

“Since 1985 your process reliability has been our #1 priority.”



**MAXP Series ANSI  
(Magnetic Drive)**  
 Max. Flow: 2000 gpm  
 Max. Head: 470 feet  
 Temperature: -150°F to 800°F  
 Max. Power: 200 hp  
 Materials of Construction:  
 Carbon Steel, 304SS, 316SS,  
 Alloy 20, Alloy B&C,  
 Monel, Titanium  
 Bearings: SiC, SiC-X

**3575 Series ANSI  
(Mechanical Seal)**  
 Max. Flow: 5000 gpm  
 Max. Head: 720 feet  
 Temperature: up to 700°F  
 Max. Power: 300 hp  
 Materials of Construction:  
 Ductile Iron, Steel, 316SS,  
 CD4MCu, Alloy 20, Alloy B&C,  
 Ni-Hard, Titanium



**MP/MPL/MPH Series  
Sub-ANSI / ANSI  
(Magnetic Drive)**  
 Max. Flow: 340 gpm  
 Max. Head: 400 feet  
 Temperature: -100° to 536°F  
 Max. Power: 20 hp  
 Materials of Construction: 316SS,  
 Alloy 20, Alloy B&C  
 Bearings: SiC, SiC-X

**MPT Series  
(Magnetic Drive)**  
 Max. Flow: 40 gpm  
 Max. Head: 440 feet  
 Temperature: -40° to 445°F  
 Max. Power: 20 hp  
 Materials of Construction: 316SS  
 Bearings: SiC-X



**MMP Series  
(Magnetic Drive)**  
 Max. Flow: 20 gpm  
 Max. Head: 95 feet  
 Temperature: -100° to 536° F  
 Max. Power: 3/4 hp  
 Materials of Construction: 316SS  
 Bearings: SiC-X  
 Shaft: 316SS, SiC

**MEP Series  
(Magnetic Drive)**  
 Max. Flow: 106 gpm  
 Max. Head: 103 feet  
 Max Temperature: 175° F  
 Max. Power: 3 hp  
 Materials of Construction:  
 GF Polypropylene  
 Bearings: C-PTFE, Carbon  
 Shaft: Ceramic



**MTA Series ANSI  
(Magnetic Drive)**  
 Max. Flow: 320 gpm  
 Max. Head: 285 feet  
 Temperature: 5° to 275°F  
 Max. Power: 25 hp  
 Materials of Construction:  
 PFA Lined  
 Bearings: C-PTFE, SiC  
 Shaft: SiC

**ME Series  
(Magnetic Drive)**  
 Max. Flow: 90 gpm  
 Max. Head: 140 feet  
 Temperature: 32° to 195° F  
 Max. Power: 3 hp  
 Materials of Construction:  
 ETFE Lined  
 PVDF Lined  
 Bearings: C-PTFE, SiC;  
 Shaft: Ceramic, SiC



**S Series-Gear Pumps  
(Mechanical Seal)**  
 Max. Flow: 30 gpm  
 Max. Head: 150 psi  
 Max Temperature: 450° F  
 Max. Power: 5 hp  
 Casing Materials:  
 316SS, Hastelloy® equiv., Ryton®  
 Shaft: 316SS, Hastelloy® equiv.  
 Bearing Materials:  
 Carbon, Teflon®, Rulon®

**SM Series-Gear Pumps  
(Magnetic Drive)**  
 Max. Flow: 30 gpm  
 Max. Head: 110 psi  
 Max Temperature: 450° F  
 Max. Power: 5 hp  
 Casing Materials:  
 316SS, Hastelloy® equiv., Ryton®  
 Shaft: 316SS, Hastelloy® equiv.  
 Bearing Materials:  
 Carbon, Teflon®, Rulon®



- Chemical Process
- Petrochemical
- Refining
- Water Treatment
- Food and Beverage
- Pulp and Paper
- Plating
- Pharmaceutical
- Semiconductor
- Power Generation
- Textiles
- General Industrial and OEM

### Pumps for most process applications in a wide range of designs and materials

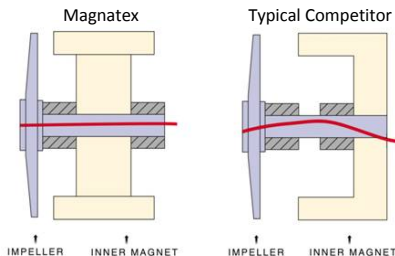
- Sealed and Sealless, Mag-drive, ANSI, sub-ANSI & ISO centrifugal pumps, as well as small gear-pumps
- Long and close-coupled pumps for NEMA or IEC motors



- Metallic – Ductile Iron, Steel, Stainless Steels, Alloy 20, Alloy B&C, Monel and Titanium
- Non-Metallic lined pumps – Polypropylene, PVDF, ETFE and PFA

### Superior Straddled-mounted Design

Magnatex metal, mag-drive pumps feature a straddle-mounted inner magnet design which reduces radial shaft load when compared to our competitors' cantilevered models. This feature allows operation across the entire performance curve without compromising service life.



### Smaller, sub-ANSI Pumps

For low flow applications, robust metal and non-metallic sub-ANSI models allow operation closer to the best efficiency point when compared to ANSI pumps, which reduces initial cost and total cost of ownership.



### Innovative Solutions to Challenging Applications

High pressure and high temperature liquids, solids laden liquids, acids, bases, pyrophoric liquids and toxic liquids are just a few of the challenging liquids being successfully handled by Magnatex Pumps.



### Magnatex Pumps, Inc.

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Houston, TX 77018  
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[www.magnatexpumps.com](http://www.magnatexpumps.com)

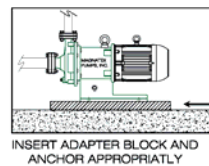
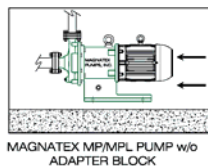
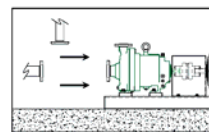
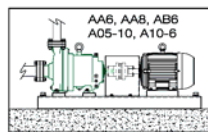
### Dry-running bearing system for sealless pumps

Magnatex metal pumps now feature SiC-X bearing material as a standard on our smaller pumps or as an option on larger units. With a coefficient of friction 1/4 that of SiC, SiC-X provide extended dry-running capability. Non-metallic pumps also have optional bearing materials for challenging services.



### Extremely cost-effective ANSI sealed pump alternatives

In addition to sealless, long-coupled ANSI units, close coupled models are available with flange locations identical to sealed ANSI pumps. This feature enables easy replacement of problem sealed pumps with Magnatex sealless mag-drive, metallic or non-metallic pumps.



### Solids Handling

With multiple provisions for handling up to 8% or more solids, Magnatex can take on difficult process applications that other mag-drive pumps are unable to handle.



### Quick Support and easy Field Maintenance



Slip-fit construction allows easy, on-site maintenance, if required. Additionally, Magnatex can inspect and repair any pump at our facility in Houston, TX. A worldwide network of distributors and representatives provide technical assistance and parts support 24/7.

### Large Inventory

A multimillion dollar inventory enables same day shipment of pumps and parts in emergency situations, anywhere in the world.



### MAGNATEX<sup>®</sup> MMP Series



The MMP Series magnetically driven, sealless, centrifugal pumps are heavy duty mag-drive pumps with superior SiC-X bearing materials for low flow applications. These close-coupled pumps are similar in construction to the MPL/MP Series, except the shaft is stationary and the suction/discharge ports are male NPT with optional flanges available.

The MMP Series pumps are high-quality, dependable, long-lasting, pumps utilizing our exclusive straddle bearing design and furnished with the shaft, thrust ring and bushing made of Beta sintered Silicon Carbide material. Sealless pumps help eliminate "Reportable Release" issues.

All Magnatex<sup>®</sup> pumps and spare parts come with a **1 year unconditional warranty** on materials and workmanship.

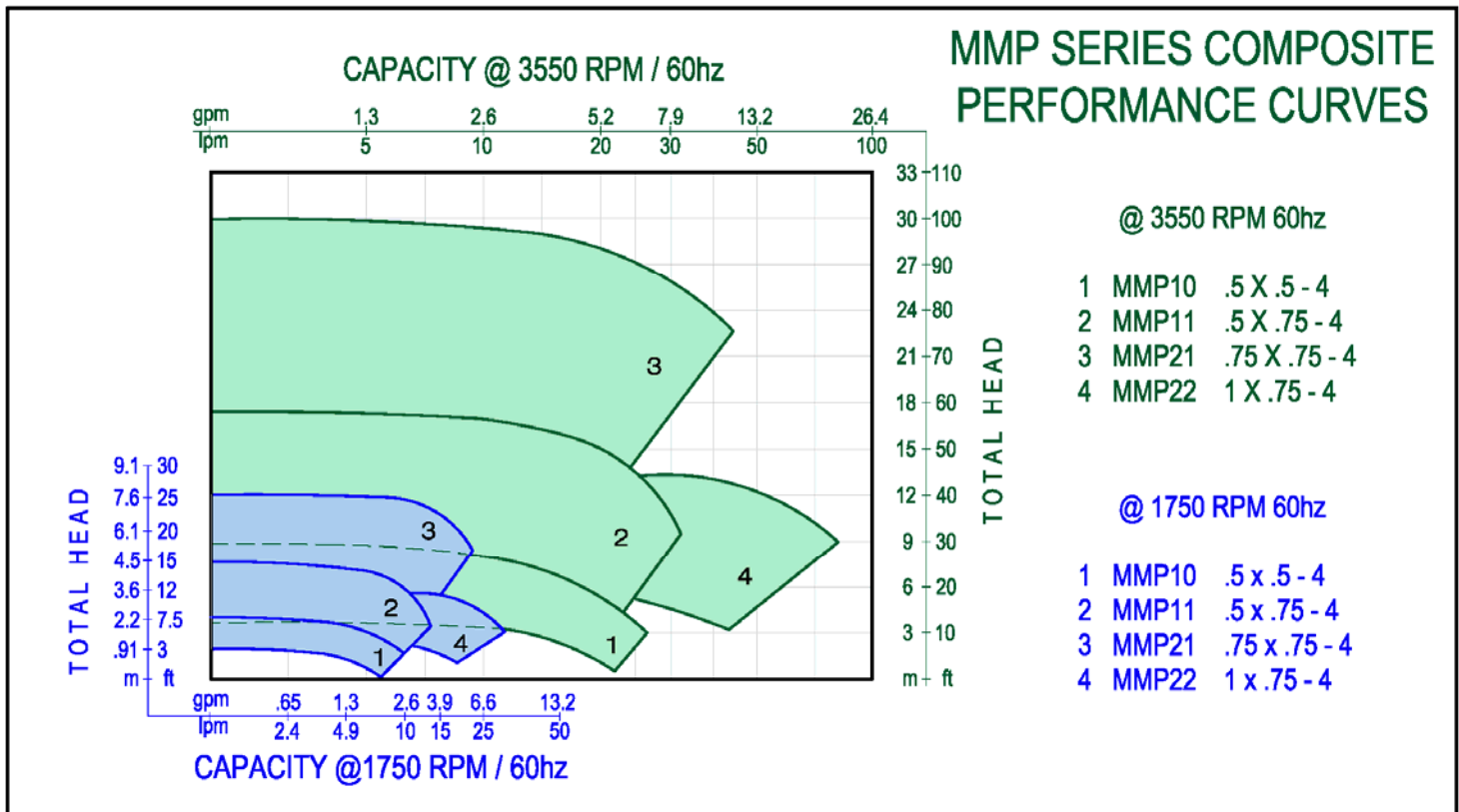
Maximum Flow..... 20 GPM  
 Maximum Head..... 95 FT  
 Liquid Temp..... -100°F to 536°F  
 Max Power..... 3/4 HP  
 Connections ..... NPT or Optional Flanges  
 Bearings ..... SiC/SiC-X Standard  
 Working Pressure..... 85 psig  
 Impeller..... Enclosed  
 Speeds..... Up to 3550 rpm  
 Magnets..... Neodymium  
 Motor..... NEMA or IEC Frame Mounted



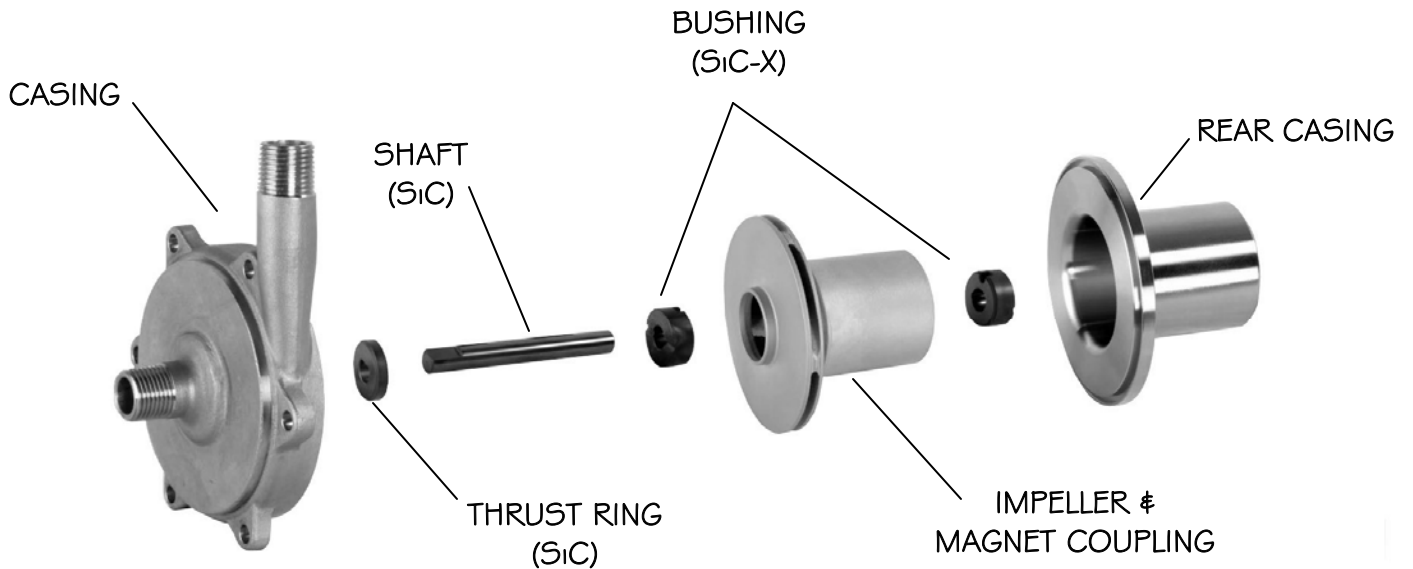
**Optional high-pressure models for suction conditions to 5,000 psi and more**

#### Materials of Construction:

- 316SS
- Ceramic or Stainless Steel Shaft Option



# MAGNATEX MMP SERIES COMPONENT VIEW



(Magnatex standard model shown)

Optional high-pressure models for suction conditions to 5,000 psi and more

SHOWN WITH OPTIONAL FLANGES

NOT FOR CONSTRUCTION

CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY  
REQUIRED LOCATION MUST BE SPECIFIED

**MAGNATEX**<sup>®</sup>  
Pumps, Inc.

**DIMENSIONAL DRAWING  
MMP SERIES CLOSE-COUPLED PUMP**

DRAWN BY: <b>B VALENTIN</b>	DATE: <b>08/13/09</b>	SCALE: <b>NTS</b>	PAGE: <b>1 OF 1</b>
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DD-MMP SERIES

ALL DIMENSIONS IN INCHES ± 0.12"

MODEL	MOTOR FRAME	DIMENSIONS										STANDARD NPT				* OPTIONAL 150# ANSI RF					APROX. WEIGHT lbs.	
		M	CP	B	C	E	F	G	K	L	CL	S	D	A	X	O	S	D	A	X'	O'	PUMP
MMP11	56 C	13.85 MAX	20.95	1.80	5.30			3.40				½	1.80	4.00	8.00	½	1.80	4.06	8.06	40	40	
MMP21			21.15	2.00	5.30	2.35	5.90	3.00	4.60	5.90	4.00	¾	2.00	4.70	8.70	¾	2.00	4.76	8.76	44	46	
MMP22			21.65	2.40	5.40			4.10					½ ¾	1.80	4.00	8.00	½ ¾	1.80	4.06	8.06	44	40

\*DOES NOT CHANGE THE PRESSURE RATING OF THE PUMP

## MAGNATEX<sup>®</sup> MP Series



Close coupled, compact, MP series pumps are the efficient and dependable choice for medium flow, medium head applications. The MP Series pump features sub-ANSI sizes for efficient lower flow applications. Affordable, high performance Magnetex<sup>®</sup> pumps give you higher efficiency with lower horsepower and a lower total cost of ownership.

- Standard SiC-X bearing system for enhanced dry running capability
- Straddle-mounted, double bearing design, reduces shaft load and bearing wear when compared to our competitors' typical cantilevered, overhung designs
- Slip fit construction allows easy maintenance and on-site repairs with no special tools required
- Large internal flow path handles solids: 1% at 500µ; 8% at 100µ.
- Close-coupled configuration eliminates coupling and motor alignment issues
- No expensive mechanical seals; eliminates costly shutdowns and pump repair which helps eliminate "Reportable Release" issues
- Handles toxic, noxious and corrosive liquids for leak-free pumping with increased safety to plant personnel and the environment
- Optional high temperature construction to handle up to 660°F
- Optional baffled rear casing design for enhanced solids handling

### MAGNATEX<sup>®</sup> MP Specifications

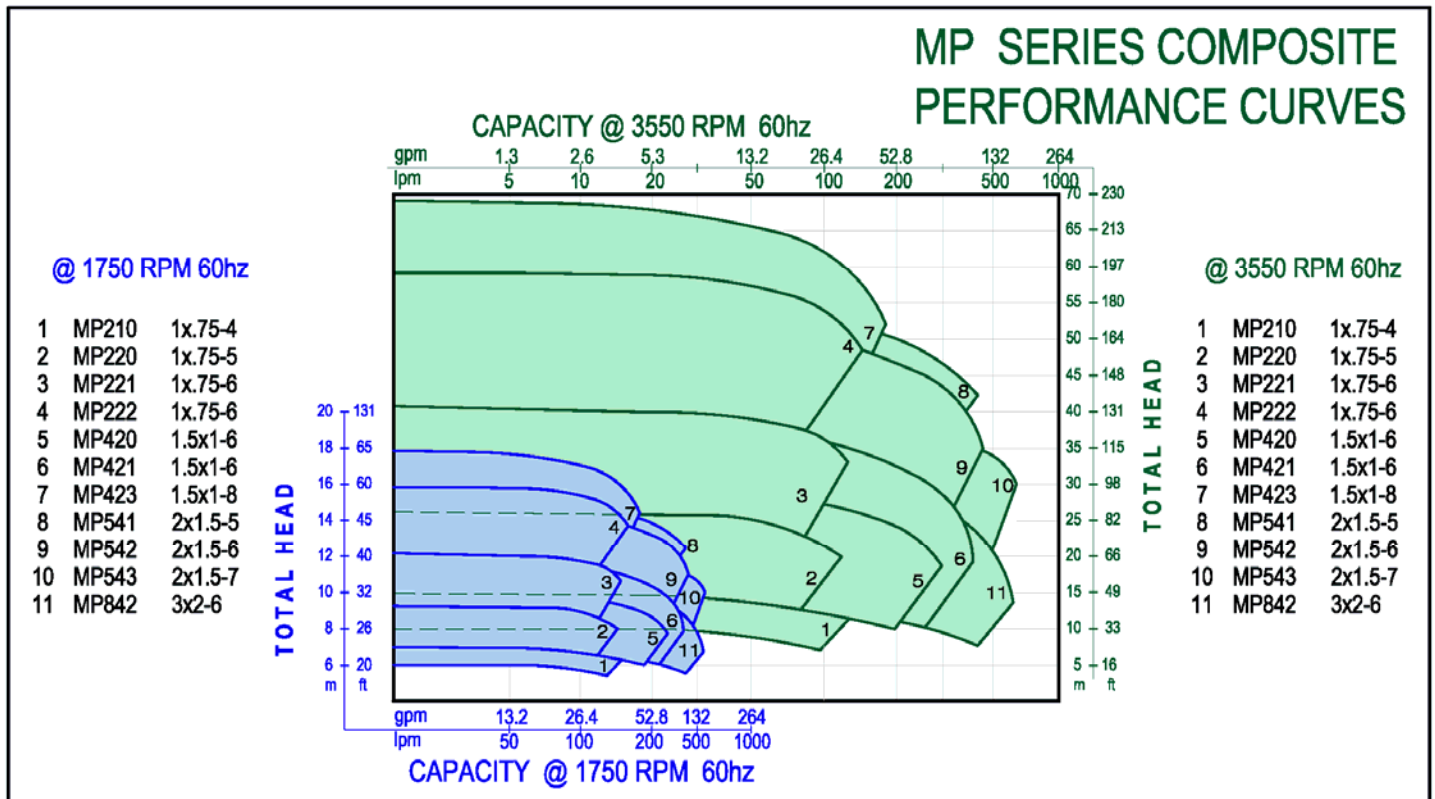
Max. Flow..... 150gpm  
 Max. Head..... 190 ft  
 Liquid Temp..... -112°F to +660°F  
 Max. Power..... 10hp  
 Maximum Working Pressure..... 150 psig  
 Connections..... 150# RF Flanges  
 Bearings..... SiC/SiC-X Standard  
 Impeller..... Enclosed  
 Speeds..... Up to 3550 rpm  
 Magnets..... Neodymium or Samarium Cobalt  
 Motor..... NEMA or IEC Frame Mounted

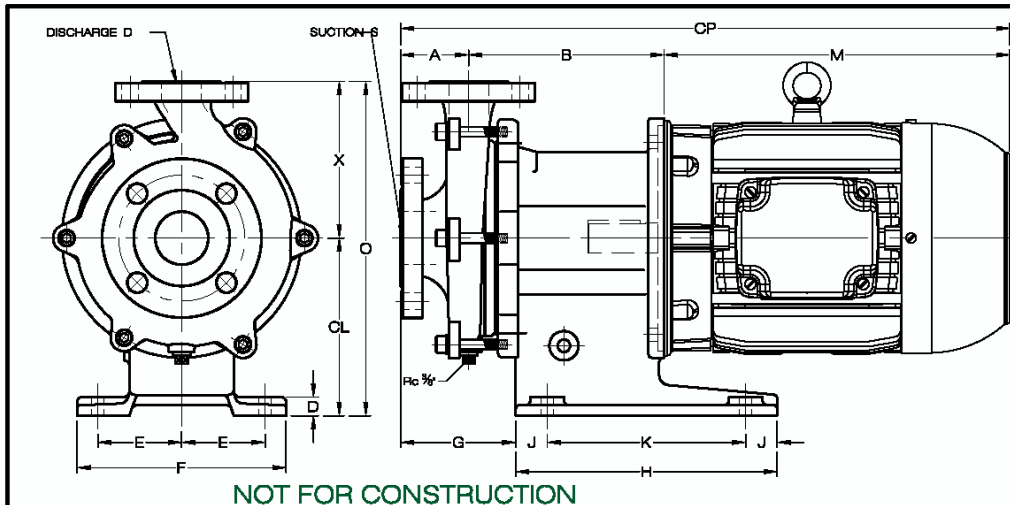
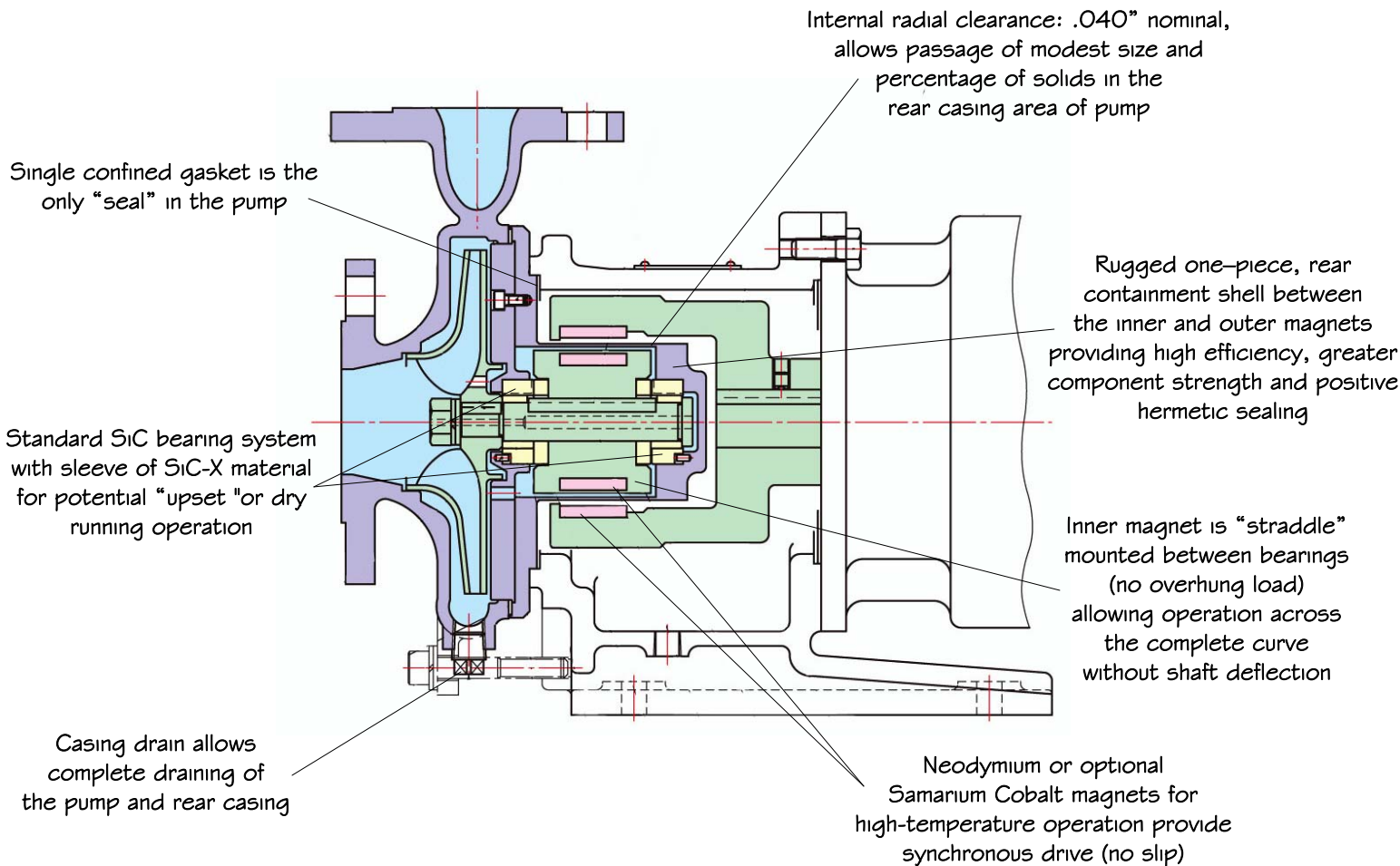


- **Optional, high-pressure models for suction conditions to 5000 psi and more**

### Materials of Construction:

- 316SS
- Alloy 20
- Alloy B & C





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**DIMENSIONAL DRAWING**  
MP SERIES CLOSE-COUPLED PUMP

DRAWN BY: B VALENTIN DATE: 07/02/10 SCALE: NTS PAGE: 1 OF 1

**DD-MP SERIES**

ALL DIMENSIONS IN INCHES ± 0.12"

**NOT FOR CONSTRUCTION**

MODEL	DIMENSIONS														PUMP LBS	MOTOR FRAME		MTR LBS	MOTOR FRAME		MTR LBS		
	S	D	A	B	D	E	F	G	H	J	K	X	CL	O		M	CP		M	CP		MTR LBS	
MP220	1.00	0.75	2.36	6.85	0.47	2.56	5.12	4.33	7.09	1.18	4.72	4.72	4.33	9.06	55	56C	10.29	19.50	31	145TC	11.21	20.42	56
																143TC	10.23	19.44	54	184TC	12.96	22.17	108
																182TC	12.02	21.23	99	184TC	12.96	22.88	108
MP221	1.00	0.75	2.56	6.65	0.47	3.15	7.87	4.33	9.84	1.18	7.48	5.12	6.69	11.81	60	143TC	10.23	19.44	54	145TC	11.21	20.42	56
				7.36	0.71										68	182TC	12.02	21.94	99	184TC	12.96	22.88	108
MP222	1.00	0.75	2.56	6.65	0.71	3.15	7.87	4.33	9.84	1.18	7.48	5.51	6.69	12.20	60	143TC	10.23	19.44	54	145TC	11.21	20.42	56
				7.36											68	182TC	12.02	21.94	99	184TC	12.96	22.88	108
MP420 / 421	1.50	1.00	2.95	6.85	0.71	3.15	7.87	4.92	9.84	1.18	7.48	5.31	6.69	12.01	62	143TC	10.23	20.03	54	145TC	11.21	21.01	56
				7.56											70	182TC	12.02	22.53	99	184TC	12.96	23.47	108
MP423	1.50	1.00	4.02	9.41	0.71	4.92	11.42	4.92	13.78	0.98	11.81	6.50	7.09	13.58	139	213TC	14.59	28.02	139	215TC	16.09	29.52	173
MP541	2.00	1.50	3.15	6.85	0.71	3.15	7.87	5.12	9.84	1.18	7.48	5.51	6.69	12.20	73	143TC	10.23	20.23	54	145TC	11.21	21.21	56
				7.56												182TC	12.02	22.73	99	184TC	12.96	23.67	108
MP542	2.00	1.50	2.56	7.36	0.71	3.15	7.87	4.33	9.84	1.18	7.48	5.91	6.69	12.60	79	182TC	12.02	21.94	99	184TC	12.96	22.88	108
MP543	2.00	1.50	4.02	9.41	0.71	4.92	11.42	4.92	13.78	0.98	11.81	6.50	7.09	13.58	143	213TC	14.59	28.02	139	215TC	16.09	29.52	173
MP842	3.00	1.50	4.20	9.41	0.71	4.92	11.42	0.98	13.78	0.98	11.81	6.50	7.09	13.58	147	213TC	14.59	28.20	139	215TC	16.09	29.70	173



Close coupled, compact, MPL series pumps are the efficient and dependable choice for medium to high head applications. The process side of the MPL pump conforms to ANSI B73.3 dimensions. Affordable, high performance Magnatex<sup>®</sup> pumps give you higher efficiency with lower first cost, lower horsepower and a lower total cost of ownership.

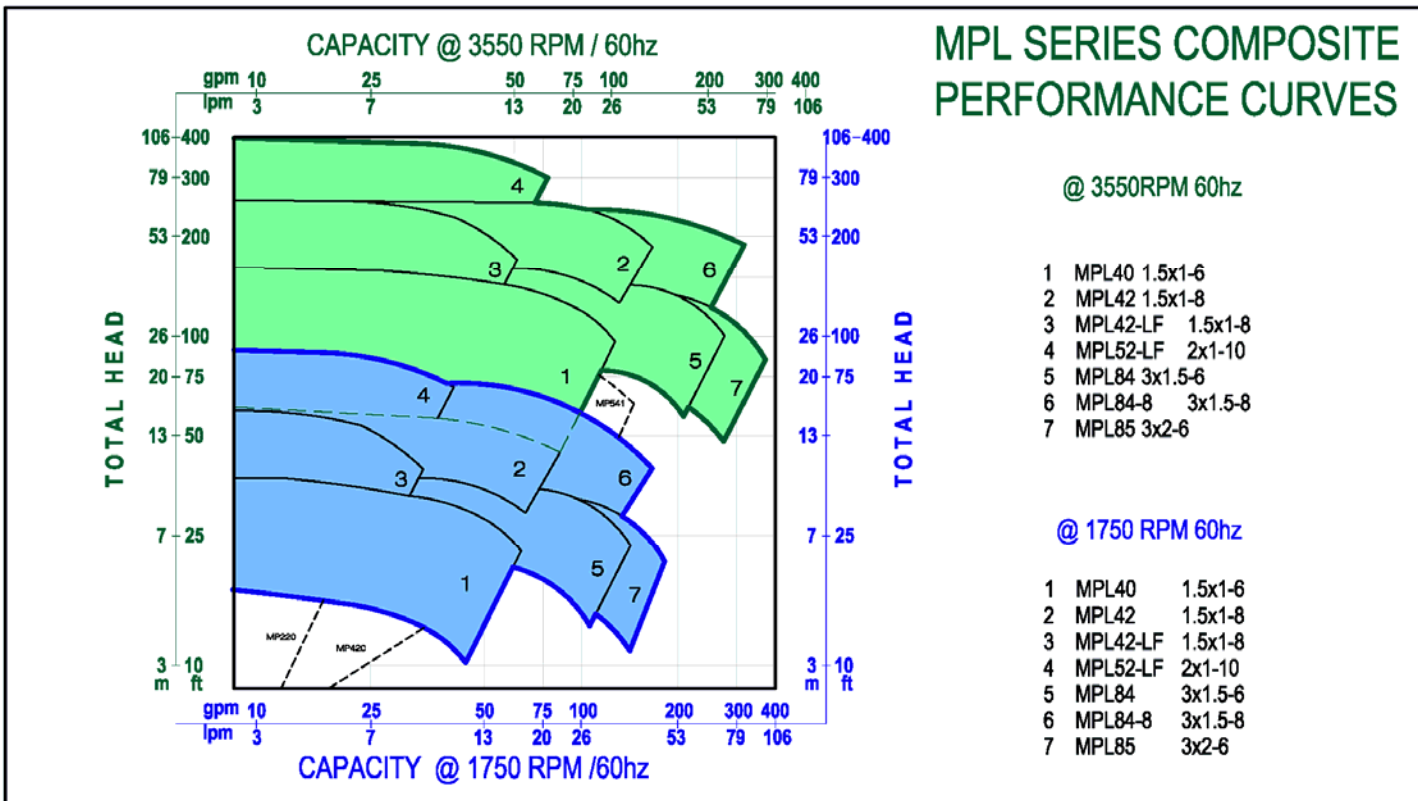
- Optional SiC-X bearing system for enhanced dry running capability
- Straddle-mounted, double bearing design, reduces shaft load and bearing wear when compared to our competitors' typical cantilevered, overhung designs
- Slip fit construction allows easy maintenance and on-site repairs with no special tools required
- Large internal flow path handles solids: 1% at 500 $\mu$ ; 8% at 100 $\mu$
- Close-coupled configuration eliminates coupling and motor alignment issues
- No expensive mechanical seals; eliminates costly shutdowns and pump repair which helps eliminate "Reportable Release" issues
- Handles toxic, noxious and corrosive liquids for leak-free pumping with increased safety to plant personnel and the environment
- Optional high temperature construction to handle up to 660°F
- Optional baffled rear casing design for enhanced solids handling

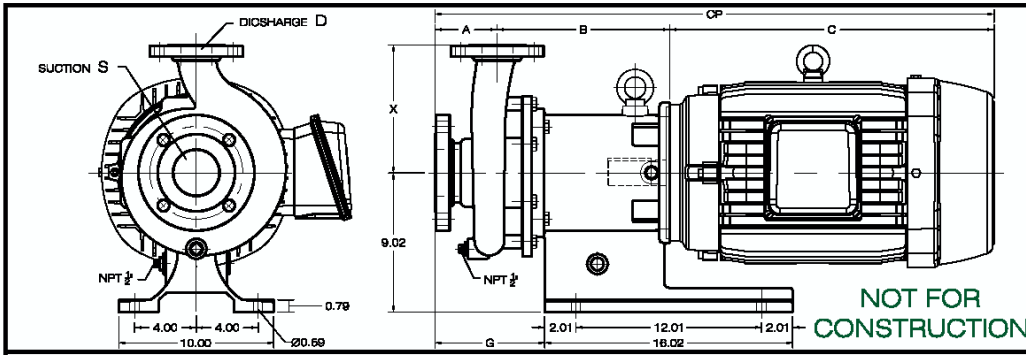
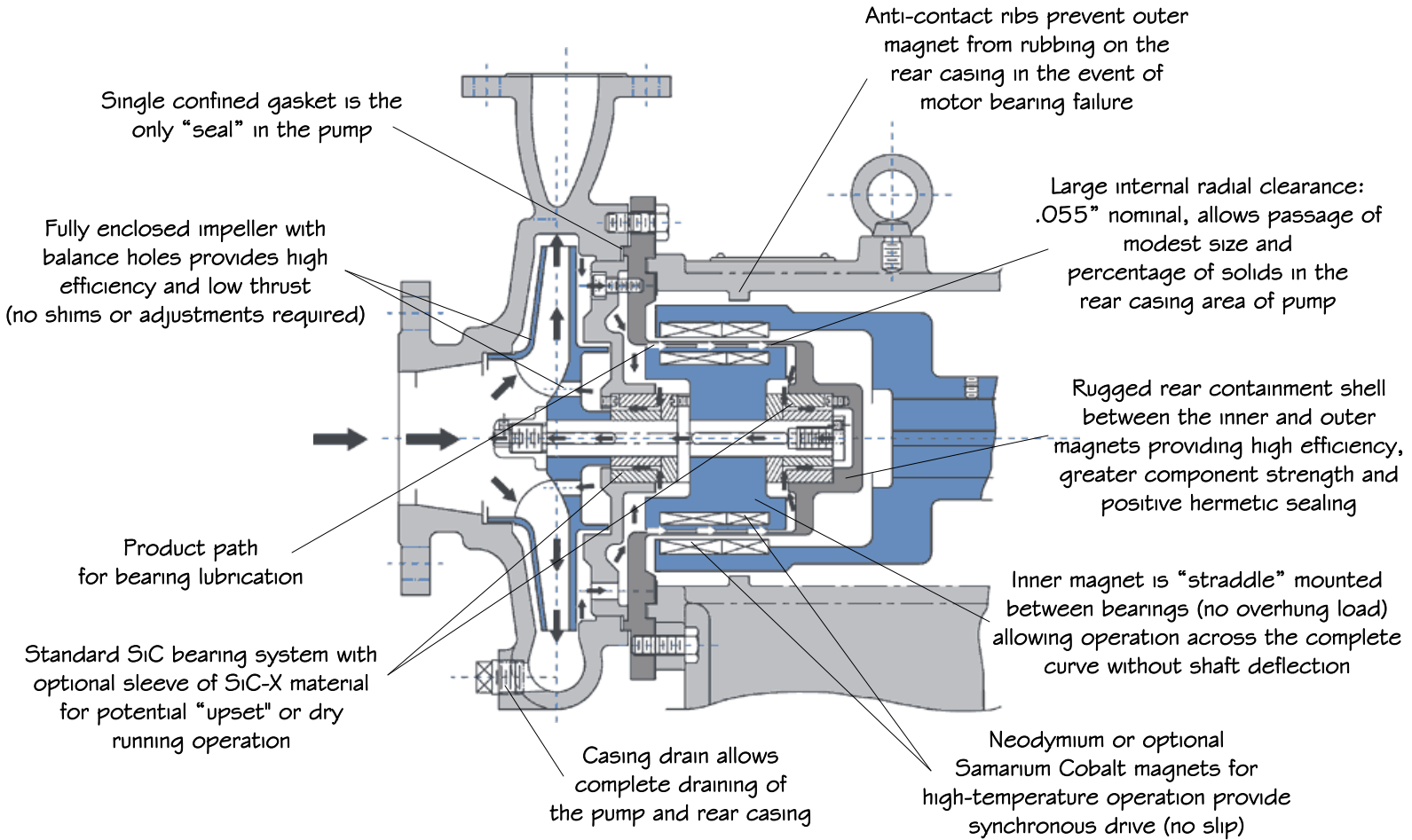
#### MAGNATEX<sup>®</sup> MPL Specifications

Maximum Flow ..... 340 gpm  
 Maximum Head ..... 400 ft  
 Liquid Temp ..... -100°F up to 660°F  
 Maximum Power ..... 30hp  
 Maximum Working Pressure..... 170 or 225 psig  
 Connections ..... 150# RF Flanges  
 Bearings ..... SiC, SiC-X Optional  
 Impeller ..... Enclosed  
 Speeds ..... up to 3550 rpm  
 Magnets ..... Samarium Cobalt or Neodymium  
 Motor ..... NEMA or IEC Frame Mounted

#### Materials of Construction:

- 316SS
- 304SS
- Alloy 20
- Alloy B & C





CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY  
REQUIRED LOCATION MUST BE SPECIFIED

**MAGNETEX**<sup>®</sup>  
Pumps, Inc.

**DIMENSIONAL DRAWING**  
MPL SERIES ANSI PUMP

DRAWN BY: B VALENTIN    DATE: 06/29/10    SCALE: NTS    PAGE: 1 OF 1

**DD-MPL SERIES**

ALL DIMENSIONS IN INCHES ± 0.12"

MODEL	DIMENSIONS																
	S	D	A	B	X	G	PUMP LBS	MOTOR FRAME	C	CP	MTR LBS	Total lbs	MOTOR FRAME	C	CP	MTR LBS	Total lbs
MPL40	1.5	1.0	4.0	11.0	6.5	6.9	187	182TC	12.02	22.98	99	286	184TC	13.01	27.99	108	295
								213TC	14.59	25.55	165	352	215TC	16.09	31.07	153	340
								254TC	19.21	30.17	238	425	256TC	20.96	35.94	259	446
MPL42	1.5	1.0	4.0	11.0	6.5	6.9	187	182TC	12.02	22.98	99	286	184TC	13.01	27.99	108	295
								213TC	14.59	25.55	165	352	215TC	16.09	31.07	153	340
								254TC	19.21	30.17	238	425	256TC	20.96	35.94	259	446
MPL42LF	1.5	1.0	4.0	11.0	6.5	6.9	187	182TC	12.02	22.98	99	286	184TC	13.01	27.99	108	295
								213TC	14.59	25.55	165	352	215TC	16.09	31.07	153	340
								254TC	19.21	30.17	238	425	256TC	20.96	35.94	259	446
MPL52LF	2.0	1.0	4.0	11.2	8.5	7.1	187	182TC	12.02	23.18	99	286	184TC	13.01	28.19	108	295
								213TC	14.59	25.75	165	352	215TC	16.09	31.27	153	340
								254TC	19.21	30.37	238	425	256TC	20.96	36.14	259	446
MPL84	3.0	1.5	4.0	11.0	6.5	6.9	187	182TC	12.02	22.98	99	286	184TC	13.01	27.99	108	295
								213TC	14.59	25.55	165	352	215TC	16.09	31.07	153	340
								254TC	19.21	30.17	238	425	256TC	20.96	35.94	259	446
MPL84-8	3.0	1.5	4.0	11.2	8.5	7.1	187	182TC	12.02	23.18	99	286	184TC	13.01	28.19	108	295
								213TC	14.59	25.75	165	352	215TC	16.09	31.27	153	340
								254TC	19.21	30.37	238	425	256TC	20.96	36.14	259	446
MPL85	3.0	2.0	4.0	11.2	8.3	7.1	187	182TC	12.02	23.18	99	286	184TC	13.01	28.19	108	295
								213TC	14.59	25.75	165	352	215TC	16.09	31.27	153	340
								254TC	19.21	30.37	238	425	256TC	20.96	36.14	259	446

### MAGNATEX<sup>®</sup> MPT Series



MPT Series magnetically driven, sealless, regenerative turbine vane pumps are designed specifically for small flows at high heads. The MPT Series features close-coupled construction similar to the MP Series, but uses a regenerative turbine vane impeller. This design provides better pump hydraulics at low flow rates and low NPSHa conditions.

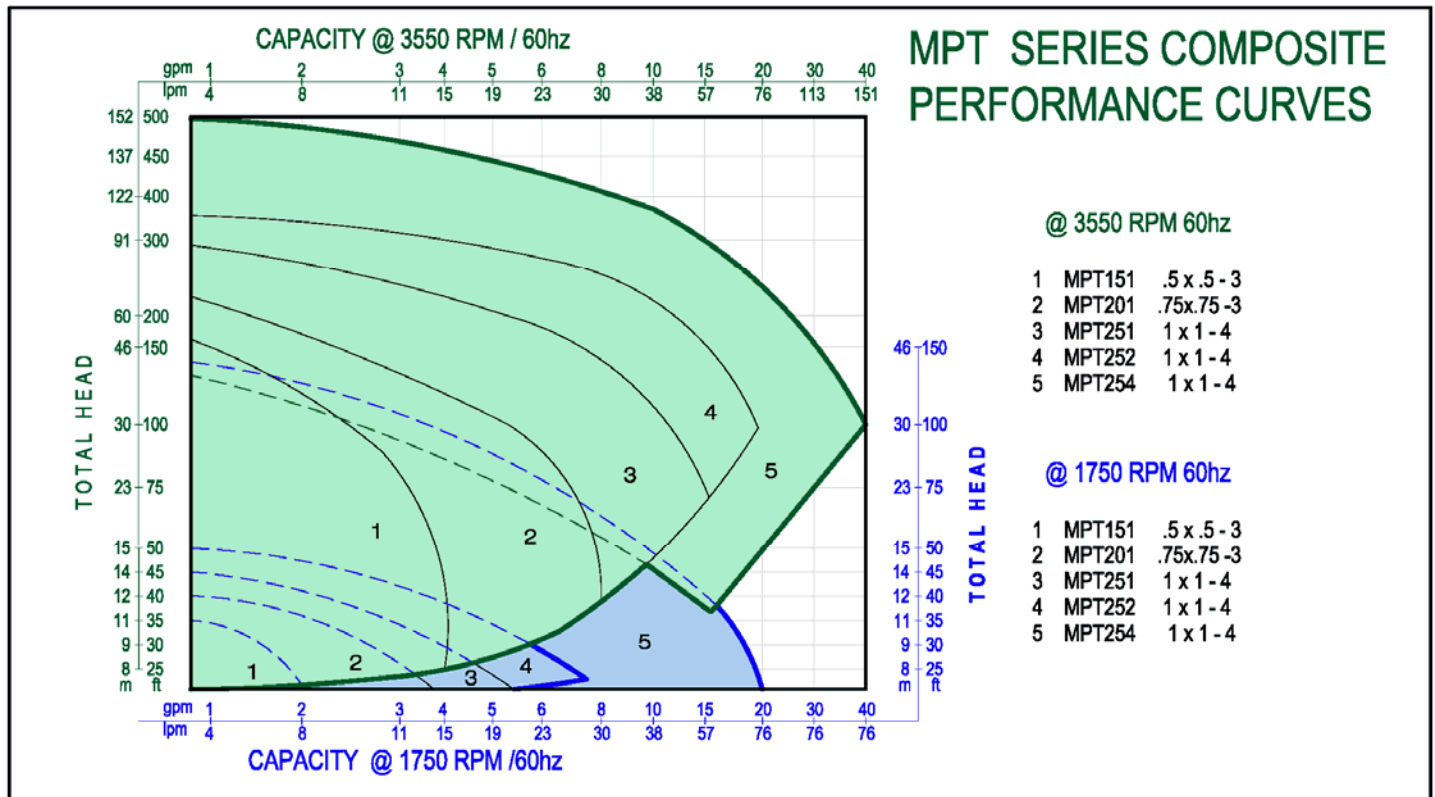
- Standard SiC-X bearing system for enhanced dry running capability
- Straddle-mounted, inner magnet system, with bearings on both sides of the magnet which reduces shaft and bearing loads when compared to our competitors' overhung, cantilevered inner magnet designs
- Slip fit construction which allows easy on-site maintenance, with no special tools or fixtures required
- Close-coupled configuration eliminates coupling and motor alignment issues
- No expensive mechanical seals; eliminates costly shutdowns and pump repair which helps eliminate "Reportable Release" issues
- Handles toxic, noxious and corrosive liquids for leak-free pumping with increased safety to plant personnel and the environment.
- Excellent for pumping entrained gases
- Excellent for low NPSHa applications

#### MAGNATEX<sup>®</sup> MPT Specifications

Max. Flow..... 40gpm  
 Max. Head..... 440 ft  
 Liquid Temp..... -20°F to +446°F  
 Max. Power..... 5hp  
 Maximum Working Pressure.....232psig  
 Connections ..... NPT with Optional Flanges  
 Bearings..... SiC/SiC-X  
 Impeller..... Turbine Vane  
 Speeds..... Up to 3550 rpm  
 Magnets..... Samarium Cobalt + Neodymium  
 Motor..... NEMA or IEC Frame Mounted

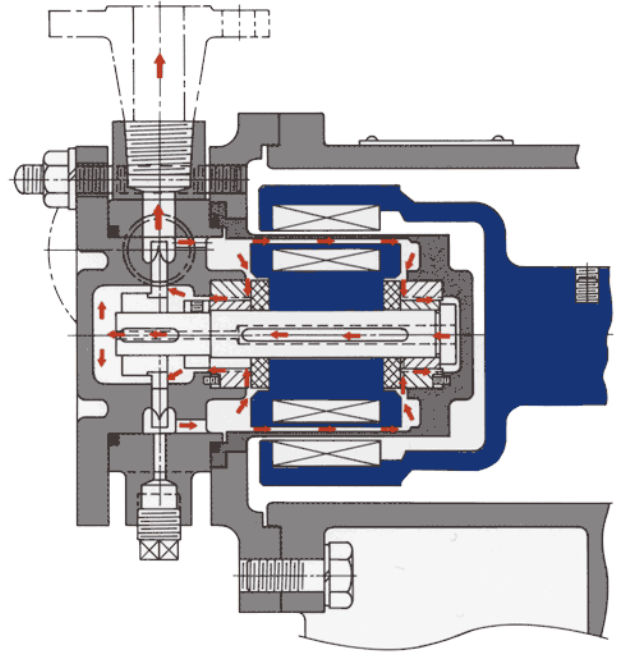
#### Materials of Construction:

- 316SS
- Alloy 20
- Alloy B & C
- Titanium



## HOW A REGENERATIVE TURBINE PUMP WORKS

- The unusual regenerative turbine impeller design involves a large number of blades machined into the periphery of the impeller
- Blades are on both sides of the centerline to limit axial thrust, which hydraulically centers the impeller during operation
- Instead of the liquid entering the impeller at the shaft centerline and exiting at the impeller periphery, liquid enters a regenerative turbine pump in the vicinity of the impeller OD. After acceleration around the pump casing it discharges through a port in the same plane as the suction
- There is considerable debate about the fluid dynamics involved in regenerative turbine pumps but the consensus of expert opinion is that liquid entering the impeller blade is accelerated radially and tangentially in the direction of rotation. Liquid moving outward toward the casing is reflected back onto the next impeller blade where it is further accelerated. This process is repeated many times until the liquid exits the discharge port
- The clearances between the impeller and casing and between the inlet and outlet are smaller to minimize backflow in the discharge segment of the casing
- Regenerative turbine pumps develop much more head for the impeller diameter and speed of rotation when compared to a typical centrifugal pump
- Because of the special impeller design, regenerative turbine pumps are excellent for low NPSH applications



**NOT FOR CONSTRUCTION**

CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY  
REQUIRED LOCATION MUST BE SPECIFIED

**DIMENSIONAL DRAWING**  
MPT SERIES CLOSE-COUPLED PUMP

DRAWN BY: **B VALENTIN**    DATE: **08/31/09**    SCALE: **NTS**    PAGE: **1 OF 1**

**DD-MPT SERIES**

ALL DIMENSIONS IN INCHES ± 0.12"

MODEL	MOTOR FRAME	DIMENSIONS											STANDARD NPT				*OPTIONAL 150# ANSI RF				APROX. WEIGHT lbs.							
		M	CP	B	C	E	F	G	K	L	T	S & D	A	X	O	S & D	A'	X'	O'	PUMP	MOTOR							
MPT 151	56 C	10.29	14.62	1.18	6.65	2.56	6.30	4.17	4.72	7.09	0.47	1/2	3.15	2.17	7.48	1/2	5.12	4.13	9.45	35	31							
	56C	10.29	14.82																		31							
MPT 201	140TC	143TC	10.23	13.38	1.38	6.85	2.56	6.30	4.33	4.72	7.09	0.47	3/4	3.15	2.17	7.48	3/4	5.12	4.13	9.45	44	54						
		145TC	11.50	16.03																								
	180TC	182TC	12.02	15.17		7.60	3.15	7.87		7.48	9.87	0.71										9.85				11.81	55	99
		184TC	13.01	17.54																								
MPT 251	140TC	143TC	10.23	14.36	1.57	6.85	2.56	6.30	4.33	4.72	7.09	0.47	1.00	4.13	2.95	8.46	1.00	6.10	4.92	10.43	44	54						
		145TC	11.50	15.63																								
	180TC	182TC	12.02	16.15		7.60	3.15	7.87		7.48	9.87	0.71										10.83				12.80	55	99
		184TC	13.01	17.14																								
MPT 252	140TC	143TC	10.23	14.36	1.57	6.85	2.56	6.30	4.33	4.72	7.09	0.47	1.00	4.13	2.95	8.46	1.00	6.10	4.92	10.43	44	54						
		145TC	11.50	15.63																								
	180TC	182TC	12.02	16.15		7.60	3.15	7.87		7.48	9.87	0.71										10.83				12.80	55	99
		184TC	13.01	17.14																								

\*DOES NOT CHANGE THE PRESSURE RATING OF THE PUMP

The MAXP Series of pumps has been designed to conform to ANSI B73.3 dimensional standards. The pumps are extremely rugged which makes them ideal for rigorous duty in the chemical and petrochemical industries.

**Magnetex MAXP pumps have the following design features:**

- Straddle mounted inner magnet system with bearings on both sides of the magnet, this design reduces shaft and bearing loads when compared to our competitors' overhung, cantilevered, inner magnet designs
- Slip fit construction which allows easy on-site maintenance with no special tools or fixtures required
- Large internal flow paths which means the pumps can easily handle 1% solids @ 500µ and up to 8% solids @ 100µ. Optional baffle-plated rear casing enables enhanced solids handling capability. Optional proprietary self cleaning strainer technology enables us to handle even higher solids percentages if necessary
- No expensive mechanical seals; eliminates costly shut downs and repairs which helps eliminate "Reportable Release" issues
- Safely handles toxic, noxious, corrosive or high temperature liquids with increased safety to personnel and the environment
- Special high temperature construction is available to handle up to 800°F
- Several dual containment systems are available which virtually eliminates any leakage to the environment when handling extremely hazardous chemicals

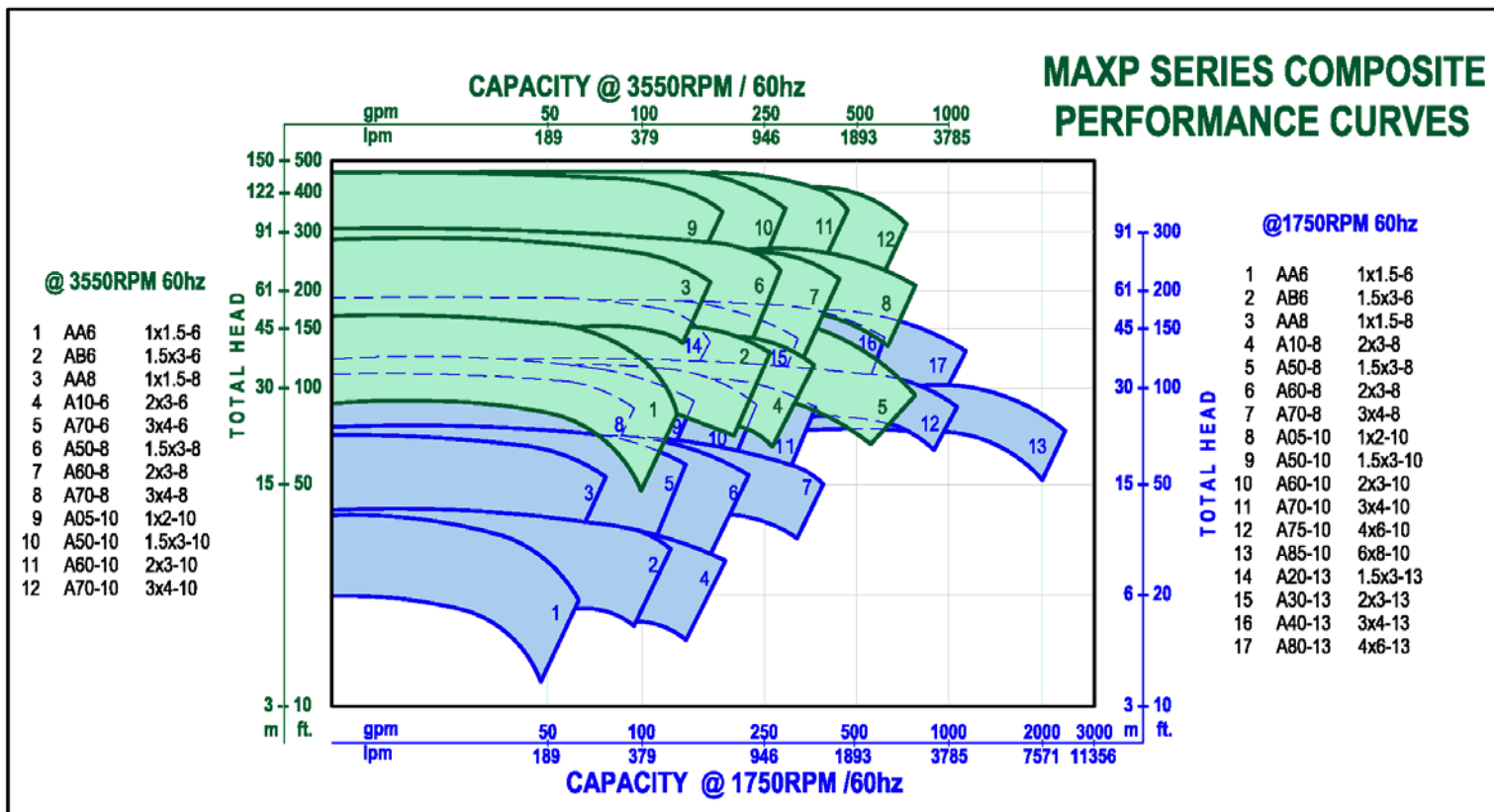


**MAGNATEX<sup>®</sup> MAXP Series Specifications**

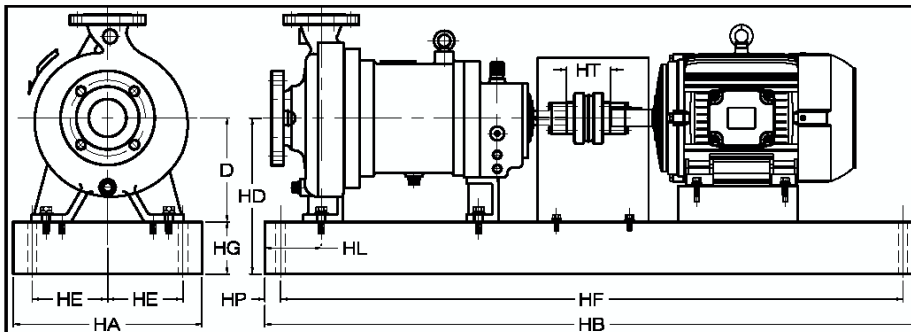
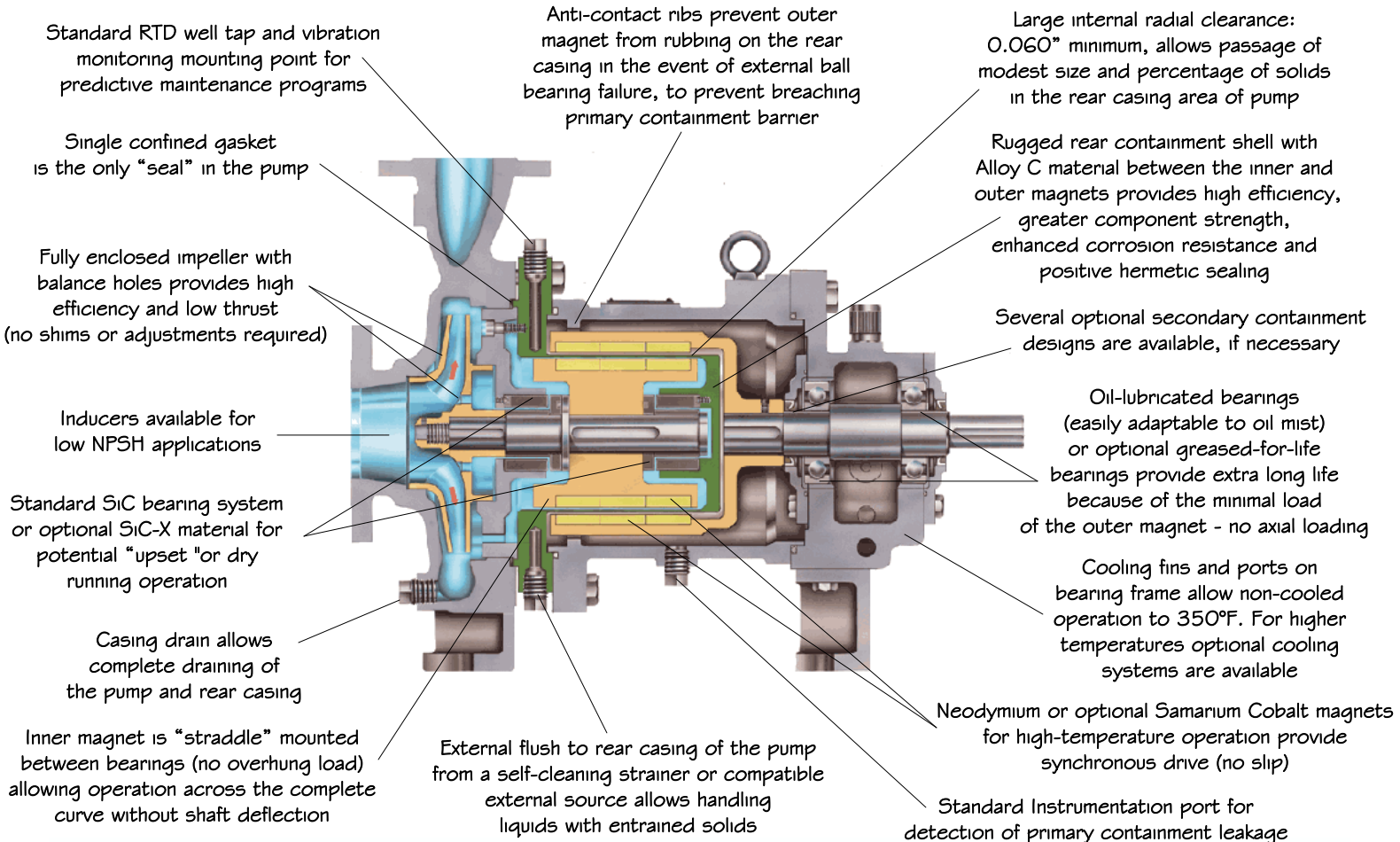
Maximum Flow.....	2000 GPM
Maximum Head.....	470 FT
Liquid Temp.....	-150°F – 800°F
Maximum Power.....	up to 200 HP
Connections.....	150lb RF std. or optional 300lb RF ANSI Flanges
Bearings.....	SiC, SiC-X optional for upset or Dry-run Conditions
Maximum Working Pressure (standard) .....	285 psig
Impeller.....	Enclosed
Speeds.....	up to 3550 rpm
Magnets.....	Neodymium or Samarium Cobalt for High Temp
Motor.....	NEMA or IEC Frame
Secondary Containment .....	Optional
Steam Jackets.....	Optional
External Flush, Re-circulated Flush & Vent.....	Optional
Vortex Breakers.....	Optional for Improved Solids Handling
Centerline mounted.....	Optional

**Materials of Construction:**

- 316SS
- Alloy 20
- Monel
- 304SS
- Alloy B & C
- Titanium



# Anatomy of the Ultimate Magnetic Drive Pump



CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY  
REQUIRED LOCATION MUST BE SPECIFIED



**DIMENSIONAL DRAWING**  
**MAXP SERIES ANSI PUMP**

DRAWN BY: **B VALENTIN** DATE: **08/06/10** SCALE: **NTS** PAGE: **1 OF 1**

**DD-MAXP SERIES**

**NOT FOR CONSTRUCTION**

## MAGNETEX MAXP SERIES ANSI BASEPLATE DIMENSIONS

NEMA Frame	Baseplate No.	HA MAX.	HB	HT	HD MAX.				HE	HF	HG MAX.	HH	HL	HP
					D=5.25 [133]	D=8.25 [210]	D=10 [254]	D=14.5 [368]						
184T	139	15 [381]	39 [991]	3.5 [89]	9 [229]	....	....	....	4.5 [114]	36.5 [927]	3.75 [95]	0.75 [19]	4.5 [114]	1.25 [32]
256T	148	18 [457]	48 [1219]	3.5 [89]	10.5 [267]	....	....	....	6 [152]	45.5 [1156]	4.13 [105]	0.75 [19]	4.5 [114]	1.25 [32]
326TS	153	21 [533]	53 [1346]	3.5 [89]	12.88 [327]	....	....	....	7.5 [191]	50.5 [1283]	4.75 [121]	0.75 [19]	4.5 [114]	1.25 [32]
184T	245	15 [381]	45 [1143]	3.5 [89]	....	12 [305]	13.75 [349]	....	4.5 [114]	42.5 [1080]	3.75 [95]	0.75 [19]	4.5 [114]	1.25 [32]
215T	252	18 [457]	52 [1321]	3.5 [89]	....	12.38 [314]	14.13 [359]	....	6 [152]	49.5 [1257]	4.13 [105]	0.75 [19]	4.5 [114]	1.25 [32]
286T	258	21 [533]	58 [1473]	3.5 [89]	....	13 [330]	14.75 [375]	....	7.5 [191]	55.5 [1410]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
365T	264	21 [533]	64 [1626]	3.5 [89]	....	13.88 [353]	14.75 [375]	....	7.5 [191]	61.5 [1562]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
405TS	268	26 [660]	68 [1727]	3.5 [89]	....	14.88 [378]	14.88 [378]	....	9.5 [241]	65.5 [1664]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
449TS	280	26 [660]	80 [2032]	3.5 [89]	....	15.88 [403]	15.88 [403]	....	9.5 [241]	77.5 [1969]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
286T	368	26 [660]	68 [1727]	5 [127]	....	....	....	19.25 [489]	9.5 [241]	65.5 [1664]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
405T	380	26 [660]	80 [2032]	5 [127]	....	....	....	19.25 [489]	9.5 [241]	77.5 [1096]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
449T	398	26 [660]	98 [2489]	5 [127]	....	....	....	19.25 [489]	9.5 [241]	95.5 [2426]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]

### MAGNATEX<sup>®</sup> 3575 Series

Heavy duty, rugged, world class quality, ANSI process pumps manufactured to meet the latest ASME B73.1-2001 standard (revision of ASME B73.1M-1991). Pumps are manufactured in 29 sizes, a wide variety of materials, seal options and seal flush systems to handle almost all applications in the process industries.

Magnatex<sup>®</sup> 3575 series pumps and spare parts come with a **5 year unconditional warranty** on materials and workmanship.

#### Spare Parts for Magnatex<sup>®</sup>, Goulds<sup>®</sup>, Durco<sup>®</sup> and Peerless<sup>®</sup> ANSI Pumps

Magnatex is a premier alternative, generic parts supplier for all of your Goulds 3196, Durco Mark II and III or Peerless 8196 pumps. Magnatex 3575 spare parts are guaranteed 100% interchangeable with Goulds 3196 parts.

We guarantee that our parts will meet the original manufacturers' performance standards. Our parts department is ready to help you with your requirements 24/7.



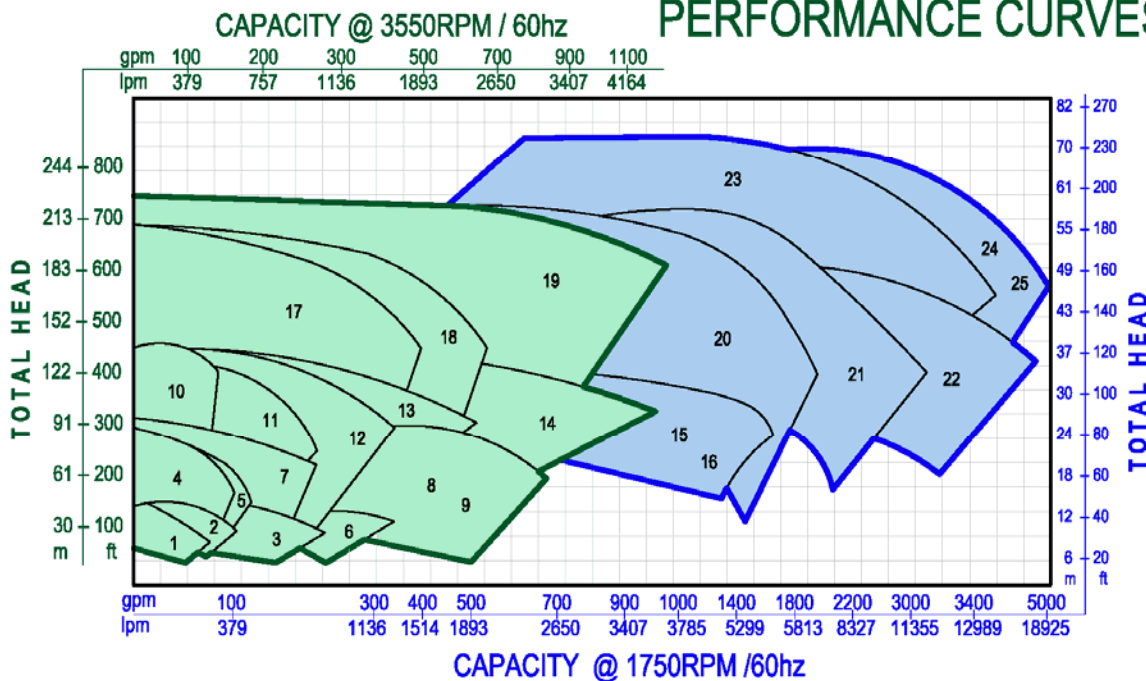
#### MAGNATEX<sup>®</sup> 3575 Series Specifications

Liquid Temp.....-100°F to +700°F  
 Max Shaft Deflection..... 0.002 Inches  
 Connections..... 150# FF std. or 300# RF Optional  
 B<sub>10</sub> Bearing Life..... 50,000 Hours  
 Maximum Working Pressure.....275 psig  
 Motor.....NEMA or IEC Foot Mounted

#### Materials of Construction:

- Ductile Iron
- Steel
- 316SS
- CD4MCu
- Alloy 20
- Alloy B & C
- Ni-Hard
- Titanium

### 3575 SERIES COMPOSITE PERFORMANCE CURVES



3575S		
1	A46	1x1.5-6
2	A66	1.5x3-6
3	A10	2x3-6
4	A48	1x1.5-8
5	A88	1.5x3-8

3575M / 3575L		
6	A70-7	3x4-7
7	A60-8	2x3-8
8	A70-8	3x4-8
9	A70-8G	3x4-8G
10	A05-10	1x2-10
11	A50-10	1.5x3-10
12	A60-10	2x3-10
13	A70-10	3x4-10
14	A40-10H	3x4-10H
15	A80-10	4x6-10
16	A80-10H	4x6-10H
17	A20-13	1.5x3-13
18	A30-13	2x3-13
19	A40-13	3x4-13
20	A80-13	4x6-13

3575XL		
21	A90-13	6x8-13
22	A100-13	8x10-13
23	A110-15	6x8-15
24	A120-15	8x10-15
25	A120-15	8x10-15G

3575 Series REV A2 090110

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Wetted parts available in Cast Steel, Ductile Iron, 316SS, CD4MCu, Alloy 20, Alloy B & C, Ni-Hard, or Titanium; materials to suit almost any application

Oil mist lubrication option; ideal for severe environment services

Externally adjustable impeller clearance; maintains peak pump performance

Large capacity oil sump; assures positive lubrication and better cooling

Inboard & Outboard INPRO VBX-5D bearing isolators; minimizes external environmental contaminants entering bearing housing

Large metal / glass oil level sight gauge; insures visibility of lubricant to help maintain proper oil level

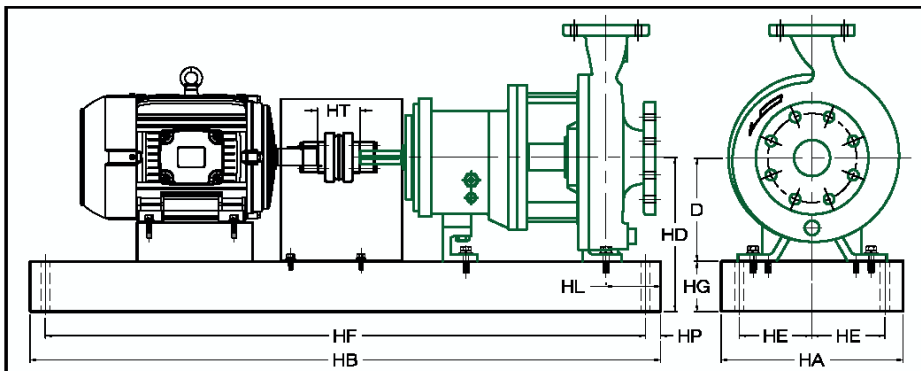
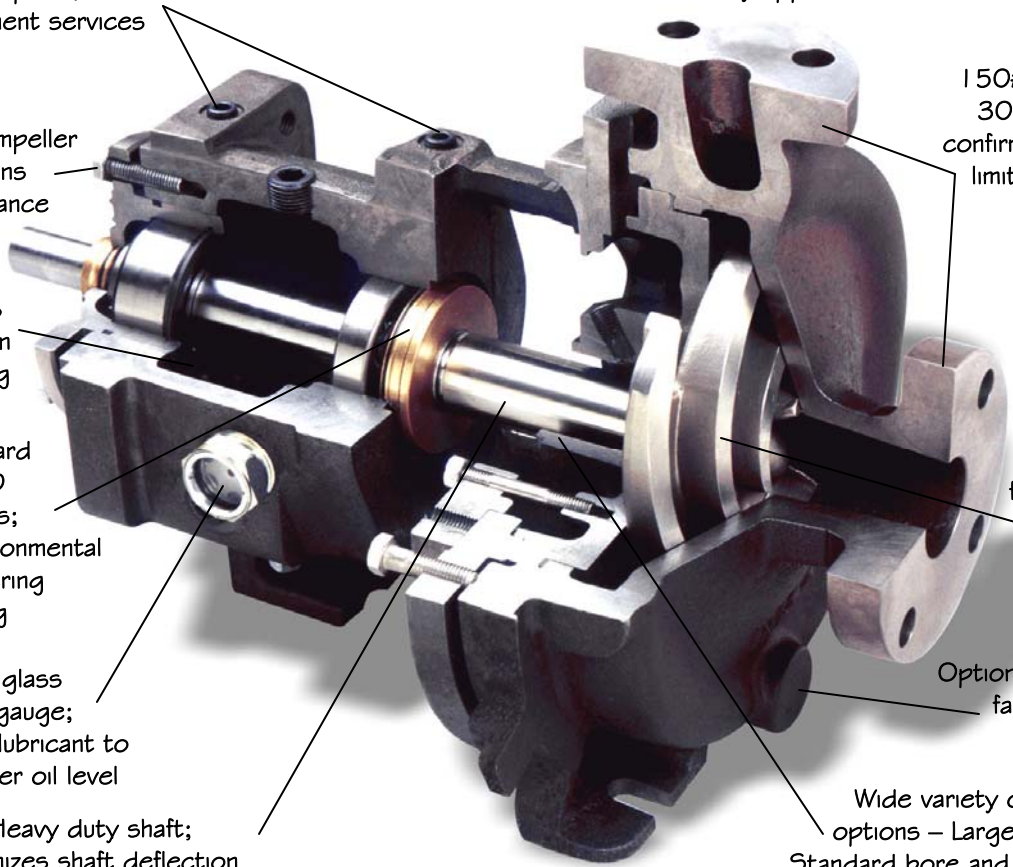
Heavy duty shaft; minimizes shaft deflection (optional hook sleeve construction available)

150# ANSI FF flanges Std., 300# RF optional. Note: confirm pressure / temperature limits for specific services

Open impeller with back pump out vanes; facilitates solids handling, minimizes axial loads and reduces seal chamber pressure

Optional 1/2" drain connection; facilitates maintenance when required

Wide variety of sealing chamber options – Large bore, Tapered bore, Standard bore and Packed box available to suite any application



CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY  
REQUIRED LOCATION MUST BE SPECIFIED



**DIMENSIONAL DRAWING**  
3575 SERIES ANSI PUMP

DRAWN BY: B VALENTIN DATE: 08/06/10 SCALE: NTS PAGE: 1 OF 1

**DD-3575 SERIES**

**NOT FOR CONSTRUCTION**

**MAGNATEX 3575 SERIES ANSI BASEPLATE DIMENSIONS**

NEMA Frame	Baseplate No.	HA MAX.	HB	HT	HD MAX.				HE	HF	HG MAX.	HH	HL	HP
					D=5.25 [133]	D=8.25 [210]	D=10 [254]	D=14.5 [368]						
184T	139	15 [381]	39 [991]	3.5 [89]	9 [229]	....	....	....	4.5 [114]	36.5 [927]	3.75 [95]	0.75 [19]	4.5 [114]	1.25 [32]
256T	148	18 [457]	48 [1219]	3.5 [89]	10.5 [267]	....	....	....	6 [152]	45.5 [1156]	4.13 [105]	0.75 [19]	4.5 [114]	1.25 [32]
326TS	153	21 [533]	53 [1346]	3.5 [89]	12.88 [327]	....	....	....	7.5 [191]	50.5 [1283]	4.75 [121]	0.75 [19]	4.5 [114]	1.25 [32]
184T	245	15 [381]	45 [1143]	3.5 [89]	....	12 [305]	13.75 [349]	....	4.5 [114]	42.5 [1080]	3.75 [95]	0.75 [19]	4.5 [114]	1.25 [32]
215T	252	18 [457]	52 [1321]	3.5 [89]	....	12.38 [314]	14.13 [359]	....	6 [152]	49.5 [1257]	4.13 [105]	0.75 [19]	4.5 [114]	1.25 [32]
286T	258	21 [533]	58 [1473]	3.5 [89]	....	13 [330]	14.75 [375]	....	7.5 [191]	55.5 [1410]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
365T	264	21 [533]	64 [1626]	3.5 [89]	....	13.88 [353]	14.75 [375]	....	7.5 [191]	61.5 [1562]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
405TS	268	26 [660]	68 [1727]	3.5 [89]	....	14.88 [378]	14.88 [378]	....	9.5 [241]	65.5 [1664]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
449TS	280	26 [660]	80 [2032]	3.5 [89]	....	15.88 [403]	15.88 [403]	....	9.5 [241]	77.5 [1969]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
286T	368	26 [660]	68 [1727]	5 [127]	....	....	....	19.25 [489]	9.5 [241]	65.5 [1664]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
405T	380	26 [660]	80 [2032]	5 [127]	....	....	....	19.25 [489]	9.5 [241]	77.5 [1096]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]
449T	398	26 [660]	98 [2489]	5 [127]	....	....	....	19.25 [489]	9.5 [241]	95.5 [2426]	4.75 [121]	1 [25]	4.5 [114]	1.25 [32]

### MAGNATEX<sup>®</sup> MEP Series

Magnet drive, sealless, medium duty, polypropylene thermoplastic pumps, designed for chemical transfer applications. Simple construction allows for economical first cost and ease of maintenance. Sealless design helps eliminate "Reportable Release" issues.

Call us today at 713-972-8666 or 1-866-624-7867.



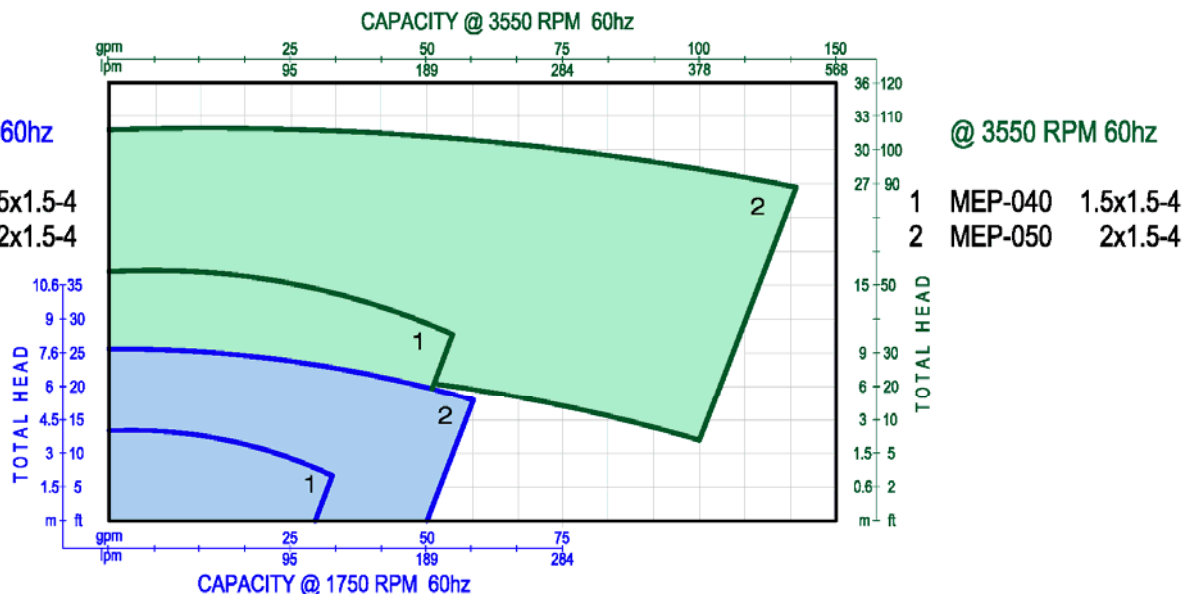
#### Materials of Construction:

- Polypropylene

#### MAGNATEX<sup>®</sup> MEP Series Specifications

Maximum Flow .....	106 GPM
Maximum Head .....	103 FT
Liquid Temp .....	Max 175°F
Maximum Power.....	5 HP
Connections .....	Drilled for DIN and ANSI Flanges
Bearings .....	Carbon, C-PTFE
Shaft .....	Ceramic
Maximum Working Pressure .....	55 psig
Impeller .....	Enclosed
Speeds .....	Up to 3550 rpm
Magnets .....	Rare Earth
Motor.....	NEMA or IEC Frame Mounted

### MEP SERIES COMPOSITE PERFORMANCE CURVES

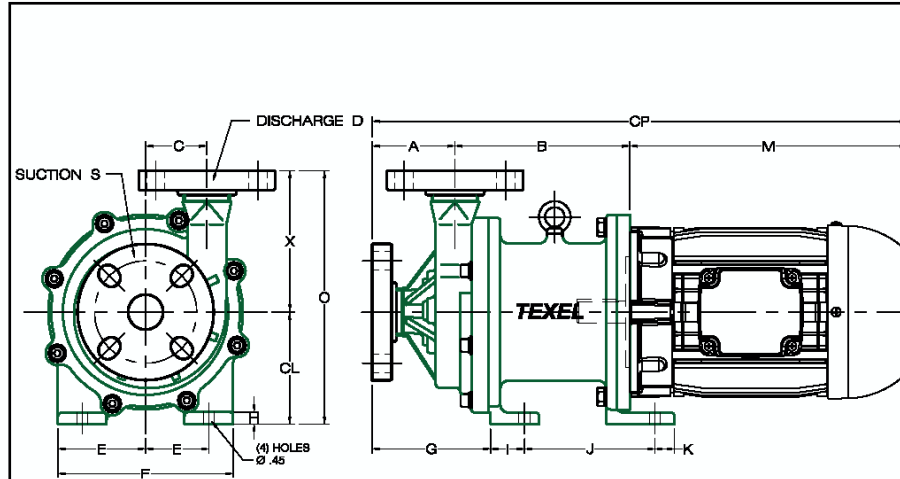


# MAGNATEX®

## MEP SERIES PUMPS

PARTS	SHAFT			BEARING				REAR CASING			O-RING		
Materials	Alumina	SiC	Titanium	Carbon	C-PTFE	G-PTFE	SiC	G-PP	C-PVDF	C-ETFE	FMP	EPDM	AFLAS®
Model													
MEP-402	●			●	●			●			●	●	*
MEP-404	●			●	●			●			●	●	*
MEP-502	●			●	●			●			●	●	*
MEP-504	●			●	●			●			●	●	*
MEP-506	●			●	●			●			●	●	*

Standard ●  
Optional \*



CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY  
REQUIRED LOCATION MUST BE SPECIFIED



### DIMENSIONAL DRAWING MEP SERIES ANSI PUMP

DRAWN BY: B VALENTIN DATE: 07/01/10 SCALE: NTS PAGE: 1 OF 1

### DD-MEP SERIES

ALL DIMENSIONS IN INCHES ± 0.12"

- NOTES:
1. FLANGES ARE 150# DRILLED FOR DIN & ANSI DIMENSIONS
  2. MAXIMUM WORKING PRESSURE IS 55 psig
  3. MAXIMUM WORKING TEMPERATURE IS 175°F / 79.4°C
  4. VERIFY WORKING PRESSURE AT PUMP TEMPERATURE

NOT FOR CONSTRUCTION

MODEL	MOTOR FRAME	DIMENSIONS																APROX. WEIGHT lbs.	
		S	D	A	B	C	CL	X	E	F	G	H	I	J	K	M	CP	PUMP	MOTOR
MEP-402	56C	1.50	1.50	3.26	7.08	2.48	4.53	5.71	2.56	7.09	6.00	0.47	1.38	5.28	0.79	10.29	20.63	24	67
MEP-404		1.50	1.50													10.23	20.57		58
MEP-502	145TC	2.00	1.50	3.66	7.20	3.39	5.51	6.61	2.95	7.87	6.85	0.59	1.57	5.37	0.79	10.23	21.09	42	99
MEP-503	182TC	2.00	1.50		7.95									12.02	23.63				
MEP-506	184TC	2.00	1.50	13.01	16.67	108													

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### MAGNATEX<sup>®</sup> ME Series

Magnatex<sup>®</sup>/ Texel<sup>®</sup> ME Series sub-ANSI pumps are dependable, durable, replaceable liner, magnetic drive pumps. They are the solution for low to medium flow, corrosive fluid applications. These pumps provide a life-time of maintenance-free operation with low initial cost and low total cost of ownership. Replaceable liners make repairs easy and inexpensive without special tooling required. Sealless design helps eliminate "Reportable Release" issues.

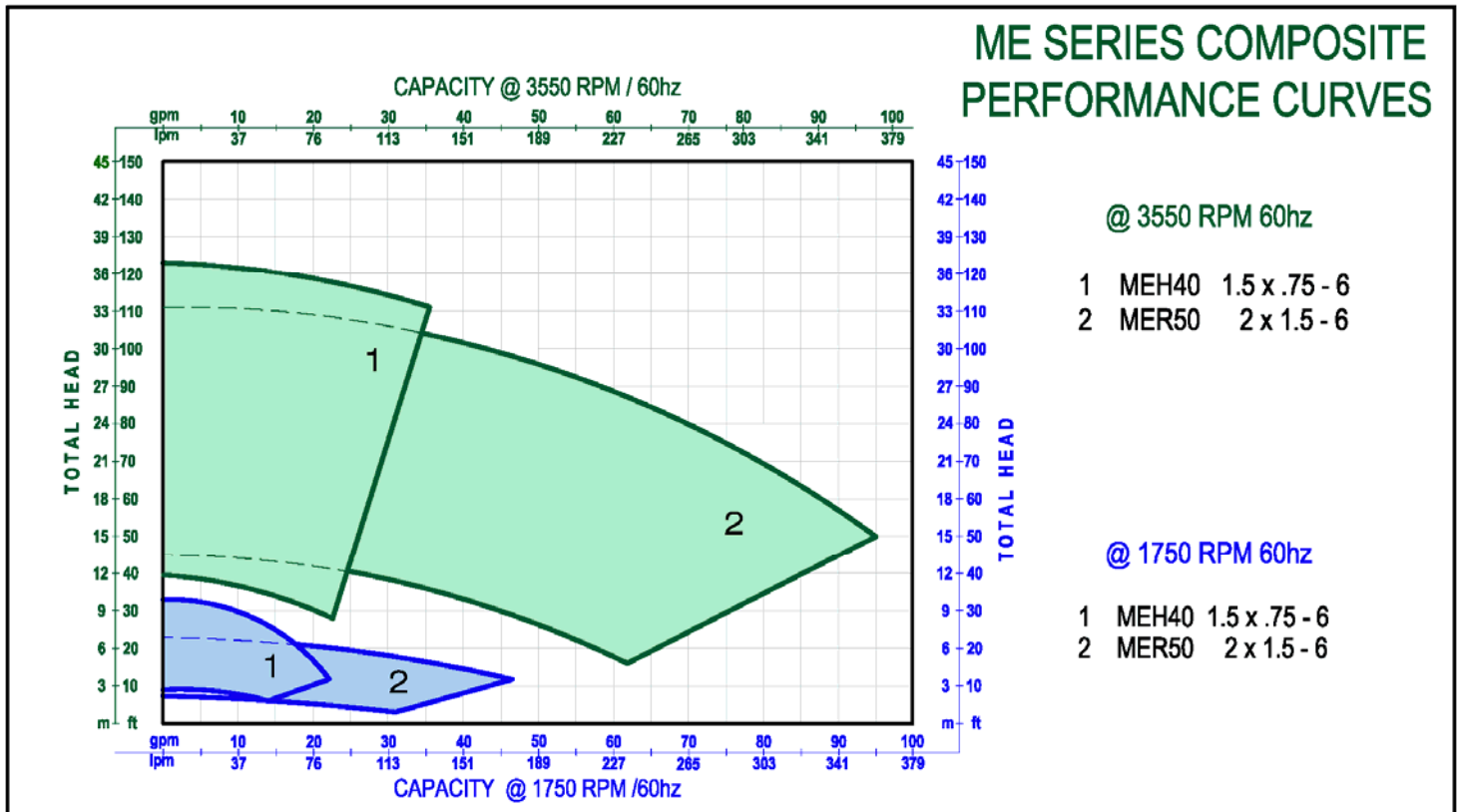


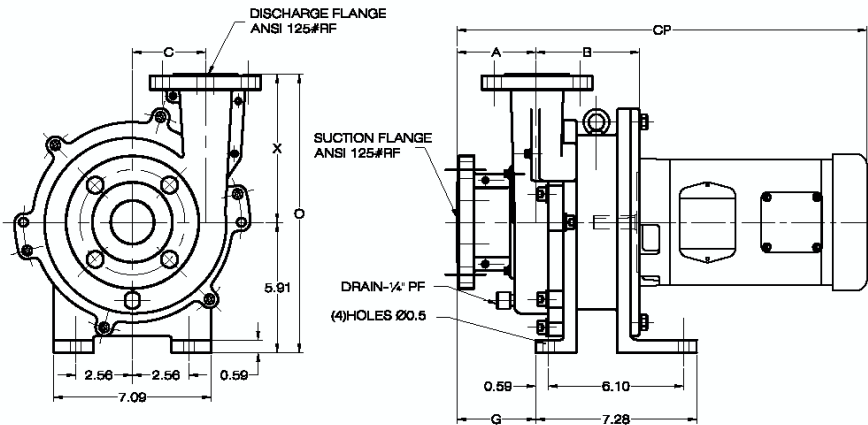
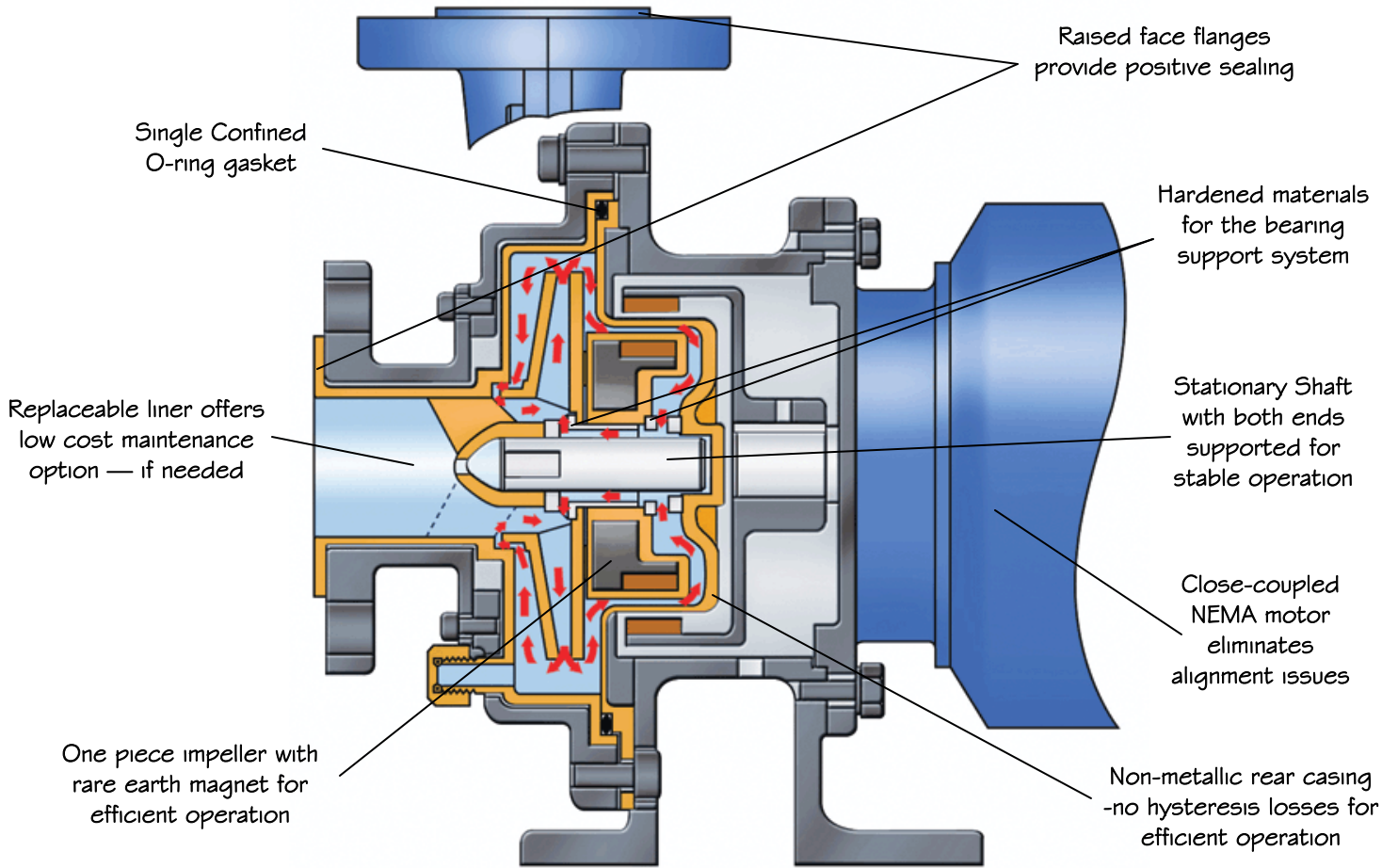
#### Materials of Construction:

- ETFE Lined
- Kynar<sup>®</sup> (PVDF) Lined. Registered trademark of Arkema, Inc.

#### MAGNATEX<sup>®</sup> ME Series Specifications

Maximum Flow .....	90 GPM
Maximum Head .....	140 FT
Liquid Temp .....	32°F to 250°F
Maximum Power .....	3 HP
Connections .....	125 lb. RF Flanges
Bearings.....	C-PTFE, G-PTFE, SiC, Carbon
Shaft .....	Ceramic, SiC
Maximum Working Pressure .....	70 psig
Impeller .....	Enclosed
Speeds .....	Up to 3550 rpm
Magnets .....	Rare Earth
Motor.....	NEMA or IEC Frame Mounted





NOT FOR CONSTRUCTION

CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY  
REQUIRED LOCATION MUST BE SPECIFIED



**PUMP DIMENSIONS**  
MEH/MER SERIES CLOSE-COUPLED PUMPS

DRAWN BY: B VALENTIN | DATE: 07/13/09 | SCALE: NTS | PAGE: 1 OF 1

**DD-MEH/MER SERIES**

ALL DIMENSIONS IN INCHES ± 0.12"

MODEL	MOTOR FRAME		DIMENSIONS								APROX.		
			S	D	CP	O	A	C	X	B	G	PUMP	MOTOR
MEH-40	56C		2	1.5	18.30	12.64	3.46	2.8	6.73	4.90	3.4	58	31
	143TC	145TC			19.86					4.92			54 / 58
	182TC	184TC			24.36					5.65			99 / 108
MER-50	56C		1.5	0.75	18.17	12.6	3.54	3.31	6.69	4.67	3.3	55	31
	143TC	145TC			19.73					4.69			54 / 58
	182TC	184TC			24.22								99 / 108

### MAGNATEX<sup>®</sup> MTA Series



Magnatex<sup>®</sup>/Texel<sup>®</sup> MTA Series sealless, mag-drive pumps feature a transfer molded, mechanically attached PFA lining that is thicker and more uniform than our competitors' roto-molded linings. Ideal for almost all industrial chemical applications including high purity and elevated temperature applications, our pumps offer many enhanced characteristics over the competition. MTA Series pumps conform to ANSI B73.3 Standards. Sealless Design helps eliminate "Reportable Release" issues.

All Magnatex<sup>®</sup> pumps and spare parts come with a **1 year unconditional warranty** on materials and workmanship.



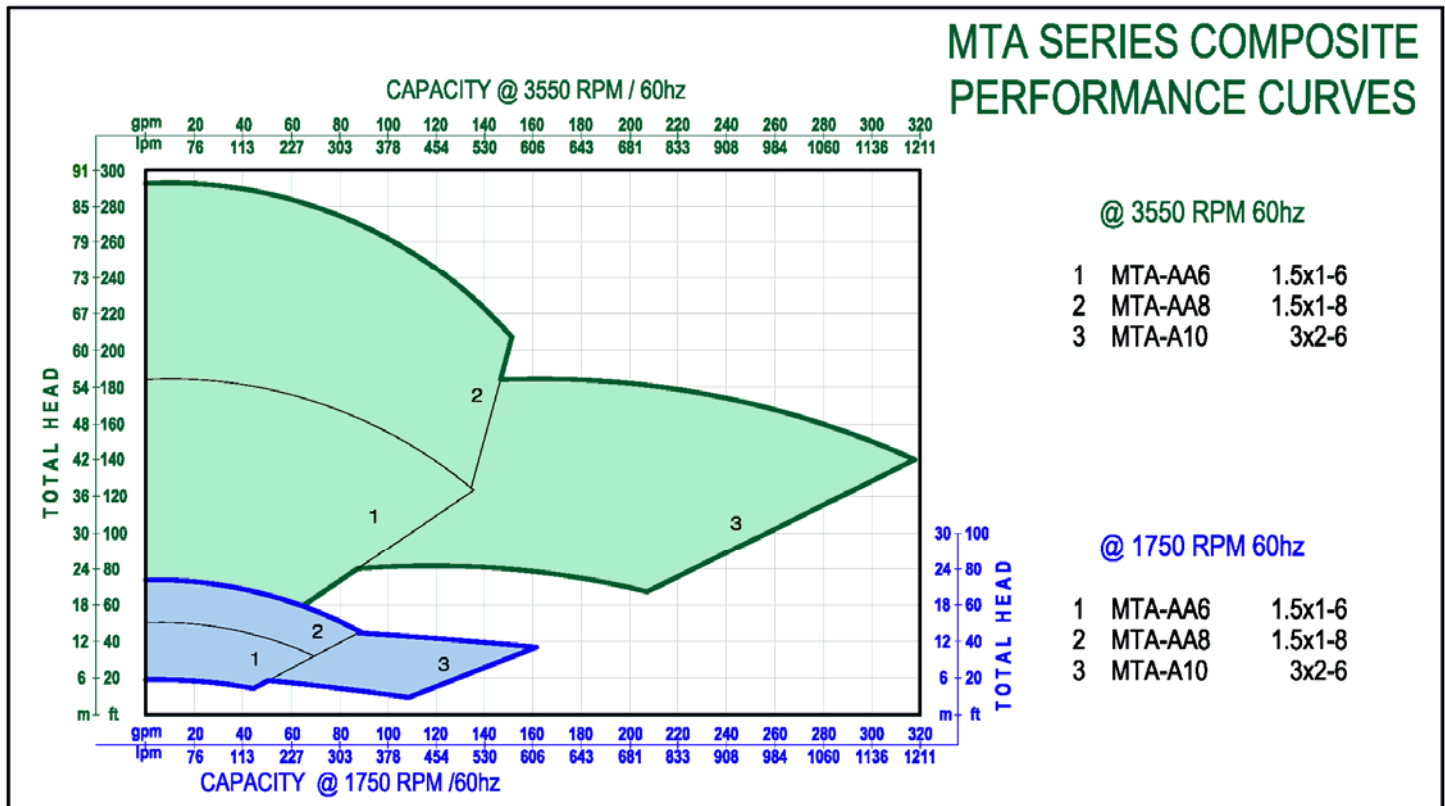
Transfer-compression molding allows positive, interlocking casing linings 4-6 mm thick that stay in place; ideal for vacuum and higher temperature applications.

#### MAGNATEX<sup>®</sup> MTA Series Specifications

Maximum Flow.....	320 GPM
Maximum Head.....	285 FT
Liquid Temp.....	32°F to 275°F
Max Power.....	25 HP
Connections .....	150lb RF Flanges
Bearings .....	C-PTFE, G-PTFE, SiC, Carbon
Shaft.....	SiC
Working Pressure.....	150 psig
Impeller.....	Enclosed
Speeds.....	Up to 3550 rpm
Magnets.....	Neodymium or Samarium Cobalt
Motor.....	NEMA or IEC Frame Mounted

#### Materials of Construction:

- PFA Lined



Proprietary high pressure transfer molded PFA fluoropolymer Lining is 5-6mm thick for superior strength, permeation and abrasion resistance

Heavy-duty Ductile Iron casing armor provides mechanical strength to the pump and protection for the PFA lining

Dovetail grooves in the DI casing armor provides positive locking of the lining-good for vacuum and high temperature applications

Shape secured component design eliminates keyed construction stress points

Extra long main bushing provides stable operation over the entire operating range of the pump

Stationary Shaft simple construction

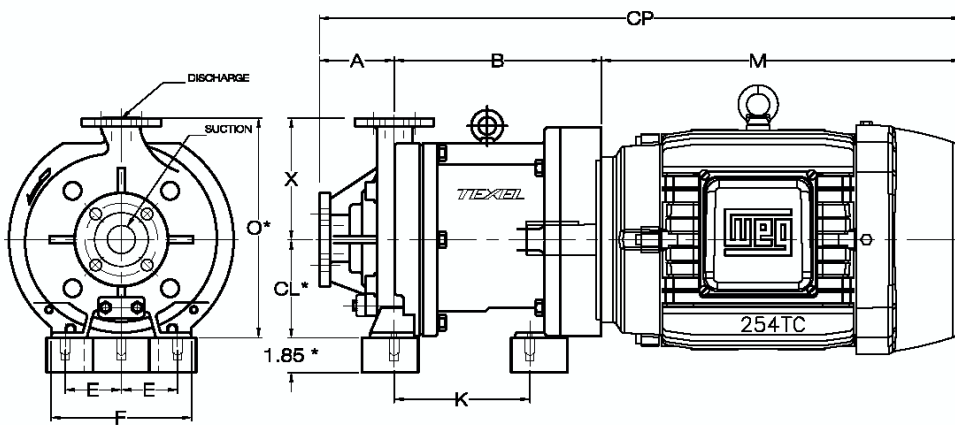
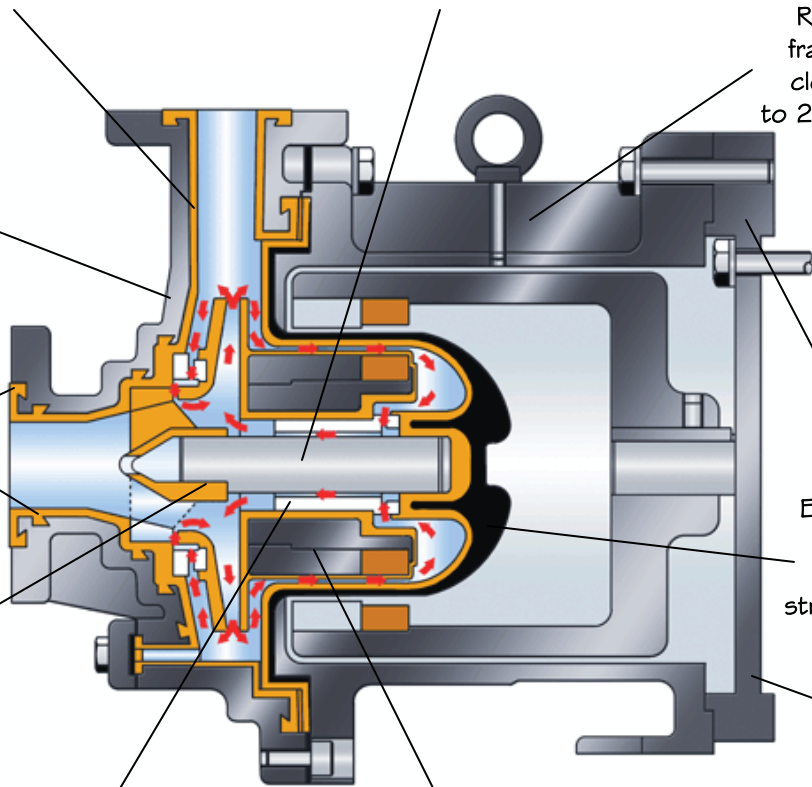
Reinforced heavy duty frame adapter supports closed coupled motors to 25hp and 284TSC frame

Motor adapter plate allows use of different hp ratings on a single pump model for performance versatility

Engineered plastic rear casing outer shell provides rigid high strength to the PFA lining

NEMA C-Face motor provides positive pump and motor alignment

PFA encapsulated seamless construction. Rare earth inner Magnets are either Nd or SmCo



\* ADD 1.85" FOR PUMP RISERS TO 'CL' AND 'O' DIM FOR MOTOR FRAME 254TC OR GREATER

CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY  
SPECIFIC LOCATION MUST BE SPECIFIED

NOT FOR CONSTRUCTION



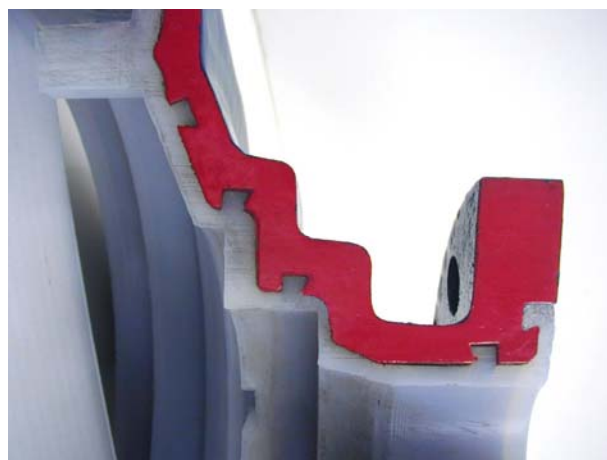
DIMENSIONAL DRAWING  
MTA SERIES CLOSE-COUPLED PUMP

DRAWN BY: B VALENTIN DATE: 07/02/10 SCALE: NTS PAGE: 1 of 1

DD-MTA SERIES

ALL DIMENSIONS IN INCHES ± 0.12"

MODEL	DIMENSIONS																		
	S	D	A	B	E	F	K	X	CL	O	PUMP LBS	MOTOR FRAME	M	CP	MTR LBS	MOTOR FRAME	M	CP	MTR LBS
MTA-AA6	1.50	1.00	4.00	9.96	3.00	7.55	7.25	6.50	5.25	11.75	231	143TC	10.23	24.19	54	145TC	11.21	25.17	56
				182TC								12.02	25.98	99	184TC	12.96	26.92	108	
				213TC								14.59	28.55	150	215TC	16.09	30.05	165	
MTA-AA8			11.06								238	254TC	19.21	34.27	266	256TC	20.96	36.02	313
			284TSC									21.81	36.87	437					
MTA-A10	3.00	2.00	4.00	10.24	4.88	11.33	12.50	8.25	8.25	16.50	253	143TC	10.23	24.47	54	145TC	11.21	25.45	56
												182TC	12.02	26.26	99	184TC	12.96	27.20	108
												213TC	14.59	28.83	150	215TC	16.09	30.33	165
												254TC	19.21	33.45	266	256TC	20.96	35.20	313
												284TSC	21.81	36.05	437				



### TEXEL PFA Lined MTA Series Pump Features

- PFA (Perfluoroalkoxytetrafluoroethylene) is a high strength, high temperature and abrasion resistant fluoropolymer material
- Standard lining thickness is 5-6 mm
- PFA lining is mechanically secured to the ductile iron casing armoring by means of recessed dovetails which are cast into the ductile iron casing armor
- Extra long main shaft bushing
- Proprietary high pressure (1200 psi) transfer compression molding process
- Completely seamless inner magnet lining.

MAGNATEX	COMPETITION
PFA offers the broadest range of resistance to chemical attack, lowest permeation rate and highest temperature capability of all the fluoropolymer materials, which ensures the maximum possible service life for lined magnetic drive pumps.	Generally only available in cheaper ETFE (Ethylenetetrafluoroethylene) material which has less chemical resistance, higher permeability and lower temperature resistance than PFA.
Magnatex PFA linings are 5—6mm thick and therefore will last longer in service than thinner ones of the same material and even longer when compared to the ETFE and PVDF linings offered by most of our competitors.	Most competitors' linings are just 3-4 mm thick which means they have proportionately less corrosion and permeation resistance than Magnatex lined pumps.
High pressure molding at 1200 psi produces a positive locking of the lining material and prevents lining movement in high vacuum or low suction pressure applications.	Most competitors have no mechanical means of restraining the casing liner which can result in lining movement in high vacuum or low suction pressure applications. Shifting or movement of the lining may result in linings collapsing onto the internal rotating elements leading to catastrophic failure of the pump.
The extra long main shaft bushing provides greater stability for operation across the entire hydraulic range of the pump, with smooth, quiet operation and extremely low vibration. Greater shaft support surface area means lower hydraulic loading, less wear and longer service life	Competitors generally offer shorter main shaft bushings resulting in a smaller surface area to support dynamic shaft loads. Less surface area, less pump life
High pressure transfer molding @ 1200psi produces a lining with a dense, uniform thickness and superior surface finish, all of which contribute to superior service life in demanding chemical services. High pressure molding also eliminates any air pockets between the casing lining and the armoring, which is critical in high temperature services.	Competitors use a cheaper, atmospheric pressure, rotomolding process which results in a thinner, less dense, more permeable lining material with a less uniform surface finish. Rotomolded linings may have air bubbles trapped behind them which can lead to linings cracking in high temperature applications.
Completely seamless inner magnet lining eliminates a potential leak path for the process fluid to reach and attack the inner magnet. Shape secured main bushing eliminates keyed construction; easing related stress points.	Most competitors have seams in the inner magnet lining that can allow aggressive chemicals to penetrate the lining which cause the magnet segments to swell and corrode, leading to catastrophic failure of the pump.

Proprietary high pressure transfer molded PFA fluoropolymer Lining is 5-6mm thick for superior strength, permeation and abrasion resistance

Stationary Shaft simple construction

Reinforced heavy-duty frame adapter supports closed coupled motors to 25hp and 284TSC frame

Heavy-duty Ductile Iron casing armor provides mechanical strength to the pump and protection for the PFA lining

Dovetail grooves in the DI casing armor provides positive locking of the lining-good for high vacuum and high temperature applications

Extra long main bushing provides stable operation over the entire operating range of the pump

PFA encapsulated construction. Rare earth inner magnets are either Nd or SmCo

Motor adapter plate allows use of different hp ratings on a single pump model for performance versatility

NEMA C-Face motor provides positive pump and motor alignment

Engineered plastic rear casing outer shell provides rigid high strength to the PFA lining





Chemical  
Process  
Pumps

"SINCE 1985 YOUR PROCESS RELIABILITY HAS BEEN OUR #1 PRIORITY."

*Serving the Chemical Process, Petrochemical, Refining, Pharmaceutical, Pulp & Paper, Textile, Food & Beverage, Power, Semiconductor, Water Treatment and General Industrial markets SINCE 1985.*

*Magnatex  
magnetic drive  
pumps now  
feature  
significantly  
increased  
dry-running  
capability!*

- Our SiC-X bearings can run dry for extended periods — even hours!
- Unique materials and manufacturing techniques of our specially treated SiC-X bearings provide a coefficient of friction 1/4 that of SiC.

The very low coefficient of friction of our SiC-X bearings results in much less heat being generated in upset or dry-running conditions

SiC-X bearings are more forgiving of dry-running conditions frequently encountered at start-up, during upset conditions or in batch services

Extremely hard surfaces minimize wear and prolong service life; resistance to chemicals is maintained for extended bearing life

**SiC-X Availability**

MMP/ MMH/ MML—Standard

MP/ ML/ MPH/ MPT-Standard

MPL/ MLL/ MHL-Optional

MAXP-Optional



- Online pump selector
- System head calculator

**MAGNATEX PUMPS, INC.**

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Houston, TX 77018

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[inquiries@magnatexpumps.com](mailto:inquiries@magnatexpumps.com)

[www.magnatexpumps.com](http://www.magnatexpumps.com)



## Dry-running capability is improved by using our proprietary SiC-X bearings when compared to SiC

### Preliminary Test Results

In multiple dry-running tests using an MP220, 1 HP unit with standard SiC bearings, noise developed after a brief period of operation. On disassembly, internal damage was identified. The same pump with the special bearing material operated over **1 hour and 45 minutes** with no unusual noise. On disassembly, there was no visible damage.

The next test involved running the same pump with the SiC-X bearing material dry for one hour with the suction valve closed. The rear casing temperature reached 260°F. With the pump still operating, the suction valve was then opened, allowing room temperature water to enter the pump; continued to operate. On inspection, no damage or cracks were observed – all parts were in excellent condition.

A test at a customer facility was inadvertently run when the suction cap used during shipping was not removed before installation. After running dry for 10 minutes, the pump was inspected and no damage was observed. The pump was reinstalled without the cap and operated as expected.

### Controlled Test Results

Test Progression	Standard SiC	SiC-X
	Coefficient of Friction = 0.39	Coefficient of Friction = 0.099
Operation with a combination of air and liquid; rotation speed of 19.7ft/sec and weight on bearing of 8.2 lbs.	The bearing surface was abraded with noticeable wear after operating for 10 minutes	Bearing was in excellent condition after 10 minutes of operation
Dry-running—no liquid; 19.7 ft/sec, 8.2lbs	Bearing damage after 2 seconds of operation.	Bearing was in excellent condition after 80 seconds
Dry-running—no liquid; 15.4 ft/sec, 2.2lbs	Bearing damage after 45 seconds of operation.	Bearing was still in excellent condition after 1 hour and 45 minutes of operation.
Heat shock after dry-running 1 hour; poured water at room temperature on bearing which was assumed over 330°F	N/A—will not run dry this long	Bearing was still in excellent condition; no thermal cracking or heat checking evident.

### SiC-X Corrosion Testing

Liquid	Temperature degrees F	Time	Degrees of Corrosion (g/m <sup>2</sup> /hr)
65% HNO <sub>3</sub>	Boiling	24 Hours	0.003
100% H <sub>2</sub> SO <sub>4</sub>	Boiling	24 Hours	0.002
35% HCl	Boiling	24 Hours	0.002
30% NaOH	Boiling	24 Hours	0.002
100% CH <sub>3</sub> COOH	158°F	24 Hours	0.000
35% H <sub>2</sub> O <sub>2</sub>	Boiling	24 Hours	0.002

In the case of the test application involving air with liquid, an inherently difficult situation for product lubricated bearings, the SiC-X bearing operated continuously for 10 minutes with no cracks or wear. Even with completely dry operation (no liquid whatsoever), the SiC-X bearings operated for considerably longer time than SiC bearings. Inspection revealed the bearings to still be in good condition after 1 hour 45 minutes.

### Conclusions

One of the weak points of ceramic materials is poor response to thermal shock. In our tests, the SiC-X bearing material was unaffected. On inspection, the bearing showed no evidence of damage. The results of a similar, though inadvertent, field test where a technician discovered the pump was being operated in a dry-running condition were equally impressive. He stopped the pump and poured liquid on the bearing to cool it off quickly. Even in that situation with the bearing close to the point of being damaged, the SiC-X gave the customer good results. The technician “expected damage” and was surprised to see the SiC-X in good condition.

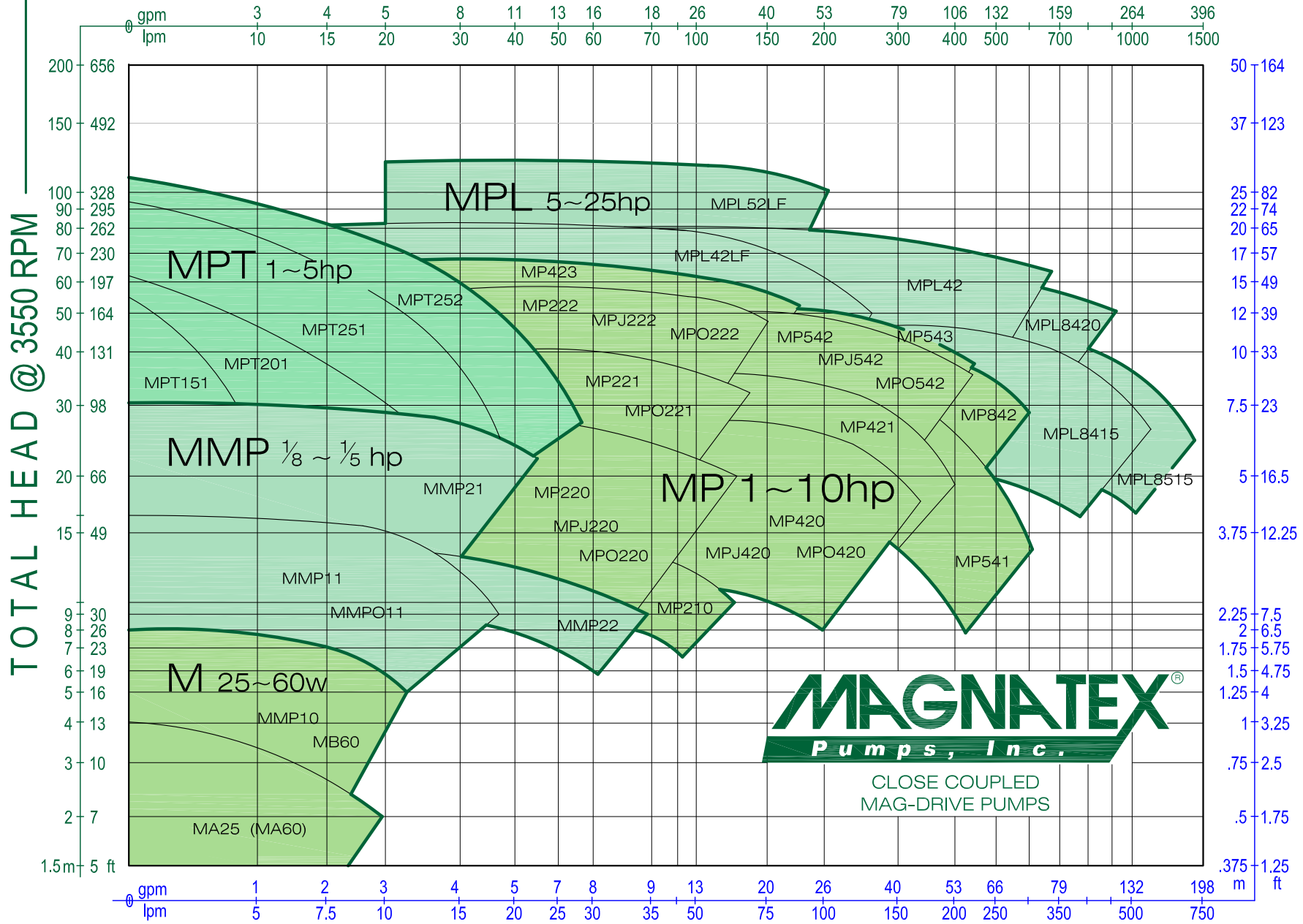
### Summary

As indicated in the corrosion testing chart above, SiC-X had comparable performance to that of SiC as shown in various literature sources for the listed chemicals.

*From our testing and analysis, it is clear that the SiC-X provides good results when used in magnetically-driven pumps, especially for troublesome, start-up dry-running conditions. The benefits don't stop there! We can expect better performance in the case of upset conditions and other temporary dry-running situations, eliminating or greatly delaying bearing damage where it likely would have immediately occurred with standard SiC.*

The values in the above charts are from actual test results and are considered reliable, though we cannot guarantee similar results. For added protection from dry run conditions we recommend the use of a power monitor for optimal equipment protection.

# CAPACITY @ 3550 RPM / 60hz (Green Scale)

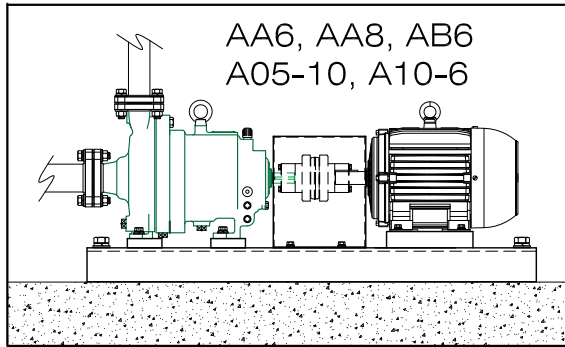


CLOSE COUPLED  
MAG-DRIVE PUMPS

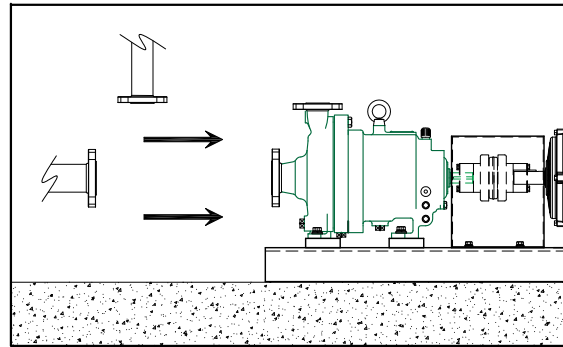
# CAPACITY @ 1750RPM / 60hz (Blue Scale)

# ANSI PUMP REPLACEMENT WITH MP/MPL SERIES

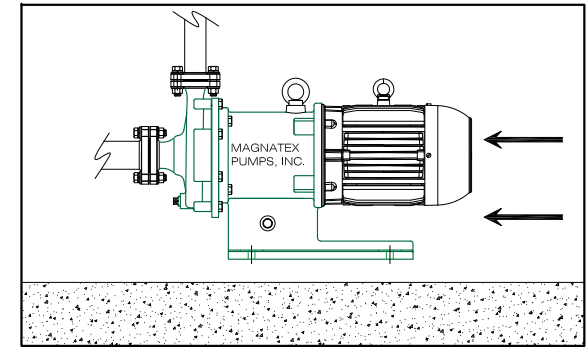
## ADAPTER BLOCK DIMENSIONS



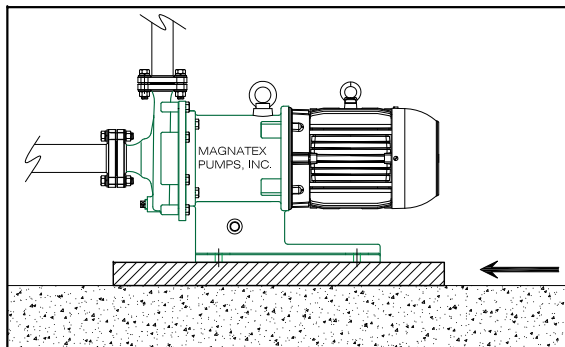
INSTALLED ANSI PUMP



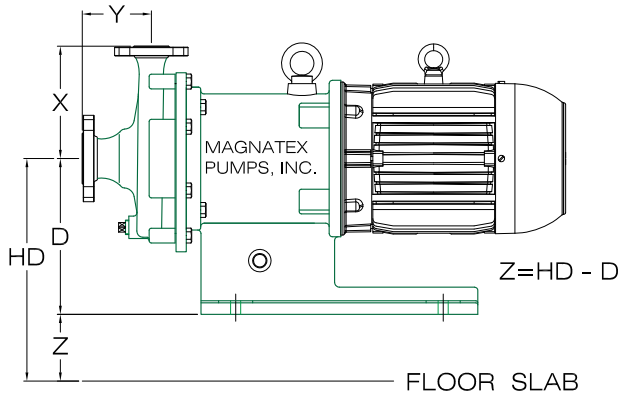
REMOVE ANSI PUMP AND BASEPLATE



MAGNETEX MP/MPL PUMP w/o ADAPTER BLOCK



INSERT ADAPTER BLOCK AND ANCHOR APPROPRIATLY



MODEL		MP / MPL			ANSI				
MP / MPL SERIES	ANSI PUMP	X	Y	D	X	Y	BASE	HD	Z +/- 0.13 [3mm]
<b>MP423</b> 1.5 x 1 x 7	<b>AA6</b> 1.5 x 1 x 6	6.50	4.00	9.00	6.50	4.00	139	9.00 [228]	0.00 [0]
		[165]	[101]	[228]	[165]	[101]	148	10.50 [266]	1.50 [38]
							153	12.88 [327]	3.88 [98]
<b>MPL42 &amp; MPL42LF</b> 1.5 x 1 x 8	<b>AA8</b> 1.5 x 1 x 8	6.50	4.00	9.00	6.50	4.00	139	9.00 [228]	0.00 [0]
		[165]	[101]	[228]	[165]	[101]	148	10.50 [266]	1.50 [38]
							153	12.88 [327]	3.88 [98]
<b>MP842</b> <b>MPL 84</b> 3 x 1.5 x 6	<b>AB6</b> 3 1.5 x 6	6.50	4.00	9.00	6.50	4.00	139	9.00 [228]	0.00 [0]
		[165]	[101]	[228]	[165]	[101]	148	10.50 [266]	1.50 [38]
							153	12.88 [327]	3.88 [98]
<b>* MPL52LF</b> 2 x 1 x 10	<b>A05-10</b> 2 x 1 x 10	6.50	4.00	9.00	8.50	4.00	245	12.00 [304]	3.00 [76]
		[165]	[101]	[228]	[216]	[101]	252	12.38 [314]	3.38 [86]
							258	13.00 [330]	4.00 [101]
							264	13.88 [352]	4.88 [124]
<b>* MPL85</b> 3 x 2 x 6	<b>A10-6</b> 3 x 2 x 6	8.25	4.00	9.00	8.25	4.00	245	12.00 [304]	3.00 [76]
		[209]	[101]	[228]	[209]	[101]	252	12.38 [314]	3.38 [86]
							258	13.00 [330]	4.00 [101]
							264	13.88 [352]	4.88 [124]

ALL DIMENSIONS IN INCHES [mm]

\* BASEPLATE MAY BE LEFT IN PLACE AND ADAPTER BLOCK THICKNESS ADJUSTED AS NEEDED. (REVIEW OLD BASE MOTOR PAD HEIGHT)

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## **API-685, 1<sup>st</sup> Edition**

### **Sealless Centrifugal Pumps for Petroleum, Heavy Duty Chemical, and Gas Industry Services**

### **Comments and Clarifications**

1. **SCOPE** These comments apply to API-685 – 1<sup>st</sup> Edition, October 2000. The API authors of this specification for Sealless Centrifugal Pumps for Petroleum, Heavy Duty Chemical, and Gas Industry Services wisely recognized there are numerous applications within the API and related markets for which the service requirements can be satisfied with pumping equipment that does not fully comply with the API-685 standard. Stated differently, there are service requirements within the API market that can be readily satisfied with a sealless mag-drive centrifugal process pump conforming to ANSI B73.1M which comply with the "not to exceed" values listed in the Scope of API-685. An owner of a process plant can benefit from several characteristics of a bonafide sealless mag-drive pump, such as provided by Magnatex Pumps, Inc., when compared with an API-685 compliant pump. Some of those benefits are:
  - a. Greatly reduced lead time for unit supply with many models in 316SS construction available from stock in a matter of 1-4 weeks for routine requirements. When needed pumps and parts can be supplied in hours for emergency situations.
  - b. Spare parts availability from manufacturer stock which reduces owner stock requirements.
  - c. Rugged design provides highly reliable service life.
  - d. Reduced initial cost as excess design requirements are removed from the equipment specifications.

Specific comments by section follow. Sections not addressed are considered to be in full compliance.

2. **6.3.3** Minimum metallurgy for the pressure casing is 316SS to minimize corrosion effect to less than 0.002" per year for most applications. As pumped liquids become more aggressive, materials are selected to keep the corrosion rate within the aforementioned corrosion rate limit.
3. **6.3.7** Nozzle loading - Does not comply with the higher strength casting requirements. The best system design characteristics include adequate piping support to prevent pipe loading moments and forces from being transferred to the pump. This helps extend pump service life and lengthen intervals of MTBPM.
4. **6.3.8** Centerline Mounting - Available as an option. Typically applied when process temperatures exceed 550°F for foot mounted pump casing.
5. **6.3.9** O-ring sealing meets the intent of this section; however, the exact dimensions and characteristics of the design are proprietary. Our O-ring seals do not leak when applied within the design parameters of the equipment limitations.
6. **6.3.11.4** Capscrews and studs are used as appropriate to facilitate field maintenance. All pressure retaining and wetted internal fasteners are a minimum of 316SS. External non-wetted process pressure retaining fasteners are 304SS.
7. **6.4.2.5** Flange surfaces comply with ISO 7005-1 smooth finish requirements and the standard raised face flange configuration provides excellent sealing characteristics within the pump design parameters for most liquids. Serrated spiral or concentric grooves complying with this section are available as an option at additional costs.
8. **6.4.3.1** Welded auxiliary connections as required are available at additional costs.
9. **6.4.3.2 and 3** Welded connections to pressure casings may be limited in size due to the space available and may not conform to the specific minimum material required by these sections.

(Over)

**API-685, 1<sup>st</sup> Edition**  
**Sealless Centrifugal Pumps for Petroleum,  
Heavy Duty Chemical, and Gas Industry Services**  
**Comments and Clarifications**

10. 6.4.3.8.3 Cylindrical (straight) threaded connections are not used on Magnatex pumps.
11. 6.7 Wear rings are not furnished.
12. 6.8.2 Secondary Control corrective action must be taken as soon as possible to isolate the source of primary leakage to assure integrity of the control system.
13. 6.8.5 Secondary pressure containment casing is ductile iron. SS secondary pressure containment is available at additional costs.
14. 6.10.4 Tolerance rings are not used. Pumps are matched to required temperature ranges while still maintaining the slip-fit maintenance features and benefits, which requires a higher level of quality control.
15. 7.2 Instrumentation and control systems when required will be matched to the application requirements specified by the purchaser. Additional costs will apply.
16. 7.3 Piping and appurtenances for auxiliary systems when required will be matched to the application requirements specified by the purchaser. Additional costs will apply.
17. 7.4 No special tools are required for maintenance of Magnatex pumps. Our pumps are designed with slip-fit construction to facilitate field maintenance.
18. 8 Inspections and Testing are tailored to the specific job requirements as required. Additional costs may apply.
19. 9.1.1.5 Magnatex pumps incorporate a straddle mount bearing system that balances shaft loading and does not pass radial loading to the rear casing. The dual bearing system is superior to single bearing arrangements that do not employ the support of the shaft from the rear containment shell. Further, our rear containment shell is the thickest in the industry and designed to handle any forces that may be encountered in operation over the performance range of the pump.
20. 9.1.1.8 A supplemental nameplate will be provided for A/F bearing numbers and magnet coupling torque rating.
21. 9.1.3.4 Outer Magnets for the smallest size magnet frames (F Series) are threaded in the direction of rotation (tightening) and set screwed in place onto the Outer Shaft, not keyed. All other Outer Magnets are keyed to the shaft for frame sizes S, M, and L, and secured by set screws over the key and at 90° on the outer magnet hub.
22. 9.1.3.5 The outer magnet segments are mechanically spaced and retained with adhesive in machined steps in the outer magnet retaining ring to prevent radial and axial movement independent of the magnet assembly. The inside diameter of the outer magnet front ring extends beyond the inner diameter surface of the magnet segments in close proximity of the rear casing. This prevents contact with the outer diameter on the rear casing containment shell portion of the rear casing during assembly and maintenance operations. Outer magnet sheathing is not required or provided for best functioning of the magnets in the range of pumps supplied by Magnatex Pumps, Inc. The inner magnet is sheathed in the same or a superior material compared to the general materials of construction for wetted parts.

We welcome your comments and inquiries and will be pleased to respond to any questions you may have about the reliability of our pumps. Contact your Magnatex representative or call us at 713.972.8666 or 866.MAG-PUMP. To view all our pump types or use our pump selection program, visit our website at [www.magnatexpumps.com](http://www.magnatexpumps.com).



## 3600 vs. 1800 RPM SPEED CONSIDERATIONS FOR MAGNETICALLY DRIVEN PUMPS

Historically, engineers have preferred to use centrifugal pumps operating at 1800 RPM rather than 3600 RPM, anticipating lower wear rates. In the case of mag-drive pumps, you need to throw all your old thinking out! Higher speeds offer many advantages! With Magnatex magnetically driven sealless centrifugal pumps:

- A. **Sealless construction.** There are no mechanical seals used, so there are no seals to wear out.
- B. **The laws of Physics prevail.** The Affinity Laws dictate that the size of the impeller required varies directly with the speed relative to flow and as the square of the speed for head. In practical terms, since a different pump with different impeller pattern will likely be selected, the impeller diameter needed at 1800 RPM will be double or more the size for a 3600 RPM selection. Not only is the impeller size larger, but also the casing and any other parts associated with change in impeller diameter.
- C. **No wear considerations.** Impeller and casing abrasive wear is not an issue as pumping solids laden liquids with sealless pumps is not recommended without an external or recirculated/filtered flush.
- D. **Stable pump bearings.** The internal bearings and thrust rings are made of Silicon Carbide, which has a hardness of Vickers 3100. Even with small amounts of solids, this extremely hard material is very wear resistant, so there should be no concerns.
- E. **No-contact radial bearings.** The internal bearings operate on a hydrodynamic "cushion" of pumped liquid. The higher the speed, the greater the cushion which leads to longer pump life. The effect is similar to a car hydroplaning - if you go too fast, the "cushion" of water under your tires will be sufficient that you lose control; the tires no longer have any contact with the road. The same effect exists with our pumps; the pump sleeve will not have contact with the bearing during operation. The only time the product lubricated, mag-drive pump bearings make contact is during start-up or shut-down.
- F. **Low anti-friction bearing loads.** Since there is no solid connection between the shaft in the bearing housing or motor (for close-coupled pumps) and the inner rotating assembly, thrust loads are not transferred to the bearing frame or motor, and radial loads are extremely low for the ball bearings in the bearing housing or motor (for close-coupled pumps.) As an example, for the Magnatex Model AA6-F25, the L<sub>10</sub> bearing life is in excess of 300,000 hours, compared to an L<sub>10</sub> of only 25,000 hours for a standard mechanical seal ANSI pump.
- G. **Higher speeds mean smaller magnets and lower cost.** Mag-drive pumps have a constant torque magnetic coupling, that is, the magnet horsepower rating changes directly with the speed. To illustrate, a magnet rated for 30 HP at 3600 RPM would only be rated for 15 HP at 1800 RPM; the 3600 RPM magnet would be much smaller than an 1800 RPM magnet for the same horsepower.

As you can see, from all of these factors, it is much more cost effective to operate at 3600 RPM. In most applications there is no mechanical benefit from operating at slower speeds.



<b>MAGNATEX PUMPS, INC.</b> 477 WEST 12 <sup>TH</sup> STREET HOUSTON, TX 77018 TEL: 713-972-8666 FAX: 713-972-8665 inquiries@magnatexpumps.com		<b>INQUIRY DATA SHEET</b>		Date	
				Quote Number	
<b>Customer Name</b>					
<b>Company</b>					
<b>Street</b>					
<b>City</b>		<b>State</b>		<b>Zip Code</b>	
<b>Phone</b>					
<b>Fax</b>					
<b>E-Mail</b>		<b>Representative</b>			

### APPLICATION DETAILS

<b>Service Name</b>					
<b>Replace Make</b>		<b>Replace Model</b>			
<b>Budget/Firm</b>		<b>Number of Units</b>			
<b>Tag Number</b>		<b>Materials of Construction</b>			
<b>Liquid</b>					
<b>Solids Content</b>	<b>Size</b>	Max. 100/500 Micron		<b>% Weight</b>	Max. 4/1
<b>Temperature °F</b>		<b>Specific Gravity</b>		<b>Viscosity (cp cs ssu)</b>	
<b>Vapor Pressure</b>		<b>Flow</b>		<b>TDH</b>	
<b>Suction Pressure</b>			<b>Discharge Pressure</b>		
<b>NPSHA</b>			<b>Motor Enclosure</b>		
<b>Explosion Proof</b>	<b>Class</b>		<b>Division</b>	<b>Group</b>	<b>Temp Code</b>

<b>Specific Heat (if available)</b>		<b>Thermal Conductivity (if available)</b>	
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**NOTES:** Any special requirements? We use water to test our pumps. If water is incompatible with your process, please let us know and we will use an alternative pressure test procedure.

<b>Pump Model</b>	<b>Price</b>	<b>WT.</b>
<b>Motor Spec.</b>	<b>Price</b>	<b>WT.</b>
<b>Motor Part #</b>	<b>Price</b>	<b>WT.</b>
<b>Baseplate</b>	<b>Price</b>	<b>WT.</b>
<b>Other</b>	<b>Price</b>	<b>WT.</b>