

## VERDERMAG

## Mag Drive Centrifugal Pumps







# Verdermag Any mag drive you want we got it



## Verdermag Mag Drive Centrifugal Pumps

The series of mag drive centrifugal pumps from Verder consists of a wide range of both metallic and non metallic pumps. Verder has more than 40 years of experience in mag drive centrifugal pumps and is an expert in choosing the most adequate pump for your pumping application.



The Verdermag series of pumps comprises the metallic Global and the non-metallic heavy duty TB, U, V&W series and the normal duty V-MD, GPMD and GLMD versions. The Verdermag range is therefore a complete, well-balanced series of magnetically coupled centrifugal pumps.

As with all series of Verdermag centrifugal pumps, emphasis is on maximum interchangeability and quality improvements, hence all products are covered by a two-year guarantee, as well as the standard Verder warranty package.

### Features and advantages

- Simple by design Fewer parts are used in the whole pump than most conventional seal cartridges ensuring easy maintenance and assembly
- Mag drive coupled: completely leak free

Mag drive centrifugal pumps are being used in a wide range of industrial areas:

#### Chemical industry

Acrylic acid, 50% aluminum chloride, hydrofluoric acid 50%, hydrogen sulfide, 85%, sulfuric acid, 98%, ammonia, phosphate and many others

#### Electronics industry

Plating, etching, ferric chloride, hydrochloric acid 37%, sodium hydroxide 50%

### Mining Brine with uranium solids, H2O, soda ash, HCI

### Galvanic industry

Plating, etching, filtration

### Pharmaceutical industry

Sodium hydroxide 50%, caustic soda, hot oil, solvents

## Steel industry

Hydro chloric acid, pickling liquor, sulfuric acid



## Working principle

Although each mag drive pump series -depending on its design- has its own characteristics, all mag drive pumps work with a magnetic coupling.







## The principle of a magnetic coupling

A magnetic coupling consists of two magnet assemblies. One is the outer assembly (the drive magnet) and the other is the inner assembly (the driven magnet). The outer assembly is connected to a motor and the inner assembly is directly or indirectly attached to a pump impeller. As illustrated, at rest, the magnet components of the outer assembly are aligned with their counterparts in the inner assembly. When load (torque) is applied, the coupling deflects angularly and the magnets create a force of simultaneous attraction and repulsion. This force is used to transfer torque from the motor to the impeller.

This permanent magnet coupling creates neither slippage nor induction currents during rotation. If excessive torque is applied, the magnets will de-couple. The magnets will not re-couple unless the pump is stopped. There is no energy loss in a permanent coupling unless an electrically conductive containment is placed between the outer and inner magnets. If an electrically conductive material is used for the containment, Eddy Currents will be generated which will cause some energy loss.





Flow range

Flow range

Heads

Heads

Heads

#### **OVERVIEW OF PUMP SERIES**

#### Series V-MD

The wide choice of V-MD pumps is based upon the most common OEM requirements for optimum flow and head characteristics. At least 10 models are available in PP and/ or E-TFE. The major advantage for using the V-MD pumps is total product containment; no unexpected leakage. Connections are hose design or threaded.

## Series GPMD and GLMD

The GPMD and GLMD series are mid capacity mag drive pumps with a very good price/quality relation. The pumps are available in PP and ETFE (GPMD) and in ETFE lined cast iron casing (GLMD). In general design the GPMD and GLMD models do have some interchangeable parts when comparing ETFE built versions.

#### Series TB, U and V&W

Verder offers you the newest mag drive series, with thrust balancing (TB series) and universal purpose pumps (U series). Also available is the V&W series, based upon the TB series, vertical inline pumps with the same benefits and features as the TB series. The patented Thrust Balancing Design eliminates axial thrust bearings and provides the basis for a controlled internal environment. This design minimizes the issue of secondary containment by providing secondary bearings.

## Flow range up to 300 m<sup>3</sup>/h up to 110 m

up to 40 m

up to 100 l/min

up to 1500 l/min

up to 14 m



Flow range up to 440 l/min Heads max. 26.5 m



## Series GPSP

The GPSP self priming mag pump is a high quality mag drive centrifugal pump with best efficiency and fastest working duty points. Model GV is constructed of PP (housing material) whilst model GV(F) is constructed of ETFE. Material choice on bushing and O-ring is carbon/FPM, ceramics/FPM or PTFE/FPM to provide utmost application possibility.

## **Series Global**

Metallic mag drive series with great possibilities to cover requirements according to ISO 2858, high pressure system Pumps, and more basic pumps (style 1 Models).

## VERDER MAG GPMD and GLMD SERIES

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Most major storage of concentrated chemicals is done in tank farms, located outside of the production facilities for safety and logistical reasons. The GLMD/GPMD pumps are used to pump these liquids into the plant, where the liquids are used for production. The majority of liquids are: acids, like hydrochloric acid, sulphuric acid, nitric acid, phosphoric acid and bases, like sodium hydroxide, potassium hydroxide etc. from virtually zero to full concentration.

### Model GPMD

The GPMD model is available in both polypropylene and ETFE and is notable for its solid plastic front casings. The process connections are standard threaded flanged with slotted holes to accommodate DIN, ANSI and JIS contra-flange specifications. Thread connections are available as well. The polypropylene components are injection moulded with glass fibre reinforcement, the E–TFE material is reinforced with carbon fibre. Most chemicals can be transferred with these material options.

#### Model GLMD

The stationary ceramic shaft design avoids complex internal design, as the single sleeve bearing is fitted into the internal magnet. The standard material for this sleeve bearing is high density carbon, this has self-lubricating possibilities if process flows are reduced. The front- and rear casing are sealed by just 1 static o-ring in Viton. The injection moulded ETFE components, such as front casing liner, rear casing, impeller and internal magnet are reinforced with 20% carbon fibre to give optimum strength and temperature resistance. The maximum liquid temperature limit is therefore 90°C.

#### **Technical specifications**

	GPMD	GLMD
Flow range	1300 l/min	1500 l/min
Head	up to 30 m	up to 40 m
Temperature	up to 90 °C	up to 90 °C
Operating temp.	max. 6 bar	max. 6 bar
Power supply	up to 11 kW	up to 11 kW



## Features and advantages

- Suitable for most chemicals
- Standard is threaded flange with slotted holes (thread only connections can be offered upon request) for GPMD, Metal-lined casing with fixed flanges (GLMD)
- Main sealing through only 1 static o-ring in Viton<sup>®</sup> (optional EPDM)
- Standard installed carbon graphite for the single sleeve bearing (optional SiC and ceramic)
- Max. of 0.5% of solids by volume
- Particle size should be limited to 50 microns
- Eddy Current losses of max. 2% (GLMD)
- All units are close coupled

Model GPMD

 Magnet coupling of Samarium Cobalt (> 4 kW at 50 Hz) or Barium Ferrite (< 4 kW)</li>

#### Applications

- Chemical industry
- Pharmaceutics
- OEM
- Tank emptying
- Food processing



### Model GLMD



## **Applications**

**Agriculture** Fertilzer

**Ammonia manufacturing** DSIA (disodium) Hydrochloric acid 33%

Animal Nutricion Ferric sulfate 10%

Automotive Cooling

**Battery manufacturing** Sulfuric acid

**Beverage** Cleaning liquid Brandy

**Brewery** Cleaning liquid; water treatment

Bromine manufacturing Bromine solutions

## **Chemical industry**

Acrylic acid Acrylomide Aluminum chloride, 50% Bleach gel Chrome solution Ferric chloride Glycol, 30% Hydrochloric acid, 35% Hydrofluoric acid 50% Hydrogen sulfide, 85% Sodium hydroxide, 50% Sulfuric acid, 98% Titamium oxichloride slurry Chemical transport Ammonia Salty acids 31% Water with 20 % NaOH Phosphate Salt sole Water + chemicals Hydrobromic/sulfuric acid Sodium hypochlorite 10% Chrome manufacturing Chrome solution

Clean rooms Waste water

**Cleaning** Fatty acid (hot) Pigment Sodium hypochlorite Sodium hydroxide, 50%

**Corn Starch industry** Hydrochloric acid 35% Sodium hydroxide 50% Sodium metabisulfite

**Corn Sweetening** Sodium hypochorite

**Cosmetics** Solvents

## **Electronics industry** Plating, etching Ferric chloride

Ferric chloride Hydrochloric acid 37% Sodium hydroxide 50% MEK Ethanol/Methano

Environmental industry Caustic Acids VOC contaminants

## Fine chemicals

Sulfuric acid 15% High purity chemicals Solvents

**Food industry** Cleaning liquid for process equipment

Galvanic industry Plating, etching, filtration

**Grain manufacturing** Hydrochloric acid 35%

**High purity water treatment** Hydrogen peroxide, 10%

Latex production Orto-di-chloro Benzeen (ODCB) Tolueen-di-isocianaat (TDI) Materials supplying Chlorinated organics

**Metal** Pickling

**Mining (Uranium)** Brine with uranium solids H2O, soda ash, HCl

**Municipalities** Acids Caustic

Nuclear power Acids and caustics

Packaging industry VOC

**Paint and Lacquer** Paint Solvents

**Paint industry** Sulfuric acid, 93% Dilute sulfuric acid Hydrochloric acid

**Paper mill** Aluminum chloride Aqueous sodium bisulphate

**Pet food** Acids and caustics

**Petrochemical industry** Crude oil

**Pharmaceutical vaccines** Sodium hydroxide 50%

**Pharmaceutical industry** Caustic soda Hot oil, solvents

**Photo industry** Sulfuric acid, 35% Developer

**Plastics industry** Bleach solution Sulfuric acid, 93% **Plating industry** Bromic acid Sulfuric acid, 10%

**Printing industry** Cooling Solvents

**Pulp and paper** White liquor and bleach

**Rail car unloading** Monochloroacetic acid Acids and caustics

**Refinery** Sulfuric acid, 98% Oil, solvents

Road tanker trucks Acids and caustics **Semi-conductor industry** Cupric chloride High purity chemicals

**Phosforie Acid** Sulfuric Acid

Solvents manufacturing Hydrochloric acid 30% Solvents

**Steel industry** Hydro chloric acid Pickling Sulfuric acid

**Sterilizing** Sulfuric acid glycol trace ethylene oxide Cleaning liquid **Tank unloading** Sulfiric acid, 85% Sulfuric acid, 93-98% Acids and caustics

Utility Sulfuric acid, 93%

Vaccines manufacturing Methallyl chloride 100%

Washing streets Soap solutions

Waste treatment Acids

Water and sewage treatment Acids Caustic soda Hydro chloric acid





# Verdermag Passion for pumps

*Liquids handling is the original passion of Verdermag. Its liquids handling companies supply a wide range of first-class pumps for a variety of industrial purposes.* 

Verder Liquids is active in many industrial sectors: chemical and process industry, food, pharmaceutical, water treatment, and environmental industries.

Within these industries pump requirements vary enormously and applications and needs change frequently. In order to ensure we provide the best solutions. We analyse and monitor industrial trends as well as maintaining close relationships with our customers.

## International presence

The Verder Group Liquids division has affiliates in: Austria - Belgium - China - Czech Republic - France - Germany Great Britain - Hungary - Netherlands - Poland - Romania - Slovakia South Africa

### Your advantages

The advantages of working with us are clear, we offer you:

- single-source solutions: Verder's wide and complementary range of pumps allows you to source your entire pumping needs from one company, reducing your costs;
- expertise: years of providing pumping solutions to industry have given us valuable expertise and knowledge which we are able to use to supply the most appropriate and reliable pumps;
- international affiliated company: our size gives you the confidence that you are dealing with a powerful international pump company and if your project involves overseas work then you can profit from our international network of companies.

### **Contact Verder**

If you would like to know more about our pumping solutions then please visit our website www.verder.com/liquidshandling. You will find the full range of our pump ranges as well as application stories, latest news and the contact details of our local specialist.



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**Any questions?** You may still have questions and/or comments after reading this brochure. Please feel free to contact us on +31 (0)30 677 92 11. You can also respond via email to info@verder.com. For more information about Verdermag please visit our website www.verder.com/liquidshandling

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