CP-3A

SMITH PRECISION PRODUCTS

Leader In LP-gas Transfer Since 1938

Positive displacement pumps, bypass valves, strainers, and flexible drive couplings for

- Cylinder filling
- Autogas
- High volume bulk transfer
- Truck delivery
- ISO containers
- Dispenser systems
- Recirculation systems
- Vaporizers
- Portable units

Flow rates from 5-250 GPM (20-950 LPM)

Differential pressures up to 150 psid (10 bar)

SMITH PUMPS

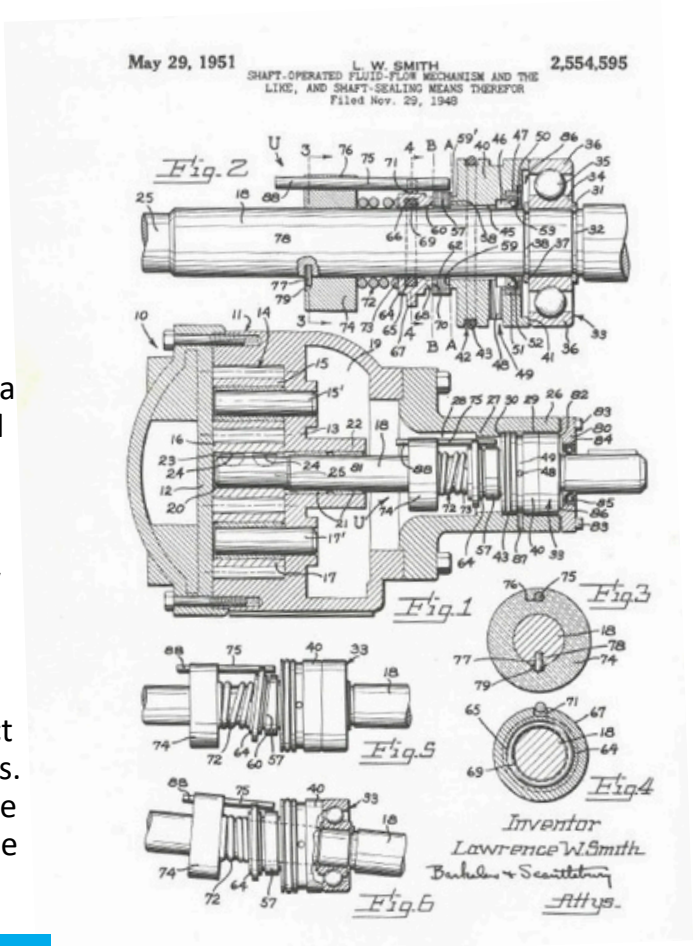
1299 Lawrence Drive
Newbury Park, CA 91320 USA
www.smithpumps.com

UL LISTED, UK/EU COMPLIANT, ISO 9001 CERTIFIED

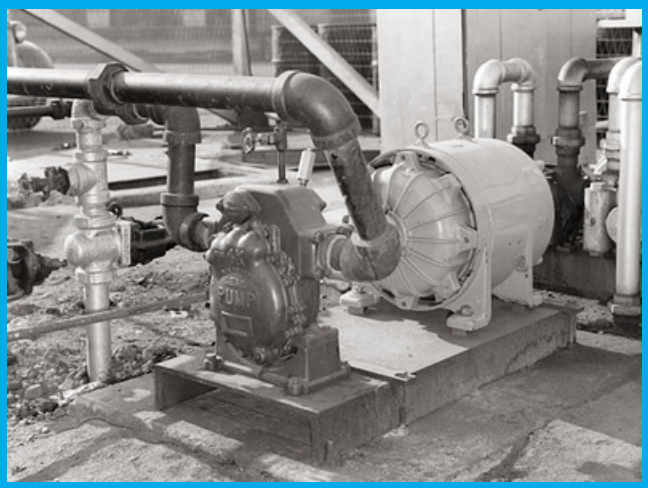
NO ONE HAS PROVIDED LIQUEFIED GAS PUMPS LONGER THAN SMITH

Smith Precision Products Company was started in 1938 by Reuben Stanley Smith and was the first company to provide pumps specifically for liquefied gas transfer. As a remarkable American inventor, Reuben focused on quality and provided innovative designs that would stand the test of time. He believed that when a customer encountered a problem, qualities such as understanding and compassion were important in finding a satisfactory solution.

Reuben's son, Lawrence, joined the company in 1945 and worked hard to uphold his father's values and re-engineer the original product line. By the end of the 1950s, the company developed a fairly complete product line and became involved in overseas markets. Severe duty service options were added in the 1960s, with flexible drive couplings and Y-type strainers to follow.



First patent issued for a mechanical seal used in a liquefied gas pump. Within seven years, most pumps were using mechanical seals.



Installation of the 4X pump, Rueben Smith's first design, 1938

Lawrence's three sons joined the company in the 1970s and continued to follow in the family's footsteps. They placed more emphasis on customer service and achieving top certifications. As a result, the company put forward exceptional new designs and major improvements to the existing product line. Today, third and fourth generation Smiths are striving to improve and strengthen the company's ability to provide an even better level of service.

Our mission is to ensure the continuation of a notable legacy–one built on Reuben's values of ethics, integrity, and compassion. If this simple philosophy is maintained, the rest is relatively easy.

TABLE OF CONTENTS

MAXIMIZING ENGINEERING POTENTIAL

Balanced Load Configuration

Minimizes gear tooth contact and eliminates constant casing contact, which generates heat. Allows for smooth, non-pulsating flow and higher differential pressures

Carbon Graphite Journal Bearings

These bearings support the entire length of the drive shaft. Balanced loading eliminates the need for a duplicate ball bearing at the end of the drive shaft and a second mechanical seal

Superseal Mechanical Shaft Seal Assembly

The Superseal assembly is built as a kit onto the pump drive shaft. This allows for dynamic pressure test before assembly into pump or when supplied as a separate component. The 3-piece seal allows for slow rotation of the intermediary seal ring, greatly reducing friction – associated wear.

Gear Set is Readily Accessible

Without disrupting the mechanical seal, the gear set can be easily replaced

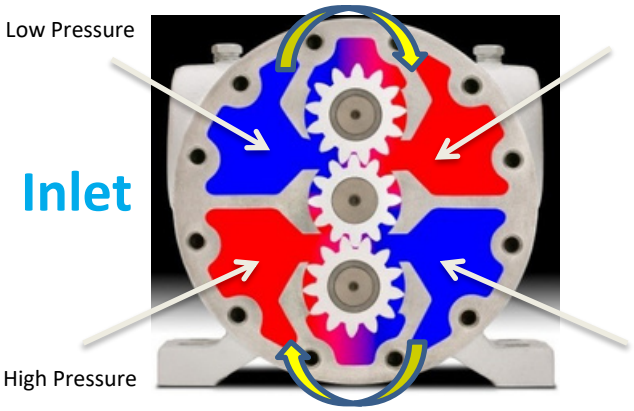
Conversion to Larger Capacity Pump

Higher flow rates can easily be accomplished with the addition of one, two, or three secondary gear housings, each with 50 GPM flow capacity.

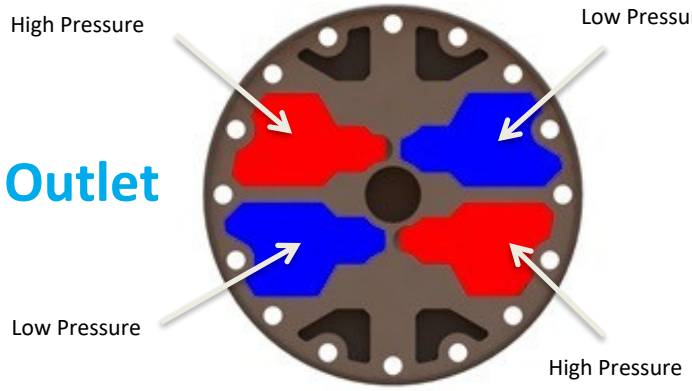
No Service Ball Bearing

Our design eliminates the requirement for periodic greasing

BALANCED LOADING DESIGN



Main Housing



Gear End Cover

Liquid first enters the inlet of the pump, shown as blue in the upper left corner of the pump main housing. It is also directed within the pump to the bottom right port, also shown as blue through the porting in the gear end housing.

As the drive gear in the center rotates in a counterclockwise direction, the low pressure blue liquid is directed into the spaces between the gear teeth and transferred to the red ports, as shown. The velocity of the liquid entering the gear teeth spaces is carefully matched with the speed of the gear set to minimize changes in velocity and directional changes of the liquid, thus minimizing the pressure drop in the pump. Gear pockets are designed to ensure a pressure gradient is present around the outside diameter of the idler gears to suppress cavitation and maximize the transfer rate of the pump.

It is the design and efficiency of the non-contacting side of the gear teeth (in the Red Zones) that largely determines the ability of the pump to develop pressure. Permissible wear on the leading side of the gear teeth does not compromise this performance characteristic of the Smith 3-gear pump. The red ports are also integrated within the pump (high pressure).

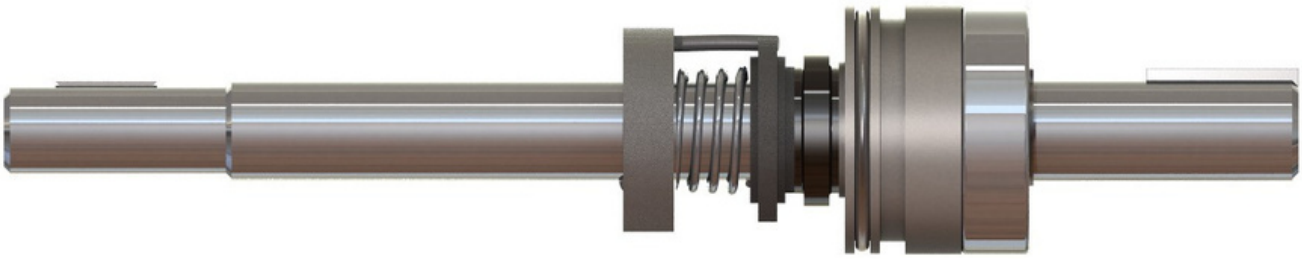
It is important from a loading standpoint that the drive gear is exposed to a neutral load, eliminating the necessity for another ball bearing to support the other end of the drive shaft (which would also add another mechanical seal). Given that the schematic uses color to indicate pressure, the symmetric colors surrounding the drive gear illustrate that the drive gear is balanced.

As high pressure develops in the red ports, liquid maintains velocity and flows out of the pump through the outlet port shown as red in the upper right corner.

Secondary gear housings can be added to the main housing shown and are internally ported to match those of the main housing. The addition of a secondary gear housing is not to boost the pressure capability of the pump, but rather to increase the volumetric flow rate of the pump.

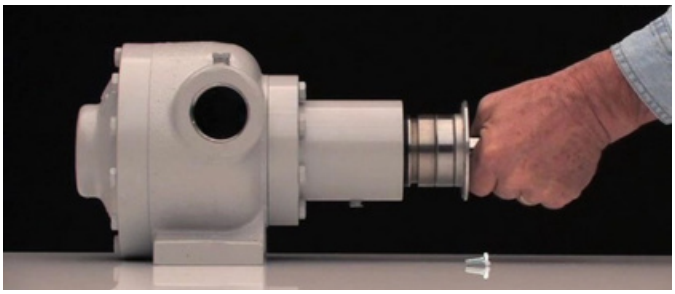
“IT ALL STARTS WITH THE SEAL”

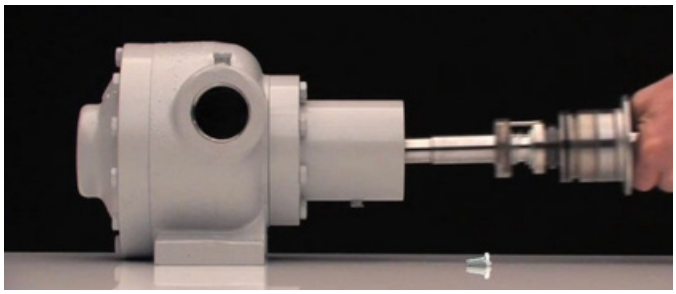
Preassembled and Pre-tested Mechanical Seal in Every Pump



- Every mechanical seal is pre-assembled and pre-tested before leaving the factory
- No lubrication is ever required
- Unique three-piece seal design allows intermediary seal ring to see ½ the wear
- The SUPERSEAL™ option eliminates brittle carbon graphite in favor of a self-repairing thermoplastic intermediary seal ring that continually laps itself while the pump is in operation
- No loose parts, no thumbprints on seal faces, easy to remove and install

EASE OF INSTALLATION





Old mechanical seal can be removed in the field in a matter of minutes! No disassembly of the pump required!

Check Out Our Video on our Youtube Channel

MAINLINE PUMP DESIGN

MC-2 series
50 GPM (190 LPM)

MC-3 series
100 GPM (380 LPM)

MC-4 series
150 GPM (570 LPM)

MC-5 series
200 GPM (758 LPM)

- Each secondary housing increases the flow capacity by 50 GPM (190 liters/min)
- Each secondary housing contains 1 drive gear, 2 idler gears
- The mechanical shaft seal assembly is exactly the same, except the length of the drive shaft is increased for each higher capacity pump model
- Ease of changing pump models if necessary

OPERATING PARAMETERS/APPROVALS

Smith Precision Products Company's Quality Management System is registered to meet the requirements of ISO 9001:2015 Certified by NQA. In addition, our LP-gas products comply with applicable UL and EU/UK approvals including ATEX/UKEX.

LP-GAS

UL Temperature Range: -40°F TO +122°F (-40°C to +50°C)
UL Maximum Allowable Working Pressure: 350 psi (24 bar)
UL Maximum Differential Pressure: 125 psi (8 bar)
Capacity: 5 to 250 GPM (19 to 945 LPM)
Duty Cycle: 2 hours continuously at maximum RPM. For pumps operating over 2 hours, we recommend our heavy duty "NSSA" option and operating the pump at ½ the maximum drive speed. Please contact our factory for recommended pump model/motor combination.
**All pumps are built for their intended liquid service and cannot be interchanged due to differences in materials of construction. Never use a pump for a liquid service other than specified.*

PASSING THE TEST

All Smith LPG pumps are tested 3 times before being shipment per our ISO: 9001 Quality Management System as follows:

- Every mechanical seal is liquid tested before shipment to inspect for seal leakage
- Casings in the pumps are pressure tested to 400 psi after assembly
- Pumps are then liquid tested to meet pump flow rate expectations

SMALL CAPACITY PUMPS

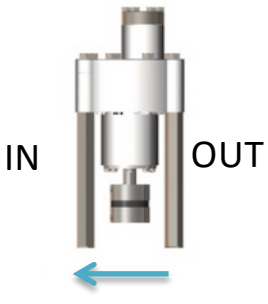
D-Series Pumps | Flow Rates of 10-15 GPM (38 – 57 L/min)

DW-1Z

- Most economical pump for intermittent duty, cylinder filling applications
- Comes with a built-in bypass valve preset to 90 psid to be used in place of an external bypass valve
- Built in strainer screen
- Shaft seal assembly/gears can be serviced in the field without disrupting the piping

Pumps Only		Average Delivery Rate (See page 10 for pump performance curves)		Maximum Differential Pressure	Inlet/ Outlet Size	Motor*
Model	Motor Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	HP (kW)
DW-1Z **MAX 3600 RPM**	3600 (60 Hz) 3000 (50 Hz)	8.5 GPM (27 LPM)	7 GPM (21 LPM)	125 PSI (8 BAR)	¾" (DN 20)	1 HP (0.55 kW)
DW-HZ **MAX 3600 RPM**	3600 (60 Hz) 3000 (50 Hz)	13.5 GPM (38 LPM)	12 GPM (31 LPM)	125 PSI (8 BAR)	1" (DN 2)	1-1/2 HP (0.75 kW)

**Explosion Proof motors are UL listed and available in 1 or 3 phase electricity for 60 Hz (3600 RPM) or 50 Hz (3000 RPM) locations, 1 phase: 115/230V (suitable for 208V), 3 phase: 208/230/460 V. Motors are 56C-frame with feet allowing the motor to be directly mounted to the pump with thermal overload protection. Foot-mount options are also available for motors with different frame sizes. ATEX/UKEX certified motors also available. See page 14 for more information. For external dimension drawings, please visit www.smithpumps.com.*



Counterclockwise

Model	Length of time to fill LP-gas cylinders		Weight (Pump only)	Weight (Pump, coupling, motor)
	20 lb. (9kg)	100 lb. (45 kg)		
ALL D-series Models	Less than 1 minute	3-4 minutes	22 lbs (10 kg)	60-67 lbs (27-30 kg)

SMALL CAPACITY PUMPS

E-Series Pumps | Flow Rates of 10-15 GPM (38 – 57 L/min)

EG-1Z

- Most popular pump for intermittent duty, cylinder filling applications
- Comes with a built-in bypass valve preset to 90 psid (110 setting also available) that can be used internally or externally.
- Built in strainer screen
- Shaft seal assembly/gears can be serviced in the field without disrupting the piping
- No greasing or lubrication required
- Pump may be mounted right side up or upside down to accommodate piping

Pumps Only		Average Delivery Rate (See page 10 for pump performance curves)		Maximum Differential Pressure	Inlet/ Outlet Size	Motor*
Model	Motor Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	HP (kW)
EG-1Z **MAX 3600 RPM**	3600 (60 Hz) 3000 (50 Hz)	8.5 GPM (25 LPM)	7 GPM (21 LPM)	125 PSI (8 BAR)	¾" (DN 20)	1 HP (0.55 kW)
EC-HZ **MAX 3600 RPM**	3600 (60 Hz) 3000 (50 Hz)	13.5 GPM (38 LPM)	12 GPM (31 LPM)	125 PSI (8 BAR)	1" (DN 25)	1-1/2 HP (0.75 kW)

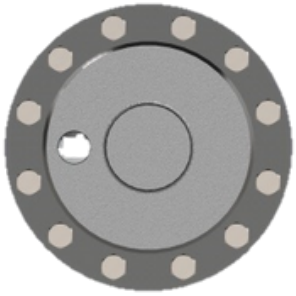
**Explosion Proof motors are UL listed and available in 1 or 3 phase electricity for 60 Hz (3600 RPM) or 50 Hz (3000 RPM) locations, 1 phase: 115/230V (suitable for 208V), 3 phase: 208/230/460 V. Motors are 56C-frame with feet allowing the motor to be directly mounted to the pump with thermal overload protection. Foot-mount options are also available for motors with different frame sizes. ATEX/UKEX certified motors also available. See page 14 for more information. For external dimension drawings, please visit www.smithpumps.com.*

IN  OUT

Clockwise

Model	Length of time to fill LP-gas cylinders		Weight (Pump only)	Weight (Pump, coupling, motor)
	20 lb. (9 kg.)	100 lb. (45 kg.)		
ALL E-series Models	Less than 1 minute	3-4 minutes	25 lbs (12 kg)	77-92 lbs (35-42 kg)

E-PUMP BYPASS OPTIONS

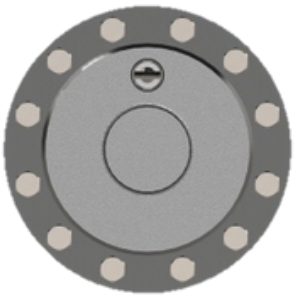


9 O'clock position

(plug is left in place, bypass valve is internal, separate external bypass must be used)

TRAINING VIDEOS

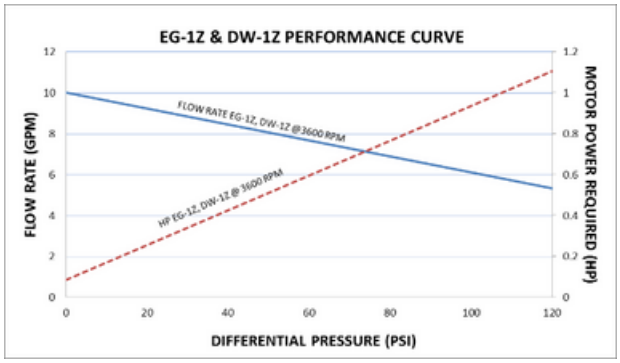
Refer to our Training Videos online at www.smithpumps.com for more information

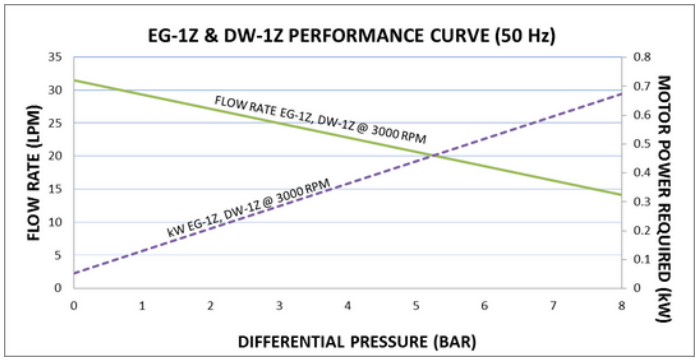


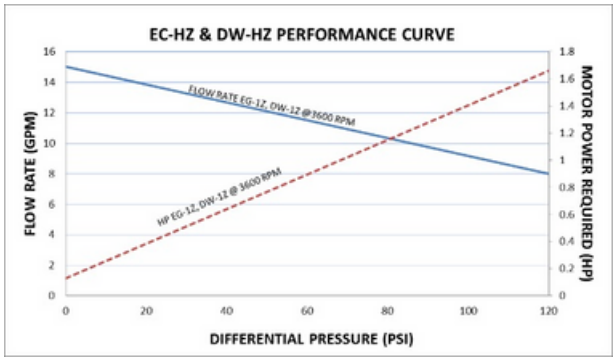
12 O'clock position

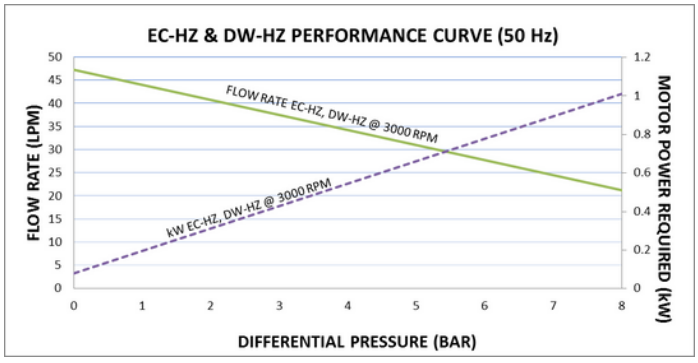
(plug is removed, bypass valve is now external, no separate external bypass valve is needed)

PUMP PERFORMANCE CURVES









Performance curves based on delivery rates of LP-gas at 75°F (24°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C).

Note: E and D series pumps will not develop more than 90psid due to the internal relief valve setting (110 psid setting also available). For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com

SMALL CAPACITY PUMPS

MC-1, GC-1 Series Pumps | Flow Rates of 10-13 GPM (38 – 49 LPM)

- Most diverse pump used for higher differential pressures (Autogas) or intermittent/continuous duty cylinder filling
- Cambered and hardened gear set stays in liquid phase when vapor conditions exist
- 1 phase, 1-1/2 HP motor allows for user to reduce electricity costs
- Identical mounting dimensions as the E & D series pump for ease of changeability
- Can be mounted upside down or vertical to accommodate piping
- No greasing or lubrication required
- Contains an internal, permanently set relief valve set to 150 psid.
- The mechanical seal is exposed to inlet pressure only, extending shaft seal life

GC-1LZ PUMP

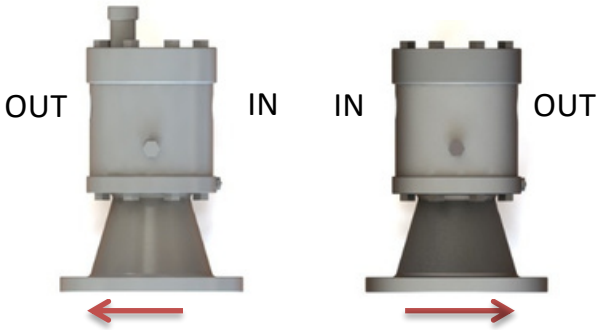
Pumps Only		Average Delivery Rate (See page 12 for pump performance curves)		Maximum Differential Pressure	Inlet/ Outlet Size	Motor*
Model	Motor Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	HP (kW)
GC-1LZ **MAX 3600 RPM**	3600 (60 Hz) 3000 (50 Hz)	11 GPM (33 LPM)	9 GPM (27 LPM)	150 PSI (10 BAR)	¾" (DN 20)	1-1/2 HP (0.75 Kw)
MC-1Z **MAX 3600 RPM**	3600 (60 Hz) 3000 (50 Hz)	8.5 GPM (25 LPM)	7 GPM (21 LPM)	125 PSI (8 BAR)	¾" (DN 20)	1-1/2 HP (0.75 kW)

**Explosion Proof motors are UL listed and available in 1 or 3 phase electricity for 60 Hz (3600 RPM) or 50 Hz (3000 RPM) locations, 1 phase: 115/230V (suitable for 208V), 3 phase: 208/230/460 V. Motors are 56C-frame with feet allowing the motor to be directly mounted to the pump with thermal overload protection. Foot-mount options are also available for motors with different frame sizes. ATEX/UKEX certified motors also available. See page 14 for more information. For external dimension drawings, please visit www.smithpumps.com.*

The MC-1Z contains an internal, *adjustable* internal relief valve set at 100 psid with maximum setting of 110 psid.

External bypass valves and Y-type strainers are recommended. See pages 28-31 for more information.

MC-1Z PUMP

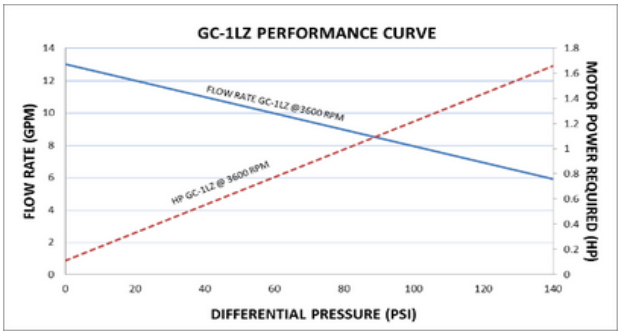


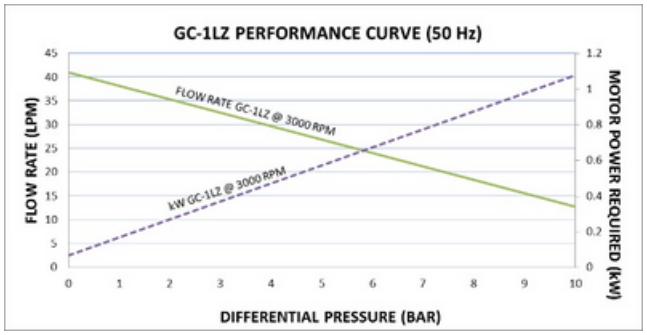
Counterclockwise
MC-1Z

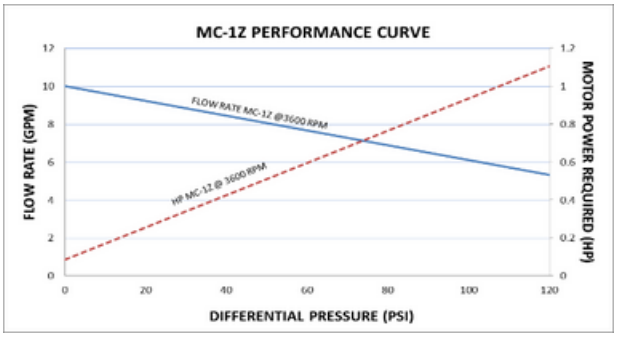
Clockwise
GC-1LZ

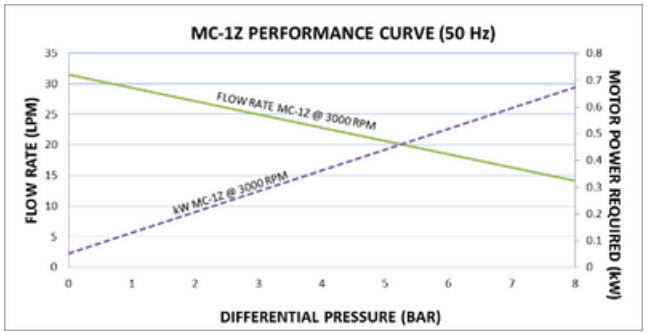
Model	Length of time to fill LP-gas cylinders		Weight (Pump only)	Weight (Pump, coupling, motor)
	20 lb. (9 kg.)	100 lb. (45 kg.)		
GC-1LZ, MC-1	Less than 1 minute	3-4 minutes	20 lbs (9 kg)	73 lbs (34 kg)

* Weight varies depending on pump model and motor, contact factory for specific weight









Performance curves based on delivery rates of Propane at 75°F (24°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C).

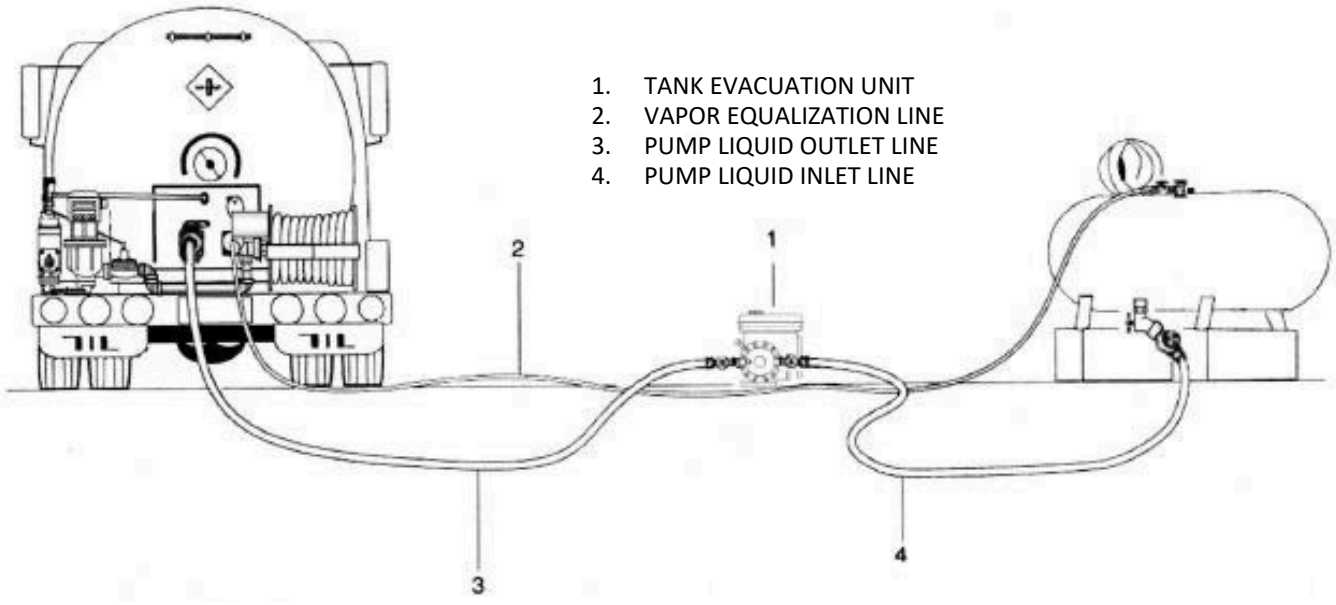
Note: MC-1 series pumps will not develop more than 110 psid due to the internal relief valve setting. For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com.

PORTABLE PUMPING UNITS

EG-1Z (10 GPM, ¾” inlet/outlet)
EC-HZ (15 GPM, 1” inlet/outlet)

GC-1LZ (13 GPM, ¾” inlet/outlet)

- Used to evacuate tanks or for applications where electricity is not available
- 3-1/2 HP gasoline powered engine (part # No.7H)
- Spark arrestor and shielded ignition comply with NFPA 58
- For evacuating tanks, specify our EG-1Z (10 GPM), EC-HZ (15 GPM), or GC-1LZ (13 GPM)
- For Autogas installations requiring higher differential pressures, specify our GC-1LZ (13 GPM)



1. TANK EVACUATION UNIT
2. VAPOR EQUALIZATION LINE
3. PUMP LIQUID OUTLET LINE
4. PUMP LIQUID INLET LINE

FRACTIONAL HP MOTORS AND ENGINES

Motor Model	HP (kW)	Hz	RPM	PHASE	VOLTAGE	PUMP MODEL
EM1-3ABB1	1 (.75 kW)	60	3600	1	115/230 (suitable for 208V)	EG-1Z, DW-1Z, MC-1Z
EM-5ABB158	1.5 (1.1 kW)	60	3600	1	115/208/230	EC-HZ, DW-HZ, GC-1LZ
EM-4ABB2	0.75 (.55 kW)	50	3000	1	110/220	EG-1Z, DW-1Z, MC-1Z
EM-9B	1.5 (1 .1 kW)	50	3000	1	220V	GC-1LZ, EC-HZ
EM-6ABB1	1/(.75k W) 1.5 /(1.1 kW)	50/ 60 Hz	3000/ 3600 RPM	3	190/380 230/460	All Small Capacity pump models for 60 Hz EG-1Z, DW-1Z, MC-1Z FOR 50 Hz ONLY
NO 7H* (Gasoline Powered)	3.5 (2.6 kW)	n/a	3600	n/a	n/a	EG-1Z, EC-HZ, GC-1LZ

Motors above are UL listed, class 1 group D, 56C frame or 143TCZ frame with feet. Allow ± 10% voltage allowance. For ATEX/UKEX motors, please contact our engineering department.

**Gasoline Engine is approved by NFPA 58, which comes with a spark arrestor and shielded ignition.*

For all other motor inquiries, please contact our engineering department.

MEDIUM CAPACITY PUMPS

MC-1044/H Series Pumps | Flow Rates of 17-35 GPM (65-133 LPM)

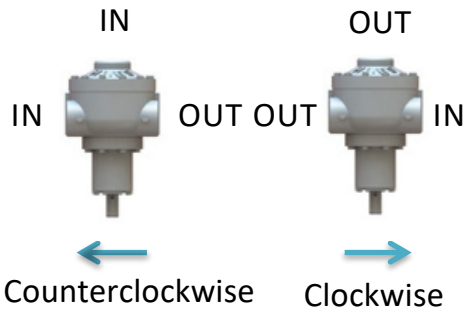
MC-1044HZ

- Ideal for small bulk transfer applications, truck loading/unloading, or filling multiple cylinders at one time
- Extra inlet in cover eliminates elbows. The unused inlet port is plugged. This supplied plug can be moved to meet the desired plumbing configuration.
- Reversible (can be used for loading and unloading)
- Two ¼" NPT ports in main housing for pressure gauge or hydrostatic relief valve
- No greasing or lubrication required
- Supplied as a complete unit (pump, base, motor, coupling, coupling guard protection) or pump only
- Direct drive reduces maintenance

Pumps Only		Average Delivery Rate (See page 16 for pump performance curves)		Maximum Differential Pressure	Inlet/ Outlet Size*	Motor**
Model	Motor Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	HP (kW)
MC-1044 **MAX 1800 RPM**	1800 (60 Hz) 1500 (50 Hz)	17 GPM (27 LPM)	14 GPM (21 LPM)	125 PSI (8 BAR)	1-1/2" (DN 40)	1-1/2 HP (0.75 kW) to 40 psid (3 bar) 2 HP (1.5 kW) over 75 psid (5 bar)
MC-1044H **MAX 1800 RPM**	1800 (60 Hz) 1500 (50 Hz)	30 GPM (87 LPM)	25 GPM (72 LPM)	125 PSI (8 BAR)	1-1/2" (DN 40)	2 HP (1.5 kW) to 75 psid (5 bar) 3 HP (2.25 kW) over 75 psid (5 bar)

**Recommended liquid outlet size on supply tanks/inlet line size: 1-1/2" – 2"*
***Explosion Proof motors are UL listed and available in 1 or 3 phase electricity for 60 Hz (1800 RPM) or 50 Hz (1500 RPM) locations, 1 phase: 115/230V (suitable for 208V), 3 phase: 208/230/460 V. Motors are base mounted, direct drive as standard option with coupling, coupling guard and thermal overload protection. ATEX/UKEX certified motors also available. For external dimension drawings, please visit www.smithpumps.com.*

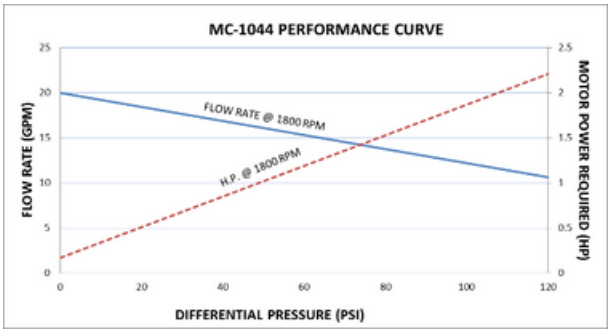
Both MC-1044 & MC-1044H pumps are reversible for loading/unloading applications

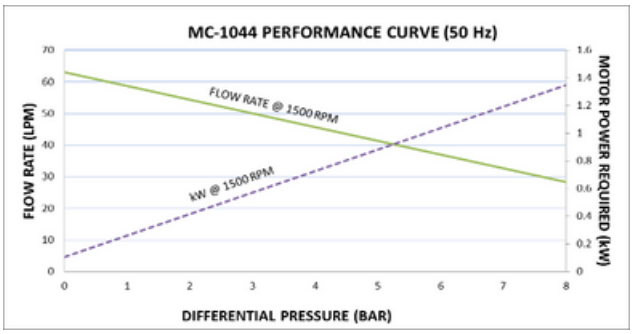


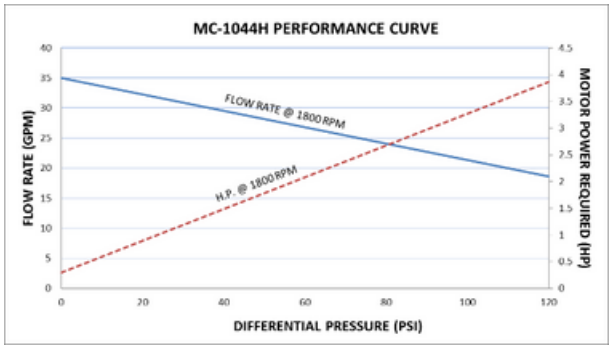
Model	Length of time to fill 4 100 lb (45 kg) LP-gas cylinders	Weight (Pump only)	Weight (Pump, coupling, motor)
MC-1044 @ 1800 RPM	4-5 minutes	45 lbs (21 kg)	190-230 lbs* (85-105 kg)
MC-1044H @ 1800 RPM	3-4 minutes	45 lbs (21 kg)	190-265 lbs* (85- 120 kg)

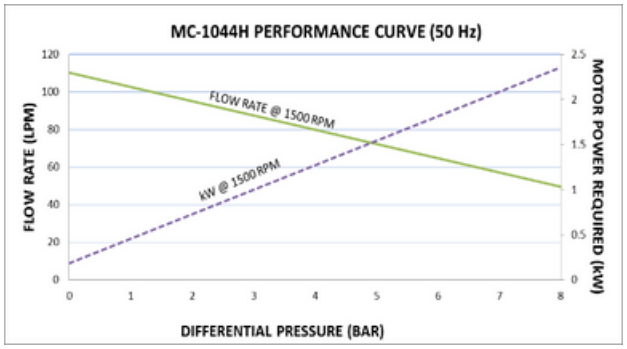
* Weight varies depending on motor, contact factory for specific weight

PUMP PERFORMANCE CURVES









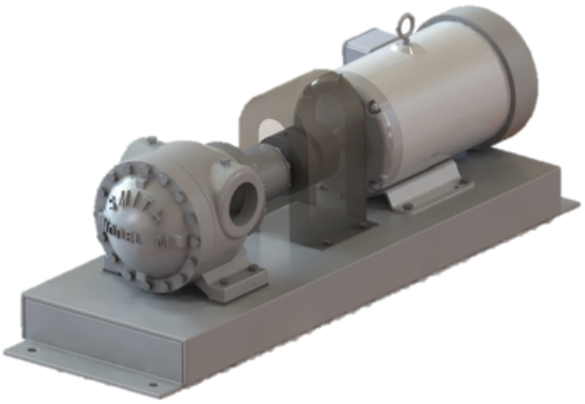
Performance curves based on delivery rates of LP-gas at 70°F (21°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C).

Note: For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com.

MEDIUM CAPACITY PUMPS

MC-2/H SERIES PUMPS | Flow Rates of 42-50 GPM (160-190 LPM)

- The “workhorse” of small bulk plant installations
- Developed for 50 Hz Countries, the MC-2H has identical flow rate as the MC-2 (1800 RPM) when operated at 1500 RPM
- For increased pump longevity, operate a “non-H” pump at 1500 RPM or lower
- Flanged option pumps (“F”) available in 2” threaded, butt-weld, or socket-weld versions
- No greasing or lubrication required
- Reversible for loading/unloading
- Ideal for installations where 3 phase electricity is not available



Note: Pump/motor assembly above comes with coupling guard protection

Pumps Only		**Average Delivery Rate** (See page 18 for pump performance curves)		**Max Differential Pressure**	**Inlet/ Outlet Size***	**Motor****	**NPSHr**
Model	Motor Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	HP (kW)	Feet (meters)
MC-2, MC-2F **MAX 1800 RPM**	1800 (60 Hz) 1500 (50 Hz)	42 GPM (125 LPM)	35 GPM (102 LPM)	125 PSI (8 BAR)	2-1/2” , 2” flanged (DN 65) (DN 50, flanged)	3 HP (2.25 kW) to 40 psid (3 bar) 5 HP (3.7 kW) over 75 psid (5 bar)	1 (0.3 m)
MC-2H, MC-2HF **MAX 1500 RPM**	1200 (60 Hz) 1500 (50 Hz)	32 GPM (157 LPM)	25 GPM (134 LPM)	125 PSI (8 BAR)	2-1/2” 2” (flanged) (DN 65) (DN 50, flanged)	3 HP (2.25 kW) to 40 psid (3 bar) 5 HP (3.7 kW) over 75 psid (5 bar)	1 (0.3 m)

**Recommended liquid outlet size on supply tanks/inlet line size: 2-3” (DN 50 – DN 80) **Explosion Proof motors are UL listed and available in 1 or 3 phase electricity for 60 Hz (1800 RPM) or 50 Hz (1500 RPM) locations, 1 phase: 230V (suitable for 208V), 3 phase: 208/230/460 V. Motors are base mounted, direct drive as standard option with coupling, coupling guard and thermal overload protection. ATEX/UKEX certified motors also available. For external dimension drawings, please visit www.smithpumps.com.*

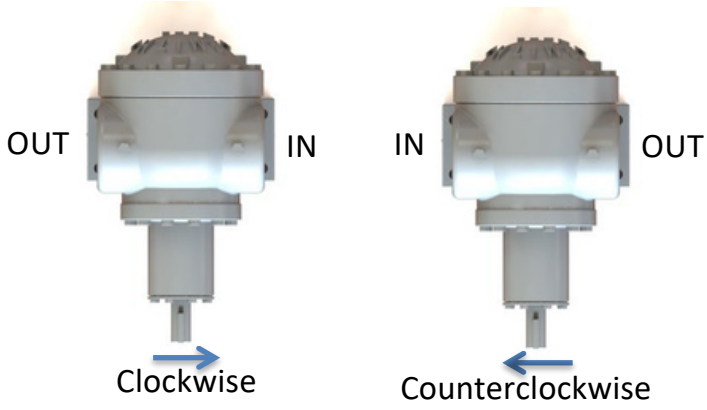
Threaded Flange

Butt-Weld Flange

Socket Weld Flange

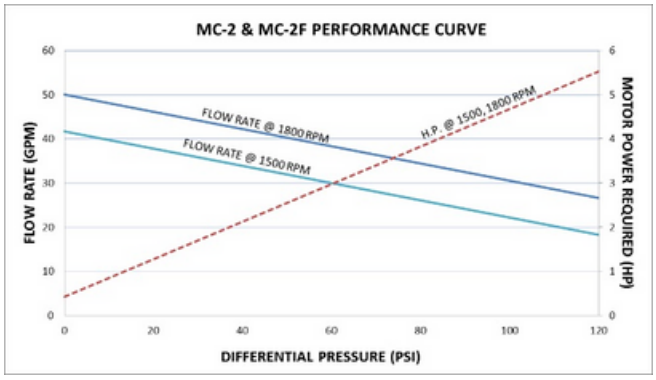
Flanges are constructed of carbon steel. Other flange materials available upon request.

Model	Length of time to fill 5 100 lb (45 kg) LP-gas cylinders	Weight (Pump only)	Weight (Pump, base, coupling, coupling guard, motor)
MC-2, MC-2F @ 1800 RPM	4 minutes	75 lbs (34 kg)	285-350 lbs* (129-159 kg)
MC-2H, MC-2HF @ 1500 RPM	4 minutes	75 lbs (34 kg)	285-350 lbs* (129-159 kg)

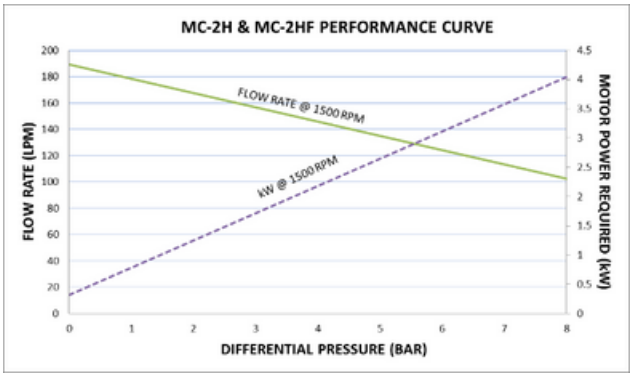


* Weight varies depending on motor, contact factory for specific weight

MC-2/MC-2H pumps are reversible for loading/unloading applications



Performance curves based on delivery rates of LP-gas at 70°F (21°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C).



Note: For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com.

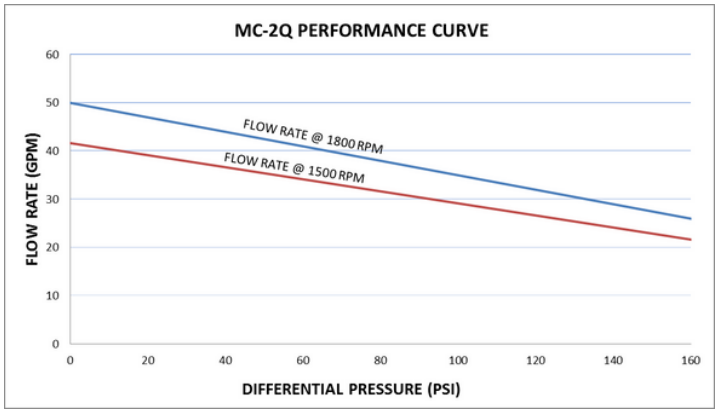
MEDIUM CAPACITY PUMPS

High Differential Pressure | MC-2Q Pump

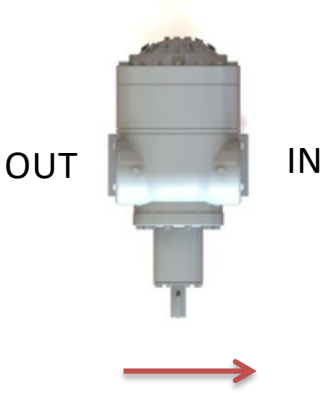
- Capable of differential pressures of up to 150 psi (over 10 bar)
- Unique helical gear design provides higher differential pressures and quieter operation

MC-2QZ

Pumps Only		Average Delivery Rate		Max Differential Pressure	Inlet/ Outlet Size*	Motor**	NPSHr
Model	Motor Speed (RPM)	40 PSID (3 bar)	150 PSID (15 bar)	PSI (BAR)	FNPT (DN)	HP (kW)	Feet (meters)
MC-2Q, **MAX 1800 RPM**	1800 (60 Hz)	45 GPM	28 GPM	150 PSI	2-1/2"	5 HP (3.7 kW) to 100 psid (6.5 bar)	1
	1500 (50 Hz)	136 LPM	87 LPM	(15 BAR)	(DN 40)	7-1/2 HP (5.6 kW) over 150psid 151(15 bar)	(0.3 m)



Performance curves based on delivery rates of LP-gas at 70°F (21°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C). Note: For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com.



Clockwise, not reversible

MC-2Q pump external dimensions and weight same as MC-3 pump on page 21. Flanged options available.

LARGE CAPACITY PUMPS

MC-3/H SERIES PUMPS | Flow Rates of 83 – 100 GPM (315 – 380 LPM)

MC-3Z

- Most popular pump for heavy duty bulk transfer
- Developed for 50 Hz Countries, the MC-3H has identical flow rate as the MC-3 (1800 RPM) when operated at 1500 RPM
- For increased pump longevity, operate a “non-H” pump at 1500 RPM or lower
- Flanged option pumps (“F”) available in 2” threaded, butt-weld, or socket-weld versions
- Reversible for loading/unloading.
- No greasing or lubrication required
- Supplied as a complete unit (pump, base, motor, coupling, coupling guard protection) or pump only
- Direct drive reduces maintenance

Pumps Only		Average Delivery Rate (See page 21 for pump performance curves)		Max Differential Pressure	Inlet/ Outlet Size*	Motor**	NPSHr
Model	Motor Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	HP (kW)	Feet (meters)
MC-3, MC-3F **MAX 1800 RPM**	1800 (60 Hz) 1500 (50 Hz)	84 GPM (255 LPM)	70 GPM (202 LPM)	125 PSI (8 BAR)	2-1/2” 2“ (flanged) (DN 65) (DN 50) flanged	5 HP (3.7 kW) to 40 psid (3 bar) 7-1/2 HP (5.6 kW) over 75 psid (5 bar)	1 (0.3 m)
MC-3H, MC-3HF **MAX 1500 RPM**	1200 (60 Hz) 1500 (50 Hz)	64 GPM (318 LPM)	50 GPM (265 LPM)	125 PSI (8 BAR)	2-1/2” 2“ (flanged) (DN 65) (DN 50) flanged	5 HP (3.7 kW) to 40 psid (3 bar) 7-1/2 HP (5.6 kW) over 75 psid (5 bar)	1 (0.3 m)

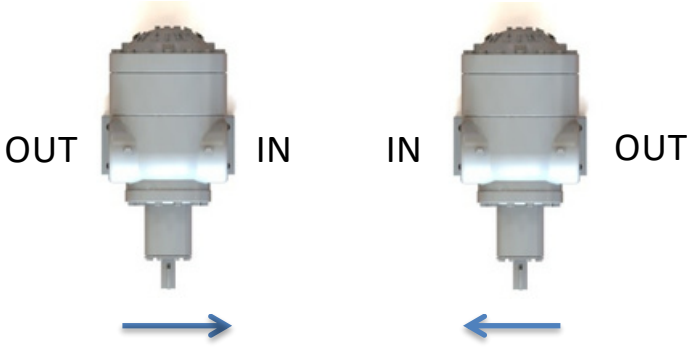
**Recommended liquid outlet size on supply tanks/inlet line size: 2-3” (DN 50 – DN 80) **Explosion Proof motors are UL listed and available in 1 or 3 phase electricity for 60 Hz (1800 RPM) or 50 Hz (1500 RPM) locations, 1 phase: 230V (suitable for 208V), 3 phase: 208/230/460 V. Motors are base mounted, direct drive as standard option with coupling, coupling guard and thermal overload protection. ATEX/UKEX certified motors also available. For external dimension drawings, please visit www.smithpumps.com.*

Threaded Flange

Butt-Weld Flange

Socket Weld Flange

Flanges are constructed of carbon steel. Other flange materials available upon request.

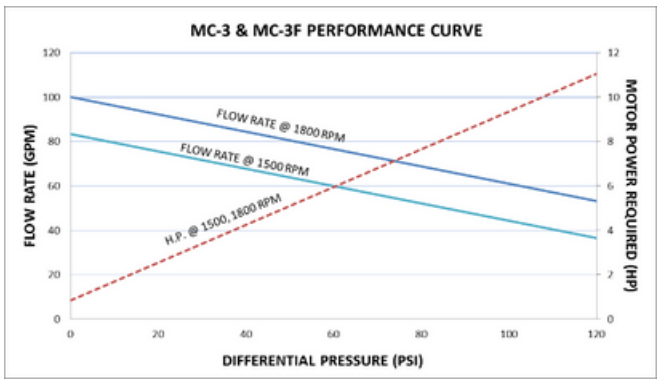


For models MC-3, MC-3F, MC-3H, MC-3HF

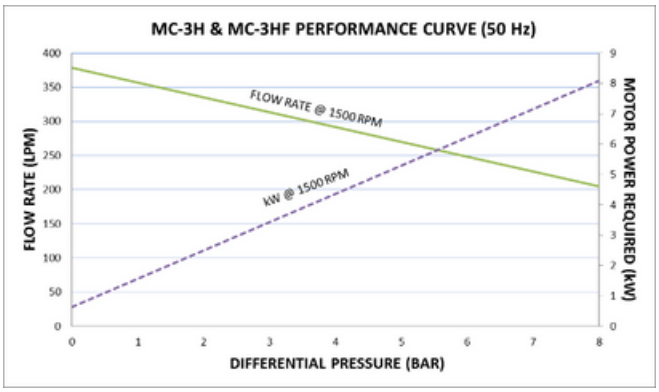
Model	Weight (Pump only)	Weight (Pump, base, coupling, coupling guard, motor)
MC-3, MC-3F, MC-3H, MC-3HF, MC-2Q	100 lbs (45 kg)	350-400 lbs* (159-182 kg)

* Weight varies depending on motor, contact factory for specific weight

PUMP PERFORMANCE CURVES



Performance curves based on delivery rates of LP-gas at 70°F (21°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C).

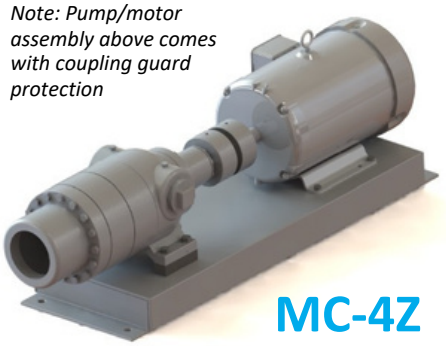


Note: For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com.

LARGE CAPACITY PUMPS

MC-4/H Pumps | Flow Rates of 125 – 150 GPM (474 – 568 LPM)

Note: Pump/motor assembly above comes with coupling guard protection

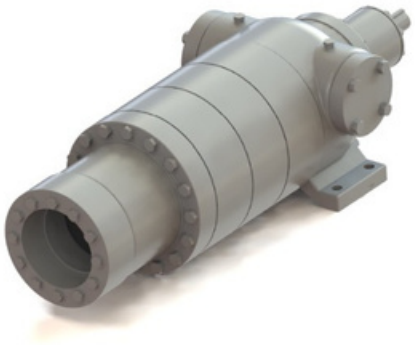


MC-4Z

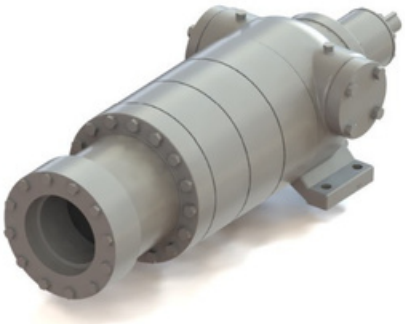
- Developed for 50 Hz Countries, the MC-4H has identical flow rate as the MC-4 (1800 RPM) when operated at 1500 RPM
- For increased pump longevity, operate a “non-H” pump at 1500 RPM or lower
- Inlet through the cover to eliminate elbows
- Flanged option pumps (“F”) available in 4” threaded or socket-weld inlet/ 2" threaded, socket-weld, or butt-weld outlet
- No greasing or lubrication required
- Supplied as a complete unit (pump, base, motor, coupling, coupling guard protection) or pump only
- Direct drive reduces maintenance

Pumps Only		**Average Delivery Rate (See page 23 for pump performance curves)**		**Max Differential Pressure**	**Inlet/ Outlet Size***	**Motor****	**NPSHr**
Model	Motor Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	HP (kW)	Feet (meters)
MC-4, MC-4F **MAX 1800 RPM**	1800 (60 Hz)	125 GPM	105 GPM	125 PSI	4” inlet 2-1/2” outlet [2” outlet for flanged version]	7-1/2 HP (5.6 kW) to 40 psid (3 bar)	1.5 ft
	1500 (50 Hz)	(363 LPM)	(306 LPM)	(8 BAR)	(DN 100) inlet (DN 65) (DN 50) flanged	10 HP (7.5 kW) over 75 psid (5 bar)	(0.5 m)
MC-4H, MC-4HF **MAX 1500 RPM**	1200 (60 Hz)	96 GPM	75 GPM	125 PSI	4” inlet 2-1/2” outlet [2” outlet for flanged version]	7-1/2 HP (5.6 kW) over 75 psid (5 bar)	1.5 ft
	1500 (50 Hz)	(475 LPM)	(398 LPM)	(8 BAR)	(DN 100) inlet (DN 65) (DN 50) flanged	10 HP (7.5 kW) over 75 psid (5 bar)	(0.5 m)

**Recommended liquid outlet size on supply tanks/inlet line size: 3” (DN 80) **Explosion Proof motors are UL listed and available for 3 phase electricity for 60 Hz (1800 RPM) or 50 Hz (1500 RPM) locations, 3 phase: 208/230/460 V. Motors are base mounted, direct drive as standard option with coupling, coupling guard and thermal overload protection. ATEX/UKEX certified motors also available. For external dimension drawings, please visit www.smithpumps.com.*

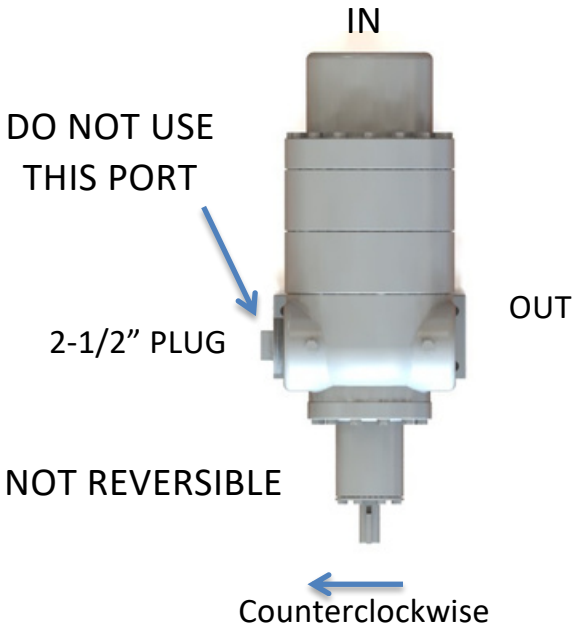


Threaded Flange



Welded Flange

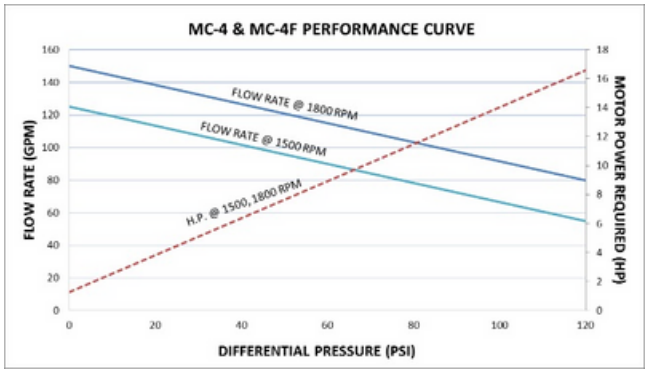
Flanges are constructed of carbon steel. Other flange materials available upon request.



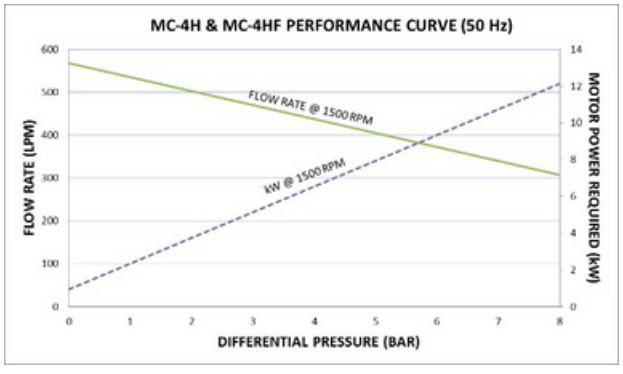
Model	Weight (Pump only)	Weight (Pump, base, coupling, coupling guard, motor)
MC-4, MC-4F, MC-4H, MC-4HF	135 lbs (62 kg)	450-500 lbs* (204-227 kg)

* Weight varies depending on motor, contact factory for specific weight

PUMP PERFORMANCE CURVES



Performance curves based on delivery rates of LP-gas at 70°F (21°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C).

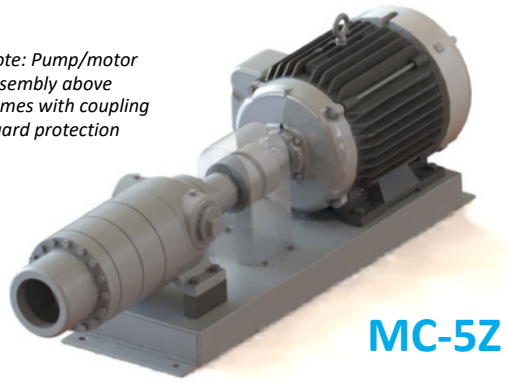


Note: For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com.

LARGE CAPACITY PUMPS

MC-5/H Pumps | Flow Rates of 167– 250 GPM (630 – 946 LPM)

Note: Pump/motor assembly above comes with coupling guard protection



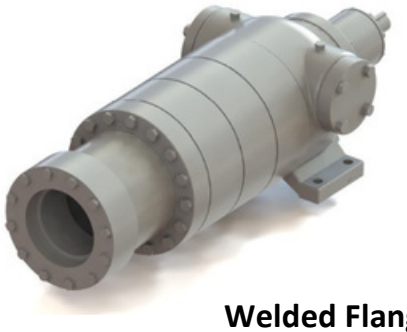
MC-5Z

- Ideal for high capacity bulk transfer
- For higher flow rates, specify our “Large” gear option for 250 GPM
- For increased pump longevity, operate a “non-H” pump at 1500 RPM or lower
- Inlet through the cover to eliminate elbows
- Flanged option pumps (“F”) available in 4” threaded or socket-weld inlet/ 2" threaded, socket-weld, or butt-weld outlet
- Supplied as a complete unit (pump, base, motor, coupling, coupling guard protection) or pump only
- No greasing or lubrication required
- Direct drive reduces maintenance

Pumps Only		Average Delivery Rate (See page 25 for pump performance curves)		Max Differential Pressure	Inlet/ Outlet Size*	Motor**	NPSHr
Model	Motor Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	HP (kW)	Feet (meters)
MC-5, MC-5F **MAX 1800 RPM**	1800 (60 Hz) 1500 (50 Hz)	167 GPM (511 LPM)	142 GPM (409 LPM)	125 PSI (8 BAR)	4” inlet 2-1/2” outlet [2” outlet for flanged version] (DN 100) inlet (DN 65) (DN 50) flanged	10 HP (7.5 kW) over 40 psid (5 bar) 15 HP (11.2 kW) over 75 psid (5 bar)	2 ft (0.61 m)
MC-5H, MC-5HF **MAX 1500 RPM**	1200 (60 Hz) 1500 (50 Hz)	128 GPM (640 LPM)	100 GPM (538 LPM)	125 PSI (8 BAR)	4” inlet 2-1/2” outlet [2” outlet for flanged version] (DN 100) inlet (DN 65) (DN 50) flanged	10 HP (7.5 kW) over 40 psid (5 bar) 15 HP (11.2 kW) over 75 psid (5 bar)	2 ft (0.61 m)

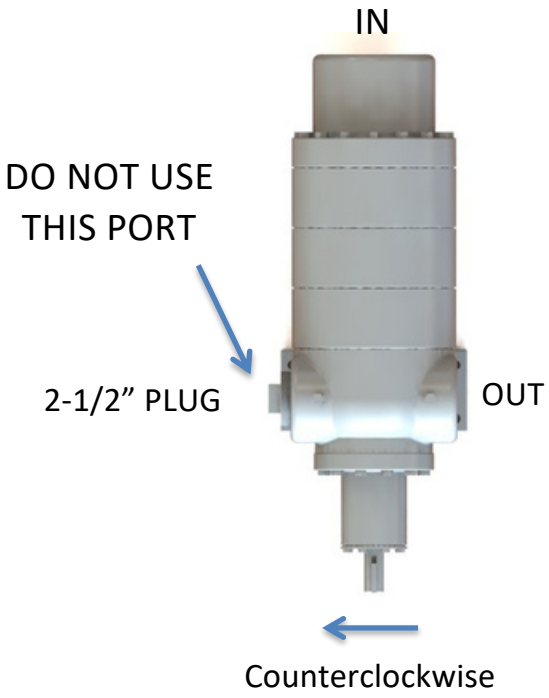
**Recommended liquid outlet size on supply tanks/inlet line size: 4-6” (DN 100 – DN 150) **Explosion Proof motors are UL listed and available in 3 phase electricity for 60 Hz (1800 RPM) or 50 Hz (1500 RPM) locations. 3 phase: 208/230/460 V. Motors are base mounted, direct drive as standard option with coupling, coupling guard and thermal overload protection. ATEX/UKEX certified motors also available. For external dimension drawings, please visit www.smithpumps.com.*

Threaded Flange



Welded Flange

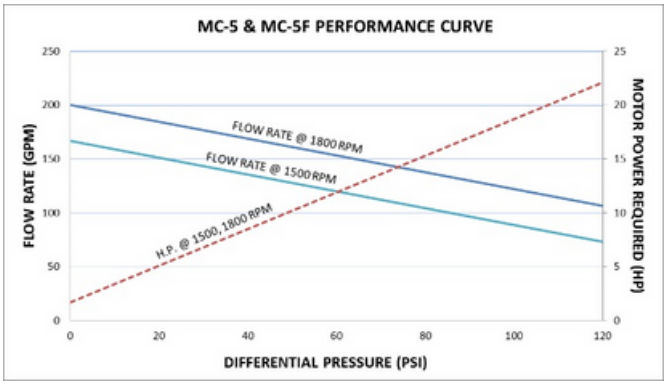
Flanges are constructed of carbon steel. Other flange materials available upon request.

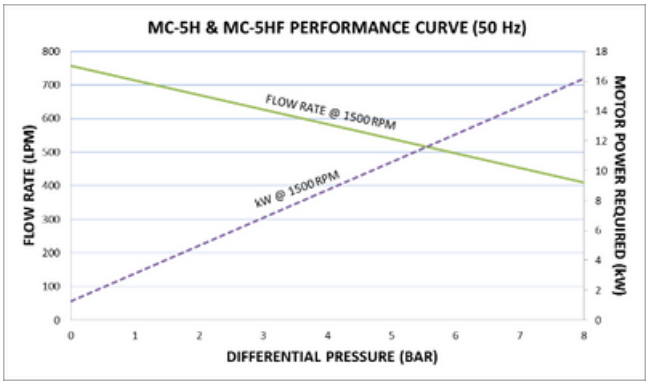


Model	Weight (Pump only)	Weight (Pump, base, coupling, coupling guard, motor)
MC-5, MC-5F, MC-5H, MC-5HF	170lbs (77 kg)	465-530 lbs* (211-240 kg)

* Weight varies depending on motor, contact factory for specific weight

PUMP PERFORMANCE CURVES





Performance curves based on delivery rates of LP-gas at 70°F (21°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C).

Note: For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com.

LOW RPM TRUCK PUMPS

TC-Series (Foot Mount) | Flow Rates of 35– 100 GPM (379 – 946 LPM)

TC-2Z

- Our low RPM truck pumps are designed for operation by power take off or by engine
- 4 Ports available for ease of pipework installation (3 ports for TC-1044H)
- Can be mounted sideways or upside down
- Available in flanged version
- Reversible
- No greasing or lubrication required

Pumps Only		Average Delivery Rate (See page 27 for pump performance curves)		Maximum Differential Pressure	Inlet/ Outlet Size*	NPSHr
Model	Motor/PTO Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	FNPT (DN)	Feet (meters)
TC-1044H **MAX 900 RPM**	900 RPM	30 GPM (114 LPM)	25 GPM (432 LPM)	125 PSI (8 BAR)	1-1/2" (DN 40)	1 ft (0.3 m).
TC-2, TC-2F **MAX 500 RPM**	500 RPM	42 GPM (159 LPM)	35 GPM (132 LPM)	125 PSI (8 BAR)	2-1/2" (DN 65) 2" flanged (DN 50)	1 ft. (0.3 m)
TC-3, TC-3F **MAX 500 RPM**	500 RPM	86 GPM (326 LPM)	70 GPM (265 LPM)	125 PSI (8 BAR)	2-1/2" (DN 65) 2" flanged (DN 50)	1 ft. (0.3 m)

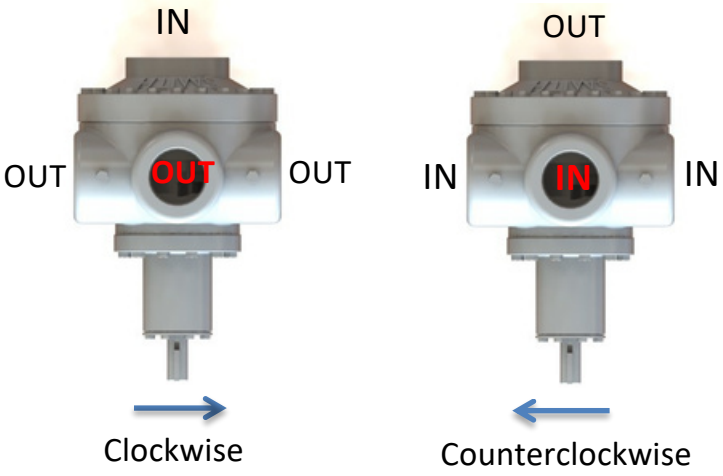
**Recommended liquid outlet size on supply tanks/inlet line size: 1-1/2" -2" for TC-1044H; 2-3" for TC-2, TC-2F; 3" for TC-3, TC-3F*

For external dimension drawings, please visit www.smithpumps.com.

TC-3 Threaded Housing

TC-3F Threaded Flange

TC-3F Butt-Weld Flange

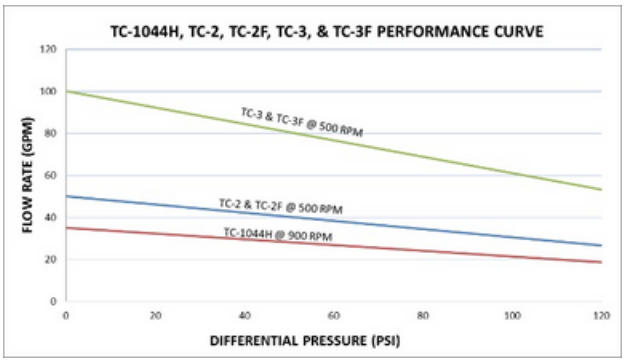


NOTE: ONE OUTLET MAY BE USED WITH 2 BLIND FLANGES INSTALLED ON UNUSED OUTLET PORTS. THE TC-1044H DOES NOT CONTAIN A TOP PORT.

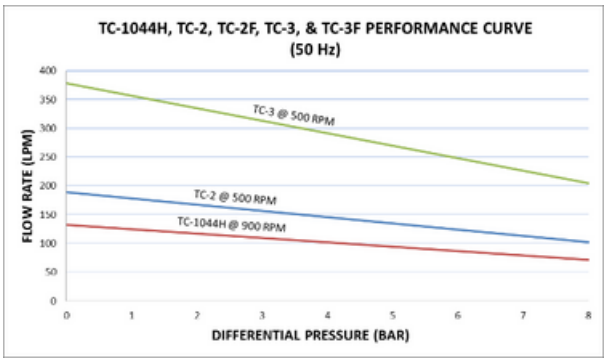
Model	Weight (Pump only)
TC-1044H	50 lbs (23 kg)
TC-2, TC-2F	100 lbs (45 kg)
TC-3, TC-3F	135 lbs (62 kg)

* Weight varies depending on motor, contact factory for specific weight

PUMP PERFORMANCE CURVES



Performance curves based on delivery rates of LP-gas at 70°F (21°C). Actual flow may be 10-15% greater than predicted. Delivery rates will be reduced by approximately 15% at temperatures approaching 32°F (0°C).



Note: For other liquid services or for more information on predicted pump output, please visit our pump performance calculator at smithpumps.com.

LOW RPM TRUCK PUMPS

MCAT-Series (Flange Mount) | Flow Rates of 42– 120 GPM (159 – 455 LPM)

MCAT-3R

- 3” flange design, for 1200 RPM maximum shaft speed that delivers comparably to other makes at 650 RPM shaft speed
- Utilizes a single mechanical seal
- Incorporates heavy duty, aircraft quality steel gears and tungsten carbide idler gear shafts
- Internal bypass valve set to 150 psid
- Includes auxiliary inlet for self loading with 30 mesh strainer screen
- All MCAT pumps are provided with two 90° threaded elbows for the inlet/outlet ports
- Optional 2” threaded, butt-weld, or socket weld for discharge and auxiliary inlet
- No greasing or lubrication required

Pumps Only		Average Delivery Rate @ 700RPM*		Maximum Differential Pressure	Inlet/ Outlet Size*
Model	Motor/PTO Speed (RPM)	40 PSID (3 bar)	75 PSID (5 bar)	PSI (BAR)	(DN)
MCAT-2R, 2L **MAX 1200 RPM**	700 RPM	39 GPM (148 LPM)	35 GPM (132 LPM)	125 PSI (8 BAR)	2” (DN 50) 2” flange options available
MCAT-3R, 3L **MAX 1200 RPM**	700 RPM	78 GPM 295 LPM	70 GPM (265 LPM)	125 PSI (8 BAR)	2” (DN 50) 2” flange options available

**Rated capacity for MCAT-3L, 3R is 85 GPM @700 RPM*
**Rated capacity for MCAT-2L, 2R is 42 GPM @ 700 RPM*

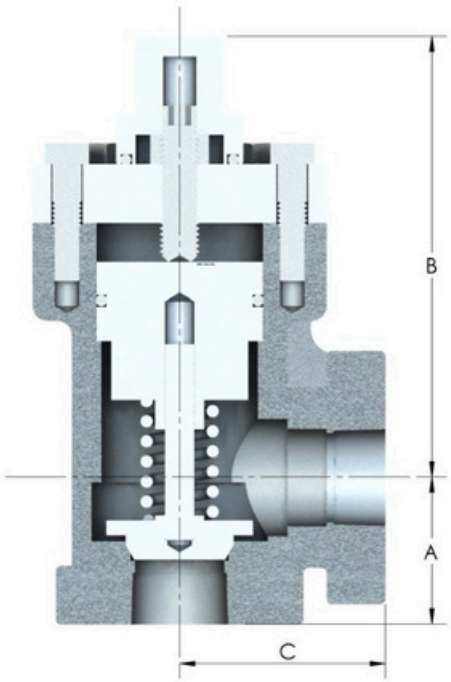
SMITH BYPASS VALVES

- Smith bypass valves are chatter free due to the unique guide-piston design
- Adjustable settings from 30-125 psid (2 – 9 bar) over tank pressure
- Superior materials for longest life
- Stainless steel guide piston and spring for infinite cycles
- Incorporates unique flow plate to evenly dissipate flow when valve opens
- Factory set to 75 psid for LPG use
- Designed for continuous flow

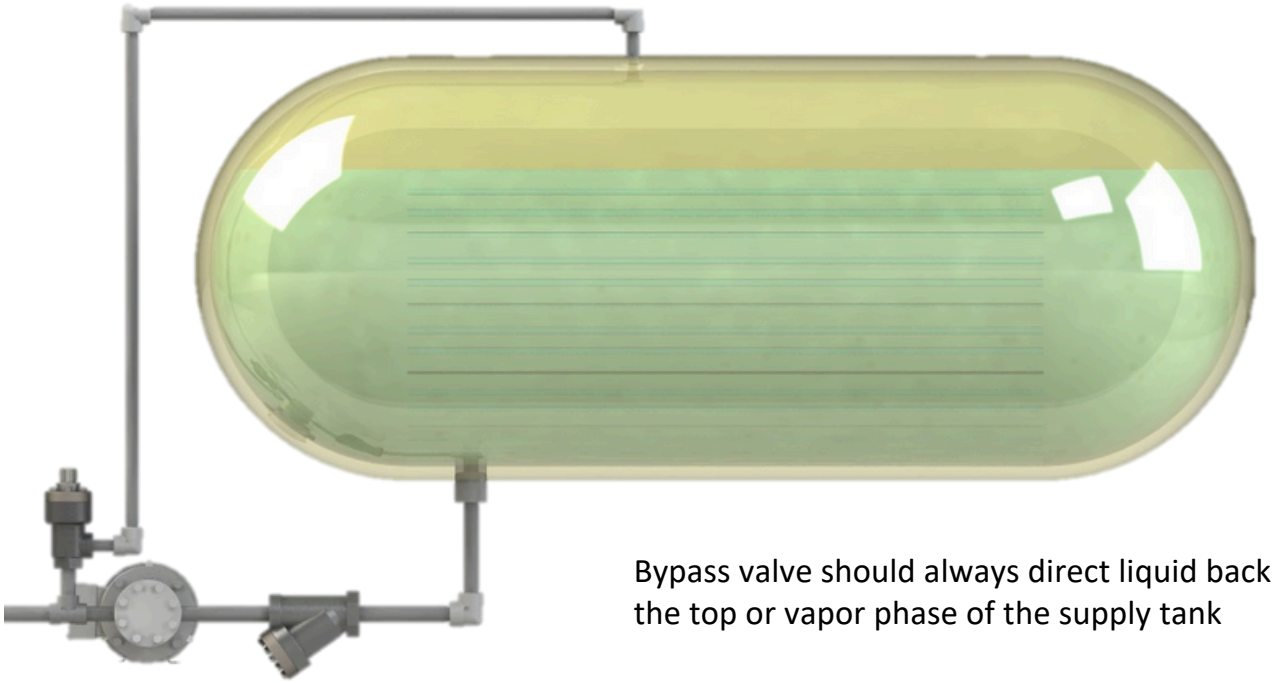
Model	Size (fnpt)	Pump recommended	Flow
WW-120	½ X ½	DW-1Z, EG-1Z, MC-1	5-10 GPM (19-38 LPM)
WW-340	¾ X ¾	DW-HZ, EC-HZ, GC-1LZ	10-15 GPM (38-57 LPM)
WW-100	1 X 1	MC-1044, MC-1044H, TC-1044H	15-35 GPM (57-132 LPM)
WW-114	1- ¼ X 1- ¼	MC-2, MC-2H, MC-2Q, MCAT-2, TC-2	35-50 GPM (132 – 189 LPM)
WW-112	1- ½ X 1- ½	MC-3, MC-3H, MCAT-3, TC-3	50-100 GPM (189-379 LPM)
WW-200	2 X 2	MC-4, MC-4H	100-150 GPM (379- 568 LPM)
WW-212	2- ½ X 2- ½	MC-5, MC-5H	150-250 GPM (568 – 946 LPM)

SMITH BYPASS VALVE DIMENSIONS

Model	Size (FNPT inches)	A	B	C
WW-120 WW-340	½ X ½ ¾ X ¾	1 -5/8” [42 mm]	5- 7/16” [138 mm]	1- ¾” [44 mm]
WW-100 WW-114 WW-112	1 X 1 1- ¼ X 1- ¼ 1- ½ X 1- ½	1 – 7/8” [48mm]	5- 5/8” [143 mm]	2- 5/8” [67 mm]
WW-200 WW-212	2 X 2 2- ½ X 2- ½	3” [76 mm]	6-1/8 [156 mm]	3- ¼ [83 mm]

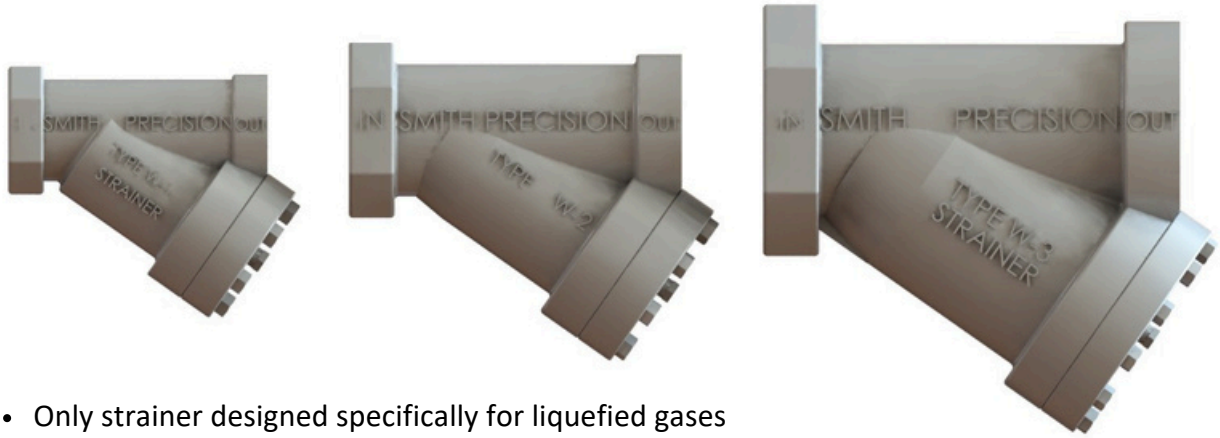


TYPICAL BYPASS VALVE INSTALLATION

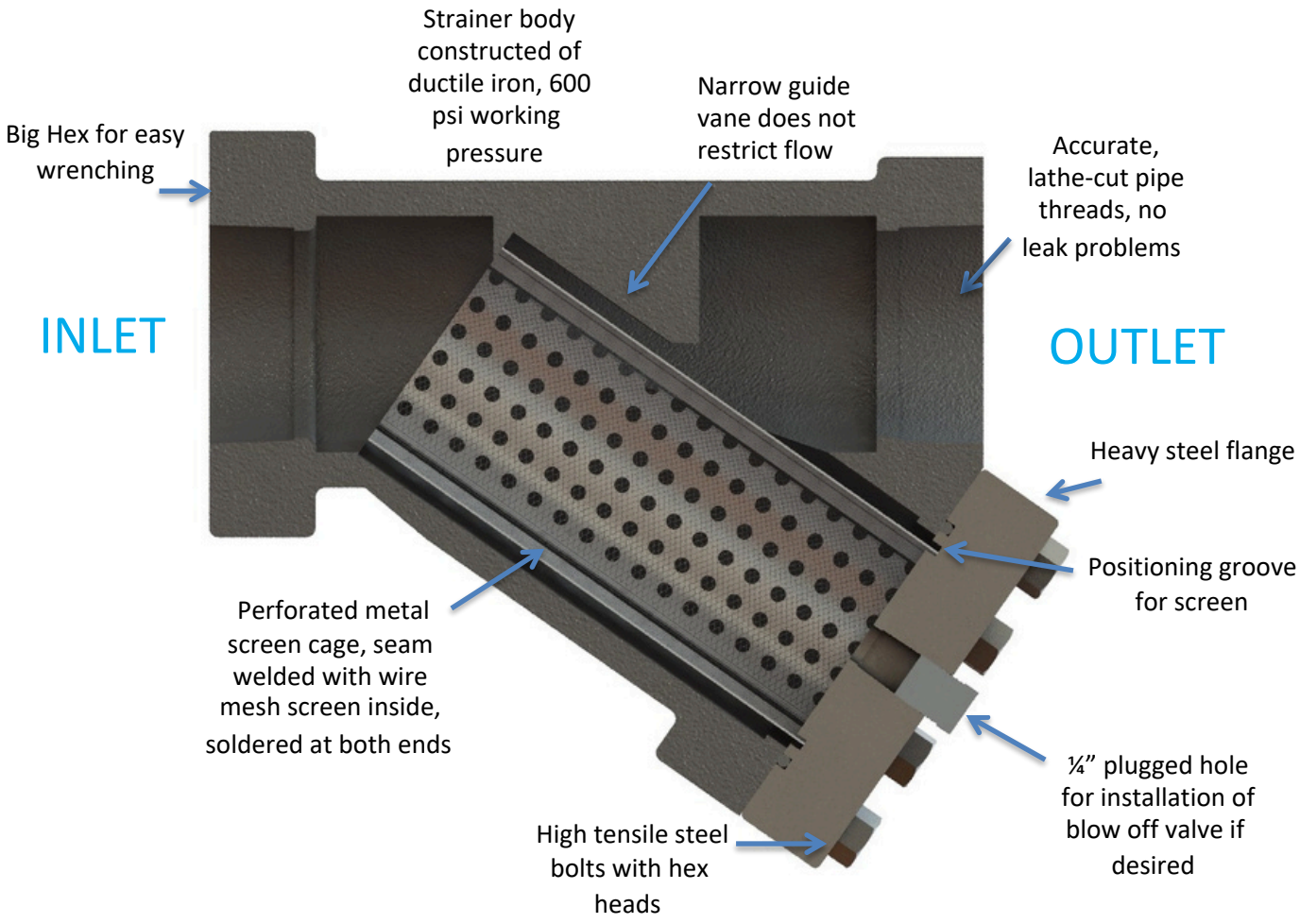


Bypass valve should always direct liquid back to the top or vapor phase of the supply tank

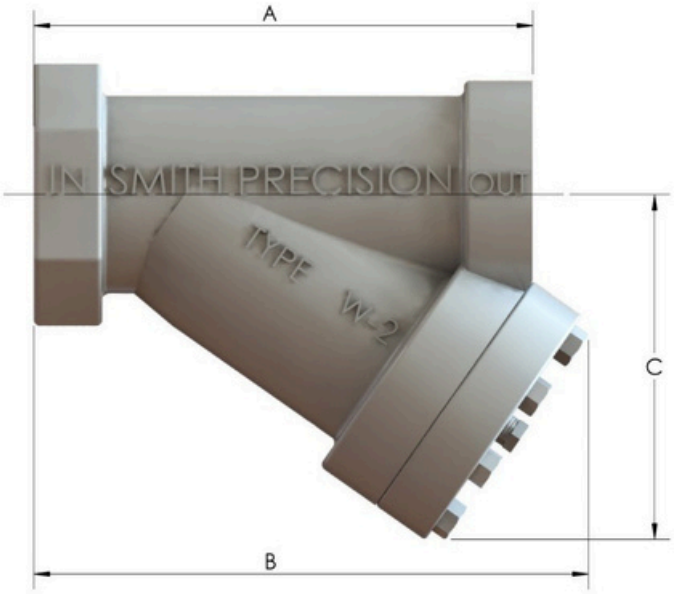
SMITH Y-TYPE STRAINERS



- Only strainer designed specifically for liquefied gases
- Oversized design allows for minimal pressure drop
- Removable screen provides ease of maintenance
- Ductile iron construction
- 600 psi (40 bar) working pressure
- ¾" to 3" and combination sizes available
- Screens available in brass 40 mesh or 300- series stainless steel 80 mesh



SMITH Y-TYPE STRAINER DIMENSIONS



Strainers above come with 40 mesh brass strainer screens for LPG use
80 mesh stainless steel also available

Model	Inlet	Outlet	A	B	C
W-1-034-034	¾”	¾”	6- 3/8” [162mm]	7” [178 mm]	4- ½“ [114 mm]
W-1-100-034	1”	¾”	6- 3/8” [162mm]	7” [178 mm]	4- ½“ [114 mm]
W-1-100-100	1”	1”	6- 3/8” [162mm]	7” [178 mm]	4- ½“ [114 mm]
W-1-114-034	1- ¼”	¾”	6- 3/8” [162mm]	7” [178 mm]	4- ½“ [114 mm]
W-1-114-100	1- ¼”	1”	6- 3/8” [162mm]	7” [178 mm]	4- ½“ [114 mm]
W-1-114-114	1- ¼”	1- ¼”	6- 3/8” [162mm]	7” [178 mm]	4- ½“ [114 mm]
W-2-112-112	1- ½”	1- ½”	8- 3/16” [208 mm]	9” [229 mm]	6-5/8” [169 mm]
W-2-200-112	2”	1- ½”	8- 3/16” [208 mm]	9” [229 mm]	6-5/8” [169 mm]
W-2-200-200	2”	2”	10- ¼” [260 mm]	11- ¼” [286 mm]	7- ½” [191 mm]
W-3-212-212	2- ½”	2- ½”	10- ¼” [260 mm]	11- ¼” [286 mm]	7- ½” [191 mm]
W-3-300-212	3”	2- ½”	10- ¼” [260 mm]	11- ¼” [286 mm]	7- ½” [191 mm]
W-3-300-300	3”	3”	10- ¼” [260 mm]	11- ¼” [286 mm]	7- ½” [191 mm]

SMITH FLEXIBLE DRIVE COUPLINGS

- Machined in house to our own quality specifications
- High strength continuous-cast ferrous alloy
- Hardened steel set screw and drive pins
- High quality machining provides concentric bore diameters
- Balanced
- Flexible nitrile coupling insert (Teflon available for heavy duty applications)

Hp of motor	Rpm	Recommended coupling model
3/4 to 1 [0.56-0.75 kW]	3600	VC-20 for EG-1Z, DW-1Z, DW-HZ
1- ½ [1.1 kW]	3600	VC-20 for GC-1, GC-1LZ, MC-1 VC-30 for EC-HZ
2 [1.9 kW]	1800 1200 900	VC-35 VC-35 VC-40
3 [2.2 kW]	1800 1200 900	VC-35 VC-40 VC-50
3-1/2 [2.6 kW] (No. 7H Engine)	3600	VC-20 (5/8" X ¾") FOR GC-1LZ VC-30 (5/8" X ¾") FOR EG-1Z, EC-HZ

Hp of motor	Rpm	Recommended coupling model
5 [3.7 kW]	1800 1200 900	VC-40 VC-40 VC-50
7- ½ [5.6 kW]	1800 1200 900	VC-40 VC-50 VC-50
10 [7.5 kW]	1800 1200 900	VC-50 VC-50 VC-50
15 [11.2 kW]	1800 1200 900	VC-50 VC-50 VC-50
20 [14.9 kW]	1800	VC-50

When ordering a coupling, specify pump model, diameter of motor shaft, and HP & RPM of motor. For a Teflon insert, add the letter "T" to the end of the model number.

SMITH PUMP PERFORMANCE FORMULA

The Smith pump performance formula is the same formula used when deriving pump performance curves. The performance formula, however, gives a very accurate representation of pump characteristics, such as taking temperature into account. Since proper installation has a very important bearing on performance of a positive displacement pump, our engineering department will gladly review a proposed piping layout. Supply us with a complete drawing or detailed sketch showing size/length of inlet and outlet lines, including any elbows, valves, tees, etc. The more information provided, the better we are able to recommend the best piping installation possible.

Formula 1: $$Q_d = Q_r \left[\frac{N_d}{N_r} - F_s P_d \right]$$

Formula 2: $$HP = \left[\frac{8.5(N_d)(Q_r)}{N_r} \times 10^{-4} \right] \times [10 + P_d]$$

Q_d = *Actual Pump Flow Rate GPM*
Q_r = *Rated Flow Rate (GPM)*
P_d = *Differential Pressure being pumped against (psi)*
HP = *Horsepower Required*
N_d = *Actual Drive Speed of Pump Shaft RPM*
N_r = *Rated Speed of Pump found in Table A*
F_s = *Slippage Factor, a temperature dependent viscosity variable found in Table B*

- Note actual pump output may be 5-10% greater than predicted value, Q_d
- For pumps operating over 2 hours continuously,the motor shaft speed must be reduced to speeds between 750-1200 RPM and our NSSA option must be specified
- Pumps using our medium sized gear option will increase the flow rate by 10%, large gears by 20%

TABLE A: Rated Transfer Capacities

Model	Rated Flow Rate (Q_r, GPM)	Rated Shaft Speed (N_r, RPM)
EG-1Z, DW-1Z	10	3600
MC-1, GC-1	10	3600
GC-1LZ	13	3600
DW-HZ, EC-HZ	15	3600
MC-1044	20	1800
MC-1044H	35	1800
TC-1044H	35	900
MC-2, MC-2F,	50	1800
MC-2H, MC-2HF,	50	1500
TC-2, TC-2F	50	500
MC-3, MC-3F,	100	1800
MC-3H, MC-3HF,	100	1500
TC-3, TC-3F	100	500
MC-4, MC-4F	150	1800
MC-4H, MC-4HF	150	1500
MC-5, MC-5F	200	1800
MC-5H, MC-5HF	200	1500

Not a math person? **Visit our pump performance calculator for quick and easy calculations**

TABLE B: Slippage Factor, Fs

	+100°F [+38°C]	+80°F [+27°C]	+60°F [16°C]	+40°F [4°C]	+20°F [-7°C]	0°F [-18°C]	-20°F [-29°C]	-40°F [-40°C]
Propane	0.0042	0.0040	0.0038	0.0036	0.0034	0.0033	0.0032	
Butane	.0033	.0032	.0031	.0028				

SMITH EXCHANGE PUMP PROGRAM

For pump end users that do not want to remove the pump from service for repairs, order an exchange pump. Once received, install the exchange pump and send the old pump back to your distributor for a credit. All exchange pumps are backed by the same warranty provided for new pumps.

The exchange program also applies to the mechanical seal. By returning the old shaft seal assembly, you will receive a credit, that can be applied towards future exchange shaft seal assemblies. It's that simple.

LITERATURE

For more information regarding our products, please call our sales or engineering department or visit our website at smithpumps.com.

DISTRIBUTORS

Smith Pumps has worldwide distribution. To find your nearest distributor, please contact us for more information.

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