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, Monel, Titanium
Bearings: SiC, SiC-X

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

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

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: 316SS

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

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.
Bearings 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.
Bearings Materials:
Carbon, Teflon®, Rulon®
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.

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.

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.

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.

inquiries@magnatexpumps.com
www.magnatexpumps.com
Magnetic Drive Sealless Pumps

MAGNATEX® 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® pumps and spare parts come with a 1 year unconditional warranty on materials and workmanship.

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

Materials of Construction:
- 316SS
- Ceramic or Stainless Steel Shaft Option

<table>
<thead>
<tr>
<th>Maximum Flow</th>
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</tr>
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<tbody>
<tr>
<td>Maximum Head</td>
<td>95 FT</td>
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<tr>
<td>Liquid Temp</td>
<td>-100°F to 536°F</td>
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<td>Max Power</td>
<td>3/4 HP</td>
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<td>Connections</td>
<td>NPT or Optional Flanges</td>
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<td>Bearings</td>
<td>SiC/Sic-X Standard</td>
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<td>Working Pressure</td>
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<td>Impeller</td>
<td>Enclosed</td>
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<td>Speeds</td>
<td>Up to 3550 rpm</td>
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<tr>
<td>Magnets</td>
<td>Neodymium</td>
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<tr>
<td>Motor</td>
<td>NEMA or IEC Frame Mounted</td>
</tr>
</tbody>
</table>

### MMP SERIES COMPOSITE PERFORMANCE CURVES

- @ 3550 RPM 60hz
  - 1 MMP10 .5 X .5 - 4
  - 2 MMP11 .5 X .75 - 4
  - 3 MMP21 .75 X .75 - 4
  - 4 MMP22 1 X .75 - 4

- @ 1750 RPM 60hz
  - 1 MMP10 .5 X .5 - 4
  - 2 MMP11 .5 X .75 - 4
  - 3 MMP21 .75 X .75 - 4
  - 4 MMP22 1 X .75 - 4

### CAPACITY @ 3550 RPM / 60hz

- gpm: 1.3 2.6 5.2 7.9 13.2 26.4
- lpm: 5 10 20 30 50 100

### TOTAl HEAD

- m: 9.1 30 7.6 25 6.1 20 4.5 15 3.6 12 2.2 7.5 .91 3
- ft: 30 7.6 25 6.1 20 4.5 15 3.6 12 2.2 7.5 .91 3

### CAPACITY @ 1750 RPM / 60hz

- gpm: 2.4 4.9 10 15 25 50
- lpm: 65 1.3 2.6 3.9 6.6 13.2
Optional high-pressure models for suction conditions to 5,000 psi and more
Magnetic Drive sub-ANSI Pumps

MAGNATEX® 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 Magnatex® 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

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

Materials of Construction:
- 316SS
- Alloy 20
- Alloy B & C

MAGNATEX® 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

MP SERIES COMPOSITE PERFORMANCE CURVES

Phone: 713-972-8666
inquiries@magnatexpumps.com
Fax: 713-972-8665
www.magnatexpumps.com
Single confined gasket is the only "seal" in the pump

Inner magnet is "straddle" mounted between bearings (no overhung load) allowing operation across the complete curve without shaft deflection

Casing drain allows complete draining of the pump and rear casing

Standard SiC bearing system with sleeve of SiC-X material for potential "upset "or dry running operation

Neodymium or optional Samarium Cobalt magnets for high-temperature operation provide synchronous drive (no slip)

Internal radial clearance: .040" nominal, allows passage of modest size and percentage of solids in the rear casing area of pump

Rugged one-piece, rear containment shell between the inner and outer magnets providing high efficiency, greater component strength and positive hermetic sealing

| MODEL | S | D | A | B | D | E | F | G | H | J | K | X | CL | O | PUMP CAP | MOTOR FRAME | M | CP | MTR LBS |
|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|-------------|---|---|--------|
| MP220 | 1.00 | 0.75 | 2.36 | 5.85 | 0.47 | 2.56 | 5.12 | 4.03 | 7.09 | 1.19 | 4.72 | 4.72 | 4.33 | 9.85 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP221 | 1.00 | 0.75 | 2.36 | 5.85 | 0.47 | 2.56 | 5.12 | 4.03 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1181 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP222 | 1.00 | 0.75 | 2.56 | 5.85 | 0.71 | 3.15 | 7.87 | 4.03 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1181 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP223 | 1.00 | 0.75 | 2.56 | 5.85 | 0.71 | 3.15 | 7.87 | 4.03 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1181 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP241 | 1.50 | 1.00 | 2.95 | 5.85 | 0.71 | 3.15 | 7.87 | 4.03 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP242 | 1.50 | 1.00 | 2.95 | 5.85 | 0.71 | 3.15 | 7.87 | 4.03 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP451 | 2.00 | 1.50 | 3.15 | 7.56 | 0.71 | 3.15 | 7.87 | 5.12 | 8.64 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP452 | 2.00 | 1.50 | 3.15 | 7.56 | 0.71 | 3.15 | 7.87 | 5.12 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP453 | 2.00 | 1.50 | 3.15 | 7.56 | 0.71 | 3.15 | 7.87 | 5.12 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP454 | 2.00 | 1.50 | 3.15 | 7.56 | 0.71 | 3.15 | 7.87 | 5.12 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP460 | 2.00 | 1.50 | 3.15 | 7.56 | 0.71 | 3.15 | 7.87 | 5.12 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP461 | 2.00 | 1.50 | 3.15 | 7.56 | 0.71 | 3.15 | 7.87 | 5.12 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |
| MP462 | 2.00 | 1.50 | 3.15 | 7.56 | 0.71 | 3.15 | 7.87 | 5.12 | 9.84 | 1.19 | 7.49 | 5.12 | 8.60 | 1201 | 56 | 143TC | 18.39 | 19.56 | 31 |

All dimensions in inches ± 0.12"
MAGNATEX® MPL Series

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® 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 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

Materials of Construction:
- 316SS
- 304SS
- Alloy 20
- Alloy B & C

MAGNATEX® 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
Bearings .......................................................... SiC, SiC-X Optional
Impeller .......................................................... Enclosed
Speeds .......................................................... up to 3550 rpm
Magnets .......................................................... Samarium Cobalt or Neodymium
Motor .......................................................... NEMA or IEC Frame Mounted

MPL SERIES COMPOSITE PERFORMANCE CURVES

Phone: 713-972-8666
inquiries@magnatexpumps.com
Fax: 713-972-8665
www.magnatexpumps.com
Single confined gasket is the only "seal" in the pump

Fully enclosed impeller with balance holes provides high efficiency and low thrust (no shims or adjustments required)

Product path for bearing lubrication

Standard SiC bearing system with optional sleeve of SiC-X material for potential "upset" or dry running operation

Large internal radial clearance: .055" nominal, allows passage of modest size and percentage of solids in the rear casing area of pump

Anti-contact ribs prevent outer magnet from rubbing on the rear casing in the event of motor bearing failure

Rugged rear containment shell between the inner and outer magnets providing high efficiency, greater component strength and positive hermetic sealing

Inner magnet is "straddle" mounted between bearings (no overhung load) allowing operation across the complete curve without shaft deflection

Neodymium or optional Samarium Cobalt magnets for high-temperature operation provide synchronous drive (no slip)

Casing drain allows complete draining of the pump and rear casing

NOT FOR CONSTRUCTION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>S</th>
<th>D</th>
<th>A</th>
<th>B</th>
<th>X</th>
<th>G</th>
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Magnetic Drive Regenerative Turbine Pumps

MAGNATEX® 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

Materials of Construction:

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

MAGNATEX® 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

MPT SERIES COMPOSITE PERFORMANCE CURVES
MAGNATEX®

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.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>MOTOR FRAMES</th>
<th>DIMENSIONS</th>
<th>STANDARD NPT</th>
<th>OPTIONAL 150# ANSI RF</th>
<th>APROX. WEIGHT</th>
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<td>4.33 7.09</td>
</tr>
</tbody>
</table>

CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY REQUIRED LOCATION MUST BE SPECIFIED

DD-MPT SERIES

ALL DIMENSIONS IN INCHES ± 0.12"
MAGNATEX® 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

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.

Magnatex 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

Materials of Construction:
- 316SS
- 304SS
- Alloy 20
- Monel
- Alloy B & C
- Titanium

Phone: 713-972-8666
inquiries@magnatexpumps.com
Fax: 713-972-8665
www.magnatexpumps.com
Anatomy of the Ultimate Magnetic Drive Pump

Standard Instrumentation port for detection of primary containment leakage

Large internal radial clearance: 0.060” minimum, allows passage of modest size and percentage of solids in the rear casing area of pump

Rugged rear containment shell with Alloy C material between the inner and outer magnets provides high efficiency, greater component strength, enhanced corrosion resistance and positive hermetic sealing

Several optional secondary containment designs are available, if necessary

Oil-lubricated bearings (easily adaptable to oil mist) or optional greased-for-life bearings provide extra long life because of the minimal load of the outer magnet - no axial loading

Cooling fins and ports on bearing frame allow non-cooled operation to 350°F. For higher temperatures optional cooling systems are available

Neodymium or optional Samarium Cobalt magnets for high-temperature operation provide synchronous drive (no slip)

Standard Instrumentation port for detection of primary containment leakage

Internal magnet is “straddle” mounted between bearings (no overhung load) allowing operation across the complete curve without shaft deflection

Casing drain allows complete draining of the pump and rear casing

External flush to rear casing of the pump from a self-cleaning strainer or compatible external source allows handling liquids with entrained solids

Inducers available for low NPSH applications

Fully enclosed impeller with balance holes provides high efficiency and low thrust (no shims or adjustments required)

Single confined gasket is the only “seal” in the pump

Several optional secondary containment designs are available, if necessary

MAXP SERIES

MaxP Series ANSI Pump

CONDUIT BOX SHOWN FOR ILLUSTRATION ONLY
REQUIRED LOCATION MUST BE SPECIFIED

MAGNATEX
Pumps, Inc.

DIMENSIONAL DRAWING
MXP SERIES ANSI PUMP

Drawing by: D. Valentin
Date: 08/06/10
Scale: 1

DD–MAXP SERIES
NOT FOR CONSTRUCTION

MAGNATEX MAXP SERIES ANSI BASEPLATE DIMENSIONS

|----------------|-------------------|----|----|----|---------|-------------|-------------|-------------|-------------|-----|----|---------|----|----|-----|-----|
Mechanical Seal ANSI Pumps

MAGNATEX® 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® 3575 series pumps and spare parts come with a 5 year unconditional warranty on materials and workmanship.

Spare Parts for Magnatex®, Goulds®, Durco® and Peerless® 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® 3575 Series Specifications

Liquid Temp...........................................-100°F to +700°F
Max Shaft Deflection..............................0.002 Inches
Connections..................150# FF std. or 300# RF Optional
B10 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 A06 1x1.5-6
2 A08 1.5x-6
3 A10 2x-6
4 A12 1x1.5-8
5 A18 1.5x5-8

3575M / 3575L
6 A02-7 3x-7
7 A05-8 2x-8
8 A07-8 3x-8
9 A07-9 3x4-8G
10 A08-10 1x2-10
11 A09-10 1.5x10-10
12 A09-10 2x-10
13 A09-10 3x4-10
14 A09-10 3x4-10H
15 A09-10 4x-10
16 A09-10 4x-10H
17 A09-10 1.5x-13
18 A09-10 2x-13
19 A09-10 3x-13
20 A09-10 4x-13

3575XL
21 A09-13 8x8-13
22 A10-13 8x10-13
23 A11-15 8x8-15
24 A12-15 8x10-15
25 A12-15 9x10-15G
Large capacity oil sump; assures positive lubrication and better cooling.

Inboard & Outboard INPRO VBX-SD bearing isolators; minimizes external environmental contaminants entering bearing housing.

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.

Oil mist lubrication option; ideal for severe environment services.

Externally adjustable impeller clearance; maintains peak pump performance.

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).

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.

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

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-SD bearing isolators; minimizes external environmental contaminants entering bearing housing.

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.

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

MAGNATEX® 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

Materials of Construction:
- Polypropylene

MEP SERIES COMPOSITE PERFORMANCE CURVES
# MEP SERIES PUMPS

<table>
<thead>
<tr>
<th>PARTS</th>
<th>SHAFT</th>
<th>BEARING</th>
<th>REAR CASING</th>
<th>O-RING</th>
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<tr>
<td>Materials</td>
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<td>SiC</td>
<td>Titanium</td>
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<td></td>
<td>MEP-506</td>
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</tbody>
</table>

**Standard** ●

**Optional** *

## DIMENSIONAL DRAWING

**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 170°F / 77°C
4. VERIFY WORKING PRESSURE AT PUMP TEMPERATURE

<table>
<thead>
<tr>
<th>MODEL</th>
<th>MOTOR FRAME</th>
<th>DIMENSIONS</th>
<th>APROX. WEIGHT lbs.</th>
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<td>MEP-402</td>
<td>56C</td>
<td>S 1.50</td>
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<td>MEP-404</td>
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<tr>
<td>MEP-506</td>
<td>184TC</td>
<td>2.00</td>
<td>1.50</td>
</tr>
</tbody>
</table>

**CONDUCT BOX SHOWN FOR ILLUSTRATION ONLY. REQUIRED LOCATION MUST BE SPECIFIED**

**COPYRIGHT MAGNATEX PUMPS, INC.**

MAGNATEX® Pumps, Inc.
Magnatex®/ Texel® 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 lifetime 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.

**MAGNATEX® 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

**ME Series COMPOSITE PERFORMANCE CURVES**

@ 3550 RPM 60hz

1. MEH40 1.5 x .75 - 6
2. MER50 2 x 1.5 - 6

@ 1750 RPM 60hz

1. MEH40 1.5 x .75 - 6
2. MER50 2 x 1.5 - 6

Materials of Construction:

- ETFE Lined
- Kynar®(PVDF) Lined. Registered trademark of Arkema, Inc.
Single Confined O-ring gasket

Replaceable liner offers low cost maintenance option — if needed

One piece impeller with rare earth magnet for efficient operation

Close-coupled NEMA motor eliminates alignment issues

Non-metallic rear casing — no hysteresis losses for efficient operation

Raised face flanges provide positive sealing

Hardened materials for the bearing support system

Stationary Shaft with both ends supported for stable operation

One piece impeller with rare earth magnet for efficient operation

Conduit box shown for illustration only. Required location must be specified.

**PUMP DIMENSIONS**

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

**NOT FOR CONSTRUCTION**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>MOTOR FRAME</th>
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<th>APROX.</th>
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<td>D</td>
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<td></td>
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<td></td>
<td>145TC</td>
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<td>182TC</td>
<td>24.36</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>184TC</td>
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</tr>
</tbody>
</table>
Magnetic Drive PFA lined Pumps

MAGNATEX® MTA Series

Magnatex®/Texel® 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® pumps and spare parts come with a 1 year unconditional warranty on materials and workmanship.

MAGNATEX® 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

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

Materials of Construction:

• PFA Lined

MTA SERIES COMPOSITE PERFORMANCE CURVES

@ 3550 RPM 60hz
1. MTA-AA6 1.5x1-6
2. MTA-AA8 1.5x1-8
3. MTA-A10 3x2-6

@ 1750 RPM 60hz
1. MTA-AA6 1.5x1-6
2. MTA-AA8 1.5x1-8
3. MTA-A10 3x2-6
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 provide positive locking of the lining—good for vacuum and high temperature applications.

Shape secured component design eliminates keyed construction stress points.

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.

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.

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

Dovetail grooves in the DI casing armor provide 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.

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

Conduit box shown for illustration only. Specific location must be specified.

Not for construction.

MAGNATEX Pumps, Inc.

Dimensional Drawing
MTA Series Close-Coupled Pump

Model: MTA-AAA, MTA-AA6, MTA-AA8, MTA-A10

All dimensions in inches ± 0.12".

<table>
<thead>
<tr>
<th>MODEL</th>
<th>S</th>
<th>D</th>
<th>A</th>
<th>B</th>
<th>E</th>
<th>F</th>
<th>K</th>
<th>X</th>
<th>CL</th>
<th>O</th>
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<th>M</th>
<th>CP</th>
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<td>266</td>
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</tbody>
</table>

* Add 1.85" for pump risers to 'CL' and 'O' for motor frame 254TC or greater.
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.

<table>
<thead>
<tr>
<th>_MAGNATEX</th>
<th>COMPETITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>Generally only available in cheaper ETFE (Ethylene-tetrafluoroethylene) material which has less chemical resistance, higher permeability and lower temperature resistance than PFA.</td>
</tr>
<tr>
<td>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.</td>
<td>Most competitors’ linings are just 3-4 mm thick which means they have proportionately less corrosion and permeation resistance than Magnatex lined pumps.</td>
</tr>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>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</td>
<td>Competitors generally offer shorter main shaft bushings resulting in a smaller surface area to support dynamic shaft loads. Less surface area, less pump life</td>
</tr>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>

Phone: 713-972-8666
inquiries@magnatexpumps.com

Fax: 713-972-8665
www.magnatexpumps.com
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 provide 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.

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.

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.

MTA Series Rev A2 090110
• 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.

• Online pump selector
• System head calculator
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.

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.

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.

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.

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ANSI PUMP REPLACEMENT WITH MP/MPL SERIES
ADAPTER BLOCK DIMENSIONS

INSTALLED ANSI PUMP

REMOVE ANSI PUMP AND BASEPLATE

MAGNATEX MP/MPL PUMP w/o ADAPTER BLOCK

INSERT ADAPTER BLOCK AND ANCHOR APPROPRIATELY

FLOOR SLAB

* 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, 1st Edition
Sealless Centrifugal Pumps for Petroleum,
Heavy Duty Chemical, and Gas Industry Services
Comments and Clarifications

1. SCOPE These comments apply to API-685 – 1st 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 bona fide 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 with 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.
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.
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 \( L_{10} \) bearing life is in excess of 300,000 hours, compared to an \( L_{10} \) 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.
INQUIRY DATA SHEET

<table>
<thead>
<tr>
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<th>Quote Number</th>
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Customer Name
Company
Street
City | State | Zip Code
Phone
Fax
E-Mail | Representative

APPLICATION DETAILS

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Liquid

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Specific Heat (if available) | Thermal Conductivity (if available)

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.

<table>
<thead>
<tr>
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