

MagnePump

Recirculation MagnePumps



Parker 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 and 1-1/2 horsepower MagnePumps are a packless design that provides improved efficiency and high torque with reduced heat losses. They are designed for liquid service and are rated for up to 5,000 psi (345 bar) system pressure.

5 and 7-1/2 HP MagnePumps

The 5 and 7-1/2 horsepower MagnePumps are 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. They are designed for liquid service and have two models rated for up to 2500 psi (172 bar) or 4400 psi (303 bar).



At a Glance:

	3/4 and 1-1/2 HP	5 and 7-1/2 HP
MAWP	5000 psi @ 650° F (345 bar @ 343°C)	2500 psi @ 650° F (172 bar @ 343°C) Or 4400 psi @ 600° F (303 bar @ 315°C)
Operating Speed	3450 rpm @ 60 Hz 2875 rpm @ 50 Hz 4400 rpm @ 76.5 Hz	3450 rpm @ 60 Hz 2875 rpm @ 50 Hz 4400 rpm @ 76.5 Hz
Static Torque	15 in.-lbs. (1.7 N-m)	150 in.-lbs. (17 N-m)



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Applications

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

Technical Specifications

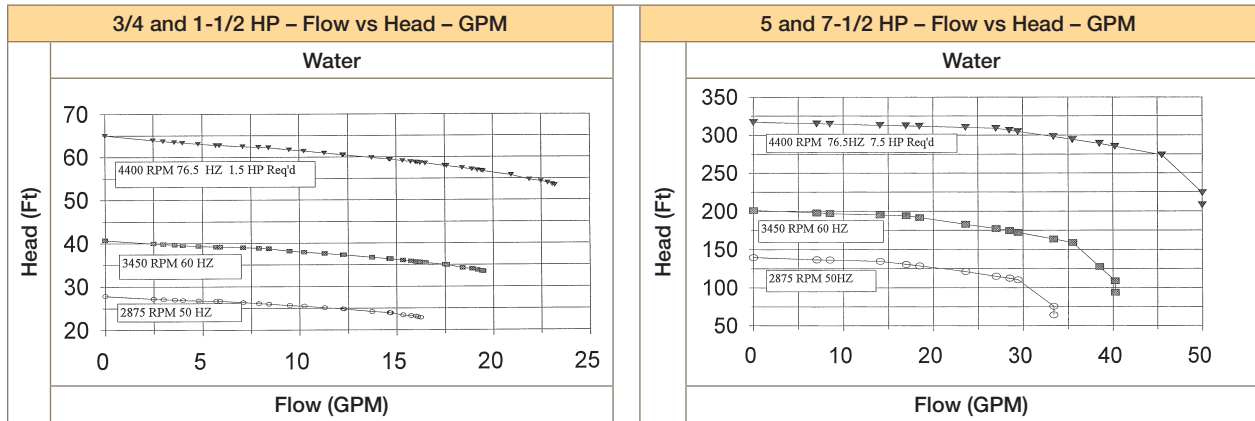
		3/4 HP	1-1/2 HP	5 HP	7-1/2 HP	
Operating Conditions	Maximum allowable working pressure	5000 psi (345 bar)	5000 psi (345 bar)	2500 psi (172 bar) 4400 psi (303 bar)	2500 psi (172 bar) 4400 psi (303 bar)	
	Maximum Temperature	650°F (343°C) - Purebon® Bearings - 4400 psi model: 600°F (315°C) 550°F (288°C) 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)		150 in - lbs. 17 N-m)		
	Magnet Cooling	Water cooling must be used at all times		No cooling required.		
Pump Construction	Material	Pump wetted parts - except as noted	316 SS/Hastelloy® C276			
		Drive Housing	A-286 SS or Hastelloy® C276	A-286 SS or Hastelloy® C276		
				Inconel 718 (4400 psi)		
		Internal fasteners	300 Series SS or Hastelloy® C-276			
	Bearings	Purebon® bearings 658RCH or Rulon® LR		Purebon® bearings 658RCH		
	Port Size	Inlet	SF1000CX (1.00" OD x 0.688" ID tubing)		1-1/2" - 2500 lb. ANSI flange (1.5" ID - 2500 psi, 1.34" ID - 4400 psi)	
		Outlet			1" - 2500 lb. ANSI flange (0.95" ID - 2500 psi, 0.82" ID - 4400 psi)	
	Motor Rating	Type	TEFC			
			Optional: Explosion proof Class 1 Group D, Class II Group F & G			
	Voltage	110/220 VAC 50 Hz, 1 Phase	230/400 VAC, 3 Phase, 50 Hz	230/400 VAC, 3 Phase, 50 Hz	230/400 VAC, 3 Phase, 50 Hz	
115/230 VAC 60 Hz, 1 Phase		208-230/460 VAC, 3 Phase, 60 Hz, Variable Speed (30-76.5 Hz operating range)	208-230/460 VAC, 3 Phase, 50 Hz,	208-230/460 VAC, 3 Phase, 60 Hz, Variable Speed (30-76.5 Hz operating range)		

General Information

	3/4 and 1-1/2 HP	5 and 7-1/2 HP
Mounting Position	Horizontal	
Weight (Approximate)	154 lbs. (70 kg) MP2040056560 (for other models see drawing)	396 lbs. (180 kg) MP4093026560 (for other models see drawing)
Maximum Flow	See Flow Charts on page 3.	
Maximum Head		

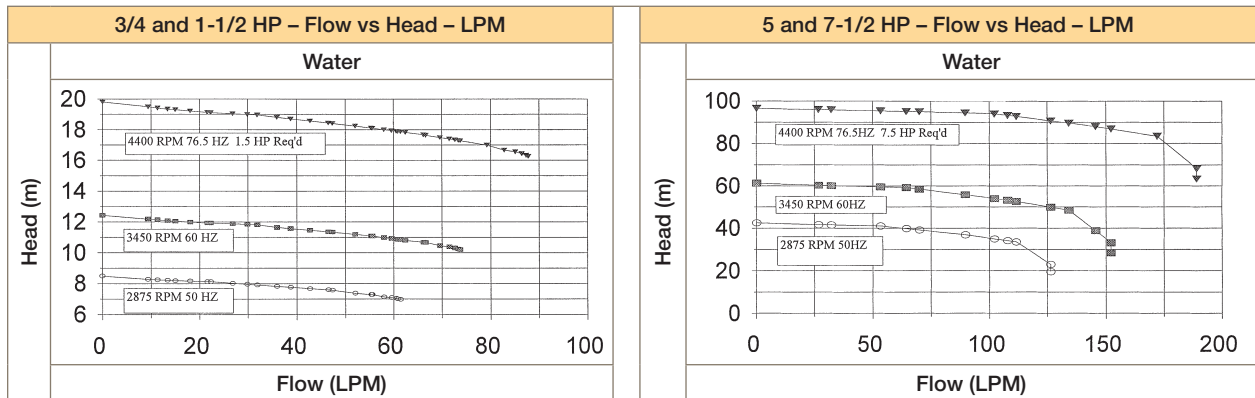
Flow Charts:

Flow vs. Head - GPM



Note: High and lower curves are calculated

Flow vs. Head - LPM



Note: High and lower curves are calculated

Ordering Guide:

MP	2040	05	65	76	-	H	X	A
Category	1	2	3	4		5	6	7

Part Number Example: **MP2040056576-HXA**

Category 1	Pump Size	
	2040	3/4 hp
	2365	1-1/2 hp
	4093	5 hp
	5032	7-1/2 hp
Category 2	Pressure (PSIG)	
	02	2500 (5 & 7-1/2 hp only)
	04	4400 (5 & 7-1/2 hp only)
	05	5000 (3/4 & 1-1/2 hp only)
Category 3	Bearing Material (Temperature Limit)	
	55	Rulon® LR (550° F) - 3/4 & 1-1/2 hp only
	65	Purebon® 658 (650° F)
Category 4	Voltage	
	50	110/220 VAC, 50 Hz, Single Phase (3/4 hp)
		230/400 VAC, 50 Hz, 3 Phase (5 hp)
	60	115/230 VAC, 60 Hz, Single Phase (3/4 hp)
		208-230/460 VAC, 60 Hz, 3 Phase (GP) (5 hp)
		230/460 VAC, 60 Hz, 3 Phase, (XP) (5 hp)
	6X	208 VAC, 60 Hz, 3 Phase (XP) (5 hp)
	75	230/400 VAC, 50 Hz, 3 Phase (1-1/2 & 7-1/2 hp) 30-76.5 Hz operating range
	76	208-230/460 VAC, 60 Hz, 3 Phase (1-1/2 hp (GP and XP), and 7-1/2 hp (GP) 30-76.5 Hz operating range
		230/460 VAC, 60 Hz, 3 Phase, (XP) (7-1/2 hp) 30-76.5 Hz operating range
	7X	208 VAC, 60 Hz, 3 Phase (XP) (7-1/2 hp) 30-76.5 Hz operating range
Category 5	Material	
	Blank	316 SS
	H	Hastelloy® C-276
Category 6	Explosion Proof Motor	
	Blank	General Purpose
	X	Explosion proof motor (Class 1, Group D, Class II Group F & G) Temperature Class T3C minimum
Category 7	Variable Frequency Drive	
	Blank	No Variable Frequency Drive
	A	200-240 VAC, 1 Phase VARIABLE FREQUENCY DRIVE (1-1/2 hp only)
	B	200-240 VAC, 3 Phase VARIABLE FREQUENCY DRIVE (1-1/2 & 7-1/2 hp)
	C	380-480 VAC, 3 Phase VARIABLE FREQUENCY DRIVE (7-1/2 hp only)

Accessories:

Magnepump Tool Kits	
Model Number	Description
TK-MP2040/236505	TOOL KIT FOR 3/4 & 1-1/2 HP PSI MAGNEPUMP
TK-MP4093/503202	TOOL KIT FOR 5 & 7-1/2 HP 2500 PSI MAGNEPUMP
TK-MP4093/503204	TOOL KIT FOR 5 & 7-1/2 HP 4400 PSI MAGNEPUMP

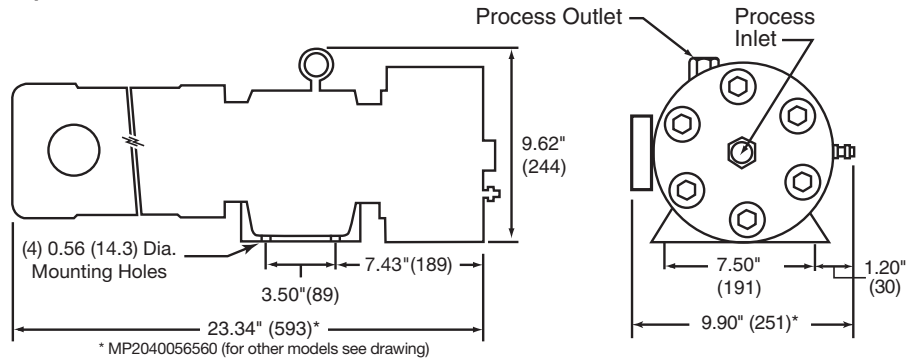
Magnepump tool kits contain specialty tools needed for standard maintenance. Kits include torque wrenches, hex bit sockets, crowfoot wrench, etc.

Magnepump Spare Parts Kits	
Model Number	Description
SPK-MP2040/23650555	SPARE PARTS KIT FOR 3/4 & 1-1/2 HP 316 SS MAGNEPUMP WITH RULON® BEARINGS
SPK-MP2040/23650565	SPARE PARTS KIT FOR 3/4 & 1-1/2 HP 316 SS MAGNEPUMP WITH PUREBON® BEARINGS
SPK-MP2040/23650555-H	SPARE PARTS KIT FOR 3/4 & 1-1/2 HP HAST C MAGNEPUMP WITH RULON® BEARINGS
SPK-MP2040/23650565-H	SPARE PARTS KIT FOR 3/4 & 1-1/2 HP HAST C MAGNEPUMP W/ PUREBON® BEARINGS
SPK-MP4093/50320265	SPARE PARTS KIT FOR 5 & 7-1/2 HP 2500 PSI 316 SS MAGNEPUMP W/ PUREBON® BEARINGS
SPK-MP4093/50320265-H	SPARE PARTS KIT FOR 5 & 7-1/2 HP 2500 PSI HAST C MAGNEPUMP W/PUREBON® BEARINGS
SPK-MP4093/50320465	SPARE PARTS KIT FOR 5 & 7-1/2 HP 4400 PSI 316 SS MAGNEPUMP W/ PUREBON® BEARINGS

Magnepump spare parts kits contain parts needed for standard maintenance. Kits include internal bearings, metal seals, etc.

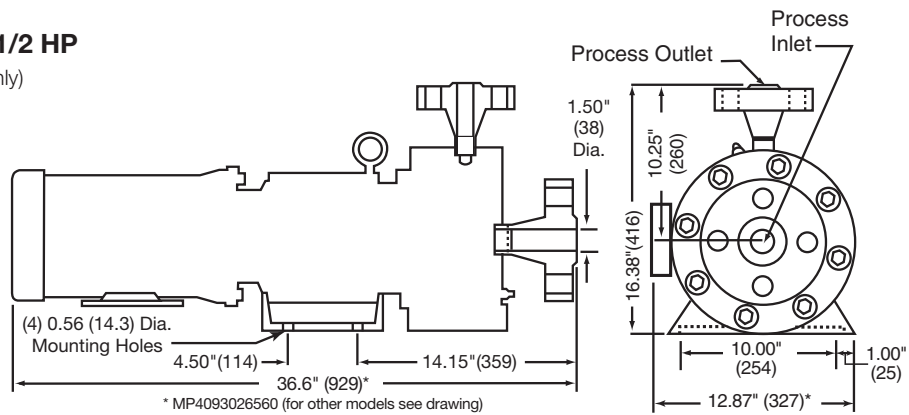
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 Rulon® is the registered trademark of Saint-Gobain Performance Plastics
 Hastelloy® is the registered trademark of Haynes International, Inc.
 Inconel® is the registered trademark of Huntington Alloys Corporation

Drawing Details: 3/4 and 1-1/2 HP



5 and 7-1/2 HP

(2500 psi only)



All dimensions are subject to change.
Inches (mm)

MagnePump Drawings				
Material	HP	PSIG	Bearings	Drawing #
316 SS	3/4	5000	Purebon®	40A-1174
			Rulon®	40A-1189
	1-1/2		Purebon®	40C-1161
			Rulon®	40C-1177
	5	2500	Purebon®	40A-3195
		4400		40C-1399
	7-1/2	2500		40C-1123
		4400		40A-9470
Hastelloy® C-276	3/4	5000	Purebon®	40C-1349
			Rulon®	40C-1350
	1-1/2		Purebon®	40C-1351
			Rulon®	40C-1352
	5	2500	Purebon®	40C-0659
				7-1/2

3D CAD models are available on request

WARNING

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Caution! Do not mix or interchange component parts or tubing with those of other manufacturers. Doing so is unsafe and will void warranty.

Caution! Parker Autoclave Engineers Valves, Fittings, and Tools are not designed to interface with common commercial instrument tubing and are designed to only connect with tubing manufactured to Parker Autoclave Engineers AES specifications. Failure to do so is unsafe and will void warranty.

Bulletin IP-MP

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