



TB-mag Pump Series Sales Guide

.....
Thrust Balanced, Sealless, Mag-drive pumps



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TB-mag Specifications

Thrust Balanced

- ✓ Thrust-balanced, Sealless, non-metallic magnetic drive pump
- ✓ A revolutionary, patented, thrust balancing system eliminates the axial thrust created by the internal pump pressures.
- ✓ The balancing system is responsive, automatic and stable with any change in the fluid conditions such as flow, pressure or viscosity.
- ✓ Operate with less power by eliminating axial thrust loads. Less friction, less power....
- ✓ Expanded operating range, engineered to perform continuously over the entire flow range.
- ✓ Increased pump life and reliability with no forward thrust.

Double Welded Impeller

- ✓ The inner magnets are protected by a patented hermetically sealed cover.
- ✓ For an extreme corrosion and permeation resistant barrier the magnet assembly is again hermetically sealed with a corrosion resistant fluoropolymer ETFE or PFA creating a double weld design.

Wear Rings

- ✓ The Patented wear ring system prevents impeller from rubbing containment shell in the event of a primary bearing upset.
- ✓ Wear rings control leakage rates maintaining higher efficiencies.
- ✓ Wear Rings restrict solids > 0.005" from entering the containment shell area, keeping all bearings and critical flow paths clear.
- ✓ Concentrations to 30%, particulate sizes to ¼"

Open Suction

- ✓ A cantilever shaft supported in the containment shell eliminates the need for a shaft support in the pump's suction.
- ✓ No suction blockage, Lower NPSHr.

Pressurized Radial Bearing

- ✓ Isolated from the suction pressure by a patented thrust balanced system, the radial bearings operate in a pressurized fluid environment.
- ✓ Pressure in the bearing area is approximately 1/3 of TDH which virtually eliminates the possibility of flashing.

Water Hammer Resistant

- ✓ Burst pressures at 3000 psi give the TB-mag pump a 10 x safety factor and resistance to sudden system surges.

Modified Concentric Volute

- ✓ All Innomag casings are designed to minimize radial loads and distribute pressure evenly across the entire flow range.
- ✓ Lowers stress on bearings and wear rings maximum pump life.

"True-Seal" Secondary Containment

- ✓ A patented design combines a simple, yet proven, "off-the-shelf" dry run cartridge seal with our long couple bearing frame. Together, these products provide your service with true metallic secondary containment.

Expanded Operating Range

- ✓ Engineered to perform continuously over the entire flow range.
- ✓ Operate at speeds 500 to 3500 rpm.

Universal Mounting

- ✓ Connect a NEMA or IEC Frame Motor, Close or Long Coupled.

Sealless

- ✓ Non-slip, synchronous mag-drive pump.
- ✓ Leak free operation for a clean environment.
- ✓ Process lubricated, no external flush system needed.

Trouble-free Maintenance

- ✓ A back pull out design for quick in the field inspections or maintenance without disturbing the piping connections.
- ✓ Liquid end and drive end independently serviceable.
- ✓ Complete kits are available for impellers, containment shells and casings. No assembly.
- ✓ 100% replaceable wear parts including all rotating and stationary wear rings.

Chemically Inert

- ✓ All pump internals are molded with thick layer of mechanically tough, chemically inert ETFE or optional PFA fluoropolymer.
- ✓ Thickness from 0.125" to .375" (2.5 to 12.7mm)

Armored Design

- ✓ Ductile iron, the suit of armor protecting the pump from pipe strain, vibration, exterior shocks and handling.

External Protection

- ✓ All external parts are 100% coated for maximum protection.
- ✓ All mating and exposed metal surfaces are coated in a premium Epoxy/Epoxy Polyamide Primer and topped with a aliphatic acrylic polyurethane.

Standard Dimension Process Pumps

- ✓ Conforms to the requirements of ANSI B73.1
- ✓ Class 150 or 300 lb flanges, ISO PN 16 or JIS 10kg/cm² drilled flanges are optional
- ✓ Also available, International conformance to ISO 2858 pumps

Performance

- ✓ Temperature range of -20°F (-29°C) to 250°F (121°C)
- ✓ Capacities up to 1500 gpm (340 m³/hr)
- ✓ Heads up to 500 ft (152 m)
- ✓ Pressures up to 300 psi (2068 kPa)
- ✓ Power ranges are 1 to 75 hp (0.75 to 45 kW)

Quality Assurance

- ✓ All parts are manufactured to the highest possible standard of quality and workmanship.
- ✓ All completed pumps and wet ends must pass a 25 point quality inspection including, a running performance/endurance and pressure test prior to shipping.
- ✓ All critical components manufactured in house in our US Factory.

TB-mag Part Features

Casing

- ✓ One piece cast ductile iron.
- ✓ Bonded ETFE or PFA lining, minimum of 1/8" (3mm) thickness.
- ✓ Self venting, top centerline discharge design.
- ✓ Casing houses front stationary silicon carbide (SiC) wear ring and thrust bumper.
- ✓ ASME/ANSI B73.1 dimensions for flange position and foot print.
- ✓ Flanges: ASME/ANSI B16.5 class 150 hole pattern standard, class 300, ISO or JIS optional.
- ✓ Two bolt flanged drain with pure PTFE gasket and 316SS blind flange, standard.

Impeller Assembly

- ✓ Molded one-piece enclosed impeller made of carbon fiber-reinforced ETFE or PFA.
- ✓ High strength neodymium iron boron magnet assembly. Maximum size magnets in every impeller.
- ✓ One impeller per pump size.
- ✓ Double weld magnet assembly hermetically sealed from environment.
- ✓ High efficiency, low NPSHr impeller geometry.
- ✓ Fully open impeller eye; no shaft socket or support struts.
- ✓ Replaceable front and back rotating SiC wear rings.
- ✓ Impeller houses radial bearings and thrust control valve.

Radial Bearings

- ✓ Tandem bearing system made of pure sintered silicon carbide (SiC)
- ✓ Separately mounted for optimum alignment with shaft.
- ✓ Bearings separated by pure PTFE spacer.

Pump Shaft

- ✓ Replaceable, straight SiC shaft.
- ✓ Cantilevered design leaves impeller eye open for optimum NPSHr.
- ✓ Shaft oversized to handle any combinations of radial loads.

Gasket

- ✓ FEP/FKM (Fluorocarbon) o-ring standard. Provides universal chemical resistance.
- ✓ Other o-ring materials available on request.

Containment Shell

- ✓ One-piece molding of carbon fiber-reinforced ETFE or PFA.
- ✓ Outer pressure housing molded from a Aramid/Vinyl ester composite.
- ✓ Provides optimum combination of pressure and shock resistance.
- ✓ Reinforced shaft socket to handle any combination of radial loads.
- ✓ Zero eddy current losses for no heat operation and maximum possible efficiency.
- ✓ Front face houses stationary SiC wear ring.
- ✓ Internal ribs limit swirl to promote fast ejection of fine particles from containment shell.

Containment Ring

- ✓ One-piece ductile iron casting.
- ✓ Aligns and supports the containment shell.
- ✓ Jackscrew holes provided for easy disassembly.

Outer Magnet Assembly

- ✓ Ductile iron shell with high strength neodymium iron boron magnets.
- ✓ One drive size per motor frame. Minimum possible inventory.
- ✓ Keyless hub for fast assembly.
- ✓ Jackscrew holes provided for easy removal from motor shaft.

Adapter

- ✓ One-piece ductile iron casting.
- ✓ Mounts to a wide range of standard NEMA and IEC C-face motors.
- ✓ Zero alignment required, just bolt it up.
- ✓ Back foot positioned for mounting directly to existing ANSI pump bases.

Thrust Balancing

The TB-mag pumps create three distinct pressure regions around the impeller. These regions are the **suction pressure** in the impeller eye, the **discharge pressure** in the volute and the **balance pressure** behind the impeller (Figure 1). In operation, the balance pressure is approximately one quarter to one third of the discharge pressure. The discharge pressure is created by the routine pumping action of the impeller while the balance pressure is controlled by the combined action of a fixed orifice and a variable orifice. The fixed orifice is created by a set of clearance rings behind the impeller. These rings limit the leakage flow behind the impeller to a relatively constant rate. The leakage then flows around the magnets, past the bushing to the thrust control valve. This thrust control valve combined with the front of the shaft defines the variable orifice. Because the impeller is free to slide axially the variable orifice changes size. As conditions of service change for the pump the impeller will automatically compensate for the pressure change and remain thrust balanced. If the impeller moves forward, the valve is opened to a greater degree and the balance chamber pressure is reduced. This causes the impeller to react with a net force towards the motor. If the impeller moves backward, the valve is now closing and the balance chamber pressure increasing. This moves the impeller towards the suction. The balancing system is responsive, automatic and stable with any change in the fluid conditions such as flow, pressure or viscosity. Compare axial thrust loads in (Figure 2).

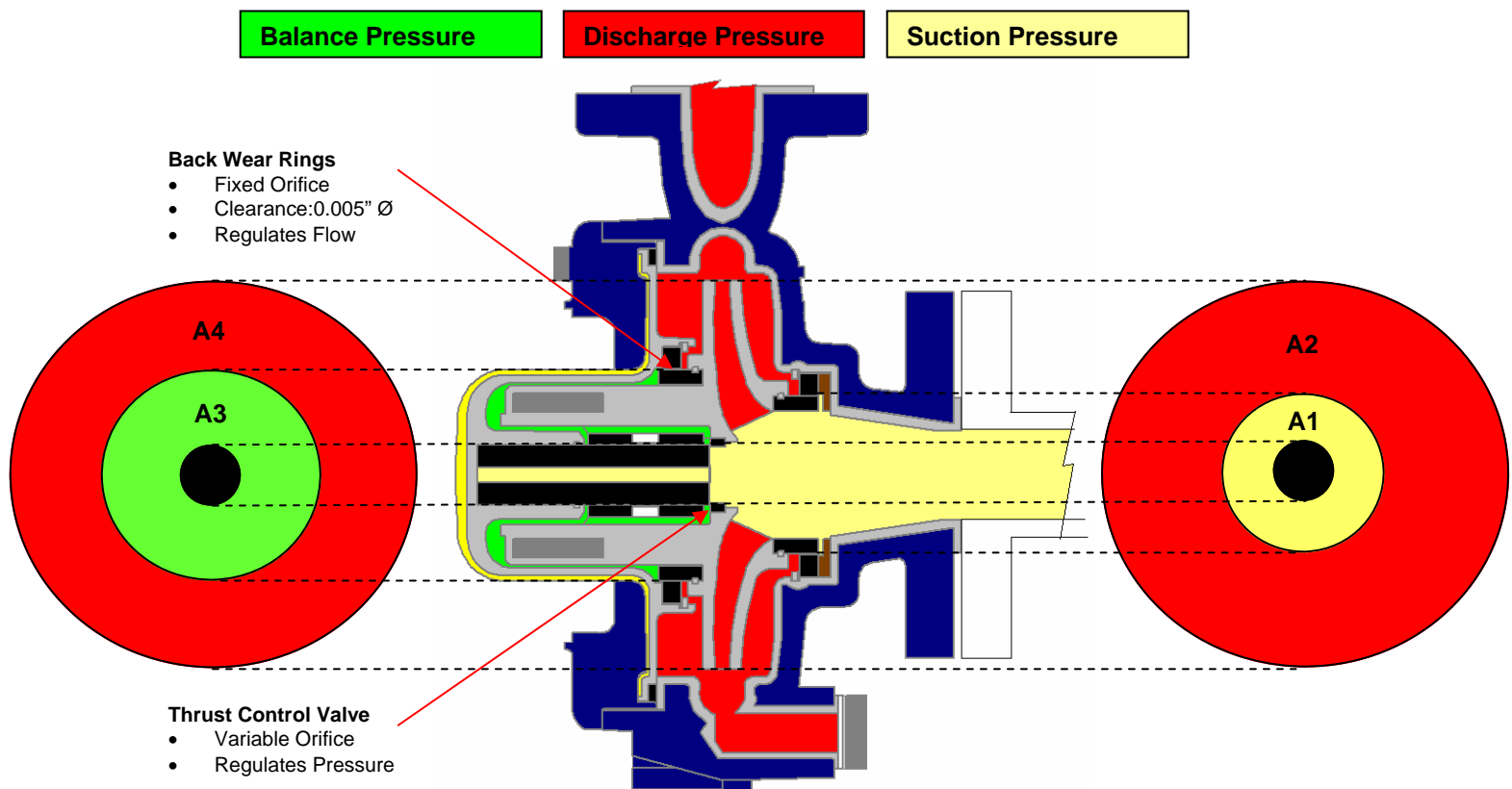


Figure 1 – Thrust Balancing Pressures & Projected Areas.

Thrust Balancing Benefits

- The balancing system is responsive, automatic and stable with any change in the fluid conditions such as flow, pressure or viscosity.
- Operate with less power by eliminating axial thrust loads. Less friction, less power....
- Expanded operating range, engineered to perform continuously over the entire flow range.
- Increased pump life and reliability with no forward thrust.

Thrust Balancing Engineering

To help clarify how our thrust balancing system works lets calculate the projected axial areas shown in Figure 1. The four areas, **A1**, **A2**, **A3** and **A4** represent the four main pressure areas affecting the forces on both the front and back of the impeller. The four areas are:

- **A1** - suction pressure area on front shroud of impeller (zero pressure)
- **A2** - discharge pressure area on front shroud of impeller (discharge pressure)
- **A3** - balance chamber pressure area on back shroud/magnet of impeller (between suction and discharge controlled by thrust balance system, approximately 1/3 to 1/4 of discharge pressure)
- **A4** - discharge pressure on back shroud of impeller. (discharge pressure) The unmarked areas at the very center represent the pump shaft which is not attached to the impeller and therefore doesn't affect the thrust forces.

The forces acting on each of these areas is the product of the area times the pressure and the sum of the forces on the front must equal the sum of forces on the back. This can be written as:

$$P1 \cdot A1 + P2 \cdot A2 = P3 \cdot A3 + P4 \cdot A4$$

Where **P1** is the suction pressure, **P2** is discharge, **P3** is the balance chamber pressure and **P4** is also discharge pressure.

Now, **P2 = P4** and **P1=0** then,

$$P3 \cdot A3 = P4 \cdot (A2 - A4) \quad \text{or}$$

$$P3 = P4 \cdot (A2 - A4) / A3$$

In the TB-mag design, **A2 > A4** so **P3** is a positive value and solely a function of the discharge pressure and the areas of the impeller wear rings.

The second important concept in the TB-mag system is how the pressure, **P3** acting on area **A3** is kept at exactly the value required to balance the system. This is accomplished by allowing the impeller to float freely in the axial direction. If the forces on the back of the impeller are greater than those on the front then the impeller is displaced forward (towards the suction). This causes the clearance between the valve and the end of the shaft to increase. This allows more fluid to exit from area **A3** and drops pressure **P3** until **P3** again balances the forces. Displacement of the impeller towards the back causes the valve-to-shaft clearance to decrease, increasing the **P3** until it balances the system. Pressures in areas **A1**, **A2** and **A4** are not affected by the impeller movement. In practice this is a very stable control system that requires pressure to operate. This system works effectively from the minimum thermal flow limit (typically a few gpm) to run-out provided the pump is generating pressure.

This simplified explanation of the axial forces doesn't include all secondary effects that can vary the pressures over the areas but does a reasonable job of describing the system. The TB-mag system is fully thrust balanced when operating to the left and right of BEP provided the pump is generating pressure and not operating in a cavitated state or very close to shut-off.

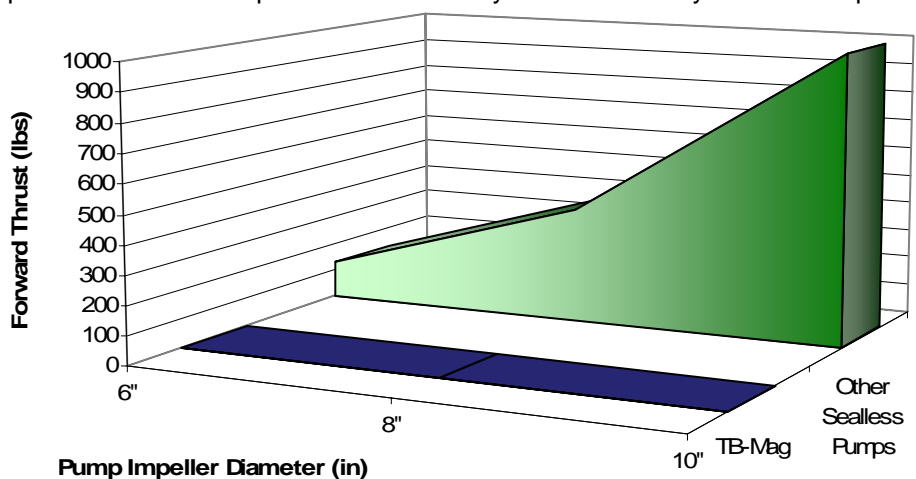


Figure 2 – Forward Thrust Comparison

TB-mag Solids Handling

Solids enter the pump through the suction and pass out through the discharge nozzle. Some of the solids will try to leak around the impeller past the wear rings. The leakage past the front wear rings simply returns the particles directly to the suction flow. However, leakage past the back wear rings could bring particles in contact with the inner magnets, the containment shell and the radial bearings. Fortunately, wear rings restrict solids > 0.005" from entering the containment shell area, keeping all bearings and critical flow paths clear. Figure 1, illustrates the main solids laden stream around the impeller and the clean stream behind the impeller. No other non metallic mag-drive keeps the solids from entering these critical areas behind the impeller.

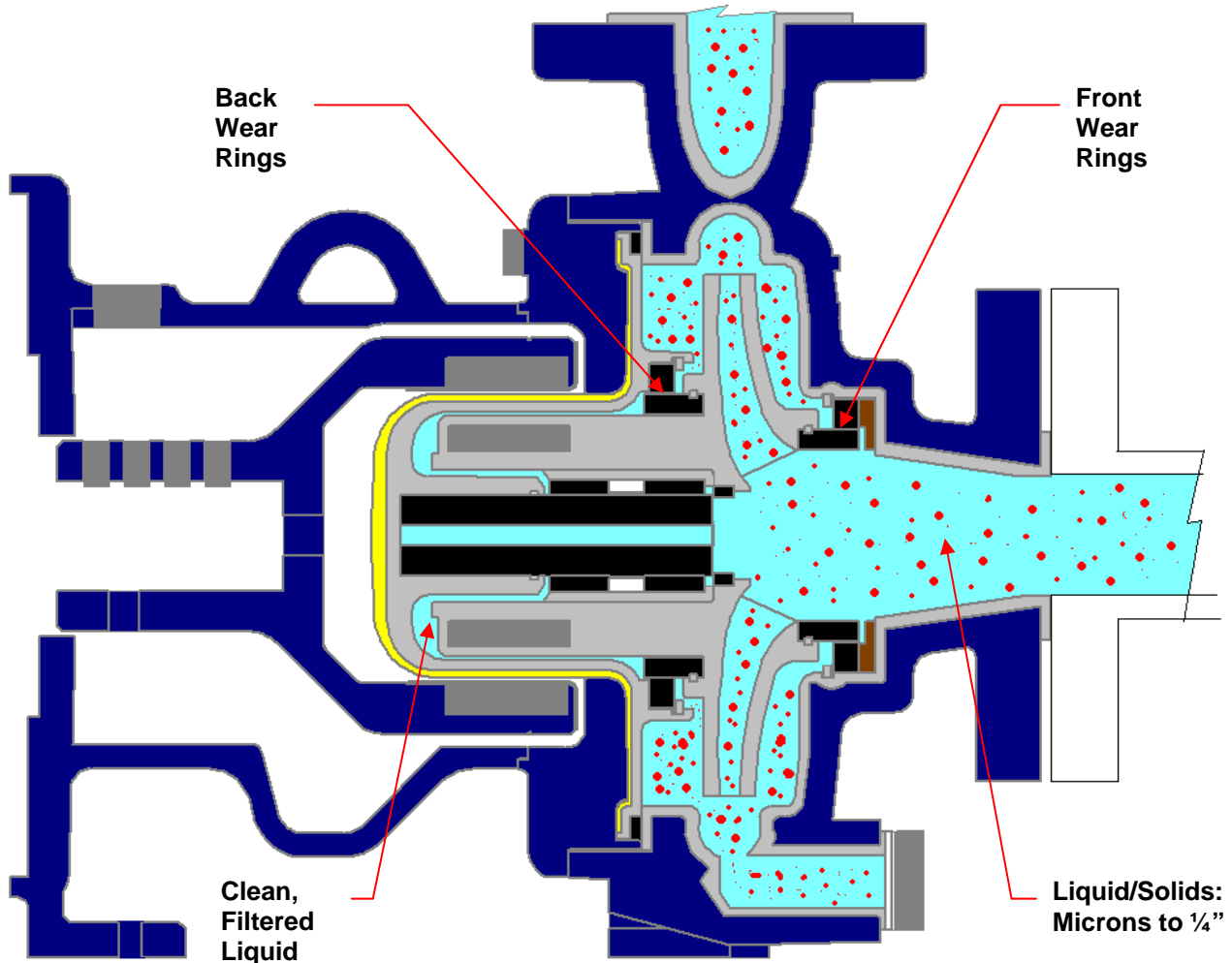


Figure 1 - Solids passing through the pump

Solids Handling Considerations

Maximum Pump Life



Minimum Pump Life

- Low percentage of solids
- Fine, smooth, spherical shaped particles
- Softer particles or flakes
- Suspended, uniform solids
- Low or variable speed operation
- Operate at or near BEP
- Continuous Duty

- High percentage of solids
- Sharp, irregular shaped, large particles
- Hard particles, silica sand (Silicon Dioxide), etc.
- Fibrous, sticky or scale forming solids
- High speed operation
- Operation near shut off or end of curve
- Intermittent duty, solids settle

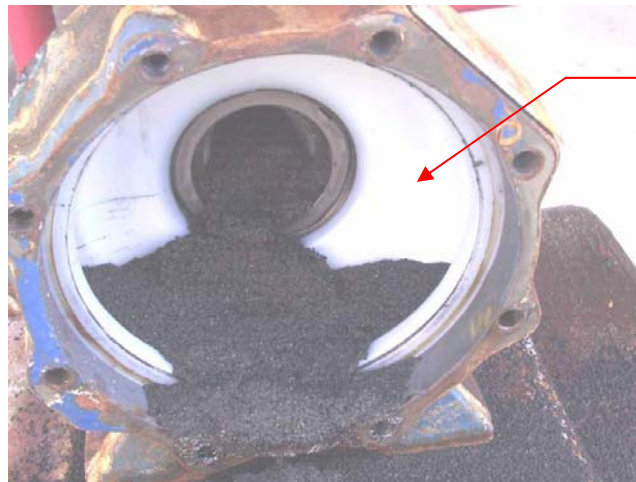
Case Study - Extreme Solids Handling

Application: Approx. 65% Carbon Slurry

Current problem: Existing mechanical seal pump would have weekly seal failures.

Trial Pump: TB-mag A, 3x2x6, 10 hp motor, 3600 rpm

Results: The TB-mag pump ran 9 months. The internal filtering system kept the bearings and inner magnet assembly clean and free from the carbon slurry. The slurry eroded the impeller vanes away separating the front shroud from the back shroud.



No wear on the casing lining.

Vanes eroded away separating the back and front shrouds.

Figure 2 – Carbon Slurry

No wear on the inner magnet assembly.



Figure 3 – Front of impeller, no vanes



Figure 4 – No wear on magnet assembly

Patented Permeation Protection

Effectively, all plastics are semi-permeable. This means that they allow small atoms, ions or molecules present in the pumped fluid to pass between their molecules like a very fine sieve. Many of these materials are very corrosive. This normally doesn't affect the plastic but can allow the corrosive products to attack the underlying materials. By far the most vulnerable parts of any pumps are the magnets. Our pumps are made using neodymium-iron-boron magnets which are the strongest available but not very corrosion resistant.

To combat permeation and give the longest life possible all Innomag pumps utilize a patented double welded magnet assembly. On the outside, the magnet assembly is hermetically sealed under the fluoropolymer plastic covering. Underneath the plastic, the magnets are hermetically sealed to the magnet carrier by welding on a 316L stainless cover. This second barrier stops permeate from reaching the magnets.

From the Umag on up, all Innomag models are manufactured using this technology.

TBmag-B, 1.5x1x8 impeller magnet showing sealed magnet assembly under fluoropolymer cover.

Same impeller looking at the stainless cover over the magnets.



TB-mag Flowpath

All Innomag pumps are product lubricated; meaning the liquid being pumped is the same liquid that lubricates and cools the internal bearings and wear rings. It's critical for the pump to have and maintain adequate suction pressure

To help visualize the flow path/internal recirculation of the TB-mag pump view Figure 1. As liquid enters the pumps suction it quickly accelerates into the impeller eye then discharged radially into the volute. The pressurized liquid splits three ways.

- 1) The mainstream of the liquid will efficiently discharge out of the casing.
- 2) A small percentage of the liquid (approximately 2-3 gpm) flows around the impeller through the rear wear rings, around the magnet assembly then splitting over and under the journal bearings before releasing past the control valve to the impeller suction.
- 3) The rest of the liquid returns to the impeller suction through the front wear rings and thrust collar.

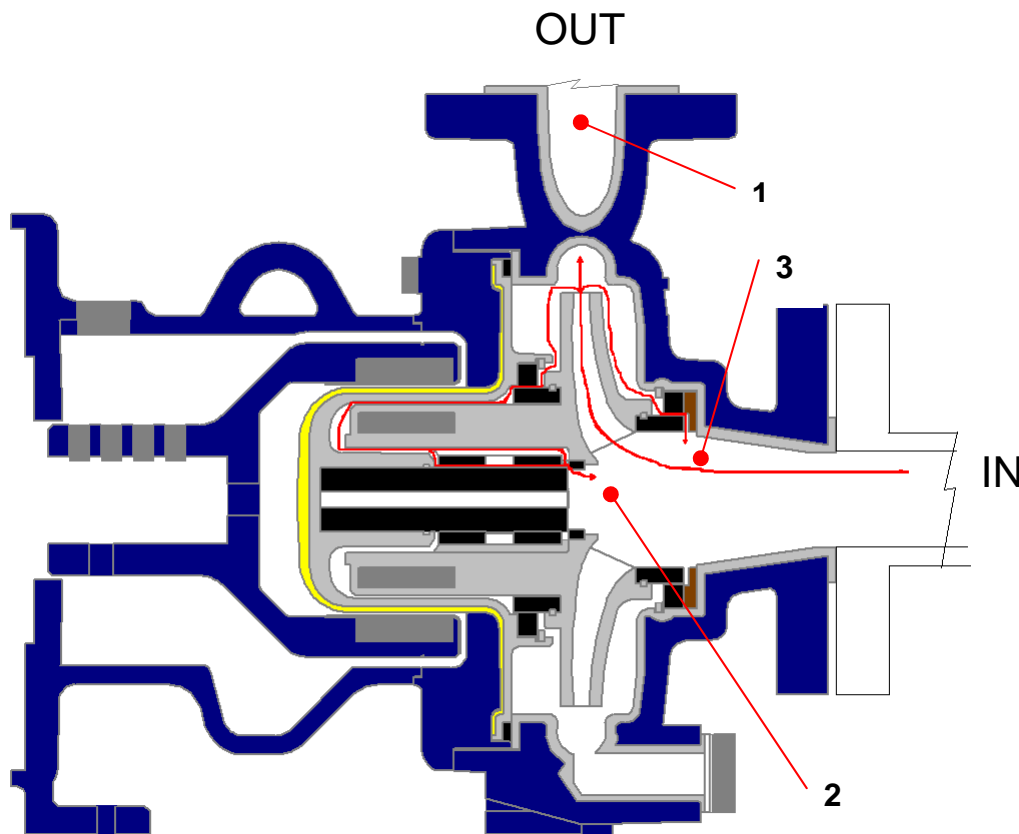


Figure 1 – TB-mag Flow Path

For maximum pump life consider the following:

- 1) Flooded Suction, liquid must flow to the pump naturally.
- 2) Net Positive Suction Head available is greater than required, $NPSH_a > NPSH_r$
- 3) Minimize suction pipe length, bends and restrictions.
- 4) Always run the pump above the minimum flow required.

Pump Identification Code-ANSI

Wet End **A 1 6 6 5 1 1 1 0 0** - **A B 0** Drive End

TB-mag Models

Code	Pump Size	STD.	Drive Torque	Max.	Min.
A1	(1.5 x 1 x 6)	AA	0,1	6.65"	4.00"
AL	(1.5 x 1 x 6) Low Flow	AA	0,1	6.65"	4.00"
A3	(3 x 1.5 x 6)	AB	0,1	6.65"	4.00"
A4	(3 x 2 x 6)	--	0,1	6.65"	4.00"
B1	(1.5 x 1 x 8)	AA	0,1	8.25"	5.50"
BL	(1.5 x 1 x 8) Low Flow	AA	0,1	8.25"	5.50"
B3	(3 x 2 x 6)	--	0,1	7.00"	5.50"
B4	(3 x 1.5 x 8)	A50	0,1	8.25"	5.50"
B5	(3 x 2 x 6)	A10	0,1	7.00"	5.50"
B6	(4 x 3 x 6)	--	0,1	7.00"	5.50"
C1	(3 x 2 x 8)	A60	0,1	8.25"	5.50"
C2	(4 x 3 x 8)	A70	0,1	8.25"	5.50"
C3	(2 x 1 x 10)	A05	0,1	10.5"	5.50"
CL	(2 x 1 x 10) Low Flow	A05	0,1	10.5"	5.50"
C4	(3 x 1.5 x 10)	A50	0,1	10.5"	5.50"
C5	(3 x 2 x 10)	A60	0,1	10.5"	5.50"
C6	(4 x 3 x 10)	A70	0,1,2	10.5"	5.50"
C7	(4 x 3 x 10H)	A70	0,1,2	10.5"	8.00"
C8	(6 x 4 x 10H)	A80	0,1,2	10.5"	8.00"
C9	(6 x 4 x 8)	A80	0,1,2	8.25"	5.50"
V1	(2 x 1.5 x 6) Vertical	2015/15	0,1	6.65"	4.00"
W1	(2 x 1.5 x 8) Vertical	2015/15	0,1	8.25"	5.50"

Note: Drive Torque - available drives per pump size.

Impeller Diameter

* **665** inches, (example: 665 = 6.65")

* Impeller trim for ANSI models must be specified in inches.

Bearing System

	Bushing	Shaft, Pump
s 1	- SiC	SiC

Wear Rings/Thrust Collar System

	Impeller Wear Rings	Cont. Shell Wear Ring	Casing Wear Ring	Casing Thrust Collar
s 1	- SiC	SiC	SiC	CF PTFE
2	- SiC	SiC	CF PTFE	SiC
3	- SiC	SiC	SiC	SiC

Gasket (All Gaskets are 0.210" square cross section)

s 1	- FEP/FKM (Fluorocarbon)
2	- FKM (Fluorocarbon)
3	- EPDM (Ethylene Propylene)

Option 1

s 0	- ANSI Dimension Pump Drilled w/ANSI (Class 150) Flanges
1	- ANSI Dimension Pump Drilled w/ANSI (Class 300) Flanges
2	- ANSI Dimension Pump Drilled w/ISO/DIN (PN16) Flanges
3	- ANSI Dimension Pump Drilled w/JIS (10 kg/cm ²) Flanges

Option 2

	Impeller Body	Casing Casting/Lining	Casing Drain	Containment Shell Lining/Composite	Impeller Torque
s 0	- CF-ETFE	D.I./ETFE	Yes	CF-ETFE/Aramid Composite	Standard
1	- CF-ETFE	D.I./ETFE	No	CF-ETFE/Aramid Composite	Standard
c 2	- CF-ETFE	D.I./Unfilled PFA	Yes	CF-ETFE/Aramid Composite	Standard
c 3	- CF-ETFE	D.I./Unfilled PFA	No	CF-ETFE/Aramid Composite	Standard
c 4	- CF-ETFE	D.I./ETFE	Yes	CF-ETFE/Aramid Composite	Ultra
c 5	- CF-ETFE	D.I./ETFE	No	CF-ETFE/Aramid Composite	Ultra

C - Consult Factory for Availability

S - Standard Material/Options

Drive Torque

0	- Standard Torque
1	- High Torque
2	- Ultra High Torque

Ultra High Torque is for "K,W" Motor Frame Only!

Refer to Table 1 for Torque Values

Motor Frame

NEMA C-Face

A	- 56C (A Series Only)
B	- 143/5TC
C	- 182/4TC
ta D	- 213/5TC
ta E	- 254/6TC (Max. A-Series)
F	- 254/6 (4 Pole)
	- 284/6TS (Max. B-Series)
G	- 324/6TSC
H	- 364/365TSC
tc J	- 284/6TC
uc K	- 324/6TC & 405TSC

IEC B5

M	- 80 (A Series Only)
N	- 90S/L
P	- 100L
Q	- 112M
ta R	- 132S/M (Max. A-Series)
S	- 160M
T	- 160M/L (Max. B-Series)
tc U	- 180M/L
tc V	- 200L
uc W	- 225S/M

ta-A-Series High Torque Drives

tc-B/C-Series High Torque Drives

uc- Optional Ultra High Torque Drive

Product Group

A	- TB-mag A
B	- TB-mag B
C	- TB-mag C
LC	- Long Coupled B/C
SS	- Secondary Seal Unit B/C

LC-Standard Long Coupled Bearing Frame for

TB-mag Models B1-C9, \$\$ Adder

SS-Long Coupled Bearing Frame equipped with

Patented Secondary Sealing System for

TB-mag Models B1-C9, \$\$\$ Adder

Material Guide

CF - Carbon Fiber

D.I. - Ductile Iron

DLC - Diamond Like Carbon Coating

ETFE - Ethylene-tetrafluoroethylene

PFA - Perfluoroalkoxy

SiC - Silicon Carbide (Ceramic)

Motor Frame Guide				
60 Hz Motors				
HP	RPM	NEMA	Code	
1	3600	143TC	B	
	1800	143TC		
1.5	3600	143TC		
	1800	145TC		
2	3600	145TC		
	1800	145TC		
3	3600	182TC		C
	1800	182TC		
5	3600	184TC		
	1800	184TC		
7.5	3600	213TC		
	1800	213TC		
10	3600	215TC	D	
	1800	215TC		
15	3600	254TC		
	1800	254TC		
20	3600	256TC		
	1800	256TC		
25	3600	284TSC		F
	1800	284TC		J
30	3600	286TSC		F
	1800	286TC		J1
40	3600	324TSC	G	
	1800	324TC	K1	
50	3600	326TSC	G	
	1800	326TC	K2	
60	3600	364TSC	H1	
75	3600	365TSC		
100	3600	405TSC	K2	

Motor Frame Guide				
50 Hz Motors				
Kw	RPM	IEC	Code	
0.75	2900	80	M	
	1450	80		
1.1	2900	80	N	
	1450	90S		
1.5	2900	90S		
	1450	90L		
2.2	2900	90L		
	1450	100L		
3	2900	100L		P
	1450	100L		
4	2900	112M		Q
	1450	112M		
5.5	2900	132S	R	
	1450	132S		
7.5	2900	132S		
	1450	132M	R1	
11	2900	160M	S	
	1450	160M	T	
15	2900	160M	S	
	1450	160L	T	
18.5	2900	160L		
	1450	180M	U1	
22	2900	180M	U	
	1450	180L	U1	
30	2900	200L	V	
	1450	200L	V1	
37	2900	200L		
	1450	225M	W2	
45	2900	225M	W1	

TABLE 1 - Torque Ratings									
Pump Series	Motor Frame Option 1	Maximum Hp (kW) at rated rpm:							
		3500		2900		1750		1450	
TB-mag A	A,B,C,D,M,N,P,Q,R	10.0	(7.5)	8.3	(6.2)	5.0	(3.8)	4.1	(3.1)
	D1,E1,R1	14.0	(10.4)	11.7	(8.7)	7.0	(5.2)	5.8	(4.4)
TB-mag B	B,C,D,E,N,P,Q,R,S	20.0	(14.9)	16.6	(12.4)	10.0	(7.5)	8.3	(6.2)
	F,R1,T	30.0	(22.4)	25.0	(18.7)	15.0	(11.2)	12.5	(9.3)
TB-mag C	B,C,D,E,N,P,Q,R,S	25.0	(18.6)	20.7	(15.5)	12.5	(9.3)	10.4	(7.7)
	F,G,J,R1,T,U,V	50.0	(37.3)	41.4	(31.1)	25.0	(18.7)	20.7	(15.5)
	J1,K1,H1,U1,V1,W	75.0	(56.0)	62.0	(46.6)	37.5	(28.0)	31.3	(23.3)
	K2,W2	100.0	(75.0)	83.0	(63.0)	50.0	(38.0)	41.0	(31.0)

Pump Identification Code - ISO

Wet End **E 1 1 6 5 1 1 1 0 0** - **E B 0** Drive End

TB-mag Models		Impeller Dia. (mm)		
Code	Pump Size	Drive Torque	Max.	Min.
E1	(50 x 32 x 160mm)	0,1	169	102
E3	(65 x 50 x 160mm)	0,1	169	102
F1	(50 x 32 x 200mm)	0,1	210	140
F4	(65 x 40 x 200mm)	0,1	210	140
G2	(100 x 65 x 200mm)	0,1	210	140

Impeller Diameter	
*	165 mm, (i.e. - 165, 140)

* Impeller trim for ISO models must be specified in mm.

Bearing System		
	Bushing	Shaft, Pump
s	1 - SiC	SiC

Wear Rings/Thrust Collar System				
	Impeller Wear Rings	Cont. Shell Wear Ring	Casing Wear Ring	Casing Thrust Collar
s	1 - SiC	SiC	SiC	CF PTFE
	2 - SiC	SiC	CF PTFE	SiC
	3 - SiC	SiC	SiC	SiC

Gasket (All Gaskets are 0.210" square cross section)	
s	1 - FEP/FKM (Fluorocarbon)
	2 - FKM (Fluorocarbon)
	3 - EPDM (Ethylene Propylene)

Option 1	
0	ISO Dimension Pump Drilled w/ANSI (Class 150) Flanges
1	ISO Dimension Pump Drilled w/ANSI (Class 300) Flanges
s	ISO Dimension Pump Drilled w/ISO/DIN (PN16) Flanges
3	ISO Dimension Pump Drilled w/JIS (10 kg/cm ²) Flanges

Option 2					
	Impeller Body	Casing Casting/Lining	Casing Drain	Containment Shell Lining/Composite	Impeller Torque
s	0 - CF-ETFE	D.I./ETFE	Yes	CF-ETFE/Aramid Composite	Standard
	1 - CF-ETFE	D.I./ETFE	No	CF-ETFE/Aramid Composite	Standard
c	2 - CF-ETFE	D.I./Unfilled PFA	Yes	CF-ETFE/Aramid Composite	Standard
c	3 - CF-ETFE	D.I./Unfilled PFA	No	CF-ETFE/Aramid Composite	Standard
c	4 - CF-ETFE	D.I./ETFE	Yes	CF-ETFE/Aramid Composite	Ultra
c	5 - CF-ETFE	D.I./ETFE	No	CF-ETFE/Aramid Composite	Ultra

C - Consult Factory for Availability
S - Standard Material/Options

Material Guide

CF - Carbon Fiber
D.I. - Ductile Iron
DLC - Diamond Like Carbon Coating
ETFE - Ethylene-tetrafluoroethylene
PFA - Perfluoroalkoxy
SiC - Silicon Carbide (Ceramic)

Drive Torque	
0	Standard Torque
1	High Torque
2	Ultra High Torque

Ultra High Torque is for "K,W" Motor Frame Only!
Refer to Table 1 for Torque Values

Motor Frame

NEMA C-Face	
A	56C (A Series Only)
B	143/5TC
C	182/4TC
ta	D - 213/5TC
ta	E - 254/6TC (Max. A-Series)
	F - 254/6 (4 Pole)
	284/6TS (Max. B-Series)
	G - 324/6TSC
	H - 364/365TSC
tc	J - 284/6TC
uc	K - 324/6TC & 405TSC

IEC B5	
M	80 (A Series Only)
N	90S/L
P	100L
Q	112M
ta	R - 132S/M (Max. A-Series)
	S - 160M
	T - 160M/L (Max. B-Series)
tc	U - 180M/L
tc	V - 200L
uc	W - 225S/M

ta-A-Series High Torque Drives
tc-B/C-Series High Torque Drives
uc-Optional Ultra High Torque Drive

Product Group

	E	TB-mag A
	F	TB-mag B
	G	TB-mag C
LC	L	Long Coupled B/C
SS	S	Secondary Seal Unit B/C

LC-Standard Long Coupled Bearing Frame for TB-mag Models B1-C9, \$\$ Adder
SS-Long Coupled Bearing Frame equipped with Patented Secondary Sealing System for TB-mag Models B1-C9, \$\$\$ Adder

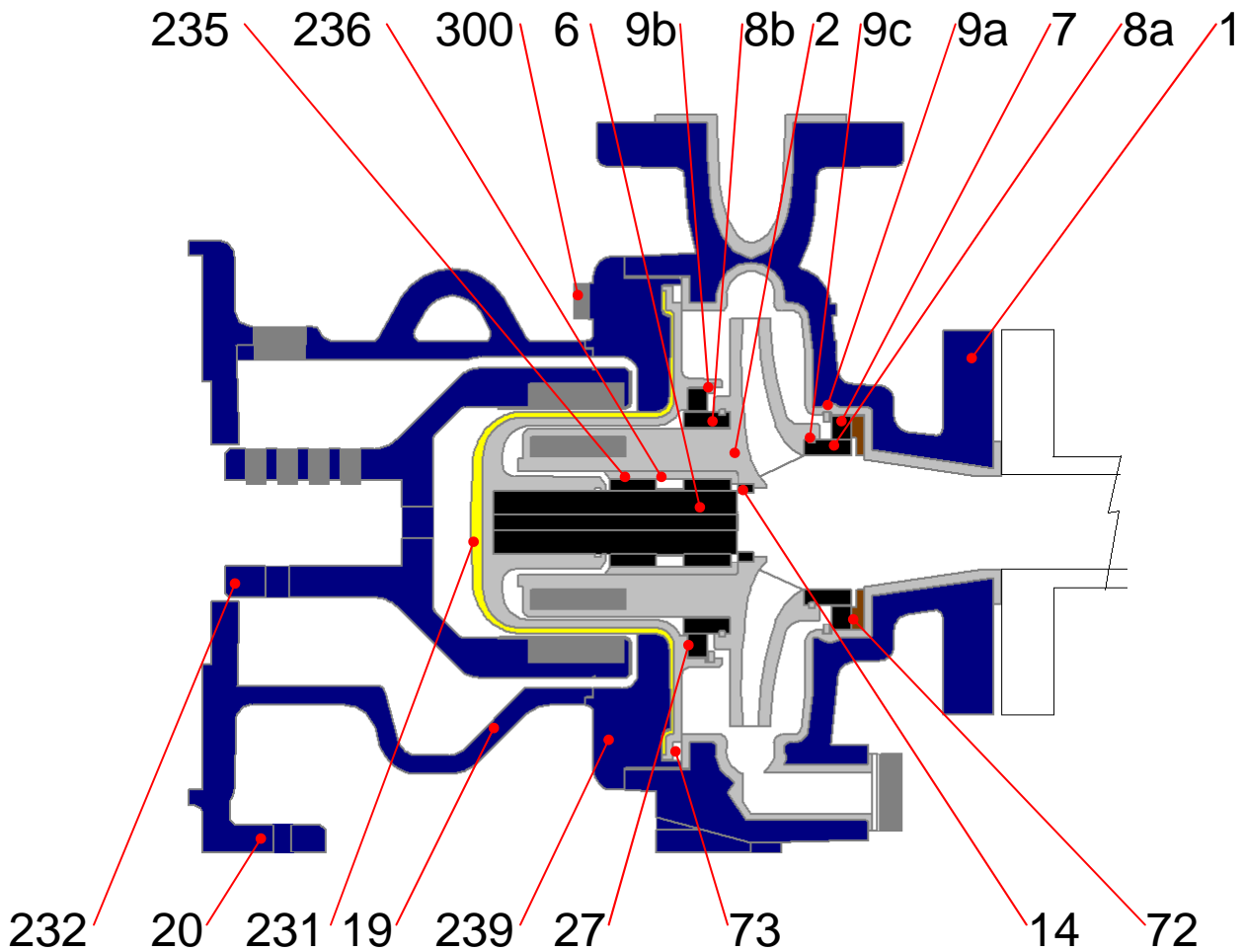
(ANSI DIMENSIONAL BEARING FRAME ONLY)

Motor Frame Guide				
60 Hz Motors				
HP	RPM	NEMA	Code	
1	3600	143TC	B	
	1800	143TC		
1.5	3600	143TC		
	1800	145TC		
2	3600	145TC		C
	1800	145TC		
3	3600	182TC	D	
	1800	182TC		
5	3600	184TC	E	
	1800	184TC		
7.5	3600	213TC	F	
	1800	213TC		
10	3600	215TC	G	
	1800	215TC		
15	3600	254TC	H1	
	1800	254TC		
20	3600	256TC	K2	
	1800	256TC		
25	3600	284TSC	K1	
	1800	284TC		
30	3600	286TSC	K2	
	1800	286TC		
40	3600	324TSC	K2	
	1800	324TC		
50	3600	326TSC	K2	
	1800	326TC		
60	3600	364TSC	K2	
	1800	364TC		
75	3600	365TSC	K2	
	1800	365TC		
100	3600	405TSC	K2	
	1800	405TC		

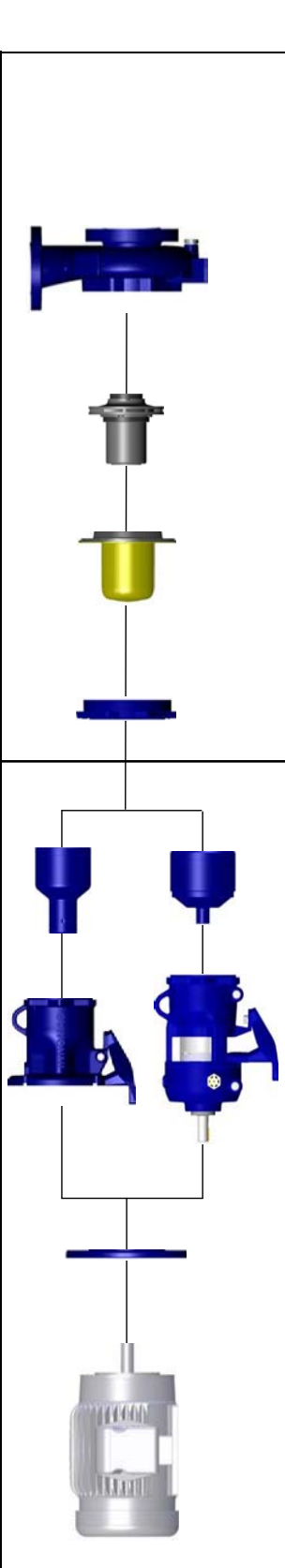
Motor Frame Guide			
50 Hz Motors			
Kw	RPM	IEC	Code
0.75	2900	80	M
	1450	80	
1.1	2900	80	N
	1450	90S	
1.5	2900	90S	P
	1450	90L	
2.2	2900	90L	Q
	1450	100L	
3	2900	100L	R
	1450	100L	
4	2900	112M	R1
	1450	112M	
5.5	2900	132S	S
	1450	132S	
7.5	2900	132S	T
	1450	132M	
11	2900	160M	U1
	1450	160M	
15	2900	160M	U
	1450	160L	
18.5	2900	160L	V1
	1450	180M	
22	2900	180M	W2
	1450	180L	
30	2900	200L	W1
	1450	200L	
37	2900	200L	W1
	1450	225M	
45	2900	225M	W1
	1450	225M	

TABLE 1 - Torque Ratings									
Pump Series	Motor Frame Option 1	Maximum Hp (kW) at rated rpm:							
		3500		2900		1750		1450	
TB-mag A	A,B,C,D,M,N,P,Q,R	10.0	(7.5)	8.3	(6.2)	5.0	(3.8)	4.1	(3.1)
	D1,E1,R1	14.0	(10.4)	11.7	(8.7)	7.0	(5.2)	5.8	(4.4)
TB-mag B	B,C,D,E,N,P,Q,R,S	20.0	(14.9)	16.6	(12.4)	10.0	(7.5)	8.3	(6.2)
	F,R1,T	30.0	(22.4)	25.0	(18.7)	15.0	(11.2)	12.5	(9.3)
TB-mag C	B,C,D,E,N,P,Q,R,S	25.0	(18.6)	20.7	(15.5)	12.5	(9.3)	10.4	(7.7)
	F,G,J,R1,T,U,V	50.0	(37.3)	41.4	(31.1)	25.0	(18.7)	20.7	(15.5)
	J1,K1,H1,U1,V1,W	75.0	(56.0)	62.0	(46.6)	37.5	(28.0)	31.3	(23.3)
	K2,W2	100.0	(75.0)	83.0	(63.0)	50.0	(38.0)	41.0	(31.0)

Item List



Item	Qty	Part Name	Material
1	1	Casing	Ductile Iron/ETFE lining
2	1	Impeller Magnet Assembly	ETFE
6	1	Shaft, Pump	Silicon Carbide
7	1	Wear Ring, Front Stationary	Silicon Carbide
8a	1	Wear Ring, Front Rotating	Silicon Carbide
8b	1	Wear Ring, Back Rotating	Silicon Carbide
9a	1	Retaining Ring, Front Stationary	ETFE
9b	1	Retaining Ring, Back Stationary	ETFE
9c	2	Retaining Ring, Pin (sets)	ETFE
14	1	Valve, Thrust Control	Silicon Carbide
19	1	Adapter	Ductile Iron
20	1	Only for Group 2, TB-mag B/C 8.25" centerline	Ductile Iron
27	1	Wear Ring, Back Stationary	Silicon Carbide
72	1	Collar, Thrust	CFR/PTFE
73	1	Gasket, O-ring	FEP/FKM (Fluorocarbon) Core
231	1	Shell, Containment	ETFE/Fiber Reinforced Vinyl Ester
232	1	Magnet Assembly, Outer	Ductile Iron/Neodymium Iron
235	2	Bushing, Bearing	Silicon Carbide
236	1	Bushing, Spacer	PTFE
239	1	Ring, Containment	Ductile Iron
300	14	Hex Cap Screw/Lock Washer	304SS

DRIVE END			WET END				
Motor Frame (NEMA/IEC)	Mounting Plate (Close Coupled NEMA/IEC)	Adapter (NEMA/IEC Close Coupled with Riser)	Outer Magnet Assembly (NEMA & IEC)	Containment Ring	Containment Shell Assembly (Includes: Pump Shaft, Wear Ring & Gasket)	Complete Impeller Assembly (Includes: Wear Ring & Bushing)	Casing Assembly (Includes: Wear Ring, Thrust Collar)
							
TB-mag A							
A - 56C		ADP-1000-SI	MAO-1000-SI	RGC-1000-SI	SLC-1000-AA	IMA-1010-AA	IA1 (1.5 x 1 x 6)
B - 143/5 TC			MAO-1010-SI	RGC-1005-SI		IMA-1010-AA	AL (1.5 x 1 x 6) Low Flow
C - 182/4 TC			MAO-1020-SI			IMA-1010-AA	E1 (50mm x 32mm)
D - 213/5 TC			MAO-1030-SI			IMA-1010-AA	EL (50mm x 32mm)
E - 213/5 TC, High Torque			MAO-1031-SI			IMA-1070-AA	EA3 (3 x 1.5 x 6)
F - 254/6 TC, High Torque			MAO-1032-SI			IMA-1070-AA	E3 (65mm x 40mm)
M - 80		ADP-1005-SI	MAO-1005-SI			IMA-1070-AA	A4 (3 x 2 x 6)
N - 90			MAO-1015-SI			IMA-1010-AA	V1 (2 x 1.5 x 6) Vertical
P - 100/112			MAO-1025-SI				
R - 132			MAO-1035-SI				
R1 - 132			MAO-1036-SI				
TB-mag B/C							
B - 143/5TC		ADP-1010-SI	MAO-1040-SI	RGC-1010-SI	SLC-1010-AA	IMA-1030-AA	B1 (1.5 x 1 x 8)
C - 182/4TC			MAO-1050-SI	RGC-1015-SI		IMA-1030-AA	BL (1.5 x 1 x 8) Low Flow
D - 213/5TC			MAO-1060-SI			IMA-1030-AA	F1 (50mm x 32mm)
E - 254/6TC (2 Pole)			MAO-1070-SI			IMA-1030-AA	FL (50mm x 32mm)
F - 284/6TSC & 254/6TC			MAO-1080-SI			IMA-1020-AA	B3 (3 x 2 x 6)
G - 324/6TSC			MAO-1090-SI			IMA-1040-AA	B4 (3 x 1.5 x 8)
H - 364/365TSC, High Torque	ADP-1100-SI		MAO-1100-SI			IMA-1040-AA	F4 (65mm x 40mm)
I - 284/6TC	ADP-1100-SI		MAO-1110-SI			IMA-1020-AA	B5 (3 x 2 x 6) 7" (178mm)
J1 - 284/6TC, High Torque			MAO-1111-SI			IMA-1065-AA	B6 (4 x 3 x 6) 7" (178mm)
K - 324TC, High Torque	ADP-1100-SI		MAO-1120-SI			IMA-1050-AA	C1 (3 x 2 x 8)
N - 90S/L		ADP-1015-SI	MAO-1055-SI			IMA-1060-AA	C2 (4 x 3 x 8)
P - 100L			MAO-1065-SI			IMA-1060-AA	G2 (100mm x 65mm)
Q - 112M			MAO-1086-SI			IMA-1030-AA	W1 (2 x 1.5 x 8) Vertical
R - 132S/M			MAO-1075-SI			IMA-1100-AA	C3 (2 x 1 x 10)
R1 - 132S/M, High Torque			MAO-1076-SI			IMA-1100-AA	CL (2 x 1 x 10) Low Flow
S - 160M	ADP-1125-SI		MAO-1095-SI			IMA-1100-AA	C4 (3 x 1.5 x 10)
T - 160M/L	ADP-1125-SI		MAO-1105-SI			IMA-1120-AA	C5 (3 x 2 x 10)
U - 180M/L			MAO-1115-SI			IMA-1130-AA	C6 (4 x 3 x 10)
V - 200L	ADP-1135-SI		MAO-1106-SI			IMA-1130-AA	C6 (4 x 3 x 10)
U - 180M/L, High Torque			MAO-1116-SI			IMA-1155-AA	C9 (6 x 4 x 8)
V - 200L, High Torque	ADP-1135-SI		MAO-1116-SI			IMA-1140-AA	C7 (4 x 3 x 10H)
W - 225S/M, High Torque	ADP-1145-SI		MAO-1125-SI			IMA-1150-AA	C8 (6 x 4 x 10H)
ANSI Bearing Frame							
BFR-2000-AA							
BFR-2010-AA							
BFR-2020-AA							

NOTES:

- 1. - Metric pump/parts
- 2. - Not all configurations are listed, consult factory for details.

Pump Dimensions – ANSI & ISO

ANSI Pump – NEMA Motor Mounting

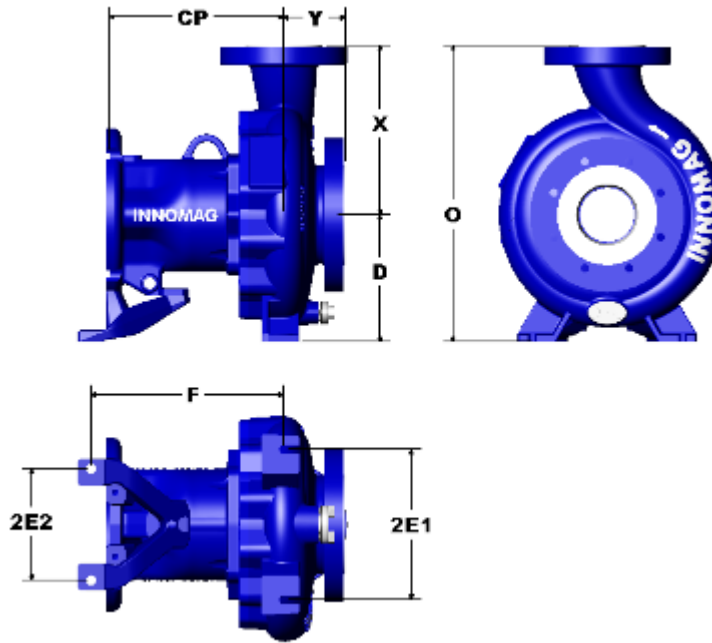


Figure 1 – ANSI Pump Dimensions

Series	Model (Size)	In (mm)										lb. (kg)
		D	2E ₁	2E ₂	F	O	X	Y	CP	SF	DF	Weight
TB-mag A	A1 - (1.5x1x6) ANSI Designation - AA	5.25 (133)	6.00 (152)	0.00 0	7.25 (184)	11.75 (298)	6.50 (165)	4.00 (102)	8.70 (221)	1.50 (38)	1.00 (25)	80.00 (36)
	AL - (1.5x1x6 LF) ANSI Designation - AA											
	A3 - (3x1.5x6) ANSI Designation - AB									3.00 (76)	2.00 (51)	90.00 (41)
	A4 - (3x2x6) ANSI Designation - --											
TB-mag B	B1 - (1.5x1x8) ANSI Designation - AA	8.25 (210)	9.75 (248)	7.25 (184)	12.50 (318)	16.75 (425)	8.50 (216)	11.30 (287)	4.00 (102)	1.50 (38)	1.00 (25)	125.00 (57)
	BL - (1.5x1x8 LF) ANSI Designation - AA											
	B3 - (3x2x6 Short) ANSI Designation - --									3.00 (76)	2.00 (51)	135.00 (61)
	B4 - (3x1.5x8) ANSI Designation - A50											
	B5 - (3x2x6 Tall) ANSI Designation - A10									4.00 (102)	3.00 (76)	185.00 (84)
	B6 - (4x3x6) ANSI Designation - --											

Pump Dimensions - Continued

Series	Model (Size)	In (mm)										lb. (kg)	
		D	2E ₁	2E ₂	F	O	X	Y	CP	SF	DF	Weight	
TB-mag C	C1 - (3x2x8) ANSI Designation - A60	8.25 (210)	9.75 (248)	7.25 (184)	12.50 (318)	17.75 (451)	9.50 (241)	4.00 (102)	11.30 (287)	3.00 (76)	2.00 (51)	159.00 (72)	
	C2 - (4x3x8) ANSI Designation - A70					19.25 (489)	11.00 (279)			4.00 (102)	3.00 (76)	195.00 (88)	
	C3 - (2x1x10) ANSI Designation - A05					16.75 (425)	8.50 (216)			2.00 (51)	1.00 (25)	174.00 (79)	
	CL - (2x1x10 LF) ANSI Designation - A05									3.00 (76)	1.50 (38)	188.00 (85)	
	C4 - (3x1.5x10) ANSI Designation - A50					17.75 (451)	9.50 (241)				2.00 (51)	189.00 (86)	
	C5 - (3x2x10) ANSI Designation - A60					19.25 (489)	11.00 (279)				3.00 (76)	205.00 (93)	
	C6 - (4x3x10) ANSI Designation - A70									4.00 (102)	3.00 (76)	219.00 (99)	
	C7 - (4x3x10H) ANSI Designation - A70									10.00 (254)	23.50 (597)	13.50 (343)	6.00 (152)
	C8 - (6x4x10H) ANSI Designation - A80					6.00 (152)	4.00 (102)						269.00 (122)
	C9 - (6x4x8) ANSI Designation - A80												

Table 1 – ANSI Pumps

NOTE: Dimensions are for reference only, use certified drawings for construction.

ISO Pump – IEC Motor Mounting

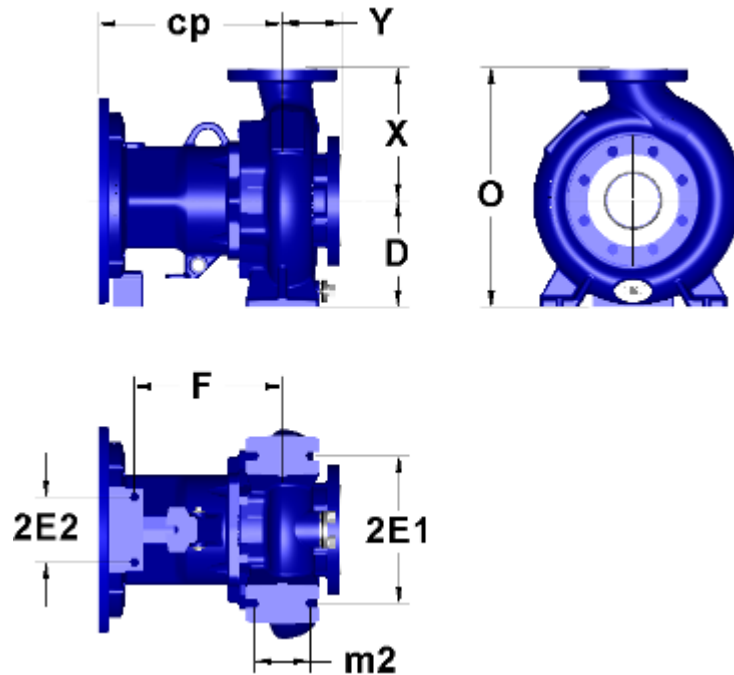


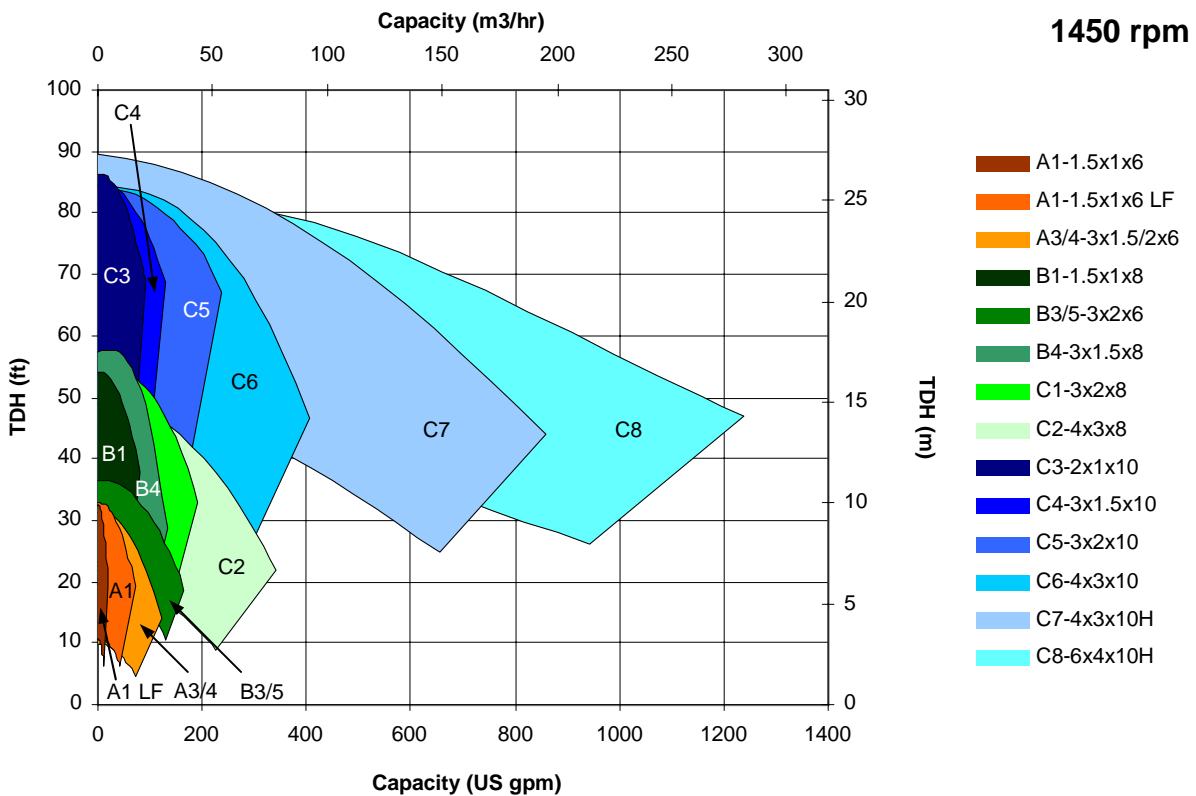
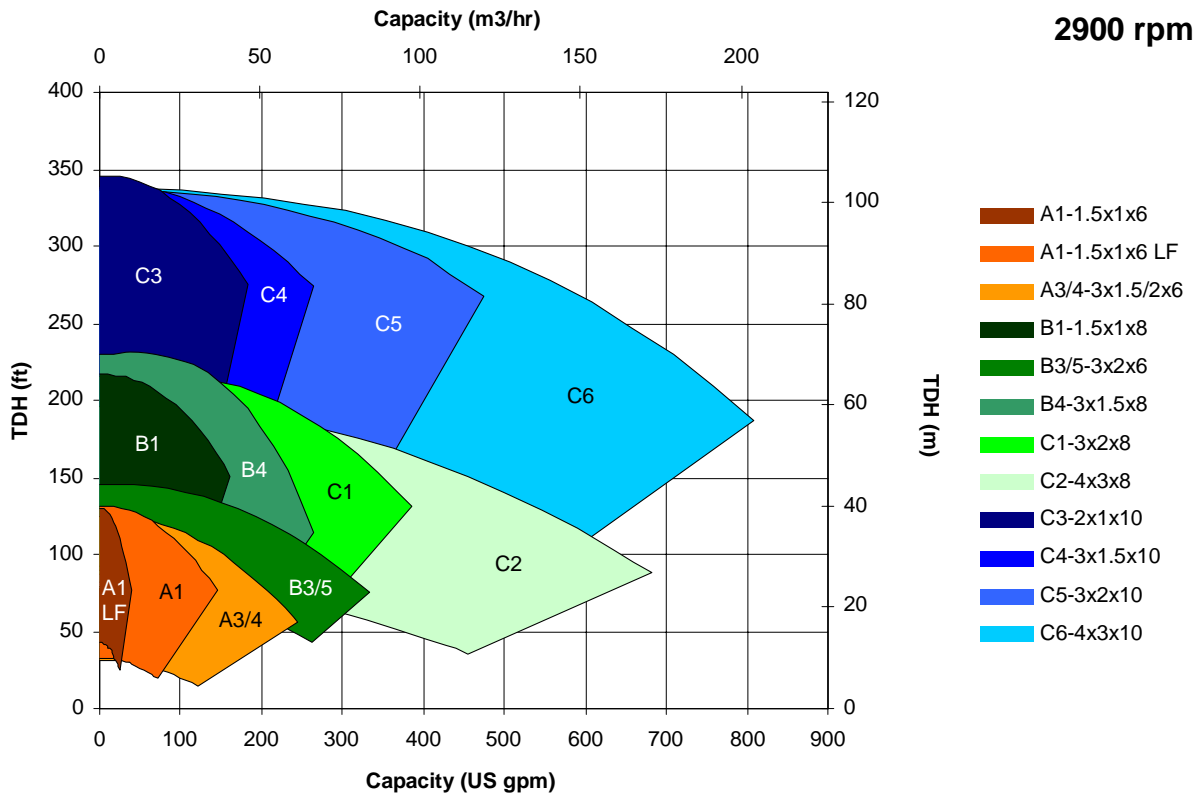
Figure 2 – ISO Pump Dimensions

Pump Series	Model (Size)	in (mm)											lb.
		D	2E1	2E2	M2	F	O	X	Y	CP	SF	DF	(kg)
TB-mag A	E1 - (50x32x160)	5.20 (132)	7.48 (190)	4.33 (110)	2.76 (70)	7.25 (184)	11.50 (292)	6.299 (160)	3.15 (80)	8.39 (213)	1.97	1.26	80
	EL - (50x32x160LF)										(50)	(32)	(36)
	E3 - (65x50x160)										2.56 (65)	1.97 (50)	86 (39)
TB-mag B	F1 - (50x32x200)	6.299 (160)	8.35 (212)	4.33 (110)	2.76 (70)	9.91 (252)	13.39 (340)	7.09 (180)	3.97 (100)	11.16 (284)	1.97	1.26	133
	FL - (50x32x200LF)										(50)	(32)	(60)
	F4 - (65x40x200)										2.56 (65)	1.57 (40)	144 (65)
TB-mag C	G2 - (100x65x200)	7.09 (180)	9.84 (250)	4.33 (110)	3.74 (95)	9.91 (252)	15.94 (405)	8.86 (225)	3.97 (100)	11.16 (284)	3.93 (100)	2.56 (65)	168 (76)

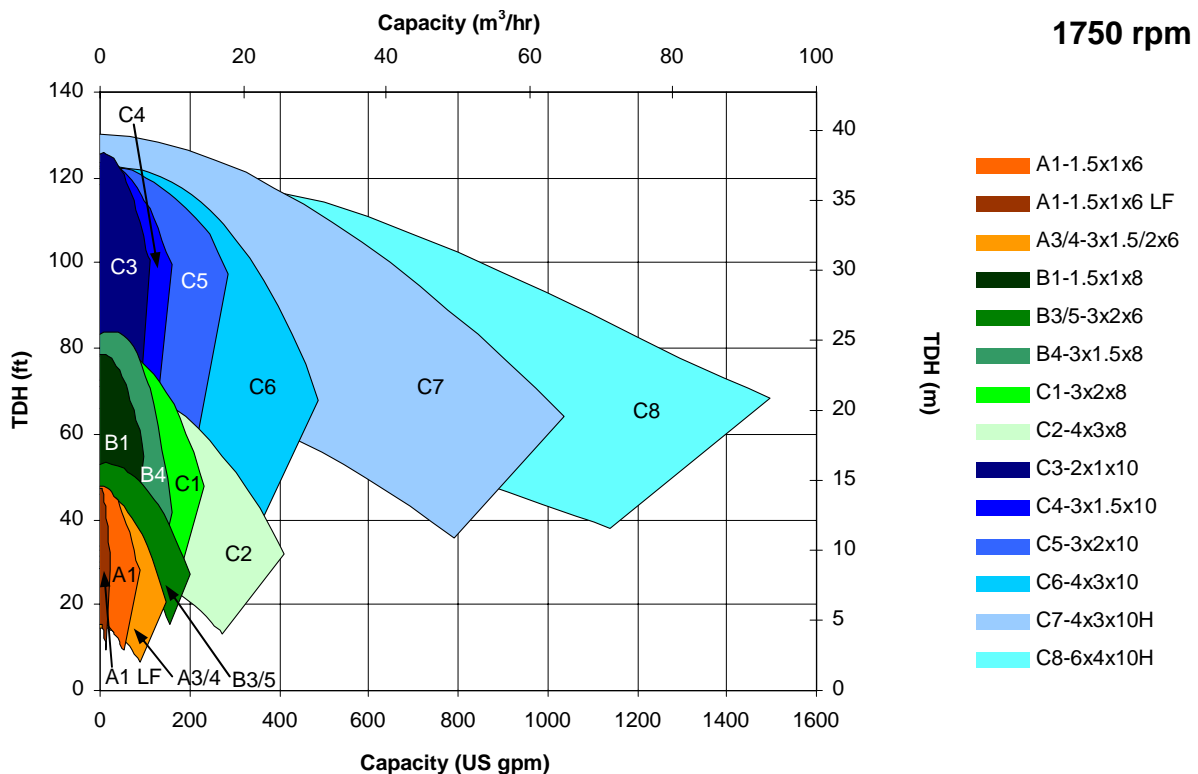
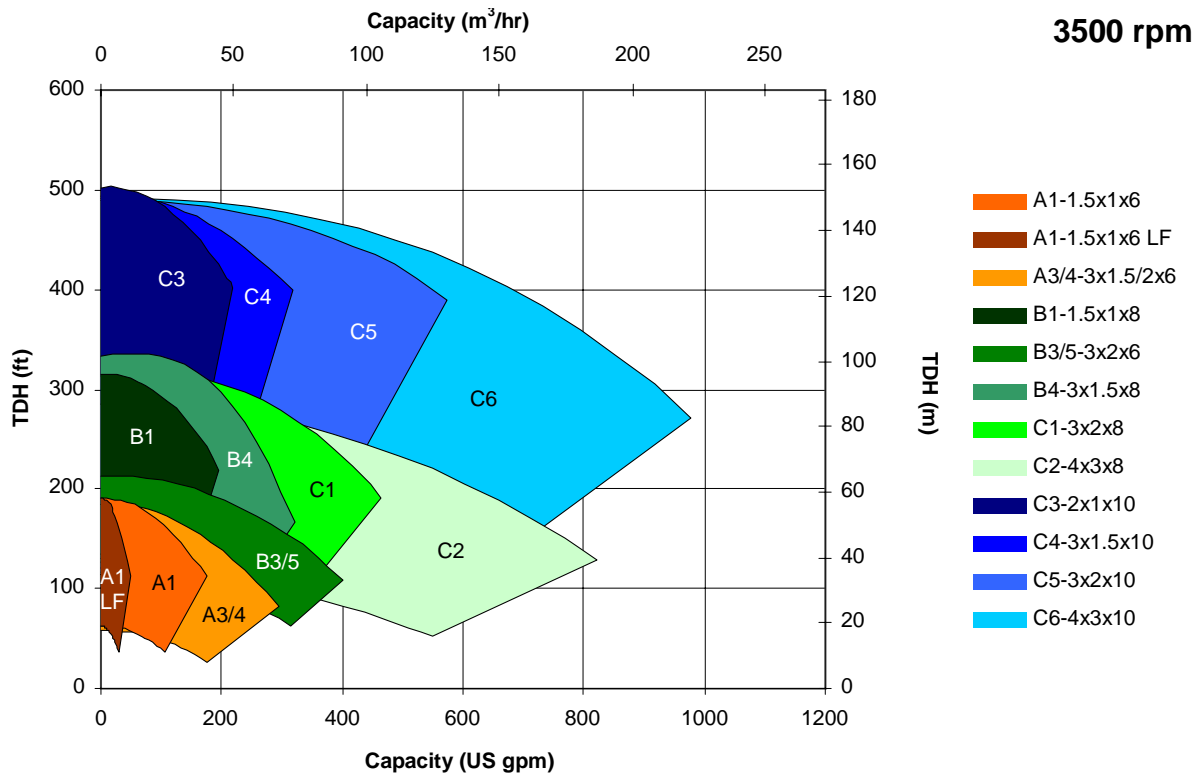
Table 2 – ISO Pumps

NOTE: Dimensions are for reference only, use certified drawings for construction.

Hydraulic Coverage – 50Hz



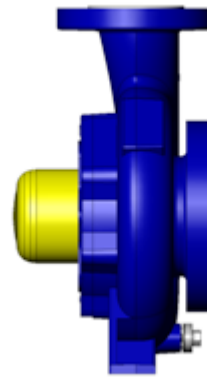
Hydraulic Coverage – 60Hz



Pump Price List - ANSI



Pump End



Wet End

Standard **Materials**
Casing: Pure ETFE
Internals: CF-ETFE

TB-mag	Model	Size	Motor Frame	Pump End	Wet End
A	A1	(1.5x1x6) ANSI - AA	A,B,C,D,M,N,P,Q,R		
			D1,E1,R1		
	AL	(1.5x1x6 LF) ANSI - AA	A,B,C,D,M,N,P,Q,R		
			D1,E1,R1		
A3	(3x1.5x6) ANSI - AB	A,B,C,D,M,N,P,Q,R			
		D1,E1,R1			
A4	(3x2x6) ANS - --	A,B,C,D,M,N,P,Q,R D1,E1,R1			
V	V1	(2x1.5x6) ANSI - 2015/15	A,B,C,D,M,N,P,Q,R		
			D1,E1,R1		
B	B1	(1.5x1x8) ANSI - AA	B,C,D,E,N,P,Q,R		
			S		
			F,R1		
			T		
	BL	(1.5x1x8 LF) ANSI - AA	B,C,D,E,N,P,Q,R		
			S		
			F,R1		
			T		
	B3	(3x2x6 Short) ANSI - --	B,C,D,E,N,P,Q,R		
S					
F,R1					
			T		

Standard **Materials**
Casing: Pure ETFE
Internals: CF-ETFE

TB-mag	Model	Size	Motor Frame	Pump End	Wet End
B	B4	(3x1.5x8) ANSI - A50	B,C,D,E,N,P,Q,R		
			S		
			F,R1		
			T		
	B5	(3x2x6 Tall) ANSI - A10	B,C,D,E,N,P,Q,R		
			S		
			F,R1		
			T		
	B6	(4x3x6) ANSI - --	B,C,D,E,N,P,Q,R		
			S		
			F,R1		
			T		
W	W1	(2x1.5x8) ANSI - 2015/15	B,C,D,E,N,P,Q,R		
			S		
			F,R1		
			T		
C	C1	(3x2x8) ANSI - A60	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		
	C2	(4x3x8) ANSI - A70	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		
	C3	(2x1x10) ANSI - A05	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		
	CL	(2x1x10 LF) ANSI - A05	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		

Standard **Materials**
Casing: Pure ETFE
Internals: CF-ETFE

TB-mag	Model	Size	Motor Frame	Pump End	Wet End
C	C4	(3x1.5x10) ANSI - A50	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		
	C5	(3x2x10) ANSI - A60	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		
	C6	(4x3x10) ANSI - A70	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		
	C7	(4x3x10H) ANSI - A70	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		
C8	(6x4x10H) ANSI - A80	B,C,D,E,N,P,Q,R			
		S			
		F,J,R1			
		G,T,U,V			
		H1,J1,K1,U1,V1,W1			
C9	(6x4x8) ANSI - A80	B,C,D,E,N,P,Q,R			
		S			
		F,J,R1			
		G,T,U,V			
		H1,J1,K1,U1,V1,W1			
			K2, W2		

Pump Adder's
(Pump cost + Added Part)



Standard ANSI Long Coupled Bearing Frame

(Refer to the pump identification code for designation)

Standard Material
Ductile Iron/Polyurethane Paint

Model	Size/Description	Part #	\$/Each
TB	B/C Series Adapter and Bearing unit , Outer Magnet Assembly	BFR-2000-AA	
	B/C Series Adapter and Bearing unit, Secondary Seal Package, Outer Magnet Assembly	BFR-2050-AA	

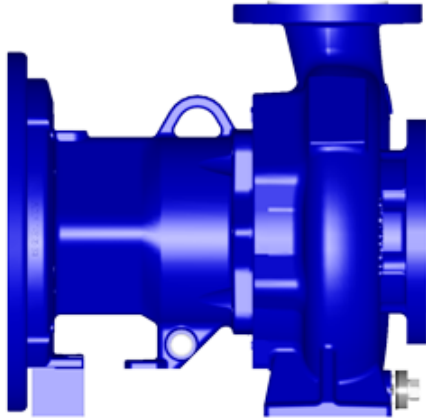
Premium, Low Friction, DLC (Diamond-Like Carbon) coatings

(Refer to the pump identification code for designation)

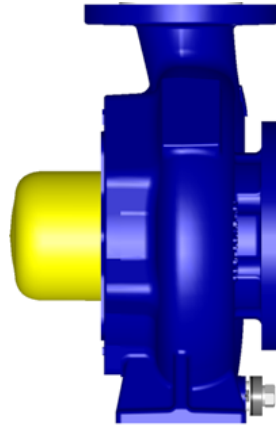
Standard Material
SiC + DLC

Model	Size/Description	\$/Each
TB	A/B/C Series, Premium, low friction DLC coating on SiC Bushings and Pump Shaft	
	A/B/C Series, Premium, low friction DLC coating on SiC Wear Rings	

Pump Price List - ISO



Pump End



Wet End

Standard Material
Casing: Pure ETFE
Internals: CF-ETFE

TB-mag	Model	Size	Motor Frame	Pump End	Wet End
A	E1	(50 x 32 x 160mm)	A,B,C,D,M,N,P,Q,R		
			D1,E1,R1		
	E3	(65 x 50 x 160mm)	A,B,C,D,M,N,P,Q,R		
			D1,E1,R1		
B	F1	(50 x 32 x 200mm)	B,C,D,E,N,P,Q,R		
			S		
			F,R1		
			T		
	F4	(65 x 40 x 200mm)	B,C,D,E,N,P,Q,R		
			S		
			F,R1		
			T		
C	G2	(100 x 65 x 200mm)	B,C,D,E,N,P,Q,R		
			S		
			F,J,R1		
			G,T,U,V		
			H1,J1,K1,U1,V1,W1		

Pump Adder's
(Pump cost + Added Part)



Standard ANSI Long Coupled Bearing Frame
(Refer to the pump identification code for designation)

Standard Material
Ductile Iron/Polyurethane Paint

Model	Size/Description	Part #	\$/Each
TB	B/C Series Adapter and Bearing unit , Outer Magnet Assembly	BFR-2000-AA	
	B/C Series Adapter and Bearing unit, Secondary Seal Package, Outer Magnet Assembly	BFR-2050-AA	

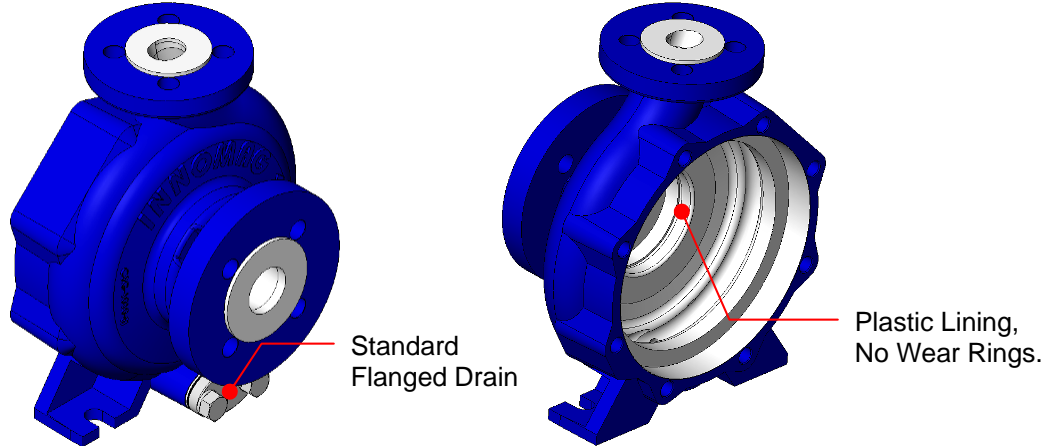
Premium, Low Friction, DLC (Diamond-Like Carbon) coatings
(Refer to the pump identification code for designation)

Standard Material
SiC + DLC

Model	Size/Description	\$/Each
TB	A/B/C Series, Premium, low friction DLC coating on SiC Bushings and Pump Shaft	
	A/B/C Series, Premium, low friction DLC coating on SiC Wear Rings	

Part Price List – ANSI & ISO

Item:	1	Qty:	1	Part Name:	Casing, Lined
Detail:	<ol style="list-style-type: none"> One piece cast ductile iron. Bonded ETFE or PFA lining, minimum of 1/8" (3mm) thickness. Self venting, top centerline discharge design. Two bolt flanged 1/2" drain with pure PTFE gasket and 316SS blind flange, standard. 				

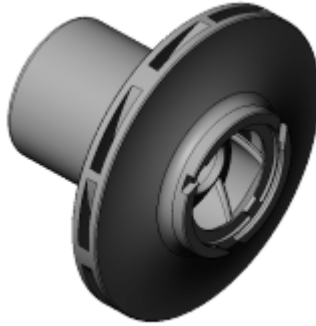


Model	Size/Description	Part #	Standard Casing Lining:		Optional 1 Casing Lining:	
			ETFE	\$/Each	PFA	\$/Each
A1	1.5 x 1 - ANSI class 150	CSG-1010-SI				
	1.5 x 1 - ANSI class 300	CSG-1011-SI				
	50 x 32mm - ISO PN 16	CSG-1012-SI				
	50 x 40mm - JIS 10 kg/cm ²	CSG-1013-SI				
AL	1.5 x 1 - ANSI class 150	CSG-1010-LF				
	1.5 x 1 - ANSI class 300	CSG-1011-LF				
	50 x 32mm - ISO PN 16	CSG-1012-LF				
	50 x 40mm - JIS 10 kg/cm ²	CSG-1013-LF				
E1	50 x 32mm - ISO PN 16	CSG-1015-SI				
	50 x 40mm - JIS 10 kg/cm ²	CSG-1017-SI				
EL	2.0 x 1.5 - ANSI class 150	CSG-1018-SI				
	50 x 32mm - ISO PN 16	CSG-1015-LF				
	50 x 40mm - JIS 10 kg/cm ²	CSG-1017-LF				
	2.0 x 1.5 - ANSI class 150	CSG-1018-LF				
A3	3 x 1.5 - ANSI class 150	CSG-1070-SI				
	3 x 1.5 - ANSI class 300	CSG-1071-SI				
	65 x 40mm - ISO PN 16	CSG-1072-SI				
	65 x 50mm - ISO PN 16	CSG-1073-SI				
	65 x 50mm - JIS 10 kg/cm ²	CSG-1074-SI				
E3	65 x 50mm - ISO PN 16	CSG-107A-SI				
	65 x 40mm - ISO PN 16	CSG-107B-SI				
	65 x 50mm - JIS 10 kg/cm ²	CSG-107C-SI				
	3 x 2 - ANSI class 150	CSG-107D-SI				
A4	3 x 2 - ANSI class 150	CSG-1075-SI				
	3 x 2 - ANSI class 300	CSG-1076-SI				
	80 x 50mm - ISO PN 16	CSG-1077-SI				
	80 x 65mm - ISO PN 16	CSG-1078-SI				
	80 x 65mm - JIS 10 kg/cm ²	CSG-1079-SI				

Model	Size/Description	Standard		Optional 1	
		Casing Lining:	ETFE	Casing Lining:	PFA
		Part #	\$/Each	Part #	\$/Each
B1	1.5 x 1 - ANSI class 150	CSG-1030-SI			
	1.5 x 1 - ANSI class 300	CSG-1031-SI			
	50 x 32mm - ISO PN 16	CSG-1032-SI			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1033-SI			
BL	1.5 x 1 - ANSI class 150	CSG-1030-LF			
	1.5 x 1 - ANSI class 300	CSG-1031-LF			
	50 x 32mm - ISO PN 16	CSG-1032-LF			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1033-LF			
F1	50 x 32mm - ISO PN 16	CSG-1035-SI			
	50 x 32mm - ISO PN 16	CSG-1036-SI			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1037-SI			
	2.0 x 1.5 - ANSI class 150	CSG-1038-SI			
FL	50 x 32mm - ISO PN 16	CSG-1035-LF			
	50 x 32mm - ISO PN 16	CSG-1036-LF			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1037-LF			
	2.0 x 1.5 - ANSI class 150	CSG-1038-LF			
B3	3 x 2 - ANSI class 150	CSG-1020-SI			
	3 x 2 - ANSI class 300	CSG-1021-SI			
	80 x 50mm - ISO PN 16	CSG-1022-SI			
	80 x 65mm - JIS 10 kg/cm ²	CSG-1023-SI			
B4	3 x 1.5 - ANSI class 150	CSG-1080-SI			
	3 x 1.5 - ANSI class 300	CSG-1081-SI			
	65 x 40mm - ISO PN 16	CSG-1082-SI			
	65 x 50mm - ISO PN 16	CSG-1083-SI			
F4	65 x 50mm - ISO PN 16	CSG-1085-SI			
	65 x 50mm - JIS 10 kg/cm ²	CSG-1087-SI			
	3 x 1.5 - ANSI class 150	CSG-1088-SI			
B5	3x2 (A10) - ANSI class 150	CSG-1090-SI			
	3x2 (A10) - ANSI class 300	CSG-1091-SI			
	80 x 50mm - ISO PN 16	CSG-1092-SI			
	80 x 65mm - ISO PN 16	CSG-1093-SI			
	80 x 65mm - JIS 10 kg/cm ²	CSG-1094-SI			
B6	4x3 - ANSI class 150	CSG-1160-SI			
	4x3 - ANSI class 300	CSG-1161-SI			
	100 x 65mm - ISO PN 16	CSG-1162-SI			
	100 x 80mm - ISO PN 16	CSG-1163-SI			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1164-SI			
C1	3 x 2 - ANSI class 150	CSG-1050-SI			
	3 x 2 - ANSI class 300	CSG-1051-SI			
	80 x 50mm - ISO PN 16	CSG-1052-SI			
	80 x 65mm - JIS 10 kg/cm ²	CSG-1053-SI			
C2	4 x 3 - ANSI class 150	CSG-1060-SI			
	4 x 3 - ANSI class 300	CSG-1061-SI			
	100 x 65mm - ISO PN 16	CSG-1062-SI			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1063-SI			
G2	100 x 65mm - ISO PN 16	CSG-1065-SI			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1067-SI			
	4 x 3 - ANSI class 150	CSG-1068-SI			

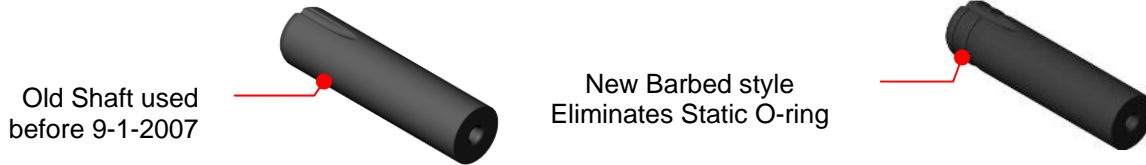
Model	Size/Description	Standard		Optional 1	
		Casing Lining:	ETFE	Casing Lining:	PFA
		Part #	\$/Each	Part #	\$/Each
C3	2x1 - ANSI class 150	CSG-1100-SI			
	2x1 - ANSI class 300	CSG-1101-SI			
	50 x 32mm - ISO PN 16	CSG-1102-SI			
CL	2x1 - ANSI class 150	CSG-1100-LF			
	2x1 - ANSI class 300	CSG-1101-LF			
	50 x 32mm - ISO PN 16	CSG-1102-LF			
C4	3x1.5 - ANSI class 150	CSG-1110-SI			
	3x1.5 - ANSI class 300	CSG-1111-SI			
	65 x 40mm - ISO PN 16	CSG-1112-SI			
	65 x 50mm - ISO PN 16	CSG-1113-SI			
	65 x 50mm - JIS 10 kg/cm ²	CSG-1114-SI			
C5	3x2 - ANSI class 150	CSG-1120-SI			
	3x2 - ANSI class 300	CSG-1121-SI			
	80 x 50mm - ISO PN 16	CSG-1122-SI			
	80 x 65mm - ISO PN 16	CSG-1123-SI			
	80 x 65mm - JIS 10 kg/cm ²	CSG-1124-SI			
C6	4x3 - ANSI class 150	CSG-1130-SI			
	4x3 - ANSI class 300	CSG-1131-SI			
	100 x 65mm - ISO PN 16	CSG-1132-SI			
	100 x 80mm - ISO PN 16	CSG-1133-SI			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1134-SI			
C7	4x3 - ANSI class 150	CSG-1140-SI			
	4x3 - ANSI class 300	CSG-1141-SI			
	100 x 65mm - ISO PN 16	CSG-1142-SI			
	100 x 80mm - ISO PN 16	CSG-1143-SI			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1144-SI			
C8	6x4 - ANSI class 150	CSG-1150-SI			
	6x4 - ANSI class 300	CSG-1151-SI			
	150 x 100mm - ISO PN 16	CSG-1152-SI			
	150 x 125mm - ISO PN 16	CSG-1153-SI			
	150 x 125mm - JIS 10 kg/cm ²	CSG-1154-SI			
C9	6x4 - ANSI class 150	CSG-1170-SI			
	6x4 - ANSI class 300	CSG-1171-SI			
	150 x 100mm - ISO PN 16	CSG-1172-SI			
	150 x 125mm - ISO PN 16	CSG-1173-SI			
	150 x 125mm - JIS 10 kg/cm ²	CSG-1174-SI			
V1	2 x 1.5 x 6 - ANSI class 150	CSG-1210-SI			
	2 x 1.5 x 6 - ANSI class 300	CSG-1211-SI			
	50 x 32mm - ISO PN 16	CSG-1212-SI			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1213-SI			
W1	2 x 1.5 x 8 - ANSI class 150	CSG-1230-SI			
	2 x 1.5 x 8 - ANSI class 300	CSG-1231-SI			
	50 x 32mm - ISO PN 16	CSG-1232-SI			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1233-SI			

Item:	2	Qty:	1	Part Name:	Impeller Magnet
Detail:	<ol style="list-style-type: none"> 1. Molded one-piece enclosed impeller made of carbon fiber-reinforced ETFE or PFA. 2. High strength neodymium iron boron magnet assembly. 3. Magnet assembly hermetically sealed by Patented "Tru-Seal" Design. 4. High efficiency, low NPSHr impeller geometry. 				



Model	Size/Description	Standard Impeller:		Option 1 Impeller:	
		Part #	\$/Each	Part #	\$/Each
A1	(1.5 x 1 x 6)	IMA -1010-SI			
AL	(1.5 x 1 x 6) Low Flow	IMA -1010-SI			
E1	(50mm x 32mm)	IMA -1010-SI			
EL	(50mm x 32mm)	IMA -1010-SI			
A3	(3 x 1.5 x 6)	IMA -1070-SI			
E3	(65mm x 40mm)	IMA -1070-SI			
A4	(3 x 2 x 6)	IMA -1070-SI			
B1	(1.5 x 1 x 8)	IMA -1030-SI			
BL	(1.5 x 1 x 8) Low Flow	IMA -1030-SI			
F1	(50mm x 32mm)	IMA -1030-SI			
FL	(50mm x 32mm)	IMA -1030-SI			
B3	(3 x 2 x 6)	IMA -1020-SI			
B4	(3 x 1.5 x 8)	IMA -1040-SI			
F4	65mm x 40mm	IMA -1040-SI			
B5	(3 x 2 x 6)	IMA -1020-SI			
B6	(4 x 3 x 6)	IMA -1160-SI			
C1	(3 x 2 x 8)	IMA -1050-SI			
C2	(4 x 3 x 8)	IMA -1060-SI			
G2	(100mm x 65mm)	IMA -1060-SI			
C3	(2 x 1 x 10)	IMA -1100-SI			
CL	(2 x 1 x 10) Low Flow	IMA -1100-SI			
C4	(3 x 1.5 x 10)	IMA -1100-SI			
C5	(3 x 2 x 10)	IMA -1120-SI			
C6	(4 x 3 x 10)	IMA -1130-SI			
	(4 x 3 x 10) Ultra High Torque	IMA -1132-SI			
C7	(4 x 3 x 10H)	IMA -1140-SI			
	(4 x 3 x 10H) Ultra High Torque	IMA -1142-SI			
C8	(6 x 4 x 10H)	IMA -1150-SI			
	(6 x 4 x 10H) Ultra High Torque	IMA -1152-SI			
C9	(6 x 4 x 8)	IMA -1155-SI			
	(6 x 4 x 8) Ultra High Torque	IMA -1157-SI			
V1	(2 x 1.5 x 6) Vertical	IMA -1010-SI			
W1	(2 x 1.5 x 8) Vertical	IMA -1030-SI			

Item:	6	Qty:	1	Part Name:	Shaft, Pump
Detail:	1. Replaceable, straight SiC shaft. 2. Cantilevered design leaves impeller eye open for optimum NPSHr. 3. Shaft oversized to handle any combinations of radial loads.				



Model	Size/Description	Standard		Option 1	
		Material:	SiC	Material:	SiC + DLC
		Part #	\$/Each	Part #	\$/Each
TB	A-Series - O.D. = 1.00" (Before 9-1-2007)	STP-1000-SI			
	A-Series - O.D. = 1.00" (Current)	STP-1005-SI			
	B/C-Series - O.D. = 1.50" (Before 9-1-2007)	STP-1010-SI			
	B/C-Series - O.D. = 1.50" (Current)	STP-1015-SI			

Item:	7	Qty:	1	Part Name:	Wear Ring, Front Stationary
Detail:	A. Replaceable, Sintered SiC or Carbon Filled PTFE B. Positioned in the casing suction.				



Model	Size/Description	OD	ID	Standard		Option 1		Option 2	
				Material:	SiC	Material::	CFR/PTFE	Material::	SiC + DLC
				Part #	\$/Each	Part #	\$/Each	Part #	\$/Each
A1	(1.5 x 1 x 6)	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
AL	(1.5 x 1 x 6) Low Flow	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
E1	(50mm x 32mm)	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
EL	(50mm x 32mm)	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
A3	(3 x 1.5 x 6)	3.765	3.015	WRS-1050-SI		WRS-1054-SI			
E3	(65mm x 40mm)	3.765	3.015	WRS-1050-SI		WRS-1054-SI			
A4	(3 x 2 x 6)	3.765	3.015	WRS-1050-SI		WRS-1054-SI			
B1	(1.5 x 1 x 8)	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
BL	(1.5 x 1 x 8) Low Flow	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
F1	(50mm x 32mm)	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
FL	(50mm x 32mm)	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
B3	(3 x 2 x 6)	4.296	3.545	WRS-1020-SI		WRS-1024-SI			
B4	(3 x 1.5 x 8)	4.296	3.545	WRS-1020-SI		WRS-1024-SI			
F4	65mm x 40mm	4.296	3.545	WRS-1020-SI		WRS-1024-SI			
B5	(3 x 2 x 6)	4.296	3.545	WRS-1020-SI		WRS-1024-SI			
B6	(4 x 3 x 6)	5.151	4.201	WRS-1030-SI		WRS-1034-SI			
C1	(3 x 2 x 8)	4.296	3.545	WRS-1020-SI		WRS-1024-SI			

Model	Size/Description	OD	ID	Standard	SiC	Option 1	CFR/PTFE	Option 2	SiC + DLC
				Material:	\$/Each	Material::	\$/Each	Material::	\$/Each
C2	(4 x 3 x 8)	5.151	4.201	WRS-1030-SI		WRS-1034-SI			
G2	(100mm x 65mm)	5.151	4.201	WRS-1030-SI		WRS-1034-SI			
C3	(2 x 1 x 10)	3.765	3.015	WRS-1050-SI		WRS-1054-SI			
CL	(2 x 1 x 10) Low Flow	3.765	3.015	WRS-1050-SI		WRS-1054-SI			
C4	(3 x 1.5 x 10)	3.765	3.015	WRS-1050-SI		WRS-1054-SI			
C5	(3 x 2 x 10)	4.296	3.545	WRS-1020-SI		WRS-1024-SI			
C6	(4 x 3 x 10)	5.151	4.201	WRS-1030-SI		WRS-1034-SI			
C7	(4 x 3 x 10H)	5.989	5.039	WRS-1040-SI		WRS-1044-SI			
C8	(6 x 4 x 10H)	7.422	6.400	WRS-1060-SI		WRS-1064-SI			
C9	(6 x 4 x 8)								
V1	(2 x 1.5 x 6) Vertical	3.396	2.645	WRS-1010-SI		WRS-1014-SI			
W1	(2 x 1.5 x 8) Vertical	3.396	2.645	WRS-1010-SI		WRS-1014-SI			

Item:	8a	Qty:	1	Part Name:	Wear Ring, Front Rotating
Detail:	A. Replaceable, Sintered SiC B. Located on the impeller front shroud.				



Model	Size/Description	OD	ID	Standard	SiC	Option 1	SiC + DLC
				Material:	\$/Each	Material::	\$/Each
A1	(1.5 x 1 x 6)	2.640	2.140	WRR-1010-SI			
AL	(1.5 x 1 x 6) Low Flow	2.640	2.140	WRR-1010-SI			
E1	(50mm x 32mm)	2.640	2.140	WRR-1010-SI			
EL	(50mm x 32mm)	2.640	2.140	WRR-1010-SI			
A3	(3 x 1.5 x 6)	3.010	2.510	WRR-1050-SI			
E3	(65mm x 40mm)	3.010	2.510	WRR-1050-SI			
A4	(3 x 2 x 6)	3.010	2.510	WRR-1050-SI			
B1	(1.5 x 1 x 8)	2.640	2.140	WRR-1010-SI			
BL	(1.5 x 1 x 8) Low Flow	2.640	2.140	WRR-1010-SI			
F1	(50mm x 32mm)	2.640	2.140	WRR-1010-SI			
FL	(50mm x 32mm)	2.640	2.140	WRR-1010-SI			
B3	(3 x 2 x 6)	3.540	3.040	WRR-1020-SI			
B4	(3 x 1.5 x 8)	3.540	3.040	WRR-1020-SI			
F4	65mm x 40mm	3.540	3.040	WRR-1020-SI			
B5	(3 x 2 x 6)	3.540	3.040	WRR-1020-SI			
B6	(4 x 3 x 6)	4.196	3.696	WRR-1030-SI			
C1	(3 x 2 x 8)	4.196	3.696	WRR-1020-SI			
C2	(4 x 3 x 8)	4.196	3.696	WRR-1030-SI			
G2	(100mm x 65mm)	4.196	3.696	WRR-1030-SI			
C3	(2 x 1 x 10)	3.010	2.510	WRR-1050-SI			
CL	(2 x 1 x 10) Low Flow	3.010	2.510	WRR-1050-SI			
C4	(3 x 1.5 x 10)	3.010	2.510	WRR-1050-SI			
C5	(3 x 2 x 10)	3.540	3.040	WRR-1020-SI			

Model	Size/Description	OD	ID	Standard	SiC	Option 1	SiC + DLC
				Material:	\$/Each	Material::	\$/Each
C6	(4 x 3 x 10)	4.196	3.696	WRR-1030-SI			
C7	(4 x 3 x 10H)	5.034	4.440	WRR-1040-SI			
C8	(6 x 4 x 10H)	6.395	5.790	WRR-1060-SI			
C9	(6 x 4 x 8)	5.034	4.440	WRR-1048-SI			
V1	(2 x 1.5 x 6) Vertical	2.640	2.140	WRR-1010-SI			
W1	(2 x 1.5 x 8) Vertical	2.640	2.140	WRR-1010-SI			

Item:	8b	Qty:	1	Part Name:	Wear Ring, Back Rotating
Detail:	A. Replaceable, Sintered SiC B. Located on the impeller back shroud.				



Model	Size/Description	OD	ID	Part #	\$/Each	Standard	Option 1	Option 2	SiC + DLC
						Material:	Material:	CF-PTFE	Material::
A1	(1.5 x 1 x 6)	3.540	3.040	WRR-1020-SI					
AL	(1.5 x 1 x 6) Low Flow	3.540	3.040	WRR-1020-SI					
E1	(50mm x 32mm)	3.540	3.040	WRR-1020-SI					
EL	(50mm x 32mm)	3.540	3.040	WRR-1020-SI					
A3	(3 x 1.5 x 6)	3.540	3.040	WRR-1020-SI					
E3	(65mm x 40mm)	3.540	3.040	WRR-1020-SI					
A4	(3 x 2 x 6)	3.540	3.040	WRR-1020-SI					
B1	(1.5 x 1 x 8)	5.034	4.440	WRR-1040-SI					
BL	(1.5 x 1 x 8) Low Flow	5.034	4.440	WRR-1040-SI					
F1	(50mm x 32mm)	5.034	4.440	WRR-1040-SI					
FL	(50mm x 32mm)	5.034	4.440	WRR-1040-SI					
B3	(3 x 2 x 6)	5.034	4.440	WRR-1040-SI					
B4	(3 x 1.5 x 8)	5.034	4.440	WRR-1040-SI					
F4	65mm x 40mm	5.034	4.440	WRR-1040-SI					
B5	(3 x 2 x 6)	5.034	4.440	WRR-1040-SI					
B6	(4 x 3 x 6)	5.034	4.440	WRR-1040-SI					
C1	(3 x 2 x 8)	5.034	4.440	WRR-1040-SI					
C2	(4 x 3 x 8)	5.034	4.440	WRR-1040-SI					
G2	(100mm x 65mm)	5.034	4.440	WRR-1040-SI					
C3	(2 x 1 x 10)	5.034	4.440	WRR-1040-SI					
CL	(2 x 1 x 10) Low Flow	5.034	4.440	WRR-1040-SI					
C4	(3 x 1.5 x 10)	5.034	4.440	WRR-1040-SI					
C5	(3 x 2 x 10)	5.034	4.440	WRR-1040-SI					
C6	(4 x 3 x 10)	5.034	4.440	WRR-1040-SI					
C7	(4 x 3 x 10H)	7.520	6.920	WRR-1070-SI					
C8	(6 x 4 x 10H)	7.520	6.920	WRR-1070-SI					
C9	(6 x 4 x 8)	5.034	4.440	WRR-1048-SI		WRR-1049-SI			
V1	(2 x 1.5 x 6) Vertical	3.540	3.040	WRR-1020-SI					
W1	(2 x 1.5 x 8) Vertical	5.034	4.440	WRR-1040-SI					

Item:	9a	Qty:	1	Part Name:	Retaining Ring, Front Stationary
Detail:	A. Replaceable, Carbon Filled ETFE or PFA B. Locks the Front Stationary Wear Ring in the Casing. C. Includes proper number of drive keys per pump size.				



Model	Size/Description	Part #	Standard	Option 1	
			Material: CF-ETFE	Material: CF-PFA	
			\$/Each	Part #	\$/Each
A1	(1.5 x 1 x 6)	RGR-1010-AA			
AL	(1.5 x 1 x 6) Low Flow	RGR-1010-AA			
E1	(50mm x 32mm)	RGR-1010-AA			
EL	(50mm x 32mm)	RGR-1010-AA			
A3	(3 x 1.5 x 6)	RGR-1050-AA			
E3	(65mm x 40mm)	RGR-1050-AA			
A4	(3 x 2 x 6)	RGR-1050-AA			
B1	(1.5 x 1 x 8)	RGR-1010-AA			
BL	(1.5 x 1 x 8) Low Flow	RGR-1010-AA			
F1	(50mm x 32mm)	RGR-1010-AA			
FL	(50mm x 32mm)	RGR-1010-AA			
B3	(3 x 2 x 6)	RGR-1020-AA			
B4	(3 x 1.5 x 8)	RGR-1020-AA			
F4	65mm x 40mm	RGR-1020-AA			
B5	(3 x 2 x 6)	RGR-1020-AA			
B6	(4 x 3 x 6)	RGR-1030-AA			
C1	(3 x 2 x 8)	RGR-1020-AA			
C2	(4 x 3 x 8)	RGR-1030-AA			
G2	(100mm x 65mm)	RGR-1030-AA			
C3	(2 x 1 x 10)	RGR-1050-AA			
CL	(2 x 1 x 10) Low Flow	RGR-1050-AA			
C4	(3 x 1.5 x 10)	RGR-1050-AA			
C5	(3 x 2 x 10)	RGR-1020-AA			
C6	(4 x 3 x 10)	RGR-1030-AA			
C7	(4 x 3 x 10H)	RGR-1040-AA			
C8	(6 x 4 x 10H)	RGR-1060-AA			
C9	(6 x 4 x 8)	RGR-1040-AA			
V1	(2 x 1.5 x 6) Vertical	RGR-1010-AA			
W1	(2 x 1.5 x 8) Vertical	RGR-1010-AA			

Item:	9b	Qty:	1	Part Name:	Retaining Ring, Back Stationary
Detail:	A. Replaceable, Carbon Filled ETFE or PFA B. Locks the Back Stationary Wear Ring in the Containment Shell C. Includes proper number of drive keys per pump size.				



Model	Size/Description	Part #	Standard	Option 1	
			Material: CF-ETFE	Material: CF-PFA	
			\$/Each	Part #	\$/Each
A1	(1.5 x 1 x 6)	RGR-1020-AA			
AL	(1.5 x 1 x 6) Low Flow	RGR-1020-AA			
E1	(50mm x 32mm)	RGR-1020-AA			
EL	(50mm x 32mm)	RGR-1020-AA			
A3	(3 x 1.5 x 6)	RGR-1020-AA			
E3	(65mm x 40mm)	RGR-1020-AA			
A4	(3 x 2 x 6)	RGR-1020-AA			
B1	(1.5 x 1 x 8)	RGR-1040-AA			
BL	(1.5 x 1 x 8) Low Flow	RGR-1040-AA			
F1	(50mm x 32mm)	RGR-1040-AA			
FL	(50mm x 32mm)	RGR-1040-AA			
B3	(3 x 2 x 6)	RGR-1040-AA			
B4	(3 x 1.5 x 8)	RGR-1040-AA			
F4	65mm x 40mm	RGR-1040-AA			
B5	(3 x 2 x 6)	RGR-1040-AA			
B6	(4 x 3 x 6)	RGR-1040-AA			
C1	(3 x 2 x 8)	RGR-1040-AA			
C2	(4 x 3 x 8)	RGR-1040-AA			
G2	(100mm x 65mm)	RGR-1040-AA			
C3	(2 x 1 x 10)	RGR-1040-AA			
CL	(2 x 1 x 10) Low Flow	RGR-1040-AA			
C4	(3 x 1.5 x 10)	RGR-1040-AA			
C5	(3 x 2 x 10)	RGR-1040-AA			
C6	(4 x 3 x 10)	RGR-1040-AA			
C7	(4 x 3 x 10H)	RGR-1060-AA			
C8	(6 x 4 x 10H)	RGR-1060-AA			
C9	(6 x 4 x 8)	RGR-1040-AA			
V1	(2 x 1.5 x 6) Vertical	RGR-1020-AA			
W1	(2 x 1.5 x 8) Vertical	RGR-1020-AA			

Item:	9c	Qty:	==	Part Name:	Retaining Pin, Impeller
Detail:	A. Replaceable, Carbon Filled ETFE or PFA B. Locks the Back Stationary Wear Ring in the Containment Shell				



Model	Size/Description	Standard		Option 1	
		Part #	\$/Each	Part #	\$/Each
TB	A/B/C	RGR-1200-SI			

Item:	9d	Qty:	==	Part Name:	Key, Locking
Detail:	A. Replaceable, Carbon Filled ETFE or PFA B. Locking keys for Stationary Wear Rings in the casing suction				



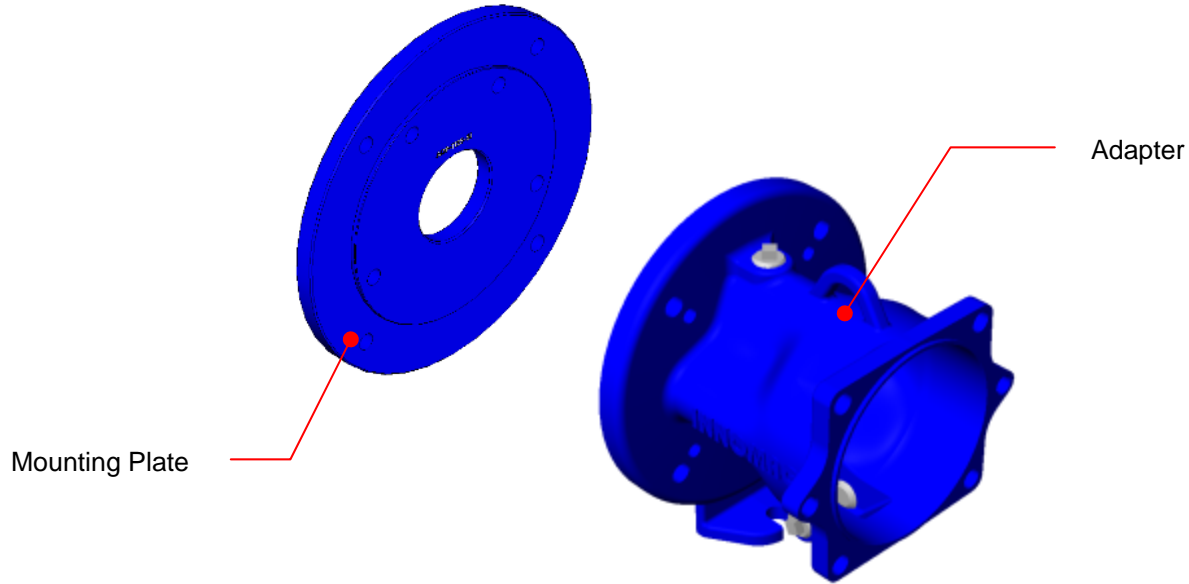
Model	Size/Description	Standard		Option 1	
		Part #	\$/Each	Part #	\$/Each
TB	A/B/C (0.313" Wide)	RGR-1205-SI			
	C-H (0.438" Wide)	RGR-1206-SI			

Item:	14	Qty:	==	Part Name:	Valve, Thrust Control
Detail:	A. Replaceable, Sintered SiC B. Located in front of the Radial Bearings on the Impeller				



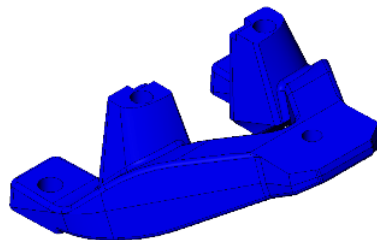
Model	Size/Description	Standard		Option 1	
		Part #	\$/Each	Part #	\$/Each
TB	A	VTC-1000-SI			
	B/C	VTC-1010-SI			

Item:	19	Qty:	1	Part Name:	Adapter
Detail:	A. One-piece ductile iron casting. B. Mounts to a wide range of standard NEMA & IEC C-face motors. C. Includes (3) ½" NPT access ports for optional monitoring. D. Includes hardware for mounting Plate to the Adapter.				



Model	Size/Description	Material:	
		Standard	Ductile Iron
		Part #	\$/Each
TB	TB-mag-A, NEMA, 143 – 254/6 Frame	ADP-1000-SI	
	TB-mag-A, IEC, 80 - 132 Frame	ADP-1005-SI	
	TB-mag-B/C, NEMA, 143 - 286 Frame	ADP-1010-SI	
	TB-mag-B/C, IEC, 90 - 132 Frame	ADP-1015-SI	
	B/C, Mounting Plate, NEMA, 326 - 405 Frame	ADP-1100-SI	
	B/C, Mounting Plate, IEC, 160 - 180 Frame	ADP-1125-SI	
	B/C, Mounting Plate, IEC, 200 Frame	ADP-1135-SI	
	B/C, Mounting Plate, IEC, 225 Frame	ADP-1145-SI	

Item:	20	Qty:	1	Part Name:	Foot, Adapter
Detail:	A. One-piece ductile iron casting. B. Mounts to a B/C Series Adapter for 8.25" centerline models, Group 2 foot print. C. Included Hardware for securing to pump adapter.				



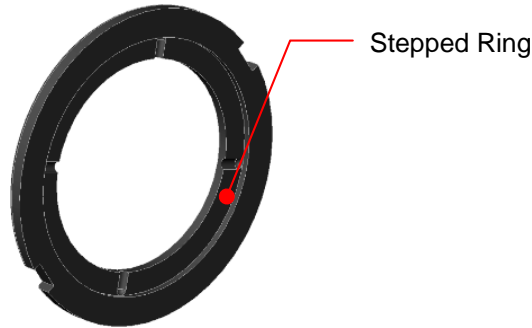
Model	Size/Description	Material:	
		Standard	Ductile Iron
		Part #	\$/Each
TB	TB-mag-B/C	FTA-1000-SI	

Item:	27	Qty:	1	Part Name:	Wear Ring, Back Stationary
Detail:	A. Replaceable, Sintered SiC B. Positioned in the Containment Shell.				

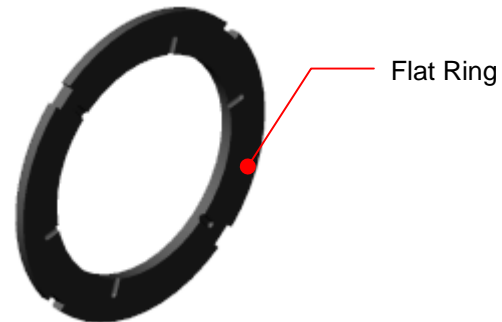


Model	Size/Description	OD	ID	Part #	Standard	Option 1	
					Material:	Material::	SiC
					\$/Each	Part #	\$/Each
A1	(1.5 x 1 x 6)	4.296	3.545	WRS-1020-SI			
AL	(1.5 x 1 x 6) Low Flow	4.296	3.545	WRS-1020-SI			
E1	(50mm x 32mm)	4.296	3.545	WRS-1020-SI			
EL	(50mm x 32mm)	4.296	3.545	WRS-1020-SI			
A3	(3 x 1.5 x 6)	4.296	3.545	WRS-1020-SI			
E3	(65mm x 40mm)	4.296	3.545	WRS-1020-SI			
A4	(3 x 2 x 6)	4.296	3.545	WRS-1020-SI			
B1	(1.5 x 1 x 8)	5.989	5.039	WRS-1040-SI			
BL	(1.5 x 1 x 8) Low Flow	5.989	5.039	WRS-1040-SI			
F1	(50mm x 32mm)	5.989	5.039	WRS-1040-SI			
FL	(50mm x 32mm)	5.989	5.039	WRS-1040-SI			
B3	(3 x 2 x 6)	5.989	5.039	WRS-1040-SI			
B4	(3 x 1.5 x 8)	5.989	5.039	WRS-1040-SI			
F4	65mm x 40mm	5.989	5.039	WRS-1040-SI			
B5	(3 x 2 x 6)	5.989	5.039	WRS-1040-SI			
B6	(4 x 3 x 6)	5.989	5.039	WRS-1040-SI			
C1	(3 x 2 x 8)	5.989	5.039	WRS-1040-SI			
C2	(4 x 3 x 8)	5.989	5.039	WRS-1040-SI			
G2	(100mm x 65mm)	5.989	5.039	WRS-1040-SI			
C3	(2 x 1 x 10)	5.989	5.039	WRS-1040-SI			
CL	(2 x 1 x 10) Low Flow	5.989	5.039	WRS-1040-SI			
C4	(3 x 1.5 x 10)	5.989	5.039	WRS-1040-SI			
C5	(3 x 2 x 10)	5.989	5.039	WRS-1040-SI			
C6	(4 x 3 x 10)	5.989	5.039	WRS-1040-SI			
C7	(4 x 3 x 10H)	8.574	7.525	WRS-1070-SI			
C8	(6 x 4 x 10H)	8.574	7.525	WRS-1070-SI			
C9	(6 x 4 x 8)	5.989	5.039	WRS-1040-SI			
V1	(2 x 1.5 x 6) Vertical	4.296	3.545	WRS-1020-SI			
W1	(2 x 1.5 x 8) Vertical	4.296	3.545	WRS-1020-SI			

Item:	72	Qty:	1	Part Name:	Collar, Thrust
Detail:	A. Replaceable, Carbon Filled PTFE or Sintered SiC B. Positioned in the Casing Suction.				



STYLE A
Stepped Ring, from 1998-2006



STYLE B
Flat Ring, starting 3/1/06

Model	Size/Description	Style A		Style B		Option 1		Option 2	
		Part #	\$/Each	Part #	\$/Each	Part #	\$/Each	Part #	\$/Each
A1	(1.5 x 1 x 6)	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
AL	(1.5 x 1 x 6) L. F.	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
E1	(50mm x 32mm)	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
EL	(50mm x 32mm)	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
A3	(3 x 1.5 x 6)	CRT-1050-SI		CRT-1051-SI		CRT-1052-SI			
E3	(65mm x 40mm)	CRT-1050-SI		CRT-1051-SI		CRT-1052-SI			
A4	(3 x 2 x 6)	CRT-1050-SI		CRT-1051-SI		CRT-1052-SI			
B1	(1.5 x 1 x 8)	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
BL	(1.5 x 1 x 8) L. F.	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
F1	(50mm x 32mm)	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
FL	(50mm x 32mm)	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
B3	(3 x 2 x 6)	CRT-1020-SI		CRT-1021-SI		CRT-1022-SI			
B4	(3 x 1.5 x 8)	CRT-1020-SI		CRT-1021-SI		CRT-1022-SI			
F4	65mm x 40mm	CRT-1020-SI		CRT-1021-SI		CRT-1022-SI			
B5	(3 x 2 x 6)	CRT-1020-SI		CRT-1021-SI		CRT-1022-SI			
B6	(4 x 3 x 6)	Style B Only		CRT-1031-SI		CRT-1032-SI			
C1	(3 x 2 x 8)	CRT-1020-SI		CRT-1021-SI		CRT-1022-SI			
C2	(4 x 3 x 8)	CRT-1030-SI		CRT-1031-SI		CRT-1032-SI			
G2	(100mm x 65mm)	CRT-1030-SI		CRT-1031-SI		CRT-1032-SI			
C3	(2 x 1 x 10)	Style B Only.		CRT-1051-SI		CRT-1052-SI			
CL	(2 x 1 x 10) L. F.			CRT-1051-SI		CRT-1052-SI			
C4	(3 x 1.5 x 10)			CRT-1051-SI		CRT-1052-SI			
C5	(3 x 2 x 10)	CRT-1020-SI		CRT-1021-SI		CRT-1022-SI			
C6	(4 x 3 x 10)	Style B Only.		CRT-1031-SI		CRT-1032-SI			
C7	(4 x 3 x 10H)			CRT-1040-SI		CRT-1042-SI			
C8	(6 x 4 x 10H)			CRT-1060-SI		CRT-1062-SI			
C9	(6 x 4 x 8)					CRT-1048-SI			
V1	(2 x 1.5 x 6) Vertical	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			
W1	(2 x 1.5 x 8) Vertical	CRT-1010-SI		CRT-1011-SI		CRT-1012-SI			

Note:

Verify the pump serial and casing revision number with Innomag to make sure the correct thrust collar is used.

Item:	73	Qty:	1	Part Name:	Gasket, O-Ring
Detail:	<p>A. Replaceable, FEP/FKM o-ring standard. Provides universal chemical resistance.</p> <p>B. Square cross section: 0.210 x 0.210, more sealing surface than traditional O-rings.</p> <p>C. Optional Materials are FKM (Fluorocarbon) or EPDM. Others available upon request.</p> <p>D. Positioned between the Casing and Containment Shell.</p>				



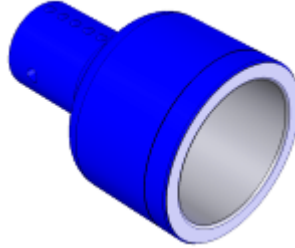
Model	Size/Description	Standard		Option 1		Option 2	
		Part #	\$/Each	Part #	\$/Each	Part #	\$/Each
TB	A	GTO-1003-SI		GTO-1004-SI		GTO-1005-SI	
	B/C 8"	GTO-1013-SI		GTO-1014-SI		GTO-1015-SI	
	C 10"	GTO-1023-SI		GTO-1024-SI		GTO-1025-SI	

Item:	231	Qty:	1	Part Name:	Shell, Containment
Detail:	<p>A. One-piece molding of carbon fiber-reinforced Fluoropolymer ETFE or PFA.</p> <p>B. Outer pressure housing molded from Aramid/Vinyl ester composite.</p> <p>C. Aramid provides optimum combination of pressure and shock resistance.</p> <p>D. Reinforced shaft socket to handle any combination of radial loads.</p> <p>E. Zero eddy current losses for no heat operation and maximum possible efficiency.</p> <p>F. Front face houses stationary SiC wear ring.</p> <p>G. Internal ribs limit swirl to promote fast ejection of fine particles from containment shell.</p>				



Model	Size/Description	Standard		Optional 1	
		Part #	\$/Each	Part #	\$/Each
TB	A	SLC-1000-SI			
	B/C 8"	SLC-1010-SI			
	C 10"	SLC-1020-SI			
	C 10" H	SLC-1030-SI			

Item:	232	Qty:	1	Part Name:	Magnet Assembly, Outer
Detail:	A. Ductile iron shell with high strength neodymium iron boron magnets. B. One drive size per motor frame. Minimum possible inventory. C. Keyless hub for fast assembly. D. Jackscrew holes provided for easy removal from motor shaft.				



Standard
Material: D.I./NdFeB Magnets

Model	Size/Description	Part #	\$/Each
TB-A	NEMA 56C	MAO-1000-SI	
	NEMA 143/5TC	MAO-1010-SI	
	NEMA 182/4TC	MAO-1020-SI	
	NEMA 213/5TC	MAO-1030-SI	
	NEMA 213/5TC, High Torque	MAO-1031-SI	
	NEMA 254/6TC, High Torque	MAO-1032-SI	
	IEC 80	MAO-1005-SI	
	IEC 90	MAO-1015-SI	
	IEC 100/112	MAO-1025-SI	
	IEC 132	MAO-1035-SI	
	IEC 132, High Torque	MAO-1036-SI	
TB-B/C	NEMA 143/5TC	MAO-1040-SI	
	NEMA 182/4TC	MAO-1050-SI	
	NEMA 213/5TC	MAO-1060-SI	
	NEMA 254/6TC	MAO-1070-SI	
	NEMA 254/6TC (1750 rpm, 4 Pole)	MAO-1080-SI	
	NEMA 284/6TSC	MAO-1080-SI	
	NEMA 324/6TSC	MAO-1090-SI	
	NEMA 364/5TSC, High Torque	MAO-1100-SI	
	NEMA 284/6TC	MAO-1110-SI	
	NEMA 284/6TC, High Torque	MAO-1111-SI	
	NEMA 324TC, High Torque	MAO-1120-SI	
	NEMA 326TC/405 TSC, Ultra High Torque	MAO-1122-SI	
	Long Couple Drive - Single	MAO-2100-SI	
	Long Couple Drive - Double	MAO-2110-SI	
	Long Couple Drive - High Torque	MAO-2120-SI	
	Long Couple Drive - Ultra High Torque	MAO-2121-SI	
	IEC 90S/L	MAO-1055-SI	
	IEC 100L/112	MAO-1065-SI	
	IEC 132S/M	MAO-1075-SI	
	IEC 132S/M, 7.5 kW @ 1450 rpm	MAO-1076-SI	
	IEC 160M, 12.5 kW @ 2900 rpm	MAO-1085-SI	
	IEC 160M/L	MAO-1095-SI	
	IEC 180M/L	MAO-1105-SI	
	IEC 200L	MAO-1115-SI	
	IEC 180M/L, High Torque	MAO-1106-SI	
	IEC 200L, High Torque	MAO-1116-SI	
	IEC 225M, High Torque	MAO-1125-SI	
IEC 225M, Ultra High Torque	MAO-1126-SI		

Item:	<u>235</u>	Qty:	<u>2</u>	Part Name:	<u>Bushing, Bearing</u>
Detail:	A. Tandem bearing system made of pure sintered silicon carbide (SiC) B. Separately mounted for optimum alignment with shaft.				



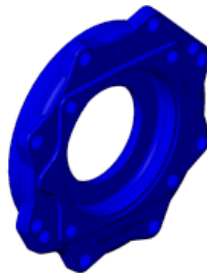
		Standard		Option 1	
		Material: SiC		Material: SiC+ DLC	
Model	Size/Description	Part #	\$/Each	Part #	\$/Each
TB	A – 1.000" I.D.	BGB-1005-SI			
	B/C – 1.500" I.D.	BGB-1015-SI			

Item:	<u>236</u>	Qty:	<u>1</u>	Part Name:	<u>Bushing, Spacer</u>
Detail:	A. Bearing spacer made of pure PTFE.				



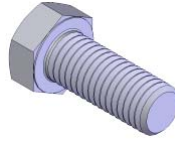
		Standard	
		Material: PTFE	
Model	Size/Description	Part #	\$/Each
TB	A	BGB-1050-SI	
	B/C	BGB-1060-SI	

Item:	<u>239</u>	Qty:	<u>1</u>	Part Name:	<u>Ring, Containment</u>
Detail:	A. One-piece ductile iron casting. B. Aligns and supports the containment shell. C. Jackscrew holes provided for easy disassembly				



		Standard	
		Material: Ductile Iron	
Model	Size/Description	Part #	\$/Each
TB	A - ANSI	RGC-1000-SI	
	A - ISO/JIS	RGC-1005-SI	
	B/C - ANSI 8"	RGC-1010-SI	
	B/C - ISO/JIS 8"	RGC-1015-SI	
	Secondary Sealed Unit – 8"	RGC-2110-SI	
	B/C - ANSI 10"	RCG-1020-SI	
	B/C - ISO/JIS 10"	RGC-1025-SI	
	Secondary Sealed Unit – 10"	RGC-2120-SI	

Item:	<u>300</u>	Qty:	<u>14</u>	Part Name:	<u>Hex Cap Screw</u>
Detail:	A. Solid 304SS fully threaded				



Standard
Material: **304 SS**

Model	Size/Description	Part #	\$/Each
TB-A	1/2"-13 x 1.25"	HDW-1021-SI	
	M12-1.75x30mm	HDW-1035-SI	
TB-B/C	5/8"-11 x 1.50"	HDW-1042-SI	
	M16-2.0x40mm	HDW-1049-SI	

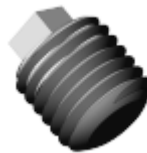
Item:	<u>301</u>	Qty:	<u>14</u>	Part Name:	<u>Lock Washer</u>
Detail:	A. Solid 304SS lock washer				



Standard
Material: **304 SS**

Model	Size/Description	Part #	\$/Each
TB-A	1/2"	HDW-1140-SI	
		HDW-1145-SI	
TB-B/C	5/8"	HDW-1160-SI	
		HDW-1165-SI	

Item:	<u>302</u>	Qty:	<u>1</u>	Part Name:	<u>Plug</u>
Detail:	A. TB-mag Adapter Plugs				



Standard

Model	Size/Description	Part #	\$/Each
TB	A/B/C - 1/2" NPT, Top of Adapter, 18-8 SS	HDW-1230-SI	
	A/B/C - 1/2" NPT, Bottom of Adapter, Red, PP.	HDW-1500-SI	

Item:	<u>370</u>	Qty:	<u>1</u>	Part Name:	<u>Drain Flange</u>
Detail:	A. Solid 304SS flange				



Standard
Material: 304 SS

Model	Size/Description	Part #	\$/Each
TB	A/B/C - Flange	SUB-1350-SI	

Item:	<u>371</u>	Qty:	<u>1</u>	Part Name:	<u>PTFE Drain Gasket</u>
Detail:	A. Universal corrosion PTFE				



Standard
Material: PTFE

Model	Size/Description	Part #	\$/Each
TB	A/B/C – Drain Gasket	GTO-1040-SI	

Item:	<u>372</u>	Qty:	<u>1</u>	Part Name:	<u>Neoprene Drain Gasket</u>
Detail:	A. Gasket provides a constant, even loading on the PTFE gasket				

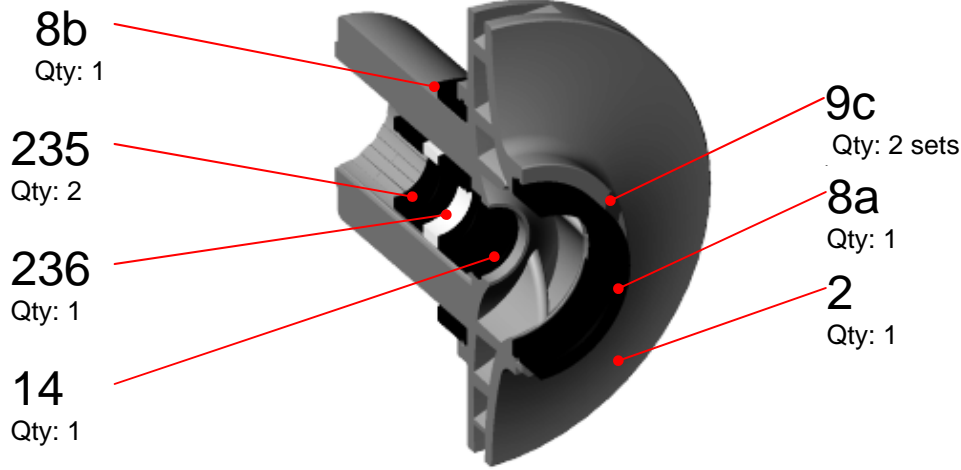


Standard
Material: Neoprene

Model	Size/Description	Part #	\$/Each
TB	A/B/C – Drain Gasket Backing	GTO-1050-SI	

Completed Sub Assemblies (Price includes installation/labor of Listed parts)

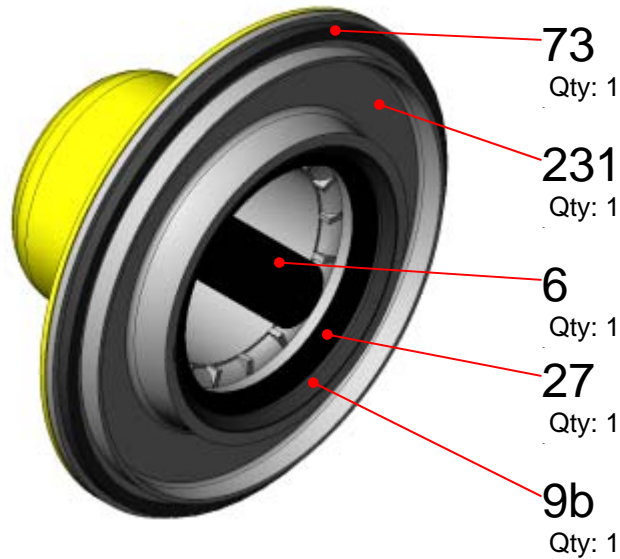
Item:	2	Qty:	1	Part Name:	Impeller Magnet, Complete
Detail:	A. Molded one-piece enclosed impeller made of carbon fiber-reinforced ETFE or PFA. B. Magnet assembly hermetically sealed by Patented "Tru-Seal" Design.				



Model	Size/Description	Standard Impeller:		Option 1 Impeller:	
		Part #	\$/Each	Part #	\$/Each
A1	(1.5 x 1 x 6)	IMA -1010-AA			
AL	(1.5 x 1 x 6) Low Flow	IMA -1010-AA			
E1	(50mm x 32mm)	IMA -1010-AA			
EL	(50mm x 32mm)	IMA -1010-AA			
A3	(3 x 1.5 x 6)	IMA -1070-AA			
E3	(65mm x 40mm)	IMA -1070-AA			
A4	(3 x 2 x 6)	IMA -1070-AA			
B1	(1.5 x 1 x 8)	IMA -1030-AA			
BL	(1.5 x 1 x 8) Low Flow	IMA -1030-AA			
F1	(50mm x 32mm)	IMA -1030-AA			
FL	(50mm x 32mm)	IMA -1030-AA			
B3	(3 x 2 x 6)	IMA -1020-AA			
B4	(3 x 1.5 x 8)	IMA -1040-AA			
F4	65mm x 40mm	IMA -1040-AA			
B5	(3 x 2 x 6)	IMA -1020-AA			
B6	(4 x 3 x 6)	IMA -1065-AA			
C1	(3 x 2 x 8)	IMA -1050-AA			
C2	(4 x 3 x 8)	IMA -1060-AA			
G2	(100mm x 65mm)	IMA -1060-AA			
C3	(2 x 1 x 10)	IMA -1100-AA			
CL	(2 x 1 x 10) Low Flow	IMA -1100-AA			
C4	(3 x 1.5 x 10)	IMA -1100-AA			
C5	(3 x 2 x 10)	IMA -1120-AA			
C6	(4 x 3 x 10)	IMA -1130-AA			
	(4 x 3 x 10) Ultra High Torque	IMA -1132-AA			
C7	(4 x 3 x 10H)	IMA -1140-AA			
	(4 x 3 x 10H) Ultra High Torque	IMA -1142-AA			
C8	(6 x 4 x 10H)	IMA -1150-AA			
	(6 x 4 x 10H) Ultra High Torque	IMA -1152-AA			
C9	(6 x 4 x 8)	IMA -1155-AA			
	(6 x 4 x 8) Ultra High Torque	IMA -1157-AA			
V1	(2 x 1.5 x 6) Vertical	IMA -1010-AA			
W1	(2 x 1.5 x 8) Vertical	IMA -1030-AA			

Completed Sub Assemblies (Price includes installation/labor of Listed parts)

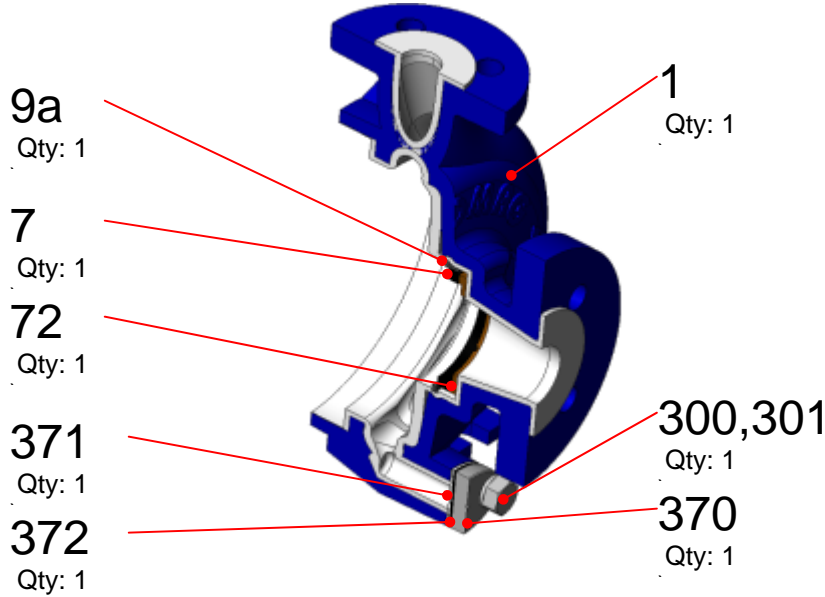
Item:	231	Qty:	1	Part Name:	Containment Shell. Complete
Detail:	<p>A. One-piece molding of carbon fiber-reinforced Fluoropolymer ETFE or PFA. B. Outer pressure housing molded from Aramid/Vinyl ester composite. C. Aramid provides optimum combination of pressure and shock resistance. D. Reinforced shaft socket to handle any combination of radial loads. E. Zero eddy current losses for no heat operation and maximum possible efficiency. F. Front face houses stationary SiC wear ring. G. Internal ribs limit swirl to promote fast ejection of fine particles from containment shell.</p>				



Model	Size/Description	Standard		Optional 1	
		Part #	\$/Each	Part #	\$/Each
TB	A	SLC-1000-AA			
	B/C 8"	SLC-1010-AA			
	C 10"	SLC-1020-AA			
	C 10" H	SLC-1030-AA			

Completed Sub Assemblies (Price includes installation/labor of Listed parts)

Item:	1	Qty:	1	Part Name:	Casing, Lined
Detail:	A. One piece cast ductile iron. B. Bonded ETFE or PFA lining, minimum of 1/8" (3mm) thickness. C. Self venting, top centerline discharge design. D. Two bolt flanged 1/2" drain with pure PTFE gasket and 316SS blind flange, standard.				



Model	Size/Description	Part #	\$/Each	Standard Material	Optional Material 1
				D.I./ETFE Lined Casing	D.I./PFA Lined Casing
A1	1.5 x 1 - ANSI class 150	CSG-1010-AA			
	1.5 x 1 - ANSI class 300	CSG-1011-AA			
	50 x 32mm - ISO PN 16	CSG-1012-AA			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1013-AA			
AL	1.5 x 1 - ANSI class 150	CSG-1010-LB			
	1.5 x 1 - ANSI class 300	CSG-1011-LB			
	50 x 32mm - ISO PN 16	CSG-1012-LB			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1013-LB			
E1	50 x 32mm - ISO PN 16	CSG-1015-AA			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1017-AA			
	2.0 x 1.5 - ANSI class 150	CSG-1018-AA			
EL	50 x 32mm - ISO PN 16	CSG-1015-LB			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1017-LB			
	2.0 x 1.5 - ANSI class 150	CSG-1018-LB			
A3	3 x 1.5 - ANSI class 150	CSG-1070-AA			
	3 x 1.5 - ANSI class 300	CSG-1071-AA			
	65 x 40mm - ISO PN 16	CSG-1072-AA			
	65 x 50mm - ISO PN 16	CSG-1073-AA			
	65 x 50mm - JIS 10 kg/cm ²	CSG-1074-AA			
E3	65 x 50mm - ISO PN 16	CSG-107A-AA			
	65 x 40mm - ISO PN 16	CSG-107B-AA			
	65 x 50mm - JIS 10 kg/cm ²	CSG-107C-AA			
	3 x 2 - ANSI class 150	CSG-107D-AA			

Model	Size/Description	Standard Material D.I./ETFE Lined Casing		Optional Material 1 D.I./PFA Lined Casing	
		Part #	\$/Each	Part #	\$/Each
A4	3 x 2 - ANSI class 150	CSG-1075-AA			
	3 x 2 - ANSI class 300	CSG-1076-AA			
	80 x 50mm - ISO PN 16	CSG-1077-AA			
	80 x 65mm - ISO PN 16	CSG-1078-AA			
	80 x 65mm - JIS 10 kg/cm ²	CSG-1079-AA			
B1	1.5 x 1 - ANSI class 150	CSG-1030-AA			
	1.5 x 1 - ANSI class 300	CSG-1031-AA			
	50 x 32mm - ISO PN 16	CSG-1032-AA			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1033-AA			
BL	1.5 x 1 - ANSI class 150	CSG-1030-LB			
	1.5 x 1 - ANSI class 300	CSG-1031-LB			
	50 x 32mm - ISO PN 16	CSG-1032-LB			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1033-LB			
F1	50 x 32mm - ISO PN 16	CSG-1035-AA			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1037-AA			
	2.0 x 1.5 - ANSI class 150	CSG-1038-AA			
FL	50 x 32mm - ISO PN 16	CSG-1035-LB			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1037-LB			
	2.0 x 1.5 - ANSI class 150	CSG-1038-LB			
B3	3 x 2 - ANSI class 150	CSG-1020-AA			
	3 x 2 - ANSI class 300	CSG-1021-AA			
	80 x 50mm - ISO PN 16	CSG-1022-AA			
	80 x 65mm - JIS 10 kg/cm ²	CSG-1023-AA			
B4	3 x 1.5 - ANSI class 150	CSG-1080-AA			
	3 x 1.5 - ANSI class 300	CSG-1081-AA			
	65 x 40mm - ISO PN 16	CSG-1082-AA			
	65 x 50mm - ISO PN 16	CSG-1083-AA			
F4	65 x 50mm - JIS 10 kg/cm ²	CSG-1084-AA			
	65 x 40mm - ISO PN 16	CSG-1085-AA			
	65 x 50mm - JIS 10 kg/cm ²	CSG-1087-AA			
B5	3 x 1.5 - ANSI class 150	CSG-1088-AA			
	3x2 (A10) - ANSI class 150	CSG-1090-AA			
	3x2 (A10) - ANSI class 300	CSG-1091-AA			
	80 x 50mm - ISO PN 16	CSG-1092-AA			
	80 x 65mm - ISO PN 16	CSG-1093-AA			
B6	80 x 65mm - JIS 10 kg/cm ²	CSG-1094-AA			
	4x3 - ANSI class 150	CSG-1160-AA			
	4x3 - ANSI class 300	CSG-1161-AA			
	100 x 65mm - ISO PN 16	CSG-1162-AA			
	100 x 80mm - ISO PN 16	CSG-1163-AA			
C1	100 x 80mm - JIS 10 kg/cm ²	CSG-1164-AA			
	3 x 2 - ANSI class 150	CSG-1050-AA			
	3 x 2 - ANSI class 300	CSG-1051-AA			
	80 x 50mm - ISO PN 16	CSG-1052-AA			
C2	80 x 65mm - JIS 10 kg/cm ²	CSG-1053-AA			
	4 x 3 - ANSI class 150	CSG-1060-AA			
	4 x 3 - ANSI class 300	CSG-1061-AA			
	100 x 65mm - ISO PN 16	CSG-1062-AA			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1063-AA			
	100 x 80mm - ISO PN 16	CSG-1064-AA			

Model	Size/Description	Standard Material D.I./ETFE Lined Casing		Optional Material 1 D.I./PFA Lined Casing	
		Part #	\$/Each	Part #	\$/Each
G2	100 x 65mm - ISO PN 16	CSG-1065-AA			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1067-AA			
	4 x 3 - ANSI class 150	CSG-1068-AA			
C3	2x1 - ANSI class 150	CSG-1100-AA			
	2x1 - ANSI class 300	CSG-1101-AA			
	50 x 32mm - ISO PN 16	CSG-1102-AA			
CL	2x1 - ANSI class 150	CSG-1100-LB			
	2x1 - ANSI class 300	CSG-1101-LB			
	50 x 32mm - ISO PN 16	CSG-1102-LB			
C4	3x1.5 - ANSI class 150	CSG-1110-AA			
	3x1.5 - ANSI class 300	CSG-1111-AA			
	65 x 40mm - ISO PN 16	CSG-1112-AA			
	65 x 50mm - ISO PN 16	CSG-1113-AA			
	65 x 50mm - JIS 10 kg/cm ²	CSG-1114-AA			
C5	3x2 - ANSI class 150	CSG-1120-AA			
	3x2 - ANSI class 300	CSG-1121-AA			
	80 x 50mm - ISO PN 16	CSG-1122-AA			
	80 x 65mm - ISO PN 16	CSG-1123-AA			
C6	80 x 65mm - JIS 10 kg/cm ²	CSG-1124-AA			
	4x3 - ANSI class 150	CSG-1130-AA			
	4x3 - ANSI class 300	CSG-1131-AA			
	100 x 65mm - ISO PN 16	CSG-1132-AA			
C7	100 x 80mm - ISO PN 16	CSG-1133-AA			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1134-AA			
	4x3 - ANSI class 150	CSG-1140-AA			
	4x3 - ANSI class 300	CSG-1141-AA			
	100 x 65mm - ISO PN 16	CSG-1142-AA			
C8	100 x 80mm - ISO PN 16	CSG-1143-AA			
	100 x 80mm - JIS 10 kg/cm ²	CSG-1144-AA			
	6x4 - ANSI class 150	CSG-1150-AA			
	6x4 - ANSI class 300	CSG-1151-AA			
	150 x 100mm - ISO PN 16	CSG-1152-AA			
C9	150 x 125mm - ISO PN 16	CSG-1153-AA			
	150 x 125mm - JIS 10 kg/cm ²	CSG-1154-AA			
	6x4 - ANSI class 150	CSG-1155-AA			
	6x4 - ANSI class 300	CSG-1156-AA			
V1	150 x 125mm - ISO PN 16	CSG-1157-AA			
	150 x 125mm - JIS 10 kg/cm ²	CSG-1158-AA			
	2 x 1.5 x 6 - ANSI class 150	CSG-1210-AA			
	2 x 1.5 x 6 - ANSI class 300	CSG-1211-AA			
W1	50 x 32mm - ISO PN 16	CSG-1212-AA			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1213-AA			
	2 x 1.5 x 8 - ANSI class 150	CSG-1230-AA			
W1	2 x 1.5 x 8 - ANSI class 300	CSG-1231-AA			
	50 x 32mm - ISO PN 16	CSG-1232-AA			
	50 x 40mm - JIS 10 kg/cm ²	CSG-1233-AA			

Recommended Spare Parts

This recommended spare parts list is intended to assist our customers in maintaining an adequate spare parts inventory based on the severity of the service. To prevent system downtime, we recommend that you have these spares on site.

1. Normal, non-abrasive service

(For preventative maintenance pump inspections)

Gasket, O-Ring

Model	Size/Description	Standard	Option 1	Option 2			
		Material: FEP/FKM	Material: FKM	Material: EPDM			
Part #	\$/Each	Part #	\$/Each	Part #	\$/Each		
TB	A	GTO-1003-SI		GTO-1004-SI		GTO-1005-SI	
	B/C 8"	GTO-1013-SI		GTO-1014-SI		GTO-1015-SI	
	C 10"	GTO-1023-SI		GTO-1024-SI		GTO-1025-SI	

2. Abrasive, low viscosity or low NPSHa service

(Replace wear parts)

Bushing, Bearing

Model	Size/Description	Standard	Option 1
		Material: SiC	Material: SiC+ DLC
Part #	\$/Each	Part #	\$/Each
TB	A – 1.000" I.D. (2-Required)	BGB-1005-SI	
	B/C – 1.500" I.D. (2-Required)	BGB-1015-SI	
	A – Bearing Spacer (1-Required)	BGB-1050-SI	
	B/C – Bearing Spacer (1-Required)	BGB-1060-SI	

Gasket, O-Ring

Model	Size/Description	Standard	Option 1	Option 2			
		Material: FEP/FKM	Material: FKM	Material: EPDM			
Part #	\$/Each	Part #	\$/Each	Part #	\$/Each		
TB	A	GTO-1003-SI		GTO-1004-SI		GTO-1005-SI	
	B/C 8"	GTO-1013-SI		GTO-1014-SI		GTO-1015-SI	
	C 10"	GTO-1023-SI		GTO-1024-SI		GTO-1025-SI	

Shaft, Pump

Model	Size/Description	Standard	Option 1
		Material: SiC	Material: SiC + DLC
Part #	\$/Each	Part #	\$/Each
TB	A-Series - O.D. = 1.00" (Before 9-1-2007)	STP-1000-SI	
	A-Series - O.D. = 1.00" (Current)	STP-1005-SI	
	B/C-Series - O.D. = 1.50" (Before 9-1-2007)	STP-1010-SI	
	B/C-Series - O.D. = 1.50" (Current)	STP-1015-SI	

3. Critical services

(When fast repairs from major upsets are required the following pre-assembled cartridges are recommended)

Impeller Magnet, Complete

(Includes 1-Impeller, 2-Bushing Bearings, 2-Wear Rings, 1-Control Valve, 1-Set of Retaining Pins, Labor)

Model	Size/Description	Standard		Option 1	
		Impeller:	CF/ETFE	Impeller:	CF/PFA
		Part #	\$/Each	Part #	\$/Each
A1	(1.5 x 1 x 6)	IMA -1010-AA			
AL	(1.5 x 1 x 6) Low Flow	IMA -1010-AA			
E1	(50mm x 32mm)	IMA -1010-AA			
EL	(50mm x 32mm)	IMA -1010-AA			
A3	(3 x 1.5 x 6)	IMA -1070-AA			
E3	(65mm x 40mm)	IMA -1070-AA			
A4	(3 x 2 x 6)	IMA -1070-AA			
B1	(1.5 x 1 x 8)	IMA -1030-AA			
BL	(1.5 x 1 x 8) Low Flow	IMA -1030-AA			
F1	(50mm x 32mm)	IMA -1030-AA			
FL	(50mm x 32mm)	IMA -1030-AA			
B3	(3 x 2 x 6)	IMA -1020-AA			
B4	(3 x 1.5 x 8)	IMA -1040-AA			
F4	65mm x 40mm	IMA -1040-AA			
B5	(3 x 2 x 6)	IMA -1020-AA			
B6	(4 x 3 x 6)	IMA -1065-AA			
C1	(3 x 2 x 8)	IMA -1050-AA			
C2	(4 x 3 x 8)	IMA -1060-AA			
G2	(100mm x 65mm)	IMA -1060-AA			
C3	(2 x 1 x 10)	IMA -1100-AA			
CL	(2 x 1 x 10) Low Flow	IMA -1100-AA			
C4	(3 x 1.5 x 10)	IMA -1100-AA			
C5	(3 x 2 x 10)	IMA -1120-AA			
C6	(4 x 3 x 10)	IMA -1130-AA			
	(4 x 3 x 10) Ultra High Torque	IMA -1132-AA			
C7	(4 x 3 x 10H)	IMA -1140-AA			
	(4 x 3 x 10H) Ultra High Torque	IMA -1142-AA			
C8	(6 x 4 x 10H)	IMA -1150-AA			
	(6 x 4 x 10H) Ultra High Torque	IMA -1152-AA			
C9	(6 x 4 x 8)	IMA -1155-AA			
	(6 x 4 x 8) Ultra High Torque	IMA -1157-AA			
V1	(2 x 1.5 x 6) Vertical	IMA -1010-AA			
W1	(2 x 1.5 x 8) Vertical	IMA -1030-AA			

Containment Shell, Complete

(Includes 1-Containment Shell, 1-Wear Ring, 1-Pump Shaft, 1-Gasket O-Ring, 1-Retaining Ring)

Model	Size/Description	Standard		Optional 1	
		Material:	CF-ETFE/Aramid Composite	Material:	CF-PFA/Aramid Composite
		Part #	\$/Each	Part #	\$/Each
TB	A	SLC-1000-AA			
	B/C 8"	SLC-1010-AA			
	C 10"	SLC-1020-AA			
	C 10" H	SLC-1030-AA			

Accessory & Service Price List

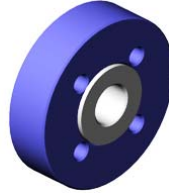
Part Name	<u>Drain Flange, Lined</u>
Detail:	C. PTFE insert, 3/8" NPT adapts to standard pipe D. Fit's all Innomag Casings E. Included 3/8" NPT Pipe Plug



Standard Material
PTFE/304 SS

Model	Size/Description	Part #	\$/Each
TB	A/B/C	SUB-1350-AA	

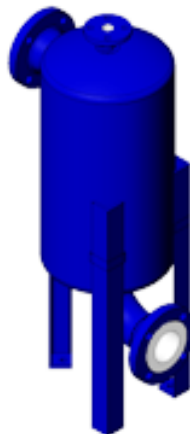
Part Name	<u>Flange Spool, Lined</u>
Detail:	A. PTFE Lining, Carbon Steel Flange



Standard Material
PTFE/Carbon Steel

Model	Size/Description	Part #	\$/Each
TB	1.5" Flange, 2.00" Thick	SUB-1500-AA	
	2" Flange, 1.75" Thick	SUB-1510-AA	
	3" Flange, 1.50" Thick	SUB-1507-AA	

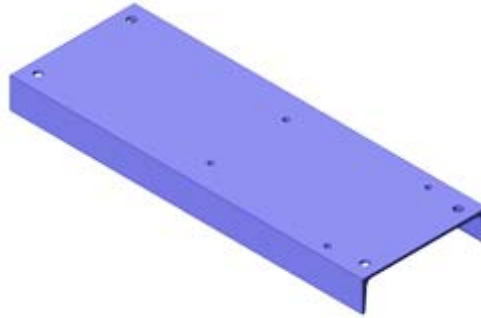
Part Name	<u>Priming Tank, Lined</u>
Detail:	A. ETFE Lined Tank, 12 gallon capacity B. Standard 1" Flanged top filling port



Standard Material
ETFE Lined/Carbon Steel

Model	Size/Description	Part #	\$/Each
TB	1.5" Flange, 5.25" Pump Centerline	PCG-1100-AA	
	3" Flange, 5.25" Pump Centerline	PCG-1105-AA	

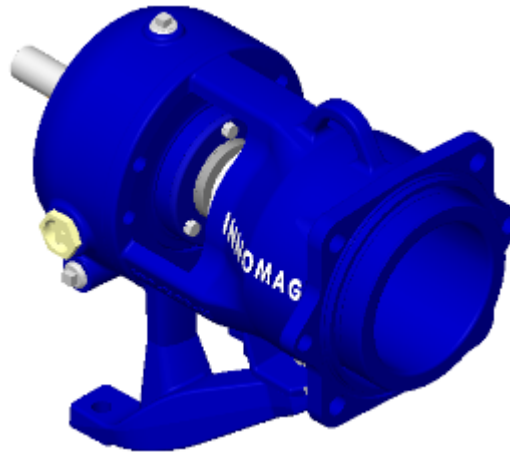
Part Name	Base, Steel
Detail:	A. Solid Steel C-Channel B. Corrosion Resistant Epoxy + Polyurethane Paint



Standard Material
Carbon Steel

Model	Size/Description	Part #	\$/Each
TB	12x34x3"	BSE-1000-SI	
	15x40x3.5"	BSE-1110-SI	
	18x48x4"	BSE-1120-SI	

Part Name	Bearing Frame, Complete
Detail:	A. Includes one Outer Magnet Assembly B. Includes FTA-1000 for group 2 height mounting C. Includes a separate Adapter and Bearing unit. D. NO mechanical seal



Standard Material
Ductile Iron/Polyurethane Paint

Model	Size/Description	Part #	\$/Each
TB	Single row outer drive (MAO-2100-SI) B-Series	BFR-2000-AA	
	Double row outer drive (MAO-2110-SI) C-Series	BFR-2010-AA	
	Double row (High Torque) outer drive (MAO-2120-SI)	BFR-2020-AA	

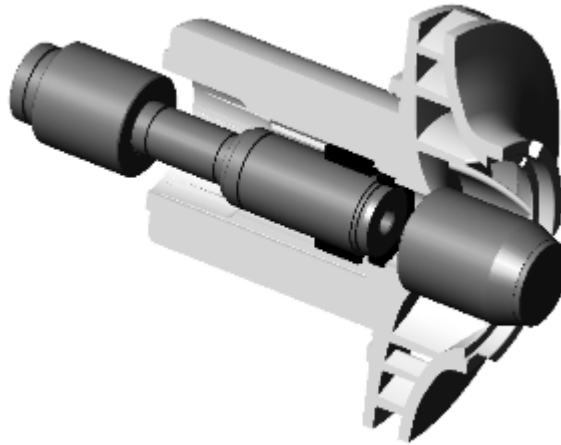
Part Name	Secondary Seal Bearing Frame, Complete
Detail:	<ul style="list-style-type: none"> A. Includes one Outer Magnet Assembly B. Includes FTA-1000 for group 2 height mounting C. Includes a separate Adapter and Bearing unit. D. Includes Dry Running mechanical seal for secondary containment



Standard Material
Ductile Iron/Polyurethane Paint

Model	Size/Description	Part #	\$/Each
TB	Single row outer drive (MAO-2100-SI) B-Series	BFR-2050-AA	
	Double row outer drive (MAO-2110-SI) C-Series	BFR-2060-AA	
	Double row (High Torque) outer drive (MAO-2120-SI)	BFR-2070-AA	

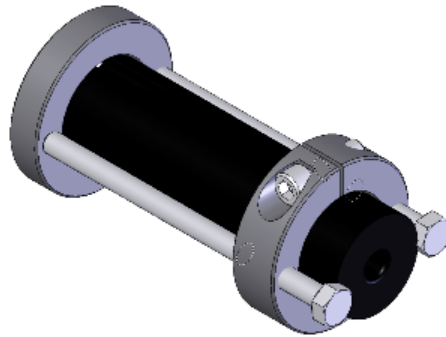
Part Name	Bushing Bearing Service Kit
Detail:	<ul style="list-style-type: none"> A. Installation and removal of bushing bearings and control valves for A/B/C Series pumps B. Impeller not included.



Standard Material
Carbon Steel/Aluminum

Model	Size/Description	Part #	\$/Each
TB	Bushing Bearing Service Kit A/B/C Series	TLG-2016-AA	

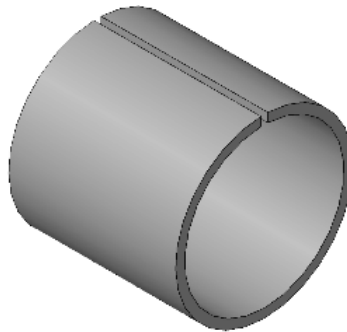
Part Name	Pump Shaft Service Kit
Detail:	A. Kit to remove pump shaft from containment shell. B. Pump shaft not included.



Standard Material
Carbon Steel/Aluminum

Model	Size/Description	Part #	\$/Each
TB	Shaft Removal Kit for A Series	TLG-2017-AA	
	Shaft Removal Kit for B/C Series	TLG-2018-AA	

Part Name	Trimming Sleeve
Detail:	A. Split PVC tubing protects the magnet assembly while trimming the impeller.



Standard Material
PVC

Model	Size/Description	Part #	\$/Each
TB	Trimming Sleeve for A Series	TLG-2033-AA	
	Trimming Sleeve for B/C Series	TLG-2023-AA	

(All prices are net to the distributor)

Service	Description	Part #	Standard	Part #	Witnessed
Hydrostatic	10 minute pressure test of a pump wet end	TST-1040-SI	No-Charge	TST-1050-SI	
	30 minute pressure test of a pump wet end	TST-1060-SI		TST-1070-SI	
Vibration Test	Vibration monitoring/measurement	TST-0800-SI		TST-0810-SI	
Performance	Duty point verification	TST-0900-SI	No-Charge	TST-0910-SI	
	5 Point Performance Test	TST-1000-SI		TST-1010-SI	
NPSH	NPSH at Duty Point	TST-1020-SI		TST-1030-SI	
	5 Point NPSH Curve	TST-1032-SI		TST-1034-SI	
Endurance	Cost per 10 minutes	TST-1080-SI		TST-1090-SI	
Certified Drawing	Certified Drawing for engineering submittals/construction	ENG-1000-SI			
Custom Drawing	Adding special bases, piping or motors to standard drawings	ENG-1010-SI			
Motor Mounting	Mounting Customer Supplied Motor to pump	LBR-1010-SI			
Base Mounting	Mounting Pump to Customer Supplied Base w/no drilling	LBR-1020-SI			
Base Drilling CS	Cost per hole drilled in carbon or stainless steel	LBR-1030-SI			
Base Drilling PC	Cost per hole drilled in Basetek base or similar.	LBR-1040-SI			

NO DISTRIBUTOR DISCOUNTS APPLY.

All prices are per single pump. Hydrostatic test price is for complete pump wet end.

- 1) Includes letter of Certification.
- 2) Performance test guarantee is for duty point only.
- 3) Prices are per pump per day.

WEG Motor Price List

WEG's W21™ NEMA Premium motors meet or exceed all NEMA Premium and CEE requirements for energy efficiency. These TEFC motors are built according to NEMA specifications and designed for operation in moist or dusty atmospheric conditions without affecting their useful life. Premium Efficiency WEG motors are tested according to IEEE 112 std., method 'B' and their efficiency values are certified by UL Labs (CSA C390) and NEMA MG1.12.53, both A and B Standards. These motors are NEMA Design 'B' and maintain exceedingly high breakdown and locked torque while providing the highest rated efficiency levels.



60 Hz NEMA					50 Hz IEC				
HP	Part Number	RPM	Frame	List Price	kW	RPM	Part Number	Frame	List Price
1	00118EP3E143TC	1800	143TC		0.75	1500/1800	.7518EP3EAL80	SH 80-4B	
1.5	00156EP3E143TC	3600	143TC		1.13	1500/1800	00118EP3EAL90S	SH 90S-4	
	00158EP3E145TC	1800	145TC			3000/3600	00136EP3EAL80	SH 90S-2	
2	00236EP3E145TC	3600	145TC		1.5	1500/1800	00158EP3EAL90L	SH 90L-4	
	00218EP3E145TC	1800	145TC			3000/3600	00156EP3EAL90S	SH 90L-2	
3	00336EP3E182TC	3600	182TC		2.25	1500/1800	00218EP3EAL100L	SG 100L-4A	
	00318EP3E182TC	1800	182TC			3000/3600	00236EP3EAL90L	SG 100L-2	
5	00536EP3E184TC	3600	284TC		3	1500/1800	00318EP3EAL100L	SG 100L-4B	
	00518EP3E184TC	1800	184TC			3000/3600	00336EP3EAL100L	SG 112M-2	
7.5	00736EP3E213TC	3600	213TC		4.13	1500/1800	00418EP3EAL112M	SG 112M-4	
	00718EP3E213TC	1800	213TC			3000/3600	00436EP3EAL112M	SG 132S-2A	
10	01036EP3E215TC	3600	215TC		5.63	1500/1800	00518EP3EAL132S	SG 132S-4	
	01018EP3E215TC	1800	215TC			3000/3600	00536EP3EAL132S	SG 132S-2B	
15	01536EP3E254TC	3600	254TC		7.5	1500/1800	00718EP3EAL132M	SG 132M-4	
	01518EP3E254TC	1800	254TC			3000/3600	00736EP3EAL132S	SG 160M-2A	
20	02036EP3E256TC	3600	256TC		11.25	1500/1800	01118EP3E160M	SG 160M-4	
	02018EP3E256TC	1800	256TC			3000/3600	01136EP3E160M	SG 160M-2B	
25	02536EP3E284TSC	3600	284TSC		15	1500/1800	01518EP3E160L	SG 160L-4	
	02518EP3E284TC	1800	284TC			3000/3600	01518EP3E160M	SG 160L-2	
30	03036EP3E286TSC	3600	286TSC		18.75	1500/1800	01818EP3E180M	SG 180M-4	
	03018EP3E286TC	1800	286TC			3000/3600	01836EP3E160L	SG 180M-2	
40	04036EP3E324TSC	3600	324TSC		22.5	1500/1800	02218EP3E180L	SG 180L-4	
	04018EP3E324TC	1800	324TC			3000/3600	02236EP3E180M	SG 200L-2A	
50	05036EP3E326TSC	3600	326TSC		30	3000/3600	03036EP3E200L	SG 200L-2B	
	05018EP3E326TC	1800	326TC		37.5	3000/3600	03736EP3E200L	SG 225M-2	
60	06036EP3E364TSC	3600	364TSC		45	3000/3600	04536EP3E225S/M	SG 250M-2	
75	07536EP3E365TSC	3600	365TSC		56.25	3000/3600	05536EP3E250S/M	SG 280S-2	
100	10036EP3E405TSC	3600	405TSC						

NOTE: Motor prices subject to change without notice.

Power Monitor & Current Transformer Price List

Emotron EL-FI M20 Shaft Power Monitors for pumps, machines and processes offer you:

- Protecting, Viewing and Controlling

Protection - Pre-alarm, alarm and stop before any machine over or under load damage occurs. This increase life time and reduce spare parts requirements.

All in one - You will readout the motor shaft power in % of rated power, kW or HP. The analogue output signal can be scaled to desired shaft power range and used as an input to controllers etc. Furthermore, two relay outputs.

Easy to install - No sensors or sensor cables. This results in less components and easy set and start up. Alarm functions can be set within three seconds at just one push of a key.





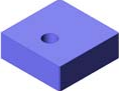




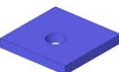


- It is applicable for all kinds of pumps, mixers, agitators, blenders, scrapers, conveyers, machine tools, automatic gates and doors.

In other words – EL-FI M20 takes care of your equipment before it is too late.



Part Number	Description	Price/Each
01-2520-20	1 or 3P, 100-240V, Display hp or kW, Max/Min Limits, 4-20mA Out	
01-2520-40	3P, 380-500V, Display hp or kW, Max/Min Limits, 4-20mA Out	
01-2520-50	3P, 525-600V, Display hp or kW, Max/Min Limits, 4-20mA Out	
CTM 010 # 01-2471-10	Current Transformer, 0.1-10 amps FLA	
CTM 025 # 01-2471-20	Current Transformer, 10.1-25 amps FLA	
CTM 050 # 01-2471-30	Current Transformer, 25.1-50 amps FLA	
CTM 100 # 01-2471-40	Current Transformer, 50.1-100 amps FLA	



Pump & Motor Block – Price List

Part Number	# Req.	Description	Height	Length	Width	Hole	\$/Each
BKM-0905-FM 	2	Motor Riser, 132 frame to 155mm CL (U-mag)	0.905	2	2	0.438	
BKM-0910-FM 	2	Motor Riser, 21 frame to 155mm CL (U-mag)	0.85	2	2	0.438	
BKM-1014-FM 	2	Motor Riser, IEC225 to 10" CL	1.142	3	3	0.625	
BKM-1015-FM 	4	Wet end riser, 36 frame -9" CL	0.75	2.5	2	0.625	
BKM-1016-FM 	2	Motor riser, 132mm to 160mm CL riser	1.102	3	3	16mm	
BKM-1017-FM 	2	Motor riser, 160mm to 180mm riser	0.787	3	3	16mm	
BKM-1018-FM 	4	Wet end riser, 8.25" CL to IEC 225 motor CL	0.608	3	3	0.625	
BKM-1019-FM 	2	Motor riser, 132mm to 180mm riser	1.89	3	3	16mm	
BKM-1020-FM 	2	Motor riser, 36 frame on 10" CL, Wet end riser, GP1 w/ 25 frame motor (6.25 CL)	1.00	2	2.5	0.625	
BKM-1021-FM 	2	Motor Riser, IEC 200 to 8.25" CL	0.38	3	3	0.750	
BKM-1022-FM 	2	Motor Riser, IEC 180 to 8.25" CL	1.163	3	3	0.625	
BKM-1025-FM 	1 & 2	Wet end riser, GP1 w/ 28 frame motor (7" CL), GP2 pump to 10" CL	1.750	3	2	0.625	



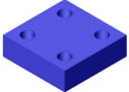
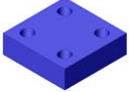






Pump & Motor Block-Continued

Part Number	# Req.	Description	Height	Length	Width	Hole	\$/Each
BKM-1026-FM 	2	ISO (CSG-1065) Wet end riser, 45MM, 180mm to 225mm CL	1.77	5	2.5	0.625	
BKM-1027-FM 	2	ISO (CSG-1065) Wet end riser, 20MM	0.79	5	2.5	0.625	
BKM-1028-FM 	2	ISO (CSG-1035) Wet end riser, 20MM	0.79	4	2	0.625	
BKM-1029-FM 	2	Wet end riser, ISO CSG-1015 to 160mm CL	1.102	4	2	0.625	
BKM-1030-FM 	2	Motor riser, 32 frame to 8.25" CL	0.25	15	3	0.688	
BKM-1036-FM 	2	ANSI Wet end riser, GP1 pump to 160mm CL	1.05	2.5	2	0.625	
BKM-1037-FM 	2	ANSI Wet end riser, GP1 pump to 180mm CL	1.84	2.5	2	0.625	
BKM-1041-FM 	2	Motor riser, 28 frame to 8.25" CL	1.25	5	2	0.625	
BKM-1053-FM 	2	Motor riser, 25 frame on 8.25" CL, 32 frame on 10" CL	2.00	5	3	1/2-13	
BKM-1057-FM 	2	Motor riser, 160mm to 8.25" CL	1.951	5	3	M12 x 1.75	
BKM-1065-FM 	2	Motor riser, 21 frame on 8.25" CL	3.00	3	3	3/8-16	
BKM-1066-FM 	2	Motor riser, 28 frame on 10" CL	3.00	3	3	1/2-13	

Pump & Motor Block-Continued

Part Number	# Req.	Description	Height	Length	Width	Hole	\$/Each
BKM-1067-FM 	2	Motor riser, IEC 180 to 10" CL	2.91	3	3	M12 x 1.75	
BKM-1071-FM 	2	Motor riser, 21 frame on 10" CL	4.75	4	3	3/8-16	
BKM-1072-FM 	2	Motor riser, 25 frame on 10" CL	3.75	3	3	1/2-13	
BKM-1073-FM 	2	Motor riser, 160MM TO 10" CL	3.701	3	3	M12 x 1.75	
BKM-1074-FM 	2	Motor riser, 132MM TO 10" CL	4.701	3	3	M10 x 1.5	
BKM-1080-FM 	1	Wet end riser, GP1 to GP2 mounting block, front feet only	3	2	12	1/2-13	
BKM-1100-FM 	1	Pump end riser, GP1 to GP2 mounting block	3	14.5	12	1/2-13	
BKM-1110-FM 	1	Pump end riser, GP1 to 10.00" CL	4.75	14.5	12	1/2-13	
BKM-1210-FM 	1	Special riser for 3x1.5x6 on Iwaki MDFL 657 / 6510 footprint	1.875	16.1	10.4	M12 x 1.75	

Pump & Motor Block-Continued

Part Number	# Req.	Description	Height	Length	Width	Hole	\$/Each
 BKM-1215-FM	1	Special riser for 3x1.5x6 on Iwaki MDFL 507 / 5010 footprint	1.875	16.1	10.4	M12 x 1.75	
 FTA-0900-SI	1	U-mag Adapter Foot	-	-	-	-	
 FTA-0905-FM	1	Pump end riser, U-mag to 5.25" CL , For 21 frame motor	0.75	2.5	2.5	10.5mm	
 FTA-0910-FM	1	Pump end riser, U-mag to 6.1" CL	1.6	2.5	2.5	10.5mm	
 FTA-0916-FM	2	Pump end riser, U-mag to Iwaki MDFL 405 footprint **(Sold as a Pair Only)	1.5	12.5	3	M12 x 1.75	
 FTA-1000-SI	1	Group 2 mounting foot, 8.25" centerline	-	-	-	-	
 FTA-1010-FM	2	Adapter riser for 6410 to 10" CL	1.75	ø1.125	ø.563	-	
 FTA-1015-FM	1	Adapter riser for ANSI-IEC - raise adapter from GP1 height to 160mm CL, (ADP-1015)	1.049	2	5.375	15mm	
 FTA-1016-FM	1	Adapter riser for ANSI-IEC - raise adapter from 132mm height to 160mm CL, (ADP-1005)	1.102	2	5.375	15mm	
 FTA-1017-FM	1	Adapter riser for ANSI-IEC - raise adapter from GP1 height to 180mm CL, (ADP-1015)	1.84	2	5.375	15mm	

Innomag vs. Competition

Design Features & Benefits:

	INNOMAG TB-mag	Goulds 3298	ANSIMAG K-Series	Finnish Th. UC Series	Iwaki MDM, MDFL
<p>Thrust Balanced</p> <ul style="list-style-type: none"> ✓ Thrust-balanced, Sealless, non-metallic magnetic drive pump. ✓ A revolutionary, patented, thrust balancing system eliminates the axial thrust created by the internal pump pressures. ✓ The balancing system is responsive, automatic and stable with any change in the fluid conditions such as flow, pressure or viscosity. ✓ Operate with less power by eliminating axial thrust loads. Less friction, less power.... ✓ Expanded operating range, engineered to perform continuously at any flow. ✓ Increased pump life and reliability with no forward thrust. 	YES	NO	NO	NO	NO
<p>Double Welded Impeller</p> <ul style="list-style-type: none"> ✓ The inner magnets are protected by a patented hermetically sealed cover. ✓ For an extreme corrosion and permeation resistant barrier the magnet assembly is again hermetically sealed with a corrosion resistant fluoropolymer ETFE or PFA creating a double weld design. 	YES	NO	NO	NO	NO
<p>Wear Rings</p> <ul style="list-style-type: none"> ✓ The Patented wear ring system prevents impeller from rubbing containment shell in the event of a primary bearing upset. ✓ Wear rings control leakage rates maintaining higher efficiencies. ✓ Wear Rings restrict solids > 0.005" from entering the containment shell area, keeping all bearings and critical flow paths clear. ✓ Concentrations to 30%, particulate sizes to ¼" 	YES	NO	NO	NO	NO
<p>Open Suction</p> <ul style="list-style-type: none"> ✓ A cantilever shaft supported in the containment shell eliminates the need for a shaft support in the pump's suction. <u>No suction blockage</u>, Lower NPSHr. 	YES	NO	NO	NO	NO
<p>Pressurized Radial Bearing</p> <ul style="list-style-type: none"> ✓ Isolated from the suction pressure by a patented thrust balanced system, the radial bearings operate in a pressurized fluid environment. ✓ Pressure in the bearing area is approximately 1/3 of TDH which virtually eliminates the possibility of flashing. 	YES	NO	NO	NO	NO
<p>Water Hammer Resistant</p> <ul style="list-style-type: none"> ✓ Burst pressures at 3000 psi give the TB-mag pump a 10 x safety factor and resistance to sudden system surges. 	YES	NO	NO	NO	NO
<p>Modified Concentric Volute</p> <ul style="list-style-type: none"> ✓ All Innomag casings are designed to minimize radial loads and distribute pressure evenly across the entire flow range. ✓ Lowers stress on bearings and wear rings maximum pump life. 	YES	NO	YES	YES	NO
<p>"True-Seal" Secondary Containment</p> <ul style="list-style-type: none"> ✓ A patented design combines a simple, yet proven, "off-the-shelf" dry run cartridge seal with our long couple bearing frame. Together, these products provide your service with true metallic secondary containment. 	YES	NO	NO	NO	NO
<p>Expanded Operating Range</p> <ul style="list-style-type: none"> ✓ Engineered to perform continuously over the entire flow range. ✓ Operate at speeds 500 to 3500 rpm. 	YES	NO	NO	NO	NO
<p>Standard Dimension Process Pumps</p> <ul style="list-style-type: none"> ✓ Conforms to the requirements of ANSI B73.1 ✓ Class 150 or 300 lb flanges, ISO PN 16 or JIS 10kg/cm² drilled flanges are optional. ✓ International conformance to ISO 2858 pumps. 	YES	YES	YES	YES	NO
<p>Quality Assurance</p> <ul style="list-style-type: none"> ✓ All parts are manufactured to the highest possible standard of quality and workmanship. ✓ All completed pumps and wet ends must pass a 25 point quality inspection including, a running performance/endurance and pressure test prior to shipping. ✓ All critical components manufactured in house in our US Factory. 	YES	NO	NO	NO	NO