

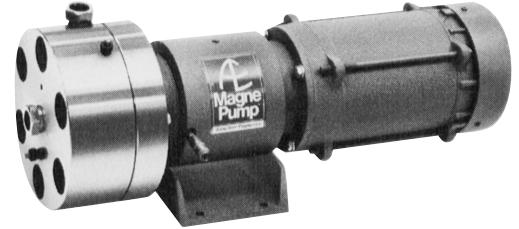
The World Leading Provider of High Pressure Equipment for Research and Industry since 1945!

## Recirculation **MagnePump**

### At a Glance

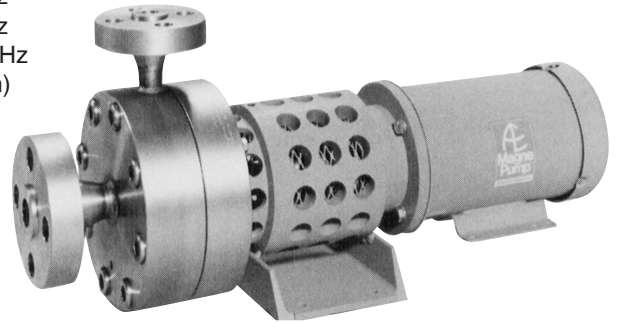
#### 3/4 and 1-1/2 Horsepower

MAWP: 5000 psi @ 650° F (345 bar @ 343° C)  
Operating Speed: 3450 rpm @ 60 Hz  
2875 rpm @ 50 Hz  
4400 rpm @ 76.5 Hz  
Static Torque: 15 in-lbs. (1.7 N-m)



#### 5 and 7-1/2 Horsepower

MAWP: 2500 psi @ 650° F (172 bar @ 343° C) Optionally: 4400 psi @ 600° F  
Operating speed 3450 rpm @ 60 Hz  
2875 rpm @ 50 Hz  
4400 rpm @ 76.5 Hz  
Static Torque 150 in-lbs (17 N-m)



**Autoclave  
Engineers** 

Division of Snap-tite, Inc.

## Principle of Operation

Autoclave Engineers MagnePumps eliminate or reduce many of the problems associated with conventional pumps, such as leakage, contamination and packing heat generation. They are ideal for applications where purity of the fluid is a major consideration or where leakage of material could be hazardous such as nuclear and petrochemical hydrates loops.

In addition, power loss is eliminated due to no seal friction, delivering full motor horsepower to the pumping unit. Also, when adverse conditions exist the magnet drive functions as a clutch, eliminating overload and motor burnout.

#### 3/4 and 1-1/2 HP MagnePumps

The 3/4 horsepower MagnePump is a packless design that provides improved efficiency and high torque with reduced heat losses. It is designed for liquid service and is rated for up to 5,000 psi (345 bar) system pressure.

#### 5 and 7-1/2 HP MagnePumps

The 5 horsepower MagnePump is a packless design which requires no supplemental cooling source. A built-in centrifugal air circulator cools the magnet zone. The 5 HP MagnePump has outlet and inlet flanges in the same plane for easy piping. It is designed for liquid service and is rated for up to 2500 psi (172 bar).

#### Applications

Applications for recirculation of process fluids (not gas) for nuclear, primary & secondary coolant, petrochemical hydrates loops and other similar processes.

# Technical Specifications

		3/4 HP	1-1/2 HP	5 HP	7-1/2 HP
<b>Operating Conditions</b>	Maximum allowable working	5000 psi (345 bar)	5000 psi (345 bar)	2500 psi (172 bar) or 4400 psi (363 bar)	2500 psi (172 bar) or 4400 psi (363 bar)
	Maximum Temperature	650°F (343°C) - Purbon Bearings, 550°F (288°C) Rulon Bearings			
	Operating Speed	3450 rpm @ 60 hz	4400 rpm @ 76.5 hz	3450 rpm @ 60 hz	4400 rpm @ 76.5 hz
		2875 rpm @ 50 hz		2875 rpm @ 50 hz	
	MagneDrive Static Torque	15 in.-lbs (1.7 N-m)		15 in.-lbs (1.7 N-m)	
	Magnet Cooling	Water cooling must be used at all times.		No cooling required.	
<b>Pump Construction</b>	<b>Material</b>	Pump wetted parts - except as noted	316 SS/Hastelloy C276		
		Drive Housing	A-286 SS or Hastelloy C-276		A-286 SS or Hastelloy C-276
		Internal Fasteners	300 Series SS or Hastelloy C-276		
	Bearings	Purebon bearings 658RCH or Rulon LR			
	<b>Port Size</b>	Inlet	SF1000CX (1.00" O.D. X 0.688" ID tubing)		1-1/2" 2500 lb ANSI flange (1.5" ID - 2500 psi, 1.34" ID - 4400 psi)
		Outlet			1-1/2" 2500 lb ANSI flange (0.95" ID - 2500 psi, 0.82" ID - 4400 psi)
	<b>Motor Rating</b>	Type	TEFC		
			Optional: Explosion proof Class 1 Group D		
			Optional: Flame proof EExd ZONE 1 & 2, Group IIC		
Voltage	120/220 VAC, 50 Hz, 1 Phase	208-230/460 VAC 30-76.5 Hz, 3 Phase Variable Speed	230/460 VAC 50-60 Hz, 3 Phase	208-230/460 VAC 30-76.5 Hz, 3 Phase Variable Speed	
	115/230 VAC, 60 Hz, 1 Phase				

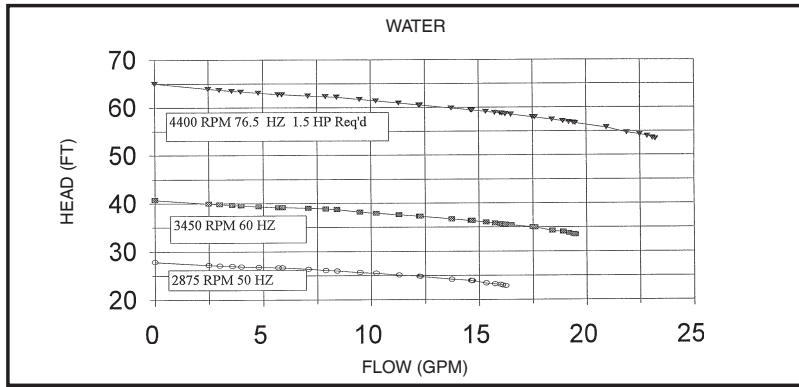
\*Consult factory for alternate bearing materials.

# General Information

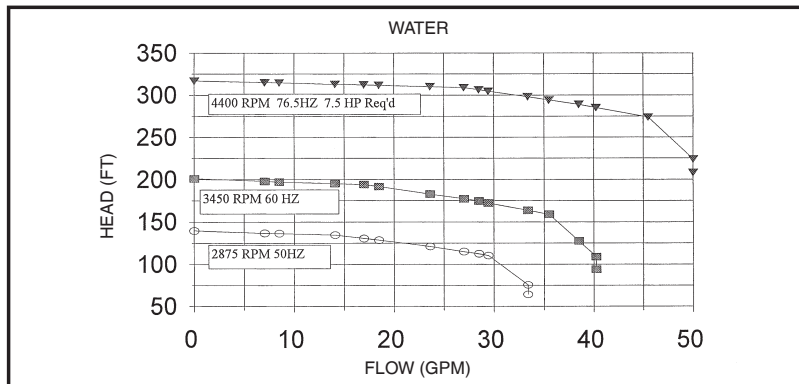
	3/4 and 1-1/2 HP	5 and 7-1/2 HP
Mounting Position	Horizontal	Horizontal
Weight (approximate)	170 lbs. (77 kg)	380 lbs. (172 kg)
Maximum Flow	See Flow Charts on Next Page	
Maximum Head (3450 rpm)		

## Flow vs. Head-GPM

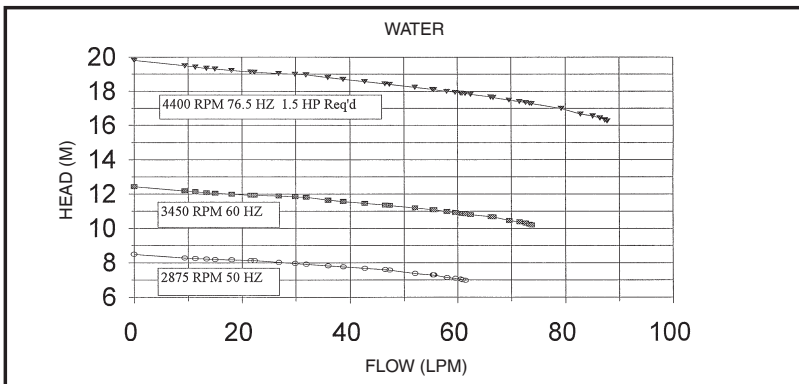
### 3/4 and 1-1/2 HP – Flow vs Head – GPM



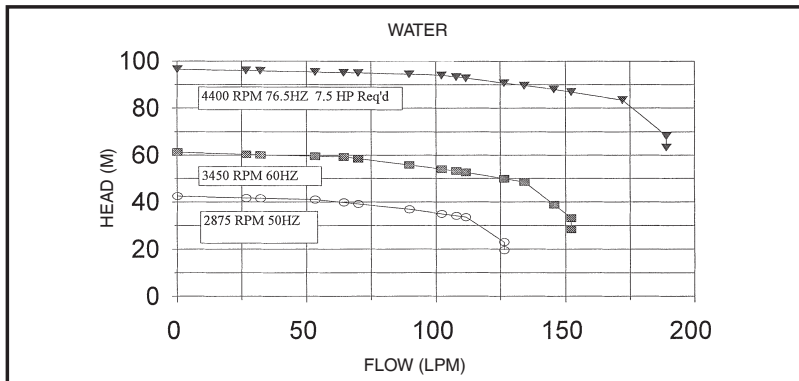
### 5 and 7-1/2 HP – Flow vs Head – GPM



### 3/4 and 1-1/2 HP – Flow vs Head – LPM



### 5 and 7-1/2 HP – Flow vs Head – LPM



Note: Higher and lower curves are calculated.

## Flow vs. Head-LPM

# Ordering Guide

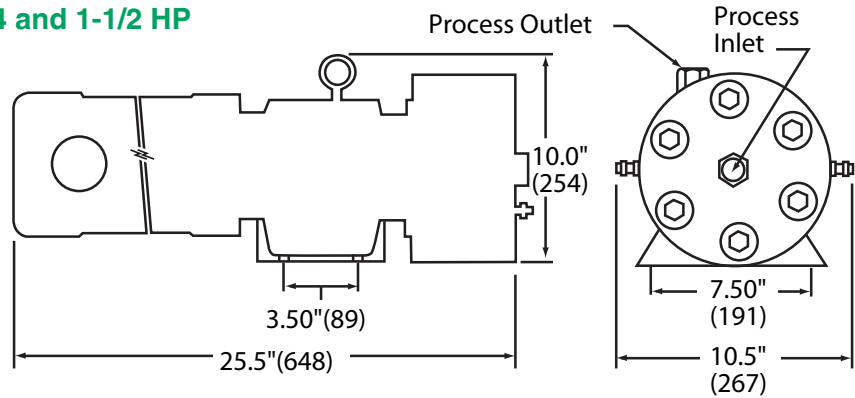
MP                          -       
 1      2      3      4      5

Part Number Example: **MP2040056560-HC** (See chart below)

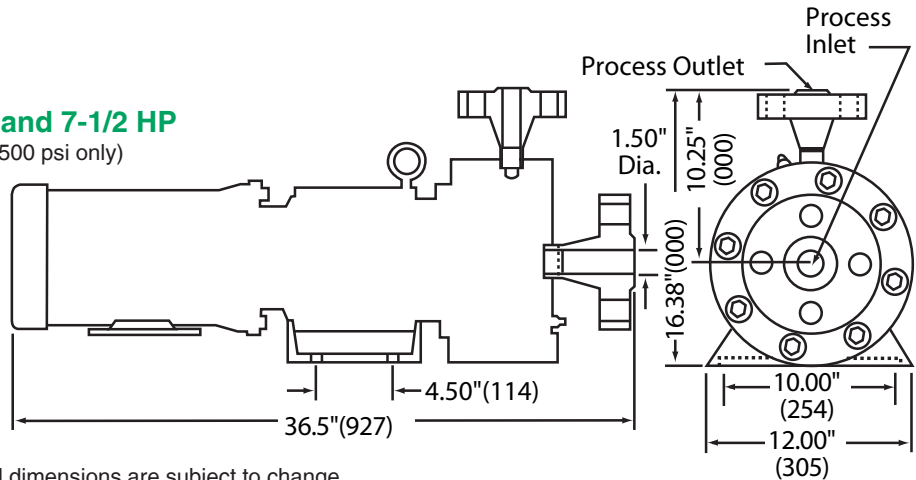
1 - Pump Size		4 - Voltage	
2040	3/4 HP	50	120/220 VAC, 50 Hz, 1 Phase (3/4 HP)
2365	1-1/2 HP	60	115/230 VAC, 60 Hz, 1 Phase (3/4 HP)
4093	5 HP		230/460 VAC, 50/60 Hz, 3 Phase (5 HP)
5032	7-1/2 HP	76	208-230/460 VAC, 30-76.5 Hz, 3 Phase (1-1/2 & 7-1/2 HP)
2 - Pressure (PSIG)		5 - Special Options	
02	2500 (5 & 7-1/2 HP Only)	HC	Hastelloy C-276
04	4400 (5 & 7-1/2 HP Only)	NC	No motor drive (variable speed motor)
05	5000 (1-1/2 & 3/4 HP Only)	XP	Explosion Proof Class 1 Group D
		EX	Flame Proof EExd ZONE 1 & 2, GROUPS IIC
3 - Bearing Material (Temperature Limit)			
55	Rulon LR (550°F)		
65	Purebon 658 (650°F)		

# Drawing Details

## 3/4 and 1-1/2 HP



## 5 and 7-1/2 HP (2500 psi only)



All dimensions are subject to change.

### Reference Drawings:

3/4 & 1-1/2 HP (316 SS): **40A-1174**  
 3/4 & 1-1/2 HP (Hastelloy C-276): **40A-4779**

5 & 7-1/2 HP (316 SS): **40A-3195**  
 5 & 7-1/2 HP (316 SS - 4400 psi): **40A-7347**  
 5 & 7-1/2 HP (Hastelloy C-276): **40C-0659**



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Bulletin IP-MP

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