

# EASY USE, LONG TERM PREFERENCE

(PUMPS FOR CLEAR FLUID HANDLING)



**SERIES MER**  
MAGNETIC DRIVE SEALESS PUMPS

## MER SERIES - MAGNETIC DRIVE PUMPS FOR ANY FLUID

MER series - Magnetic Driven Pumps are single stage, closed impeller type centrifugal pumps. These pumps can be dismantled and assembled without any special tools and rotating parts can be easily replaced, hence bringing down the maintenance cost of the pump.

### Chemical resistance:

The MER series pumps are designed for high chemical and mechanical resistance. Thermoplastic materials such as GFR/PP and PVDF suitable for temperatures range of  $-30^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$  depending on the materials.

Non-plastic parts which are coming in contact with the pumping media are in excellent corrosion resistance material such as pure ceramic / silicon carbide and GFP/PP/CFT/PTFE.

### Principle operation:

A group of magnets (drive) turns jointly with the motor shaft, generating a magnetic torque that allows the rotation of the second magnets (driven) group on which is moulded impeller. A suitable shaped diaphragm separates the primary group of magnets from the impeller and consequently from the pumped fluid. This magnetic pumps are 100% leakproof, as they are without mechanical seal & packing free.



### Construction:

The volute casing is a single injection moulded with excellent chemical resistant materials. Flanged connections are normally ANSI B16.5.

The rear cover realised with the same thermoplastic material is coupled with volute casing forming tight chamber. 'O'-Ring in Viton or EPDM or FEP guarantees a perfect sealing.

The shaft and the rotating parts are built of pure ceramic ( $\text{Al}_2\text{O}_3$  99.7%) or silicon carbide.

The drive magnet as well as impeller magnet are made of isotropic and anisotropic Ferrite or Neodymium - Iron - Boron depending on the requirement.

### Electric motor:

MER series pumps can be supplied with std. TEFC Non-FLP and FLP motors.

### Examples of applications:

The application's field of this type of magnetic driven pumps includes a wide range of possibilities.

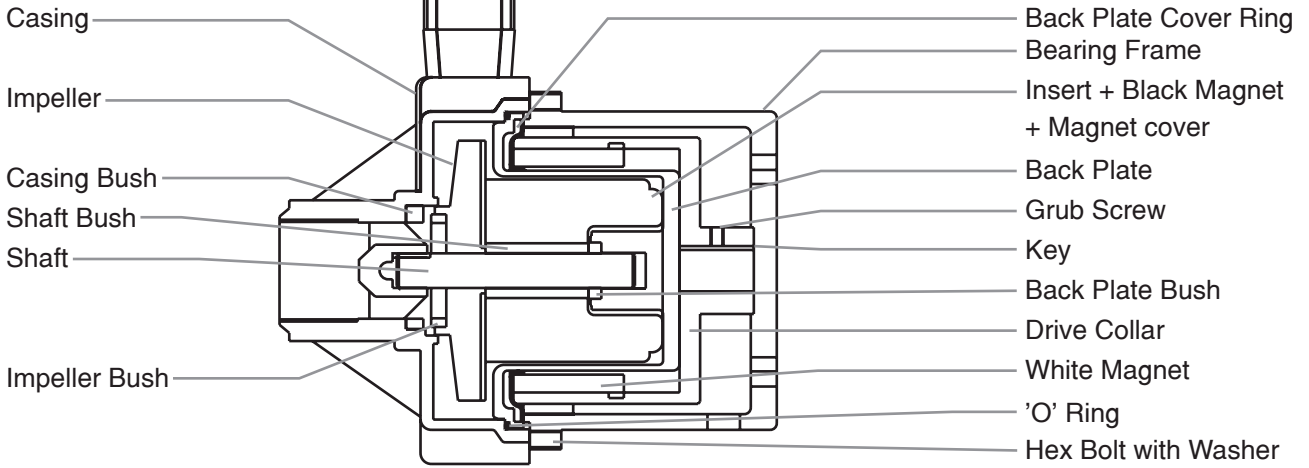
Apart from the standard magnetic drive applications in the chemicals industry, MER series could be successfully used in filtering plants water treatment systems, heat exchangers, IC photoengravings, ultrasonic cleaners, colours or black and processors and metal finishing industry.

### Caution

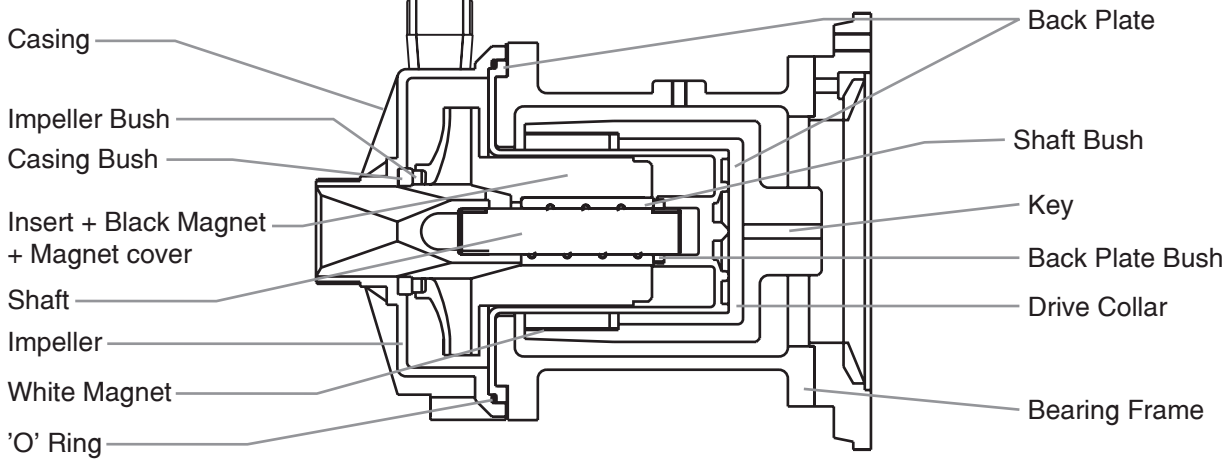
- The pump must not run dry.
- These pumps are meant for clear fluid services only. Dirty fluids (containing slurries or particles) may reduce durability of magnets resulting into malfunction of the pump.



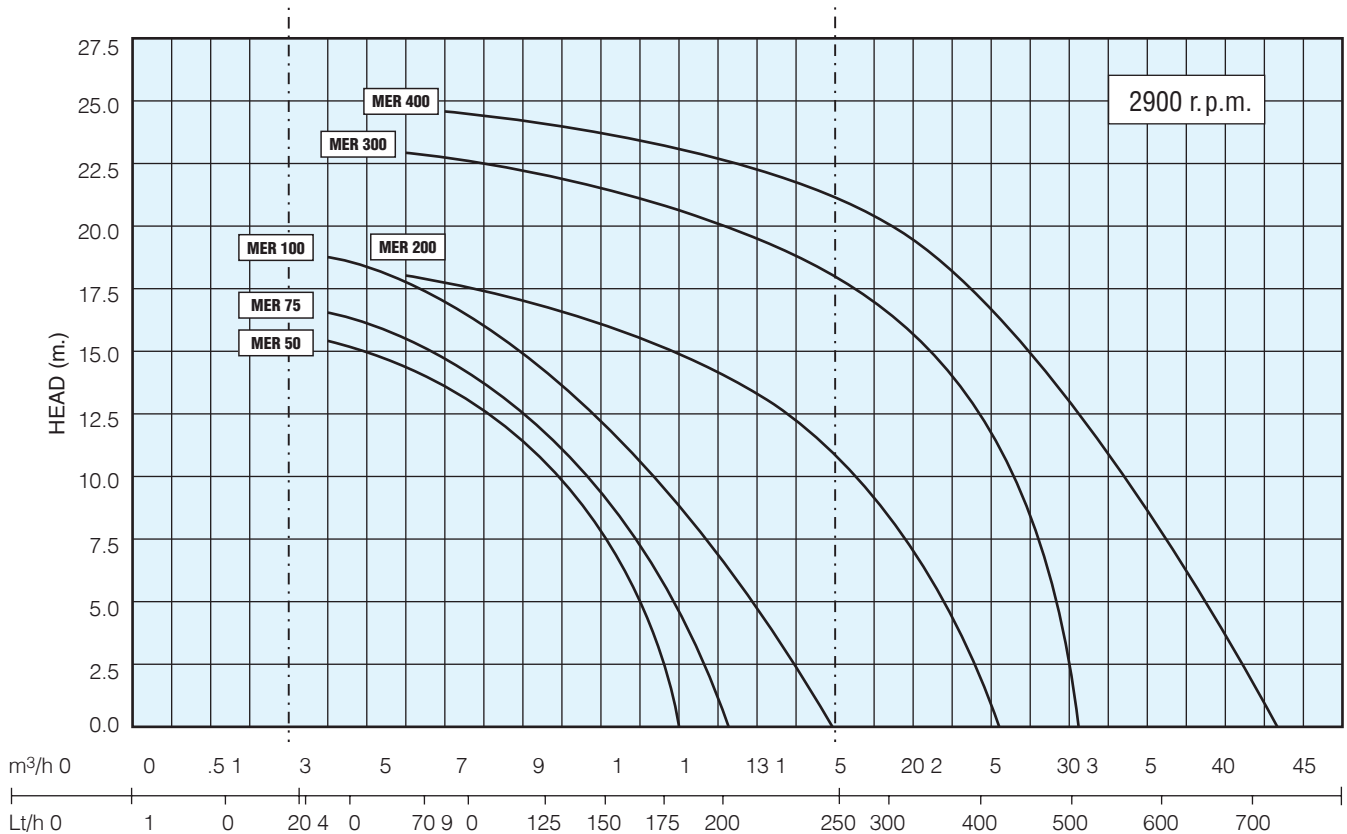
**MER 50 - MER 75 - MER 100**



**MER 200 - MER 300 - MER 400**



**General performance curves**

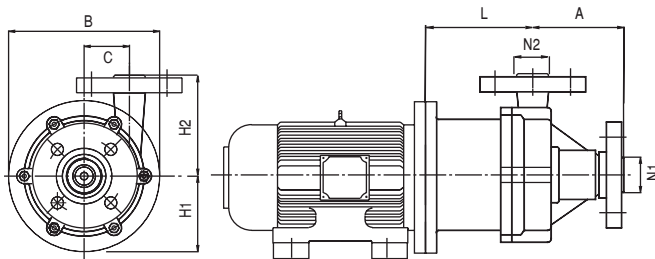


## Materials of constructions

| PART NAME          | MATERIAL                         |
|--------------------|----------------------------------|
| Casing             | PP / GFR / PVDF                  |
| Impeller           | PP / GFR / PVDF                  |
| Back Plate         | PP / GFR / PVDF                  |
| 'O'-Ring           | Viton / EPDM / FEP               |
| Shaft              | Ceramic (99.7%) / Silicon        |
| Shaft Bush P       | P / GFP / PTFE / CFT             |
| Impeller Bush P    | P / GFP / PTFE / CFT             |
| Casing Bush C      | eramic (99.7%) / Silicon         |
| Black Plate Bush C | eramic (99.7%) / Silicon Carbide |

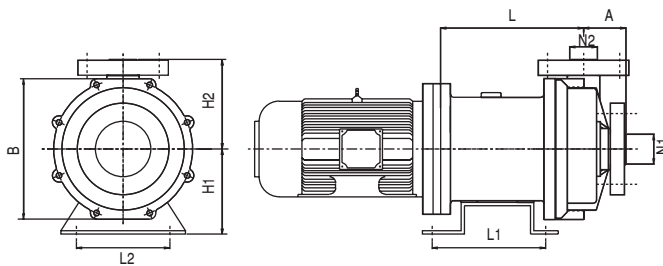
| Material |  |
|----------|--|
| PP       | Polypropylene                            |
| GFR G    | lass fibre reinforced Polypropylene      |
| PVDF     | Polyvinilidene fluoride                  |
| PTFE     | Polytetrafluoroethylene                  |
| CFT C    | arbon fibre filled Teflon                |
| Ceramic  | Alumina ceramic at 99.7% (high purity)   |
| Sic      | Silicon carbide                          |
| Viton    | Fluorinated elastomer                    |
| EPDM E   | thylene-Propylene rubber                 |
| FEP F    | luorinated, Ethylene-Propylene copolymer |

## Constructive dimensions



| MODEL M | ER 50  | MER 75 M | ER 100 |
|---------|--------|----------|--------|
| KW      | 0.55   | 0.75     | 1      |
| HP 0    | .75    | 1        | 1.5    |
| N1      | Ø30    | Ø30      | Ø30    |
| N2      | Ø30    | Ø30      | Ø30    |
| A       | 120.55 | 20.55    | 120.55 |
| B       | 200    | 200      | 200    |
| C       | 60     | 60       | 60     |
| L       | 142.05 | 42.05    | 142.05 |
| H1      | 100    | 100      | 100    |
| H2      | 134.3  | 134.3    | 134.3  |

FLANGES AS PER ANSI & DIN STANDARD



| MODEL M | ER 200 M | ER 300 M | ER 400 |
|---------|----------|----------|--------|
| KW      | 2.2      | 3.75     | 5      |
| HP 3    | 3        | 5        | 7.5    |
| N1      | Ø40      | Ø40      | Ø50    |
| N2      | Ø32      | Ø32      | Ø40    |
| A       | 64       | 64.6     | 4      |
| B       | 242.4    | 242.4    | 242.4  |
| L       | 215.5    | 215.5    | 215.5  |
| H1      | 106.6    | 106.6    | 106.6  |
| H2      | 135.8    | 135.8    | 135.8  |

FLANGES AS PER ANSI & DIN STANDARD

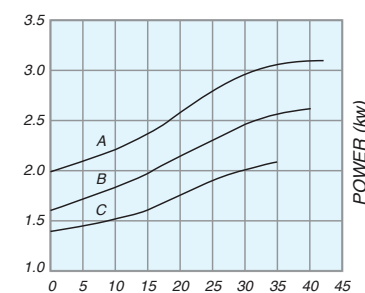
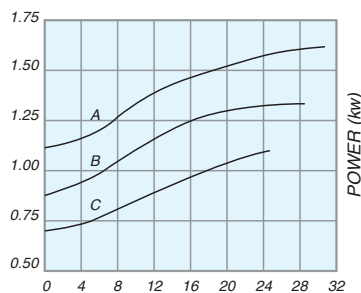
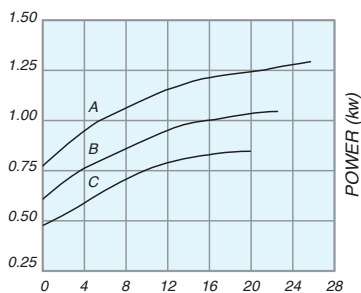
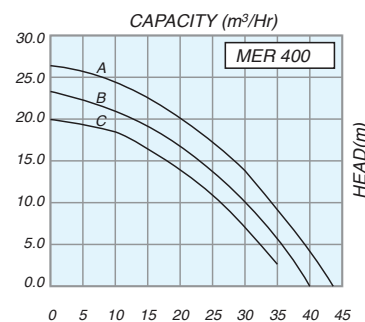
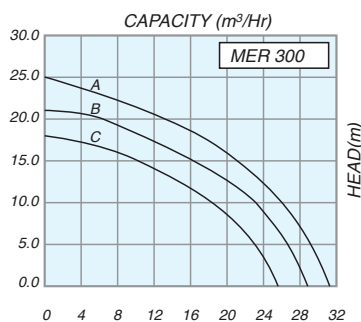
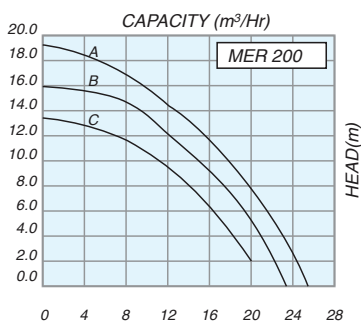
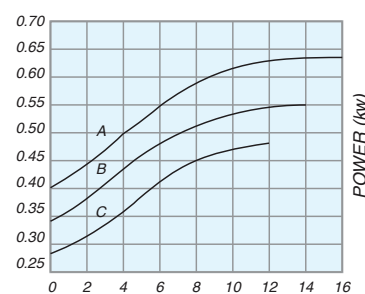
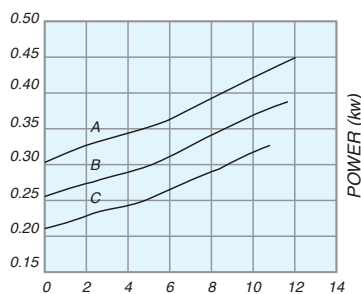
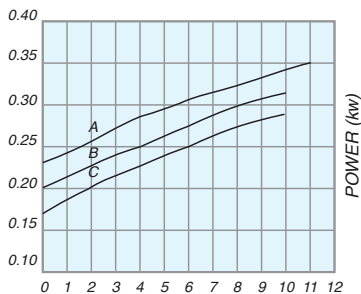
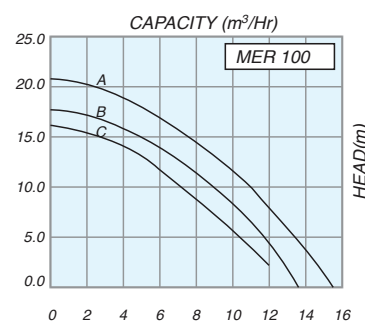
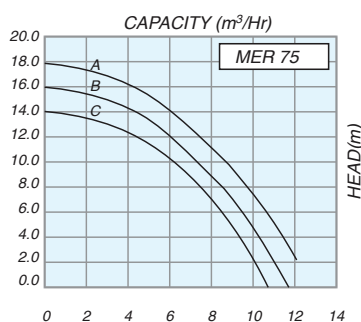
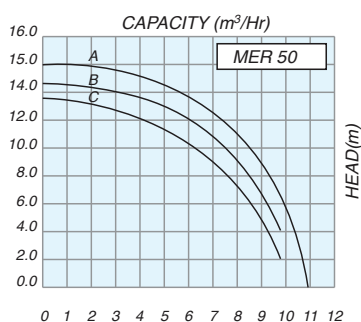
## Curves - 50 Hz

Limits of specific gravity (in Kg/dm<sup>3</sup>) referred to the maximum flow for each impeller.

| Impeller | Specific gravity | Specific gravity |
|----------|------------------|------------------|
| A        | 1.1 - 1.4        | 1.4              |
| B        | 1.25 - 1.6       | 1.6              |
| C        | 1.4 - 1.9        | 1.9              |

IEC electric motor

| Pump  | MER | 50   | 75   | 100 | 200 | 300 | 400 |
|-------|-----|------|------|-----|-----|-----|-----|
| Motor | kW  | 0.55 | 0.75 | 1.1 | 2.2 | 3.7 | 5.5 |



Curves referred to water at 20° C. Viscosity = 1° E

Power referred to specific gravity = 1kg/dm<sup>3</sup>

The **Raje-Dia Pumps** is dedicated to the manufacture of highly corrosive liquid handling system for the core sector. An exhaustive survey was carried out on pumps built for handling corrosive liquids at high temperatures under various service conditions. To meet the growing demand, Raje-Dia has a fully equipped state-of-the-art manufacturing plant in Gujarat with comprehensive production, quality assurance and testing facilities.

**Raje-Dia Pumps** are available all over the country with an efficient dealers and after sales service network.



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## **Raje-Dia Pumps Pvt. Ltd.**

1 - G, Laxmi Industrial Estate, New Link Road,  
Andheri (West), Mumbai 400 053, INDIA.  
Fax: 91-22- 2632 0866  
Phone: 91-22-2635 2846, 2639 0337/38, 2636 1737.  
Website: [www.rajediapumps.com](http://www.rajediapumps.com)  
E-mail: [rppl@rajediapumps.com](mailto:rppl@rajediapumps.com)



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