RICHTER
Process Pumps & Valves

Centrifugal Magnetic Drive Pump

MNK
125-100-315

powerful ■ robust ■ reliable

MNK 125-100-315

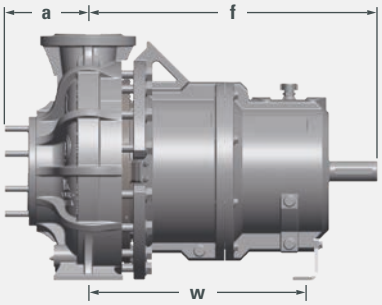
Technical data

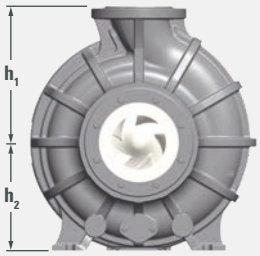
Dimensions

Inlet-Ø	Outlet-Ø	Impeller-Ø
125 mm	100 mm	315 mm

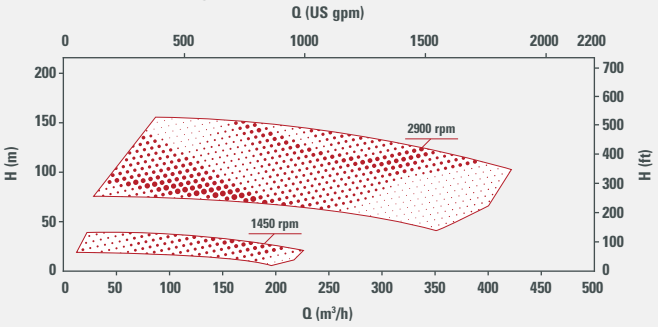
a	f	h_1	h_2	w
140 mm	660 mm[1)]	315 mm	250 mm	490 mm[1)]

[1)] deviating from DIN EN ISO 2858

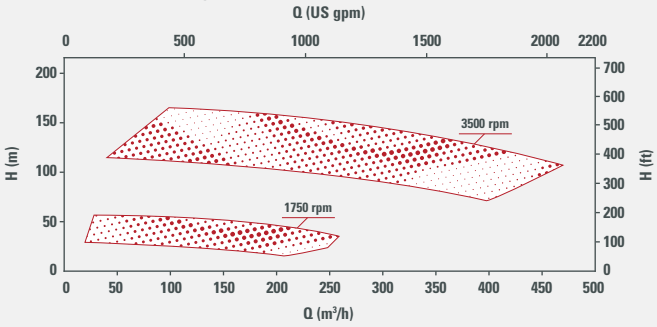




50 Hz Performance range



60 Hz Performance range



The MNK 125-100-315: A True Game Changer

The demand for operational safety, availability and reliability places high standards on the plant components used in the chemical industry.

Especially when it comes to handling toxic, corrosive, aggressive and environmentally hazardous media, lined magnetic drive pumps are the optimum solution and always superior to mechanical seal pumps or metallic magnetic drive pumps.

- Between two magnetic coupling elements, a containment can hermetically seals the fluid from the outside and guarantees safe operation – without leakage and emissions.
- The elimination of a mechanical seal allows wear-free and thus virtually maintenance-free continuous operation of magnetic drive pumps; for the customer, this means less maintenance, downtime and lower spare parts costs.
- The PFA lining of the flow guiding components prevents the corrosive and aggressive fluids from affecting metallic surfaces.

Richter Chemie-Technik GmbH is consistently continuing on its path with the development of the magnetic drive pump series MNK. The MNK 125-100-315 was designed in close cooperation with a leading manufacturer for innovative material solutions in the chemical industry. It closes the gap to mechanical seal pumps and metallic magnetic drive pumps in terms of efficiency, head and NPSH value – without compromising on operational safety. The MNK 125-100-315 – a combination of innovations from compressor technology with experience from pump technology – the best of both worlds.

Development strategy

- Definition of the requirement specification in cooperation with a development partner from the chemical industry
- Design of the flow components using state-of-the-art CFD design methods and fluid-structure coupling
- Validation of the design in a six-month 24/7 heavy-duty operation at the development partner's site

Design features

- closed impeller with splitter blades, metalcore and PFA lining
- optimized pump hydraulics:
  - low NPSH values
  - smooth and low-vibration operation
  - wide efficiency optimum
- improved impeller eye sealing
- double can system: diffusion-resistant, pressure-resistant, break-proof
- universally corrosion resistant due to lining with pure PFA and use of robust SSiC plain bearings
- proven design of the MNK series
- Condition monitoring system: SAFERUN®-ready

Technical specifications

- maximum flow rate: 450 m³/h
- maximum head: 240 m
- maximum operating pressure: 25 bar
- maximum fluid temperature: 200 °C

MNK 125-100-315

Design features

Impeller with partially or fully supported metalcore and PFA lining

- No loss of performance due to impeller corosion
- Maximum protection against impeller failure

Up to 12 mm PFA wall thickness

- Maxiumum corrosion safety

Condition Monitoring System SAFERUN®

- IoT-ready

Optimized impeller blade design with splitter blades

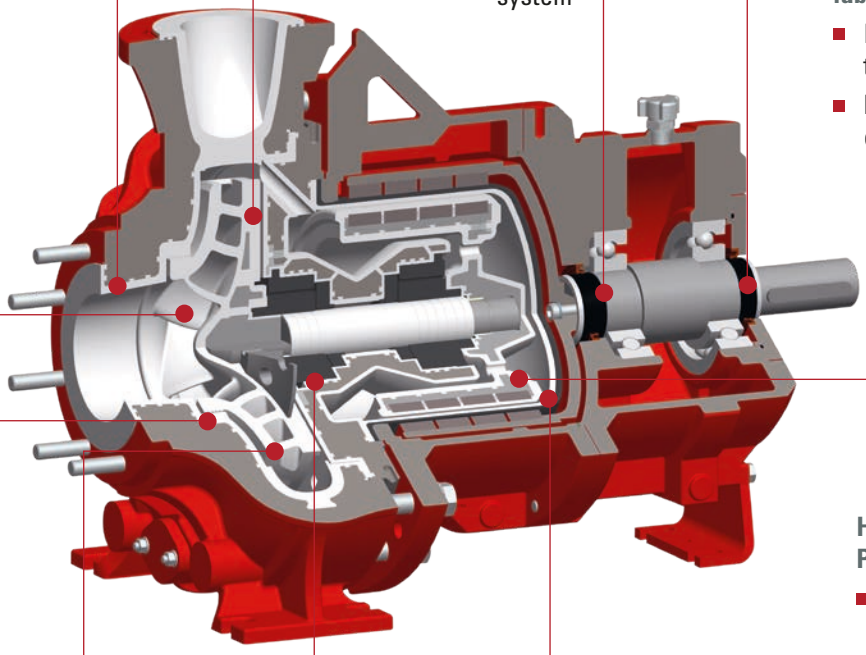
- Improved NPSH values
- Reduced blade loading
- Smooth operation

Optionally: SAFESEAL®

- Secondary sealing system

Optimized bearing lubrication

- Increased temperature range
- Less maintenance cycles



Optimized impeller eye design

- Improved efficiency

High performance Permanent magnets

- For high fluid temperatures
- For forques up to 800 Nm

Modular system MNK: Impeller with splitter blades, one piece impeller/shaft

- Proven “heavy-duty“ design of the MNK 200-150-315

Hermetic can sealing

- No mechanical seal leakage or auxiliary system requirement

Plain bearings made of pure SSiC optionally: SAFEGLIDE®

- Dry run protection system

MNK 125-100-315

Areas of application

Media

- Corrosive fluids
- Hazardous fluids
- Fluids with solids
- Crystallizing fluids
- Toxic fluids
- Hot fluids up to 200°C
- High purity fluids

Products & production targets

- Chlorine electrolysis
  - Anolyte and catholyte production
  - Precipitation brine
  - Clear brine
  - Bleaching brine
- MDI production
- TDI production
- MNB Mono-Nitrobenzene production
- Plastics and special fibres production
- Sulfuric acid concentration
- Sulfuric acid production
- Metal pickling

Applications

- Basic Chemistry
- Petrochemistry
- Pharmaceutical industry
- Water treatment
- Food industry
- Semiconductor production
- Pulp production
- Metal processing
- Waste disposal/recycling
  - Sulfuric acid (H_2SO_4)
  - Sodium hypochlorite (NaOCl)
  - Bromine (Br)
- Large multi-purpose plants

leakage-free ■ maintenance-free ■ smooth running ■ IoT-ready

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