

PRODUCT RANGE



Setting Innovative Standards

Magnetic Drive Pumps

A magnetic drive pump uses a magnetic field to create the rotation of the impeller (or any other device utilized to displace fluid). The external magnet is mounted on the motor shaft. The liquid end consists of pump impeller (or any other device used to displace fluids) and an internal magnet mounted onto the driven shaft which is supported by bushing assembly and **HERMETICALLY** sealed by containment shell; without the need of a mechanical seal.

The external magnet begins to rotate when the motor is started. The rotating magnetic field effects the inner magnet which begins to rotate the impeller at the same speed of the external magnet to displace the fluid.

Magnetic drive pumps offer a series of superior advantages over mechanical seal Pumps:

- Pump is sealless guaranteeing operational safety for operators and environment, most of all in case of critical, hazardous, corrosive or expensive chemicals pumping.
- Without mechanical seal, both initial costs of the same and cumbersome auxiliary API flushed plans are avoided.
- For the same reason, pump selection, operation and maintenance are much simpler and less expensive than mechanical seal.
- Ability to handle high gas content fluids in which most mechanical seals would fail due to poor lubrication and cooling.

Are you concerned about energy costs, maintenance costs (Spare parts and downtime), leakages of dangerous/expansive chemicals, frequent seal failure and complex sealing system? M Pumps has the solution to address your concerns with its advanced sealless pump technology.

With its superior technology applied on the HYBRID containment shell which generates negligible eddy current loss, M Pumps is now able to directly replace double mechanical seal pumps and canned motor pumps using standard motors. It is now possible to upgrade your conventional pumps into M Pumps most advanced and environmental friendly sealless pumps.

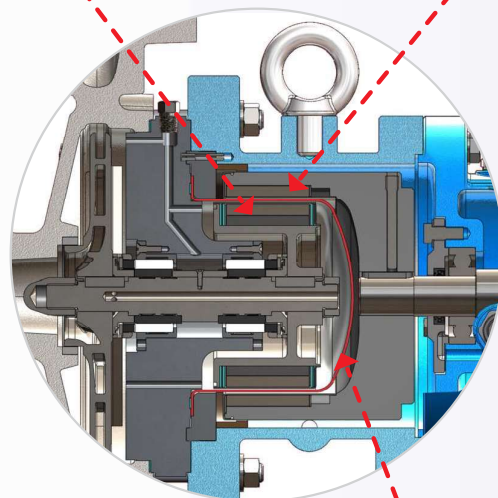
M PUMPS has solved all these issues with the HYBRID Containment Shell *(see page 8)*

The Hybrid Rear Shell offers several advantages:

- Vs other magnetic drive manufacturers, much lower power absorption.
- Consequently the power consumption is much lower, offering very competitive Total Cost of Ownership.
- Almost negligible heat generation, with easy handling of: low boiling chemicals/cooling agents.
- 50 bar g design pressure and -90 °C/+200 °C design temperature.
- On demand: Reliable, immediate temperature reading (temperature sensor is located at the source of the magnetic field, providing accurate reading and timely response, avoiding pump failure).

Smaller Internal Magnets

External Magnets

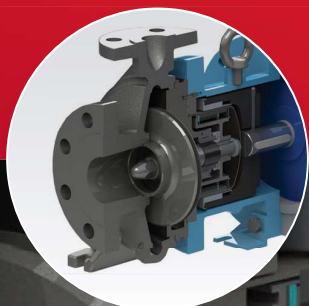


Rear Containment Shell

There are NO MORE technical reasons to choose a mechanical seal pumps Vs a M PUMPS magnetic sealless pump.

M PUMPS offers the most advanced Rear Containment Shell on the market.

Centrifugal Pumps



Extremely wide centrifugal pump range, meeting and exceeding international standards (DIN EN 22858 – ISO 2858, ANSI B73.3, API 685 2nd Ed & API 610 11th Ed) and available in both magnetic drive and traditional mechanical seal design.

These pumps can be supplied both with close coupled and long coupled version (with or without baseplate). Metallic wetted parts from AISI 316 (STD), Duplex, Hastelloy C, Titanium etc. Several non-metallic models for corrosive and ultra pure application (PFA lined cast iron pump heads, vertical pumps with solid plastic, injection molding both in PP and PVDF).

- Closed impeller
- High efficiency
- SiC bearings
- Modular construction
4000 m³/h – 700 m
- -150 °C to + 400 °



API (Petroleum, Petrochemical & Gas process services)

API 685



CN MAG-M OH2 OH1 Centrifugal Mag-Drive

API 685 2nd ed.
Flow up to 4000 m³/h
Head up to 350 m



CN MAG-MS BB5 Centrifugal Between-Bearings

Mag-Drive API 685 2nd ed.
Flow up to 1000 m³/h
Head up to 2200 m

API 610



CN SEAL-M OH2 OH1 Centrifugal Pump

Acc. to API 610 11th ed.
Flow up to 4000 m³/h
Head up to 350 m



CN SEAL-MS BB5 Centrifugal Between-bearings mechanical seal

Acc. to API 610 11th ed.
Flow up to 1000 m³/h
Head up to 2200 m



CN SEAL-MV OH3 Centrifugal Vertical In Line mechanical seal

Acc. to API 610 11th ed.
Flow up to 4000 m³/h
Head up to 350 m

ISO 2858



MECH SEAL

CN SEAL-M SERIES Centrifugal Pump.

Acc. to DIN EN 22858
Flow up to 4000 m³/h
Head up to 220 m

METALLIC



MECH SEAL

CL SEAL-M SERIES Lined Centrifugal Pump-Mech. Seal

Acc. to DIN EN 22858
Flow up to 550 m³/h
Head up to 170 m

PFA LINED

M PUMPS STD (Mag Drive)



METALLIC

CM MAG-M SERIES Centrifugal Pump

Metallic Head
Flow up to 35 m³/h
Head up to 36 m



PLASTIC

CM MAG-P SERIES Reinforced Plastic Centrifugal Pump

Plastic Head Injection Molding
Flow up to 35 m³/h
Head up to 23 m



CN MAG-MV OH5
Centrifugal Vertical In Line

Mag-Drive API 685 2nd ed.
Flow up to 4000 m³/h
Head up to 350 m



WN MAG-M BB2
Centrifugal Between-bearings

Mag-Drive API 685 2nd ed.
Flow up to 4000 m³/h
Head up to 240 m



CNV MAG-M VS4
Centrifugal vertical

Mag-Drive API 685 2nd ed.
Flow up to 500 m³/h
Head up to 120 m
Length up to 7 m



WN MAG-MS BB2
Centrifugal Between-bearings

Mag-Drive API 685 2nd ed.
Flow up to 4000 m³/h
Head up to 470 m



CN SEAL-MV OH4
Centrifugal Vertical In Line
mechanical seal

Acc. to API 610 11th ed.
Flow up to 4000 m³/h
Head up to 350 m



WN SEAL-M BB2
Centrifugal Between-bearings
mechanical seal

Acc. to API 610 11th ed.
Flow up to 4000 m³/h
Head up to 240 m



CN SEAL-MV OH5
Centrifugal Vertical In Line
mechanical seal

Acc. to API 610 11th ed.
Flow up to 4000 m³/h
Head up to 350 m



WN SEAL-MS BB2
Centrifugal Between-bearings
mechanical seal

Acc. to API 610 11th ed.
Flow up to 4000 m³/h
Head up to 470 m



CNV SEAL-M VS4
Centrifugal Vertical Suspended
mechanical seal

Acc. to API 610 11th ed.
Flow up to 600 m³/h
Head up to 220 m

ANSI B73.3



METALLIC



CN MAG-M SERIES Centrifugal Pump
Acc. to DIN EN 22858 Long Coupled Version

Flow up to 4000 m³/h
Head up to 220 m
Close Coupled Version
Flow up to 250 m³/h
Head up to 145 m



CN MAG-M SERIES
Centrifugal Pump

ANSI B73.3
Flow up to 100 m³/h
Head up to 75 m



PFA LINED



CL MAG-M SERIES
Centrifugal Pump-Magn Seal

ANSI B73.3
Flow up to 90 m³/h
Head up to 63 m



CL MAG-M SERIES
Centrifugal Pump-Magn Seal

ANSI B73.3
Flow up to 90 m³/h
Head up to 63 m



PFA LINED

C MAG-PL SERIES
Lined Centrifugal Pump

Flow up to 140 m³/h
Head up to 44 m



CV MAG-P SERIES

Solid Plastic Vertical Sump Centrifugal Pump

Plastic Head
Flow up to 140 m³/h
Head up to 44 m
Length up to 5 m

Side Channel Pumps



- Low NPSHr (as low as 0,5 metres)
- Able to deliver up to 50% gas content
- Self priming
- Flows up to 40 m³/h
- Head up to 450 m (multi stage)
- System pressure 50 bar g
- Operating temperature -90 to + 250 °C
- Heavy Duty Centerline
- Barrel construction (No intermediate gaskets)



SC MAG-M SERIES
*Centrifugal Side Channel
Combination Pump*

Flow up to 40 m³/h
Head up to 450 m
NPSH up to 0,5 m

316 stainless steel Multi-Stage Barrel construction. Ideal to pump liquefied gasses and liquids under vapor pressure like condensate, refrigerant, boiler feed water or LPG (up to 50% gas content).

Applications: Chemical and Petrochemical Industries, Refineries, Liquid gas plants, Power plants truck loading and unloading.

- Aggressive, explosive and toxic liquids
- Isobutylene, butadiene, propylene
- Hydrocarbons
- Liquid gases
- Boiler water
- LPG
- Ammonia
- Methyl chloride, vinyl chloride



SPECIAL PUMPS

With almost 40-year experience in designing magnetic driven pumps for industrial demanding application, we have the ability to supply bespoke units.

All pumps are designed following the most rigorous methods of calculation, and, thanks to the FEM system specific analysis are carried out to simulate actual process conditions.

Special pumps are divided into four main categories:

High Temperature applications

- First level with operating temperature up to 250 °C
- Second with operating temperature up to 350 °C
- Third level above 350 °C

High System Pressure applications

With solution both for positive displacement and centrifugal pumps, and pressure rating ranging from # 300, # 600, # 900, 1500, # 2500 and above ANSI # 2500 rating

Combination of High Temperature & High Pressure

We successfully supplied pumps operating @ 270 °C that were hydraulically tested @ 750 bar g

Low Temperature applications

Pumps with special construction are suitable to work with chemicals as low as – 120 °C pumping temperature

Exotic materials (meeting NACE and NORSOK requirements), such as Duplex Steel, Hastelloy ®C 276 ,Titanium etc. and various type of jacketing are available too



T MAG-XPM SERIES
*High System Pressure
Peripheral Pump*

Flow up to 9 m³/h
Head up to 90 m
System Pressure up to 1500 bar



CN MAG-M SERIES
*Process centrifugal pumps with
Hybrid Rear Containment Shell
and inducer for critical NPSH
available—as low as 1,5 meters*



SC MAG-M30 SERIES
*Special jacketing on head and bracket
to handle supercritical chemicals*

Mag drive side channel pump with cooling jacketing and brackets specifically designed for pumping Hydrogen Peroxide.

Hybrid Rear Containment Shell

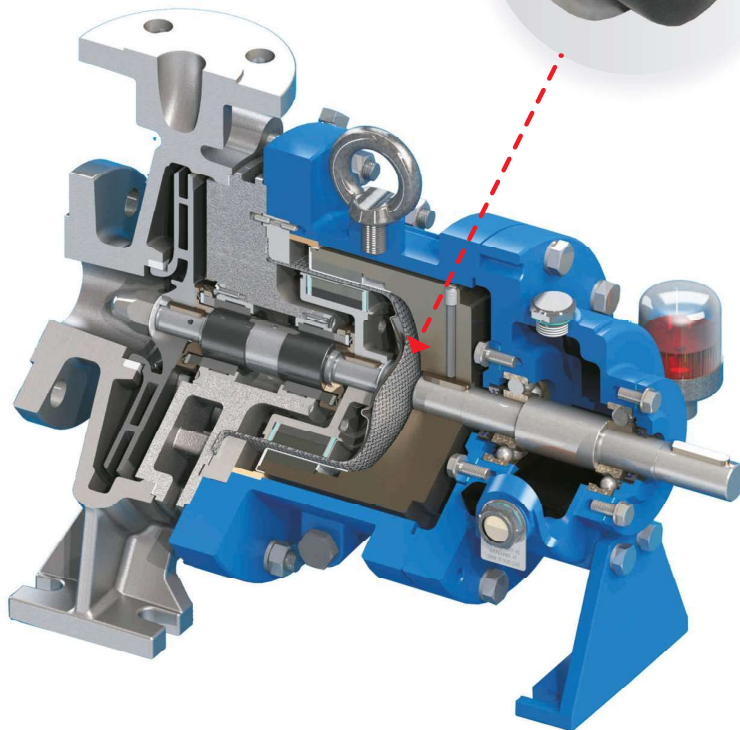
Thanks to our 40 years of experience in magnetic drive technology, M Pumps is able to supply innovative and unique rear containment shell on magnetic drive pumps to enhance the competitiveness and operational efficiency in today's process industry. As technology advances, the need for high pressure, high temperature and energy efficient become the top priorities among pump users. Staying ahead of these priorities required M Pumps to adopt a forward thinking and proactive approach to pump design.

The patented hybrid technology containment shell combines the reliability of a standard inner metallic shell (High Pressure and High Temperature) with the strength of Carbon Fibre outer shell to achieve an energy efficient (Reduction in magnetic loss and cost of ownership) and environmental friendly (Hermetically sealed) solution.



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Standard version



Available on all M PUMPS Process Pumps

Based on this Philosophy, M Pumps has created an advanced High pressure, High Temperature and Energy efficient Rear Containment Shell to eliminate the various concerns on the use of magnetic driven pumps in the process industry.

M PUMPS Hybrid Technology is the most advanced and attractive ENERGY SAVING solution available now in the market. Innovative and unique M Pumps solution offering:

Main Advantages

- Impressive reduction in Magnetic losses
- High Pressure design: vacuum to 50 bar g
- High Temperature design: -90 °C to 200 °C
- Motor power installation up to 1000 kW



On demand:
integrated thermoprobe sensor
type E

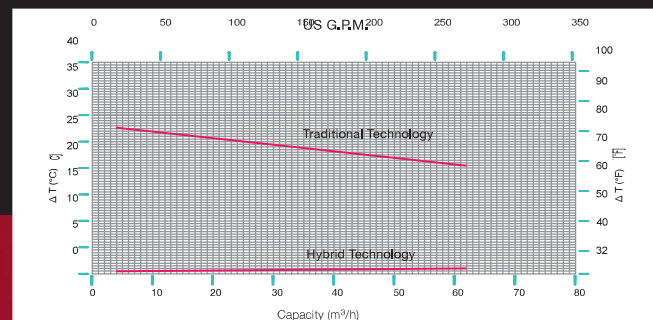
Mag Losses and Heat Reduction

Hybrid shell containment comparison (*)				
	MATERIAL	DES PRESS (bar)	DESIGN TEMP °C	MAG-LOSSES (kW)
HYBRID M PUMPS	HASTELLOY C / CARBON FIBER	50	-90/+200°C	0,78
COMPETITORS	ZIRCONIUM OXYDE	16	-190/+350°C	/
	METAL ZIRCONIUM OXYDE	16	-190/+350°C	1,5
	COMPOSITE PEEK	16 (≤ 20 °C)	-40/+120°C	/
	PTFE - CARBON FIBER	16	-20/+200°C	/
	BOROSILICATE GLASS	10	-40/+180°C	/

(*) Comparison with installed motor 18,5 kW, 2 poles, 50 Hz.

Table is shown a comparison between M PUMPS and other rear shell solutions available now on the market.

Minimized Temperature rising on rear casing region



Hybrid technology reduces greatly heat generation in the rear casing region. This benefit is particularly important when pumping low boiling liquids.