Product Catalog

Gear &

Centrifugal

Pumps

LIQUIFLO CHEMICAL PROCESSING PUMPS

Liquiflo™

Challenge Us

With Your

Toughest

Pumping

Applications

Liquiflo™

INTRODUCTION

Liquiflo has been solving some of the most difficult chemical pumping applications for over 40 years

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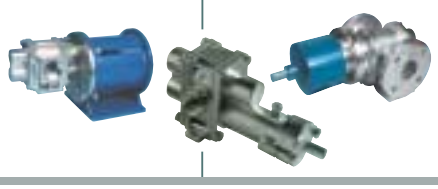
Liquiflo specializes in designing and manufacturing high-quality gear and centrifugal pumps for the chemical processing industry. With our extensive experience and wide range of available products and materials, we can handle some of the most difficult and challenging chemical pumping applications. These include pumping acids, caustics, solvents, polymers and other types of chemicals, as well as hot, viscous or extremely thin liquids.

This new full-color 108-page catalog describes the many products Liquiflo has to offer and was designed with several features intended to simplify the pump selection process.

Our goal is to be the best pump company in the business. We intend to strive towards this goal by working as a team to provide our customers with quality products and essential information in a timely manner. Our courteous and professional Customer Service and Engineering personnel are available to assist you with your chemical pumping applications.

We hope you enjoy using this catalog – both as a means for solving your chemical pumping requirements and as a useful engineering reference.

GENERAL SPECIFICATIONS for LIQUIFLO GEAR & CENTRIFUGAL PUMPS

Gear Pumps				Centrifugals
3-Series	**H-Series**	**2-Series**	**4-Series**	**Centry® Series**
• 11 sizes • Sealed • Mag-Drive	• 8 sizes • Sealed • Mag-Drive	• 2 sizes • Mag-Drive	• 4 sizes • Mag-Drive	• 5 sizes • Sealed • Mag-Drive
Flow Rates (max)				
• 58 GPM	• 30 GPM	• 60 GPH	• 3.5 GPM	• 160 GPM
Differential Pressures (max)				
• 100 PSI	• 225 PSI	• 225 PSI	• 100 PSI	• 320 ft (head)
Housing Materials				
• 316 SS • Alloy-C • Alloy-20	• 316 SS • Alloy-C	• 316 SS • Titanium	• 316 SS • Alloy-C • Titanium	• 316 SS • Alloy-C
				

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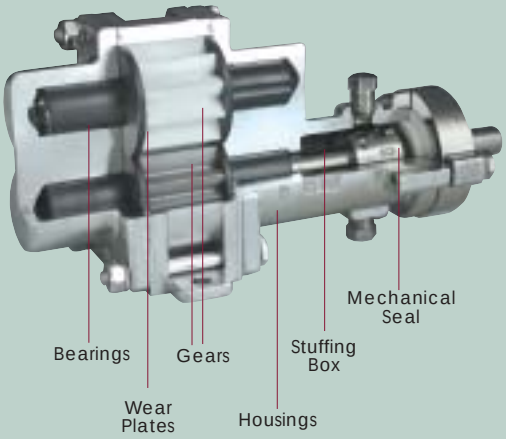
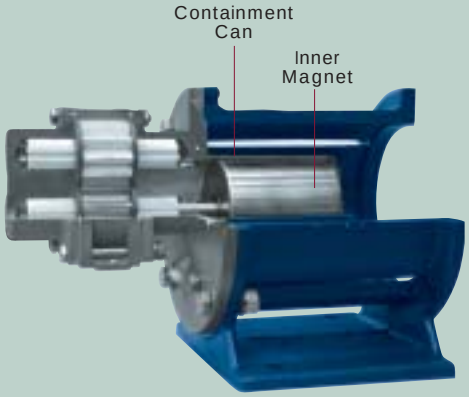
Liquiflo



All pump components shown are available in a wide selection of materials to handle difficult chemical pumping applications.

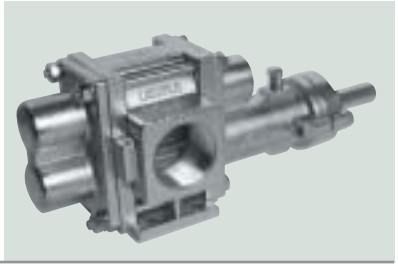
Bearings	Optional Silicon Carbide Bearings and hardened Shafts provide extended service life.
Wear Plates	Allow pump to be rebuilt to like-new condition.
Gears	Material selection includes metal/non-metal self-lubricating combinations for thin fluids.
Housings	Available in several materials for a wide range of corrosion resistance.
Stuffing Box	**Universal Stuffing Box** will accept packing, single-mechanical seal, double-mechanical seal and external mechanical seal arrangements.
Mechanical Seal	Type 9 Seal: available in a wide selection of materials for pumping virtually any chemicals.



Containment Can	Available in 316 SS, Alloy-C or Tefzel-lined Alloy-C. Eliminates leakage associated with mechanical seals.
Inner Magnets	Liquiflo's standard Inner Magnets are made from Samarium Cobalt which can be used at elevated temperatures.

Liquiflo's Rotogear 3-series and H-series gear pumps handle flows from 0.1 to 58 GPM and up to 225 PSI* of pressure. They were specifically designed to meet the needs of the chemical processing industry and will handle a wide range of difficult pumping applications.

* For higher pressure applications, please contact factory.



WHY USE GEAR PUMPS?

Gear Pumps are positive displacement pumps that are frequently used for metering and transferring viscous as well as thin fluids at higher differential pressures.

Gear pumps are an economical alternative to Diaphragm pumps for metering applications and do not pulse or require an air source to operate. They generally last longer in continuous duty applications than Diaphragm, Progressive Cavity or Peristaltic pumps that require frequent part replacements. However, the real value of a gear pump derives from the flexibility and availability of materials of construction and the sealing arrangements which facilitate optimizing the pump for the given service.

Liquiflo has extended the useful range of gear pumps into low-viscosity fluids by using a wide variety of non-metallic self-lubricating components.

Advantages and attributes over other types of pumps are:

- Low flow and high discharge pressure
- Virtually no pulsations
- Self-priming
- Lower NPSHR
- Fewer wearing parts
- Less auxiliary equipment required (pulsation dampeners, compressors, dryers, etc.)
- Flow accuracies as low as 0.5% are achievable
- Easy to repair

WHY USE MAG-DRIVE GEAR PUMPS?

Magnetically Coupled Pumps offer a simple and cost effective solution to sealing toxic, noxious, crystallizing or most other fluids that present problems for single seals and would therefore require use of a double mechanical seal. Magnetically-coupled pumps eliminate the need for cooling loops that are required by double mechanical seals. Two problems commonly associated with cooling loops are selecting a compatible barrier fluid and disposing of the barrier fluid in the event of an inboard seal failure.

Liquiflo has been producing magnetically coupled pumps for more than twenty years with tens of thousands of successful applications. Magnetically-coupled versions are available for all of Liquiflo's product lines including **2**, **3**, **4**, & **H-Series Gear Pumps**, and the **Centry® Series Centrifugal Pumps**.

Advantages of Mag-Drive Pumps:

- Less expensive than double-sealed arrangements
- Eliminates cooling loops required on double seal arrangements
- Eliminates the need to dispose of barrier fluids

MATERIALS AVAILABLE

Liquiflo's **Rotogear® 3-Series and H-Series Gear Pumps** come in a wide range of materials to meet all of your chemical processing applications.

HOUSINGS	GEARS	WEAR PLATES	BEARINGS	SHAFTS
316 SS	316 SS	Carbon	Carbon	316 SS
Alloy-C	Alloy-C	Ceramic	Teflon	Alloy-C
Titanium	Glass-filled PTFE	Teflon	Ryton	Titanium
	Delrin	Ryton	Silicon Carbide	Ceramic Coated
	Ryton	PEEK	PEEK	Tungsten Carbide Coated
	Carbon			

Liquiflo Gear Pumps handle a wide range of applications including the pumping of low-viscosity and high-viscosity fluids, as well as complex metering applications.

High-Viscosity Fluids

Water treatment polymers and food materials up to 80,000 cps are typical of the high-viscosity service of the Rotogear® Series of gear pumps. On high-viscosity applications, it is preferable and more efficient to use larger pumps running at slower speeds.

Low-Viscosity Fluids

Frequently, gear pumps are the preferred solution in low-viscosity pumping applications because of their hydraulics (low flow, high pressure and pulseless flow), compactness, efficiency and low cost. Liquiflo's wide selection of materials allow for pump customization to reduce premature shaft, gear, and bearing wear on low-viscosity fluids. Liquiflo has successfully pumped liquids with viscosities as low as 0.3 CPS.

Metering

Liquiflo gear pumps are used in variable flow systems where the motor RPM is controlled to regulate pump output. Flow rate, pH levels or RPM can trigger the control of feedback signals. (Refer to the Engineering section for more details on gear pumps in metering applications). The Rotogear® Series is available in a wide variety of flow ranges (11 sizes offered), simplifying selection for metering applications.

REPAIR KITS

Repair Kits simplify inventory and speed repair. All parts can also be purchased separately.

Repair kits contain all components to completely rebuild your Liquiflo Gear Pump to like-new condition (all items except the housings are included).

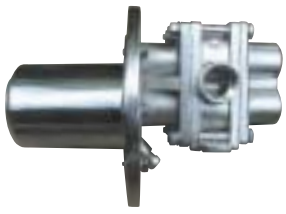
Repair Kits Include:

- **Gears**
- **Shafts**
- **Keys**
- **Bearings**
- **Wear Plates**
- **Pins**
- **O-Rings**
- **Retaining Rings**
- **Seals (if applicable)**

RELIEF VALVES

Positive displacement pumps should be installed with a relief valve in the discharge line. This will protect the pump and piping against any type of line blockage including the inadvertent closing of an isolation valve. Liquiflo manufactures two sizes of relief valves in both 316 SS and Alloy-C.

CARTRIDGE



A cartridge is a complete mag-drive pump less the outer magnet and pedestal. A cartridge replacement is a convenient way to quickly replace a pump that requires maintenance.

OPTIONS

Liquiflo has several options available for its complete line of Positive Displacement Gear Pumps, as well as offering a complete line of standard pumps. Liquiflo will custom engineer its pumps and options to fit your specific requirements.

SANITARY FITTINGS

Sanitary Fittings are available for food & drug applications

RAISED-FACE FLANGES

ANSI, DIN, JIS Flanges are available

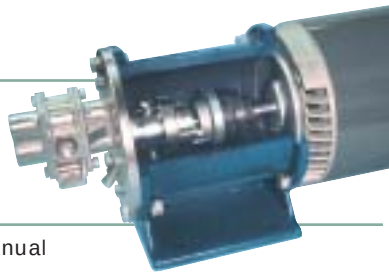
CLAMP-ON TEMPERATURE CONTROL JACKET

Temperature Control Jackets can maintain the pump at either elevated or reduced temperatures. Commonly used when pumping liquids that solidify or become difficult to pump when the temperature decreases.

S-ADAPTER

The S-Adapter is available for long-coupling mag-drive pumps; it isolates the pump from the motor.

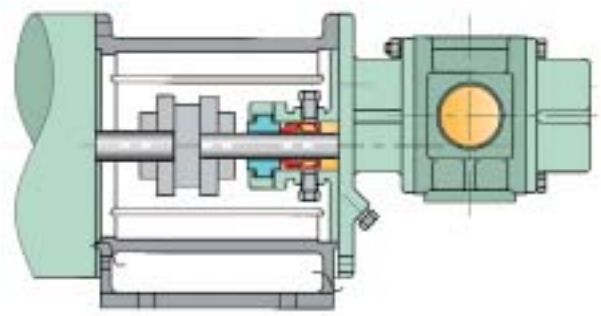
TYPICAL MOUNTING CONFIGURATIONS



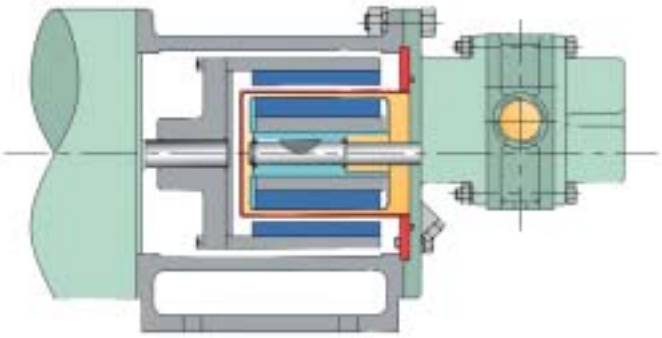
Close-Coupled Option eliminates manual alignment of pump and motor.

Features of Close-Coupled Design:

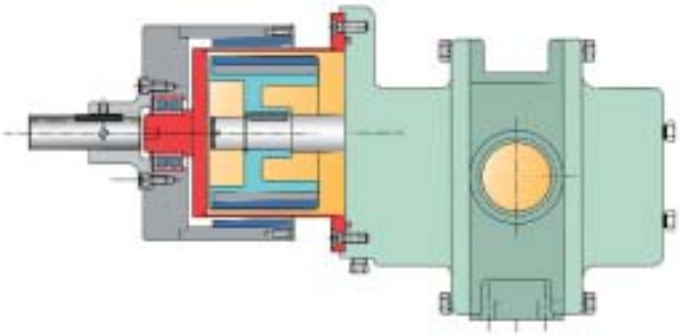
- Eliminates difficulties and inconvenience of manually aligning pump and motor
- Cast-iron bracket that rigidly supports pump & motor
- Dimensionally interchangeable with our Mag-Drive pumps
- Available for 56C, 143/145TC, IEC 71, 80, 90 frame motors
- Excellent for OEM applications
- Quickly and easily installed



CLOSE-COUPLED SEALED



CLOSE-COUPLED MAG-DRIVE



LONG-COUPLED MAG-DRIVE (312, 314 & H12 only)

SEAL CONFIGURATIONS

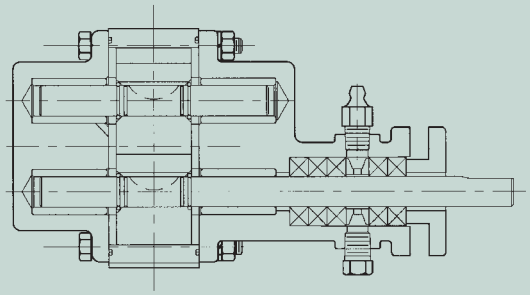


FIG.1 LANTERN RING/PACKING SEAL

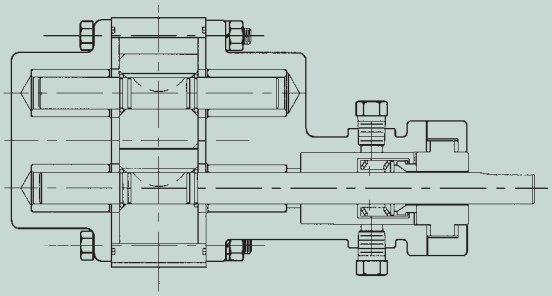


FIG.2 SINGLE MECHANICAL SEAL

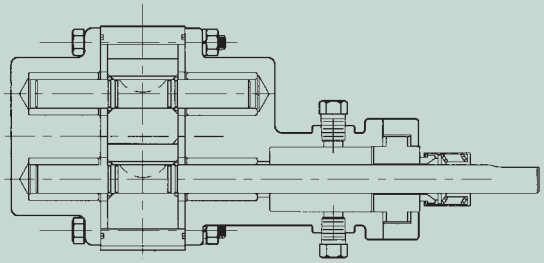


FIG.3 EXTERNAL MECHANICAL SEAL

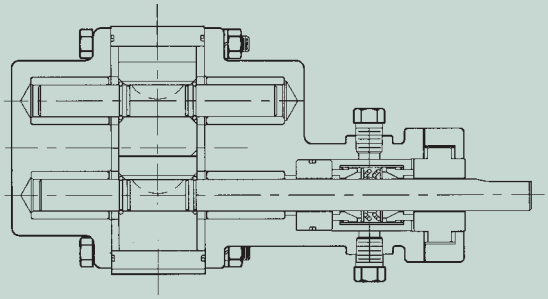


FIG.4 DOUBLE MECHANICAL SEAL

RANGE OF SEALS AVAILABLE

Liquiflo's Universal Front Housings will accommodate packing, as well as single and double mechanical seal configurations.

Fig. 1 **Packing** is suitable and the most economical for safe, non-hazardous liquids.

Fig. 2 **Single Mechanical Seals** are used when leakage needs to be minimized. Single seals have a viscosity limit of 5,000 cps and a temperature limit of 500˚F.

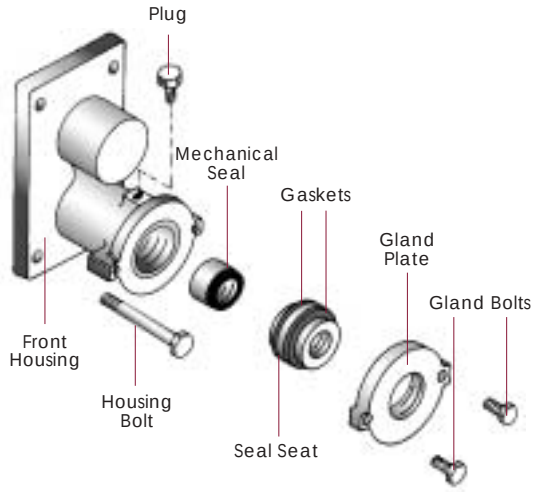
Fig. 3 **External Mechanical Seals** are used to isolate the seal body from the liquid being pumped or when pumping liquid under vacuum conditions.

Fig. 4 **Double Mechanical Seals** require a flushing system and are typically used when pumping liquids that are abrasive, crystallize on contact with air, or are very dangerous.

SEAL MATERIALS AVAILABLE

PACKING	SEAL WEDGES	SEAL FACES	SEAL SEATS
Braided Teflon Grafoil	Teflon Grafoil	Carbon Teflon Silicon Carbide	Ceramic Silicon Carbide Tungsten Carbide

FIG.5 EXPLODED VIEW OF SINGLE INTERNAL MECHANICAL SEAL



3-SERIES
ROTOGEAR® EXTERNAL GEAR PUMPS

3-Series

Up to 100 PSI differential pressure

Liquiflo's **3-Series** gear pumps are available in Sealed and Mag-Drive versions with flows up to **58 GPM** and differential pressures up to **100 PSI**.

H-Series Preview

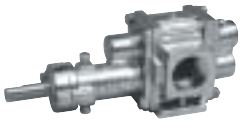
Liquiflo's **H-Series** are **higher-pressure** gear pumps available in Sealed and Mag-Drive versions with flows up to approximately **30 GPM** and differential pressures up to **225 PSI***. With similar outside dimensions to the 3-Series, the H-Series has larger diameter shafts, and bigger bearings and seals for extended service life. These features allow it to handle higher pressures and operate longer. (See H-Series Section.)

* 300 PSI possible on some models. Contact factory.

3-Series Specification Chart

SEALED



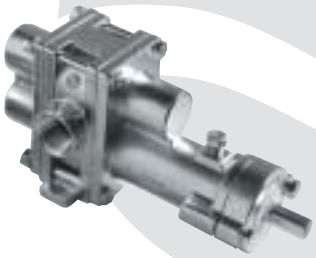



MAG-DRIVE
Close-Coupled



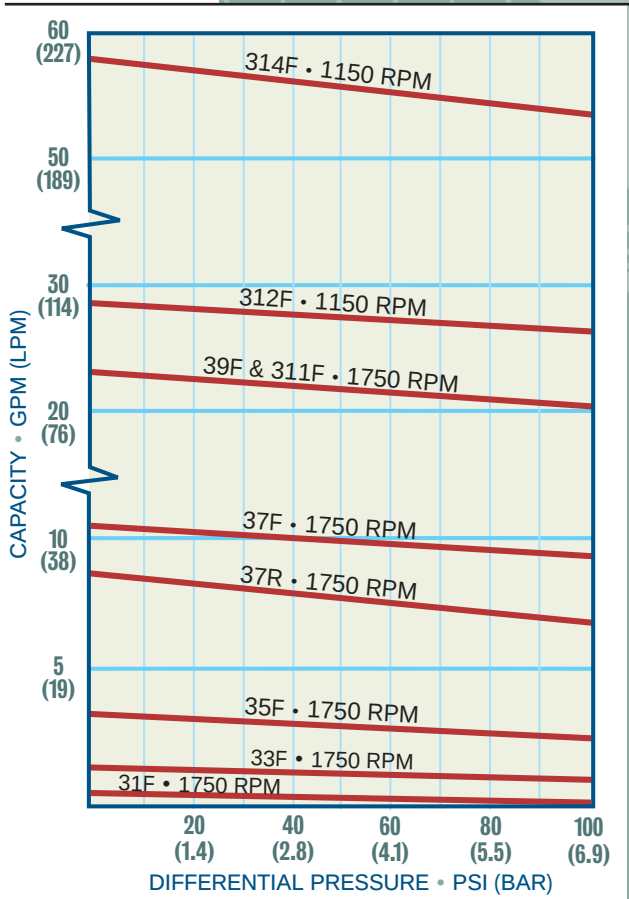

SEALED MAG-DRIVE	31F 31F-MC	33F 33F-MC	35R 35R-MC	35F 35F-MC	37R 37R-MC	37F 37F-MC	39R 39R-MC
Max Flow	0.5 GPM (1.9 LPM)	1.4 GPM (5.3 LPM)	2.4 GPM (9.1 LPM)	3.4 GPM (13 LPM)	8.6 GPM (32.5 LPM)	10.7 GPM (40.5 LPM)	15 GPM (57 LPM)
Max Diff. Press.	100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)
Max Discharge	300 PSI (20.7 BAR)	300 PSI (20.7 BAR)	300 PSI (20.7 BAR)	300 PSI (20.7 BAR)	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)
Max Temp.	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)
Max Viscosity	100,000 * CPS	100,000 * CPS	100,000 * CPS	100,000 * CPS	100,000 * CPS	100,000 * CPS	100,000 * CPS
Max Speed	1750 RPM	1750 RPM	1750 RPM	1750 RPM	1750 RPM	1750 RPM	1750 RPM
NPSHR @ Max Speed	3 FT (0.9 M)	2 FT (0.6 M)	2 FT (0.6 M)	2 FT (0.6 M)	5.2 FT (1.6 M)	5.2 FT (1.6M)	4 FT (1.2M)
Weight (LBS) Sealed Mag-Drive	 2.5 LBS (1.1 KGS) 31 LBS (14 KGS)	 2.5 LBS (1.1 KGS) 31 LBS (14 KGS)	 3.5 LBS (1.6 KGS) 32 LBS (15 KGS)	 3.5 LBS (1.6 KGS) 32 LBS (15 KGS)	 6.5 LBS (2.9 KGS) 36 LBS (16 KGS)	 6.5 LBS (2.9 KGS) 36 LBS (16 KGS)	 8 LBS (3.6 KGS) 38 LBS (17 KGS)

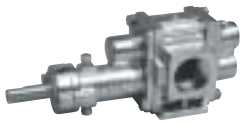
* Higher viscosities possible. Contact factory.

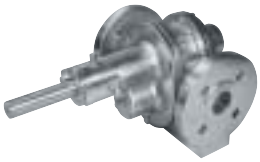


COMPOSITE GEAR PUMP PERFORMANCE CURVES

TEST FLUID: WATER (1 CPS)





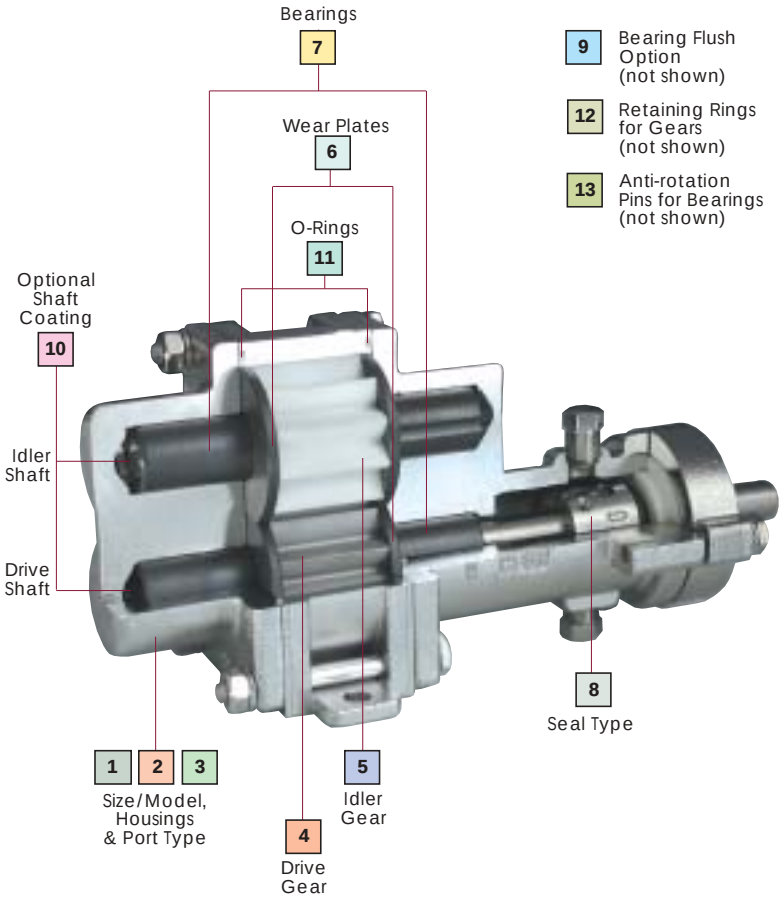


LONG-COUPLED ONLY

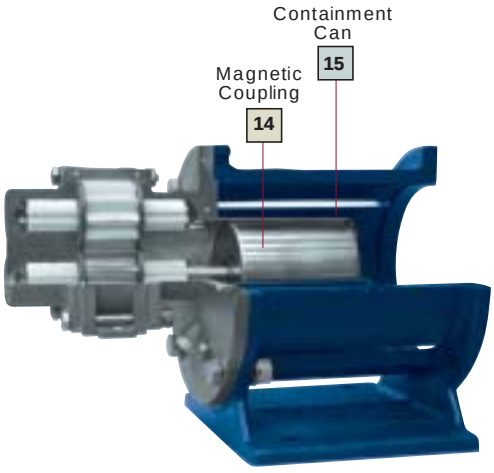
39F 39F-MC	312R 312R-MC	312F 312F-MC	314F 314F-MC
21.5 GPM (**81.4** LPM)	**22** GPM (**83** LPM)	**29** GPM (**110** LPM)	**58** GPM (**220** LPM)
100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)
225 PSI (15.5 BAR)	270 PSI (18.6 BAR)	270 PSI (18.6 BAR)	270 PSI (18.6 BAR)
500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)
100,000 * CPS	100,000 * CPS	100,000 * CPS	100,000 * CPS
1750 RPM	1150 RPM	1150 RPM	1150 RPM
3 FT (0.9 M)	5 FT (1.5 M)	5 FT (1.5 M)	3 FT (0.9 M)
9.8 LBS (4.4 KGS) 40 LBS (18 KGS)	52 LBS (23.6 KGS) 70 LBS (31.8 KGS)	52 LBS (23.6 KGS) 70 LBS (31.8 KGS)	67 LBS (30.4 KGS) 85 LBS (38.6 KGS)

Note: 311F Model available. Contact factory.

PUMP MODEL CODING



Sealed Pump



Mag-Drive Pump

tel. 908.518.0777 fax. 908.518.1847 www.liquiflo.com

PUMP MODEL CODING

EXAMPLE:

35FS6P22U00000, designates a Model 35F Pump with Single Mechanical Seal.

35F	S	6	P	2	2	U	0	0	0	0	0		
1&2	3	4	5	6	7	8	9	10	11	12	13	14	15

Pos.	Description	Selection	
1 & 2	Pump Model	35F	**35F Pump**
3	Housing Mat'l	S	**316 SS NPT**
4	Drive Gear Mat'l	6	**316 SS**
5	Idler Gear Mat'l	P	**PEEK**
6	Wear Plate Mat'l	2	**Carbon**
7	Bearing Mat'l	2	**Carbon**
8	Seal Type	U	**Single, Carbon-Ceramic**
9	Bearing Flush	0	**None**
10	Shaft Coating	0	**None**
11	O-Rings	0	**Teflon**
12	Retaining Ring	0	**Same mat'l as housings**
13	Bearing Pins	0	**Teflon**
14	Mag Coupling		**N/A**
15	Options		**N/A**

Liquiflo's Model Code describes both the pump's size and material selected. This model code is required for the future identification of your pump when reordering either a pump or replacement parts. Model code is permanently stamped into pump housing.

■ **Available**

❍ **No longer available in new pumps. Parts available only for repair and replacement.**

⊗ **Not Available**

Flanges available:

ANSI, DIN, JIS

Or slip joint flanges conforming to the dimensions of the standard.

	31/33	35	37	39R	39F	312	314
NPT/BSPT	1/4	1/2	3/4	1	1 1/4	1 1/4	–
ANSI 150# RF	1/2	1/2	3/4	1	1 1/4	1 1/2	2 1/2
DIN PN16	10	15	20	25	32	40	65
JIS 10K	10	15	20	25	32	40	65

Note: 311F pumps available with same features as 39F

Liquiflo 3-Series Gear Pumps
Selection & Availability

Liquiflo

Sample Model No.	35	F	S	6	P	2	2	U	0	0	0	0	0		
Position No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Position			31	33	35	37	39	312	314
Position 1 Model	1	**Pump Model**							
Position 2 Model	2	F = Full Capacity	■	■	■	■	■	■	■
		R = Reduced Capacity	⊗	⊗	■	■	■	■	⊗
Position 3 Basic Material & Port Type	3	S = 316 SS NPT	■	■	■	■	■	■	⊗
		H = Alloy-C NPT	■	■	■	■	■	■	⊗
		L = 316 SS Flanged	■	■	■	■	■	■	■
		C = Alloy-C Flanged	■	■	■	■	■	■	■
		X = 316 SS BSPT	■	■	■	■	■	■	⊗
		Y = Alloy-C BSPT	■	■	■	■	■	■	⊗
Position 4 Drive Gear	4	1 = Alloy-C	■	■	■	■	■	■	■
		3 = Teflon	⊗	■	■	■	■	■	■
		5 = Delrin	❍	❍	❍	❍	❍	❍	❍
		6 = 316 SS	■	■	■	■	■	■	■
		8 = Ryton	■	■	■	■	■	■	■
		P = PEEK	■	■	■	■	■	■	■
Position 5 Idler Gear	5	1 = Alloy-C	■	■	■	■	■	■	■
		2 = Carbon	⊗	■	■	■	■	⊗	⊗
		3 = Teflon	⊗	■	■	■	■	■	■
		5 = Delrin	❍	❍	❍	❍	❍	❍	❍
		6 = 316 SS	■	■	■	■	■	■	■
		8 = Ryton	■	■	■	■	■	■	■
		P = PEEK	■	■	■	■	■	■	■
Position 6 Wear Plates	6	2 = Carbon	■	■	■	■	■	■	■
		3 = Teflon	■	■	■	■	■	■	■
		4 = Ceramic	⊗	■	■	■	■	■	■
		P = PEEK	■	■	■	■	■	■	■
		E = Carbon 60	■	■	■	■	■	■	■
Position 7 Bearings	7	2 = Carbon	■	■	■	■	⊗	■	■
		3 = Teflon	■	■	■	■	■	■	■
		B = Silicon Carbide	■	■	■	■	■	■	■
		P = PEEK	■	■	■	■	■	■	■
		E = Carbon 60	■	■	■	■	■	■	■
Position 8 Outer Magnet Bore (Mag Drive ONLY)	8	0 = 0.625" (56C)	■	■	■	■	■	⊗	⊗
		1 = 0.875" (143/145TC)	■	■	■	■	■	■	■
		2 = 14 mm (IEC 71 - B5)	■	■	■	■	■	⊗	⊗
		3 = 19 mm (IEC 80 - B5)	■	■	■	■	■	⊗	⊗
		4 = 24 mm (IEC 90 - B5)	■	■	■	■	■	⊗	⊗
		5 = 1.125" (182/184TC)	■	■	■	■	■	⊗	⊗
Position 8 Seal Types (Sealed pumps ONLY	8	S = Single-Int Teflon - Ceramic	■	■	■	■	■	■	■
		U = Single-Int Carbon - Ceramic	■	■	■	■	■	■	■
		W = Single-Ext Carbon - Ceramic	■	■	■	■	■	■	■
		X = Single-Ext Teflon - Ceramic	■	■	■	■	■	■	■
		F = Double Carbon - Ceramic	■	■	■	■	■	■	■
		H = Double Teflon - Ceramic	■	■	■	■	■	■	■
		J = U-Cup Viton	■	■	■	■	⊗	⊗	⊗
		L = Packing Teflon	■	■	■	■	■	■	■
		R = Packing Grafoil	■	■	■	■	■	■	■
Position 9 Bearing Flush	9	0 = Standard Housings	■	■	■	■	■	⊗	⊗
		1 = Ext. Brg Flush	■	■	■	■	■	■	■
		2 = Int. Brg Flush	■	■	■	■	■	■	■
Position 10 Shaft Coating	10	0 = Material same as housing (uncoated)	■	■	■	■	■	■	■
		1 = Ceramic	■	■	■	■	■	■	■
		2 = Tungsten Carbide	■	■	■	■	■	■	■
Position 11 O-Rings	11	0 = Teflon	⊗	■	■	■	■	■	■
		6 = 316 SS / PFA encap.	■	■	■	■	■	■	■
		B = Buna-N	■	■	■	■	■	■	■
		E = EPDM	■	■	■	■	■	■	■
		V = Viton	■	■	■	■	■	■	■
		K = Kalrez	■	■	■	■	■	■	■
Position 12 Retaining Rings	12	0 = Material same as housing	■	■	■	■	■	■	■
Position 13 Bearing Pins	13	0 = Teflon	■	■	■	■	■	⊗	⊗
		1 = Alloy-C	■	■	■	■	■	■	■
		6 = 316 SS	■	■	■	■	■	■	■
Position 14 Magnetic Coupling (Mag-Drive)	14	S = 33 in-lbs	■	■	■	⊗	⊗	⊗	⊗
		A = 66 in-lbs	⊗	⊗	⊗	■	■	⊗	⊗
		B = 120 in-lbs	■	■	■	■	■	⊗	⊗
		C = 240 in-lbs	⊗	⊗	⊗	■	■	⊗	⊗
		K = 250 in-lbs	⊗	⊗	⊗	⊗	⊗	■	■
		J = 500 in-lbs	⊗	⊗	⊗	⊗	⊗	■	■
Position 15 (Options)	15	8 = Temperature Trim	■	■	■	■	■	■	■
		9 = Viscosity Trim	■	■	■	■	■	■	■
		S = Single Wall Can	■	■	■	■	■	■	■
		D = Dual-Kan	■	■	■	■	■	■	■

31F SEALED
31F-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

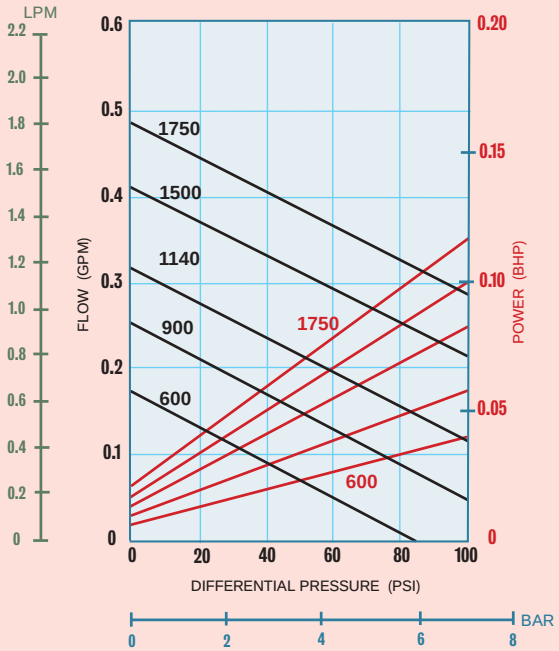
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	1/4" NPT/BSPT or 1/2" FLG
MAX FLOW	0.5 GPM; 1.9 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	300 PSI; 20.7 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	3 FT; 0.9 M
LIFT (DRY)	0.5 FT; 0.15 M
WEIGHT (without motor)	
SEALED	2.5 LBS; 1.1 KGS
MAG-DRIVE	31 LBS; 14 KGS

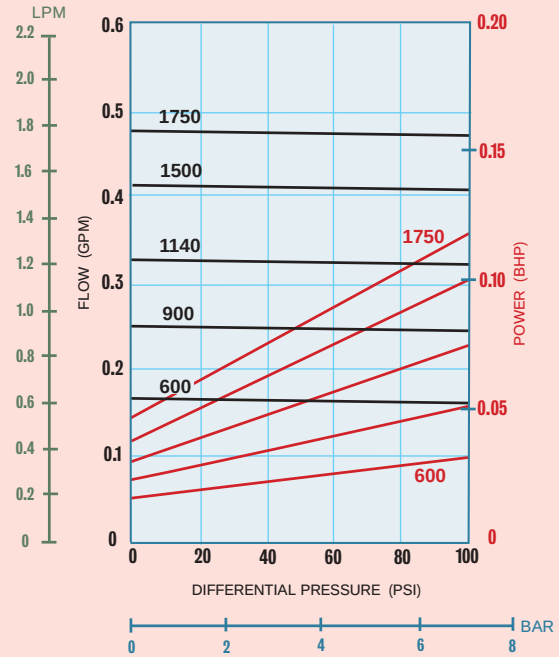
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

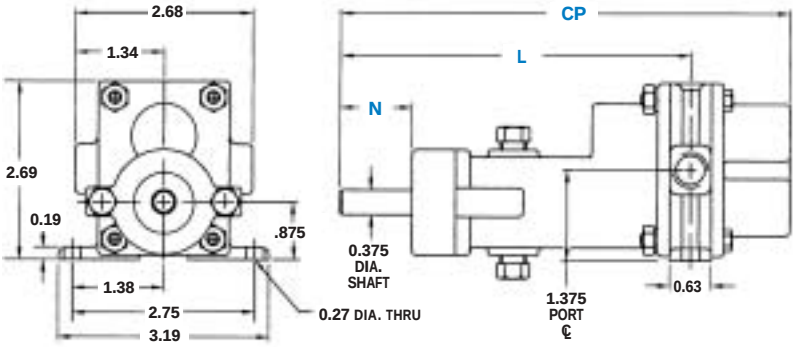


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: 31F Sealed

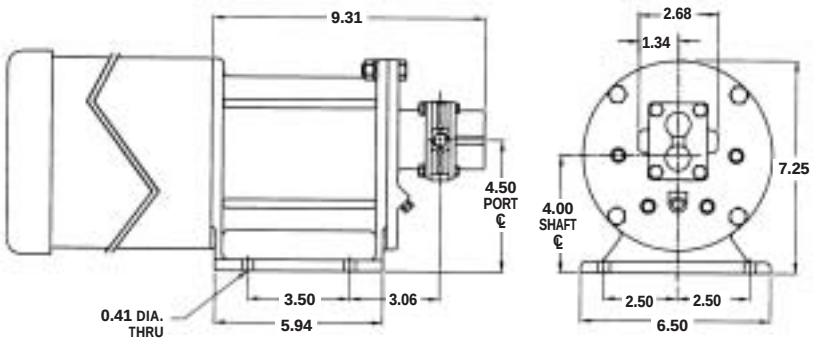


DIMENSION	SEAL CONFIGURATIONS PACKING / SINGLE MECHANICAL SEAL / DOUBLE MECHANICAL SEAL	EXTERNAL MECHANICAL SEAL	LIP SEAL
CP(1)	6.94	7.66	6.94
N	0.81(2)	1.03	0.81
L	5.44	6.16	5.44

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: 31F-MC & 31F Sealed



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33F SEALED
33F-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

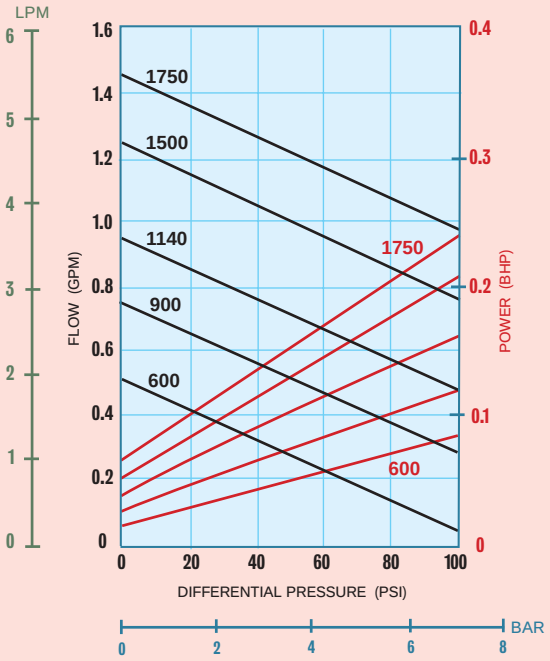
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	1/4" NPT/BSPT or 1/2" FLG
MAX FLOW	1.4 GPM; 5.3 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	300 PSI; 20.7 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	2 FT; 0.6 M
LIFT (DRY)	1.5 FT; 0.45 M
WEIGHT (without motor)	
SEALED	2.5 LBS; 1.1 KGS
MAG-DRIVE	31 LBS; 14 KGS

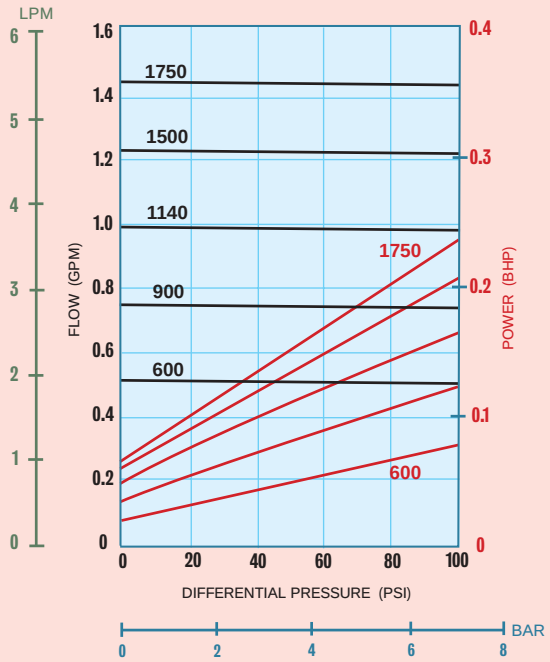
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

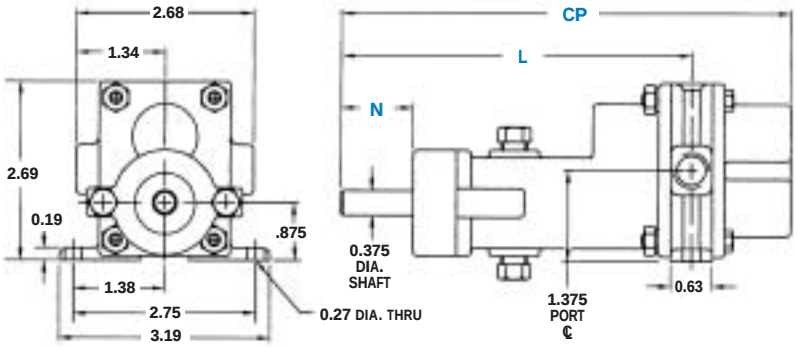


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: 33F Sealed

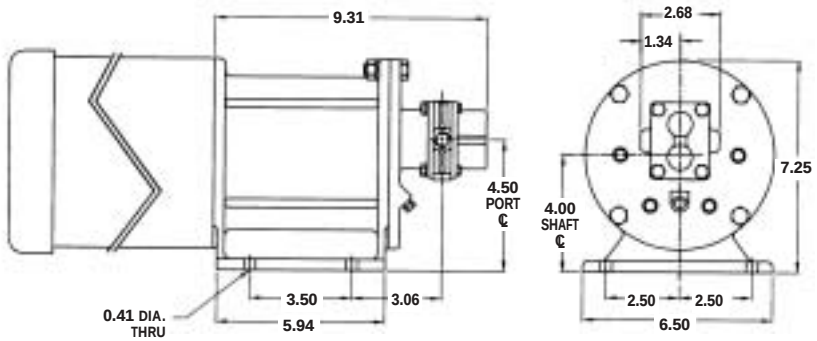


DIMENSION	SEAL CONFIGURATIONS PACKING / SINGLE MECHANICAL SEAL / DOUBLE MECHANICAL SEAL	EXTERNAL MECHANICAL SEAL	LIP SEAL
CP(1)	6.95	7.66	6.94
N	0.81(2)	1.03	0.81
L	5.44	6.16	5.44

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: 33F-MC & 33F Sealed



35R SEALED
35R-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

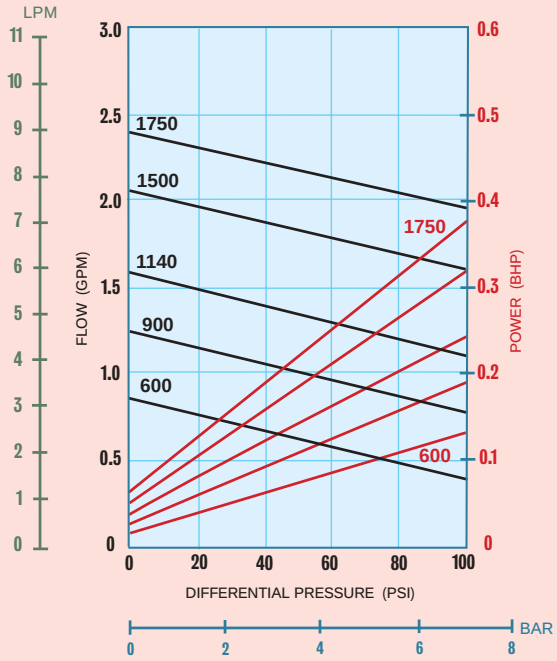
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	1/2" NPT/BSPT/FLG
MAX FLOW	2.4 GPM; 9.1 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	300 PSI; 20.7 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	2 FT; 0.6 M
LIFT (DRY)	2 FT; 0.6 M
WEIGHT (without motor)	
SEALED	3.5 LBS; 1.6 KGS
MAG-DRIVE	32 LBS; 15 KGS

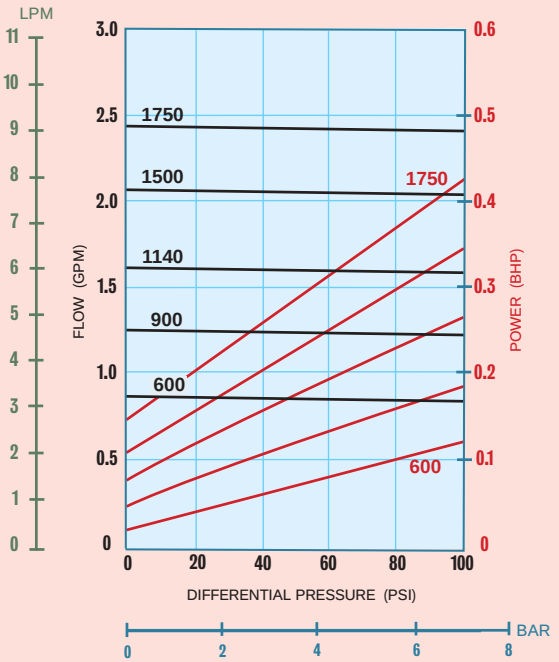
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

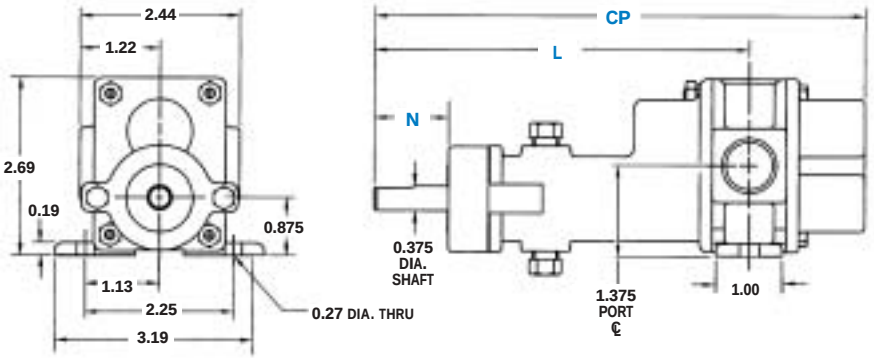


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: 35R Sealed

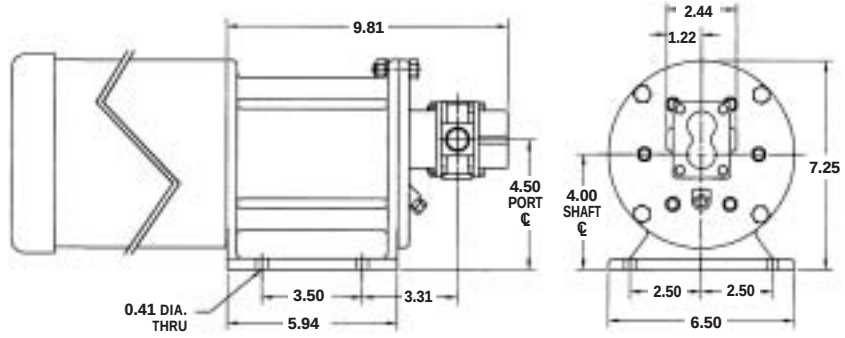


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	EXTERNAL MECHANICAL SEAL	LIP SEAL
CP(1)	7.44	8.56	7.44
N	0.80 (2)	1.42	0.80
L	5.67	6.81	5.67

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: 35R-MC & 35R Sealed



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35F SEALED
35F-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

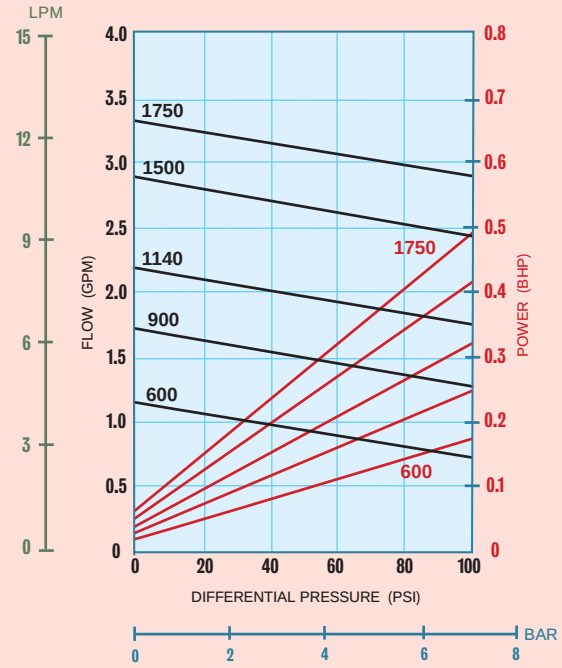
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	1/2" NPT/BSPT/FLG
MAX FLOW	3.4 GPM; 12.9 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	300 PSI; 20.7 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	2 FT; 0.6 M
LIFT (DRY)	4 FT; 1.2 M
WEIGHT (without motor)	
SEALED	3.5 LBS; 1.6 KGS
MAG-DRIVE	32 LBS; 15 KGS

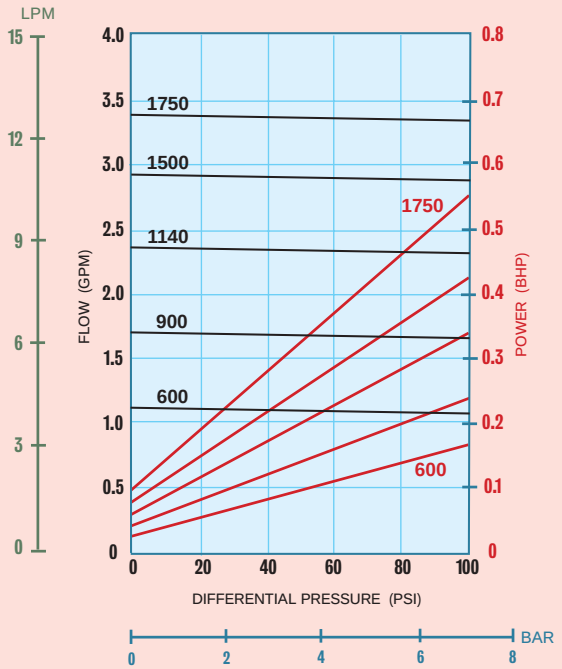
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

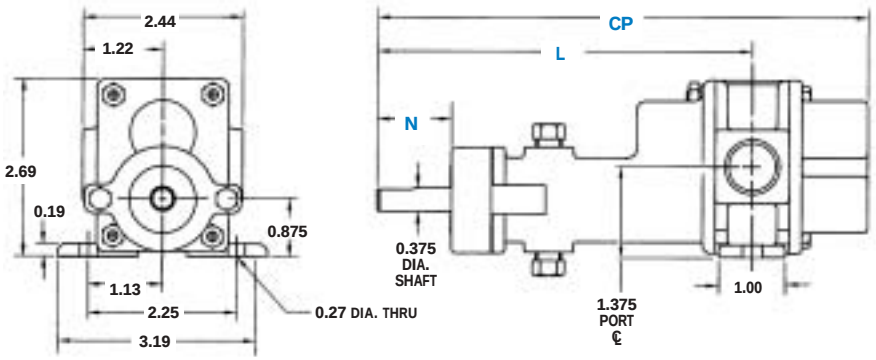


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: 35F Sealed

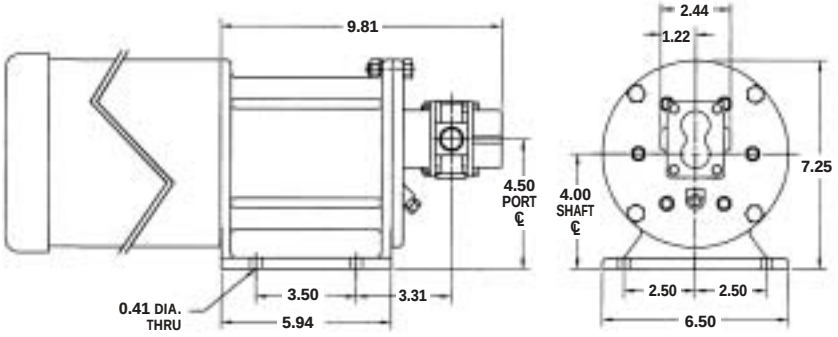


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	EXTERNAL MECHANICAL SEAL	LIP SEAL
CP(1)	7.44	8.56	7.44
N	0.80 (2)	1.42	0.80
L	5.67	6.81	5.67

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

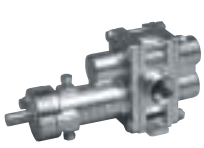
Dimensional Data (inches)

Close-Coupled: 35F-MC & 35F Sealed



37R SEALED
37R-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP



Sealed

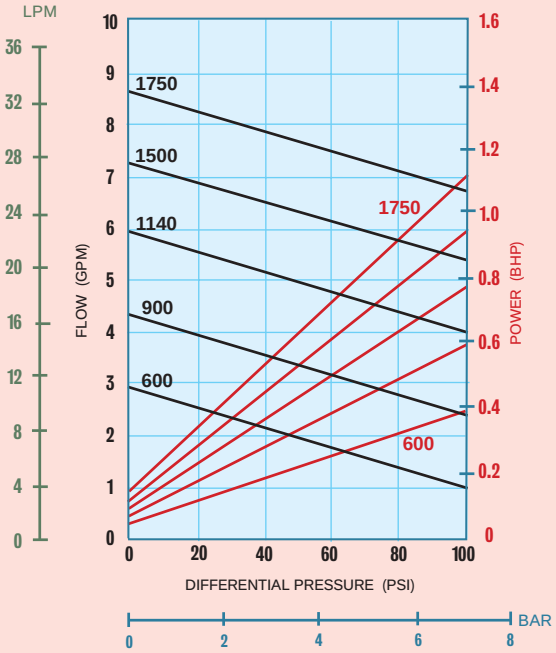
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	3/4" NPT/BSPT/FLG
MAX FLOW	8.6 GPM; 32.5 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	225 PSI; 15.5 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	5.2 FT; 1.6 M
LIFT (DRY)	6 FT; 1.8 M
WEIGHT (without motor)	
SEALED	6.5 LBS; 3 KGS
MAG-DRIVE	36 LBS; 16 KGS

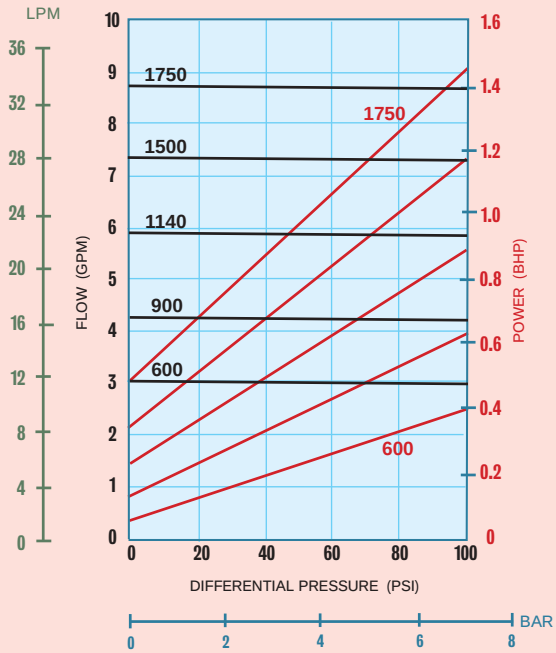
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

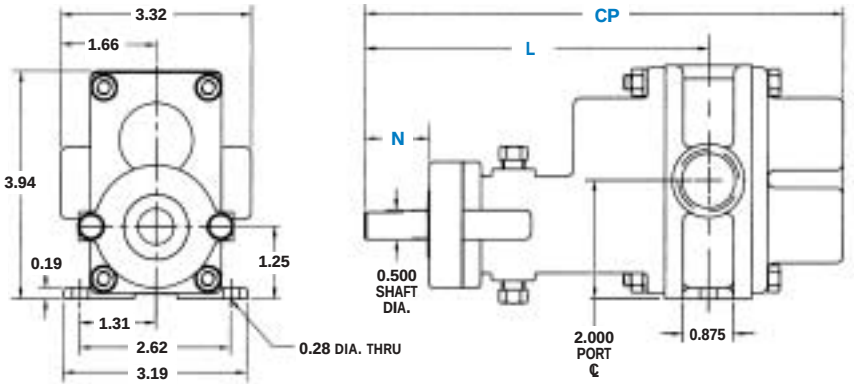


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: 37R Sealed

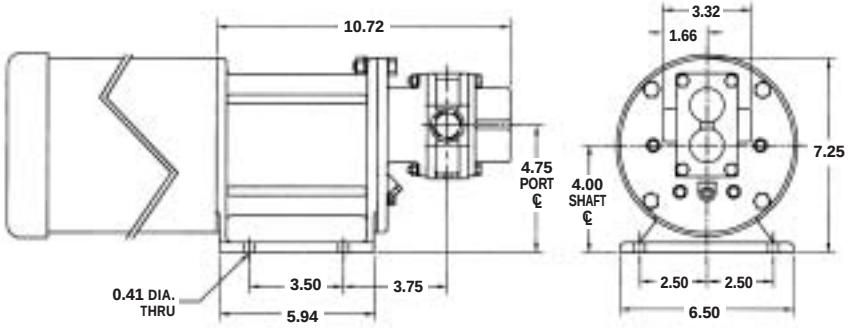


DIMENSION	SEAL CONFIGURATIONS PACKING / SINGLE MECHANICAL SEAL / DOUBLE MECHANICAL SEAL	EXTERNAL MECHANICAL SEAL	LIP SEAL
CP(1)	8.19	10.32	8.19
N	0.94 (2)	2.44	0.94
L	5.98	8.10	5.98

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: 37R-MC & 37R Sealed



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37F SEALED
37F-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

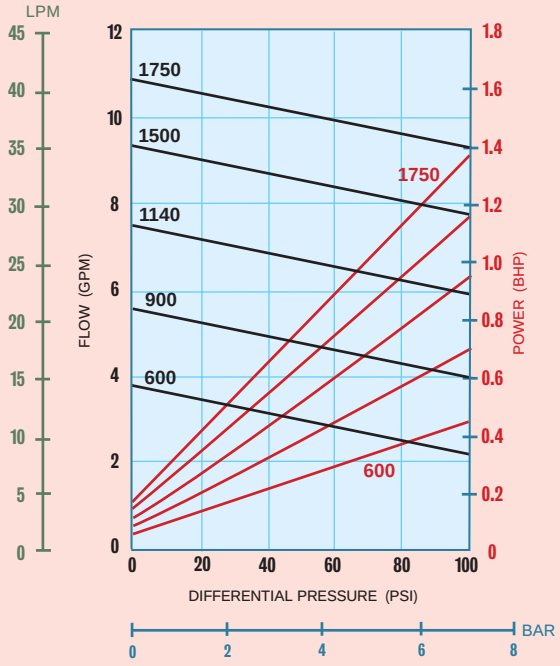
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	3/4" NPT/BSPT/FLG
MAX FLOW	10.7 GPM; 40.5 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	225 PSI; 15.5 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	5.2 FT; 1.6 M
LIFT (DRY)	7 FT; 2.1 M
WEIGHT (without motor)	
SEALED	6.5 LBS; 3 KGS
MAG-DRIVE	36 LBS; 16 KGS

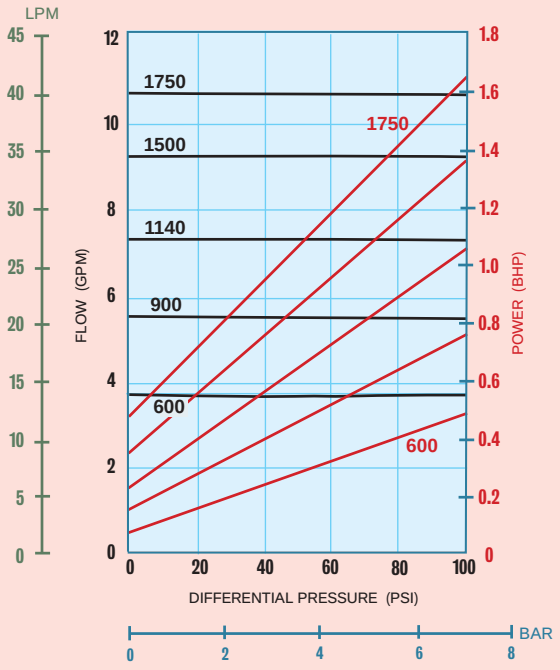
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

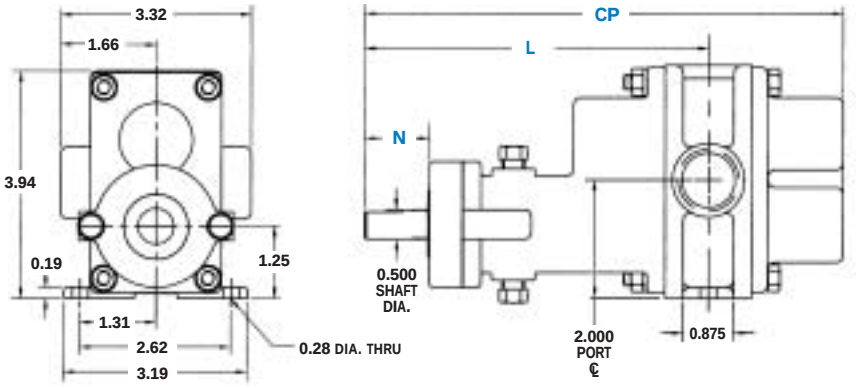


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: 37F Sealed

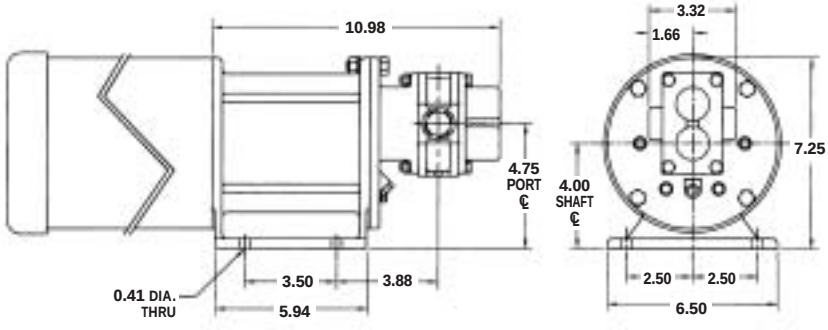


DIMENSION	SEAL CONFIGURATIONS: PACKING / SINGLE MECHANICAL SEAL / DOUBLE MECHANICAL SEAL	EXTERNAL MECHANICAL SEAL	LIP SEAL
CP(1)	8.31	10.44	8.31
N	0.81(2)	2.31	0.81
L	5.98	8.10	5.98

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: 37F-MC & 37F Sealed



39R SEALED
39R-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

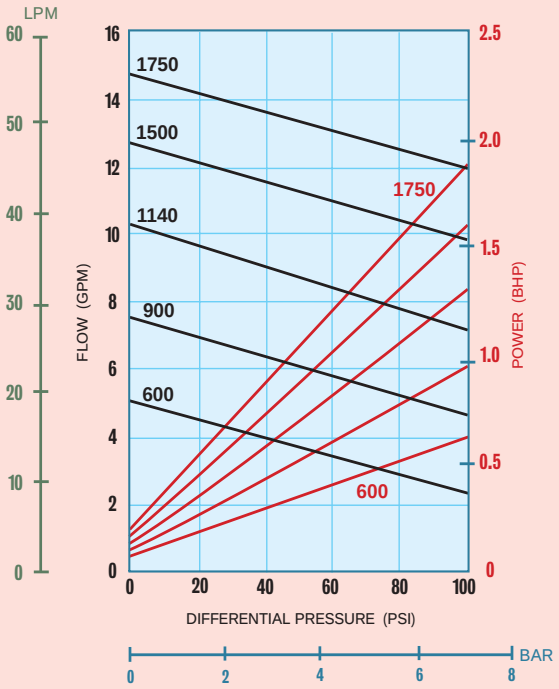
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	1" NPT/BSPT/FLG
MAX FLOW	15 GPM; 57 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	225 PSI; 15.5 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	4 FT; 1.2 M
LIFT (DRY)	6 FT; 1.8 M
WEIGHT (without motor)	
SEALED	8 LBS; 3.6 KGS
MAG-DRIVE	38 LBS; 17 KGS

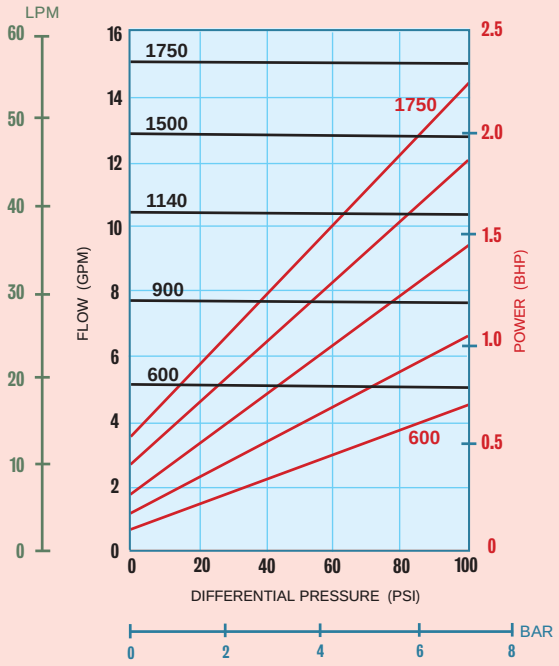
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

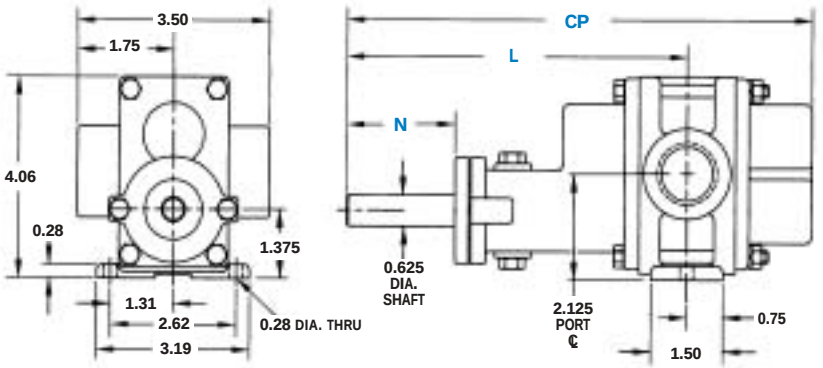


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: 39R Sealed

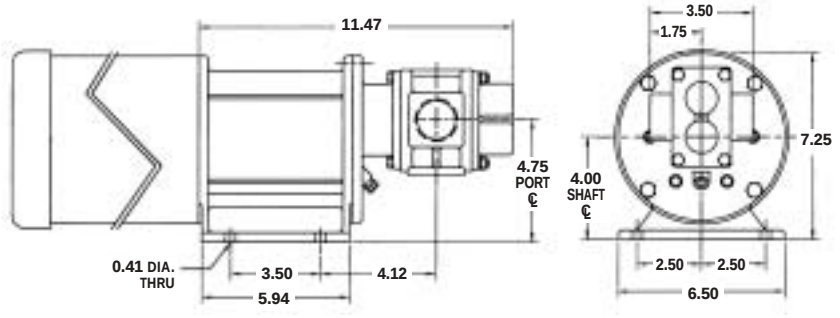


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	EXTERNAL MECHANICAL SEAL	LIP SEAL
CP(1)	9.69	9.69	9.69
N	1.68 (2)	1.44	1.68
L	7.09	7.09	7.09

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: 39R-MC & 39R Sealed



tel. 908.518.0777 fax. 908.518.1847

39F SEALED
39F-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

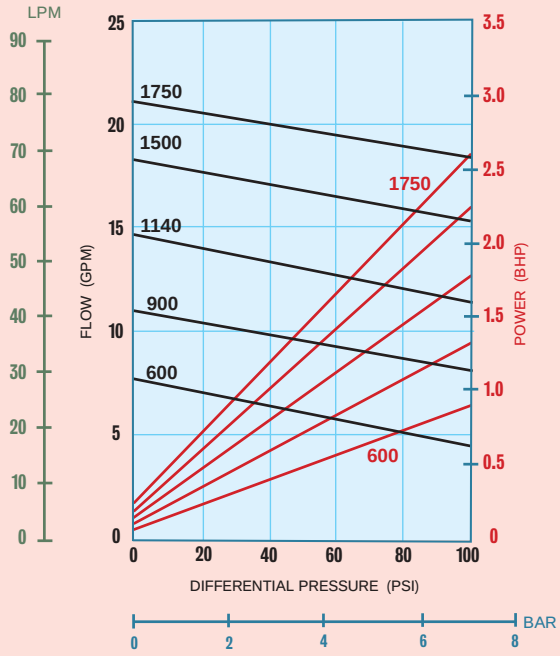
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	$1^1/_4$" NPT/BSPT/FLG
MAX FLOW	21.5 GPM; 81.4 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	225 PSI; 15.5 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	3 FT; 0.96 M
LIFT (DRY)	14 FT; 4.2 M
WEIGHT (without motor)	
SEALED	9.8 LBS; 4.4 KGS
MAG-DRIVE	40 LBS; 18 KGS

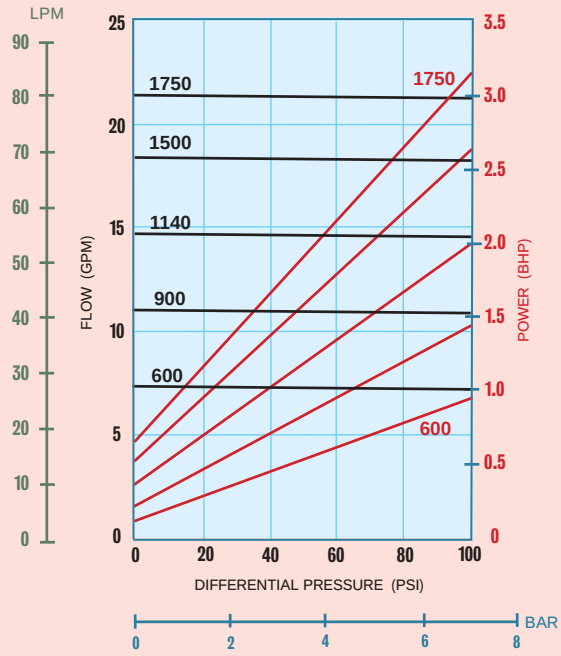
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

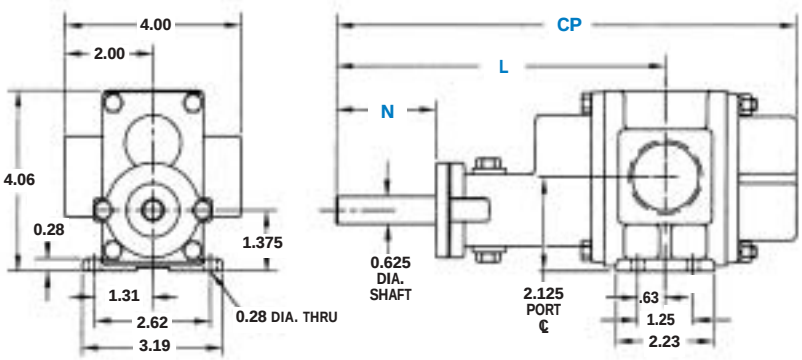


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: 39F Sealed

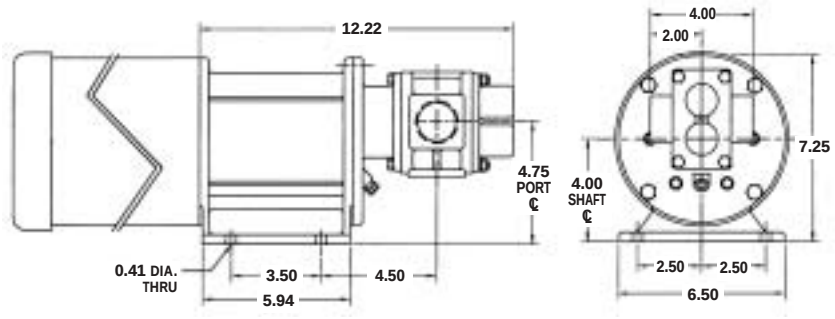


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	EXTERNAL MECHANICAL SEAL	LIP SEAL
CP(1)	10.44	10.44	10.44
N	1.68 (2)	1.06	1.68
L	7.47	7.47	7.47

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

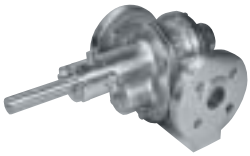
Dimensional Data (inches)

Close-Coupled: 39F-MC & 39F Sealed



312R SEALED
312R-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP



Sealed

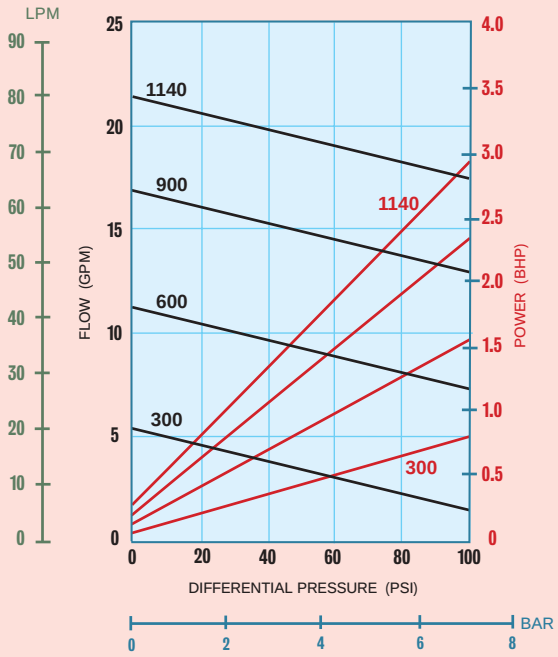
Mag-Drive

PORT SIZE	$1^1/_2$" FLG or $1^1/_4$" NPT/BPST
MAX. FLOW	22 GPM; 83 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	270 PSI; 18.6 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1150 RPM	5 FT; 1.5 M
LIFT (DRY)	15 FT; 4.5 M
WEIGHT (without motor)	
SEALED	52 LBS; 23.6 KGS
MAG-DRIVE	70 LBS; 31.8 KGS

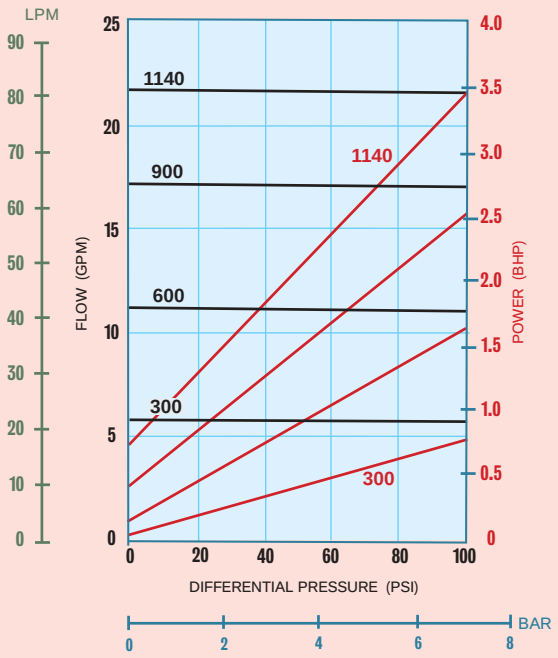
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

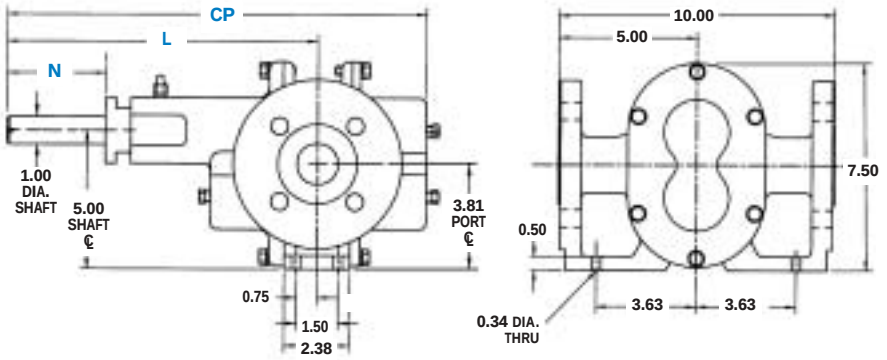


100 CPS Fluid (Oil)



Dimensional Data (inches)

312R Sealed (Long-coupled only)

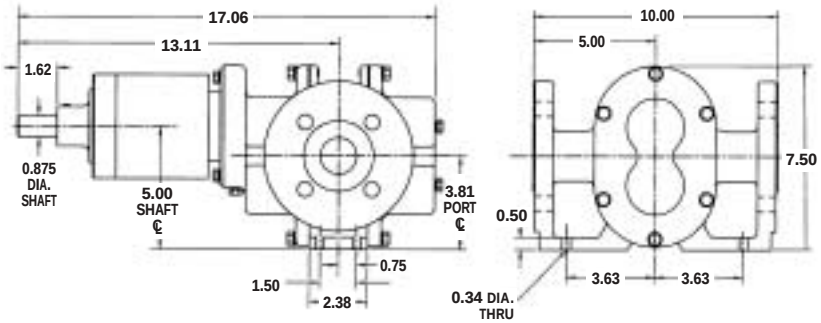


DIMENSION	SEAL CONFIGURATIONS: SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	SEAL CONFIGURATIONS: PACKING
CP(1)	15.19	15.19
N	3.75 (2)	3.69
L	11.25	11.25

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

312R-MC Mag-Drive (Long-coupled only)



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312F SEALED
312F-MC MAG-DRIVE

Liquiflo™
3-SERIES
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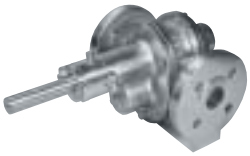
GEAR PUMP



Sealed

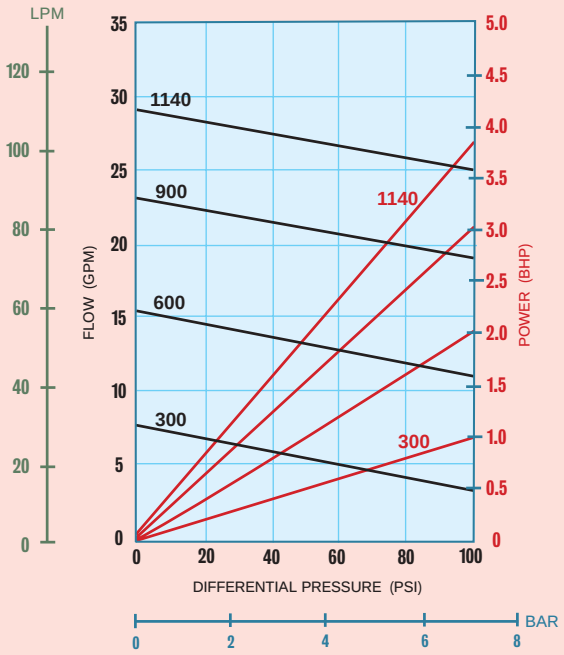
Mag-Drive

PORT SIZE	$1^1/_2$" FLG or $1^1/_4$" NPT/BPST
MAX FLOW	29 GPM; 110 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	270 PSI; 18.6 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1150 RPM	5 FT; 1.5 M
LIFT (DRY)	17 FT; 5.2 M
WEIGHT (without motor)	
SEALED	52 LBS; 23.6 KGS
MAG-DRIVE	70 LBS; 31.8 KGS

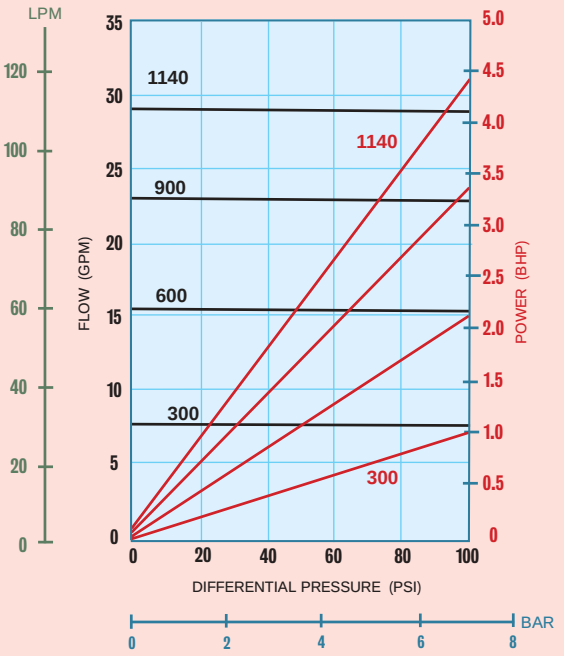
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

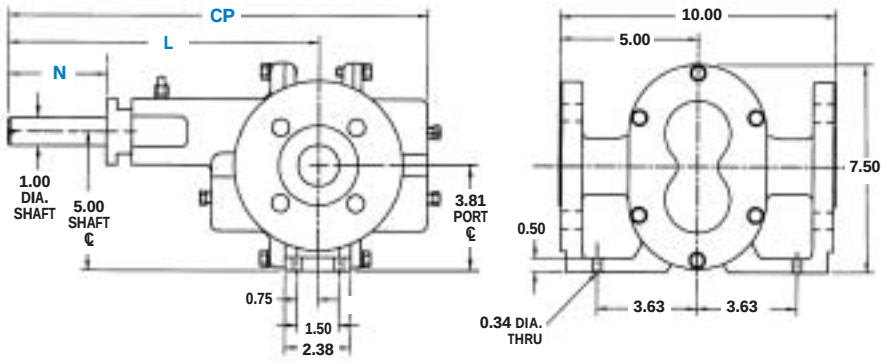


100 CPS Fluid (Oil)



Dimensional Data (inches)

312F Sealed (Long-coupled only)

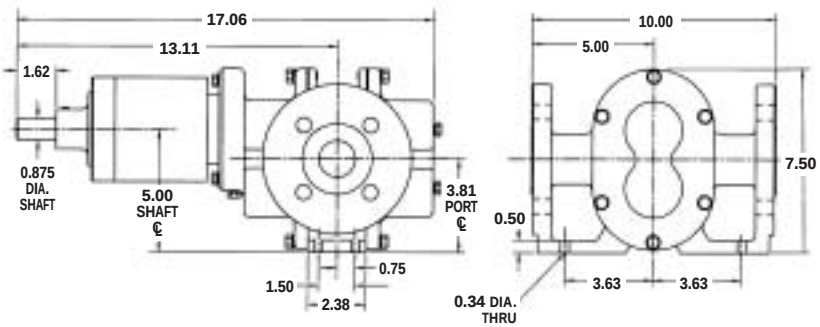


DIMENSION	SEAL CONFIGURATIONS: SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	SEAL CONFIGURATIONS: PACKING
CP(1)	15.19	15.19
N	3.75 (2)	3.69
L	11.25	11.25

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

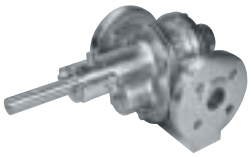
Dimensional Data (inches)

312F-MC Mag-Drive (Long-coupled only)



314F SEALED
314F-MC MAG-DRIVE

Liquiflo™
3-SERIES
ROTOGEAR®
GEAR PUMP


Sealed

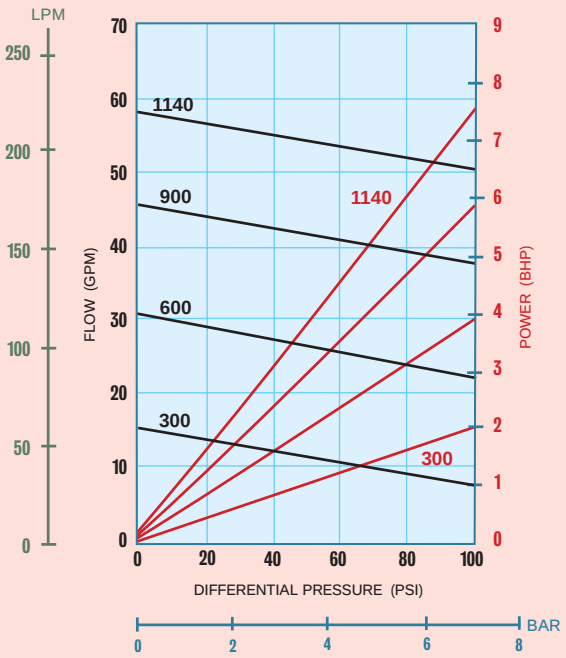

Mag-Drive

PORT SIZE	$2^1/_2$" FLG
MAX FLOW	58 GPM; 220 LPM
MAX DIFFERENTIAL PRESSURE	100 PSI; 7 BAR
MAX DISCHARGE PRESSURE	270 PSI; 18.6 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1150 RPM	3 FT; 0.9 M
LIFT (DRY)	20 FT; 6.1 M
WEIGHT (without motor)	
SEALED	67 LBS; 30.4 KGS
MAG-DRIVE	85 LBS; 38.6 KGS

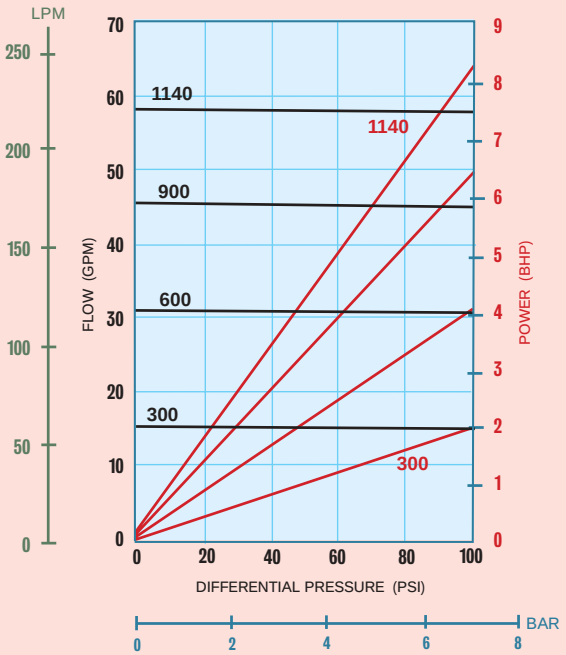
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

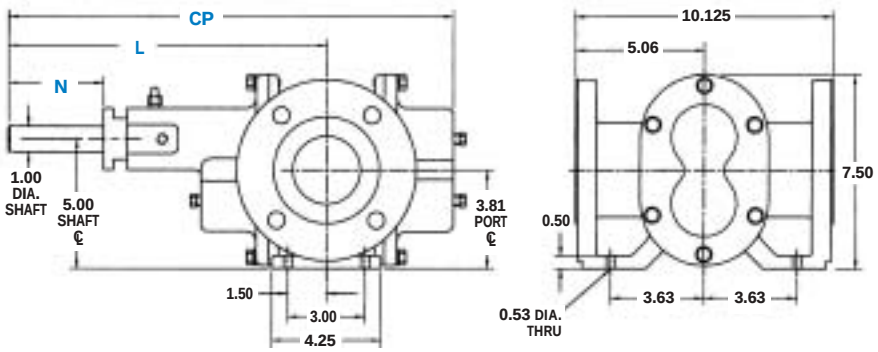


100 CPS Fluid (Oil)



Dimensional Data (inches)

314F Sealed (Long-coupled only)

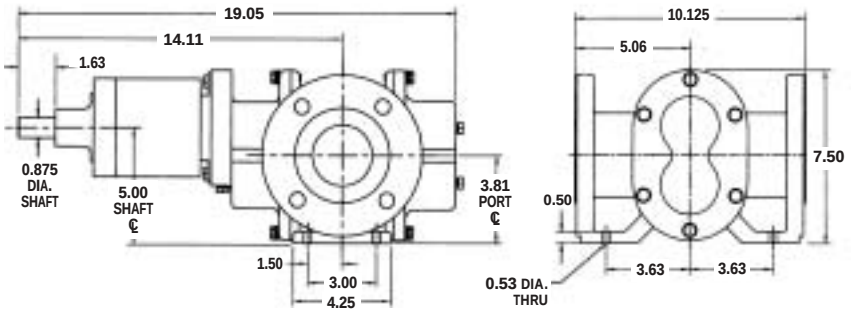


DIMENSION	SEAL CONFIGURATIONS: SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	SEAL CONFIGURATIONS: PACKING
CP(1)	19.69	19.69
N	6.25 (2)	6.18
L	14.75	14.75

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

314F-MC Mag-Drive (Long-coupled only)



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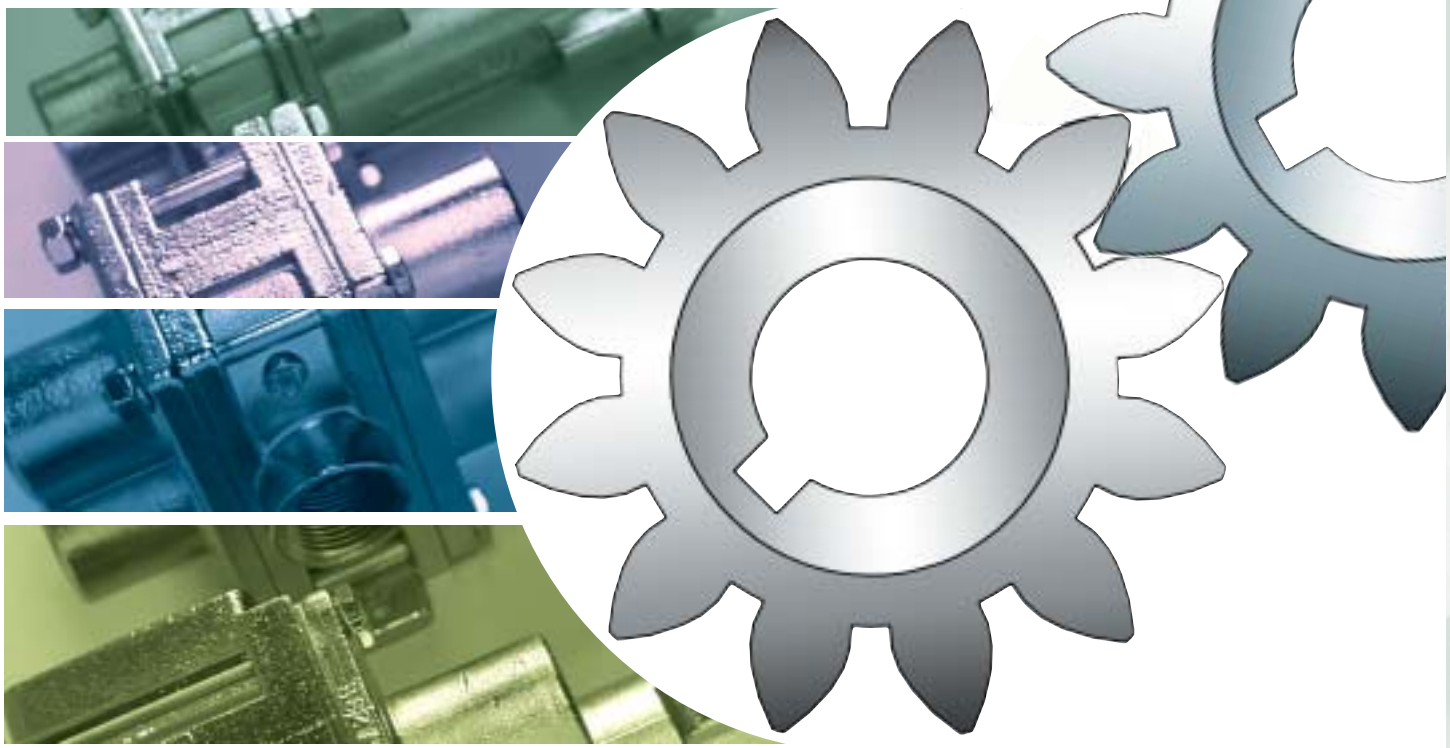
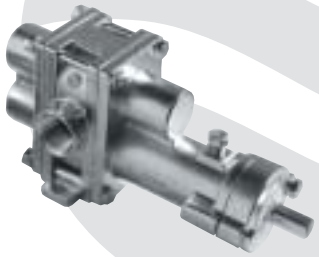
H-SERIES

ROTOGEAR® EXTERNAL GEAR PUMPS



H-SERIES
ROTOGEAR® EXTERNAL GEAR PUMPS



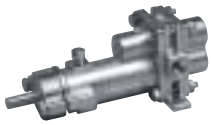
H-Series

Up to 225 PSI differential pressure

Liquiflo's **H-Series high-pressure** gear pumps are available in Sealed and Mag-Drive versions with flows up to approximately **30 GPM** and differential pressures up to **225 PSI***. With similar outside dimensions to the 3-Series, the H-Series has larger shafts, bearings and seals for extended service life. These features allow it to handle higher pressures and operate longer.

* 300 PSI possible on some models. Contact factory.

H-Series Specification Chart

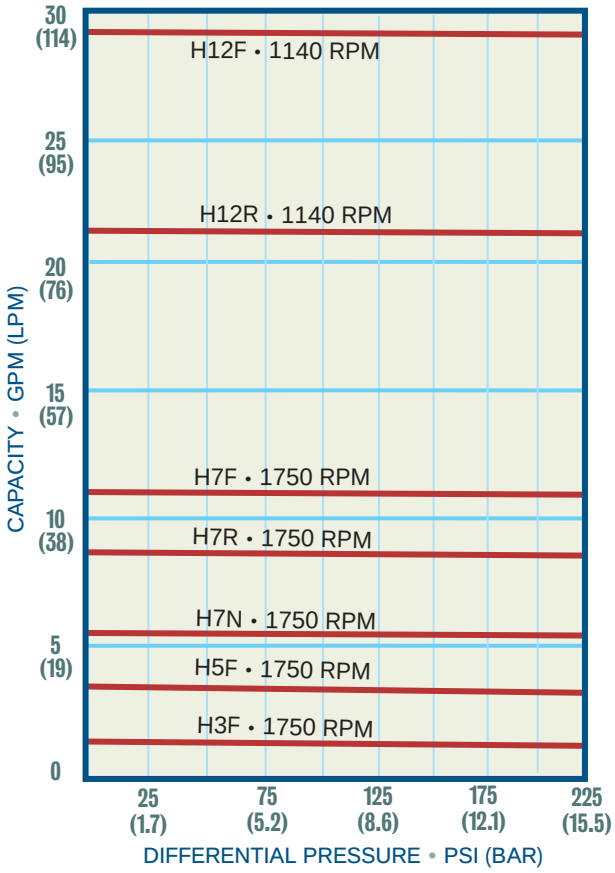
SEALED						
MAG-DRIVE Close-Coupled						
SEALED MAG-DRIVE	**H3F H3F-MC**	**H5R H5R-MC**	**H5F H5F-MC**	**H7N H7N-MC**	**H7R H7R-MC**	**H7F H7F-MC**
Max Flow	**1.4** GPM (**5.3** LPM)	**2.4** GPM (**9.1** LPM)	**3.4** GPM (**13** LPM)	**5.4** GPM (**20.4** LPM)	**8.6** GPM (**32.5** LPM)	**10.7** GPM (**40.5** LPM)
Max Diff. Press.	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)
Max Discharge	300 PSI (20.7 BAR)	300 PSI (20.7 BAR)	300 PSI (20.7 BAR)	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)	225 PSI (15.5 BAR)
Max Temp.	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)	500˚F (260˚C)
Max Viscosity	100,000* CPS	100,000* CPS	100,000* CPS	100,000* CPS	100,000* CPS	100,000* CPS
Max Speed	1750 RPM	1750 RPM	1750 RPM	1750 RPM	1750 RPM	1750 RPM
NPSHR @ Max Speed	2 FT (0.6M)	2 FT (0.6M)	2 FT (0.6M)	5.2 FT (1.6M)	5.2 FT (1.6M)	5.2 FT (1.6M)
Weight (LBS) Sealed Mag-Drive	2.5 LBS (1.1 KGS) 31 LBS (14 KGS)	3.5 LBS (1.6 KGS) 32 LBS (15 KGS)	3.5 LBS (1.6 KGS) 32 LBS (15 KGS)	6.5 LBS (2.9 KGS) 36 LBS (16 KGS)	6.5 LBS (2.9 KGS) 36 LBS (16 KGS)	6.5 LBS (2.9 KGS) 36 LBS (16 KGS)

* Higher viscosities possible. Contact factory.

Liquiflo™

COMPOSITE GEAR PUMP PERFORMANCE CURVES

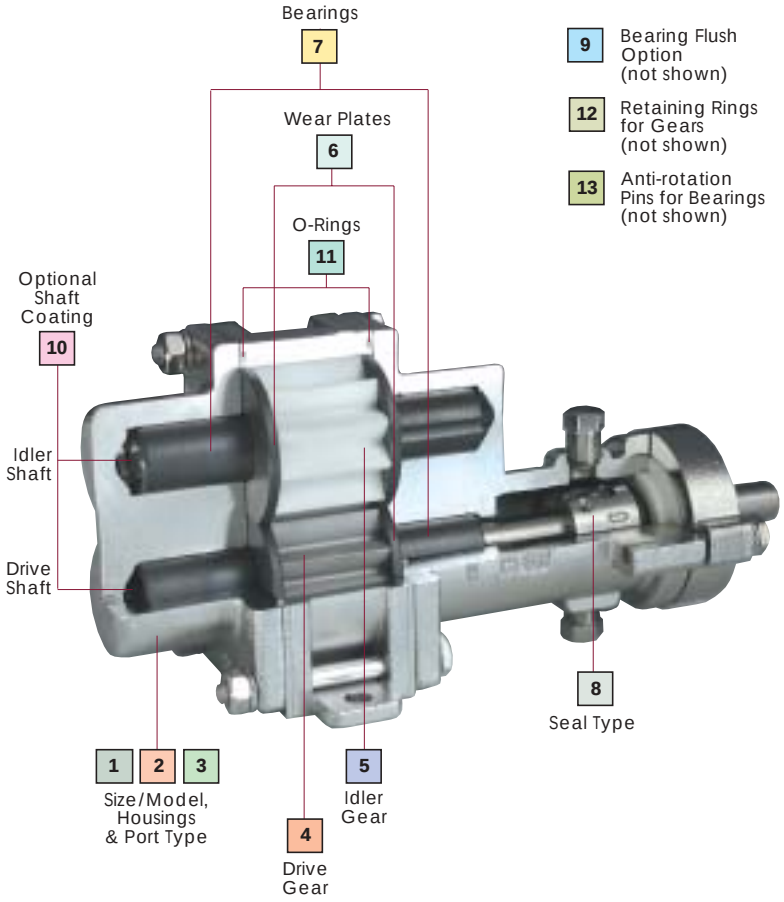
TEST FLUID: OIL (100 CPS)



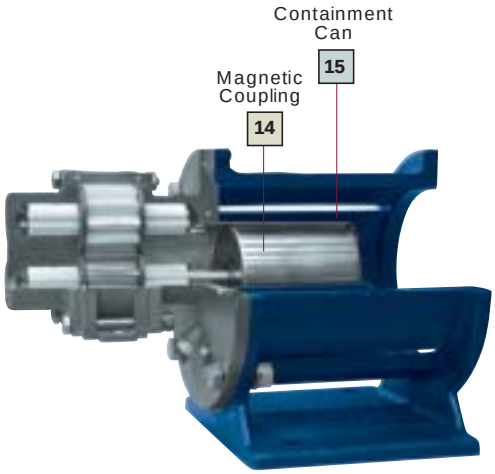
LONG-COUPLED ONLY

H12R H12R-MC	H12F H12F-MC
22 GPM (**83** LPM)	**29** GPM (**110** LPM)
225 PSI (15.5 BAR)	225 PSI (15.5 BAR)
270 PSI (18.6 BAR)	270 PSI (18.6 BAR)
500˚F (260˚C)	500˚F (260˚C)
100,000* CPS	100,000* CPS
1150 RPM	1150 RPM
5 FT (1.5M)	5 FT (1.5M)
52 LBS (23.6 KGS) 70 LBS (32 KGS)	52 LBS (23.6 KGS) 70 LBS (32 KGS)

PUMP MODEL CODING



Sealed Pump



Mag-Drive Pump

tel. 908.518.0777 fax. 908.518.1847 www.liquiflo.com

PUMP MODEL CODING

EXAMPLE:

H5FS6PEEU00000, designates a Model H5F Pump with Single Mechanical Seal.

H5F	S	6	P	E	E	U	0	0	0	0	0	_	_
1&2	3	4	5	6	7	8	9	10	11	12	13	14	15

Pos.	Description	Selection	
1 & 2	Pump Model	H5F	**H5F Pump**
3	Housing Mat'l	S	**316 SS NPT**
4	Drive Gear Mat'l	6	**316 SS**
5	Idler Gear Mat'l	P	**PEEK**
6	Wear Plate Mat'l	E	**Carbon 60**
7	Bearing Mat'l	E	**Carbon 60**
8	Seal Type	U	**Single, Carbon-Ceramic**
9	Bearing Flush	0	**None**
10	Shaft Coating	0	**None**
11	O-Rings	0	**Teflon**
12	Retaining Ring	0	**Same mat'l as housings**
13	Bearing Pins	0	**Teflon**
14	Mag Coupling		**N/A**
15	Options		**N/A**

Liquiflo's Model Code describes both the pump's size and material selected. This model code is required for the future identification of your pump when reordering either a pump or replacement parts. Model code is permanently stamped into pump housing.

■ **Available**

❍ **No longer available in new pumps. Parts available only for repair and replacement.**

⊗ **Not Available**

Flanges available:

ANSI, DIN, JIS

Or slip joint flanges conforming to the dimensions of the standard.

	H3	H5	H7	H12
NPT/BSPT	1/4	1/2	3/4	1 1/4
ANSI 150# RF FLG	1/2	1/2	3/4	1 1/2
DIN PN16	10	15	20	40
JIS 10K	10	15	20	40

Liquiflo H-Series Gear Pumps
Selection & Availability

Liquiflo™

Sample Model No.	H5	F	S	6	P	E	E	U	0	0	0	0	0		
Position No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Position			H3	H5	H7	H7N	H12
1 Pump Model							
2 Model	F	= Full Capacity	■	■	■	⊗	■
	R	= Reduced Capacity	⊗	■	■	⊗	■
3 Basic Material & Port Type	S	= 316 SS NPT	■	■	■	■	■
	H	= Alloy-C NPT	■	■	■	■	■
	L	= 316 SS Flanged	■	■	■	■	■
	C	= Alloy-C Flanged	■	■	■	■	■
	X	= 316 SS BSPT	■	■	■	■	■
	Y	= Alloy-C BSPT	■	■	■	■	■
4 Drive Gear	1	= Alloy-C	■	■	■	■	■
	6	= 316 SS	■	■	■	■	■
	P	= PEEK	■	■	■	■	■
5 Idler Gear	1	= Alloy-C	■	■	■	■	■
	6	= 316 SS	■	■	■	■	■
	8	= Ryton	■	■	■	■	■
	P	= PEEK	■	■	■	■	■
6 Wear Plates	E	= Carbon 60	■	■	■	■	■
	3	= Teflon	■	■	■	■	■
	4	= Ceramic	■	■	■	■	■
	P	= PEEK	■	■	■	■	■
7 Bearings	E	= Carbon 60	■	■	■	■	■
	B	= Silicon Carbide	■	■	■	■	■
	P	= PEEK	■	■	■	■	■
8 Outer Magnet Bore (Mag Drive ONLY)	0	= 0.625" (56C)	■	■	■	■	⊗
	1	= 0.875" (143/145TC)	■	■	■	■	■
	2	= 14 mm (IEC 71 - B5)	■	■	■	■	⊗
	3	= 19 mm (IEC 80 - B5)	■	■	■	■	⊗
	4	= 24 mm (IEC 90 - B5)	⊗	■	■	■	⊗
	5	= 1.125" (182/184TC)	⊗	⊗	■	■	⊗
8 Seal Types (Sealed pumps ONLY)	U	= Single-Int Carbon - Ceramic	■	■	■	■	■
	L	= Packing Teflon	■	■	■	■	■
	R	= Packing Grafoil	■	■	■	■	■
9 Bearing Flush	0	= Standard Housings	■	■	■	■	⊗
	1	= Ext. Brg Flush	■	■	■	■	■
	2	= Int. Brg Flush	■	■	■	■	■
10 Shaft Coating	0	= Material same as housing (uncoated)	■	■	■	■	■
	1	= Ceramic	■	■	■	■	■
	2	= Tungsten Carbide	■	■	■	■	■
11 O-Rings	0	= Teflon	■	■	■	■	■
	6	= 316 SS / PFA encap.	■	■	■	■	■
	B	= Buna-N	■	■	■	■	■
	E	= EPDM	■	■	■	■	■
	V	= Viton	■	■	■	■	■
	K	= Kalrez	■	■	■	■	■
12 Retaining Rings	0	= Material same as housing	■	■	■	■	■
13 Bearing Pins	0	= Teflon	■	■	■	■	⊗
	1	= Alloy-C	■	■	■	■	■
	6	= 316 SS	■	■	■	■	■
14 Magnetic Coupling (Mag Drive)	S	= 33 in-lbs	■	⊗	⊗	⊗	⊗
	B	= 120 in-lbs	■	■	■	■	⊗
	C	= 240 in-lbs	⊗	■	■	■	⊗
	K	= 250 in-lbs	⊗	⊗	⊗	⊗	■
	J	= 500 in-lbs	⊗	⊗	⊗	⊗	■
15 (Options)	8	= Temperature Trim	■	■	■	■	■
	9	= Viscosity Trim	■	■	■	■	■
	S	= Single Wall Can	■	■	■	■	■
	D	= Dual-Kan	■	■	■	■	■

H3F SEALED
H3F-MC MAG-DRIVE

Liquiflo™
H-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

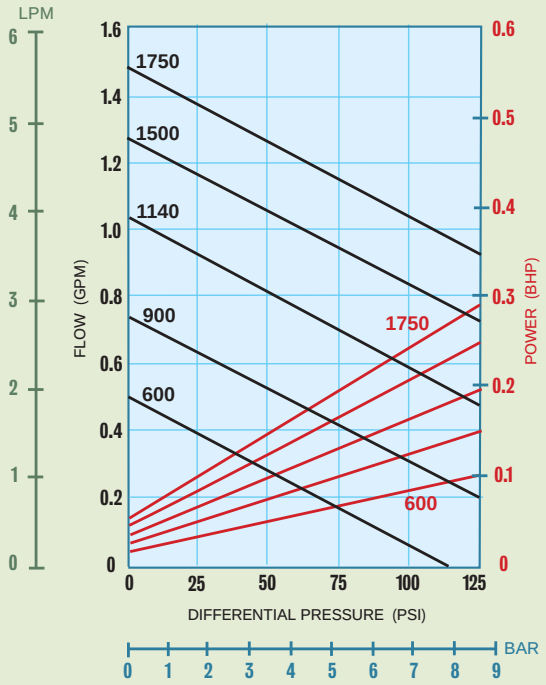
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	1/4" NPT/BSPT or 1/2" FLG
MAX FLOW	1.4 GPM; 5.3 LPM
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	300 PSI; 20.7 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	2 FT; 0.6 M
LIFT (DRY)	1.5 FT; 0.45 M
WEIGHT (without motor) SEALED MAG-DRIVE	 2.5 LBS; 1.1 KGS 31 LBS; 14 KGS

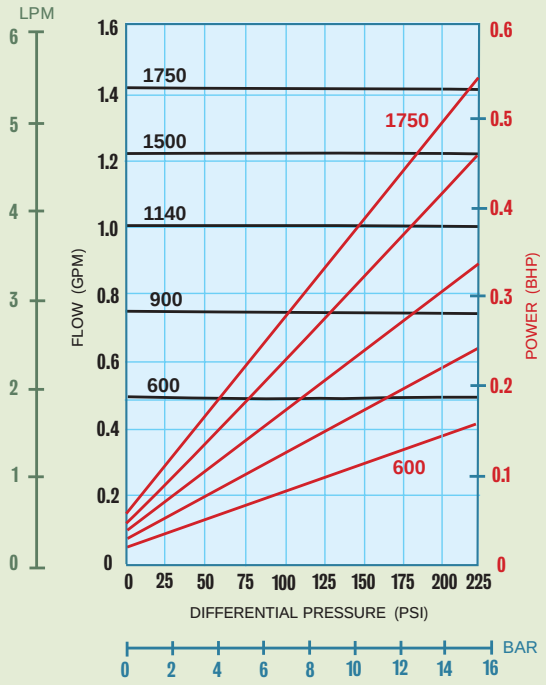
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

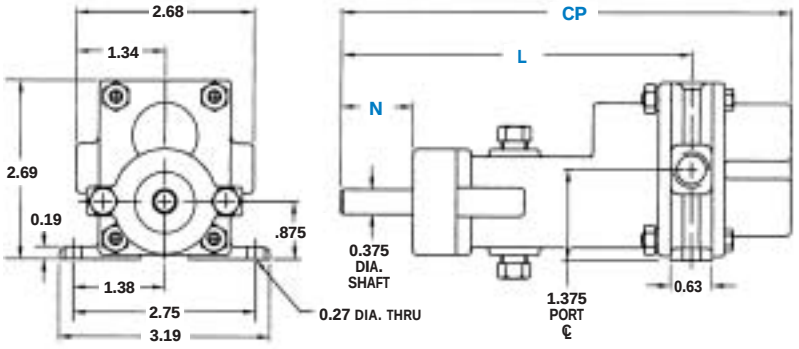


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: H3F Sealed

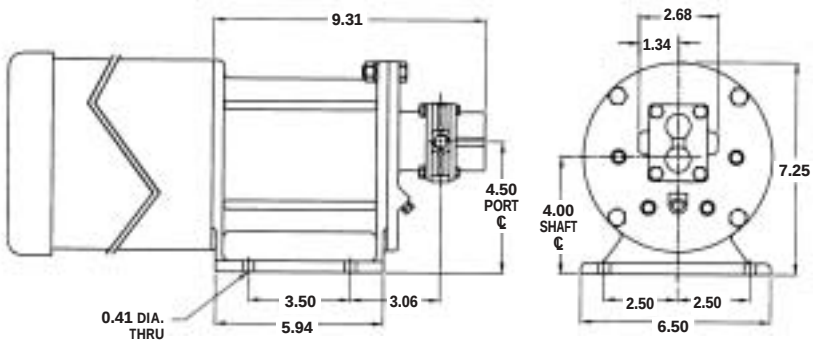


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL
CP(1)	6.94
N	0.81 (2)
L	5.44

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: H3F-MC & H3F Sealed



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H5R SEALED
H5R-MC MAG-DRIVE

Liquiflo™
H-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

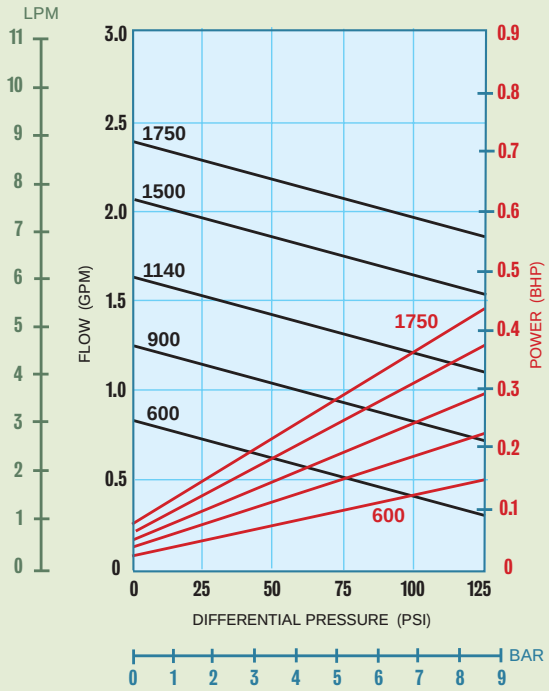
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	1/2" NPT/BSPT/FLG
MAX FLOW	2.4 GPM; 9.1 LPM
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	300 PSI; 20.7 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	2 FT; 0.6 M
LIFT (DRY)	2 FT; 0.6 M
WEIGHT (without motor) SEALED MAG-DRIVE	 3.5 LBS; 1.6 KGS 32 LBS; 15 KGS

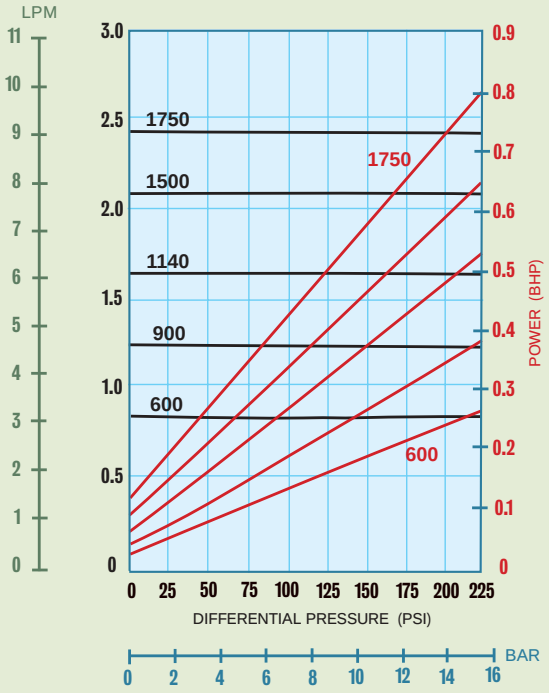
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

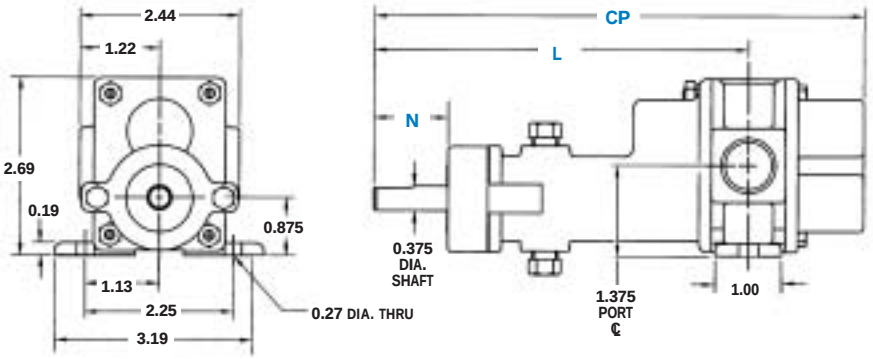


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: H5R Sealed

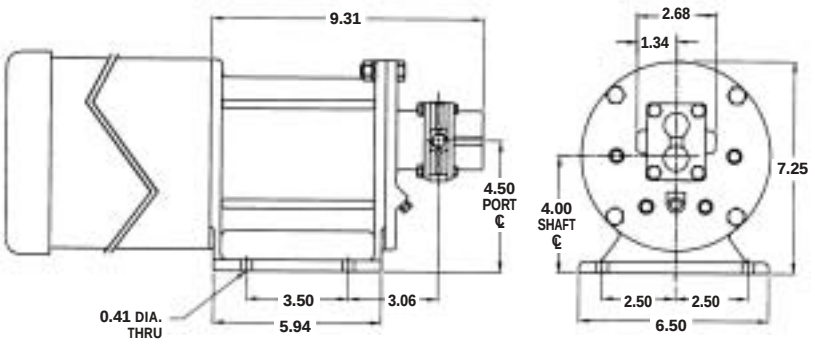


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL
CP(1)	7.44
N	0.80 (2)
L	5.67

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: H5R-MC & H5R Sealed



H5F SEALED
H5F-MC MAG-DRIVE

Liquiflo™
H-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

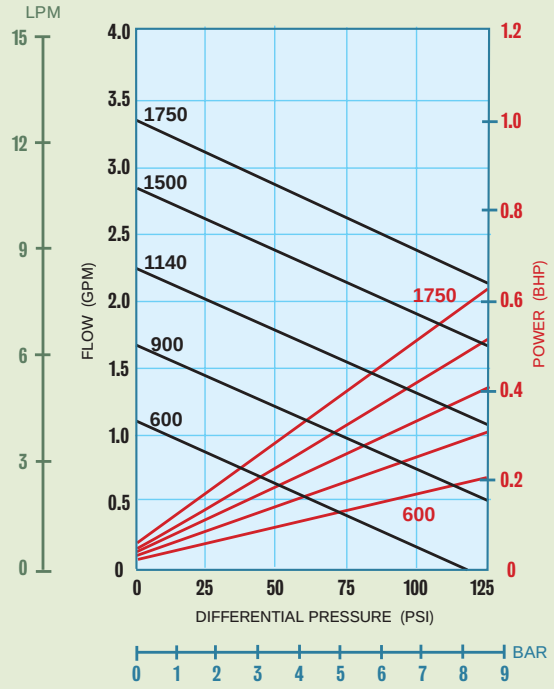
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	1/2" NPT/BSPT/FLG
MAX FLOW	3.4 GPM; 13 LPM
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	300 PSI; 20.7 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	2 FT; 0.6 M
LIFT (DRY)	4 FT; 1.2 M
WEIGHT (without motor)	
SEALED	3.5 LBS; 1.6 KGS
MAG-DRIVE	32 LBS; 15 KGS

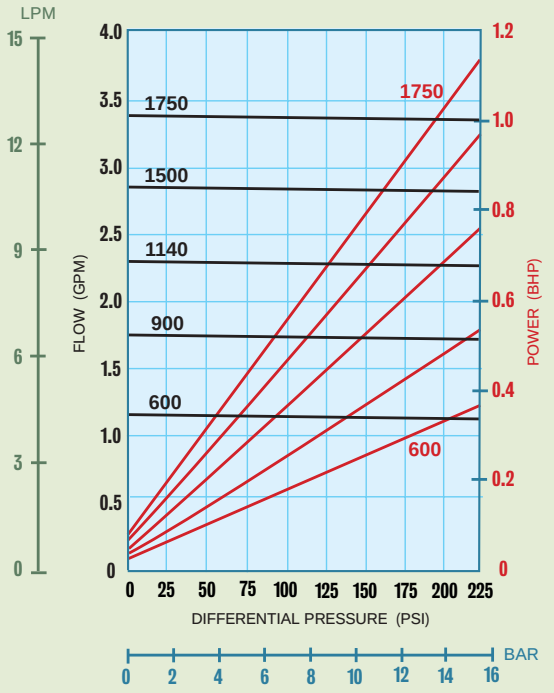
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

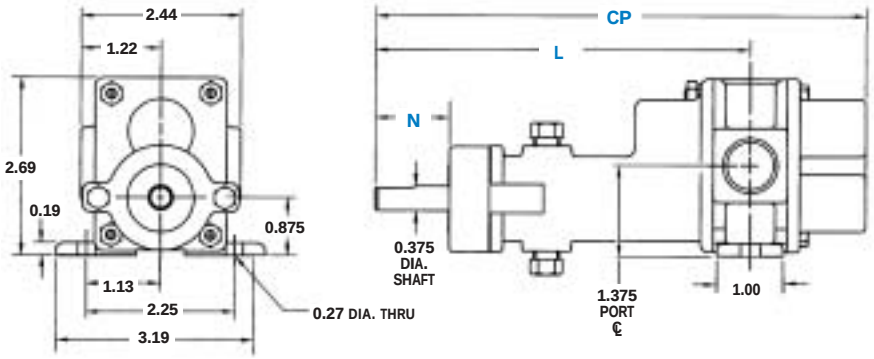


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: H5F Sealed

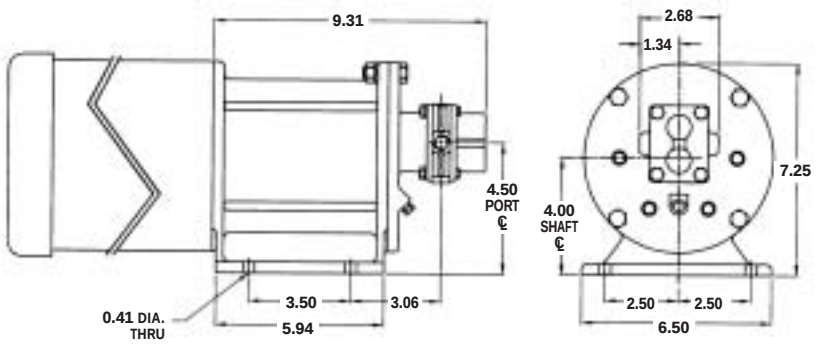


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL
CP(1)	7.44
N	0.80 (2)
L	5.67

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: H5F-MC & H5F Sealed



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H7N SEALED
H7N-MC MAG-DRIVE

Liquiflo™
H-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

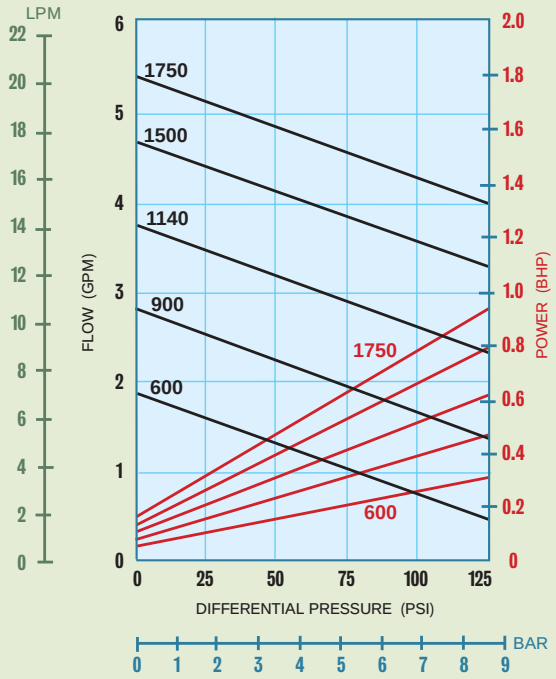
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	3/4" NPT/BSPT/FLG
MAX FLOW	5.4 GPM; 20.4 LPM
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	225 PSI; 15.5 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	5.2 FT; 1.6 M
LIFT (DRY)	6 FT; 1.8 M
WEIGHT (without motor) SEALED MAG-DRIVE	 6.5 LBS; 3 KGS 36 LBS; 16 KGS

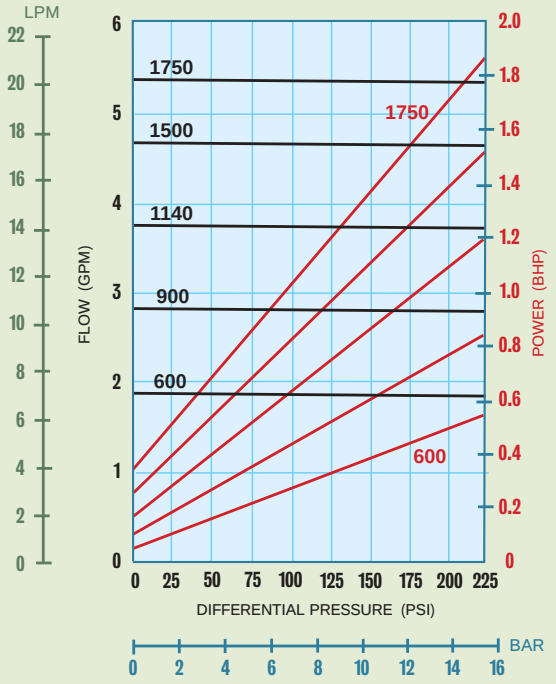
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

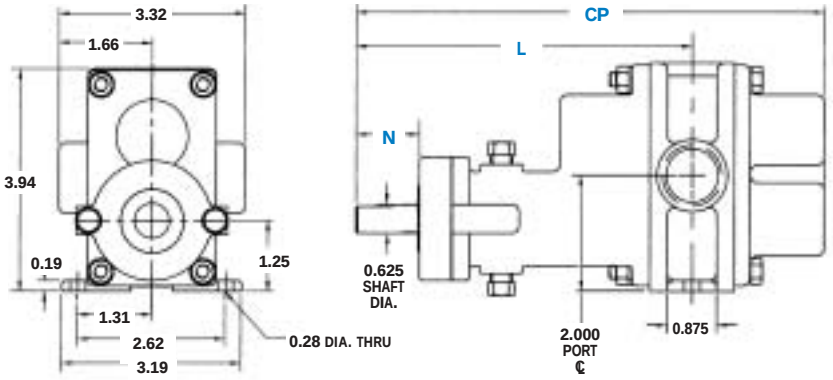


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: H7N Sealed

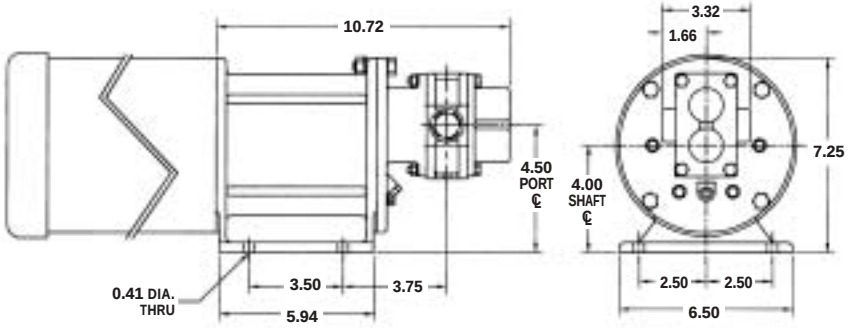


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL
CP(1)	8.20
N	0.94 (2)
L	5.98

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: H7N-MC & H7N Sealed



H7R SEALED
H7R-MC MAG-DRIVE

Liquiflo™
H-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

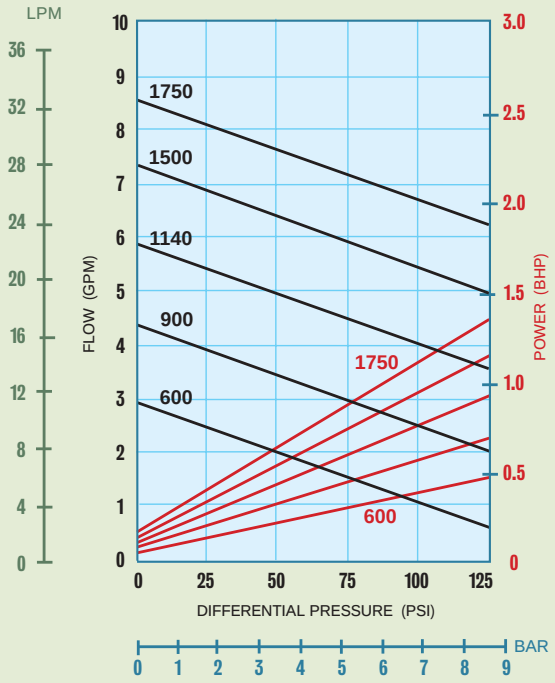
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	3/4" NPT/BSPT/FLG
MAX FLOW	8.6 GPM; 32.5 LPM
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	225 PSI; 15.5 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	5.2 FT; 1.6 M
LIFT (DRY)	6 FT; 1.8 M
WEIGHT (without motor) SEALED MAG-DRIVE	 6.5 LBS; 3 KGS 36 LBS; 16 KGS

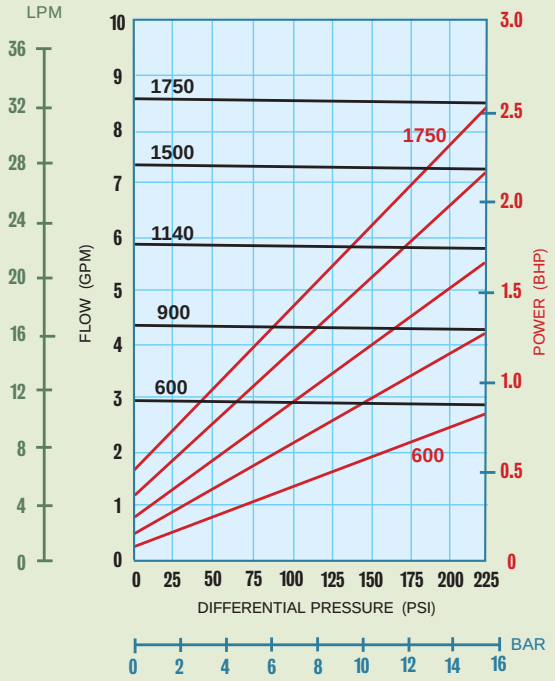
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

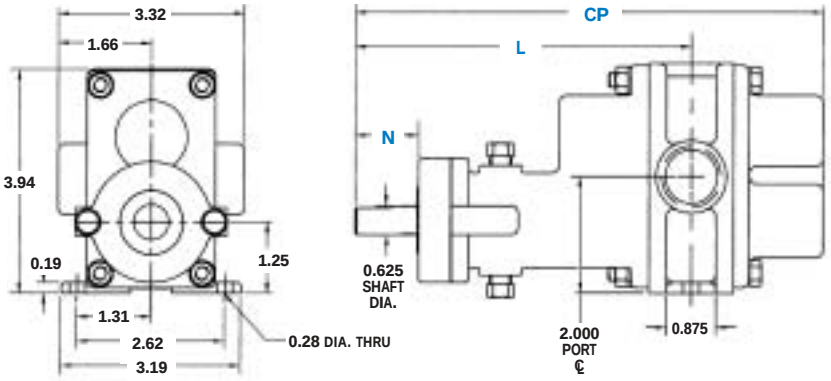


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: H7R Sealed

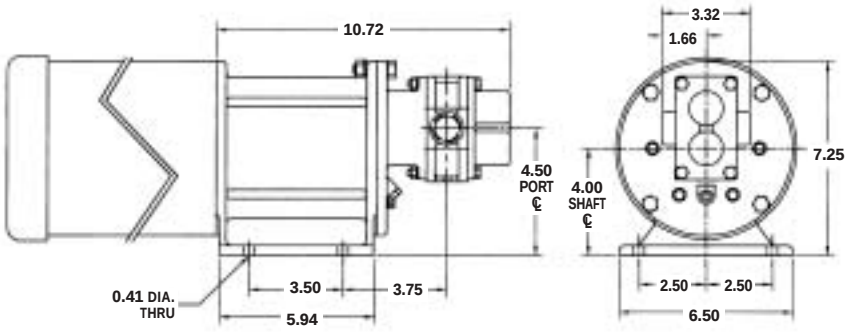


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL
CP(1)	8.20
N	0.94 (2)
L	5.98

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: H7R-MC & H7R Sealed



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H7F SEALED
H7F-MC MAG-DRIVE

Liquiflo™
H-SERIES
ROTOGEAR®
GEAR PUMP

Sealed

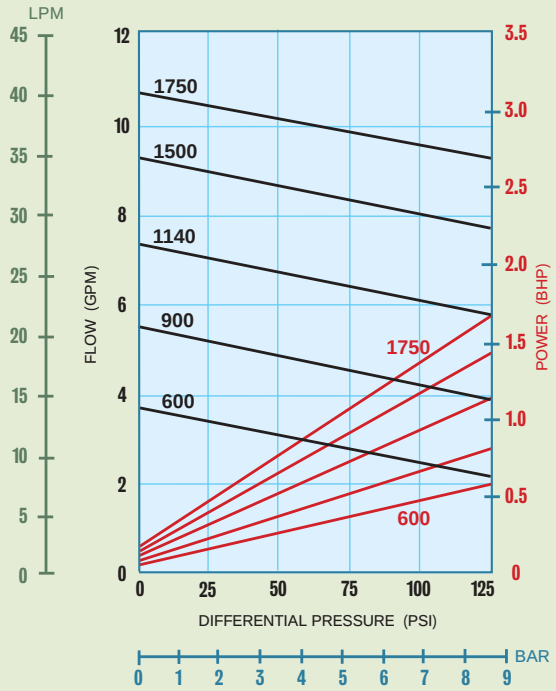
Close Coupled:
Sealed or Mag-Drive

PORT SIZE	3/4" NPT/BSPT/FLG
MAX FLOW	10.7 GPM; 40.5 LPM
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	225 PSI; 15.5 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	5.2 FT; 1.6 M
LIFT (DRY)	7 FT; 2.1 M
WEIGHT (without motor) SEALED MAG-DRIVE	 6.5 LBS; 3 KGS 36 LBS; 16 KGS

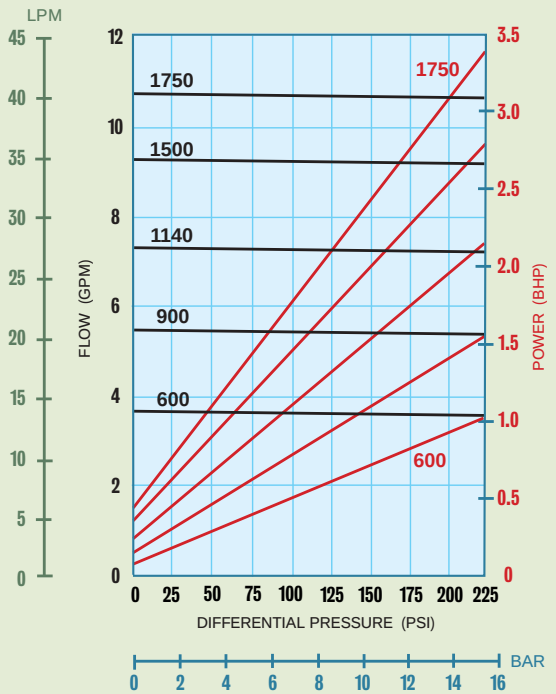
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

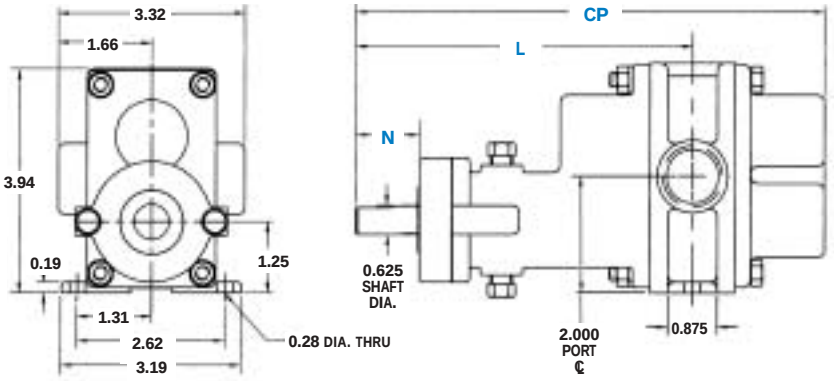


100 CPS Fluid (Oil)



Dimensional Data (inches)

Long-Coupled: H7F Sealed

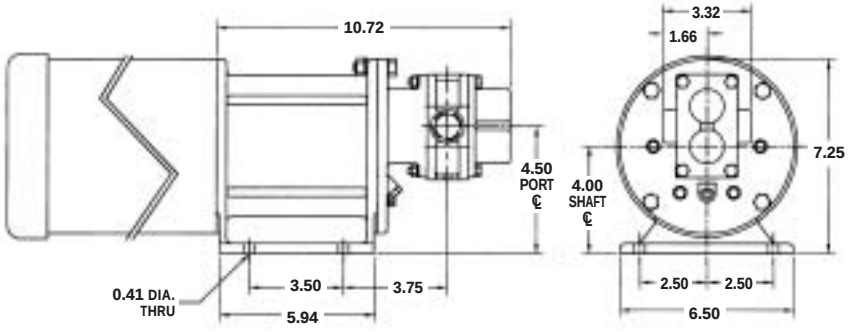


DIMENSION	SEAL CONFIGURATIONS PACKING SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL
CP(1)	8.32
N	0.94 (2)
L	5.98

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

Close-Coupled: H7F-MC & H7F Sealed



H12R SEALED
H12R-MC MAG-DRIVE

Liquiflo™
H-SERIES
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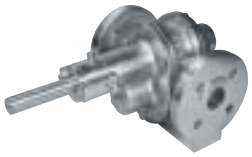
GEAR PUMP


Sealed

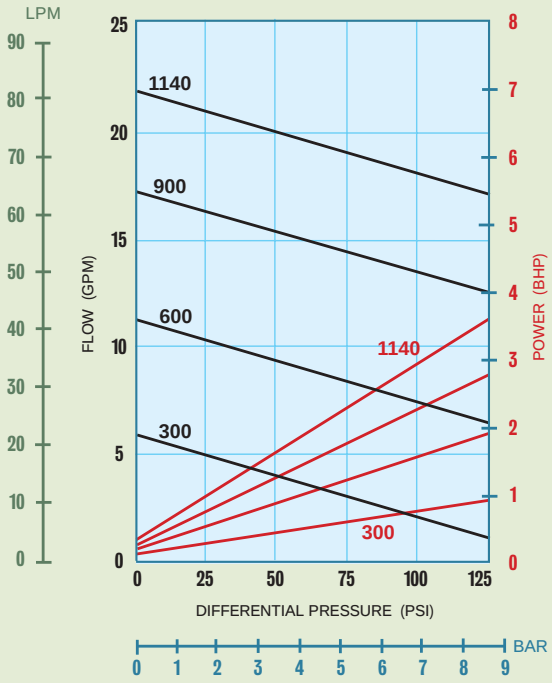

Mag-Drive

PORT SIZE	$1^1/_2$" FLG or $1^1/_4$" NPT/BPST
MAX FLOW	22 GPM; 83 LPM
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	270 PSI; 18.6 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	-40˚F; -40˚ C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	5 FT; 1.5 M
LIFT (DRY)	15 FT; 4.5 M
WEIGHT (without motor)	
SEALED	52 LBS; 24 KGS
MAG-DRIVE	70 LBS; 32 KGS

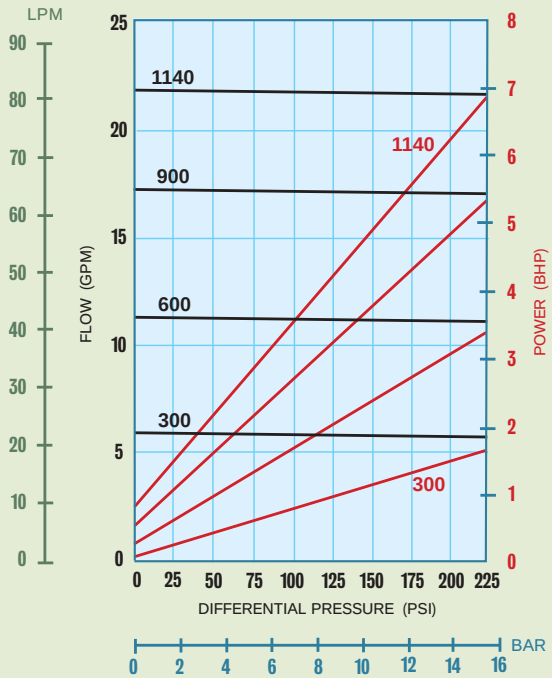
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

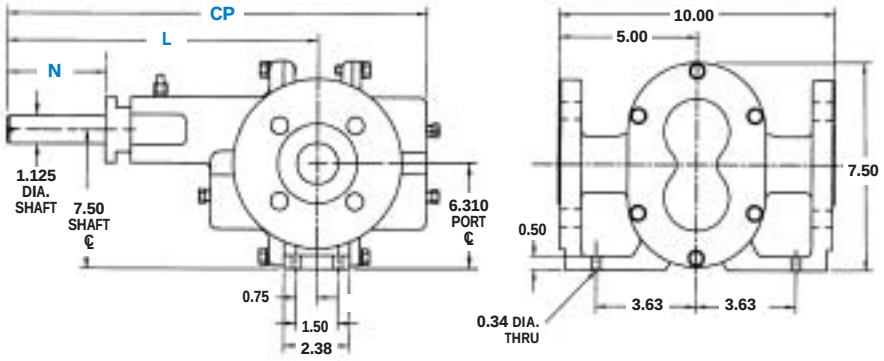


100 CPS Fluid (Oil)



Dimensional Data (inches)

H12R Sealed (Long-coupled only)

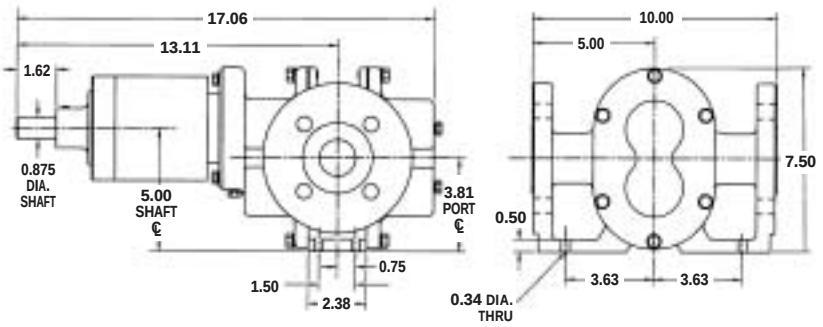


DIMENSION	SEAL CONFIGURATIONS: SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	SEAL CONFIGURATIONS: PACKING
CP(1)	15.19	15.19
N	2.25 (2)	2.18
L	9.75	9.75

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

H12R-MC Mag-Drive (Long-coupled only)



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H12F SEALED
H12F-MC MAG-DRIVE

Liquiflo™
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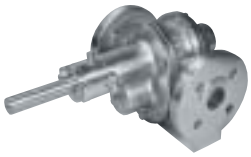
ROTOGEAR®
GEAR PUMP



Sealed

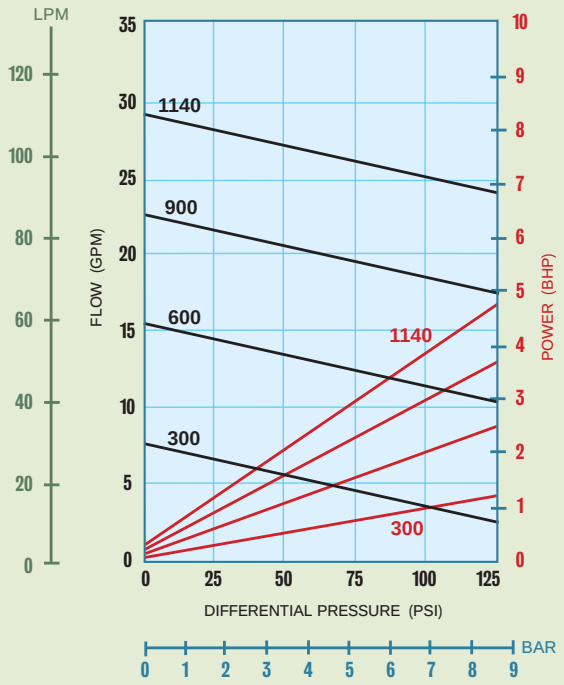
Mag-Drive

PORT SIZE	1 1/2" FLG or 1 1/4" NPT/BPST
MAX FLOW	29 GPM; 110 LPM
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	270 PSI; 18.6 BAR
MAX TEMPERATURE	500˚F; 260˚C
MIN TEMPERATURE	- 40˚F; -40˚ C
MAX VISCOSITY	100,000* CPS
NPSHR @ 1750 RPM	5 FT; 1.5 M
LIFT (DRY)	17 FT; 5.2 M
WEIGHT (without motor)	
SEALED	52 LBS; 24 KGS
MAG-DRIVE	70 LBS; 32 KGS

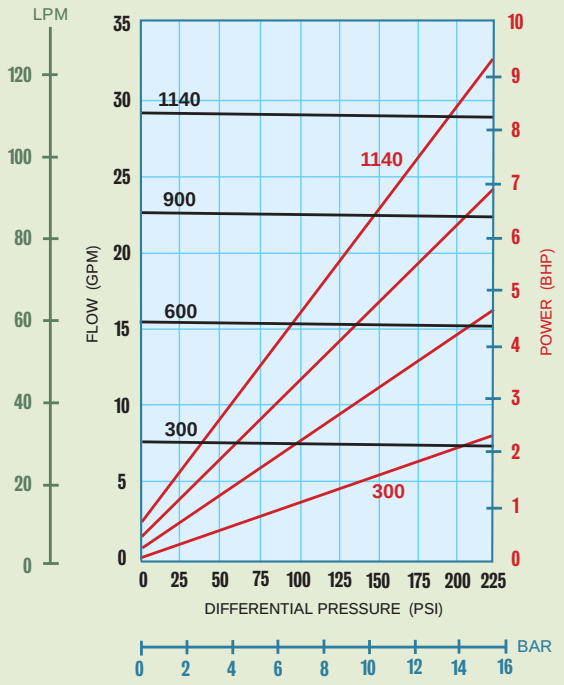
* Higher viscosities possible. Contact factory.

PERFORMANCE CURVES

1 CPS Fluid (Water)

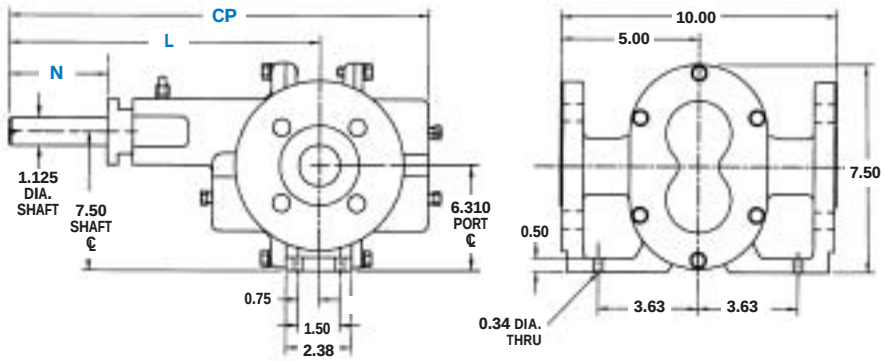


100 CPS Fluid (Oil)



Dimensional Data (inches)

H12F Sealed (Long-coupled only)

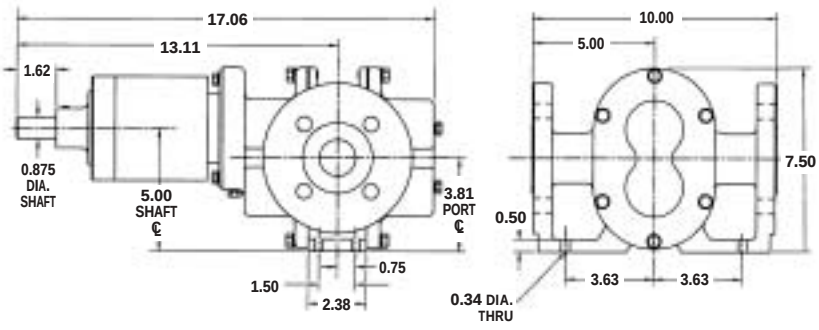


DIMENSION	SEAL CONFIGURATIONS: SINGLE MECHANICAL SEAL DOUBLE MECHANICAL SEAL	SEAL CONFIGURATIONS: PACKING
CP(1)	15.19	15.19
N	2.25 (2)	2.18
L	9.75	9.75

NOTES: (1) Add .312 inches for Bearing Flush Plug.
(2) Minimum dimension.

Dimensional Data (inches)

H12F-MC Mag-Drive (Long-coupled only)



Liquiflo™
2-SERIES
ROTOGEAR®
EXTERNAL
GEAR PUMP

2-SERIES MAG-DRIVE MINI-PUMP

GENERAL INFORMATION

DESCRIPTION

The **2-Series Mini-Pump** is a low-flow/ high-pressure external gear pump that is completely field repairable. With a ruggedly designed 316 Stainless Steel or Titanium body and several material options for shafts, gears, wear plates and bearings, these pumps can be used in a wide variety of services.

TYPICAL USES & APPLICATIONS

The **2-Series Mini-Pump** is typically used in chemical processing plants, pilot plants, laboratories, paper-making, chemical dosing and metering, pipeline sampling and waste-water treatment.

MAINTENANCE

The **2-Series Mini-Pump** was designed with reliability and ease of maintenance in mind. The gear and shaft are permanently fixed to each other making repairs easy and fool-proof. Standard repair kits contain all wearing parts and static O-rings:

- Gear-Shaft Assemblies
- Bearing-Wear Plate Combinations
- O-rings

CUSTOMIZATION

Contact factory.

FEATURES

- Mag-Drive
- Corrosion resistant materials
- Pulseless flow
- Flow rates from 1 to 60 GPH
- Viscosities to 5,000 CPS
- Differential pressures up to 225 PSI
- Low NIPR (NPSHR)
- Self-compensating wear plates limit slip on low viscosity fluids
- High torque SmCo Magnets
- Minutes to repair

REPAIR KITS

Repair Kits simplify inventory and speed repair. All parts can also be purchased separately.

2-Series Mini-Pump

2-Series Mini-Pump
close-coupled to motor

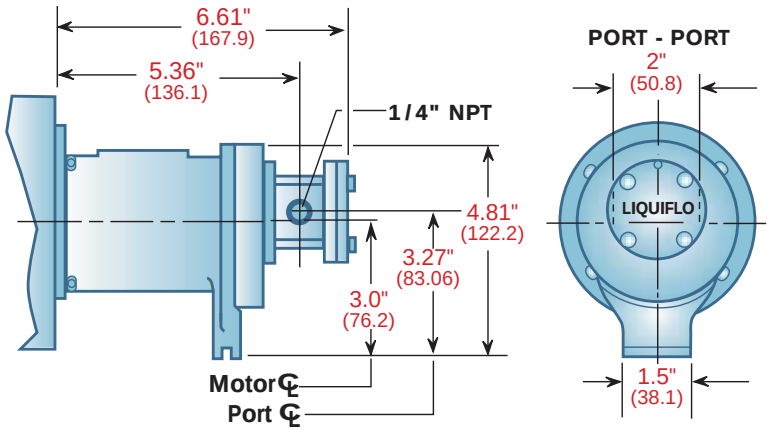
MATERIALS AVAILABLE

HOUSINGS	GEARS	BEARINGS	SHAFTS
316 SS TITANIUM	316 SS ALLOY-C PEEK TITANIUM	CARBON PEEK	316 SS TITANIUM

Note: Tungsten Carbide and Chrome Oxide Coated Shafts are available.

Dimensional Data -inches (mm)

2-SERIES Mag-Drive Mini Pump



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PUMP MODEL CODING

Liquiflo 2-Series Gear Pumps
Selection & Availability

Liquiflo 2-SERIES ROTOGEAR® EXTERNAL GEAR PUMP

EXAMPLE:

2FS6PE200T, designates a Model 2F Mag-Drive Pump.

2F	S	6	P	E	2	0	0	T
1 & 2	3	4	5	6	7	8	9	10

Pos.	Description	Selection	
1 & 2	Pump Model	2F	**2F Pump**
3	Housing Mat'l	S	**316 SS NPT**
4	Drive Gear Mat'l	6	**316 SS**
5	Idler Gear Mat'l	P	**PEEK**
6	Wear Plate & Bearing	E	**Carbon 60**
7	Outer Magnet Bore	2	**.625" dia.**
8	Shafts	0	**Non-coated**
9	O-Rings	0	**Teflon**
10	Magnetic Coupling	T	**MCT**

Liquiflo's Model Code describes both the pump's size and material selected. This model code is required for the future identification of your pump when reordering either a pump or replacement parts. Model code is permanently stamped into pump housing.

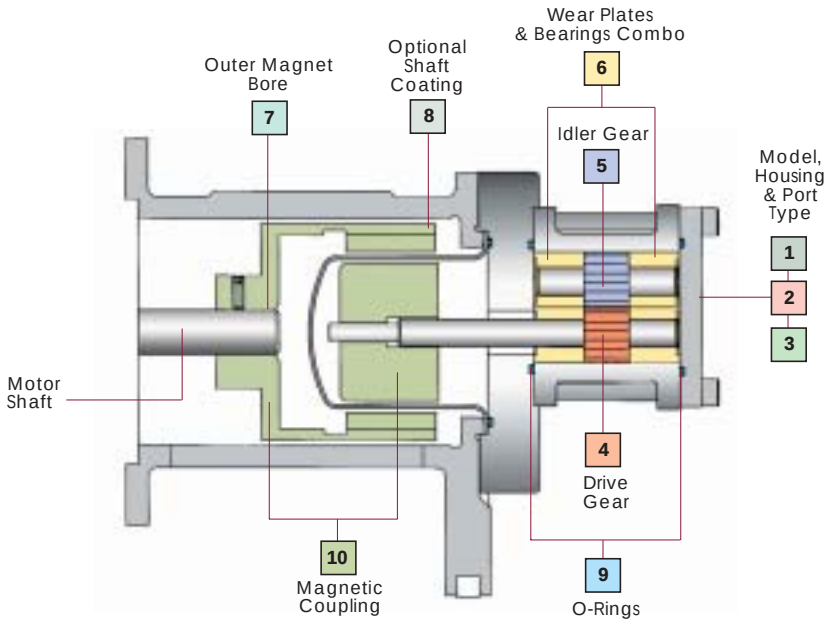
■ **Available**

❍ **No longer available in new pumps. Parts available only for repair and replacement.**

⊗ **Not Available**

Sample Model No.	2	F	S	6	P	E	2	0	0	T
Position No.	1	2	3	4	5	6	7	8	9	10

Position 1 Model	**1**	**Pump Model**	2
Position 2 Model	**2**	F = Full Capacity R = Reduced Capacity	■ ■
Position 3 Basic Material & Port Type	**3**	S = 316 SS NPT X = 316 SS BSPT T = Titanium NPT Z = Titanium BSPT	■ ■ ■ ■
Position 4 Drive Gear	**4**	1 = Alloy-C 6 = 316 SS P = PEEK 4 = Titanium	■ ■ ■ ■
Position 5 Idler Gear	**5**	1 = Alloy-C 6 = 316 SS P = PEEK 4 = Titanium	■ ■ ■ ■
Position 6 Wear Plates & Bearings Combination	**6**	E = Carbon 60 P = PEEK	■ ■
Position 7 Outer Magnet Bore	**7**	0 = 0.500" (NEMA 48C) 1 = 14 mm (IEC 71 - B14 Face) 2 = 0.625" ((NEMA 56C)	■ ■ ■
Position 8 Shaft Coating	**8**	0 = Material same as housing (uncoated) 1 = Ceramic	■ ■
Position 9 O-Rings	**9**	0 = Teflon B = Viton K = Kalrez	■ ■ ■
Position 10 Magnetic Coupling	**10**	T = 30 in-lbs	■



2-Series Mini Pump (Mag-Drive)

2-SERIES Mag-Drive Mini Pump

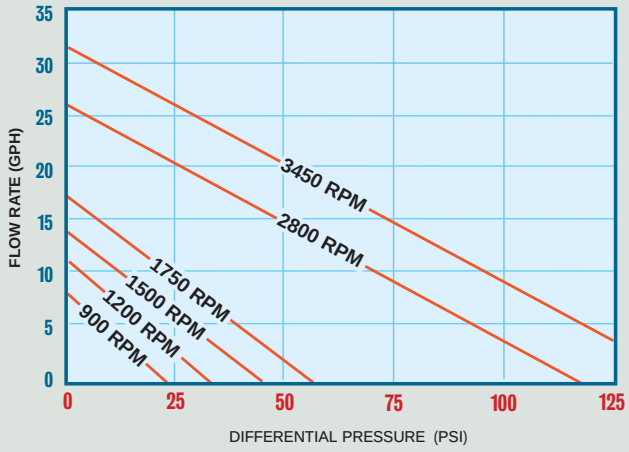
Liquiflo™
2-SERIES
ROTOGEAR®
EXTERNAL
GEAR PUMP

MODEL	2R (Reduced)	2F (Full)
PORT SIZE	1/4" NPT/BSPT	1/4" NPT/BSPT
MAX FLOW	30 GPH; 113 LPH	60 GPH; 227 LPH
MAX DIFFERENTIAL PRESSURE	225 PSI; 15.5 BAR	225 PSI; 15.5 BAR
MAX DISCHARGE PRESSURE	300 PSI; 20.7 BAR	300 PSI; 20.7 BAR
MAX TEMPERATURE	500˚F; 260˚C	500˚F; 260˚C
MIN TEMPERATURE	- 40˚F; -40˚C	- 40˚F; -40˚C
MAX VISCOSITY (300 RPM)	5,000 CPS	5,000 CPS
NPSHR @ 1750 RPM	2 FT; 0.6 M	2 FT; 0.6 M
LIFT (DRY)	1.2 FT	1.2 FT
WEIGHT (without motor)	5 LBS; 2.3 KGS	5 LBS; 2.3 KGS

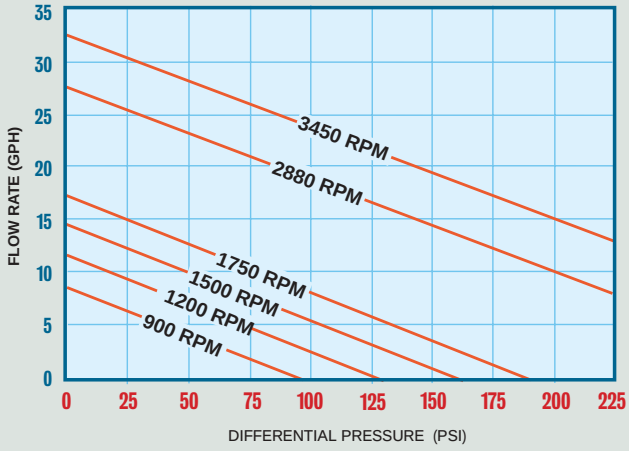
2R

PERFORMANCE CURVES

1 CPS Fluid (Water)



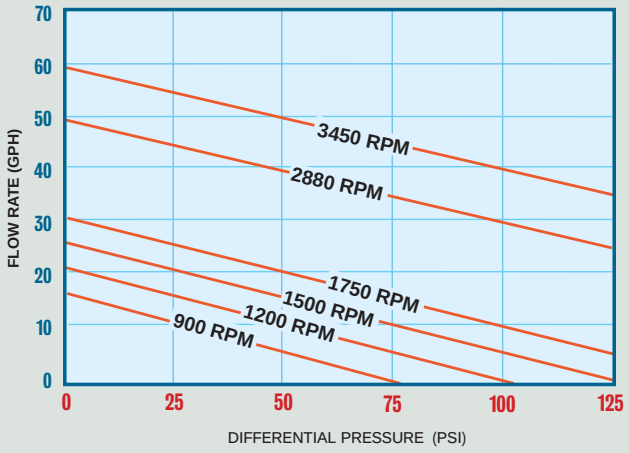
30 CPS Fluid (Oil)



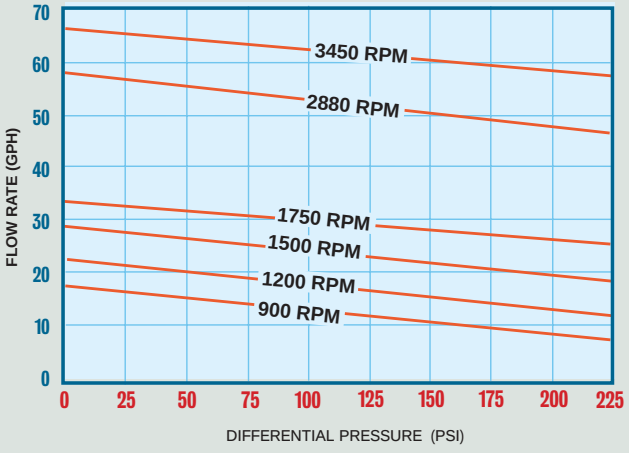
2F

PERFORMANCE CURVES

1 CPS Fluid (Water)



30 CPS Fluid (Oil)



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Liquiflo™
4-SERIES
ROTOGEAR®
EXTERNAL
GEAR PUMP

4-SERIES MAG-DRIVE GEAR PUMP

GENERAL INFORMATION

Liquiflo's **4-Series** pumps are low-flow/high-pressure magnetically-driven gear pumps that are completely field repairable. The 4-Series housings are manufactured from Bar Stock in 316 Stainless Steel, Alloy-C or Titanium. With several material options for shafts, gears, wear plates and bearings, these pumps can be used in a wide variety of chemical processing applications.

REPAIR KITS

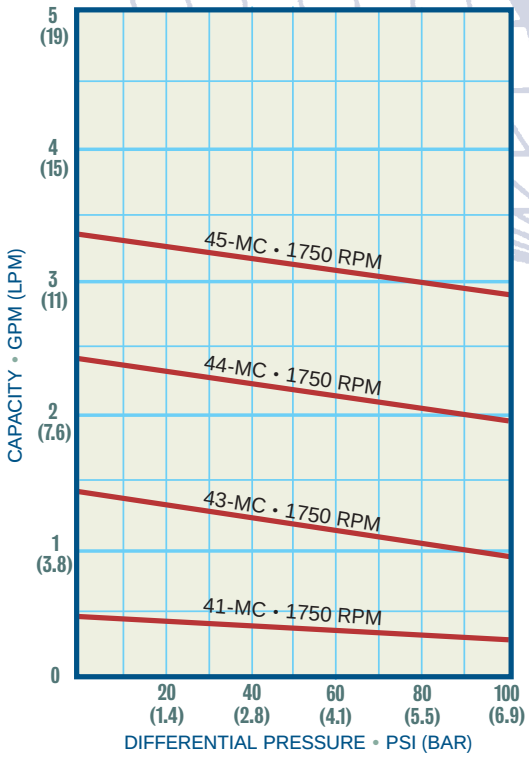
Repair Kits simplify inventory and speed repair. All parts can also be purchased separately.

MATERIALS AVAILABLE

HOUSINGS	GEARS	WEAR PLATES	BEARINGS	SHAFTS
316 SS	316 SS	CARBON	CARBON	316 SS
ALLOY-C	ALLOY-C	CERAMIC	TEFLON	ALLOY-C
TITANIUM	GLASS-FILLED PTFE	GLASS-FILLED PTFE	RYTON	CERAMIC COATED
	RYTON	RYTON	SILICON CARBIDE	TUNGSTEN CARBIDE COATED
	CARBON		PEEK	

COMPOSITE GEAR PUMP PERFORMANCE CURVES

TEST FLUID: WATER (1 CPS)



4-Series Specification Chart

MODEL	41-MC	43-MC	44-MC	45-MC
Port Size	1/4" NPT/BSPT	1/4" NPT/BSPT	3/8" NPT/BSPT	3/8" NPT/BSPT
Max Flow @ 1750 RPM	0.5 GPM (1.9 LPM)	1.4 GPM (5.3 LPM)	2.4 GPM (9.1 LPM)	3.4 GPM (12.9 LPM)
Max Diff. Press.	100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)	100 PSI (7 BAR)
Max Discharge Press.	300 PSI (21 BAR)	300 PSI (21 BAR)	300 PSI (21 BAR)	300 PSI (21 BAR)
Max Temperature	500°F (260°C)	500°F (260°C)	500°F (260°C)	500°F (260°C)
Min Temperature	-40°F (40°C)	-40°F (40°C)	-40°F (40°C)	-40°F (40°C)
Max Viscosity @ 300 RPM	4,500 CPS	3,700 CPS	2,000 CPS	1,000 CPS
NPSHR @ 1750 RPM	4.5 FT (1.4 M)	3 FT (0.9 M)	3 FT (0.9 M)	2 FT (0.6 M)
Lift (Dry)	0.5 FT (0.15 M)	1.5 FT (0.45 M)	2.0 FT (0.6 M)	4 FT (1.2 M)
Weight	11 LBS (24 KGS)	11 LBS (24 KGS)	13 LBS (29 KGS)	13 LBS (29 KGS)

PUMP MODEL CODING

EXAMPLE:

43MCS6P22N000, designates a Model 43MC Mag-Drive Pump.

43MC	S	6	P	2	2	N	0	0	0
1	2	3	4	5	6	7	8	9	10

Pos.	Description	Selection	
1	Pump Model	43MC	**43MC Pump**
2	Housing Mat'l	S	**316 SS NPT**
3	Drive Gear Mat'l	6	**316 SS**
4	Idler Gear Mat'l	P	**PEEK**
5	Wear Plate Mat'l	2	**Carbon**
6	Bearing Mat'l	2	**Carbon**
7	Inner Magnet	N	**MCN**
8	Outer Magnet Bore	0	**.500 dia. NEMA 48C**
9	Shafts	0	**Non-coated**
10	Trim	0	**None**

Liquiflo's Model Code describes both the pump's size and material selected. This model code is required for the future identification of your pump when reordering either a pump or replacement parts. Model code is permanently stamped into pump housing.

■ **Available**

❍ **No longer available in new pumps. Parts available only for repair and replacement**

⊗ **Not Available**

Liquiflo 4-Series Gear Pumps
Selection & Availability

Liquiflo™ 4-SERIES ROTOGEAR® EXTERNAL GEAR PUMP

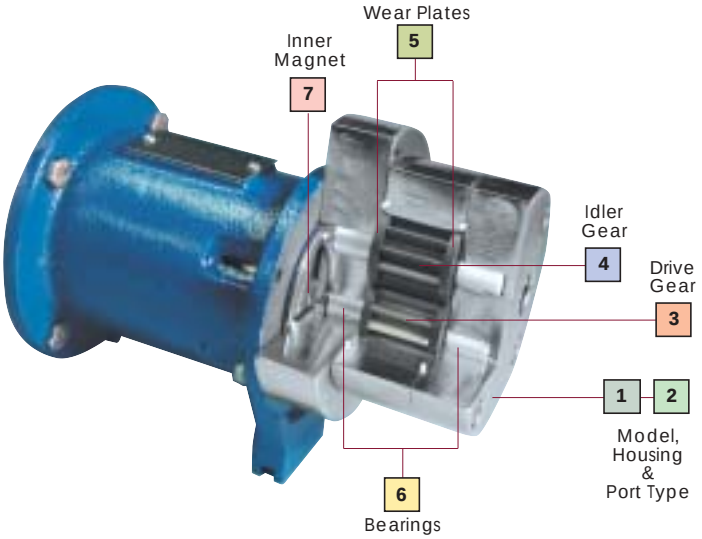
Sample Model No.	43MC	S	6	P	2	2	N	0	0	0
Position No.	1	2	3	4	5	6	7	8	9	10

Position			41 MC	43 MC	44 MC	45 MC
Position 1 Model	1	**Pump Model**				
Position Basic Material & Port Type	2	S = 316 SS NPT H = Alloy-C NPT T = Titanium NPT X = 316 SS BSPT Y = Alloy-C BSPT Z = Titanium BSPT	■	■	■	■
Position Drive Gear	3	1 = Alloy-C 3 = Teflon 4 = Titanium 6 = 316 SS 8 = Ryton P = PEEK	■	■	■	■
Position Idler Gear	4	1 = Alloy-C 3 = Teflon 4 = Titanium 6 = 316 SS 8 = Ryton P = PEEK	■	■	■	■
Position Wear Plates	5	2 = Carbon E = Carbon 60 3 = Teflon 4 = Ceramic 8 = Ryton P = PEEK	■	■	■	■
Position Bearings	6	2 = Carbon E = Carbon 60 3 = Teflon 8 = Ryton B = Silicon Carbide P = PEEK	■	■	■	■
Position Inner Magnet	7	N = 20 inch-lbs R = 30 inch-lbs	■	■	■	■
Position Outer Magnet Bore Size	8	0 = .500" (NEMA 48C) 1 = 14 mm (IEC 71 - B14 Face) 2 = .625" (NEMA 56C)	■	■	■	■
Position Shaft Coating	9	0 = Material Same as Housing (uncoated) A = Coated - Ceramic C = Coated - Tungsten Carbide	■	■	■	■
Position Trim	10	0 = None 8 = Temperature Trim 9 = Viscosity Trim	■	■	■	■

8 Outer Magnet Bore Size (not shown)

9 Optional Shaft Coating (not shown)

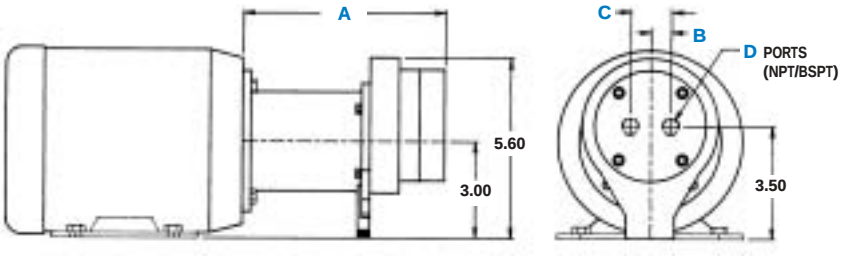
10 Trim (not shown)



4-Series Mag-Drive Gear Pump

4-SERIES MAG-DRIVE GEAR PUMP

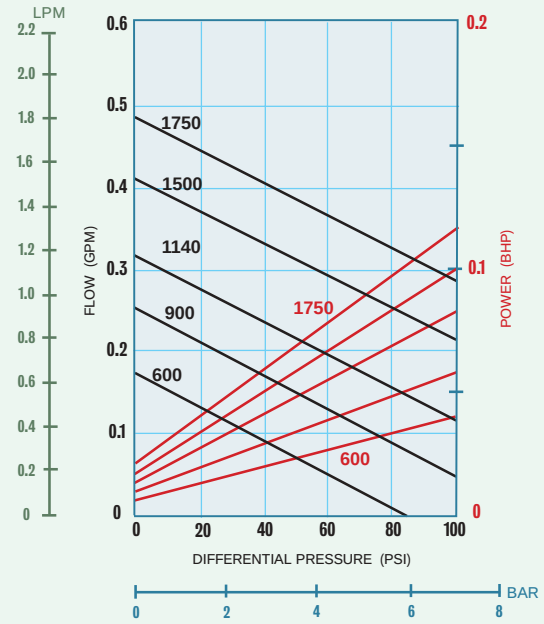
Dimensional Data (inches)



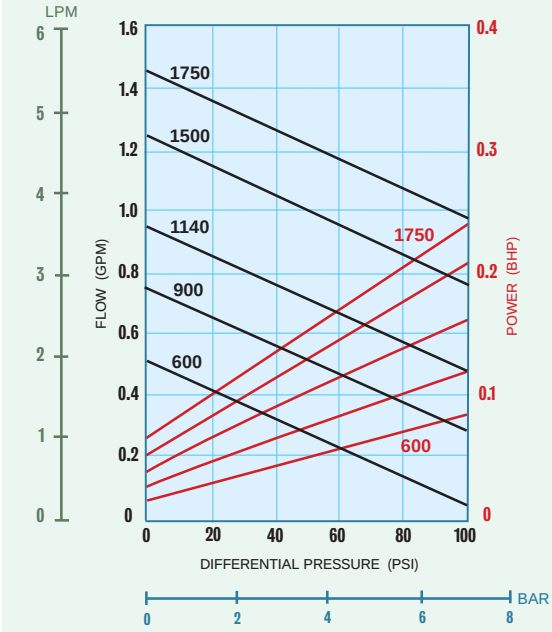
MODEL	A	B	C	D
41-MC	6.24	0.62	1.250	1/4"
43-MC	6.24	0.62	1.250	1/4"
44-MC	6.74	0.75	1.500	3/8"
45-MC	6.74	0.75	1.500	3/8"

PERFORMANCE CURVES: 1 CPS Fluid (Water)

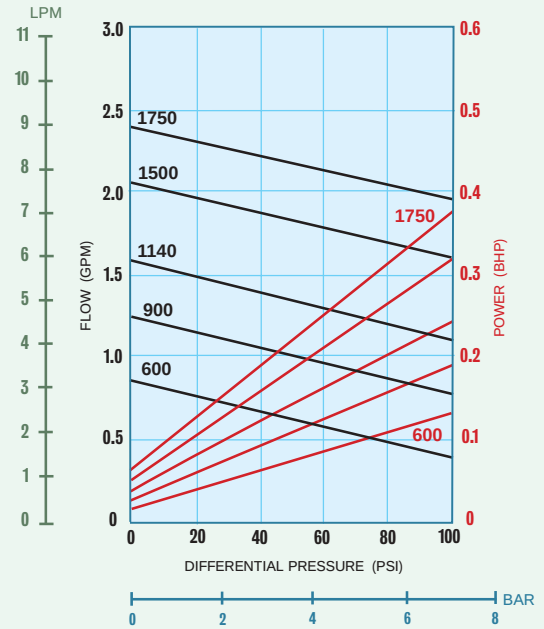
41-MC



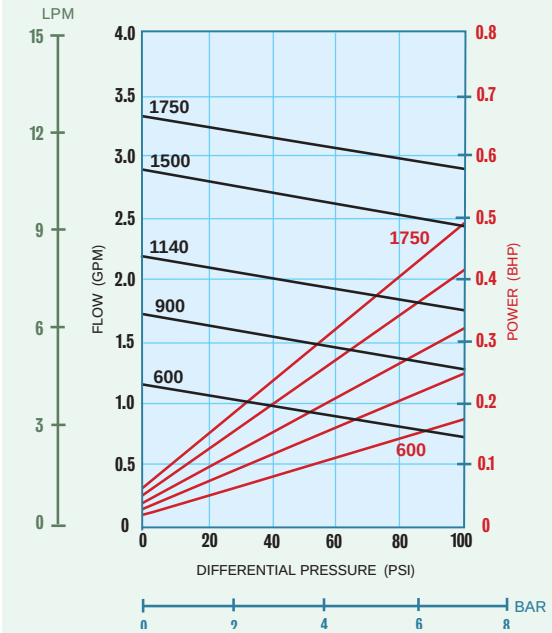
43-MC



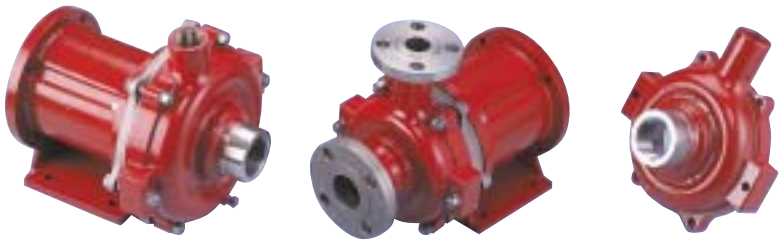
44-MC



45-MC



CENTRY® CENTRIFUGAL PUMPS



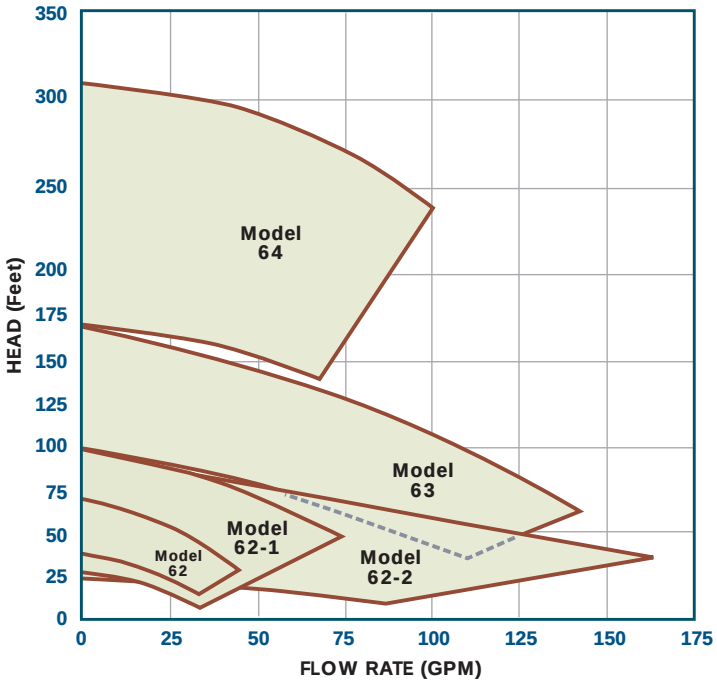
Centry® Pump shown Close-Coupled to sturdy cast iron mounting bracket.

Liquiflo's Centry® line of Centrifugal pumps are available in 316 SS or Alloy-C with either Packing, Single Mechanical Seal, Double Mechanical Seal, or Mag-Drive configuration.

MODELS AVAILABLE

MODEL	SIZE * (inches)	MAX FLOW	MAX HEAD
62	1 x 3/4 x 3 3/4	40 GPM	60 ft
62-1	1 1/4 x 1 x 5	75 GPM	90 ft
62-2	2 x 1 1/2 x 5	160 GPM	80 ft
63	1 1/2 x 1 x 6	125 GPM	160 ft
64	1 1/2 x 1 x 8	90 GPM	320 ft

* Suction Port Size x Discharge Port Size x Impeller Diameter



FEATURES

General: Depending on the model, the Centry® Series centrifugals are available as standard with closed impellers. Closed impellers eliminate axial loads and extend the life of the motor bearings when the pump is close-coupled to the motor. Closed impellers simplify the axial positioning of the impeller, when using close-coupled sealed pumps.

Single Mechanical Seals:

Single mechanical seals are the most economical type of seal to use when leakage is not desired. When properly installed and maintained, these seals will generally give years of trouble-free service.

Double Mechanical Seals:

Double Mechanical seals are also available for the Liquiflo Centry® Series centrifugal pumps. This seal configuration relies on a barrier lubrication system to cool and lubricate the seal faces.

Magnetically-Coupled Pumps

These offer a simple and cost-effective solution to sealing toxic, noxious, crystallizing or most other fluids that present problems for single seals and would therefore require use of a double mechanical seal. Magnetically-coupled pumps eliminate the need for cooling loops that are required for double mechanical seals.

CUSTOMIZATION

Contact factory.

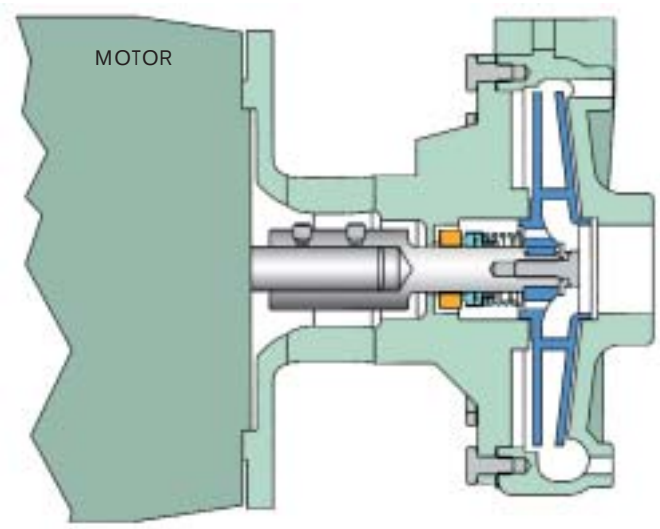
Features of Sealed and Sealless Centry® Pumps

Centry® Model 62 Pump shown Close-Coupled to sturdy Cast Iron Mounting Bracket with and without Power Frame Option

Mechanically Sealed Pumps:

- Compact close-coupled design or long-coupled mounting
- Back pullout design to simplify maintenance
- Type 9 or Type 21 seals are available
- Several choices for seal materials to meet the requirements of the application
- Single or Double mechanical seal configurations are available

SEALED PUMP

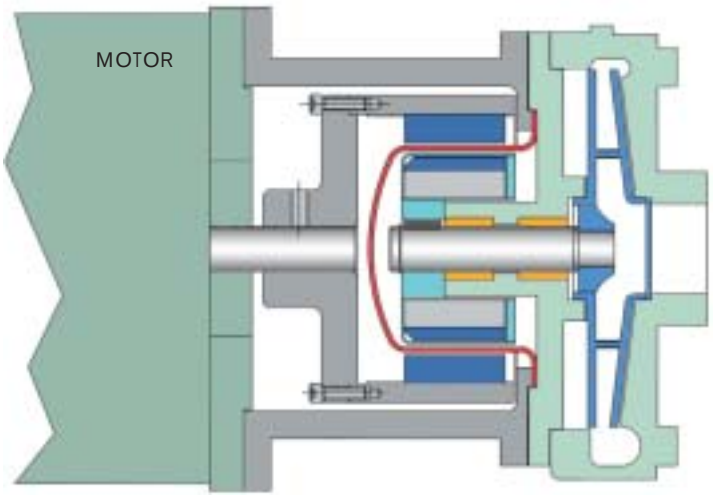


Centry® Model 62-1 or Model 62-2

Mag-Drive Pumps:

- Double support sleeve bearings are available in Carbon or Silicon Carbide to extend the working life of the pump
- Optional hard Ceramic coated or Tungsten Carbide coated shafts are available for abrasive or thin fluids
- Available in compact close-coupled or Power Frame design, depending on model

MAG-DRIVE PUMP



Centry® Model 62-1 or Model 62-2

SPECIALTY PUMPS

SPECIALS

One of Liquiflo's many strengths is their ability to design and manufacture Specialty Pumps. A Special Pump can be as simple as modifying a port configuration or as complex as a complete new pump design. Liquiflo's design and manufacturing engineers use their years of pumping experience and knowledge of engineered materials to custom design a pump to meet specific applications. To date, Liquiflo has designed over 700 different specialty pumps which have solved numerous problems in the chemical and industrial marketplace throughout the world.

If you have an application that cannot use a standard off-the-shelf pump, please give us the opportunity to design a custom pump that will meet the specific needs of your application.

A few examples of Liquiflo's custom designed pumps are described and shown below.

"High Viscosity" Pump

Challenge: To pump a mastic with a viscosity similar to caulking at a differential pressure up to 500 PSI and suction pressure of 1000 PSI. The pump needed to be mounted on a 4-axis robotic head where it needed to discharge a bead of mastic at a maximum rate of 17 linear feet per second. In order to keep the inertia to a minimum, the pump needed to weigh less than 10 lbs.

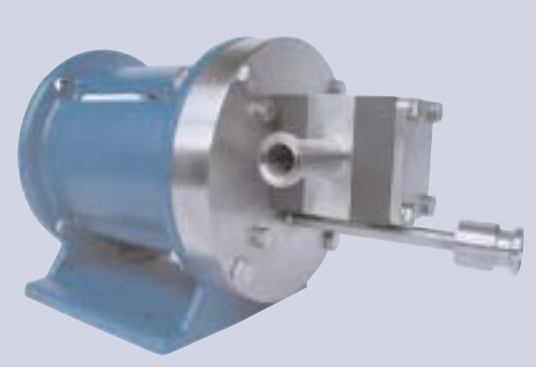
Solution: A variation of the 37 Series was used. The pump casings were made of aluminum to help minimize the weight. The internal construction was: hardened steel gears, wear plates and shafts, sintered bronze bearings isolated from the pumpage by polypac seals and externally grease lubricated. The pump was close-coupled to a hydraulic motor and operated at a maximum speed of 50 RPM. From design to shipment, the working prototype was completed in just under eight weeks, and full-scale production was completed within sixteen weeks.

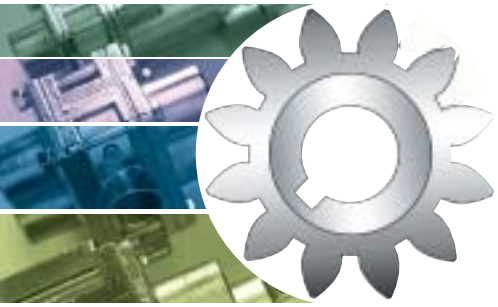
"Ultra-High Pressure" Mag-Drive Pump

Challenge: Custom requirements were for a mag-drive pump that could handle system pressures up to 1500 PSI (100 bar).

Solution: Containment Can and housings had to be designed to withstand the unusually high pressure without catastrophic failure or distortion that would affect operating characteristics. A solid 316 SS bar stock body with extra heavy bolting was used in conjunction with an extra heavy-walled containment can to withstand the extremely high pressures. Test pressures of the newly designed pump exceeded 4500 PSI (300 bar). From design to shipment, the working prototype was completed in under ten weeks.

Liquiflo Can Customize a Solution for Your Special Application





Challenge Us With Your Toughest Pumping Applications

"Glove Box" Nuclear Pump

Challenge: A pump was required for processing high-grade plutonium. The pump needed to be mounted inside the "glove box." The motor would be mounted on the outside of the glove box and the pump would be mounted on the inside of the glove box. In addition, due to the radioactivity of the material being pumped, a further requirement was to have the ability to remove the pump cartridge and/or the motor, without creating a breach in the glove box wall.

Solution: A double containment shell solved the problem. One containment can was mounted to the pump in the normal manner while the second containment can was mounted to the glove box wall. This configuration maintained closure in the event that either the pump or the motor needed to be removed for repair or replacement.

"Bromine" Plastic Gear Pump

Challenge: The requirement was to pump pure liquid bromine at a differential pressure of 30 PSI.

Solution: This is one of a number of gear pumps that Liquiflo made from plastic. This pump in particular was a Kynar version of a 35 mag drive with Kynar coated inner magnet and containment can, tantalum shafting, and unfilled Kynar housings. Other engineered plastics that Liquiflo has manufactured gear pumps from include CPVC for herbicide service, PTFE for ultra pure water service and Ryton for various services.

"Super Bullet" (Colloidal Suspension) Pump

Challenge: The requirement was to build a non-pulsing positive displacement pump for pumping water containing colloidal silica for the paper industry. The colloidal silica particles are extremely abrasive and small in size – just 2-10 microns. These abrasive particles work their way into the smallest of crevices and accelerate wear of surfaces that exhibit any relative motion. The customer found it impossible to find a pump that would last more than a few weeks in this extremely difficult service.

Solution: Liquiflo's designers solved this challenging application using a variety of engineered materials that would work well together even in an extremely abrasive environment. They also redesigned the internal configuration of the pump to minimize the abrasive action that normally takes place. After an extended effort, the chosen materials for the internals of the pump were SiC on SiC bearings, and bearing-grade PEEK gears. A small amount of carbon graphite was added to the inner SiC sleeve bearing to give it some self-lubricating properties. With a service life now in excess of 12 months, our satisfied customer respectfully nicknamed it The "Super Bullet."