

# Magnetic Drive Sealless Pumps - Centrifugal (Metallic) - ANSI SERIES



## PRODUCT OVERVIEW

The Pumps are offered with a range of Synchronous Magnetic Drives rated to match motor performance. This range is based on sizes corresponding to the pump frames and performance required.

The **SANDO** Pumps are designed as per ASME B 73.1 Standard to operate from -80°C to + 300°C without the need of any Heating/Cooling Medium.

All units are available in CLOSE COUPLED or SEPARATE MOUNTED configuration.

All liquid ends are interchangeable within the frame size, as are drive components to give optimum match of hydraulic and magnetic performances.

Pumps are constructed with single fully trapped gasket sealing.

## RANGE

Head M	Flow M <sup>3</sup> /hr	Temp. °C	Sys. Pressure Bar	Mounting	Design Std.
From 15 - 200	From 2 - 300	-80 to +300	Up to 150	Close Coupled or Separate Mounted	ASME B 73.1

OR

Head Ft.	Flow GPM	Temp. °F	Sys. Pressure PSI	Mounting	Design Std.
From 32 - 660	From 8 - 1320	-110 to +570	Up to 2175	Close Coupled or Separate Mounted	ASME B 73.1



## DESIGN RANGE LIMITS

### Pressure Limits

Flange Standard	Design Pressure		
	316 SS	Alloy C	Alloy 20
ANSI B 16.5 Class 150	275 psi	290 psi	230 psi
ANSI B 16.5 Class 300	740 psi	750 psi	650 psi

Component	Hydrostatic Test Value		
	316 SS	Alloy C	Alloy 20
Casing (ANSI B16.5 Class 150)	425 psi	450 psi	350 psi
Shroud	425 psi	450 psi	350 psi
Casing (ANSI B16.5 Class 300)	1100 psi	1125 psi	975 psi
Shroud	1100 psi	1125 psi	975 psi

### Temperature Limits

The Pumps are suitable for the following temperature ranges:

Standard Range	: -40°C to +300°C (-40°F to +570°F)
Optional Range	: -80°C to +350°C (-110°F to +660°F)

For sub zero temperatures as suitable sealing compound is used to prevent the ingress of moisture into the coupling between the shroud and motor adapter assembly interface.

### Solid Handling Capacity

The Standard Pumps are capable of handling solids up to 5% w/w with 150 microns particle size.

Special Design Pumps are also available for handling solids/slurry up to 20% w/w with 150 microns particle size.

## FLANGES & CONNECTIONS

### Casing

Suction and Discharge Flanges are designed in accordance with the following relevant standards:

ANSI B16.5 Class 150 with 1.50 mm (0.06") high raised face machined with a continuous spiral groove.

ANSI B16.5 Class 300 with 1.50 mm (0.06") high raised face machined with a continuous spiral groove.

### Flange Loadings

Allowable Flange Loadings imposed by pipework are in accordance with API 610 8<sup>th</sup> Edition Standard.

### Drain Connections

The following drain options are available:

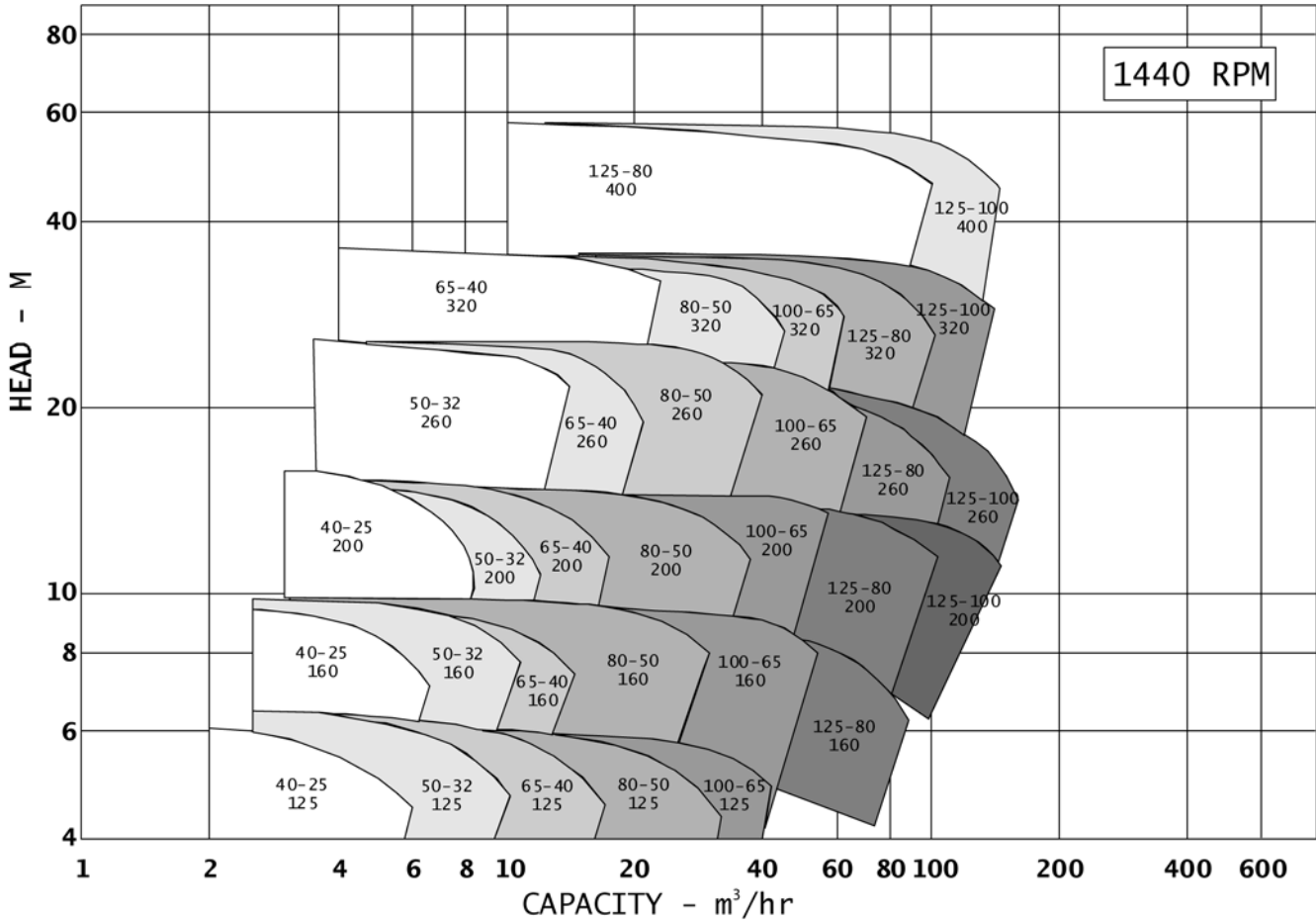
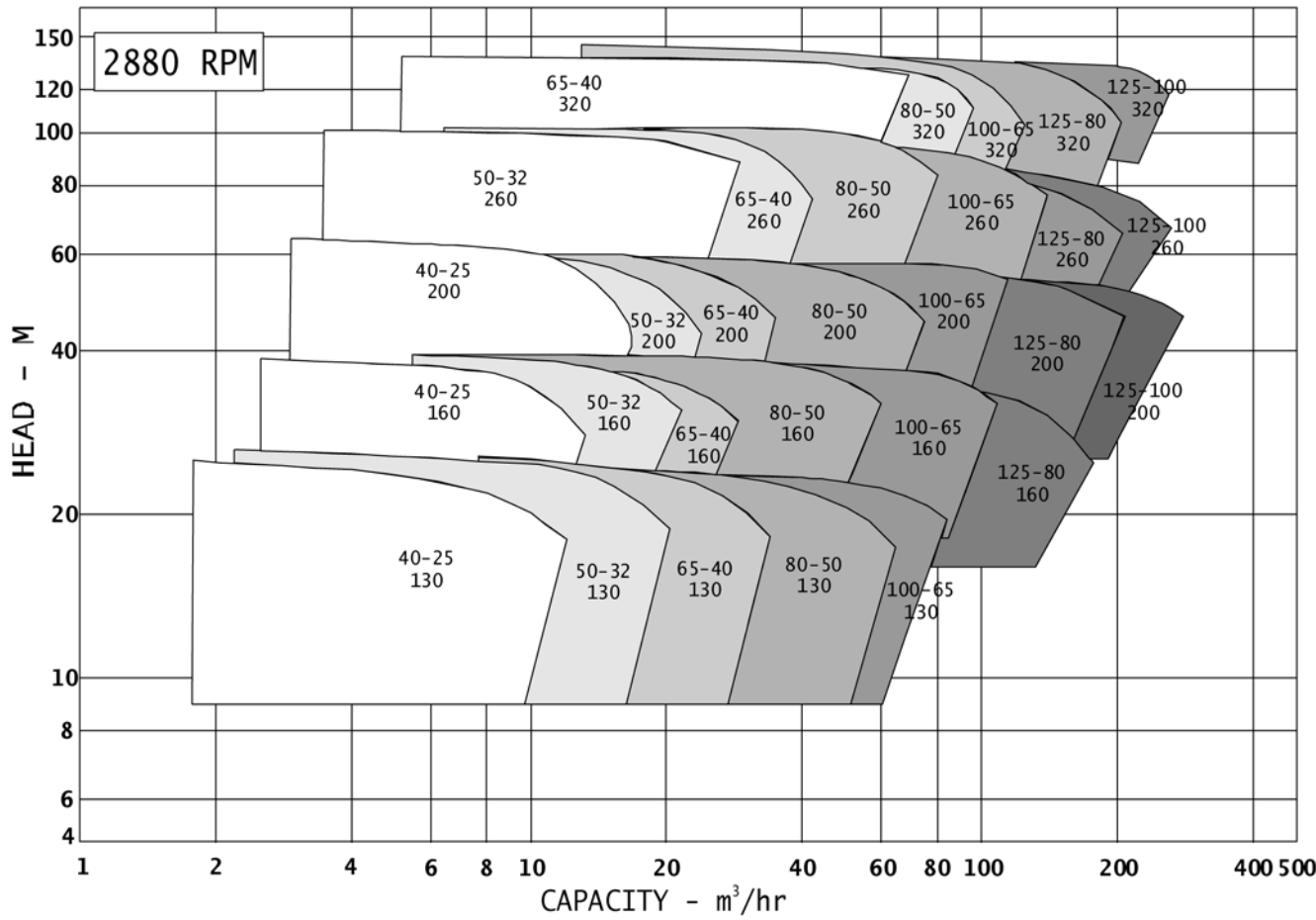
Standard	: 3/8" BSP drain plug fitted as standard with fully trapped gasket.
Option 1	: No Drain; boss left undrilled
Option 2	: 1/2" flanged drain rated to the casing Flanges

### Gauge Connections

No option for gauge connection tapplings currently exists.

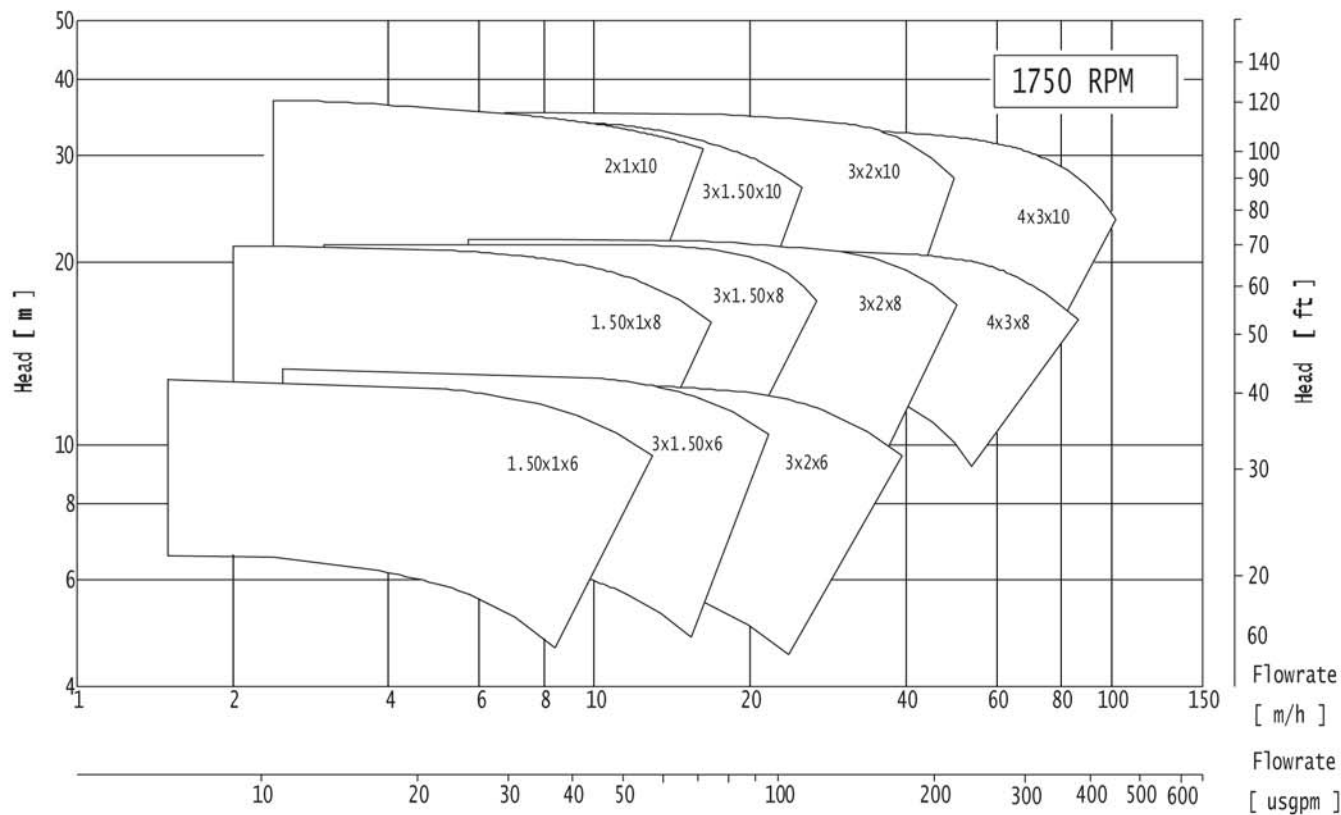
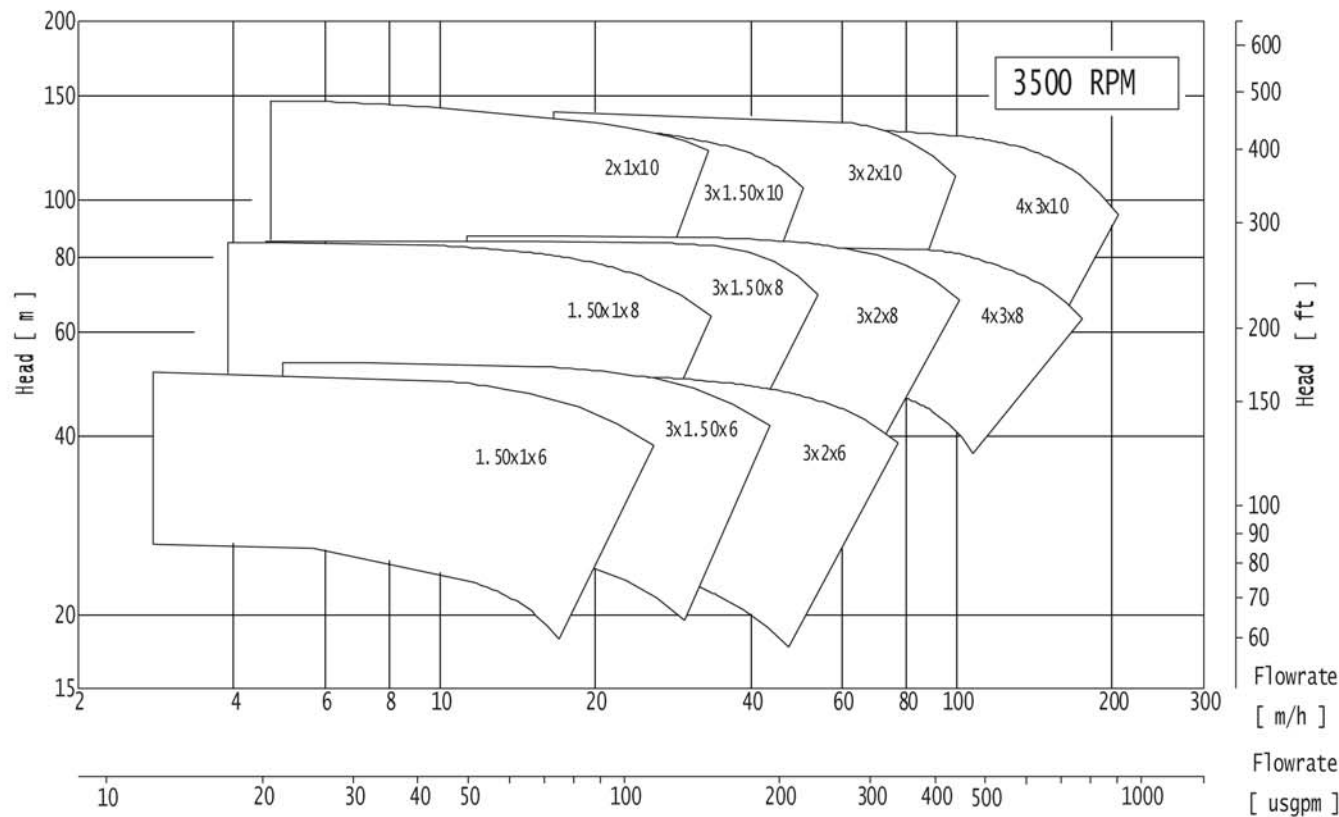
Performance Range

50 Hz. Range

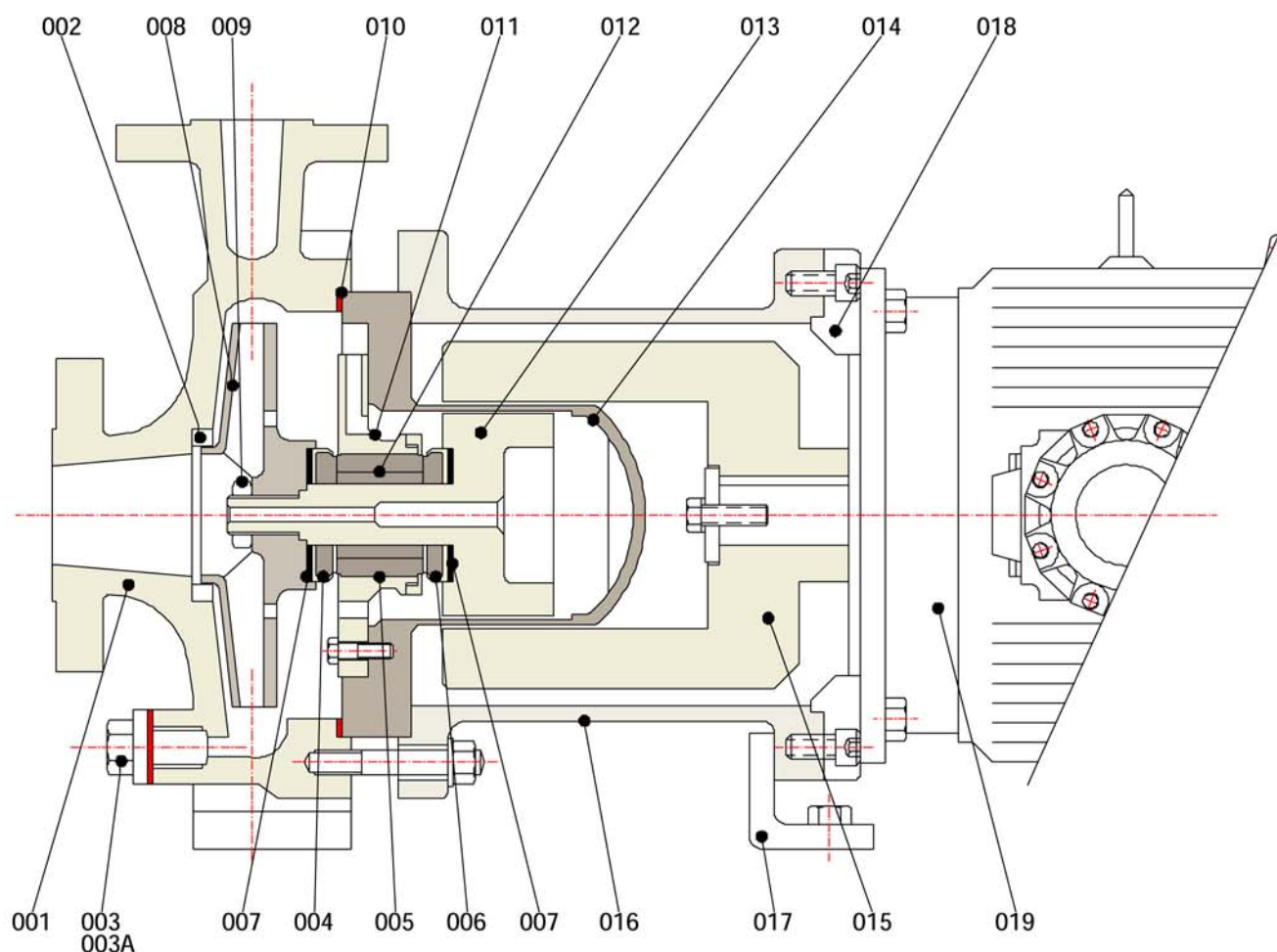


Performance Range

60 Hz. Range



## Construction



001	Casing	Stainless Steel	011	Bush Holder	Stainless Steel
002	Casing Wear Ring	Stainless Steel	012	Shaft Sleeve	Alpha SiC
003	Drain Plug	Stainless Steel	013	Inner Magnet	Stainless Steel
003A	Drain Plug Gasket	CAF/PTFE	014	Isolation Shell	Alloy C & SS
004	Front Thrust Ring	Alpha SiC	015	Outer Magnet	En8
005	Bush	Alpha SiC	016	Coupling Housing	Mild Steel
006	Rear Thrust Ring	Alpha SiC	017	Housing Foot	Mild Steel
007	Support Gasket	Graphite/PTFE	018	Support Flange	Mild Steel
008	Impeller	Stainless Steel	019	Electric Motor	Standard
009	Coupling Fixing	Stainless Steel	****	Fastners	Various
010	Casing Gasket	CAF/PTFE			

## Options

### Material of Construction

Wetted Parts : Alloy 20, Alloy C, Titanium  
 Internal Bearing : Alpha SiC / Carbon  
 Gaskets : PTFE / CAF

### Other Options

Casing Drains Flanged or Screwed  
 Jacketed Casing & Isolation Shell  
 Coupling Housing Drain



## SANDO Pump range & User benefits

- Sealless Design - Total product Containment-ideal for hydrocarbons, petrochemicals, toxic, hot, cold, valuable products etc.
- Interchangeable wet end, designed for max head/flow coverage across all product range
- Choice of various metallic material of construction
- One joint casing/coupling housing design
- Casing gasket fully confined to eliminate 'Blowout' risk
- Various Suction and Discharge Flange connection options
- Maximum interchangeability exists between spareparts
- Cartridge assemblies allowing fast replacement of the rotating equipment

**The overall benefit package this range brings to the user are:**

- Ease of Application
- Low Capital Cost
- Design ensures safe, leak free operation
- Low running costs
- Minimal Spare holding
- Minimal downtime / fast maintenance
- Maximises on-line process time

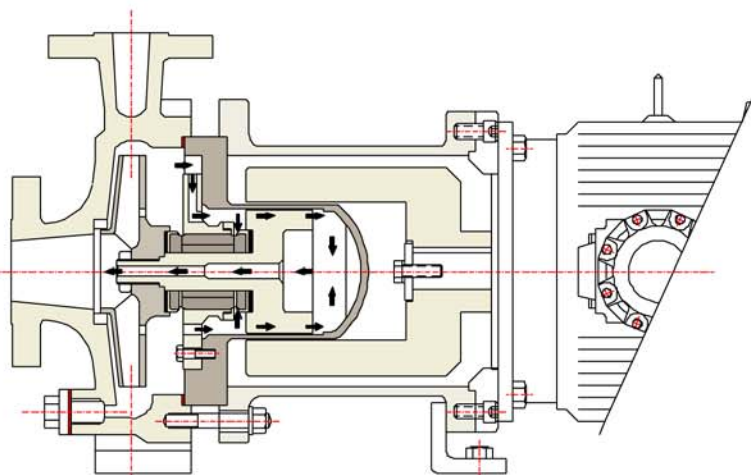
### Internal Flow

The pumpage is taken from the discharge side of the impeller and fed back through the inner magnet, the isolation shell and the product wetted bearings to both cool and lubricate the drive assembly.

The recirculation flow for any Magnetic Drive pump has three basic functions

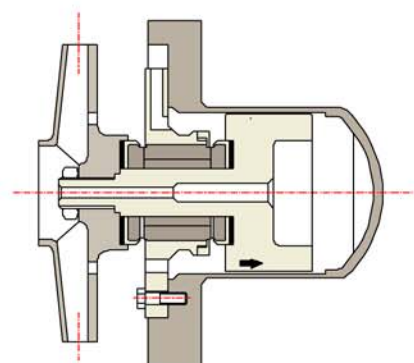
1. Removal of the heat generated from magnetic losses;
2. Lubrication of the internal radial & thrust bearings;
3. Thrust balancing of the free floating rotating assembly

To successfully meet these requirements, the circulated pumpage must remain in the liquid phase at all points within the magnetic coupling area.



### Cartridge Replacements

- The low cost alternative to a standby pump
- On site installation is straight forward using your own staff
- Your used cartridge can be refurbished & returned
- Cartridge replacements keep your spares inventory low
- Cost effective standby for multi pump installations
- Replacement cartridge fully complies with original pump specification, ensuring maximum integrity



There has never been a more cost effective way to keep plant inventory at a manageable level than with a SANDO replacement cartridge. As a spare part it is both easy to install and more importantly completely complies with the original technical specifications of your pump.

The complete rotating unit is replaced thus assuring the total operational integrity of the pump. Most cartridges can be replaced in less than one hour, keeping downtime and lost production to a minimum.