No noise hydraulic pumps
Magnetic Coupling presentation
What is a MAGNETIC COUPLING SEAL?

It is a permanent magnetic synchronous coupling able to transmit torque through magnetic forces between the internal and external rotor. Applying a magnetic coupling, the drive and the driven sides are hermetically separated. In case of critical media the magnetic coupling is a reliable seal and prevents any serious leaking.

The magnetic coupling is the containment shroud that is fixed to the driven sided power unit and separates internal and external rotor from each other. The vibration torque transmission are very low, due to the absence of mechanical connection with completely leak-proof separation of product and atmosphere.

The magnetic coupling therefore is used to ensure no media leaking or when pumps are used in sensitive or hazardous areas.

Why choosing a MAGNETIC COUPLING SEAL?

<table>
<thead>
<tr>
<th>ZERO pump maintenance:</th>
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<td>there is no more the requirement to periodically check/change the sealing. The maintenance costs drop down drastically.</td>
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<th>NO leakage:</th>
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<td>there is no sealing on rotary parts, but only static sealing.</td>
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<th>Component protection:</th>
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<td>The magnetic coupling also protects the motor from damages. If the pump requires a torque (power) bigger that the maximum allowed, the magnetic coupling automatically detaches the power transmission</td>
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Where to use a MAGNETIC COUPLING SEAL?

- Hot oils
- Heat transfer
- Cooling of special components with special fluids
- Filtration of special fluids
- Automotive factories
- Toy factories (Plastic Injection Molding Machines)
- Medical applications
- Marine applications
- Gearbox lubrication in Windmill applications

Did you know? Settima SEAL-LESS MAGNETIC COUPLINGS PUMPS have been chosen by one of the world’s leader in plastic injection molding machines as the safety measure of choice. Settima MAGNETIC COUPLINGS PUMPS are installed over the PIM machines used to produce one of the most loved toys for children all over the world, the LEGO® blocks. Settima scores another point in ensuring safer conditions at work and home, and a cleaner world!

(LEGO® is a registered trademark of LEGO® Group, and it is reported here for information purposes only)
A look at the MAGNETIC COUPLING installation and components:

- Standard IEC motor
- Standard bell housing
- Magnetic Coupling Settima three screw pump
- Magnetic Coupling motor side
- Magnetic Coupling pump side
- PUMP COVER: it covers statically sealed to the pump - it keeps the oil inside and there is no sealing on moving parts.
NO-SEAL (MAGNETIC) overview

Magnetic Coupling seals are high technology seals, with extremely high reliability and high performances, guaranteed to be absolutely totally leakage free.

SETTIMA can provide this seal alone, or with an already perfectly compatible bellhouse. SETTIMA engineers study very carefully every customer’s single specific installation, and they can offer him with a complete solution, from the motor pump unit, to the correct magnetic seal and the compatible bellhouse, everything tested and ready to use.

<table>
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<th>SEAL MATERIALS</th>
<th>Stainless steel, Hastelloy, PEEK, ceramic</th>
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<tr>
<td>FLUIDS MANAGED</td>
<td>All standard oils, fuels, emulsion and fluids, plus all fluids unsuited for use with NBR/Viton/EPDM/PTFE lip seals or with mechanical seal materials</td>
</tr>
<tr>
<td>TEMPERATURE RANGE</td>
<td>Up to +130° C standard, up to 300° C with ceramic seal</td>
</tr>
<tr>
<td>ORDER CODE</td>
<td>Ask SETTIMA: tell us the specifics of your installation, our engineers will provide you a solution!</td>
</tr>
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</table>
Generally, the magnetic coupling DOES NOT CHANGE the pump layout. It means you can use the same bell housing and coupling you are already using with a standard shaft Settima pump.
A look at the applications: HOT FLUIDS & API 685

HOT OIL & HEAT TRANSFER MAGNETIC DRIVE PUMPS

High Temperature Magnetic Drive Pumps
Pumping heat transfer fluids provides a wide range of challenges to the end user. Many problems can be traced back to mechanical seal failures, resulting in costly repairs and down time.
By eliminating the mechanical shaft seal of a conventional screw pump, Settima FGM seal-less magnetic drive pump series provide a more reliable, safer and cost-effective solution for hot fluids and heat transfer applications.

FGM – Seal-less up to 500°C without cooling
High performance magnetic couplings handle product temperatures up to 500 °C without external cooling. Settima seal-less magnetic drive pumps require very little maintenance, providing many years of trouble-free service – even under extreme conditions.

Key Benefits – Settima Seal-less Advantages
- Low maintenance design reduces life cycle costs
- High performance magnets handle liquids up to 500°C
- Elimination of lip seal or mechanical seal increases reliability and avoids costly repairs and down-time
- Motor protection is assured by a fixed torque transferrable from a specific FGM Settima joint
- Over 10 years of experience with seal-less mag drive pumps and over 10,000 installed mag drive pumps

API 685 HEAVY DUTY SEALLESS MAGNETIC DRIVE PUMPS

Seal-less Mag Drive Pumps per API 685 applications
First introduced in 2000 the API 685 standard describes requirements for seal-less centrifugal pumps for petroleum, heavy-duty chemical, and gas industry services. Our screw pumps have been designed to comply to sealing requirements of API 685. Our screw pumps with API 685 compatible sealing, are screw pumps designed according to API 676 including a sealing compatible with the requirements of API 685.

Key Benefits – Settima Seal-less Advantage
- High reliability - low cost of ownership
- No mechanical seal, no complicated seal support system
- No emission inspection & reporting required
- Exclusion from fugitive monitoring requirement of the Clean Air Act
- Motor protection is assured by a fixed torque transferrable from a specific FGM Settima joint
- Over 10 years of experience with seal-less mag drive pumps and over 10,000 installed mag drive pumps
Magnetic Coupling

Settima full complement of products:

**SMT** – high-pressure industrial, lube and tool machines

**SMT16B** – cooling, filtration and lube oil

**SMT8B** – compact cooling and filtration

**SFO** – shipyards diesel oil handling

**SM** – lifts and freight elevators

**SMAPI (API 676)** – wide range of marine and industrial applications

**FOTP** – high-reliability boiler ignition/feeding marine application

**SMTU** – USA lifts and freight elevators

**CONTINUUM®** – high-pressure, no-noise fluid power applications

**2VHL CONTINUUM®** – low-pressure no-noise lube oil services

**FLOWMETERS** – high-pressure, high-precision flow measurement

**MAGNETIC COUPLING** – seal-less option for no medium leakage

Engineering and certification are a resource for our customers. If some certification is not available today, it could be available soon: ask Settima and we will answer.