6	55%	14.8	36%	10.4	25%	5.3	9%		
2000 (138)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	43.1	73%	21.8	50%	17.6	42%	10.6	26%	7.6	17%	4.0	5%			
2250 (155)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	81.0	92%	29.6	60%	15.8	39%	13.0	32%	8.0	18%	5.8	11%	3.1	3%		
2500 (172)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	53.9	80%	21.8	50%	12.1	30%	10.0	24%	6.3	13%	4.6	7%	2.5	1%		
2750 (190)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	38.9	69%	16.8	41%	9.6	23%	8.0	18%	5.1	9%	3.8	4%	-	-	-	-
3000 (207)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	85.7	93%	29.6	60%	13.4	33%	7.8	18%	6.6	13%	4.3	6%	3.2	3%	-	-	-	-
3250 (224)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	62.2	84%	23.4	52%	11.0	27%	6.5	13%	5.5	10%	3.6	4%	2.7	2%	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.12 08055 Motor



Order code	500205008055
Voltage	36 VDC
Power	2.5 kW
Insulation	F
Number of Terminals	2
Diameter	4.5" (114 mm)
Overall Length Dimension	6.75" (172 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field

Fixed Clearance Amp Draw for 08055 36 Volt Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	13	13	13	13	14	14	15	15	15	16	16	17
250 (17)	13	14	14	15	16	16	18	19	20	21	22	26
500 (34)	14	15	16	16	18	20	22	24	25	28	30	36
750 (51)	15	16	17	18	20	23	26	29	31	35	38	47
1000 (68)	16	17	18	19	22	26	30	34	36	41	46	57
1250 (86)	17	18	20	21	25	29	34	39	42	48	53	68
1500 (103)	18	19	21	22	27	32	38	45	48	55	61	78
1750 (121)	19	20	23	24	29	35	43	50	53	62	69	89
2000 (138)	20	21	24	26	32	38	47	55	59	69	77	100
2250 (155)	21	22	25	27	34	41	51	60	64	76	85	111
2500 (172)	22	23	27	29	36	44	55	65	70	82	93	-
2750 (190)	22	25	28	31	38	47	59	71	76	89	101	-
3000 (207)	23	26	29	32	41	50	63	76	81	96	109	-
3250 (224)	-	-	31	34	43	53	67	81	87	-	-	-

Current values are DC Amps

Fixed Clearance Flows for 08055 36 Volt Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.39	1.46	0.46	1.75	0.57	2.17	0.67	2.52	0.94	3.54	1.26	4.77	1.66	6.29	2.07	7.83	2.21	8.37	2.70	10.21	3.09	11.72	4.05	15.32	
250 (17)	0.38	1.43	0.45	1.71	0.56	2.11	0.65	2.45	0.90	3.42	1.20	4.56	1.57	5.93	1.92	7.28	2.05	7.76	2.46	9.31	2.79	10.55	3.55	13.42	
500 (34)	0.37	1.39	0.44	1.66	0.54	2.04	0.62	2.36	0.86	3.27	1.14	4.31	1.46	5.53	1.77	6.71	1.88	7.11	2.22	8.40	2.49	9.42	3.09	11.71	
750 (51)	0.35	1.34	0.42	1.60	0.52	1.97	0.60	2.28	0.83	3.13	1.08	4.08	1.37	5.18	1.64	6.22	1.74	6.57	2.03	7.67	2.26	8.54	2.77	10.47	
1000 (68)	0.34	1.30	0.41	1.55	0.50	1.90	0.58	2.20	0.79	2.99	1.02	3.88	1.29	4.87	1.53	5.80	1.62	6.12	1.87	7.08	2.07	7.84	2.52	9.53	
1250 (86)	0.33	1.25	0.39	1.49	0.48	1.83	0.56	2.11	0.76	2.86	0.97	3.69	1.22	4.60	1.44	5.45	1.51	5.73	1.74	6.58	1.92	7.26	2.31	8.76	
1500 (103)	0.32	1.20	0.38	1.43	0.46	1.76	0.54	2.03	0.72	2.74	0.93	3.51	1.15	4.36	1.36	5.13	1.43	5.40	1.63	6.15	1.79	6.77	2.13	8.07	
1750 (121)	0.30	1.14	0.36	1.37	0.45	1.69	0.51	1.94	0.69	2.62	0.88	3.34	1.09	4.13	1.28	4.85	1.35	5.10	1.52	5.77	1.67	6.33	1.95	7.39	
2000 (138)	0.29	1.09	0.35	1.31	0.43	1.61	0.49	1.85	0.66	2.50	0.84	3.18	1.04	3.93	1.22	4.60	1.28	4.83	1.43	5.42	1.56	5.91	1.76	6.68	
2250 (155)	0.27	1.02	0.33	1.24	0.40	1.53	0.47	1.76	0.63	2.38	0.80	3.03	0.99	3.73	1.15	4.37	1.21	4.58	1.34	5.08	1.45	5.50	1.56	5.90	
2500 (172)	0.25	0.95	0.31	1.16	0.38	1.44	0.44	1.67	0.60	2.26	0.76	2.88	0.94	3.55	1.09	4.14	1.15	4.34	1.25	4.74	1.34	5.07	-	-	
2750 (190)	0.23	0.88	0.29	1.08	0.36	1.35	0.42	1.57	0.56	2.14	0.72	2.73	0.89	3.36	1.04	3.92	1.08	4.10	1.16	4.40	1.22	4.61	-	-	
3000 (207)	0.21	0.80	0.26	0.99	0.33	1.26	0.39	1.47	0.53	2.01	0.68	2.58	0.84	3.18	0.98	3.70	1.02	3.86	1.06	4.03	1.09	4.12	-	-	
3250 (224)	-	-	-	-	0.30	1.15	0.36	1.35	0.50	1.88	0.64	2.42	0.79	3.00	0.92	3.48	0.95	3.61	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08055 36 Volt Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	7.4	23%	7.4	23%	7.4	23%	7.4	23%	7.4	23%	7.4	23%	7.4	22%	7.3	22%	7.3	22%	7.3	22%	7.3	22%	7.2	22%	
250 (17)	7.3	22%	7.3	22%	7.3	22%	7.3	22%	7.2	22%	7.1	22%	7.0	22%	6.9	21%	6.9	21%	6.8	21%	6.7	21%	6.5	20%	
500 (34)	7.3	22%	7.2	22%	7.2	22%	7.1	22%	7.0	21%	6.8	21%	6.7	20%	6.5	20%	6.4	20%	6.2	19%	6.0	18%	5.5	17%	
750 (51)	7.2	22%	7.1	22%	7.0	22%	7.0	21%	6.8	21%	6.6	20%	6.3	19%	6.0	19%	5.9	18%	5.6	17%	5.3	17%	4.7	15%	
1000 (68)	7.1	22%	7.0	21%	6.9	21%	6.8	21%	6.6	20%	6.3	19%	5.9	18%	5.6	17%	5.4	17%	5.1	16%	4.7	15%	4.0	12%	
1250 (86)	7.0	21%	6.9	21%	6.8	21%	6.7	20%	6.4	20%	6.0	19%	5.6	17%	5.2	16%	5.0	16%	4.5	14%	4.2	13%	3.3	10%	
1500 (103)	6.9	21%	6.8	21%	6.7	20%	6.5	20%	6.2	19%	5.8	18%	5.2	16%	4.8	15%	4.6	14%	4.1	13%	3.6	11%	2.7	9%	
1750 (121)	6.8	21%	6.7	21%	6.5	20%	6.4	20%	6.0	18%	5.5	17%	4.9	15%	4.4	14%	4.2	13%	3.6	11%	3.2	10%	2.2	7%	
2000 (138)	6.7	21%	6.6	20%	6.4	20%	6.2	19%	5.8	18%	5.2	16%	4.6	14%	4.0	13%	3.8	12%	3.2	10%	2.7	9%	1.7	6%	
2250 (155)	6.7	20%	6.5	20%	6.3	19%	6.1	19%	5.6	17%	5.0	16%	4.3	13%	3.7	12%	3.4	11%	2.8	9%	2.3	7%	1.3	4%	
2500 (172)	6.6	20%	6.4	20%	6.2	19%	6.0	18%	5.4	17%	4.8	15%	4.0	13%	3.4	11%	3.1	10%	2.4	8%	1.9	6%	-	-	
2750 (190)	6.5	20%	6.3	19%	6.0	19%	5.8	18%	5.2	16%	4.5	14%	3.8	12%	3.1	10%	2.8	9%	2.1	7%	1.6	5%	-	-	
3000 (207)	6.4	20%	6.2	19%	5.9	18%	5.7	18%	5.0	16%	4.3	13%	3.5	11%	2.8	9%	2.5	8%	1.8	6%	1.3	4%	-	-	
3250 (224)	-	-	-	-	5.8	18%	5.6	17%	4.9	15%	4.1	13%	3.2	10%	2.5	8%	2.2	7%	1.5	5%	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.13 08168 Motor



Order code	500205008168
Voltage	36 VDC
Power	2.9 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Fixed Clearance Amp Draw for 08168 Motor												
Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	11	11	12	12	13	13	14	14	15	16	16	18
250 (17)	12	12	13	14	16	17	19	21	22	24	26	31
500 (34)	13	14	16	16	19	22	25	29	31	34	38	47
750 (51)	15	16	18	19	23	26	32	37	39	45	50	63
1000 (68)	16	17	20	21	26	31	38	45	48	55	62	80
1250 (86)	18	19	22	24	30	36	45	52	56	66	74	96
1500 (103)	19	21	24	26	33	41	51	60	65	76	86	112
1750 (121)	21	23	26	29	37	45	57	68	73	87	98	128
2000 (138)	22	24	28	31	40	50	64	76	82	97	110	144
2250 (155)	23	26	30	34	44	55	70	84	91	108	122	161
2500 (172)	25	28	33	36	47	60	76	92	99	118	134	-
2750 (190)	26	29	35	39	51	64	83	100	108	129	146	-
3000 (207)	-	31	37	41	54	69	89	108	116	139	158	-
3250 (224)	-	-	39	44	58	74	95	116	125	150	170	-

Current values are DC Amps

Fixed Clearance Flows for 08168 Motor																									
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.38	1.42	0.45	1.71	0.56	2.13	0.66	2.48	0.93	3.52	1.26	4.76	1.67	6.33	2.09	7.91	2.25	8.52	2.76	10.43	3.17	12.00	4.23	16.03	
250 (17)	0.37	1.41	0.45	1.69	0.56	2.11	0.65	2.46	0.92	3.49	1.24	4.71	1.65	6.25	2.06	7.79	2.22	8.39	2.70	10.24	3.10	11.75	4.12	15.59	
500 (34)	0.37	1.39	0.44	1.67	0.55	2.08	0.64	2.43	0.91	3.45	1.23	4.65	1.63	6.15	2.02	7.65	2.17	8.23	2.64	9.99	3.02	11.43	3.97	15.04	
750 (51)	0.36	1.36	0.43	1.64	0.54	2.06	0.63	2.40	0.90	3.40	1.21	4.58	1.60	6.05	1.98	7.51	2.13	8.07	2.57	9.74	2.94	11.11	3.83	14.49	
1000 (68)	0.35	1.34	0.43	1.61	0.53	2.02	0.62	2.36	0.89	3.36	1.19	4.51	1.57	5.95	1.94	7.36	2.09	7.90	2.51	9.49	2.85	10.79	3.68	13.94	
1250 (86)	0.34	1.31	0.42	1.58	0.53	1.99	0.61	2.33	0.87	3.30	1.17	4.44	1.54	5.85	1.90	7.21	2.04	7.73	2.44	9.23	2.76	10.46	3.53	13.38	
1500 (103)	0.34	1.27	0.41	1.55	0.52	1.95	0.60	2.28	0.86	3.25	1.15	4.37	1.52	5.74	1.86	7.05	1.99	7.55	2.37	8.97	2.67	10.13	3.38	12.81	
1750 (121)	0.33	1.23	0.40	1.51	0.50	1.91	0.59	2.24	0.84	3.19	1.13	4.29	1.49	5.62	1.82	6.90	1.95	7.37	2.30	8.70	2.58	9.79	3.23	12.24	
2000 (138)	0.31	1.19	0.39	1.46	0.49	1.86	0.58	2.19	0.83	3.13	1.11	4.20	1.45	5.50	1.78	6.73	1.90	7.19	2.22	8.42	2.49	9.44	3.08	11.66	
2250 (155)	0.30	1.14	0.37	1.41	0.48	1.81	0.56	2.13	0.81	3.06	1.09	4.12	1.42	5.38	1.73	6.56	1.85	7.00	2.15	8.13	2.40	9.08	2.93	11.08	
2500 (172)	0.29	1.09	0.36	1.35	0.46	1.75	0.55	2.07	0.79	2.98	1.06	4.02	1.39	5.25	1.69	6.39	1.80	6.80	2.07	7.84	2.30	8.72	-	-	
2750 (190)	0.27	1.03	0.34	1.29	0.44	1.68	0.53	2.00	0.77	2.90	1.03	3.92	1.35	5.11	1.64	6.21	1.74	6.60	1.99	7.54	2.20	8.34	-	-	
3000 (207)	-	-	0.32	1.22	0.42	1.60	0.51	1.92	0.74	2.81	1.01	3.81	1.31	4.97	1.59	6.01	1.69	6.39	1.91	7.22	2.10	7.96	-	-	
3250 (224)	-	-	-	-	0.40	1.52	0.48	1.83	0.72	2.71	0.97	3.69	1.27	4.81	1.54	5.81	1.63	6.17	1.82	6.89	2.00	7.56	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08168 Motor																								
Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510	
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)	
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	45.8	50%
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	90%	90.6	62%	10.9	24%	
1500 (103)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	94%	59.7	55%	20.5	36%	4.8	12%	
1750 (121)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	77%	96.0	63%	18.9	34%	8.8	21%	2.7	6%	
2000 (138)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	97%	54.4	53%	29.5	42%	9.2	21%	4.9	12%	1.7	3%	
2250 (155)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	72%	22.3	37%	14.1	29%	5.4	14%	3.1	7%	1.2	2%	
2500 (172)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	54.4	53%	12.1	26%	8.2	20%	3.5	9%	2.1	5%	-	-	
2750 (190)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	90%	25.9	40%	7.6	18%	5.4	14%	2.5	6%	1.6	3%	-	-	
3000 (207)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	72%	15.1	30%	5.2	13%	3.8	9%	1.9	4%	1.2	2%	-	-	
3250 (224)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	69.1	58%	9.9	23%	3.8	9%	2.8	7%	1.4	2%	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.14 08055 Motor



Order code	500205008055
Voltage	48 VDC
Power	2.5 kW
Insulation	F
Number of Terminals	2
Diameter	4.5" (114 mm)
Overall Length Dimension	6.75" (172 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field

Fixed Clearance Amp Draw for 08055 48 Volt Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	12	12	13	13	13	14	14	14	15	15	15	17
250 (17)	13	13	14	14	15	16	17	18	19	20	21	24
500 (34)	14	14	15	15	17	18	21	23	24	26	28	33
750 (51)	15	15	16	17	19	21	24	27	29	32	35	43
1000 (68)	15	16	17	18	21	24	28	32	34	38	42	53
1250 (86)	16	17	19	20	23	27	32	36	39	44	49	62
1500 (103)	17	18	20	21	25	29	35	41	44	51	56	72
1750 (121)	18	19	21	23	27	32	39	46	49	57	63	82
2000 (138)	19	20	22	24	29	35	43	50	54	63	71	92
2250 (155)	20	21	24	25	31	38	47	55	59	69	78	102
2500 (172)	20	22	25	27	33	41	50	60	64	76	85	-
2750 (190)	21	23	26	28	35	43	54	65	69	82	93	-
3000 (207)	-	24	27	30	38	46	58	70	75	89	-	-
3250 (224)	-	-	29	31	40	49	62	74	80	95	-	-

Current values are DC Amps

Fixed Clearance Flows for 08055 48 Volt Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.44	1.68	0.53	2.02	0.66	2.50	0.77	2.91	1.09	4.11	1.46	5.54	1.93	7.32	2.41	9.12	2.58	9.78	3.16	11.94	3.62	13.71	4.77	18.06	
250 (17)	0.44	1.65	0.52	1.98	0.65	2.45	0.75	2.85	1.06	4.00	1.41	5.35	1.85	7.01	2.29	8.65	2.44	9.25	2.95	11.16	3.35	12.70	4.33	16.37	
500 (34)	0.43	1.61	0.51	1.93	0.63	2.39	0.73	2.78	1.02	3.87	1.36	5.14	1.76	6.66	2.15	8.14	2.29	8.67	2.73	10.33	3.08	11.65	3.89	14.74	
750 (51)	0.42	1.57	0.50	1.89	0.62	2.33	0.71	2.70	0.99	3.74	1.30	4.93	1.67	6.34	2.03	7.69	2.16	8.16	2.55	9.63	2.85	10.80	3.56	13.49	
1000 (68)	0.40	1.53	0.48	1.84	0.60	2.27	0.69	2.62	0.96	3.62	1.25	4.74	1.60	6.05	1.93	7.29	2.04	7.73	2.39	9.04	2.66	10.09	3.30	12.49	
1250 (86)	0.39	1.49	0.47	1.78	0.58	2.20	0.67	2.55	0.93	3.50	1.21	4.57	1.53	5.79	1.83	6.93	1.94	7.34	2.25	8.53	2.50	9.48	3.08	11.66	
1500 (103)	0.38	1.44	0.46	1.73	0.56	2.14	0.65	2.47	0.89	3.39	1.16	4.39	1.47	5.55	1.75	6.62	1.85	6.99	2.13	8.08	2.37	8.96	2.89	10.94	
1750 (121)	0.37	1.39	0.44	1.67	0.55	2.07	0.63	2.39	0.86	3.27	1.12	4.23	1.41	5.32	1.67	6.33	1.77	6.68	2.03	7.67	2.24	8.49	2.71	10.27	
2000 (138)	0.35	1.33	0.42	1.61	0.53	1.99	0.61	2.31	0.83	3.15	1.08	4.07	1.35	5.11	1.60	6.06	1.69	6.40	1.93	7.30	2.13	8.05	2.54	9.60	
2250 (155)	0.34	1.27	0.41	1.54	0.51	1.92	0.59	2.22	0.80	3.04	1.04	3.92	1.30	4.91	1.53	5.81	1.62	6.13	1.83	6.94	2.02	7.64	2.35	8.91	
2500 (172)	0.32	1.20	0.39	1.47	0.48	1.83	0.56	2.13	0.77	2.92	0.99	3.76	1.24	4.71	1.47	5.57	1.55	5.87	1.74	6.60	1.91	7.22	-	-	
2750 (190)	0.30	1.13	0.37	1.39	0.46	1.74	0.54	2.03	0.74	2.80	0.95	3.61	1.19	4.52	1.41	5.34	1.49	5.63	1.65	6.26	1.80	6.80	-	-	
3000 (207)	-	-	0.34	1.30	0.44	1.65	0.51	1.93	0.71	2.67	0.91	3.46	1.14	4.33	1.35	5.11	1.42	5.38	1.56	5.91	-	-	-	-	
3250 (224)	-	-	-	-	0.41	1.55	0.48	1.82	0.67	2.54	0.87	3.30	1.09	4.14	1.29	4.88	1.36	5.13	1.46	5.54	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08055 48 Volt Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	7.5	23%	7.5	23%	7.5	23%	7.5	23%	7.4	23%	7.4	23%	7.4	23%	7.4	23%	7.4	23%	7.4	23%	7.4	22%	7.3	22%	
250 (17)	7.4	23%	7.4	23%	7.4	22%	7.3	22%	7.3	22%	7.2	22%	7.1	22%	7.0	22%	7.0	21%	6.9	21%	6.8	21%	6.6	20%	
500 (34)	7.3	22%	7.3	22%	7.2	22%	7.2	22%	7.1	22%	7.0	21%	6.8	21%	6.6	20%	6.6	20%	6.4	20%	6.2	19%	5.8	18%	
750 (51)	7.2	22%	7.2	22%	7.1	22%	7.1	22%	6.9	21%	6.7	21%	6.5	20%	6.2	19%	6.1	19%	5.8	18%	5.6	17%	5.0	16%	
1000 (68)	7.2	22%	7.1	22%	7.0	21%	6.9	21%	6.7	21%	6.5	20%	6.1	19%	5.8	18%	5.7	18%	5.3	16%	5.0	16%	4.3	13%	
1250 (86)	7.1	22%	7.0	21%	6.9	21%	6.8	21%	6.5	20%	6.2	19%	5.8	18%	5.4	17%	5.3	16%	4.8	15%	4.5	14%	3.6	11%	
1500 (103)	7.0	21%	6.9	21%	6.8	21%	6.7	20%	6.3	19%	6.0	18%	5.5	17%	5.0	16%	4.9	15%	4.4	14%	4.0	12%	3.0	10%	
1750 (121)	6.9	21%	6.8	21%	6.7	20%	6.5	20%	6.2	19%	5.7	18%	5.2	16%	4.7	15%	4.5	14%	3.9	12%	3.5	11%	2.5	8%	
2000 (138)	6.9	21%	6.7	21%	6.6	20%	6.4	20%	6.0	18%	5.5	17%	4.9	15%	4.3	14%	4.1	13%	3.5	11%	3.1	10%	2.0	7%	
2250 (155)	6.8	21%	6.6	20%	6.4	20%	6.3	19%	5.8	18%	5.3	16%	4.6	14%	4.0	13%	3.8	12%	3.1	10%	2.7	9%	1.6	5%	
2500 (172)	6.7	21%	6.6	20%	6.3	19%	6.2	19%	5.6	17%	5.0	16%	4.3	14%	3.7	12%	3.5	11%	2.8	9%	2.3	7%	1.2	4%	
2750 (190)	6.6	20%	6.5	20%	6.2	19%	6.0	19%	5.5	17%	4.8	15%	4.1	13%	3.4	11%	3.1	10%	2.5	8%	1.9	6%	-	-	
3000 (207)	6.6	20%	6.4	20%	6.1	19%	5.9	18%	5.3	16%	4.6	14%	3.8	12%	3.1	10%	2.9	9%	2.1	7%	1.6	5%	-	-	
3250 (224)	-	-	-	-	6.0	19%	5.8	18%	5.1	16%	4.4	14%	3.6	11%	2.8	9%	2.6	8%	1.8	6%	1.3	5%	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.15 08040 Motor



Order code	500205008040
Voltage	48 VDC
Power	3.6 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Fixed Clearance Amp Draw for 08040 Motor												
Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	9	9	10	10	10	11	11	11	12	12	12	14
250 (17)	10	10	11	11	12	13	14	16	16	18	19	22
500 (34)	11	11	12	13	14	16	19	21	22	24	26	33
750 (51)	12	12	14	14	17	19	23	26	27	31	34	43
1000 (68)	13	13	15	16	19	22	27	31	33	38	42	53
1250 (86)	14	14	16	17	21	25	31	36	38	45	50	64
1500 (103)	14	16	18	19	24	28	35	41	44	51	57	74
1750 (121)	15	17	19	21	26	31	39	46	49	58	65	84
2000 (138)	16	18	20	22	28	34	43	51	55	65	73	94
2250 (155)	17	19	22	24	30	38	47	56	60	71	80	104
2500 (172)	18	20	23	25	33	41	51	61	66	78	88	114
2750 (190)	19	21	25	27	35	44	55	66	71	84	95	124
3000 (207)	-	22	26	29	37	47	59	71	77	91	103	-
3250 (224)	-	-	27	30	39	50	63	76	82	97	110	-

Current values are DC Amps

Fixed Clearance Flows for 08040 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.38	1.43	0.45	1.72	0.57	2.14	0.66	2.49	0.93	3.54	1.26	4.77	1.68	6.35	2.09	7.93	2.26	8.54	2.76	10.46	3.18	12.03	4.24	16.04	
250 (17)	0.37	1.41	0.45	1.70	0.56	2.12	0.65	2.47	0.92	3.50	1.25	4.72	1.65	6.25	2.06	7.79	2.21	8.38	2.70	10.22	3.10	11.72	4.10	15.51	
500 (34)	0.37	1.39	0.44	1.67	0.55	2.09	0.64	2.44	0.91	3.45	1.23	4.64	1.62	6.14	2.01	7.62	2.16	8.19	2.62	9.93	3.00	11.35	3.94	14.90	
750 (51)	0.36	1.37	0.43	1.65	0.54	2.06	0.63	2.40	0.90	3.40	1.21	4.57	1.59	6.02	1.97	7.46	2.11	8.01	2.55	9.66	2.91	11.01	3.79	14.33	
1000 (68)	0.35	1.34	0.43	1.61	0.53	2.02	0.62	2.36	0.88	3.35	1.19	4.49	1.56	5.91	1.93	7.29	2.07	7.82	2.48	9.39	2.82	10.67	3.64	13.79	
1250 (86)	0.35	1.31	0.42	1.58	0.52	1.99	0.61	2.32	0.87	3.29	1.17	4.41	1.53	5.80	1.88	7.14	2.02	7.64	2.41	9.13	2.73	10.35	3.50	13.27	
1500 (103)	0.34	1.27	0.41	1.54	0.51	1.95	0.60	2.28	0.85	3.23	1.14	4.33	1.50	5.68	1.84	6.98	1.97	7.47	2.34	8.87	2.65	10.02	3.37	12.75	
1750 (121)	0.33	1.23	0.40	1.50	0.50	1.90	0.59	2.23	0.84	3.17	1.12	4.25	1.47	5.56	1.80	6.82	1.93	7.29	2.27	8.61	2.56	9.70	3.23	12.23	
2000 (138)	0.31	1.19	0.38	1.46	0.49	1.85	0.57	2.17	0.82	3.10	1.10	4.16	1.44	5.44	1.76	6.66	1.88	7.11	2.21	8.35	2.48	9.38	3.09	11.70	
2250 (155)	0.30	1.14	0.37	1.41	0.47	1.80	0.56	2.12	0.80	3.03	1.08	4.07	1.41	5.32	1.72	6.49	1.83	6.93	2.14	8.08	2.39	9.06	2.95	11.16	
2500 (172)	0.29	1.08	0.36	1.35	0.46	1.73	0.54	2.05	0.78	2.95	1.05	3.97	1.37	5.19	1.67	6.33	1.78	6.75	2.06	7.81	2.30	8.72	2.80	10.60	
2750 (190)	0.27	1.02	0.34	1.28	0.44	1.67	0.52	1.98	0.76	2.87	1.02	3.87	1.34	5.06	1.63	6.16	1.73	6.56	1.99	7.53	2.21	8.37	2.65	10.02	
3000 (207)	-	-	0.32	1.21	0.42	1.59	0.50	1.90	0.73	2.78	0.99	3.76	1.30	4.92	1.58	5.98	1.68	6.36	1.91	7.24	2.12	8.01	-	-	
3250 (224)	-	-	-	-	0.40	1.50	0.48	1.81	0.71	2.68	0.96	3.64	1.26	4.77	1.53	5.79	1.63	6.15	1.83	6.93	2.02	7.64	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08040 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510			
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)			
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	85%		
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	94%	Cont	58%		
1500 (103)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	88%	Cont	71%	46.6	39%			
1750 (121)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	94%	Cont	69%	89.3	53%	21.1	26%				
2000 (138)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	87%	Cont	77%	92.4	54%	48.2	39%	9.8	17%			
2250 (155)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	72%	Cont	63%	53.9	42%	26.5	29%	4.7	11%			
2500 (172)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	87%	Cont	60%	83.6	51%	31.9	32%	14.9	21%	2.4	7%		
2750 (190)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	75%	77.0	49%	53.9	42%	19.2	24%	8.5	15%	-	-		
3000 (207)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	65%	51.3	41%	35.1	34%	11.7	19%	4.9	11%	-	-		
3250 (224)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	90%	98.7	55%	34.5	33%	23.1	27%	7.3	14%	2.9	8%	-	-		

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.2.16 08174 Motor



Order code	500205008174
Voltage	72 VDC
Power	3.6 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Fixed Clearance Amp Draw for 08174 Motor

Pressure psi (bar)	17-100	17-120	17-150	17-190	17-270	13-150	13-200	13-250	13-270	13-330	13-380	13-510
	0.022 in ³ (0.35 cc)	0.026 in ³ (0.43 cc)	0.032 in ³ (0.53 cc)	0.041 in ³ (0.67 cc)	0.058 in ³ (0.96 cc)	0.073 in ³ (1.19 cc)	0.097 in ³ (1.59 cc)	0.121 in ³ (1.98 cc)	0.131 in ³ (2.14 cc)	0.160 in ³ (2.62 cc)	0.184 in ³ (3.01 cc)	0.247 in ³ (4.05 cc)
50 (3)	4	4	4	4	4	5	5	5	6	6	6	7
250 (17)	4	4	5	5	6	6	7	8	9	9	10	13
500 (34)	5	5	6	6	7	8	10	12	12	14	16	20
750 (51)	5	6	7	7	9	11	13	15	16	19	21	27
1000 (68)	6	7	8	8	10	13	16	19	20	24	27	35
1250 (86)	7	7	9	9	12	15	19	22	24	28	32	42
1500 (103)	7	8	10	10	14	17	22	26	28	33	38	50
1750 (121)	8	9	10	12	15	19	24	30	32	38	43	57
2000 (138)	9	10	11	13	17	21	27	33	36	43	49	65
2250 (155)	9	10	12	14	18	23	30	37	40	48	54	72
2500 (172)	10	11	13	15	20	26	33	40	44	52	60	80
2750 (190)	10	12	14	16	22	28	36	44	48	57	66	-
3000 (207)	-	13	15	17	23	30	39	48	52	62	71	-
3250 (224)	-	-	16	18	25	32	42	51	56	67	77	-

Current values are DC Amps

Fixed Clearance Flows for 08174 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	0.37	1.41	0.45	1.70	0.56	2.12	0.65	2.47	0.92	3.50	1.25	4.72	1.66	6.28	2.07	7.84	2.23	8.44	2.73	10.34	3.14	11.89	4.19	15.85	
250 (17)	0.37	1.40	0.44	1.68	0.55	2.09	0.64	2.44	0.91	3.46	1.23	4.66	1.63	6.18	2.03	7.70	2.19	8.29	2.67	10.10	3.06	11.58	4.05	15.34	
500 (34)	0.36	1.37	0.44	1.65	0.55	2.06	0.64	2.41	0.90	3.41	1.21	4.59	1.60	6.07	1.99	7.53	2.14	8.10	2.60	9.83	2.97	11.24	3.90	14.78	
750 (51)	0.36	1.35	0.43	1.63	0.54	2.03	0.63	2.37	0.89	3.36	1.19	4.51	1.57	5.96	1.95	7.38	2.09	7.93	2.53	9.57	2.89	10.92	3.77	14.29	
1000 (68)	0.35	1.32	0.42	1.60	0.53	2.00	0.62	2.33	0.87	3.31	1.17	4.44	1.55	5.85	1.91	7.23	2.05	7.76	2.47	9.33	2.81	10.63	3.66	13.84	
1250 (86)	0.34	1.29	0.41	1.56	0.52	1.96	0.61	2.29	0.86	3.25	1.15	4.37	1.52	5.74	1.87	7.09	2.01	7.60	2.41	9.10	2.73	10.35	3.55	13.42	
1500 (103)	0.33	1.26	0.40	1.52	0.51	1.92	0.59	2.25	0.84	3.20	1.13	4.29	1.49	5.64	1.83	6.94	1.97	7.45	2.35	8.88	2.67	10.09	3.44	13.02	
1750 (121)	0.32	1.22	0.39	1.48	0.50	1.88	0.58	2.20	0.83	3.14	1.11	4.21	1.46	5.53	1.80	6.81	1.93	7.29	2.29	8.67	2.60	9.83	3.33	12.62	
2000 (138)	0.31	1.17	0.38	1.44	0.48	1.83	0.57	2.15	0.81	3.07	1.09	4.13	1.43	5.42	1.76	6.67	1.89	7.14	2.23	8.46	2.53	9.57	3.23	12.22	
2250 (155)	0.30	1.12	0.37	1.39	0.47	1.77	0.55	2.09	0.79	3.00	1.07	4.04	1.40	5.31	1.73	6.53	1.85	6.99	2.18	8.24	2.46	9.32	3.12	11.79	
2500 (172)	0.28	1.07	0.35	1.33	0.45	1.71	0.54	2.03	0.77	2.93	1.04	3.95	1.37	5.20	1.69	6.39	1.81	6.84	2.12	8.02	2.39	9.05	3.00	11.34	
2750 (190)	0.27	1.01	0.33	1.27	0.43	1.64	0.52	1.96	0.75	2.85	1.02	3.86	1.34	5.08	1.65	6.25	1.77	6.68	2.06	7.79	2.32	8.77	-	-	
3000 (207)	-	-	0.32	1.19	0.41	1.57	0.50	1.88	0.73	2.76	0.99	3.75	1.31	4.96	1.61	6.09	1.72	6.52	1.99	7.54	2.24	8.47	-	-	
3250 (224)	-	-	-	-	0.39	1.48	0.47	1.79	0.70	2.66	0.96	3.64	1.27	4.83	1.57	5.94	1.68	6.35	1.92	7.29	2.15	8.16	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Fixed Clearance S2 and S3 Thermals for 08174 Motor

Pressure psi (bar)	17-100		17-120		17-150		17-190		17-270		13-150		13-200		13-250		13-270		13-330		13-380		13-510		
	0.022 in ³ (0.35 cc)		0.026 in ³ (0.43 cc)		0.032 in ³ (0.53 cc)		0.041 in ³ (0.67 cc)		0.058 in ³ (0.96 cc)		0.073 in ³ (1.19 cc)		0.097 in ³ (1.59 cc)		0.121 in ³ (1.98 cc)		0.131 in ³ (2.14 cc)		0.160 in ³ (2.62 cc)		0.184 in ³ (3.01 cc)		0.247 in ³ (4.05 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	50.1	65%
1500 (103)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	93.7	Cont	18.3	32%
1750 (121)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	87.0	97%	39.6	55%	7.9	19%	
2000 (138)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	41.3	56%	18.9	33%	3.8	12%		
2250 (155)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	65.5	79%	21.5	36%	9.9	22%	2.0	8%		
2500 (172)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	55.9	70%	36.4	52%	12.1	25%	5.6	15%	1.1	6%		
2750 (190)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	32.9	48%	21.5	36%	7.2	18%	3.3	11%	-	-		
3000 (207)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	70.2	83%	20.4	35%	13.3	26%	4.5	13%	2.1	8%	-	-	
3250 (224)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	44.9	60%	13.1	26%	8.6	20%	2.9	10%	1.4	6%	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.3 Pump Displacement - Pressure Balanced Gear Pumps

Nominal Pump Performance - Pressure Balanced Pumps

Pump	Displacement		No Load Flow in gpm	
	in ³ /rev	cm ³ /rev	1800 rpm	3600 rpm
AP05 0.16	0.009	0.15	0.07	0.14
AP05 0.25	0.016	0.27	0.13	0.26
AP05 0.35	0.020	0.33	0.16	0.31
AP05 0.50	0.033	0.54	0.26	0.51
AP05 0.75	0.047	0.77	0.37	0.73
AP05 0.90	0.056	0.92	0.44	0.88
AP05 1.20	0.074	1.22	0.58	1.16
AP05 1.60	0.100	1.64	0.78	1.56
AP05 2.30	0.141	2.31	1.10	2.19
AP100 0.85	0.053	0.86	0.41	0.82
AP100 1.20	0.075	1.23	0.58	1.17
AP100 1.70	0.105	1.72	0.82	1.64
AP100 2.20	0.135	2.21	1.05	2.11
AP100 2.50	0.155	2.53	1.20	2.41
AP100 3.30	0.202	3.31	1.57	3.15
AP100 3.50	0.219	3.59	1.71	3.42
AP100 4.30	0.273	4.48	2.13	4.26
AP100 5.00	0.315	5.17	2.46	4.91
AP100 6.50	0.390	6.40	3.04	6.08
AP100 8.00	0.474	7.77	3.70	7.39
AP100 10.00	0.611	10.01	4.76	9.52

Gear Pumps are widely used in modern hydraulic systems due to their high performance, long service life and low purchase and maintenance costs.

Product development has made it possible to achieve high operating pressures, excellent volumetric and mechanical efficiency, and lower noise levels, in operation, by means of:

- 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 quality.
- The Bucher Hydraulics Gear Pump Catalog can be referenced for additional technical specifications

Recommended Operating Conditions for Pressure Balanced Pumps:

Bucher Hydraulics recommends 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 seal	AP05-APR05	AP100-AP200-AP300
Buna N	-15 / 65 °C	-15 / 80 °C
Viton	-10 / 80 °C	-15 / 120 °C

Attention: Consult factory before using pumps at temperatures above 80°C or in use under conditions different than those indicated in this catalog.

5.4 DC Motor Performances - Pressure Balanced Gear Pumps

12 Volt

Part Number	Order Code	Performance Data Page No.	Insulation Class	Number of Terminals	Housing Diameter Inch (mm)	UL Listed	Description *See Key
08111	500205008111	79	F	1	4.5" (114 mm)	No	SW / ID
08053	500205008053	81	F	1	3" (80 mm)	No	PM / ID
08196	500205008196	83	F	1	4.5" (114 mm)	No	SW / HD
08050	500205008050	85	H	2	5.5" (140 mm)	No	SW / ID
08163	500205008163	87	H	2	5.5" (140 mm)	No	PM / ID
08004	500205008004	89	F	1	3" (80 mm)	No	PM / ID
22368	50020502236	91	F	1	4.5" (114 mm)	No	SW / MD

24 Volt

08051	500205008051	93	F	2	3" (80 mm)	No	PM / ID
08007	500205008007	95	H	2	5" (125 mm)	No	SW / ID
08120	500205008120	97	F	2	4.5" (114 mm)	Yes	SW / ID
19430	500205019430	99	F	2	3" (80 mm)	No	PM
08035	500205008035	101	H	2	5.5" (140 mm)	No	PM / ID

36 Volt

08055	500205008055	103	F	2	4.5" (114 mm)	No	SW / ID
08168	500205008168	105	H	2	5.5" (140 mm)	No	PM / ID

48 Volt

08055	500205008055	107	F	2	4.5" (114 mm)	No	SW / ID
08040	500205008040	109	H	2	5.5" (140 mm)	No	PM / ID

72 Volt

08174	500205008174	111	H	2	5.5" (140 mm)	No	PM / ID
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* Key to Abbreviations
 PM = Permanent Magnet
 ID = Intermittent Duty
 SW = Series Wound
 CW = Compound Wound
 ED = Extended Duty
 HD = Heavy Duty
 MD = Medium Duty

Bucher Hydraulics purchases motors from several qualified suppliers to ensure availability. Minor dimensional and cosmetic differences may exist.

5.4.1 08111 Motor



Order Code	500205008111
Voltage	12 VDC
Power	1.6 kW
Insulation	F
Number of Terminals	1
Housing Diameter	4.5" (114 mm)
Length Dimension	6.75" (172 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field

Pressure Balanced Amp Draw for 08111 Motor										
Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	75	77	79	81	86	90	94	99	106	116
250 (17)	83	89	95	98	110	120	128	142	156	180
500 (34)	94	103	113	120	140	156	169	191	215	252
750 (51)	104	118	131	140	168	191	208	238	269	-
1000 (68)	114	132	149	160	196	224	245	281	-	-
1250 (86)	124	146	166	180	222	255	280	-	-	-
1500 (103)	134	159	183	199	247	285	312	-	-	-
1750 (121)	144	173	200	218	272	313	-	-	-	-
2000 (138)	154	186	216	236	295	-	-	-	-	-
2250 (155)	164	199	232	253	-	-	-	-	-	-
2500 (172)	173	211	247	270	-	-	-	-	-	-
2750 (190)	183	224	262	287	-	-	-	-	-	-
3000 (207)	192	236	277	-	-	-	-	-	-	-
3250 (224)	201	248	291	-	-	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08111 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	2.20	8.35	3.00	11.36	3.76	14.22	4.24	16.05	5.69	21.53	6.77	25.62	7.55	28.58	8.82	33.40	10.07	38.12	11.77	44.56	
250 (17)	2.00	7.57	2.63	9.96	3.19	12.07	3.53	13.35	4.45	16.86	5.07	19.20	5.48	20.76	6.11	23.12	6.67	25.25	7.41	28.04	
500 (34)	1.78	6.75	2.26	8.57	2.66	10.06	2.88	10.92	3.46	13.11	3.83	14.49	4.07	15.40	4.44	16.80	4.79	18.12	5.25	19.89	
750 (51)	1.60	6.05	1.97	7.47	2.27	8.58	2.43	9.19	2.84	10.73	3.10	11.73	3.28	12.40	3.56	13.46	3.79	14.36	-	-	
1000 (68)	1.45	5.47	1.74	6.60	1.97	7.46	2.09	7.92	2.41	9.14	2.63	9.95	2.77	10.49	2.96	11.19	-	-	-	-	
1250 (86)	1.31	4.98	1.56	5.90	1.74	6.60	1.84	6.98	2.12	8.01	2.29	8.68	2.39	9.03	-	-	-	-	-	-	
1500 (103)	1.20	4.55	1.41	5.33	1.56	5.92	1.65	6.25	1.89	7.15	2.01	7.61	2.02	7.64	-	-	-	-	-	-	
1750 (121)	1.11	4.19	1.28	4.85	1.42	5.38	1.50	5.68	1.70	6.42	1.73	6.55	-	-	-	-	-	-	-	-	
2000 (138)	1.02	3.87	1.18	4.46	1.30	4.94	1.37	5.20	1.52	5.74	-	-	-	-	-	-	-	-	-	-	
2250 (155)	0.95	3.59	1.09	4.12	1.21	4.57	1.27	4.79	-	-	-	-	-	-	-	-	-	-	-	-	
2500 (172)	0.88	3.35	1.01	3.84	1.12	4.24	1.17	4.42	-	-	-	-	-	-	-	-	-	-	-	-	
2750 (190)	0.83	3.13	0.95	3.58	1.04	3.95	1.07	4.07	-	-	-	-	-	-	-	-	-	-	-	-	
3000 (207)	0.78	2.94	0.89	3.36	0.97	3.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3250 (224)	0.73	2.77	0.83	3.16	0.90	3.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08111 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.137 in ³ (2.24 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	13.8	31%	13.6	31%	13.5	30%	13.4	30%	13.1	30%	12.8	29%	12.6	29%	12.3	28%	12.0	28%	11.4	27%	
250 (17)	12.4	28%	11.8	27%	11.1	25%	10.8	26%	9.7	24%	8.9	22%	8.3	21%	7.4	19%	6.5	17%	5.3	14%	
500 (34)	10.9	26%	9.8	24%	8.9	22%	8.4	21%	6.8	18%	5.8	15%	5.1	14%	4.2	11%	3.3	9%	2.4	7%	
750 (51)	9.6	23%	8.3	21%	7.1	18%	6.6	17%	4.9	13%	3.9	11%	3.3	9%	2.5	7%	1.9	5%	-	-	
1000 (68)	8.5	21%	7.0	18%	5.8	15%	5.2	14%	3.6	10%	2.8	8%	2.3	6%	1.6	5%	-	-	-	-	
1250 (86)	7.5	19%	6.0	16%	4.8	13%	4.2	12%	2.8	8%	2.0	6%	-	-	-	-	-	-	-	-	
1500 (103)	6.7	17%	5.1	14%	3.9	11%	3.4	10%	2.1	6%	-	-	-	-	-	-	-	-	-	-	
1750 (121)	6.0	16%	4.4	12%	3.3	9%	2.8	8%	1.7	5%	-	-	-	-	-	-	-	-	-	-	
2000 (138)	5.4	14%	3.8	11%	2.8	8%	2.3	7%	-	-	-	-	-	-	-	-	-	-	-	-	
2250 (155)	4.8	13%	3.3	9%	2.4	7%	1.9	6%	-	-	-	-	-	-	-	-	-	-	-	-	
2500 (172)	4.3	12%	2.9	8%	2.0	6%	1.6	5%	-	-	-	-	-	-	-	-	-	-	-	-	
2750 (190)	3.9	11%	2.6	7%	1.7	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3000 (207)	3.5	10%	2.3	6%	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	
3250 (224)	3.2	9%	2.0	6%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3500 (240)	2.9	8%	1.8	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.2 08053 Motor



Order Code	500205008053
Voltage	12 VDC
Power	0.8 kW
Insulation	F
Number of Terminals	1
Diameter	3" (80 mm)
Overall Length Dimension	5.265" (134 mm)
IP Ratings	IP54
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08053 Motor

Pressure psi (bar)	AP05-0.16	AP05-0.25	AP05-0.35	AP05-0.50	AP05-07.5	AP05-0.90	AP05-1.20	AP05-1.60	AP05-2.30
	0.009 in ³ (0.15 cc)	0.016 in ³ (0.27 cc)	0.020 in ³ (0.33 cc)	0.033 in ³ (0.54 cc)	0.047 in ³ (0.77 cc)	0.056 in ³ (0.92 cc)	0.074 in ³ (1.22 cc)	0.100 in ³ (1.64 cc)	0.141 in ³ (2.31 cc)
50 (3)	22	23	23	25	26	27	29	32	37
250 (17)	24	26	27	31	36	39	44	53	66
500 (34)	26	30	32	40	48	53	63	78	102
750 (51)	28	34	37	48	59	67	82	104	138
1000 (68)	31	38	42	56	71	82	101	130	175
1250 (86)	33	43	47	65	83	96	120	156	213
1500 (103)	35	47	52	73	96	111	140	183	-
1750 (121)	37	51	57	81	108	125	159	210	-
2000 (138)	40	55	62	90	120	140	179	-	-
2250 (155)	42	59	67	98	132	155	199	-	-
2500 (172)	44	63	72	107	144	170	219	-	-
2750 (190)	47	68	77	115	157	185	-	-	-
3000 (207)	49	72	83	124	169	200	-	-	-
3250 (224)	51	76	88	132	182	215	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08053 Motor																		
Pressure psi (bar)	AP05-0.16		AP05-0.25		AP05-0.35		AP05-0.50		AP05-0.7.5		AP05-0.90		AP05-1.20		AP05-1.60		AP05-2.30	
	0.009 in ³ (0.15 cc)		0.016 in ³ (0.27 cc)		0.020 in ³ (0.33 cc)		0.033 in ³ (0.54 cc)		0.047 in ³ (0.77 cc)		0.056 in ³ (0.92 cc)		0.074 in ³ (1.22 cc)		0.100 in ³ (1.64 cc)		0.141 in ³ (2.31 cc)	
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm
50 (3)	0.33	1.25	0.60	2.26	0.72	2.72	1.17	4.44	1.65	6.25	1.96	7.42	2.54	9.60	3.35	12.67	4.53	17.13
250 (17)	0.33	1.23	0.58	2.19	0.69	2.62	1.11	4.20	1.53	5.79	1.79	6.77	2.26	8.54	2.88	10.89	3.71	14.05
500 (34)	0.32	1.20	0.56	2.11	0.66	2.51	1.04	3.93	1.40	5.29	1.61	6.10	1.98	7.51	2.45	9.29	3.04	11.52
750 (51)	0.31	1.17	0.54	2.04	0.64	2.41	0.97	3.69	1.29	4.87	1.47	5.56	1.77	6.71	2.14	8.11	2.58	9.75
1000 (68)	0.30	1.15	0.52	1.97	0.61	2.31	0.92	3.48	1.19	4.52	1.35	5.10	1.60	6.07	1.90	7.19	2.20	8.33
1250 (86)	0.30	1.12	0.50	1.90	0.59	2.22	0.87	3.29	1.11	4.21	1.25	4.72	1.46	5.54	1.70	6.43	1.85	7.00
1500 (103)	0.29	1.10	0.49	1.84	0.57	2.14	0.82	3.12	1.04	3.94	1.16	4.39	1.34	5.09	1.51	5.73	-	-
1750 (121)	0.28	1.07	0.47	1.78	0.55	2.06	0.78	2.97	0.98	3.71	1.08	4.10	1.24	4.68	1.34	5.05	-	-
2000 (138)	0.28	1.05	0.46	1.72	0.53	1.99	0.75	2.83	0.92	3.50	1.02	3.84	1.13	4.30	-	-	-	-
2250 (155)	0.27	1.02	0.44	1.67	0.51	1.92	0.71	2.70	0.87	3.31	0.95	3.60	1.04	3.92	-	-	-	-
2500 (172)	0.26	1.00	0.43	1.62	0.49	1.86	0.68	2.59	0.83	3.13	0.89	3.38	0.94	3.55	-	-	-	-
2750 (190)	0.26	0.98	0.42	1.57	0.48	1.80	0.65	2.48	0.78	2.97	0.83	3.16	-	-	-	-	-	-
3000 (207)	0.25	0.96	0.40	1.53	0.46	1.74	0.63	2.38	0.74	2.81	0.78	2.94	-	-	-	-	-	-
3250 (224)	0.25	0.94	0.39	1.48	0.45	1.69	0.60	2.28	0.70	2.65	0.72	2.73	-	-	-	-	-	-

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08053 Motor																		
Pressure psi (bar)	AP05-0.16		AP05-0.25		AP05-0.35		AP05-0.50		AP05-0.7.5		AP05-0.90		AP05-1.20		AP05-1.60		AP05-2.30	
	0.009 in ³ (0.15 cc)		0.016 in ³ (0.27 cc)		0.020 in ³ (0.33 cc)		0.033 in ³ (0.54 cc)		0.047 in ³ (0.77 cc)		0.056 in ³ (0.92 cc)		0.074 in ³ (1.22 cc)		0.100 in ³ (1.64 cc)		0.141 in ³ (2.31 cc)	
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	21.6	51%	21.4	51%	21.3	50%	21.1	49%	20.8	48%	20.6	48%	20.2	47%	19.7	45%	19.0	43%
250 (17)	20.8	49%	20.1	46%	19.7	45%	18.5	41%	17.3	38%	16.5	35%	15.1	32%	13.2	27%	10.7	22%
500 (34)	19.9	46%	18.5	41%	17.9	39%	15.7	33%	13.6	28%	12.4	25%	10.3	21%	7.7	16%	4.9	11%
750 (51)	19.0	43%	17.1	37%	16.2	35%	13.3	27%	10.7	22%	9.2	19%	6.9	14%	4.4	10%	2.1	6%
1000 (68)	18.2	40%	15.7	33%	14.7	31%	11.2	23%	8.3	17%	6.8	14%	4.5	10%	2.4	6%	0.8	4%
1250 (86)	17.4	38%	14.5	30%	13.2	27%	9.4	19%	6.4	13%	4.9	11%	2.9	7%	1.2	4%	0.3	2%
1500 (103)	16.6	36%	13.3	27%	12.0	24%	7.9	16%	4.9	11%	3.5	8%	1.8	5%	0.6	3%	-	-
1750 (121)	15.9	34%	12.2	25%	10.8	22%	6.6	14%	3.7	9%	2.5	7%	1.1	4%	0.3	2%	-	-
2000 (138)	15.2	32%	11.2	23%	9.7	20%	5.4	12%	2.8	7%	1.7	5%	0.6	3%	-	-	-	-
2250 (155)	14.5	30%	10.3	21%	8.7	18%	4.5	10%	2.1	6%	1.2	4%	0.4	3%	-	-	-	-
2500 (172)	13.8	29%	9.4	19%	7.8	16%	3.7	9%	1.5	5%	0.8	4%	0.2	2%	-	-	-	-
2750 (190)	13.2	27%	8.6	17%	7.0	14%	3.0	8%	1.1	4%	0.5	3%	-	-	-	-	-	-
3000 (207)	12.6	26%	7.9	16%	6.3	13%	2.5	7%	0.8	4%	0.3	2%	-	-	-	-	-	-
3250 (224)	12.0	24%	7.2	15%	5.6	12%	2.0	6%	0.6	3%	0.2	2%	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.3 08196 Motor



Order Code	500205008196
Voltage	12 VDC
Power	1.9 kW
Insulation	F
Number of Terminals	1
Diameter	4.5" (114 mm)
Overall Length Dimension	7" (178 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field, Heavy-Duty

Pressure Balanced Amp Draw for 08196 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	86	88	90	92	96	100	103	108	114	124
250 (17)	94	99	104	107	118	127	134	147	161	182
500 (34)	103	112	121	127	145	161	172	193	215	250
750 (51)	113	125	138	146	172	192	208	236	266	312
1000 (68)	122	138	154	164	197	223	243	277	313	367
1250 (86)	131	151	170	182	221	252	276	316	357	-
1500 (103)	140	163	186	200	245	281	307	352	-	-
1750 (121)	150	176	201	217	268	308	337	-	-	-
2000 (138)	158	188	216	234	290	333	365	-	-	-
2250 (155)	167	200	231	251	312	358	-	-	-	-
2500 (172)	176	212	245	267	333	381	-	-	-	-
2750 (190)	185	223	260	283	352	-	-	-	-	-
3000 (207)	194	235	274	298	371	-	-	-	-	-
3250 (224)	202	246	287	313	-	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08196 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	2.04	7.70	2.79	10.57	3.52	13.31	3.99	15.12	5.44	20.59	6.55	24.81	7.38	27.93	8.76	33.14	10.15	38.42	12.14	45.96	
250 (17)	1.90	7.18	2.54	9.61	3.12	11.82	3.49	13.21	4.54	17.17	5.27	19.96	5.78	21.90	6.58	24.92	7.33	27.74	8.32	31.48	
500 (34)	1.74	6.59	2.27	8.59	2.72	10.30	3.00	11.34	3.73	14.10	4.21	15.92	4.53	17.14	5.02	19.01	5.49	20.77	6.14	23.25	
750 (51)	1.61	6.08	2.04	7.73	2.40	9.10	2.61	9.89	3.16	11.94	3.51	13.27	3.74	14.17	4.12	15.61	4.50	17.04	5.04	19.09	
1000 (68)	1.49	5.62	1.85	7.01	2.15	8.12	2.31	8.75	2.74	10.38	3.03	11.46	3.23	12.22	3.56	13.48	3.88	14.71	4.21	15.94	
1250 (86)	1.38	5.22	1.69	6.40	1.94	7.33	2.07	7.85	2.44	9.23	2.69	10.18	2.87	10.87	3.16	11.97	3.38	12.80	-	-	
1500 (103)	1.28	4.86	1.55	5.88	1.76	6.68	1.88	7.13	2.21	8.35	2.44	9.23	2.60	9.84	2.82	10.67	-	-	-	-	
1750 (121)	1.20	4.54	1.44	5.44	1.62	6.14	1.73	6.54	2.02	7.67	2.24	8.47	2.37	8.97	-	-	-	-	-	-	
2000 (138)	1.12	4.26	1.33	5.05	1.50	5.69	1.60	6.05	1.88	7.11	2.06	7.80	2.14	8.11	-	-	-	-	-	-	
2250 (155)	1.06	4.00	1.25	4.72	1.40	5.30	1.49	5.64	1.75	6.63	1.89	7.16	-	-	-	-	-	-	-	-	
2500 (172)	1.00	3.77	1.17	4.42	1.31	4.98	1.40	5.30	1.64	6.19	1.71	6.49	-	-	-	-	-	-	-	-	
2750 (190)	0.94	3.56	1.10	4.16	1.24	4.69	1.32	5.00	1.52	5.77	-	-	-	-	-	-	-	-	-	-	
3000 (207)	0.89	3.37	1.04	3.94	1.17	4.44	1.25	4.73	1.41	5.33	-	-	-	-	-	-	-	-	-	-	
3250 (224)	0.84	3.19	0.99	3.73	1.12	4.22	1.18	4.48	-	-	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08196 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	21.7	37%	21.6	37%	21.5	37%	21.4	37%	21.2	37%	21.0	36%	20.9	36%	20.7	36%	20.4	36%	20.0	35%	
250 (17)	20.7	36%	20.3	36%	19.8	35%	19.5	35%	18.6	33%	17.8	33%	17.3	32%	16.3	31%	15.2	29%	13.7	27%	
500 (34)	19.6	35%	18.7	34%	17.9	33%	17.3	32%	15.7	30%	14.4	28%	13.4	27%	11.9	25%	10.3	22%	8.1	19%	
750 (51)	18.5	33%	17.3	32%	16.1	30%	15.4	29%	13.1	26%	11.5	24%	10.3	23%	8.5	20%	6.7	17%	4.5	13%	
1000 (68)	17.5	32%	15.9	30%	14.5	28%	13.6	27%	10.9	23%	9.1	21%	7.8	19%	5.9	16%	4.2	13%	2.3	9%	
1250 (86)	16.5	31%	14.6	28%	13.0	26%	11.9	25%	9.0	21%	7.1	18%	5.8	16%	4.0	12%	2.5	9%			
1500 (103)	15.5	30%	13.5	27%	11.6	24%	10.5	23%	7.4	18%	5.5	15%	4.2	13%	2.6	10%					
1750 (121)	14.6	28%	12.3	25%	10.3	23%	9.2	21%	6.0	16%	4.1	13%	3.0	10%							
2000 (138)	13.8	27%	11.3	24%	9.2	21%	8.0	19%	4.9	14%	3.1	11%	2.1	8%							
2250 (155)	13.0	26%	10.3	23%	8.2	19%	6.9	17%	3.9	12%	2.3	9%									
2500 (172)	12.2	25%	9.4	21%	7.2	18%	6.0	16%	3.1	11%											
2750 (190)	11.4	24%	8.6	20%	6.4	16%	5.1	14%	2.4	9%											
3000 (207)	10.7	23%	7.8	19%	5.6	15%	4.4	13%													
3250 (224)	10.1	22%	7.1	18%	4.9	14%	3.7	12%													

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.4 08050 Motor



Order Code	500205008050
Voltage	12 VDC
Power	2.5 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.25" (261 mm)
IP Ratings	IP20
UL Listed	No
Type	Wound Field

Pressure Balanced Amp Draw for 08050 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	58	59	61	62	65	67	69	72	76	82
250 (17)	63	66	70	72	79	85	89	97	106	120
500 (34)	69	75	80	84	96	106	114	127	142	166
750 (51)	75	83	91	96	113	127	138	156	177	209
1000 (68)	81	91	102	108	130	147	161	184	210	249
1250 (86)	87	100	112	120	146	167	183	211	241	287
1500 (103)	93	108	122	132	162	187	205	237	271	-
1750 (121)	99	116	133	144	178	206	227	262	-	-
2000 (138)	105	124	143	155	194	224	247	286	-	-
2250 (155)	110	132	153	166	209	242	267	-	-	-
2500 (172)	116	140	162	177	224	260	286	-	-	-
2750 (190)	122	147	172	188	238	277	-	-	-	-
3000 (207)	128	155	182	199	252	293	-	-	-	-
3250 (224)	133	163	191	210	266	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08050 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	1.28	4.86	1.77	6.70	2.24	8.48	2.55	9.66	3.51	13.28	4.26	16.11	4.82	18.23	5.77	21.83	6.75	25.55	8.19	30.99	
250 (17)	1.21	4.60	1.64	6.21	2.04	7.72	2.29	8.68	3.03	11.48	3.57	13.52	3.95	14.96	4.56	17.25	5.13	19.43	5.90	22.32	
500 (34)	1.13	4.29	1.50	5.67	1.82	6.90	2.02	7.66	2.57	9.74	2.94	11.14	3.19	12.08	3.57	13.51	3.91	14.81	4.36	16.52	
750 (51)	1.06	4.01	1.37	5.20	1.64	6.21	1.80	6.82	2.22	8.40	2.49	9.42	2.66	10.09	2.93	11.10	3.18	12.04	3.53	13.37	
1000 (68)	0.99	3.75	1.26	4.78	1.49	5.63	1.62	6.12	1.95	7.36	2.15	8.15	2.29	8.67	2.51	9.48	2.72	10.28	3.03	11.45	
1250 (86)	0.93	3.52	1.17	4.41	1.36	5.13	1.46	5.53	1.73	6.55	1.90	7.19	2.02	7.63	2.21	8.35	2.40	9.07	2.65	10.03	
1500 (103)	0.87	3.30	1.08	4.08	1.24	4.70	1.33	5.03	1.56	5.90	1.71	6.46	1.81	6.85	1.99	7.52	2.15	8.15	-	-	
1750 (121)	0.82	3.10	1.00	3.79	1.14	4.33	1.22	4.61	1.42	5.37	1.55	5.88	1.65	6.25	1.81	6.86	-	-	-	-	
2000 (138)	0.77	2.92	0.93	3.53	1.06	4.00	1.12	4.25	1.30	4.94	1.43	5.42	1.52	5.76	1.66	6.28	-	-	-	-	
2250 (155)	0.73	2.75	0.87	3.30	0.98	3.72	1.04	3.94	1.21	4.57	1.33	5.03	1.41	5.34	-	-	-	-	-	-	
2500 (172)	0.69	2.60	0.81	3.08	0.92	3.47	0.97	3.67	1.13	4.27	1.24	4.69	1.31	4.95	-	-	-	-	-	-	
2750 (190)	0.65	2.45	0.76	2.89	0.86	3.25	0.91	3.43	1.06	4.00	1.16	4.39	-	-	-	-	-	-	-	-	
3000 (207)	0.61	2.32	0.72	2.72	0.81	3.05	0.85	3.23	1.00	3.77	1.08	4.10	-	-	-	-	-	-	-	-	
3250 (224)	0.58	2.19	0.68	2.56	0.76	2.88	0.80	3.04	0.94	3.55	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08050 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	89.9	92%	72.2	77%
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	95.4	96%	80.0	84%	70.0	75%	55.4	61%	43.1	49%	29.4	34%	
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	91.4	93%	67.0	72%	52.3	58%	43.4	49%	31.4	36%	22.4	26%	13.5	15%	
1000 (68)	Cont	Cont	98.6	99%	81.0	84%	71.2	76%	47.9	54%	35.1	40%	27.9	32%	18.8	21%	12.5	14%	6.9	6%	
1250 (86)	Cont	Cont	82.9	86%	65.4	71%	56.0	62%	34.9	40%	24.2	28%	18.5	21%	11.8	13%	7.4	7%	-	-	
1500 (103)	93.7	95%	70.1	75%	53.2	59%	44.4	50%	25.9	30%	17.1	19%	12.6	14%	7.6	7%	4.6	4%	-	-	
1750 (121)	82.9	86%	59.5	65%	43.5	49%	35.6	41%	19.4	22%	12.3	13%	8.9	9%	5.2	4%	-	-	-	-	
2000 (138)	73.4	78%	50.8	57%	35.9	41%	28.7	33%	14.8	16%	9.1	9%	6.4	6%	-	-	-	-	-	-	
2250 (155)	65.3	71%	43.5	49%	29.8	34%	23.4	27%	11.5	12%	6.8	6%	4.7	4%	-	-	-	-	-	-	
2500 (172)	58.1	64%	37.4	43%	24.8	29%	19.1	22%	9.0	9%	5.2	4%	-	-	-	-	-	-	-	-	
2750 (190)	51.9	58%	32.3	37%	20.8	24%	15.8	18%	7.1	7%	-	-	-	-	-	-	-	-	-	-	
3000 (207)	46.4	52%	28.0	32%	17.6	20%	13.1	14%	5.7	5%	-	-	-	-	-	-	-	-	-	-	
3250 (224)	41.6	47%	24.3	28%	14.9	17%	11.0	12%	4.6	4%	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.5 08163 Motor



Order Code	500205008163
Voltage	12 VDC
Power	1.9 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08163 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	34	38	41	43	51	57	61	70	79	94
250 (17)	46	55	63	68	86	100	112	132	154	189
500 (34)	62	76	90	99	129	154	173	207	244	303
750 (51)	77	97	117	130	172	206	233	279	330	-
1000 (68)	92	117	143	160	213	257	291	349	-	-
1250 (86)	106	138	169	189	254	307	347	-	-	-
1500 (103)	121	158	195	219	295	-	-	-	-	-
1750 (121)	136	178	220	248	334	-	-	-	-	-
2000 (138)	150	198	245	276	-	-	-	-	-	-
2250 (155)	165	218	270	304	-	-	-	-	-	-
2500 (172)	179	238	295	332	-	-	-	-	-	-
2750 (190)	194	257	319	-	-	-	-	-	-	-
3000 (207)	208	276	343	-	-	-	-	-	-	-
3250 (224)	222	295	-	-	-	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08163 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	1.51	5.70	2.09	7.90	2.66	10.06	3.04	11.51	4.23	16.01	5.19	19.64	5.92	22.40	7.19	27.22	8.55	32.35	10.62	40.19	
250 (17)	1.45	5.51	2.00	7.55	2.51	9.52	2.85	10.80	3.88	14.70	4.68	17.70	5.26	19.92	6.24	23.62	7.23	27.35	8.60	32.55	
500 (34)	1.40	5.28	1.89	7.15	2.35	8.91	2.65	10.02	3.51	13.30	4.15	15.69	4.59	17.37	5.28	19.97	5.87	22.23	6.44	24.39	
750 (51)	1.34	5.07	1.79	6.79	2.21	8.36	2.47	9.33	3.19	12.09	3.68	13.94	3.99	15.12	4.39	16.63	4.57	17.31	-	-	
1000 (68)	1.29	4.87	1.70	6.45	2.08	7.86	2.30	8.71	2.90	10.97	3.25	12.29	3.42	12.95	-	-	-	-	-	-	
1250 (86)	1.24	4.68	1.62	6.14	1.95	7.39	2.15	8.12	2.61	9.89	2.81	10.64	-	-	-	-	-	-	-	-	
1500 (103)	1.19	4.51	1.54	5.84	1.84	6.95	2.00	7.56	2.33	8.83	-	-	-	-	-	-	-	-	-	-	
1750 (121)	1.15	4.33	1.47	5.55	1.72	6.52	1.85	7.01	2.05	7.74	-	-	-	-	-	-	-	-	-	-	
2000 (138)	1.10	4.17	1.39	5.28	1.61	6.10	1.71	6.47	-	-	-	-	-	-	-	-	-	-	-	-	
2250 (155)	1.06	4.01	1.32	5.01	1.50	5.69	1.56	5.92	-	-	-	-	-	-	-	-	-	-	-	-	
2500 (172)	1.02	3.86	1.25	4.74	1.39	5.27	1.42	5.37	-	-	-	-	-	-	-	-	-	-	-	-	
2750 (190)	0.98	3.70	1.18	4.48	1.28	4.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3000 (207)	0.94	3.55	1.11	4.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3250 (224)	0.90	3.41	1.04	3.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08163 Motor																						
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0			
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)			
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	89.8	97%	42.2	64%	
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	60.4	78%	37.9	60%	16.5	37%	6.6	22%	1.5	8%		
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	95.1	Cont	32.5	55%	13.4	33%	6.7	22%	2.0	10%	-	-	-	-		
1000 (68)	Cont	Cont	Cont	Cont	62.9	80%	40.3	62%	9.7	27%	3.0	13%	1.2	7%	-	-	-	-	-	-		
1250 (86)	Cont	Cont	68.2	84%	29.9	53%	17.2	38%	2.9	13%	0.7	5%	-	-	-	-	-	-	-	-		
1500 (103)	Cont	Cont	38.2	61%	14.2	34%	7.4	23%	0.9	6%	-	-	-	-	-	-	-	-	-	-		
1750 (121)	68.0	83%	21.4	44%	6.8	22%	3.2	14%	-	-	-	-	-	-	-	-	-	-	-	-		
2000 (138)	44.9	66%	12.0	31%	3.3	14%	1.4	8%	-	-	-	-	-	-	-	-	-	-	-	-		
2250 (155)	29.7	53%	6.8	22%	1.6	9%	0.6	5%	-	-	-	-	-	-	-	-	-	-	-	-		
2500 (172)	19.6	41%	3.8	15%	0.8	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2750 (190)	13.0	33%	2.2	11%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3000 (207)	8.6	25%	1.2	7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3250 (224)	5.7	20%	0.7	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.6 08004 Motor



Order Code	500205008004
Voltage	12 VDC
Power	0.8 kW
Insulation	F
Number of Terminals	1
Housing Diameter	3" (80 mm)
Length Dimension	6.75" (171 mm)
IP Ratings	IP54
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08004 Motor

Pressure psi (bar)	AP05-0.16	AP05-0.25	AP05-0.35	AP05-0.50	AP05-07.5	AP05-0.90	AP05-1.20	AP05-1.60	AP05-2.30
	0.009 in ³ (0.15 cc)	0.016 in ³ (0.27 cc)	0.020 in ³ (0.33 cc)	0.033 in ³ (0.54 cc)	0.047 in ³ (0.77 cc)	0.056 in ³ (0.92 cc)	0.074 in ³ (1.22 cc)	0.100 in ³ (1.64 cc)	0.141 in ³ (2.31 cc)
50 (3)	21	22	22	23	25	26	27	30	33
250 (17)	23	25	25	29	32	35	39	46	56
500 (34)	25	28	29	35	42	46	54	66	85
750 (51)	26	31	33	42	51	57	69	87	114
1000 (68)	28	34	37	49	61	69	84	107	143
1250 (86)	30	38	41	55	70	80	100	128	173
1500 (103)	32	41	45	62	80	92	115	149	203
1750 (121)	34	44	49	69	90	103	130	171	-
2000 (138)	35	48	53	75	99	115	146	192	-
2250 (155)	37	51	57	82	109	127	162	214	-
2500 (172)	39	54	61	89	119	139	178	-	-
2750 (190)	41	58	65	96	129	151	193	-	-
3000 (207)	43	61	70	102	138	163	-	-	-
3250 (224)	45	64	74	109	148	175	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08004 Motor																		
Pressure psi (bar)	AP05-0.16		AP05-0.25		AP05-0.35		AP05-0.50		AP05-0.7.5		AP05-0.90		AP05-1.20		AP05-1.60		AP05-2.30	
	0.009 in ³ (0.15 cc)		0.016 in ³ (0.27 cc)		0.020 in ³ (0.33 cc)		0.033 in ³ (0.54 cc)		0.047 in ³ (0.77 cc)		0.056 in ³ (0.92 cc)		0.074 in ³ (1.22 cc)		0.100 in ³ (1.64 cc)		0.141 in ³ (2.31 cc)	
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm
50 (3)	0.21	0.78	0.37	1.41	0.45	1.70	0.74	2.80	1.05	3.97	1.25	4.74	1.63	6.18	2.18	8.26	3.00	11.37
250 (17)	0.20	0.77	0.37	1.39	0.44	1.67	0.72	2.72	1.01	3.82	1.19	4.52	1.54	5.82	2.01	7.61	2.69	10.17
500 (34)	0.20	0.76	0.36	1.36	0.43	1.63	0.69	2.63	0.96	3.64	1.13	4.27	1.43	5.40	1.82	6.90	2.35	8.88
750 (51)	0.20	0.75	0.35	1.33	0.42	1.59	0.67	2.54	0.92	3.47	1.07	4.03	1.33	5.02	1.66	6.27	2.05	7.77
1000 (68)	0.19	0.74	0.34	1.31	0.41	1.56	0.65	2.45	0.87	3.31	1.01	3.82	1.24	4.68	1.51	5.70	1.79	6.77
1250 (86)	0.19	0.72	0.34	1.28	0.40	1.52	0.63	2.37	0.83	3.16	0.95	3.61	1.15	4.35	1.37	5.17	1.54	5.84
1500 (103)	0.19	0.71	0.33	1.25	0.39	1.49	0.60	2.29	0.80	3.01	0.90	3.42	1.07	4.05	1.23	4.67	1.31	4.97
1750 (121)	0.19	0.70	0.32	1.23	0.38	1.45	0.58	2.21	0.76	2.88	0.85	3.23	0.99	3.77	1.11	4.20	-	-
2000 (138)	0.18	0.69	0.32	1.20	0.37	1.42	0.56	2.14	0.72	2.74	0.81	3.06	0.92	3.49	0.99	3.75	-	-
2250 (155)	0.18	0.68	0.31	1.18	0.37	1.39	0.55	2.07	0.69	2.62	0.76	2.89	0.85	3.23	0.88	3.32	-	-
2500 (172)	0.18	0.67	0.30	1.15	0.36	1.35	0.53	2.00	0.66	2.50	0.72	2.73	0.79	2.98	-	-	-	-
2750 (190)	0.17	0.66	0.30	1.13	0.35	1.32	0.50	1.93	0.63	2.38	0.68	2.57	0.72	2.73	-	-	-	-
3000 (207)	0.17	0.64	0.29	1.11	0.34	1.29	0.49	1.86	0.60	2.26	0.64	2.42	-	-	-	-	-	-
3250 (224)	0.17	0.63	0.29	1.08	0.33	1.26	0.48	1.80	0.57	2.15	0.60	2.27	-	-	-	-	-	-

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08004 Motor																		
Pressure psi (bar)	AP05-0.16		AP05-0.25		AP05-0.35		AP05-0.50		AP05-0.7.5		AP05-0.90		AP05-1.20		AP05-1.60		AP05-2.30	
	0.009 in ³ (0.15 cc)		0.016 in ³ (0.27 cc)		0.020 in ³ (0.33 cc)		0.033 in ³ (0.54 cc)		0.047 in ³ (0.77 cc)		0.056 in ³ (0.92 cc)		0.074 in ³ (1.22 cc)		0.100 in ³ (1.64 cc)		0.141 in ³ (2.31 cc)	
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	22.7	55%	22.6	55%	22.5	55%	22.3	54%	22.1	53%	21.9	52%	21.6	51%	21.2	50%	20.5	48%
250 (17)	22.1	53%	21.5	51%	21.2	50%	20.2	46%	19.1	43%	18.4	41%	17.1	37%	15.4	33%	13.1	27%
500 (34)	21.3	50%	20.2	46%	19.6	45%	17.7	39%	15.8	34%	14.7	31%	12.7	26%	10.2	21%	7.2	15%
750 (51)	20.6	48%	18.9	42%	18.1	40%	15.5	33%	13.1	27%	11.6	24%	9.3	19%	6.6	14%	3.7	9%
1000 (68)	19.9	46%	17.7	39%	16.8	36%	13.6	28%	10.7	22%	9.2	18%	6.7	14%	4.1	9%	1.9	6%
1250 (86)	19.2	43%	16.6	36%	15.5	33%	11.8	24%	8.8	18%	7.2	15%	4.8	10%	2.5	7%	0.9	4%
1500 (103)	18.5	41%	15.5	33%	14.3	30%	10.3	21%	7.1	15%	5.6	12%	3.4	8%	1.5	5%	0.4	3%
1750 (121)	17.9	39%	14.5	30%	13.2	27%	9.0	18%	5.8	12%	4.3	10%	2.3	6%	0.9	4%	0.1	2%
2000 (138)	17.2	38%	13.6	28%	12.1	25%	7.8	16%	4.7	10%	3.3	8%	1.6	5%	0.5	3%	-	-
2250 (155)	16.6	36%	12.7	26%	11.2	23%	6.7	14%	3.7	9%	2.5	7%	1.1	4%	0.3	2%	-	-
2500 (172)	16.0	34%	11.8	24%	10.3	21%	5.8	12%	3.0	7%	1.8	6%	0.7	3%	-	-	-	-
2750 (190)	15.4	33%	11.1	22%	9.4	19%	5.0	11%	2.3	6%	1.4	5%	0.4	3%	-	-	-	-
3000 (207)	14.9	31%	10.3	21%	8.7	17%	4.3	10%	1.8	6%	1.0	4%	-	-	-	-	-	-
3250 (224)	14.4	30%	9.6	19%	7.9	16%	3.6	9%	1.4	5%	0.7	3%	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.7 22368 Motor



Order code	500205022368
Voltage	12 VDC
Power	1.9 kW
Insulation	F
Number of Terminals	1
Housing Diameter	4.5" (114 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field Medium Duty

Pressure Balanced Amp Draw for 22368 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	74	76	78	79	83	87	89	94	99	107
250 (17)	81	86	90	93	103	111	117	128	140	160
500 (34)	89	97	105	110	127	140	151	170	191	224
750 (51)	98	109	119	127	150	169	184	211	240	286
1000 (68)	106	120	134	143	173	197	217	251	287	345
1250 (86)	114	131	149	160	197	226	249	290	334	-
1500 (103)	122	143	163	176	219	254	281	328	-	-
1750 (121)	130	154	177	193	242	281	312	-	-	-
2000 (138)	138	165	191	209	264	308	342	-	-	-
2250 (155)	146	175	205	225	286	335	-	-	-	-
2500 (172)	154	187	219	241	307	-	-	-	-	-
2750 (190)	162	198	233	256	329	-	-	-	-	-
3000 (207)	170	209	247	272	350	-	-	-	-	-
3250 (224)	178	220	260	287	-	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 22368 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	2.15	8.14	2.92	11.05	3.65	13.82	4.12	15.60	5.52	20.90	6.56	24.83	7.31	27.67	8.54	32.33	9.74	36.87	11.38	43.08	
250 (17)	1.94	7.34	2.55	9.65	3.09	11.70	3.41	12.91	4.31	16.32	4.91	18.59	5.31	20.10	5.93	22.45	6.51	24.64	7.29	27.60	
500 (34)	1.73	6.55	2.19	8.29	2.57	9.73	2.79	10.56	3.36	12.72	3.73	14.12	3.99	15.10	4.39	16.62	4.78	18.09	5.36	20.29	
750 (51)	1.55	5.87	1.91	7.23	2.19	8.29	2.36	8.93	2.78	10.52	3.06	11.58	3.26	12.34	3.60	13.63	3.92	14.84	4.29	16.24	
1000 (68)	1.40	5.30	1.69	6.40	1.92	7.27	2.04	7.72	2.39	9.05	2.64	9.99	2.81	10.64	3.09	11.70	3.29	12.45	3.39	12.83	
1250 (86)	1.27	4.81	1.51	5.72	1.71	6.47	1.81	6.85	2.12	8.03	2.34	8.86	2.49	9.43	2.67	10.11	2.74	10.37	-	-	
1500 (103)	1.16	4.39	1.37	5.19	1.54	5.83	1.64	6.21	1.92	7.27	2.11	7.99	2.21	8.37	2.30	8.71	-	-	-	-	
1750 (121)	1.07	4.05	1.26	4.77	1.41	5.34	1.50	5.68	1.75	6.62	1.90	7.19	1.96	7.42	-	-	-	-	-	-	
2000 (138)	1.00	3.79	1.16	4.39	1.30	4.92	1.39	5.26	1.61	6.09	1.71	6.47	1.72	6.51	-	-	-	-	-	-	
2250 (155)	0.93	3.52	1.08	4.09	1.22	4.62	1.29	4.88	1.48	5.60	1.52	5.75	-	-	-	-	-	-	-	-	
2500 (172)	0.87	3.29	1.01	3.82	1.14	4.32	1.21	4.5	1.35	5.11	-	-	-	-	-	-	-	-	-	-	
2750 (190)	0.81	3.07	0.95	3.60	1.07	4.05	1.13	4.28	1.23	4.66	-	-	-	-	-	-	-	-	-	-	
3000 (207)	0.77	2.91	0.90	3.41	1.01	3.82	1.06	4.01	1.12	4.24	-	-	-	-	-	-	-	-	-	-	
3250 (224)	0.73	2.76	0.85	3.22	0.95	3.60	0.99	3.75	-	-	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 22368 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	12.7	28%	12.6	27%	12.5	27%	12.4	27%	12.1	27%	11.9	27%	11.7	27%	11.4	27%	11.1	26%	10.6	26%	
250 (17)	11.5	27%	10.9	26%	10.4	26%	10.1	26%	9.2	25%	8.5	24%	8.0	23%	7.3	22%	6.6	21%	5.7	20%	
500 (34)	10.2	26%	9.3	25%	8.5	24%	8.1	23%	6.9	22%	6.1	20%	5.5	19%	4.8	18%	4.1	16%	3.3	13%	
750 (51)	9.1	25%	8.0	23%	7.2	22%	6.7	21%	5.4	19%	4.6	17%	4.1	16%	3.4	14%	2.9	11%	2.2	8%	
1000 (68)	8.2	23%	7.0	22%	6.1	20%	5.6	19%	4.4	16%	3.7	14%	3.2	12%	2.6	10%	2.2	8%	-	-	
1250 (86)	7.4	22%	6.2	21%	5.3	19%	4.8	18%	3.6	14%	3.0	12%	2.6	10%	2.1	8%	-	-	-	-	
1500 (103)	6.8	21%	5.6	19%	4.7	17%	4.2	16%	3.1	12%	2.5	10%	2.2	8%	-	-	-	-	-	-	
1750 (121)	6.2	21%	5.0	18%	4.1	16%	3.7	14%	2.7	10%	2.1	8%	1.8	6%	-	-	-	-	-	-	
2000 (138)	5.7	20%	4.5	17%	3.7	14%	3.3	13%	2.3	9%	1.9	6%	-	-	-	-	-	-	-	-	
2250 (155)	5.3	19%	4.1	16%	3.3	13%	2.9	12%	2.1	7%	-	-	-	-	-	-	-	-	-	-	
2500 (172)	4.9	18%	3.8	15%	3.0	12%	2.6	10%	1.8	6%	-	-	-	-	-	-	-	-	-	-	
2750 (190)	4.6	17%	3.5	14%	2.8	11%	2.4	9%	-	-	-	-	-	-	-	-	-	-	-	-	
3000 (207)	4.3	16%	3.2	13%	2.5	10%	2.2	8%	-	-	-	-	-	-	-	-	-	-	-	-	
3250 (224)	4.0	15%	3.0	12%	2.3	9%	2.0	7%	-	-	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.8 08051 Motor



Order Code	500205008051
Voltage	24 VDC
Power	0.8 kW
Insulation	F
Number of Terminals	2
Housing Diameter	3" (80 mm)
Length Dimension	5.265" (134 mm)
IP Ratings	IP54
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08051 Motor

Pressure psi (bar)	AP05-0.16	AP05-0.25	AP05-0.35	AP05-0.50	AP05-07.5	AP05-0.90	AP05-1.20	AP05-1.60	AP05-2.30
	0.009 in ³ (0.15 cc)	0.016 in ³ (0.27 cc)	0.020 in ³ (0.33 cc)	0.033 in ³ (0.54 cc)	0.047 in ³ (0.77 cc)	0.056 in ³ (0.92 cc)	0.074 in ³ (1.22 cc)	0.100 in ³ (1.64 cc)	0.141 in ³ (2.31 cc)
50 (3)	22	23	23	24	24	25	26	27	29
250 (17)	23	24	25	26	28	30	32	36	41
500 (34)	24	26	27	30	33	36	40	47	57
750 (51)	25	28	29	33	39	42	49	58	75
1000 (68)	26	29	31	37	44	48	57	71	93
1250 (86)	27	31	33	41	49	55	66	83	0
1500 (103)	28	33	35	44	55	62	75	0	-
1750 (121)	29	35	38	48	60	68	85	0	-
2000 (138)	30	37	40	52	66	75	94	-	-
2250 (155)	31	38	42	56	72	82	-	-	-
2500 (172)	32	40	44	60	78	90	-	-	-
2750 (190)	33	42	46	64	84	-	-	-	-
3000 (207)	34	44	49	68	90	-	-	-	-
3250 (224)	35	46	51	72	96	-	-	-	-

Current values are DC Amps

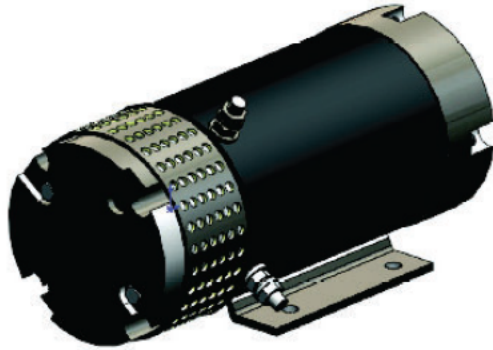
Pressure Balanced Flows for 08051 Motor																		
Pressure psi (bar)	AP05-0.16		AP05-0.25		AP05-0.35		AP05-0.50		AP05-0.75		AP05-0.90		AP05-1.20		AP05-1.60		AP05-2.30	
	0.009 in ³ (0.15 cc)		0.016 in ³ (0.27 cc)		0.020 in ³ (0.33 cc)		0.033 in ³ (0.54 cc)		0.047 in ³ (0.77 cc)		0.056 in ³ (0.92 cc)		0.074 in ³ (1.22 cc)		0.100 in ³ (1.64 cc)		0.141 in ³ (2.31 cc)	
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm
50 (3)	0.32	1.22	0.58	2.19	0.70	2.64	1.14	4.31	1.60	6.07	1.90	7.19	2.46	9.30	3.24	12.25	4.37	16.53
250 (17)	0.32	1.20	0.56	2.13	0.67	2.54	1.07	4.06	1.48	5.59	1.72	6.53	2.17	8.22	2.76	10.45	3.55	13.45
500 (34)	0.31	1.17	0.54	2.04	0.64	2.43	1.00	3.79	1.34	5.08	1.55	5.86	1.90	7.19	2.34	8.88	2.91	11.01
750 (51)	0.30	1.14	0.52	1.97	0.61	2.32	0.94	3.55	1.23	4.67	1.40	5.32	1.69	6.41	2.05	7.75	2.47	9.34
1000 (68)	0.29	1.11	0.50	1.90	0.59	2.23	0.88	3.33	1.14	4.32	1.29	4.88	1.53	5.80	1.82	6.88	2.10	7.96
1250 (86)	0.29	1.08	0.48	1.83	0.56	2.14	0.83	3.15	1.06	4.02	1.19	4.51	1.40	5.30	1.62	6.15	1.75	6.62
1500 (103)	0.28	1.06	0.47	1.77	0.54	2.05	0.79	2.98	1.00	3.77	1.11	4.20	1.29	4.87	1.44	5.47	-	-
1750 (121)	0.27	1.03	0.45	1.71	0.52	1.98	0.75	2.83	0.94	3.55	1.04	3.92	1.18	4.48	1.26	4.78	-	-
2000 (138)	0.27	1.01	0.44	1.65	0.50	1.91	0.71	2.70	0.88	3.35	0.97	3.68	1.08	4.10	-	-	-	-
2250 (155)	0.26	0.98	0.42	1.60	0.49	1.84	0.68	2.58	0.84	3.17	0.91	3.45	-	-	-	-	-	-
2500 (172)	0.25	0.96	0.41	1.55	0.47	1.78	0.65	2.47	0.79	3.00	0.85	3.23	-	-	-	-	-	-
2750 (190)	0.25	0.94	0.40	1.50	0.45	1.72	0.63	2.37	0.75	2.84	-	-	-	-	-	-	-	-
3000 (207)	0.24	0.92	0.39	1.46	0.44	1.66	0.60	2.27	0.71	2.68	-	-	-	-	-	-	-	-
3250 (224)	0.24	0.90	0.37	1.42	0.43	1.61	0.58	2.18	0.67	2.53	-	-	-	-	-	-	-	-

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08051 Motor																		
Pressure psi (bar)	AP05-0.16		AP05-0.25		AP05-0.35		AP05-0.50		AP05-0.75		AP05-0.90		AP05-1.20		AP05-1.60		AP05-2.30	
	0.009 in ³ (0.15 cc)		0.016 in ³ (0.27 cc)		0.020 in ³ (0.33 cc)		0.033 in ³ (0.54 cc)		0.047 in ³ (0.77 cc)		0.056 in ³ (0.92 cc)		0.074 in ³ (1.22 cc)		0.100 in ³ (1.64 cc)		0.141 in ³ (2.31 cc)	
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	13-8	34%	13.7	33%	13.7	33%	13.5	33%	13.3	32%	13.1	32%	12.9	31%	12.5	30%	12.0	28%
250 (17)	13-3	32%	12.8	30%	12.5	30%	11.6	27%	10.8	25%	10.2	23%	9.2	21%	7.9	18%	6.3	14%
500 (34)	12.6	30%	11.6	27%	11.2	26%	9.7	22%	8.2	18%	7.4	16%	6.0	13%	4.3	10%	2.6	6%
750 (51)	12.0	28%	10.6	24%	10.0	23%	8.0	18%	6.2	14%	5.3	12%	3.8	9%	2.3	6%	1.0	3%
1000 (68)	11.4	27%	9.7	22%	9.0	20%	6.6	15%	4.7	10%	3.7	8%	2.3	6%	1.1	3%	-	-
1250 (86)	10.9	25%	8.8	20%	8.0	18%	5.4	12%	3.5	8%	2.6	6%	1.4	4%	0.5	2%	-	-
1500 (103)	10.3	24%	8.0	18%	7.1	16%	4.4	10%	2.6	6%	1.8	5%	0.8	3%	-	-	-	-
1750 (121)	9.8	22%	7.3	16%	6.3	14%	3.6	8%	1.9	5%	1.2	3%	0.5	2%	-	-	-	-
2000 (138)	9.3	21%	6.6	15%	5.6	12%	2.9	7%	1.3	4%	0.8	3%	-	-	-	-	-	-
2250 (155)	8.8	20%	6.0	13%	5.0	11%	2.3	6%	1.0	3%	0.5	2%	-	-	-	-	-	-
2500 (172)	8.4	19%	5.4	12%	4.4	10%	1.9	5%	0.7	2%	-	-	-	-	-	-	-	-
2750 (190)	8.0	18%	4.9	11%	3.9	9%	1.5	4%	0.5	2%	-	-	-	-	-	-	-	-
3000 (207)	7.5	17%	4.4	10%	3.4	8%	1.2	3%	-	-	-	-	-	-	-	-	-	-
3250 (224)	7.2	16%	4.0	9%	3.0	7%	0.9	3%	-	-	-	-	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.9 08007 Motor



Order Code	500205008007
Voltage	24 VDC
Power	4.5 kW
Insulation	H
Number of Terminals	2
Diameter	5" (125 mm)
Overall Length Dimension	11" (280 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08007 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	51	52	53	54	56	58	59	62	65	70
250 (17)	55	57	60	62	67	72	76	82	89	101
500 (34)	59	64	69	72	81	89	95	107	119	139
750 (51)	64	71	77	81	95	106	115	131	148	175
1000 (68)	69	77	86	91	109	123	134	154	176	211
1250 (86)	74	84	94	101	122	140	154	178	204	245
1500 (103)	79	91	103	111	136	156	172	200	231	-
1750 (121)	83	97	111	120	149	173	191	223	257	-
2000 (138)	88	104	119	130	162	189	209	245	-	-
2250 (155)	93	110	128	139	175	205	227	-	-	-
2500 (172)	98	117	136	148	188	220	245	-	-	-
2750 (190)	102	123	144	158	201	236	262	-	-	-
3000 (207)	107	130	152	167	214	251	-	-	-	-
3250 (224)	112	136	160	176	226	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08007 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	2.10	7.95	2.90	10.98	3.68	13.94	4.20	15.89	5.80	21.96	7.07	26.76	8.03	30.39	9.67	36.62	11.40	43.15	13.97	52.88	
250 (17)	2.01	7.59	2.73	10.32	3.41	12.91	3.85	14.56	5.15	19.49	6.12	23.18	6.83	25.84	7.97	30.18	9.10	34.46	10.67	40.39	
500 (34)	1.90	7.18	2.53	9.59	3.11	11.78	3.47	13.15	4.50	17.04	5.23	19.79	5.73	21.70	6.53	24.17	7.29	27.59	8.34	31.57	
750 (51)	1.80	6.80	2.36	8.94	2.86	10.82	3.16	11.96	3.99	15.11	4.56	17.26	4.95	18.73	5.56	21.06	6.16	23.31	7.02	26.58	
1000 (68)	1.71	6.46	2.21	8.36	2.64	9.99	2.90	10.96	3.59	13.58	4.06	15.35	4.38	16.57	4.90	18.54	5.42	20.51	6.20	23.46	
1250 (86)	1.62	6.14	2.07	7.84	2.45	9.28	2.67	10.11	3.26	12.36	3.67	13.88	3.95	14.96	4.42	16.74	4.90	18.56	5.58	21.12	
1500 (103)	1.54	5.84	1.95	7.38	2.29	8.65	2.48	9.38	3.00	11.36	3.37	12.74	3.63	13.73	4.07	15.40	4.50	17.05	-	-	
1750 (121)	1.47	5.57	1.84	6.96	2.14	8.10	2.31	8.76	2.79	10.55	3.13	11.83	3.37	12.76	3.78	14.32	4.15	15.70	-	-	
2000 (138)	1.40	5.31	1.74	6.58	2.01	7.62	2.17	8.22	2.61	9.88	2.93	11.09	3.16	11.98	3.53	13.37	-	-	-	-	
2250 (155)	1.34	5.08	1.65	6.24	1.90	7.20	2.05	7.75	2.46	9.32	2.77	10.48	2.99	11.30	-	-	-	-	-	-	
2500 (172)	1.28	4.86	1.57	5.94	1.80	6.83	1.94	7.34	2.33	8.84	2.63	9.94	2.82	10.68	-	-	-	-	-	-	
2750 (190)	1.23	4.65	1.49	5.66	1.72	6.50	1.84	6.98	2.22	8.42	2.50	9.46	2.66	10.07	-	-	-	-	-	-	
3000 (207)	1.18	4.46	1.43	5.40	1.64	6.20	1.76	6.66	2.13	8.05	2.37	8.99	-	-	-	-	-	-	-	-	
3250 (224)	1.13	4.28	1.37	5.17	1.57	5.94	1.68	6.38	2.04	7.72	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08007 Motor																						
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0			
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)			
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	73.1	84%	36.6	53%	
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	99.8	Cont	57.1	71%	33.0	50%	15.5	32%	-	-
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	81.6	91%	55.9	70%	30.4	48%	16.9	34%	7.6	22%	-	-
1500 (103)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	89.5	97%	50.2	65%	33.5	50%	17.6	35%	9.5	25%	-	-	-	-
1750 (121)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	59.8	73%	32.4	49%	21.2	39%	10.9	27%	5.8	20%	-	-	-	-
2000 (138)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	41.4	57%	21.8	39%	14.0	31%	7.1	22%	-	-	-	-	-	-
2250 (155)	Cont	Cont	Cont	Cont	Cont	Cont	77.4	87%	29.5	47%	15.2	32%	9.7	25%	-	-	-	-	-	-	-	-
2500 (172)	Cont	Cont	Cont	Cont	84.5	93%	58.6	72%	21.5	39%	10.9	27%	6.9	21%	-	-	-	-	-	-	-	-
2750 (190)	Cont	Cont	Cont	Cont	65.9	78%	45.1	61%	16.1	33%	8.0	23%	-	-	-	-	-	-	-	-	-	-
3000 (207)	Cont	Cont	Cont	Cont	52.1	67%	35.2	52%	12.2	29%	6.0	20%	-	-	-	-	-	-	-	-	-	-
3250 (224)	Cont	Cont	82.0	91%	41.7	58%	27.9	45%	9.5	25%	-	-	-	-	-	-	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.10 08120 Motor



Order Code	500205008120
Voltage	24 VDC
Power	2.1 kW
Insulation	F
Number of Terminals	2
Housing Diameter	4.5" (114 mm)
Length Dimension	6.75" (172 mm)
IP Ratings	IP64
UL Listed	No
Type	Wound Field

Pressure Balanced Amp Draw for 08120 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	48	49	50	50	53	54	56	58	61	66
250 (17)	51	54	56	58	63	68	71	78	85	96
500 (34)	56	60	65	68	77	85	91	101	113	132
750 (51)	61	67	73	77	90	101	109	124	141	167
1000 (68)	65	73	81	86	103	117	128	147	168	201
1250 (86)	70	80	89	96	116	133	146	169	194	-
1500 (103)	74	86	97	105	129	149	164	191	220	-
1750 (121)	79	92	105	114	142	164	182	212	-	-
2000 (138)	83	99	113	123	154	180	199	-	-	-
2250 (155)	88	105	121	132	167	195	216	-	-	-
2500 (172)	93	111	129	141	179	210	-	-	-	-
2750 (190)	97	117	137	150	191	-	-	-	-	-
3000 (207)	102	123	145	159	203	-	-	-	-	-
3250 (224)	106	129	152	168	215	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08120 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	2.01	7.61	2.76	10.47	3.50	13.23	3.97	15.04	5.44	20.60	6.59	24.94	7.44	28.16	8.88	33.62	10.36	39.21	12.50	47.32	
250 (17)	1.89	7.16	2.55	9.64	3.15	11.94	3.54	13.39	4.65	17.59	5.45	20.62	6.01	22.74	6.90	26.10	7.74	29.28	8.85	33.50	
500 (34)	1.76	6.65	2.31	8.74	2.80	10.59	3.09	11.71	3.90	14.76	4.44	16.81	4.80	18.18	5.36	20.28	5.87	22.21	6.55	24.79	
750 (51)	1.64	6.19	2.11	7.97	2.50	9.48	2.74	10.36	3.35	12.67	3.74	14.16	4.00	15.15	4.40	16.67	4.79	18.11	5.31	20.10	
1000 (68)	1.53	5.78	1.93	7.31	2.26	8.55	2.45	9.26	2.93	11.09	3.24	12.26	3.45	13.05	3.78	14.30	4.09	15.48	4.45	16.86	
1250 (86)	1.43	5.41	1.78	6.73	2.06	7.78	2.21	8.36	2.61	9.87	2.87	10.86	3.05	11.53	3.33	12.60	3.56	13.49	-	-	
1500 (103)	1.34	5.08	1.64	6.23	1.88	7.13	2.01	7.62	2.36	8.92	2.59	9.79	2.74	10.38	2.97	11.23	3.08	11.66	-	-	
1750 (121)	1.26	4.78	1.53	5.78	1.74	6.57	1.85	7.00	2.15	8.15	2.36	8.93	2.49	9.43	2.64	9.99	-	-	-	-	
2000 (138)	1.19	4.50	1.43	5.40	1.61	6.10	1.71	6.48	1.99	7.52	2.17	8.21	2.27	8.58	-	-	-	-	-	-	
2250 (155)	1.12	4.25	1.33	5.05	1.50	5.69	1.59	6.03	1.85	6.99	2.00	7.56	2.05	7.76	-	-	-	-	-	-	
2500 (172)	1.06	4.02	1.25	4.74	1.41	5.33	1.49	5.64	1.72	6.52	1.83	6.93	-	-	-	-	-	-	-	-	
2750 (190)	1.01	3.80	1.18	4.47	1.32	5.01	1.40	5.31	1.61	6.08	-	-	-	-	-	-	-	-	-	-	
3000 (207)	0.95	3.61	1.12	4.22	1.25	4.74	1.32	5.01	1.50	5.67	-	-	-	-	-	-	-	-	-	-	
3250 (224)	0.91	3.43	1.06	4.00	1.18	4.49	1.25	4.74	1.39	5.26	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08120 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	9.7	24%	9.6	24%	9.6	24%	9.6	24%	9.5	23%	9.4	23%	9.3	23%	9.2	23%	9.1	23%	9.0	23%	
250 (17)	9.3	23%	9.1	23%	8.9	23%	8.8	22%	8.4	22%	8.1	21%	7.8	21%	7.4	20%	7.0	19%	6.3	18%	
500 (34)	8.8	22%	8.4	22%	8.1	21%	7.8	21%	7.2	20%	6.6	19%	6.3	18%	5.6	17%	5.0	15%	4.1	14%	
750 (51)	8.3	22%	7.8	21%	7.3	20%	7.0	19%	6.1	18%	5.5	16%	5.0	15%	4.2	14%	3.5	12%	2.6	10%	
1000 (68)	7.9	21%	7.3	20%	6.7	19%	6.3	18%	5.2	16%	4.5	14%	4.0	13%	3.2	11%	2.5	9%	1.7	7%	
1250 (86)	7.5	20%	6.7	19%	6.1	18%	5.6	17%	4.5	14%	3.7	13%	3.2	11%	2.4	9%	1.8	7%	1.1	5%	
1500 (103)	7.1	20%	6.3	18%	5.5	17%	5.1	16%	3.8	13%	3.0	11%	2.5	9%	1.8	7%	1.3	5%	-	-	
1750 (121)	6.7	19%	5.8	17%	5.0	16%	4.5	14%	3.3	11%	2.5	9%	2.0	8%	1.4	6%	-	-	-	-	
2000 (138)	6.4	18%	5.4	16%	4.5	15%	4.0	13%	2.8	10%	2.0	8%	1.6	7%	-	-	-	-	-	-	
2250 (155)	6.1	18%	5.0	16%	4.1	14%	3.6	12%	2.4	9%	1.7	7%	1.3	5%	-	-	-	-	-	-	
2500 (172)	5.7	17%	4.6	15%	3.7	13%	3.2	11%	2.0	8%	1.4	6%	-	-	-	-	-	-	-	-	
2750 (190)	5.4	16%	4.3	14%	3.4	12%	2.9	11%	1.7	7%	1.1	5%	-	-	-	-	-	-	-	-	
3000 (207)	5.2	16%	4.0	13%	3.1	11%	2.6	10%	1.5	6%	-	-	-	-	-	-	-	-	-	-	
3250 (224)	4.9	15%	3.7	13%	2.8	10%	2.3	9%	1.3	5%	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.11 19430 Motor



Order Code	500205019430
Voltage	24 VDC
Power	0.7 kW
Insulation	F
Number of Terminals	2
Diameter	3" (80 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP67
UL Listed	No
Type	Permanent Magnet, Bi-Rotational

Pressure Balanced Amp Draw for 19430 Motor									
Pressure psi (bar)	AP05-0.16	AP05-0.25	AP05-0.35	AP05-0.50	AP05-07.5	AP05-0.90	AP05-1.20	AP05-1.60	AP05-2.30
	0.009 in ³ (0.15 cc)	0.016 in ³ (0.27 cc)	0.020 in ³ (0.33 cc)	0.033 in ³ (0.54 cc)	0.047 in ³ (0.77 cc)	0.056 in ³ (0.92 cc)	0.074 in ³ (1.22 cc)	0.100 in ³ (1.64 cc)	0.141 in ³ (2.31 cc)
50 (3)	15	15	16	16	17	18	19	20	23
250 (17)	16	17	18	20	22	23	26	31	37
500 (34)	17	19	20	24	28	31	36	44	57
750 (51)	18	21	23	28	34	38	46	58	78
1000 (68)	19	23	25	33	41	46	57	73	-
1250 (86)	21	26	28	37	47	54	67	88	-
1500 (103)	22	28	30	41	54	62	79	-	-
1750 (121)	23	30	33	46	60	70	90	-	-
2000 (138)	24	32	36	51	67	79	-	-	-
2250 (155)	25	34	38	55	74	-	-	-	-
2500 (172)	26	36	41	60	81	-	-	-	-
2750 (190)	28	39	44	65	89	-	-	-	-
3000 (207)	29	41	47	70	-	-	-	-	-
3250 (224)	30	43	49	74	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 19430 Motor																		
Pressure psi (bar)	AP05-0.16		AP05-0.25		AP05-0.35		AP05-0.50		AP05-0.7.5		AP05-0.90		AP05-1.20		AP05-1.60		AP05-2.30	
	0.009 in ³ (0.15 cc)		0.016 in ³ (0.27 cc)		0.020 in ³ (0.33 cc)		0.033 in ³ (0.54 cc)		0.047 in ³ (0.77 cc)		0.056 in ³ (0.92 cc)		0.074 in ³ (1.22 cc)		0.100 in ³ (1.64 cc)		0.141 in ³ (2.31 cc)	
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm
50 (3)	0.33	1.24	0.59	2.23	0.71	2.68	1.15	4.35	1.61	6.09	1.90	7.19	2.44	9.24	3.19	12.06	4.25	16.08
250 (17)	0.32	1.21	0.56	2.13	0.67	2.54	1.06	4.01	1.44	5.45	1.67	6.33	2.08	7.87	2.61	9.87	3.30	12.49
500 (34)	0.31	1.17	0.54	2.03	0.63	2.39	0.97	3.66	1.28	4.84	1.46	5.53	1.77	6.70	2.15	8.15	2.62	9.91
750 (51)	0.30	1.13	0.51	1.93	0.60	2.26	0.89	3.37	1.15	4.36	1.30	4.93	1.55	5.87	1.84	6.96	2.08	7.88
1000 (68)	0.29	1.10	0.49	1.84	0.57	2.14	0.83	3.13	1.05	3.99	1.18	4.47	1.38	5.23	1.57	5.93	-	-
1250 (86)	0.28	1.07	0.46	1.76	0.54	2.03	0.77	2.93	0.97	3.68	1.08	4.08	1.23	4.66	1.28	4.86	-	-
1500 (103)	0.27	1.03	0.44	1.68	0.51	1.94	0.73	2.75	0.90	3.41	0.99	3.74	1.08	4.09	-	-	-	-
1750 (121)	0.26	1.00	0.43	1.61	0.49	1.85	0.69	2.59	0.84	3.17	0.90	3.41	0.92	3.49	-	-	-	-
2000 (138)	0.26	0.97	0.41	1.55	0.47	1.77	0.65	2.46	0.78	2.94	0.81	3.08	-	-	-	-	-	-
2250 (155)	0.25	0.95	0.39	1.49	0.45	1.70	0.61	2.33	0.72	2.71	-	-	-	-	-	-	-	-
2500 (172)	0.24	0.92	0.38	1.44	0.43	1.64	0.58	2.21	0.65	2.47	-	-	-	-	-	-	-	-
2750 (190)	0.24	0.89	0.37	1.39	0.42	1.57	0.55	2.09	0.59	2.23	-	-	-	-	-	-	-	-
3000 (207)	0.23	0.87	0.35	1.34	0.40	1.52	0.52	1.98	-	-	-	-	-	-	-	-	-	-
3250 (224)	0.22	0.85	0.34	1.30	0.39	1.46	0.49	1.86	-	-	-	-	-	-	-	-	-	-

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 19430 Motor																		
Pressure psi (bar)	AP05-0.16		AP05-0.25		AP05-0.35		AP05-0.50		AP05-0.7.5		AP05-0.90		AP05-1.20		AP05-1.60		AP05-2.30	
	0.009 in ³ (0.15 cc)		0.016 in ³ (0.27 cc)		0.020 in ³ (0.33 cc)		0.033 in ³ (0.54 cc)		0.047 in ³ (0.77 cc)		0.056 in ³ (0.92 cc)		0.074 in ³ (1.22 cc)		0.100 in ³ (1.64 cc)		0.141 in ³ (2.31 cc)	
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	18.9	51%	18.8	50%	18.7	50%	18.4	49%	18.0	48%	17.8	47%	17.4	45%	16.8	43%	16.0	41%
250 (17)	18.1	48%	17.2	45%	16.9	43%	15.5	39%	14.1	35%	13.3	32%	11.8	28%	9.9	22%	7.4	16%
500 (34)	17.0	44%	15.5	39%	14.8	37%	12.5	30%	10.3	24%	9.1	20%	7.0	16%	4.8	11%	2.6	6%
750 (51)	16.1	41%	13.9	34%	13.0	31%	10.0	23%	7.4	16%	6.1	13%	4.1	9%	2.2	5%	0.8	3%
1000 (68)	15.1	38%	12.5	30%	11.4	26%	7.9	18%	5.3	12%	4.0	9%	2.3	6%	0.9	3%	-	-
1250 (86)	14.3	35%	11.1	26%	9.9	23%	6.2	14%	3.7	8%	2.6	6%	1.2	3%	0.4	2%	-	-
1500 (103)	13.4	32%	10.0	23%	8.6	19%	4.9	11%	2.5	6%	1.6	4%	0.6	2%	-	-	-	-
1750 (121)	12.6	30%	8.9	20%	7.5	17%	3.8	9%	1.7	4%	1.0	3%	0.3	1%	-	-	-	-
2000 (138)	11.9	28%	7.9	18%	6.5	14%	3.0	7%	1.2	3%	0.6	2%	-	-	-	-	-	-
2250 (155)	11.2	26%	7.0	16%	5.6	12%	2.3	6%	0.8	3%	0.3	2%	-	-	-	-	-	-
2500 (172)	10.5	24%	6.2	14%	4.9	11%	1.7	4%	0.5	2%	-	-	-	-	-	-	-	-
2750 (190)	9.9	23%	5.5	12%	4.2	9%	1.3	4%	0.3	1%	-	-	-	-	-	-	-	-
3000 (207)	9.3	21%	4.9	11%	3.6	8%	1.0	3%	-	-	-	-	-	-	-	-	-	-
3250 (224)	8.7	20%	4.3	10%	3.1	7%	0.7	2%	-	-	-	-	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.12 08035 Motor



Order Code	500205008035
Voltage	24 VDC
Power	2.7 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08035 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	13	15	16	17	20	23	25	29	33	40
250 (17)	19	22	26	28	36	42	47	57	67	83
500 (34)	25	32	38	42	55	67	75	91	109	138
750 (51)	32	41	50	56	75	91	104	126	152	193
1000 (68)	39	50	62	69	94	115	132	162	195	249
1250 (86)	45	59	74	83	114	140	160	197	238	0
1500 (103)	52	69	86	97	134	165	189	233	0	-
1750 (121)	58	78	98	111	154	189	218	0	-	-
2000 (138)	65	87	110	125	173	214	246	0	-	-
2250 (155)	72	97	122	139	193	239	0	-	-	-
2500 (172)	78	106	134	153	213	0	0	-	-	-
2750 (190)	85	115	146	167	233	0	-	-	-	-
3000 (207)	92	125	158	181	0	0	-	-	-	-
3250 (224)	99	134	170	195	0	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08035 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	1.30	4.93	1.81	6.86	2.32	8.77	2.66	10.06	3.73	14.12	4.61	17.43	5.28	20.00	6.48	24.53	7.78	29.46	9.83	37.19	
250 (17)	1.28	4.83	1.77	6.69	2.25	8.51	2.57	9.71	3.56	13.48	4.35	16.48	4.96	18.76	6.00	22.71	7.11	26.90	8.78	33.24	
500 (34)	1.24	4.71	1.71	6.48	2.17	8.20	2.46	9.32	3.37	12.75	4.08	15.43	4.60	17.43	5.50	20.81	6.42	24.29	7.76	29.36	
750 (51)	1.21	4.60	1.66	6.29	2.09	7.91	2.36	8.95	3.20	12.11	3.83	14.51	4.30	16.27	5.07	19.20	5.84	22.11	6.91	26.14	
1000 (68)	1.19	4.49	1.61	6.11	2.02	7.64	2.28	8.61	3.04	11.52	3.62	13.69	4.03	15.25	4.70	17.78	5.34	20.20	6.13	23.21	
1250 (86)	1.16	4.38	1.57	5.93	1.95	7.38	2.19	8.30	2.90	10.99	3.42	12.95	3.78	14.33	4.36	16.49	4.86	18.40	5.37	20.31	
1500 (103)	1.13	4.28	1.52	5.76	1.89	7.14	2.11	8.00	2.77	10.49	3.24	12.26	3.56	13.47	4.03	15.27	4.40	16.64	-	-	
1750 (121)	1.10	4.18	1.48	5.60	1.83	6.91	2.04	7.72	2.65	10.03	3.07	11.61	3.34	12.65	3.72	14.07	-	-	-	-	
2000 (138)	1.08	4.08	1.44	5.45	1.77	6.70	1.97	7.45	2.53	9.59	2.90	10.99	3.13	11.86	3.40	12.86	-	-	-	-	
2250 (155)	1.05	3.99	1.40	5.30	1.71	6.49	1.90	7.20	2.42	9.16	2.74	10.38	2.92	11.06	-	-	-	-	-	-	
2500 (172)	1.03	3.90	1.36	5.16	1.66	6.29	1.84	6.96	2.31	8.75	2.58	9.78	2.71	10.27	-	-	-	-	-	-	
2750 (190)	1.01	3.81	1.33	5.02	1.61	6.10	1.78	6.72	2.21	8.35	2.43	9.18	-	-	-	-	-	-	-	-	
3000 (207)	0.98	3.72	1.29	4.89	1.56	5.91	1.72	6.49	2.10	7.95	2.26	8.57	-	-	-	-	-	-	-	-	
3250 (224)	0.96	3.63	1.26	4.76	1.51	5.73	1.66	6.27	2.00	7.56	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08035 Motor																						
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0			
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)			
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	71.2	88%	
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	63.1	85%	30.4	61%	17.5	42%	9.3	22%		
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	53.7	80%	26.4	56%	17.7	42%	10.3	25%	6.5	13%	3.8	4%		
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	67.5	87%	21.7	49%	12.2	30%	8.6	20%	5.3	9%	3.5	4%	-	-		
1250 (86)	Cont	Cont	Cont	Cont	49.5	77%	31.3	62%	12.1	30%	7.2	15%	5.2	9%	3.3	3%	-	-	-	-		
1500 (103)	Cont	Cont	63.5	85%	27.5	58%	18.6	44%	7.8	17%	4.8	8%	3.6	4%	-	-	-	-	-	-		
1750 (121)	Cont	Cont	37.1	68%	17.8	43%	12.4	31%	5.5	10%	3.5	3%	2.6	1%	-	-	-	-	-	-		
2000 (138)	76.6	90%	24.7	54%	12.6	31%	9.0	21%	4.2	5%	2.6	1%	-	-	-	-	-	-	-	-		
2250 (155)	49.2	77%	17.8	43%	9.5	23%	6.9	14%	3.3	3%	-	-	-	-	-	-	-	-	-	-		
2500 (172)	34.6	66%	13.5	33%	7.4	16%	5.4	10%	2.6	1%	-	-	-	-	-	-	-	-	-	-		
2750 (190)	25.9	56%	10.7	26%	6.0	11%	4.4	6%	-	-	-	-	-	-	-	-	-	-	-	-		
3000 (207)	20.2	47%	8.7	20%	5.0	8%	3.7	4%	-	-	-	-	-	-	-	-	-	-	-	-		
3250 (224)	16.3	40%	7.2	16%	4.2	5%	3.1	3%	-	-	-	-	-	-	-	-	-	-	-	-		

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.13 08055 Motor



Order Code	500205008055
Voltage	36 VDC
Power	2.5 kW
Insulation	F
Number of Terminals	2
Diameter	4.5" (114 mm)
Overall Length Dimension	6.75" (172 mm)
IP Ratings	IP54
UL Listed	No
Type	Wound Field

Pressure Balanced Amp Draw for 08055 36 Volt Motor										
Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	13	13	14	15	16	17	18	20	22	25
250 (17)	15	17	19	20	24	27	29	34	38	46
500 (34)	18	21	24	26	33	38	43	50	59	73
750 (51)	22	26	30	33	42	50	56	67	80	100
1000 (68)	25	30	36	40	52	62	70	84	100	0
1250 (86)	28	35	42	46	61	74	84	101	0	-
1500 (103)	31	39	48	53	71	86	98	119	-	-
1750 (121)	34	44	53	60	80	98	111	-	-	-
2000 (138)	38	48	59	67	90	110	0	-	-	-
2250 (155)	41	53	65	73	100	0	-	-	-	-
2500 (172)	44	57	71	80	109	-	-	-	-	-
2750 (190)	47	62	77	87	119	-	-	-	-	-
3000 (207)	51	67	83	94	0	-	-	-	-	-
3250 (224)	54	71	89	100	-	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08055 36 Volt Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	1.34	5.05	1.84	6.98	2.34	8.84	2.66	10.08	3.67	13.90	4.47	16.92	5.07	19.20	6.10	23.11	7.19	27.21	8.81	33.34	
250 (17)	1.27	4.80	1.72	6.52	2.15	8.14	2.43	9.18	3.24	12.28	3.86	14.61	4.31	16.31	5.05	19.12	5.80	21.96	6.89	26.07	
500 (34)	1.19	4.52	1.59	6.03	1.96	7.41	2.19	8.27	2.85	10.77	3.33	12.60	3.67	13.90	4.24	16.05	4.80	18.18	5.58	21.14	
750 (51)	1.13	4.26	1.48	5.61	1.80	6.81	1.99	7.55	2.55	9.66	2.96	11.19	3.24	12.27	3.70	14.02	4.12	15.61	4.53	17.15	
1000 (68)	1.07	4.04	1.39	5.25	1.67	6.31	1.84	6.96	2.33	8.81	2.68	10.13	2.92	11.04	3.27	12.36	3.48	13.17	3.27	12.39	
1250 (86)	1.01	3.83	1.30	4.93	1.56	5.90	1.71	6.48	2.15	8.13	2.45	9.26	2.63	9.96	2.82	10.68	2.73	10.33	-	-	
1500 (103)	0.96	3.64	1.23	4.65	1.46	5.54	1.60	6.07	1.99	7.55	2.23	8.45	2.34	8.88	2.32	8.76	-	-	-	-	
1750 (121)	0.92	3.47	1.17	4.41	1.38	5.23	1.51	5.72	1.85	7.01	2.01	7.63	2.03	7.67	-	-	-	-	-	-	
2000 (138)	0.88	3.32	1.11	4.19	1.31	4.96	1.43	5.40	1.71	6.48	1.78	6.72	1.67	6.33	-	-	-	-	-	-	
2250 (155)	0.84	3.17	1.06	4.00	1.25	4.72	1.35	5.11	1.57	5.93	1.51	5.73	-	-	-	-	-	-	-	-	
2500 (172)	0.80	3.04	1.01	3.82	1.19	4.49	1.28	4.83	1.41	5.33	-	-	-	-	-	-	-	-	-	-	
2750 (190)	0.77	2.92	0.97	3.65	1.13	4.27	1.20	4.56	1.24	4.69	-	-	-	-	-	-	-	-	-	-	
3000 (207)	0.74	2.80	0.92	3.50	1.07	4.05	1.13	4.28	1.06	4.00	-	-	-	-	-	-	-	-	-	-	
3250 (224)	0.71	2.70	0.89	3.35	1.01	3.84	1.05	3.98	-	-	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08055 36 Volt Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	7.4	22%	7.3	22%	7.3	22%	7.3	22%	7.2	22%	7.2	22%	7.1	22%	7.1	22%	7.0	21%	6.9	21%	
250 (17)	7.1	22%	7.0	21%	6.8	21%	6.7	21%	6.5	20%	6.2	19%	6.1	19%	5.8	18%	5.4	17%	4.9	15%	
500 (34)	6.8	21%	6.5	20%	6.3	19%	6.1	19%	5.6	17%	5.2	16%	4.9	15%	4.3	14%	3.8	12%	3.0	10%	
750 (51)	6.4	20%	6.1	19%	5.7	18%	5.5	17%	4.8	15%	4.2	13%	3.8	12%	3.1	10%	2.5	8%	1.6	5%	
1000 (68)	6.1	19%	5.7	17%	5.2	16%	4.9	15%	4.0	13%	3.4	11%	2.9	9%	2.2	7%	1.5	5%	-	-	
1250 (86)	5.8	18%	5.3	16%	4.7	15%	4.4	14%	3.4	11%	2.6	8%	2.1	7%	1.4	5%	-	-	-	-	
1500 (103)	5.5	17%	4.9	15%	4.3	13%	3.9	12%	2.8	9%	2.0	7%	1.5	5%	-	-	-	-	-	-	
1750 (121)	5.3	16%	4.5	14%	3.8	12%	3.4	11%	2.2	7%	1.5	5%	-	-	-	-	-	-	-	-	
2000 (138)	5.0	15%	4.2	13%	3.4	11%	3.0	9%	1.8	6%	-	-	-	-	-	-	-	-	-	-	
2250 (155)	4.7	15%	3.8	12%	3.0	10%	2.6	8%	1.4	5%	-	-	-	-	-	-	-	-	-	-	
2500 (172)	4.4	14%	3.5	11%	2.7	9%	2.2	7%	-	-	-	-	-	-	-	-	-	-	-	-	
2750 (190)	4.2	13%	3.2	10%	2.3	8%	1.9	6%	-	-	-	-	-	-	-	-	-	-	-	-	
3000 (207)	4.0	12%	2.9	9%	2.0	7%	1.6	5%	-	-	-	-	-	-	-	-	-	-	-	-	
3250 (224)	3.7	12%	2.6	8%	1.8	6%	1.3	4%	-	-	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.14 08168 Motor



Order Code	500205008168
Voltage	36 VDC
Power	2.9 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08168 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	11	12	13	14	16	18	20	23	26	31
250 (17)	15	18	20	22	28	33	36	43	51	63
500 (34)	20	24	29	32	42	51	57	69	82	104
750 (51)	25	31	38	43	57	69	78	95	114	144
1000 (68)	30	38	47	53	72	87	99	121	145	0
1250 (86)	35	45	56	63	86	105	120	147	0	-
1500 (103)	40	52	65	73	101	123	141	173	-	-
1750 (121)	45	59	74	84	115	141	162	0	-	-
2000 (138)	50	66	83	94	130	159	0	-	-	-
2250 (155)	55	73	92	104	144	0	-	-	-	-
2500 (172)	60	80	101	114	159	0	-	-	-	-
2750 (190)	65	87	110	125	173	-	-	-	-	-
3000 (207)	70	94	119	135	0	-	-	-	-	-
3250 (224)	74	101	127	145	-	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08168 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	1.30	4.93	1.82	6.88	2.33	8.82	2.67	10.12	3.77	14.28	4.68	17.70	5.38	20.36	6.63	25.11	8.01	30.32	10.20	38.60	
250 (17)	1.29	4.87	1.79	6.78	2.29	8.67	2.62	9.93	3.68	13.92	4.53	17.16	5.19	19.65	6.35	24.02	7.59	28.73	9.51	36.00	
500 (34)	1.27	4.80	1.76	6.66	2.24	8.49	2.56	9.70	3.56	13.48	4.35	16.49	4.96	18.76	5.99	22.67	7.07	26.75	8.65	32.74	
750 (51)	1.25	4.73	1.73	6.54	2.19	8.31	2.50	9.46	3.44	13.03	4.18	15.81	4.72	17.87	5.63	21.32	6.54	24.77	7.79	29.48	
1000 (68)	1.23	4.65	1.70	6.42	2.15	8.13	2.44	9.23	3.33	12.59	4.00	15.14	4.49	16.98	5.28	19.97	6.02	22.78	6.93	26.23	
1250 (86)	1.21	4.58	1.66	6.30	2.10	7.94	2.38	9.00	3.21	12.14	3.82	14.46	4.25	16.09	4.92	18.62	5.50	20.80	-	-	
1500 (103)	1.19	4.51	1.63	6.18	2.05	7.76	2.31	8.76	3.09	11.70	3.64	13.79	4.02	15.20	4.56	17.27	-	-	-	-	
1750 (121)	1.17	4.44	1.60	6.06	2.00	7.58	2.25	8.53	2.97	11.25	3.46	13.11	3.78	14.31	4.21	15.92	-	-	-	-	
2000 (138)	1.15	4.37	1.57	5.94	1.95	7.40	2.19	8.29	2.85	10.81	3.29	12.44	3.55	13.42	-	-	-	-	-	-	
2250 (155)	1.13	4.29	1.54	5.82	1.91	7.22	2.13	8.06	2.74	10.36	3.11	11.76	-	-	-	-	-	-	-	-	
2500 (172)	1.12	4.22	1.50	5.70	1.86	7.03	2.07	7.82	2.62	9.92	2.93	11.09	-	-	-	-	-	-	-	-	
2750 (190)	1.10	4.15	1.47	5.58	1.81	6.85	2.00	7.59	2.50	9.47	-	-	-	-	-	-	-	-	-	-	
3000 (207)	1.08	4.08	1.44	5.45	1.76	6.67	1.94	7.35	2.38	90.3	-	-	-	-	-	-	-	-	-	-	
3250 (224)	1.06	4.01	1.41	5.33	1.71	6.49	1.88	7.12	-	-	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08168 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	74%	28.8	42%	7.1	18%	
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	65%	29.7	43%	8.6	20%	3.8	9%	1.6	3%		
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	53.8	53%	12.3	26%	6.2	15%	2.7	6%	1.4	2%	-	-	-	-
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	75%	12.0	26%	4.4	11%	2.6	6%	1.3	2%	-	-	-	-	-	-
1500 (103)	Cont	Cont	Cont	Cont	Cont	67%	33.8	45%	5.1	13%	2.3	5%	1.4	2%	-	-	-	-	-	-	-
1750 (121)	84.6	Cont	Cont	86%	30.3	43%	12.8	27%	2.8	7%	1.4	2%	-	-	-	-	-	-	-	-	-
2000 (138)	Cont	Cont	83.8	61%	13.2	28%	6.7	17%	1.8	3%	-	-	-	-	-	-	-	-	-	-	-
2250 (155)	Cont	Cont	30.2	43%	7.4	18%	4.1	10%	1.2	2%	-	-	-	-	-	-	-	-	-	-	-
2500 (172)	Cont	82%	15.4	30%	4.7	12%	2.8	6%	-	-	-	-	-	-	-	-	-	-	-	-	-
2750 (190)	Cont	64%	9.3	22%	3.2	8%	2.0	4%	-	-	-	-	-	-	-	-	-	-	-	-	-
3000 (207)	43.5	49%	6.2	16%	2.4	5%	1.5	3%	-	-	-	-	-	-	-	-	-	-	-	-	-
3250 (224)	24.1	39%	4.5	11%	1.8	4%	1.2	2%	-	-	-	-	-	-	-	-	-	-	-	-	-

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.15 08055 Motor



Order Code	500205008055
Voltage	48 VDC
Power	2.5 kW
Insulation	F
Number of Terminals	2
Diameter	4.5" (114 mm)
Overall Length Dimension	6.75" (172 mm)
IP Ratings	IP54
UL Listed	Yes
Type	Wound Field

Pressure Balanced Amp Draw for 08055 48 Volt Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	12	13	14	14	15	17	17	19	21	24
250 (17)	15	16	18	19	22	25	27	31	35	43
500 (34)	17	20	23	25	31	35	39	46	54	67
750 (51)	20	24	28	31	39	46	52	62	73	92
1000 (68)	23	28	33	37	48	57	64	77	92	117
1250 (86)	26	32	39	43	56	68	77	93	112	-
1500 (103)	29	36	44	49	65	79	90	110	132	-
1750 (121)	32	40	49	55	74	90	103	126	-	-
2000 (138)	35	45	54	61	83	101	116	0	-	-
2250 (155)	38	49	60	67	92	113	129	-	-	-
2500 (172)	41	53	65	73	101	124	0	-	-	-
2750 (190)	44	57	71	80	110	136	-	-	-	-
3000 (207)	46	61	76	86	119	-	-	-	-	-
3250 (224)	49	65	81	92	128	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08055 48 Volt Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	1.54	5.82	2.13	8.06	2.71	10.26	3.10	11.73	4.30	16.29	5.27	19.95	6.01	22.74	7.29	27.59	8.65	32.75	10.73	40.63	
250 (17)	1.48	5.61	2.03	7.68	2.55	9.66	2.89	10.95	3.93	14.67	4.73	17.89	5.32	20.13	6.32	23.91	7.35	27.80	8.86	33.54	
500 (34)	1.42	5.36	1.91	7.25	2.38	9.01	2.68	10.13	3.56	13.46	4.21	15.95	4.69	17.77	5.49	20.79	6.30	23.86	7.47	28.28	
750 (51)	1.36	5.14	1.81	6.86	2.23	8.45	2.50	9.45	3.26	12.36	3.83	14.51	4.24	16.06	4.92	18.62	5.58	21.14	6.44	24.38	
1000 (68)	1.30	4.93	1.72	6.52	2.11	7.97	2.34	8.87	3.03	11.47	3.53	13.38	3.89	14.74	4.47	16.91	4.97	18.81	5.35	20.26	
1250 (86)	1.25	4.74	1.64	6.22	1.99	7.55	2.21	8.37	2.84	10.75	3.29	12.45	3.60	13.63	4.05	15.33	4.32	16.35	4.04	15.29	
1500 (103)	1.20	4.56	1.57	5.94	1.90	7.19	2.10	7.94	2.67	10.12	3.07	11.63	3.33	12.59	3.61	13.66	3.56	13.49	-	-	
1750 (121)	1.16	4.39	1.50	5.70	1.81	6.86	2.00	7.57	2.53	9.57	2.87	10.85	3.05	11.53	3.11	11.78	-	-	-	-	
2000 (138)	1.12	4.24	1.45	5.47	1.74	6.57	1.91	7.23	2.39	9.04	2.65	10.05	2.74	10.37	2.55	9.67	-	-	-	-	
2250 (155)	1.08	4.09	1.39	5.27	1.67	6.31	1.83	6.92	2.25	8.53	2.43	9.19	2.40	9.09	-	-	-	-	-	-	
2500 (172)	1.05	3.96	1.34	5.08	1.60	6.07	1.75	6.63	2.11	8.00	2.18	8.25	2.03	7.70	-	-	-	-	-	-	
2750 (190)	1.01	3.83	1.29	4.90	1.54	5.84	1.68	6.36	1.97	7.44	1.91	7.23	-	-	-	-	-	-	-	-	
3000 (207)	0.98	3.71	1.25	4.74	1.48	5.62	1.61	6.09	1.81	6.85	-	-	-	-	-	-	-	-	-	-	
3250 (224)	0.95	3.60	1.21	4.58	1.43	5.41	1.54	5.82	1.64	6.21	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08055 48 Volt Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	7.4	23%	7.4	23%	7.4	23%	7.4	22%	7.3	22%	7.3	22%	7.2	22%	7.2	22%	7.1	22%	7.0	21%	
250 (17)	7.2	22%	7.1	22%	6.9	21%	6.9	21%	6.6	20%	6.4	20%	6.3	19%	6.0	18%	5.7	18%	5.2	16%	
500 (34)	6.9	21%	6.7	20%	6.4	20%	6.3	19%	5.8	18%	5.4	17%	5.1	16%	4.6	14%	4.1	13%	3.4	11%	
750 (51)	6.6	20%	6.3	19%	5.9	18%	5.7	18%	5.0	16%	4.5	14%	4.1	13%	3.5	11%	2.8	9%	1.9	6%	
1000 (68)	6.3	19%	5.9	18%	5.5	17%	5.2	16%	4.3	14%	3.7	12%	3.3	10%	2.5	8%	1.8	6%	0.9	3%	
1250 (86)	6.0	19%	5.5	17%	5.0	16%	4.7	15%	3.7	12%	3.0	10%	2.5	8%	1.7	6%	1.0	4%	-	-	
1500 (103)	5.8	18%	5.1	16%	4.6	14%	4.2	13%	3.1	10%	2.3	8%	1.8	6%	1.1	4%	-	-	-	-	
1750 (121)	5.5	17%	4.8	15%	4.1	13%	3.7	12%	2.6	8%	1.8	6%	1.3	4%	0.6	2%	-	-	-	-	
2000 (138)	5.2	16%	4.5	14%	3.8	12%	3.3	10%	2.1	7%	1.3	4%	0.8	3%	-	-	-	-	-	-	
2250 (155)	5.0	15%	4.1	13%	3.4	11%	2.9	9%	1.7	6%	0.9	3%	-	-	-	-	-	-	-	-	
2500 (172)	4.7	15%	3.8	12%	3.0	10%	2.5	8%	1.3	4%	0.6	2%	-	-	-	-	-	-	-	-	
2750 (190)	4.5	14%	3.5	11%	2.7	9%	2.2	7%	1.0	3%	-	-	-	-	-	-	-	-	-	-	
3000 (207)	4.3	13%	3.3	10%	2.4	8%	1.9	6%	0.7	3%	-	-	-	-	-	-	-	-	-	-	
3250 (224)	4.1	13%	3.0	10%	2.1	7%	1.6	5%	-	-	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.16 08040 Motor



Order Code	500205008040
Voltage	48 VDC
Power	3.6 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08040 48 Volt Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	12	13	14	14	15	17	17	19	21	24
250 (17)	15	16	18	19	22	25	27	31	35	43
500 (34)	17	20	23	25	31	35	39	46	54	67
750 (51)	20	24	28	31	39	46	52	62	73	92
1000 (68)	23	28	33	37	48	57	64	77	92	117
1250 (86)	26	32	39	43	56	68	77	93	112	-
1500 (103)	29	36	44	49	65	79	90	110	132	-
1750 (121)	32	40	49	55	74	90	103	126	-	-
2000 (138)	35	45	54	61	83	101	116	0	-	-
2250 (155)	38	49	60	67	92	113	129	-	-	-
2500 (172)	41	53	65	73	101	124	0	-	-	-
2750 (190)	44	57	71	80	110	136	-	-	-	-
3000 (207)	46	61	76	86	119	-	-	-	-	-
3250 (224)	49	65	81	92	128	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08040 48 Volt Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	1.54	5.82	2.13	8.06	2.71	10.26	3.10	11.73	4.30	16.29	5.27	19.95	6.01	22.74	7.29	27.59	8.65	32.75	10.73	40.63	
250 (17)	1.48	5.61	2.03	7.68	2.55	9.66	2.89	10.95	3.93	14.67	4.73	17.89	5.32	20.13	6.32	23.91	7.35	27.80	8.86	33.54	
500 (34)	1.42	5.36	1.91	7.25	2.38	9.01	2.68	10.13	3.56	13.46	4.21	15.95	4.69	17.77	5.49	20.79	6.30	23.86	7.47	28.28	
750 (51)	1.36	5.14	1.81	6.86	2.23	8.45	2.50	9.45	3.26	12.36	3.83	14.51	4.24	16.06	4.92	18.62	5.58	21.14	6.44	24.38	
1000 (68)	1.30	4.93	1.72	6.52	2.11	7.97	2.34	8.87	3.03	11.47	3.53	13.38	3.89	14.74	4.47	16.91	4.97	18.81	5.35	20.26	
1250 (86)	1.25	4.74	1.64	6.22	1.99	7.55	2.21	8.37	2.84	10.75	3.29	12.45	3.60	13.63	4.05	15.33	4.32	16.35	4.04	15.29	
1500 (103)	1.20	4.56	1.57	5.94	1.90	7.19	2.10	7.94	2.67	10.12	3.07	11.63	3.33	12.59	3.61	13.66	3.56	13.49	-	-	
1750 (121)	1.16	4.39	1.50	5.70	1.81	6.86	2.00	7.57	2.53	9.57	2.87	10.85	3.05	11.53	3.11	11.78	-	-	-	-	
2000 (138)	1.12	4.24	1.45	5.47	1.74	6.57	1.91	7.23	2.39	9.04	2.65	10.05	2.74	10.37	2.55	9.67	-	-	-	-	
2250 (155)	1.08	4.09	1.39	5.27	1.67	6.31	1.83	6.92	2.25	8.53	2.43	9.19	2.40	9.09	-	-	-	-	-	-	
2500 (172)	1.05	3.96	1.34	5.08	1.60	6.07	1.75	6.63	2.11	8.00	2.18	8.25	2.03	7.70	-	-	-	-	-	-	
2750 (190)	1.01	3.83	1.29	4.90	1.54	5.84	1.68	6.36	1.97	7.44	1.91	7.23	-	-	-	-	-	-	-	-	
3000 (207)	0.98	3.71	1.25	4.74	1.48	5.62	1.61	6.09	1.81	6.85	-	-	-	-	-	-	-	-	-	-	
3250 (224)	0.95	3.60	1.21	4.58	1.43	5.41	1.54	5.82	1.64	6.21	-	-	-	-	-	-	-	-	-	-	

Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08040 Volt Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	7.4	23%	7.4	23%	7.4	23%	7.4	22%	7.3	22%	7.3	22%	7.2	22%	7.2	22%	7.1	22%	7.0	21%	
250 (17)	7.2	22%	7.1	22%	6.9	21%	6.9	21%	6.6	20%	6.4	20%	6.3	19%	6.0	18%	5.7	18%	5.2	16%	
500 (34)	6.9	21%	6.7	20%	6.4	20%	6.3	19%	5.8	18%	5.4	17%	5.1	16%	4.6	14%	4.1	13%	3.4	11%	
750 (51)	6.6	20%	6.3	19%	5.9	18%	5.7	18%	5.0	16%	4.5	14%	4.1	13%	3.5	11%	2.8	9%	1.9	6%	
1000 (68)	6.3	19%	5.9	18%	5.5	17%	5.2	16%	4.3	14%	3.7	12%	3.3	10%	2.5	8%	1.8	6%	0.9	3%	
1250 (86)	6.0	19%	5.5	17%	5.0	16%	4.7	15%	3.7	12%	3.0	10%	2.5	8%	1.7	6%	1.0	4%	-	-	
1500 (103)	5.8	18%	5.1	16%	4.6	14%	4.2	13%	3.1	10%	2.3	8%	1.8	6%	1.1	4%	-	-	-	-	
1750 (121)	5.5	17%	4.8	15%	4.1	13%	3.7	12%	2.6	8%	1.8	6%	1.3	4%	0.6	2%	-	-	-	-	
2000 (138)	5.2	16%	4.5	14%	3.8	12%	3.3	10%	2.1	7%	1.3	4%	0.8	3%	-	-	-	-	-	-	
2250 (155)	5.0	15%	4.1	13%	3.4	11%	2.9	9%	1.7	6%	0.9	3%	-	-	-	-	-	-	-	-	
2500 (172)	4.7	15%	3.8	12%	3.0	10%	2.5	8%	1.3	4%	0.6	2%	-	-	-	-	-	-	-	-	
2750 (190)	4.5	14%	3.5	11%	2.7	9%	2.2	7%	1.0	3%	-	-	-	-	-	-	-	-	-	-	
3000 (207)	4.3	13%	3.3	10%	2.4	8%	1.9	6%	0.7	3%	-	-	-	-	-	-	-	-	-	-	
3250 (224)	4.1	13%	3.0	10%	2.1	7%	1.6	5%	-	-	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

5.4.17 08174 Motor



Order Code	500205008174
Voltage	72 VDC
Power	3.6 kW
Insulation	H
Number of Terminals	2
Diameter	5.5" (140 mm)
Overall Length Dimension	10.75" (273 mm)
IP Ratings	IP20
UL Listed	No
Type	Permanent Magnet

Pressure Balanced Amp Draw for 08174 Motor

Pressure psi (bar)	AP100-1.2	AP100-1.7	AP100-2.2	AP100-2.5	AP100-3.5	AP100-4.3	AP100-5.0	AP100-6.5	AP100-7.8	AP100-10.0
	0.075 in ³ (1.23 cc)	0.105 in ³ (1.72 cc)	0.135 in ³ (2.21 cc)	0.155 in ³ (2.54 cc)	0.220 in ³ (3.60 cc)	0.273 in ³ (4.48 cc)	0.315 in ³ (5.17 cc)	0.391 in ³ (6.41 cc)	0.475 in ³ (7.79 cc)	0.611 in ³ (10.02 cc)
50 (3)	9	10	11	11	13	14	15	17	19	22
250 (17)	12	13	15	16	20	23	26	30	35	43
500 (34)	15	18	21	23	30	35	39	47	55	69
750 (51)	18	22	27	30	39	46	52	63	75	94
1000 (68)	21	27	33	36	48	58	66	79	95	119
1250 (86)	25	31	38	43	57	69	79	96	114	-
1500 (103)	28	36	44	49	67	81	92	112	-	-
1750 (121)	31	40	50	56	76	92	105	128	-	-
2000 (138)	34	45	55	62	85	103	118	-	-	-
2250 (155)	37	49	61	69	94	115	0	-	-	-
2500 (172)	41	54	67	75	103	126	-	-	-	-
2750 (190)	44	58	72	82	112	-	-	-	-	-
3000 (207)	47	62	78	88	121	-	-	-	-	-
3250 (224)	50	67	84	95	130	-	-	-	-	-

Current values are DC Amps

Pressure Balanced Flows for 08174 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm
50 (3)	1.31	4.95	1.82	6.91	2.34	8.85	2.68	10.16	3.78	14.31	4.68	17.72	5.38	20.36	6.62	25.07	7.99	30.24	10.15	38.42	
250 (17)	1.29	4.88	1.79	6.79	2.29	8.67	2.62	9.92	3.66	13.87	4.51	17.07	5.16	19.52	6.29	23.82	7.52	28.45	9.41	35.61	
500 (34)	1.27	4.80	1.76	6.65	2.23	8.45	2.55	9.65	3.53	13.37	4.31	16.32	4.90	18.56	5.92	22.43	7.00	26.48	8.59	32.51	
750 (51)	1.25	4.72	1.72	6.51	2.18	8.25	2.48	9.39	3.41	12.90	4.13	15.64	4.67	17.68	5.59	21.14	6.51	24.65	7.81	29.58	
1000 (68)	1.22	4.63	1.68	6.37	2.13	8.05	2.41	9.14	3.29	12.45	3.96	14.99	4.45	16.85	5.26	19.91	6.04	22.87	7.01	26.55	
1250 (86)	1.20	4.55	1.65	6.24	2.08	7.86	2.35	8.90	3.18	12.02	3.79	14.37	4.24	16.04	4.94	18.69	5.56	21.03	-	-	
1500 (103)	1.18	4.48	1.62	6.12	2.03	7.68	2.29	8.66	3.07	11.61	3.63	13.75	4.03	15.24	4.61	17.44	-	-	-	-	
1750 (121)	1.16	4.40	1.58	5.99	1.98	7.50	2.23	8.44	2.96	11.20	3.47	13.14	3.81	14.42	4.26	16.14	-	-	-	-	
2000 (138)	1.14	4.32	1.55	5.87	1.93	7.32	2.17	8.22	2.85	10.80	3.31	12.53	3.59	13.58	-	-	-	-	-	-	
2250 (155)	1.12	4.25	1.52	5.75	1.89	7.15	2.11	8.00	2.75	10.40	3.14	11.89	3.36	12.71	-	-	-	-	-	-	
2500 (172)	1.10	4.17	1.49	5.63	1.84	6.98	2.06	7.79	2.64	9.99	2.97	11.24	-	-	-	-	-	-	-	-	
2750 (190)	1.08	4.10	1.46	5.52	1.80	6.81	2.00	7.57	2.53	9.57	-	-	-	-	-	-	-	-	-	-	
3000 (207)	1.06	4.03	1.43	5.40	1.76	6.64	1.94	7.36	2.42	9.15	-	-	-	-	-	-	-	-	-	-	
3250 (224)	1.05	3.96	1.40	5.29	1.71	6.48	1.89	7.14	2.30	8.71	-	-	-	-	-	-	-	-	-	-	

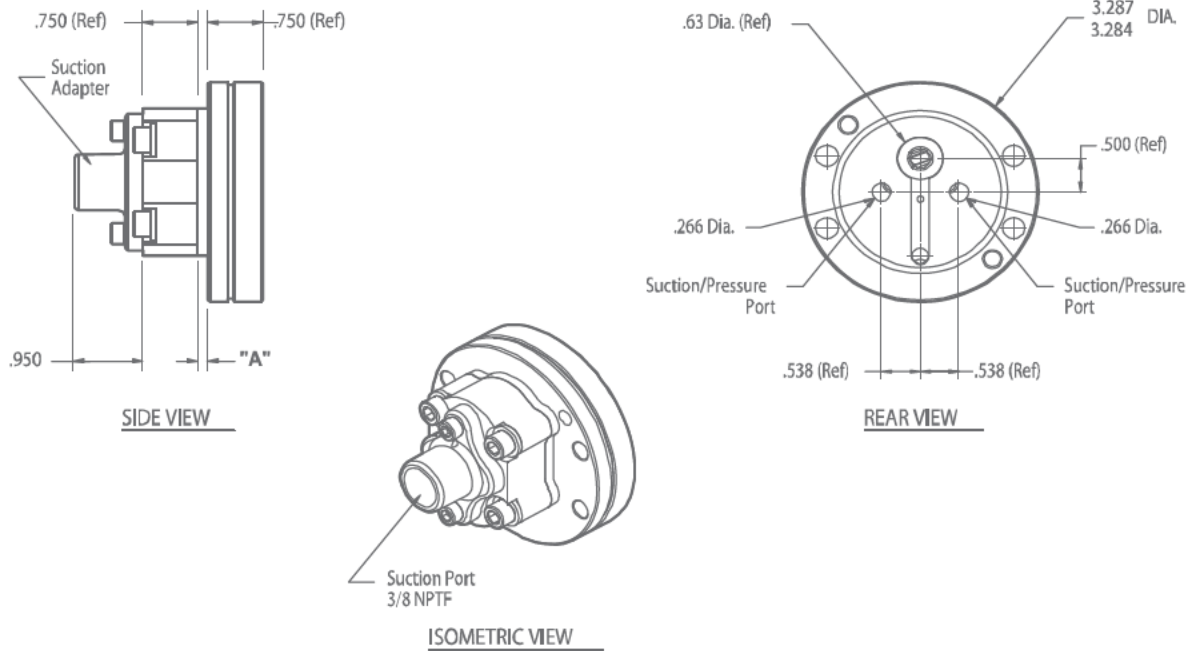
Flows are for bled-to-reservoir pumps. Bled-to-suction pumps will provide lower flows and have lower pressure limits.

Pressure Balanced S2 and S3 Thermals for 08174 Motor																					
Pressure psi (bar)	AP100-1.2		AP100-1.7		AP100-2.2		AP100-2.5		AP100-3.5		AP100-4.3		AP100-5.0		AP100-6.5		AP100-7.8		AP100-10.0		
	0.075 in ³ (1.23 cc)		0.105 in ³ (1.72 cc)		0.135 in ³ (2.21 cc)		0.155 in ³ (2.54 cc)		0.220 in ³ (3.60 cc)		0.273 in ³ (4.48 cc)		0.315 in ³ (5.17 cc)		0.391 in ³ (6.41 cc)		0.475 in ³ (7.79 cc)		0.611 in ³ (10.02 cc)		
	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*	S3*	S2*
50 (3)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
250 (17)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
500 (34)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	77%	72.5	48%	
750 (51)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	96%	Cont	78%	87.2	52%	34.5	33%	8.5	15%		
1000 (68)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	87%	Cont	60%	62.7	45%	21.2	26%	6.8	13%	1.3	4%		
1250 (86)	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	60%	42.7	37%	20.3	25%	5.7	12%	1.5	5%	-	-		
1500 (103)	Cont	Cont	Cont	Cont	Cont	98%	Cont	80%	51.0	40%	16.3	22%	7.0	14%	1.7	5%	-	-	-	-	
1750 (121)	Cont	Cont	Cont	Cont	Cont	78%	Cont	61%	23.3	27%	6.6	13%	2.6	7%	-	-	-	-	-	-	
2000 (138)	Cont	Cont	Cont	93%	Cont	62%	68.0	47%	11.0	18%	2.8	8%	-	-	-	-	-	-	-	-	
2250 (155)	Cont	Cont	Cont	78%	75.0	49%	38.6	35%	5.3	12%	1.2	4%	-	-	-	-	-	-	-	-	
2500 (172)	Cont	Cont	Cont	65%	45.6	38%	22.3	26%	2.7	7%	-	-	-	-	-	-	-	-	-	-	
2750 (190)	Cont	95%	93.7	54%	28.1	30%	13.1	20%	1.4	5%	-	-	-	-	-	-	-	-	-	-	
3000 (207)	Cont	84%	63.3	45%	17.6	23%	7.8	15%	-	-	-	-	-	-	-	-	-	-	-	-	
3250 (224)	Cont	74%	43.1	37%	11.1	18%	4.7	11%	-	-	-	-	-	-	-	-	-	-	-	-	

* S2= Single run times in minutes, S3 = % of a repeating 10 minute cycle

6 Dimensional Information for Bi-rotational D.C. Motors with Performance Curves

6.1 Bi-rotational *i*-pumps



Bi-Rotational *i* - Pump Data

Pump Number	Order Code	"A"	Displacement (in ³ /R ev)	Displacement (cc/Rev)	Flow @ 1800 rpm (GPM)
12818-100	500216312818100	.100	0.022	0.36	0.17
12818-120	500216312818120	.120	0.027	0.44	0.21
12818-150	500216312818150	.150	0.032	0.52	0.25

For Bi-rotational Pump + Motor performance curves, refer to the data available for Permanent Magnet, Two Terminal Motors found on page 44 or 78; or contact the factory.

6.2 Model B-3108

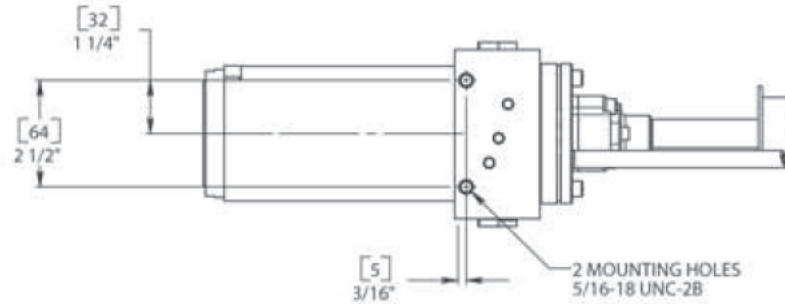
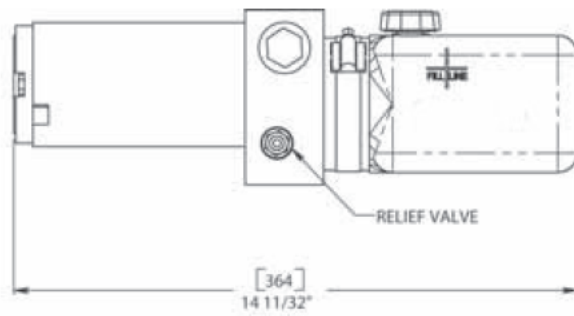
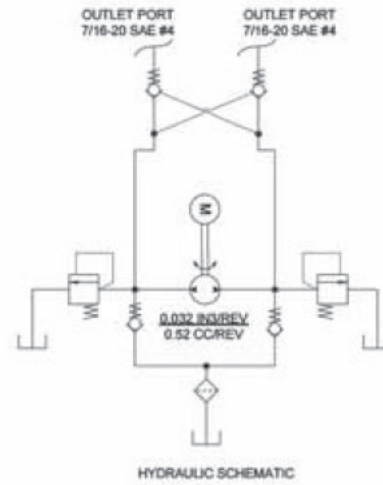
Description

- Birotational Pump and Motor / Reservoir
- Check Valve
- Externally Adjustable Relief Valve
- Pilot-Operated Check Valves
- #4 SAE Outlet
- Horizontal Mounting

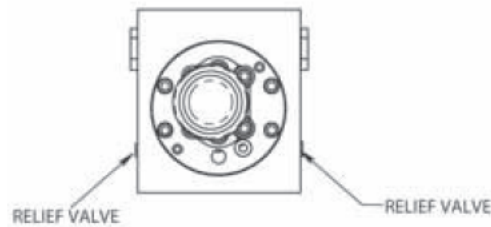
Popular Options

- Vertical Mounting

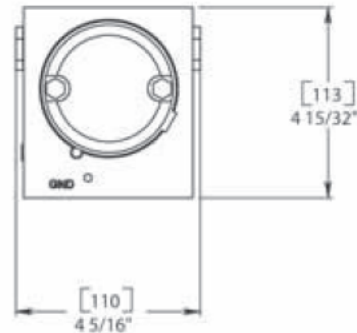
Schematic



VIEW SHOWN WITHOUT RESERVOIR



VIEW SHOWN WITHOUT RESERVOIR



Consult factory for additional options and specifications. Order code 50031083XXXX depending on configuration.

6.3 Model B-3504

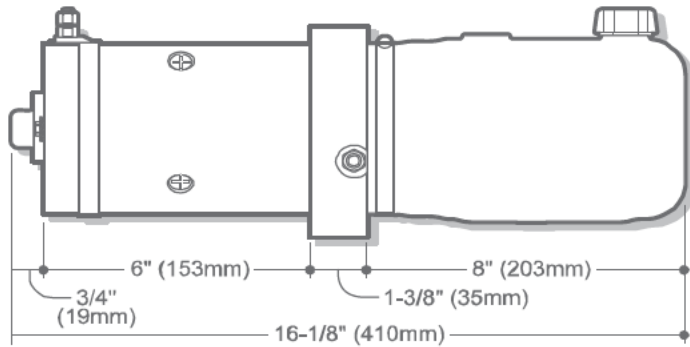
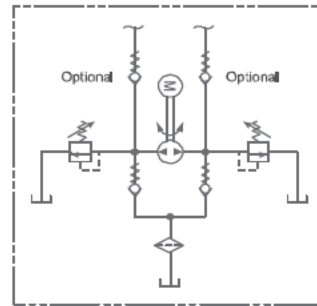
Description

- Birotational Pump and Motor / Reservoir
- Check Valve
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- Horizontal Mounting

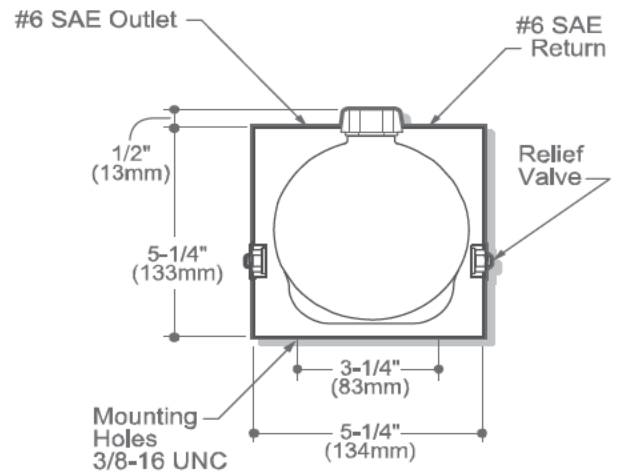
Popular Options

- Check Valve in C1 and C2 Ports for Optional Manifold
- Vertical Mounting

Schematic



SIDE VIEW



END VIEW

Consult factory for additional options and specifications. Order code 50035043XXXX depending on configuration.

6.4 Model B-3530

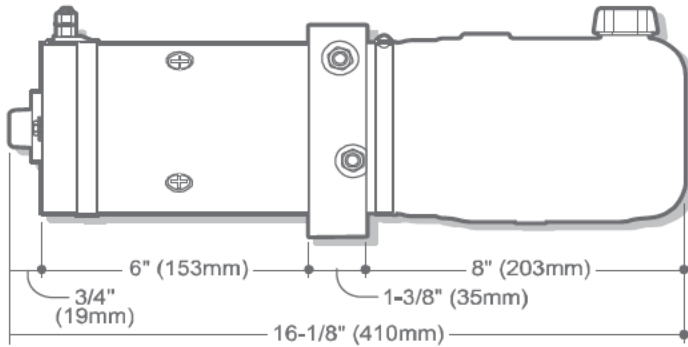
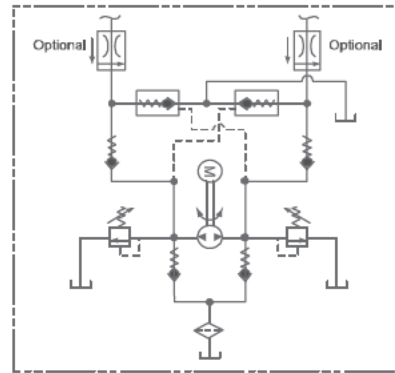
Description

- Birotational Pump and Motor / Reservoir
- Check Valve
- Pilot-Operated Check Valves
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- Horizontal Mounting

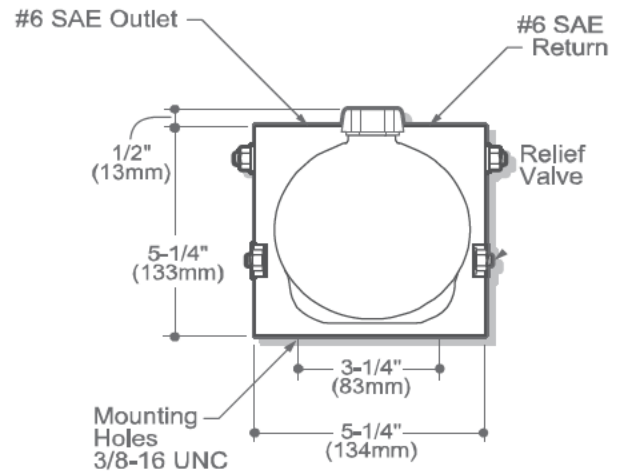
Popular Options

- Pressure Compensated Flow Controls
- Vertical Mounting

Schematic



SIDE VIEW



END VIEW

Consult factory for additional options and specifications. Order code 50035303XXXX depending on configuration.

6.5 Model B-3547

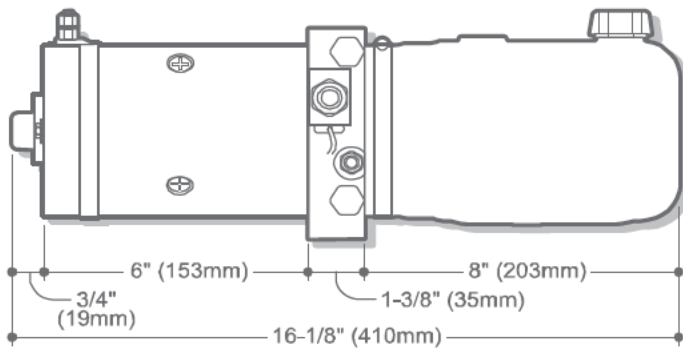
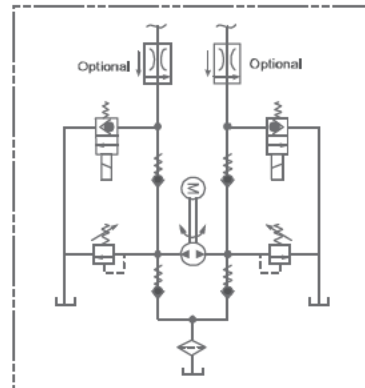
Description

- Birotational Pump and Motor / Reservoir
- Two 2-Way/2-Position Solenoid Controlled Cartridge Valves Located Externally and Manifolder Directly to Unit.
- Check Valve
- Externally Adjustable Relief Valve
- #6 SAE Outlet
- Horizontal Mounting

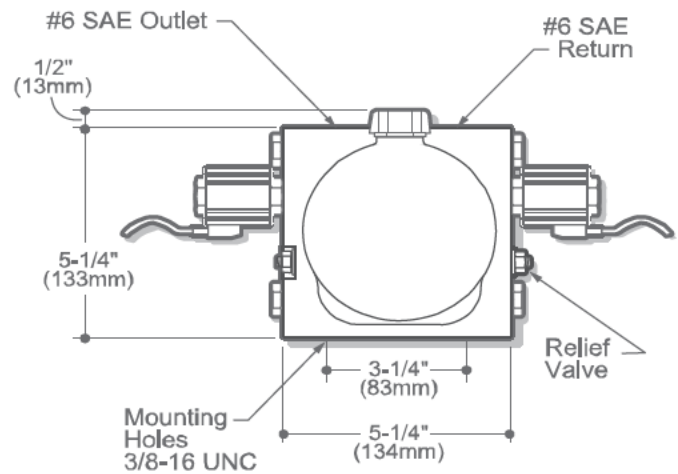
Popular Options

- Pressure Compensated Flow Controls
- Vertical Mounting

Schematic



SIDE VIEW



END VIEW

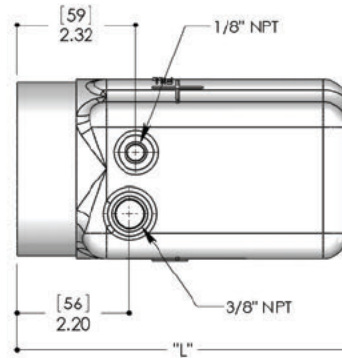
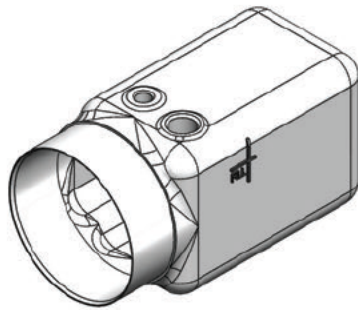
Consult factory for additional options and specifications. Order code 50035473XXXX depending on configuration.

7 Accessories for M-Series D.C. Power Systems

7.1 Reservoirs for M-3000 Units

7.1.1 Poly reservoirs

3.5 inch x 3.5 inch Mini Poly



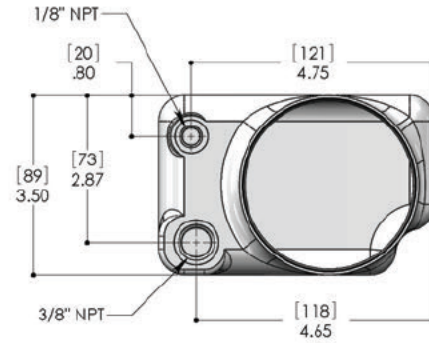
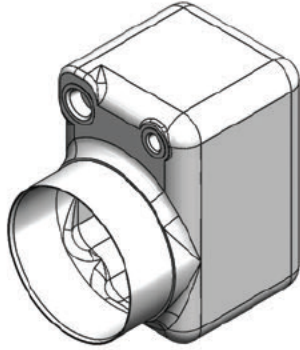
Horizontal Reservoirs					
Part Number	Order Code	Usable Volume		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06230	500206406230	30.51	0.50	6.46	164.08
06231	500206406231	62.04	1.02	11.08	281.43
06233	500206406233*	125.10	2.05	20.32	516.13

* Special supports may be required, consult factory prior to use in horizontal applications

Vertical Reservoirs					
Part Number	Order Code	Usable Volume		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06230	500206406230	24.5	0.40	6.46	164.08
06231	500206406231	69.22	1.13	11.08	281.43
06233	500206406233	158.67	2.60	20.32	516.13

Consult factory for full product range and custom solutions

3.5 inch x 5.38 inch Mini Poly



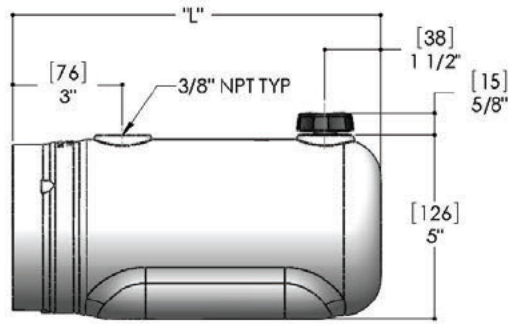
Horizontal Reservoirs					
Part Number	Order Code	Usable Volume		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06218	500206406218	32.34	0.53	4.88	123.95
06217	500206406217	50.89	0.83	6.76	171.70
06197	500206406197	60.66	0.99	7.75	196.85
06216	500206406216	69.44	1.14	8.64	219.46
06215	500206406215*	88.00	1.44	10.52	267.21
06214	500206406214*	106.55	1.75	12.40	314.96
06213	500206406213*	125.10	2.05	14.28	362.71

* Special supports may be required, consult factory prior to use in horizontal applications

Vertical Reservoirs					
Part Number	Order Code	Usable Volume		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06218	500206406218	27.46	0.45	4.88	123.95
06217	500206406217	58.58	0.96	6.76	171.70
06197	500206406197	74.97	1.23	7.75	196.85
06216	500206406216	91.54	1.50	8.64	219.46
06215	500206406215	120.83	1.98	10.52	267.21
06214	500206406214	151.95	2.49	12.40	314.96
06213	500206406213	183.08	3.00	14.28	362.71

Consult factory for full product range and custom solutions

4.5 inch [114 mm] Poly



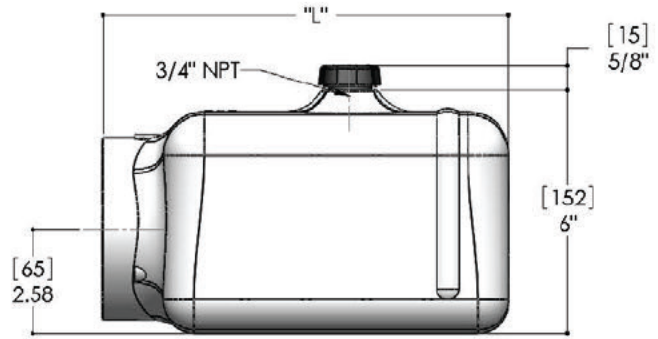
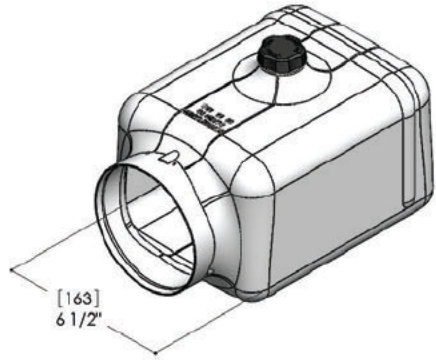
Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06102	500206406102	54.92	0.90	8.00	203.20
06103	500206406103	75.67	1.24	10.00	254.00
06104	500206406104	96.41	1.58	12.00	304.80
06105	500206406105	106.79	1.75	13.00	330.20

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.

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

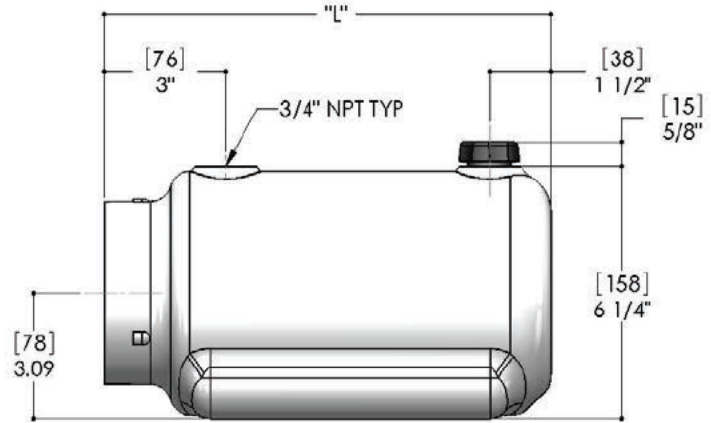
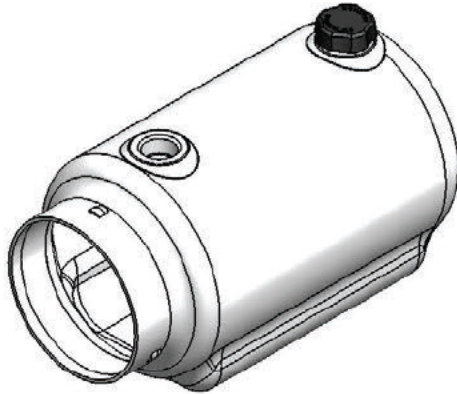


3/4 NPT Fill Port					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14157	500206414157	143.40	2.35	10.00	254.00
14158	500206414158	220.00	3.61	13.50	342.90
14159	500206414159	247.23	5.69	19.00	482.60

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.



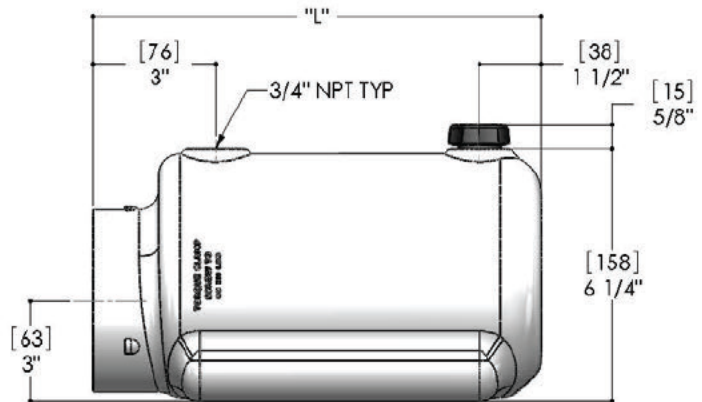
Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14128	500206414128	118.37	1.94	9.00	228.60
14121	500206414121	136.19	2.23	10.00	254.00
14122	500206414122	154.01	2.52	11.00	279.40
14123	500206414123	189.65	3.11	13.00	330.20
14124	500206414124	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



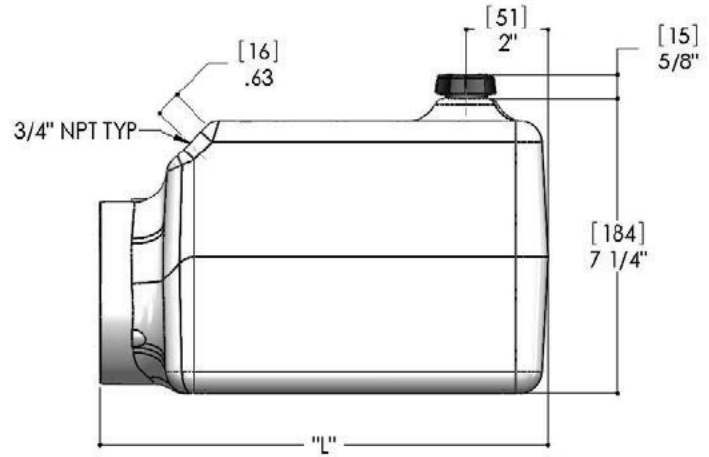
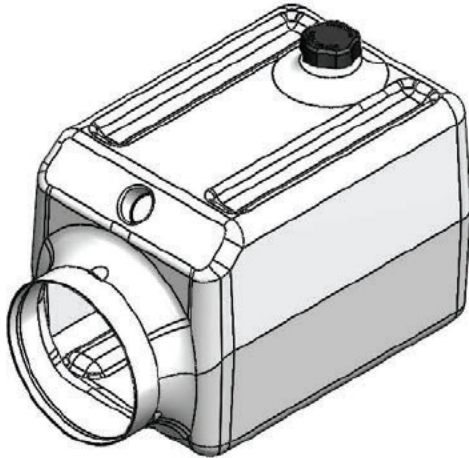
Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14009	500206414009	123.57	2.03	9.00	228.60
14010	500206414010	143.40	2.35	10.00	254.00
14011	500206414011	163.23	2.68	11.00	279.40
14012	500206414012	202.89	3.33	13.00	330.20
14013	500206414013	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



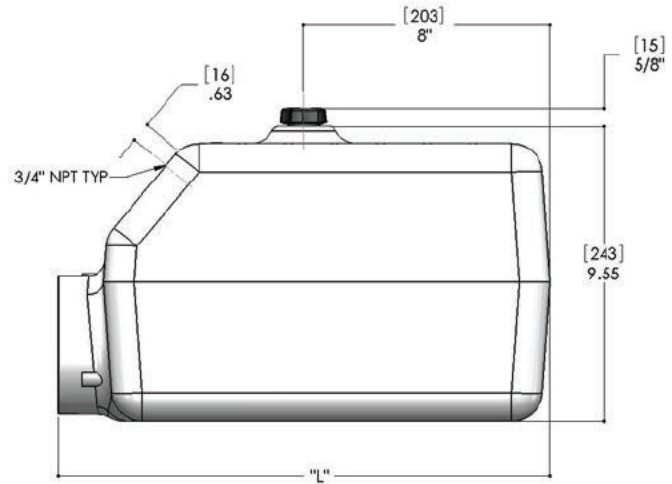
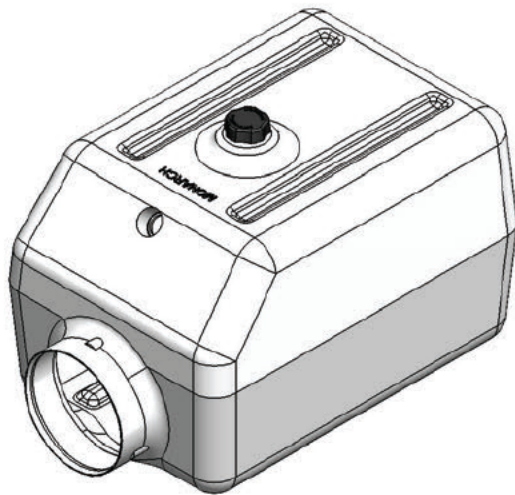
Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14164	500206414164	157.14	2.58	7.50	190.50
14165	500206414165	203.21	3.33	9.00	228.60
14166	500206414166	264.64	4.34	11.00	279.40
14167	500206414167	326.07	5.34	13.00	330.20
14168	500206414168	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

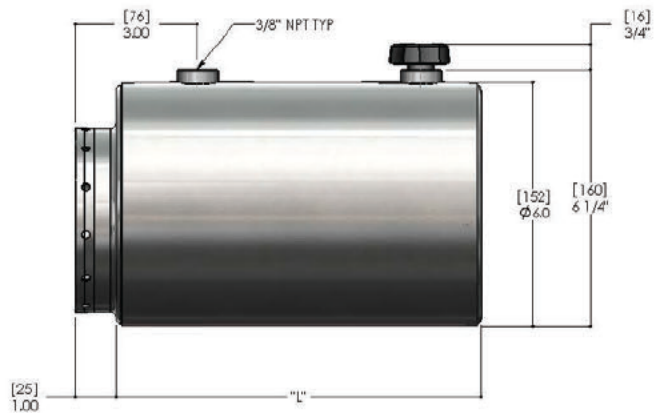
Vertical Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
14226	500206414226	793.33	13.00	16.00	406.40
14227	500206414227	979.46	16.05	18.00	457.20
14228	500206414228	1165.58	19.10	20.00	508.00

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.

7.1.2 Steel reservoirs

6.25 inch [158 mm] Round Steel

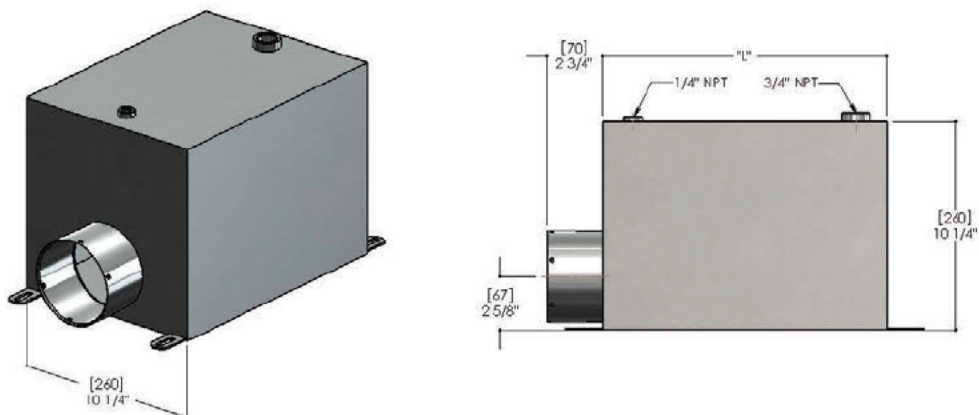


Horizontal Reservoirs					
Part Number	Order Code	Useable Capacity		"L" Length	
		Cubic inch (in ³)	Liter (l)	inch	mm
06042	500206406042	189.17	3.10	9.00	228.60
06043	500206406043	217.24	3.56	10.00	254.00
06044	500206406044	292.91	4.80	13.50	342.90
06045	500206406045	393.60	6.45	18.00	457.20

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

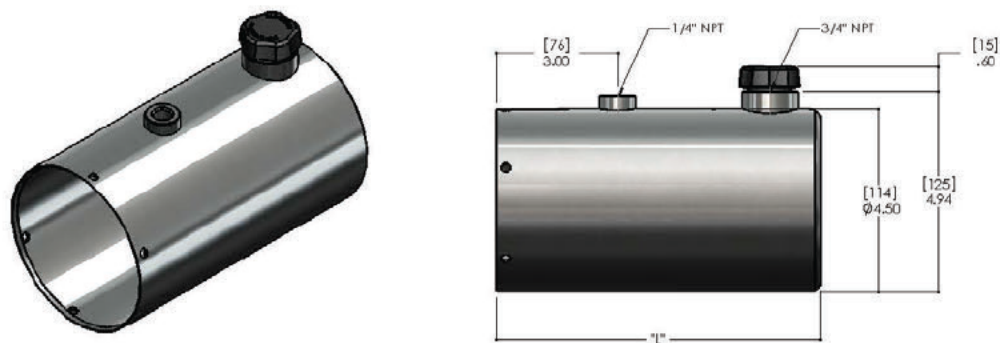
10.25 inch [260 mm] x 10.25 inch [260 mm] Steel



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

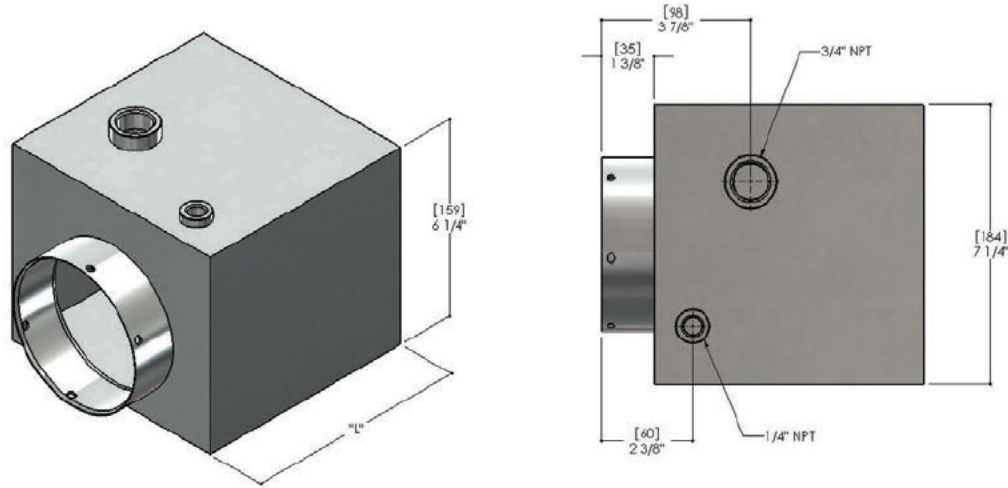
4.25 inch [114 mm] Round Steel



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

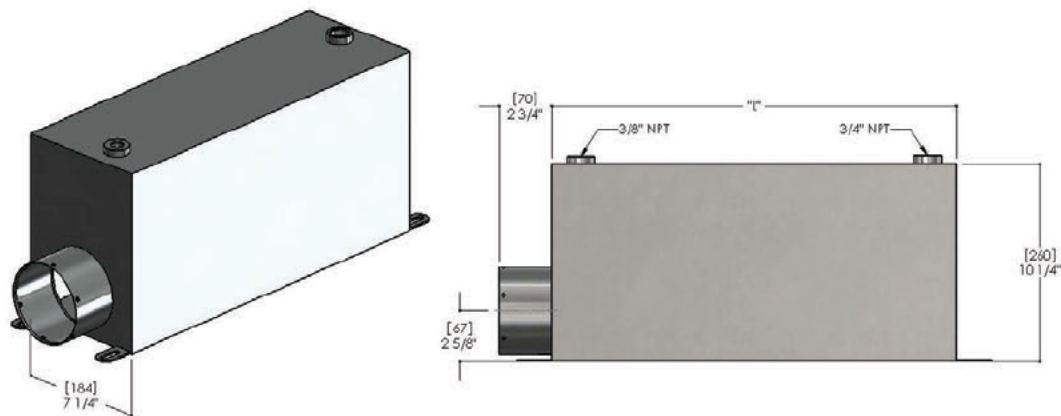
7.25 inch [184 mm] x 6.25 inch [158 mm] Steel



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

7.2 Valves for DC Systems

NFPA D03 Directional and Auxiliary Control Valves

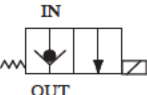
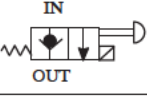
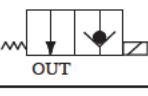
Solenoid directional and auxiliary controls are available. Consult Bucher Hydraulics factory for additional information and selection.

Part Number	Order Code	Schematic	Description
12 VDC - 00962 24 VDC - 00965	500208500962 500208500965		4-Way/3-Position. Solenoid Operated. Tandem Center.
12 VDC - 00963 24 VDC - 00966	500208500963 500208500966		4-Way/3-Position. Solenoid Operated. Open Center.
12 VDC - 00961 24 VDC - 00964	500208500961 500208500964		4-Way/3-Position. Solenoid Operated. Closed Center.
12 VDC - 01040 24 VDC - 01039	500208501040 500208501039		4-Way/3-Position, P Blocked. A and B to T. "Motor Spool".
12 VDC - 00460 24 VDC - 00461	500208500460 500208500461		4-Way/2-Position. P to A. Spring Offset.
24 VDC - 00685	500208500685		4-Way/2-Position. P to A. Detent.
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 Bucher Hydraulics about special requirements for explosion proof, shockless (soft shift) and other function and spool configurations not shown here. Other DC as well as AC 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).

Cartridge Valves

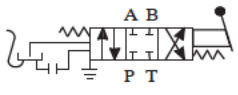
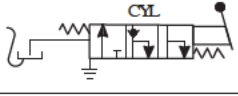
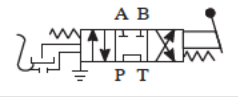
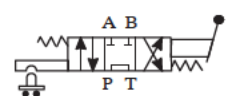
Solenoid operated cartridge valves are used in various models. Manual operated cartridge valves are also available; please consult factory for options.

Part Number	Order Code	Schematic	Description
12 VDC - 00707 24 VDC - 07158	500208500707 500208507158		2-Way/2-Position Normally Closed. Modified Cavity #8. Grounded Coil.
07144	500208507144		2-Way/2-Position Normally Closed. Modified Cavity #8. Manual Operation. Pull to Open. Spring Closed.
12 VDC - 00501 24 VDC - 00502	Consult factory for Order Code		2-Way/2-Position Normally Open. Modified Cavity #8. Grounded Coil.

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

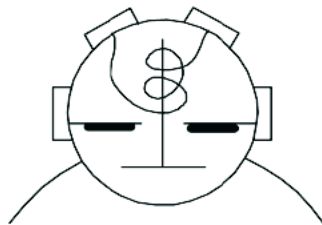
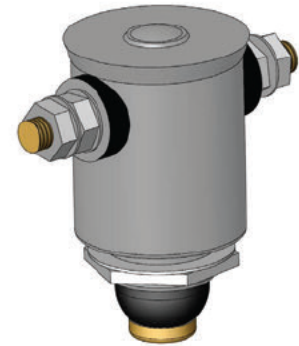
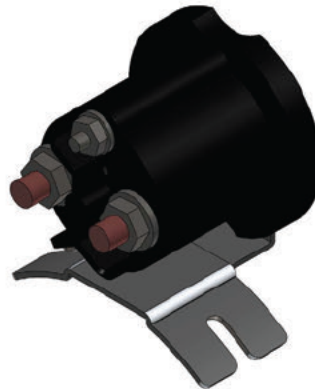
Manual Valves

Manually Operated Directional Control Valves are used on Models M-3310, M-500 and M-3000 Special Units.

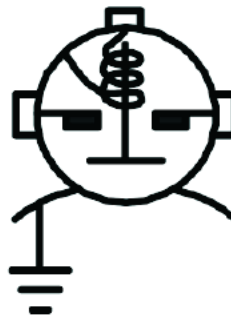
Part Number	Order Code	Schematic	Description
M-3310 Condenser Type - 01020	500218501020		4-Way/3-Position. Closed Center. Direct Mounting.
M-500 Type - 00853 500218500856	500218500853 500218500856		3-Way/3-Position. Cylinder Port Checked. Direct Mounting.
M-3310 Condenser Type - 00893 M-500 Type - 00856 (Non Condenser Type)	500218500893		4-Way/3-Position. Tandem Center. Direct Mounting.
M-3310 Cam Start SW - 07120	500218507120		4-Way/3-Position. Tandem Center. Direct Mounting.

7.3 Motor Start Switches for D.C. Power Systems

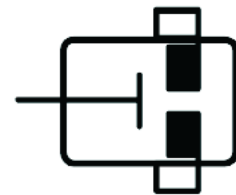
Images and Wiring Diagrams



"A"



"B"



"C"

Part Number	Order Code	Voltage	Wiring diagram	Coil Duty	Notes
17744	500208017744	12	A (4-post)	Int.	
17764	500208017764	24	A (4-post)	Int.	
17757	500208017757	12	B (3-post)	Int.	
03322	500218003322	12 / 24	C (3-post)	N.A.	Manual Start Only - M-3301, M-3313
04343	500208004343	12 / 24	C (3-post)	N.A.	Round Valve; M-3310 Only
01361	500201301361	N.A.	N.A.	N.A.	Battery Cable; 5 inch long
01628	500201301628	N.A.	N.A.	N.A.	Battery Cable; 6 inch long

Other options available; contact factory for more information on the following options:

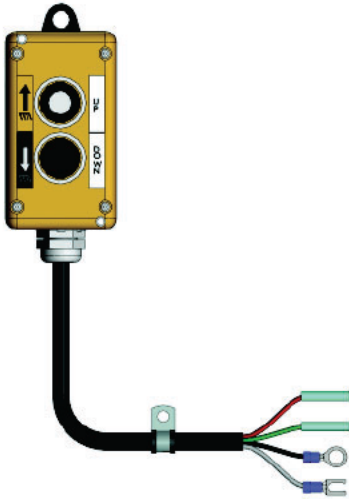
- Switches available for curved mounting for direct attachment to power unit
- Flat base for remote mounting
- Bus bar
- Battery cable
- Continuous or extended duty switches available

7.4 Control Stations

7.4.1 Single Acting Control Station

Control Box Part Number: 17922 (Order code: 500232017922)

Cord lengths range from 72 inches to 240 inches*



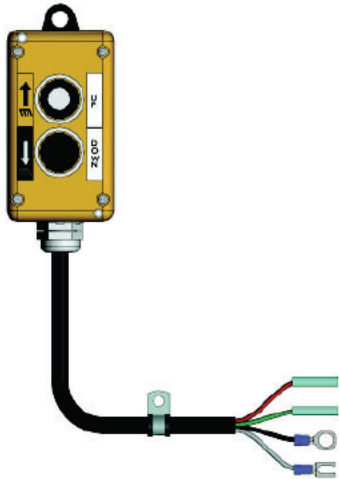
Part Number	Order Code	Cord Length			
		Inches	Feet	Centimeters	Meters
17922-072	500232017922072	72.0	6.0	182.9	1.83
17922-084	500232017922084	84.0	7.0	213.4	2.13
17922-096	500232017922096	96.0	8.0	243.8	2.44
17922-120	500232017922120	120.0	10.0	304.8	3.05
17922-144	500232017922144	144.0	12.0	365.8	3.66
17922-156	500232017922156	156.0	13.0	396.2	3.96
17922-180	500232017922180	180.0	15.0	457.2	4.57
17922-192	500232017922192	192.0	16.0	487.7	4.88
17922-204	500232017922204	204.0	17.0	518.2	5.18
17922-240	500232017922240	240.0	20.0	609.6	6.10

* Table contains only popular lengths; consult factor for full product range

7.4.2 Double Acting Control Station

Control Box Part Number: 04334 (Order code: 500232004334)

Cord lengths range from 36 inches to 360 inches*



Part Number	Order Code	Cord Length			
		Inches	Feet	Centimeters	Meters
04334-036	50023204334036	36.0	3.0	91.4	0.91
04334-072	50023204334072	72.0	6.0	182.9	1.83
04334-096	50023204334096	96.0	8.0	243.8	2.44
04334-120	50023204334120	120.0	10.0	304.8	3.05
04334-144	50023204334144	144.0	12.0	365.8	3.66
04334-180	50023204334180	180.0	15.0	457.2	4.57
04334-240	50023204334240	240.0	20.0	609.6	6.10
04334-300	50023204334300	300.0	25.0	762.0	7.62
04334-360	50023204334360	360.0	30.0	914.4	9.14

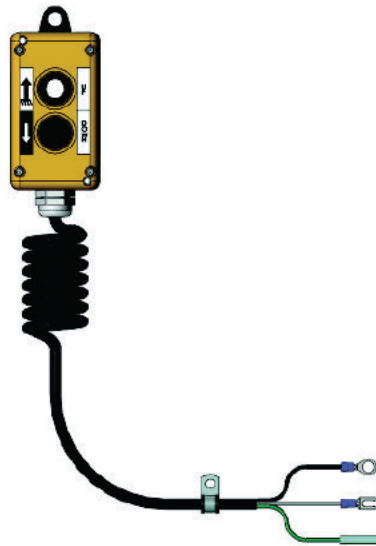
* Table contains only popular lengths; consult factor for full product range

Three-button and Four-button control stations available. Consult factor for more options.

7.4.3 Coiled Wire Control Station

Control Box Part Number: 18988 (Order code: 500232018988)

Cord lengths range from 14 inches to 192 inches*



Part Number	Order Code	Cord Length			
		Inches	Feet	Centimeters	Meters
18988-144	500232018988144	144.0	12.0	365.8	3.66
18988-192	500232018988192	192.0	16.0	487.7	4.88

* Coiled and Straight wire options are available; consult factor for full product range

7.4.4 Control Station with Deutsch Connector

Control Box Part Number: 17720 (Order code: 500232017720)

Cord lengths range from 36 inches to 360 inches*



Part Number	Order Code	Cord Length			
		Inches	Feet	Centimeters	Meters
17720-036	500232017720036	36.0	3.0	91.4	0.91
17720-072	500232017720072	72.0	6.0	182.9	1.83
17720-096	500232017720096	96.0	8.0	243.8	2.44
17720-120	500232017720120	120.0	10.0	304.8	3.05
17720-144	500232017720144	144.0	12.0	365.8	3.66
17720-180	500232017720180	180.0	15.0	457.2	4.57
17720-240	500232017720240	240.0	20.0	609.6	6.10
17720-300	500232017720300	300.0	25.0	762.0	7.62
17720-360	500232017720360	360.0	30.0	914.4	9.14

* Table contains only popular lengths; consult factor for full product range

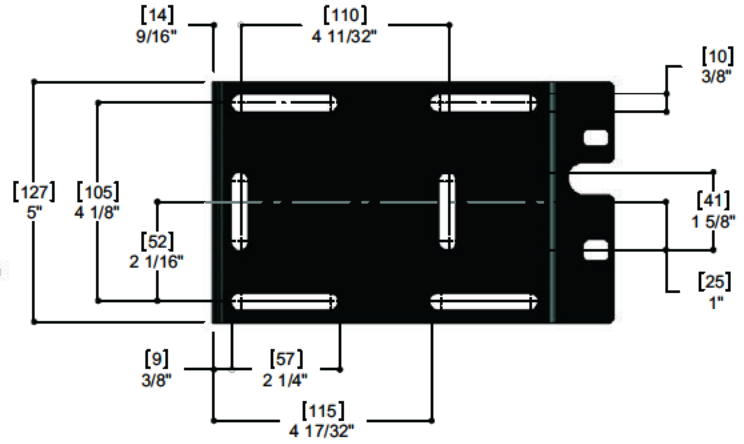
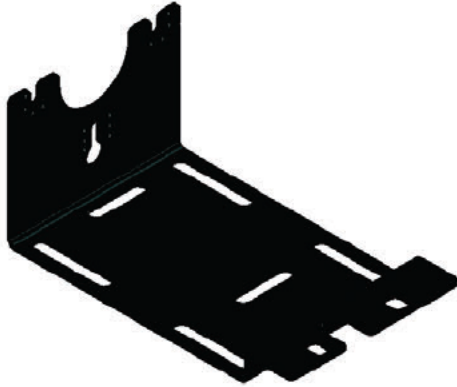
Three-button and Four-button control stations available. Consult factor for more options.

7.5 Mounting Brackets

Part Number: 01289

Order Code: 50001001289

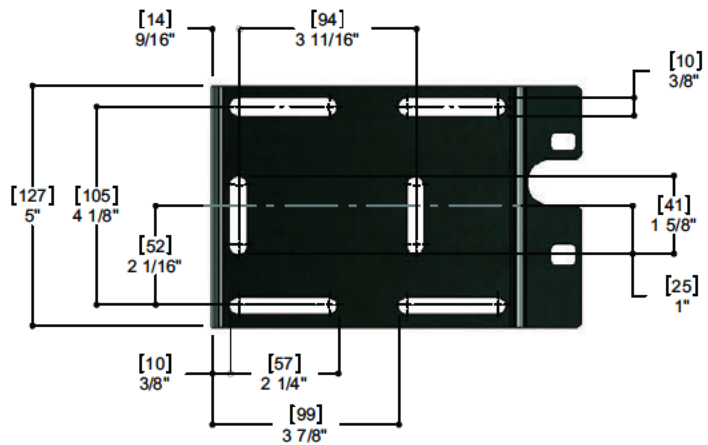
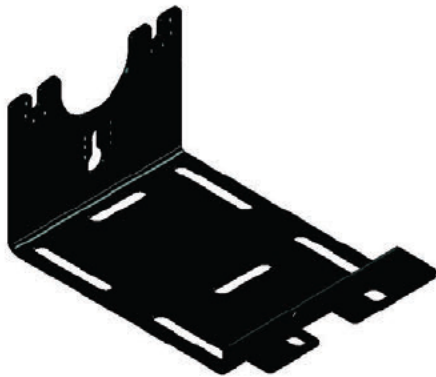
Compatible with most 4.5 inch [114 mm] diameter DC motors (Motor length: 7 inch [178 mm])



Part Number: 02238

Order Code: 50001002238

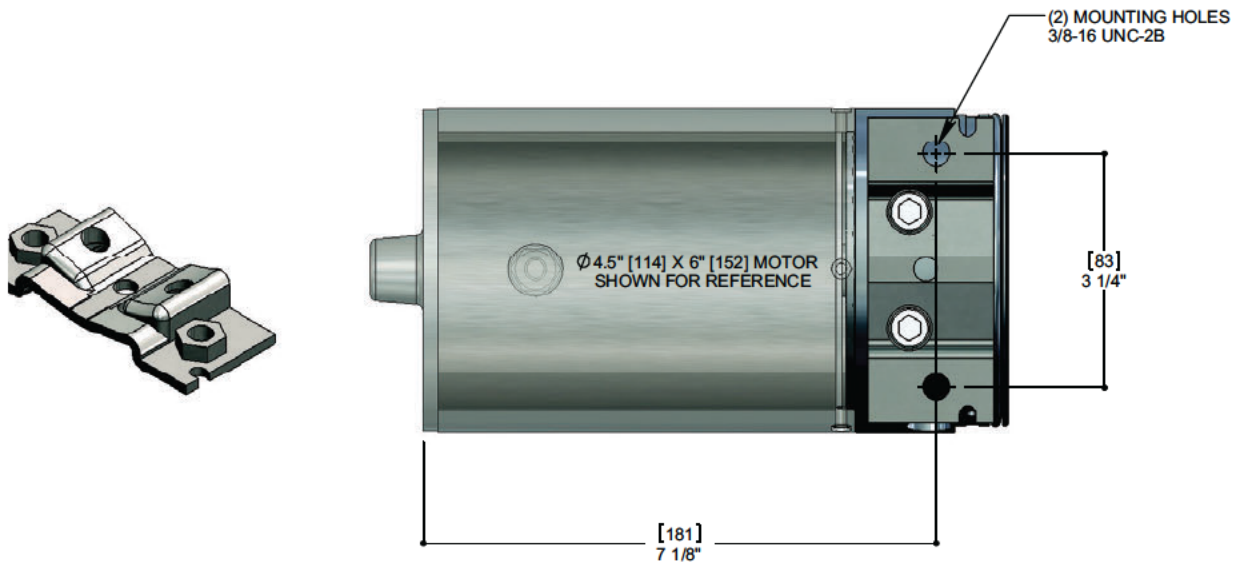
Compatible with most 4.5 inch [114 mm] diameter DC motors (Motor length: 6 inch [528 mm])



Part Number: 04560

Order Code: 50001004560

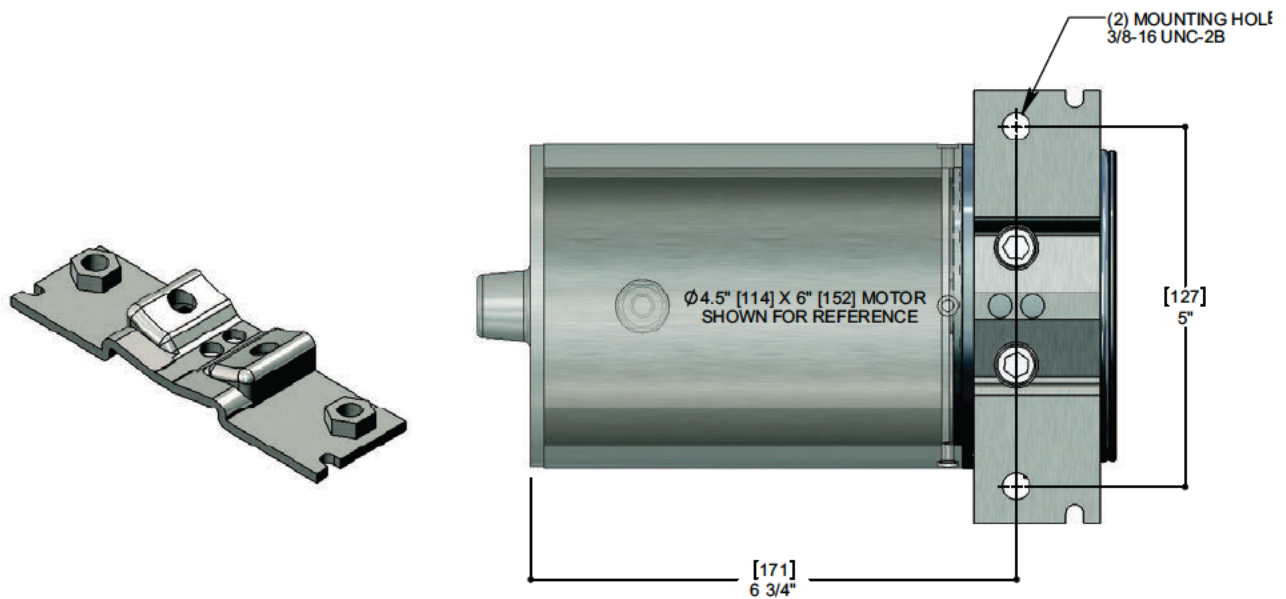
Compatible with most Power Units that use a 4.5 inch [114 mm] round base.
Also available: M10 x 1.5 THD. Consult Factory.



Part Number: 04559

Order Code: 50001004559

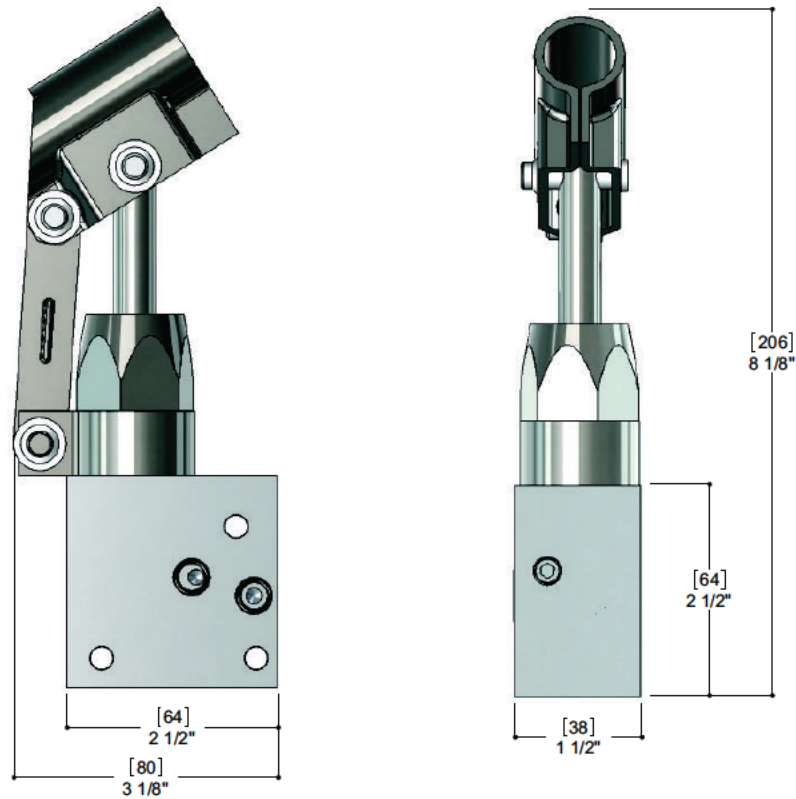
Compatible with most Power Units that use a 4.5 inch [114 mm] round base.
Also available: M10 x 1.5 THD. Consult Factory.



7.6 Hand Pumps for Remote or Direct Mounting

- Standard Hand Pumps - Available for Emergency Back Up Function in Bucher Hydraulics Power Packs
- Heavy Duty Hand Pumps - Available for Usage in Robust Power Pack Applications

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



Description

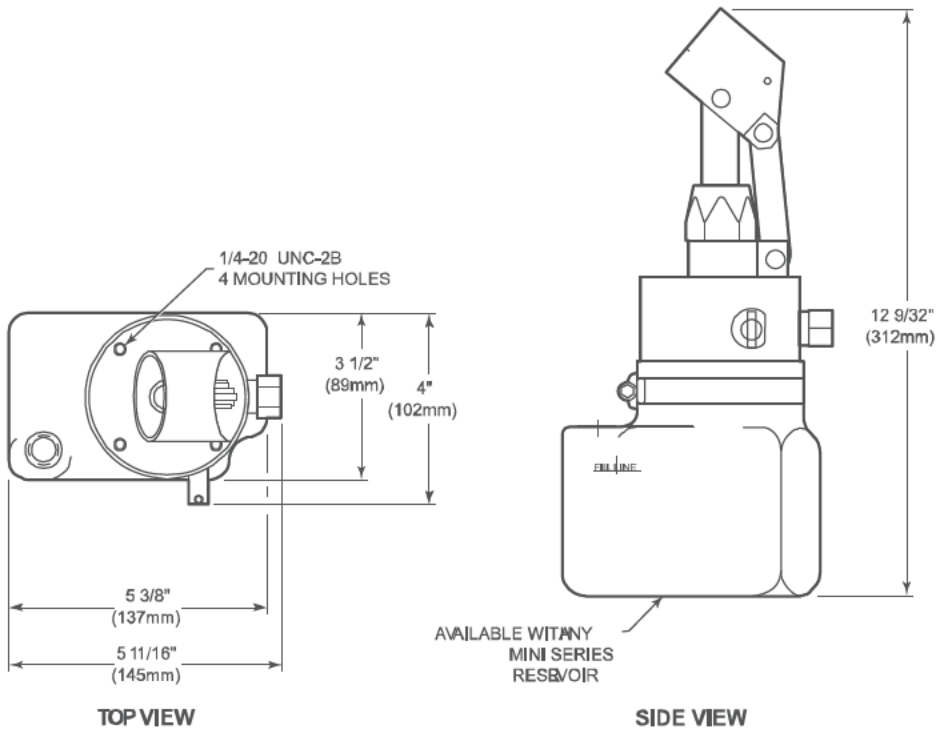
- Single Acting
- Outlet Port: 1/4" NPTF
- Designed for Mounting Directly to Bucher Hydraulics Power Packs
- Handle May be Positioned in any Direction
- Release Valve (Use Handle for Actuating)
- Supplied with Painted Steel "Comfort Grip" Handle
- All Exposed Materials are Aluminum or Plated Steel for Corrosion Resistance

Note: Consult factory for more options and Hand Pump part numbers.

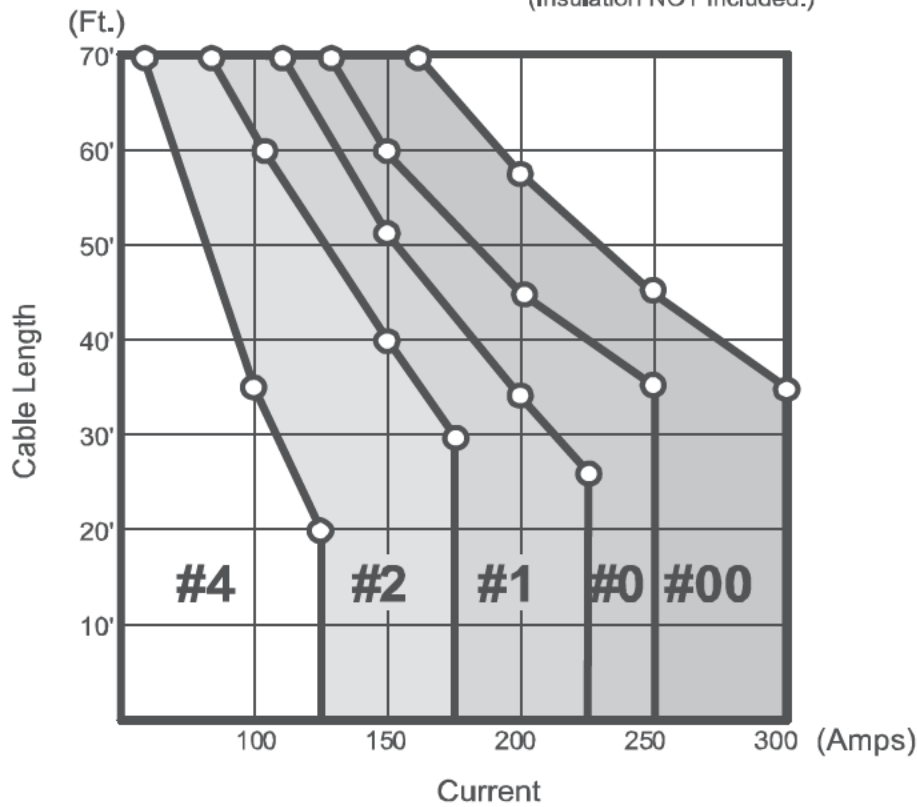
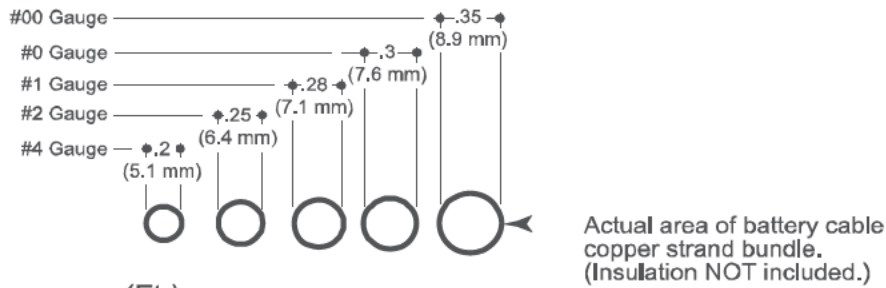
7.7 Model H-100 Series Hand Pumps With Reservoirs

Hand Pump with Relief Valve and Reservoir

- 12140 [500216312140] Heavy Duty Hand Pump with Relief Valve
- Available with any Mini Series Reservoir. See page 118 for options



7.8 Battery Cables



- For best results, Bucher Hydraulics would recommend that you increase 1 or 2 cable sizes above the minimum shown above. Select cable size so that your cable length and maximum amp draw falls below and to the left of curve.
- Curve describes a 1 volt loss in the battery cable itself.
- Total length of battery cable(s) including all ground cables.

Example: With maximum current draw of 200 amps and total cable length of 28 ft (7.82m), Select #1 gauge (.28 in/7.1mm) or larger.

7.9 Popular Accessories For DC Power Systems

Part Number	Order Code	Description
01436	500203701436	Sight Level/Temperature Gauge. For Use on Large Reservoirs Only.
01516	500205901516	Reservoir Breather, Flush Mount, 3/8" NPT. Cross Scored.
03171	500205903171	Reservoir Breather, 3/8" NPT.
01143	500205901143	Reservoir Breather, 1/4" 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. Non Pressure Compensated. 1/4" NPT. F x F For Flows to 3.0 GPM (11.4 LPM).
01720-X.XX	500218501720XXX	Flow Control, Pressure Compensated. Fixed. 1/4" NPT F x F. Other Types Available. Specify Flow Required.
01875	500213201875	Filter, Return Line. 15 GPM. 10 Micron Nominal.
04369	500213204369	Filter, Return Line. 5 GPM. 10 Micron Nominal.
01425	500203201425	Filter/Breather, Chrome Plated. Basket Strainer.
04202	500205504202	M-3310 Cam Start Switch Conversion Kit.
07157	500208507157	Relief Valve, Cartridge. 1500-3000 psi. Other Pressure Ranges Also Available.
01506	500200801506	Terminal Cover, Rubber. #4 Cable.

Other Available Options and Accessories Include:

- Float Switches
- Special Manifold Circuits
- Pressure Switches
- Multi-Function Valve Controls - Monoblock and Sectional
- Special Cartridge, Industrial and Manual Valve Configurations.

NOTE: Accessories Will Not Fit Every Model. Please Contact the Factory For Assistance.

8 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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Data is provided for the purpose of product description only, and must not be construed as warranted characteristics in the legal sense. The information does not relieve users from the duty of conducting their own evaluations and tests. Because the products are subject to continual improvement, we reserve the right to amend the product specifications contained in this catalogue.

Classification: 440