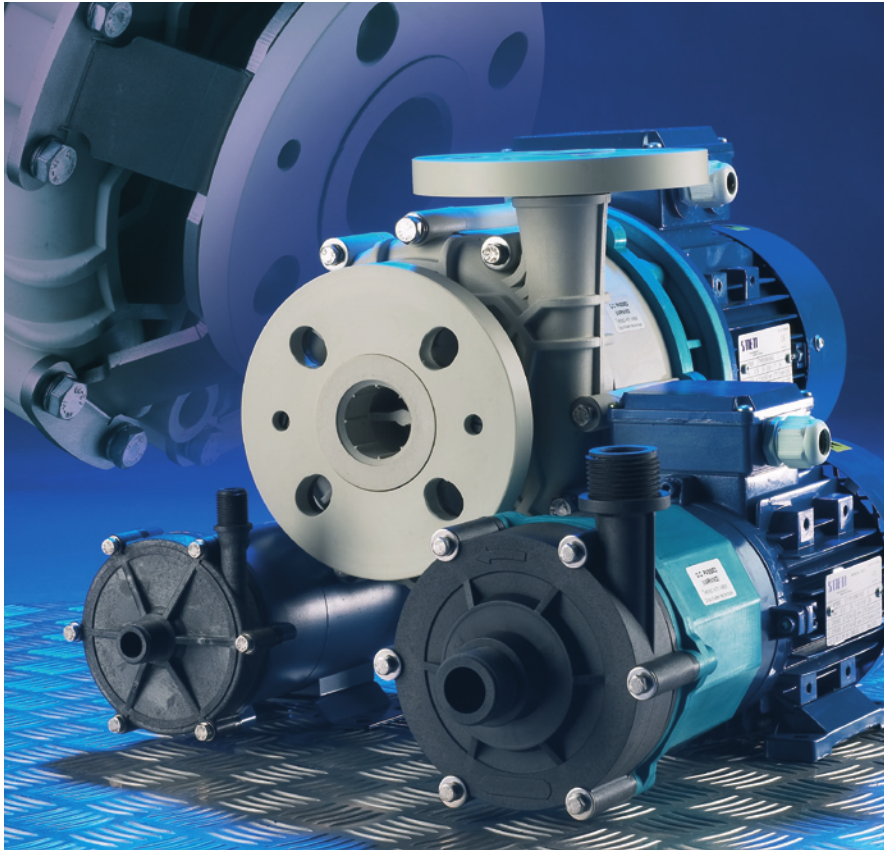


Lutz Horizontal Centrifugal Pumps

Magnetically coupled



Fields of application

- ✓ Galvanic and surface processing systems
- ✓ Water treatment and wastewater systems
- ✓ Etching and cleaning systems
- ✓ Printed circuit board manufacturing
- ✓ Chemical industry (general)
- ✓ Galvanic/acid process plant engineering
- ✓ Photo industry
- ✓ Solar system

Ideally designed for pumping:

Many liquids which include acids, bases, mixtures of acids and bases, solvents, alkali stripping baths, galvanic baths, photo-chemicals as well as radioactive, sterile, expensive or highly corrosive liquids.

Features

■ Sealless

The impeller is driven by the magnetic force of the outer magnets, therefore no mechanical seal is required. As the pump housing is hermetically sealed no leaks can occur.

■ Different bearing systems for different needs

Bearing materials of carbon, ceramic, silicon carbide and Rulon® make it possible to configure pumps individually for difficult operating conditions, such as dry running, suspended solids, or highly aggressive media.

■ Operating safety and high level of efficiency

The use of high-performance permanent magnets ensures high transmission forces even at elevated temperatures. The design of the bearing system and use of compatible materials reduce energy loss through friction.

Customer benefits

✓ Power and efficiency

Maximum level of efficiency through optimised hydraulics results in lower power requirements.

✓ Long service life

The use of high quality materials ensures a long service life.

✓ Highly cost-effective

✓ Easy to maintain

Small number of components and wear parts can be replaced without special tools, thus reducing cost and lengthy downtimes.

ATEX:



The GX version of the AM/TMR series, complies with the requirements of ATEX directive 94/9/EC. Thus they can be used in hazardous (Ex) areas.



Lutz Horizontal Centrifugal Pumps

The right solution for every pumping requirement



TMR G2 / TMR G3 series

With the TMR series, Lutz offers a reliable magnetically coupled pump with a patented magnetic axial thrust self-aligning system that easily handles critical suction conditions caused by pressure loss. When used together with the "R" bearing system, the pumps are suitable for dry running. The series is designed for medium (TMR G2) to large pumping capacity (TMR G3) at higher system pressures.

Pump capacity: up to 48 m³/h (800 l/min)
Pumping head: up to 42 m



AM series

With a proven track record, the AM series is ideal for transfers with medium flows, circulation and low pressure systems. The glass reinforced polypropylene and ECTFE housing combined with the available choice of bearing materials allow the AM series to be used in a wide range of applications with an 85% coverage of frequently use chemicals.

Pump capacity: up to 200 l/min
Pumping head: up to 12 m



TMB series

The TMB series is specially designed for installation in small systems and equipment. The sturdy construction and reduced dimensions make the series suitable for OEM application.

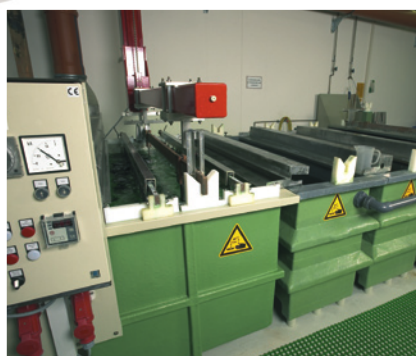
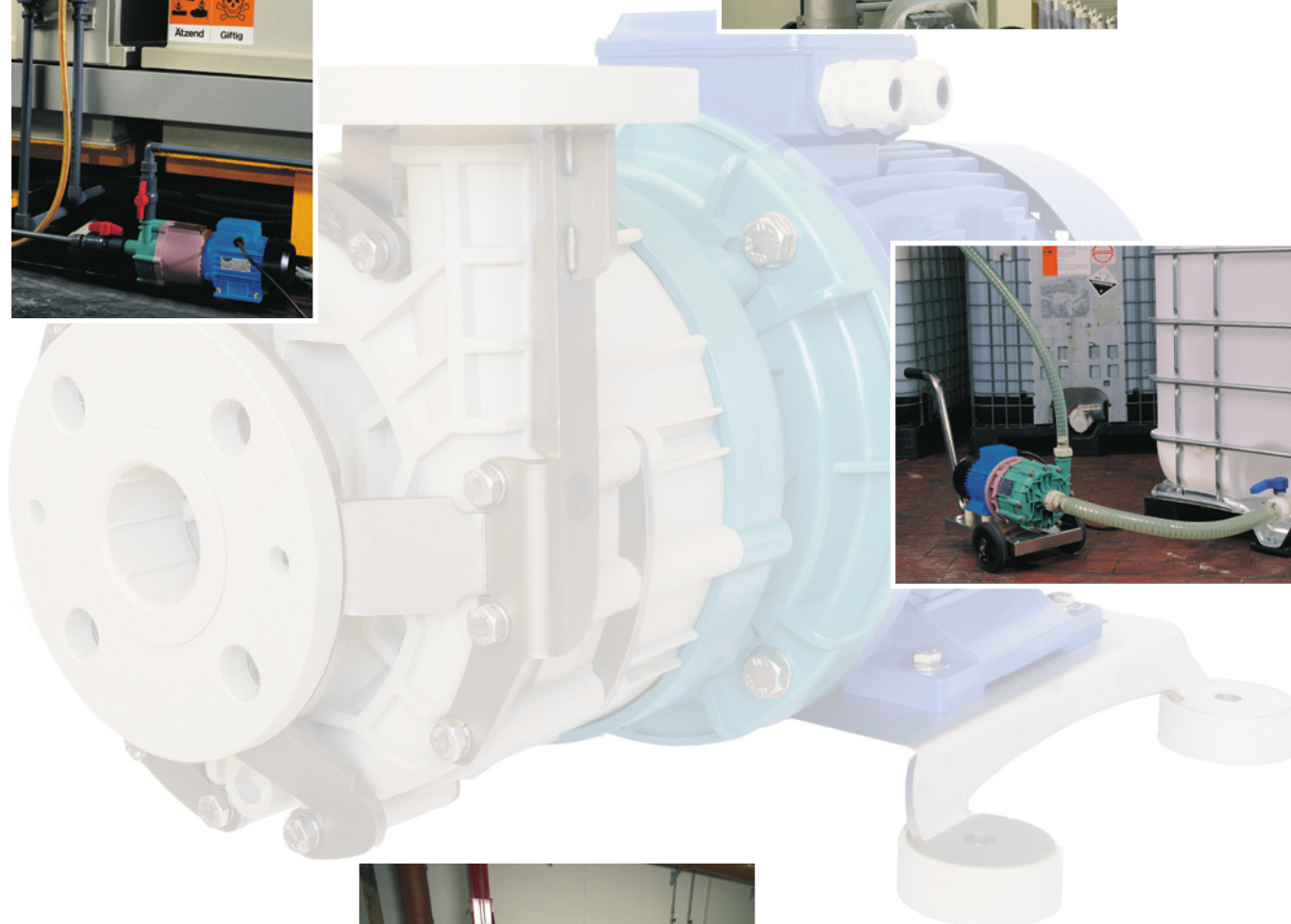
Pump capacity: up to 65 l/min
Pumping head: up to 8 m



EU-Patent No. 1152151
US-Patent No. 6,551,075

Lutz Horizontal Centrifugal Pumps

Pumps are among the most important system components in the chemical and process industries. Safety during operation, reliability and performance are prime considerations, especially when aggressive, corrosive, toxic and other hazardous liquids must be pumped. Don't take chances – contact your Lutz partner or us directly.



Lutz Horizontal Centrifugal Pumps

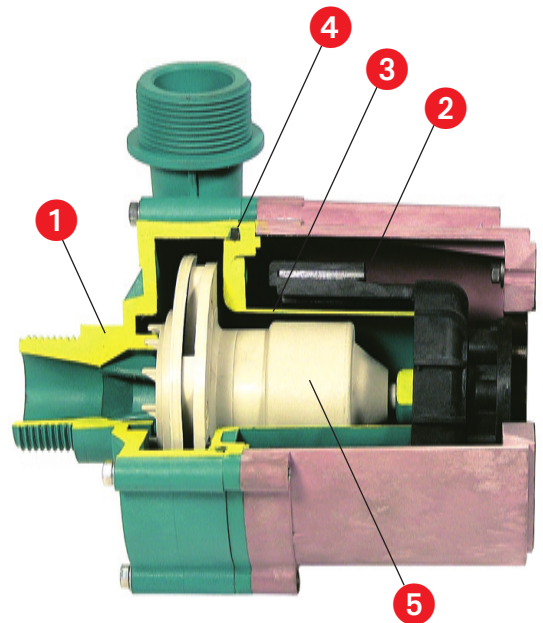
Leak-free and reliable

Operating principle

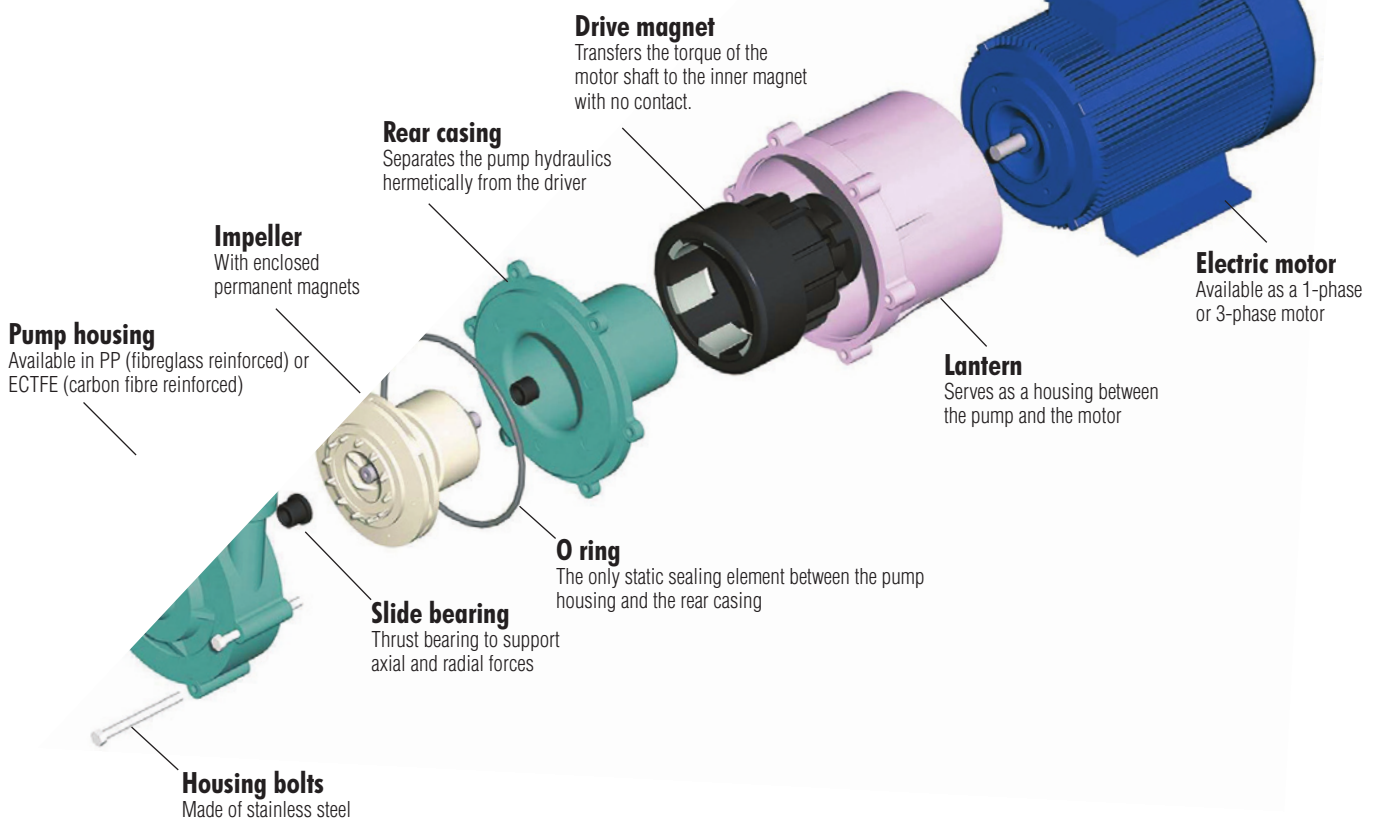
The magnetic coupling consists of two magnetic rotors separated from each other by a closed rear casing. The drive magnetic rotor positioned on the motor shaft transfers the torque of the motor via a rotating magnetic field to the inner rotor enclosed in the rear casing. Depending on the pump design, the driven rotor is directly or indirectly connected with the impeller. Thus the impeller is driven without the need of a shaft seal. The pumped liquid lubricates the bearing of the pump. A static seal between the pump housing and the separate rear casing acts as a sealing element to the atmosphere.

Lutz horizontal centrifugal pumps with magnetic coupling are running leakage- and maintenance-free.

- 1 Pump housing
- 2 Drive magnet
- 3 Rear casing
- 4 O ring
- 5 Impeller with magnet



Exploded view



Lutz Horizontal Centrifugal Pumps

TMB Series: Rugged technology in a minimum of space

✓ Compact dimensions, performance according to the needs

TMB range gives up to 65 l/min. and max. 8m delivery head, ideal for small systems and apparatus engineering. Covers densities up to 1.1 kg/dm³ and viscosities up to 20 mPas.

✓ Corrosion resistant

Bearings made from Rulon®, adequate for hypochlorite solutions, bromine and chromium compounds.

✓ Ideal for mobile applications

In mobile apparatuses.

✓ Variable connections possibilities

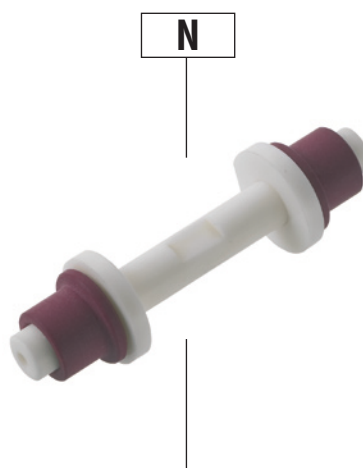
Various threads and flanges are possible.



Pump construction

- **Pump material**
WR: Polypropylene
(glass fibre reinforced)
GF: ECTFE
(carbon fibre filled)
- **Bearing material**
Rulon®, ceramics
- **Sealing of casing**
Viton®
- **Magnet**
Ferrite

Bearing system TMB

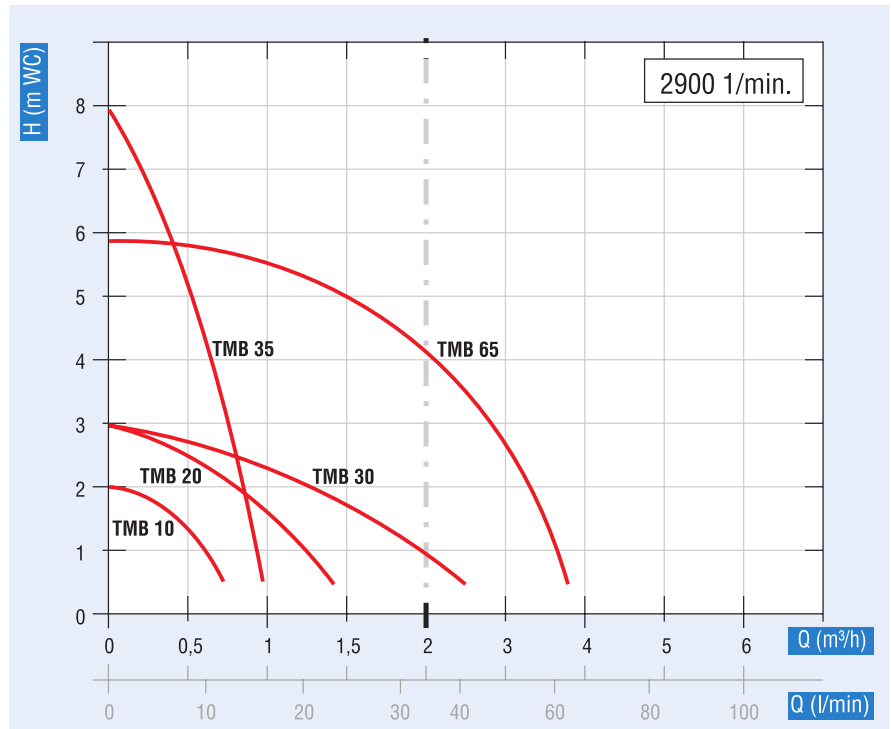


Corrosion resistant **NEW**

Adequate for hypochlorite solutions, bromine and chromium compounds through the use of **Rulon®** slide bearings

Performance curve

Single performance curve in 50 Hz and 60 Hz on request.



Type	TMB 10	TMB 20 - 30 - 35 - 65	TMB 35
Construction	WR	WR	GF
Volute casing	Polypropylene (glass fibre reinforced)	Polypropylene (glass fibre reinforced)	ETCFE (carbon fibre filled)
Rear casing			
Centrifugal impeller			
Operating temperature	0 up to +60 °C	0 up to +60 °C	0 up to +110 °C
Environment temperature	0 up to +45 °C	0 up to +45 °C	0 up to +45 °C
Bearing system	N ₁	N ₁	N ₁
Guide bearing	—	Rulon®	Rulon®
Shaft	SS	ceramics	ceramics
Thrust ring	Rulon®	ceramics	ceramics
O ring	Viton®	Viton®	Viton®
Screws	SS	SS	SS

Technical data		TMB 10	TMB 20	TMB 30	TMB 35	TMB 65
Inlet-Ø	BSP	—	G 3/4 OT	G 3/4 OT	G 1/2 OT	G 1 OT
Outlet-Ø	BSP	—	G 3/4 OT	G 3/4 OT	G 3/8 OT	G 1 OT
Hose connection	Inlet (mm)	14	18	20	18	26
	Outlet (mm)	14	17	20	18	26
Motor power (IEC) 50 Hz	W	15	29	57	57	97
Motor		1-Phase 230 V / 50 Hz				

Viton® and Kalrez® are registered Trademarks of DuPont Performance Elastomers. Rulon® is a registered Trademark of Saint-Gobain. OT = Outer thread IT= Inner thread

Lutz Horizontal Centrifugal Pumps

AM Series: Compact and versatile for small quantities

✓ Small pump sizes, high performance

The AM series achieves up to 200 l/min., max. 12 m delivery head with compact dimensions, densities up to 1.8 kg/dm³ and viscosities up to 40 mPas.

✓ Dry running

The **R** version is suitable for limited dry running (Version WR and GF)

✓ Corrosion resistant

Version **N** adequate for hypochlorite solutions, bromine and chromium compounds.

✓ Low downtimes

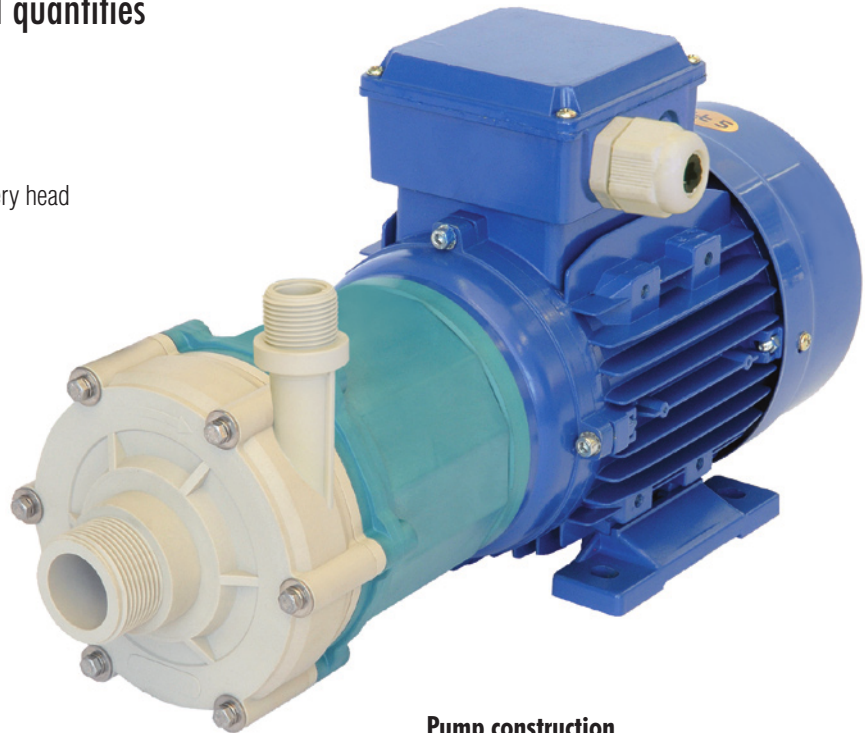
Version **X** up to 5% solids possible.

✓ Variable connection possibilities

Various hoses, threads and flanges are possible.

✓ Also suitable for combustible media

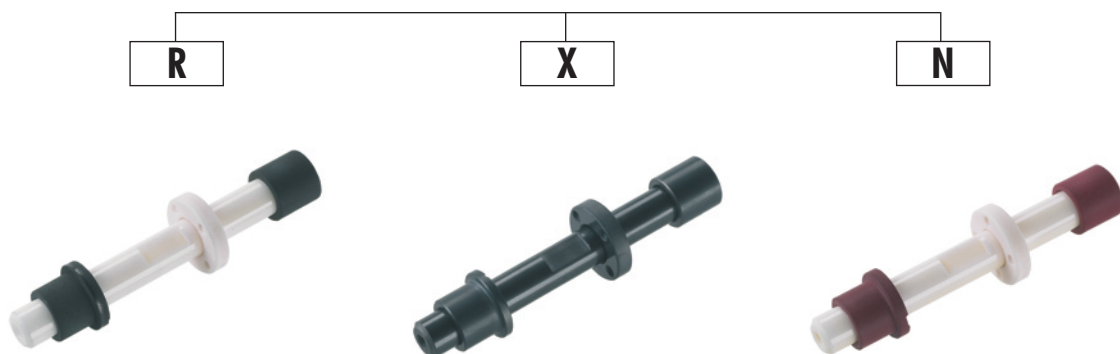
Design GX approved according to ATEX.



Pump construction

- **Pump material**
WR: Polypropylene (glass fibre reinforced)
GF/GX: ECTFE (carbon fibre filled)
- **Bearing material**
Carbon, ceramics, silicon carbide, Rulon®
- **Sealing of casing**
Viton®, EPDM or Kalrez®

Bearing systems AM



Designed for dry running

Designed for dry running through the use of **HD carbon** slide bearings

Adequate for solids

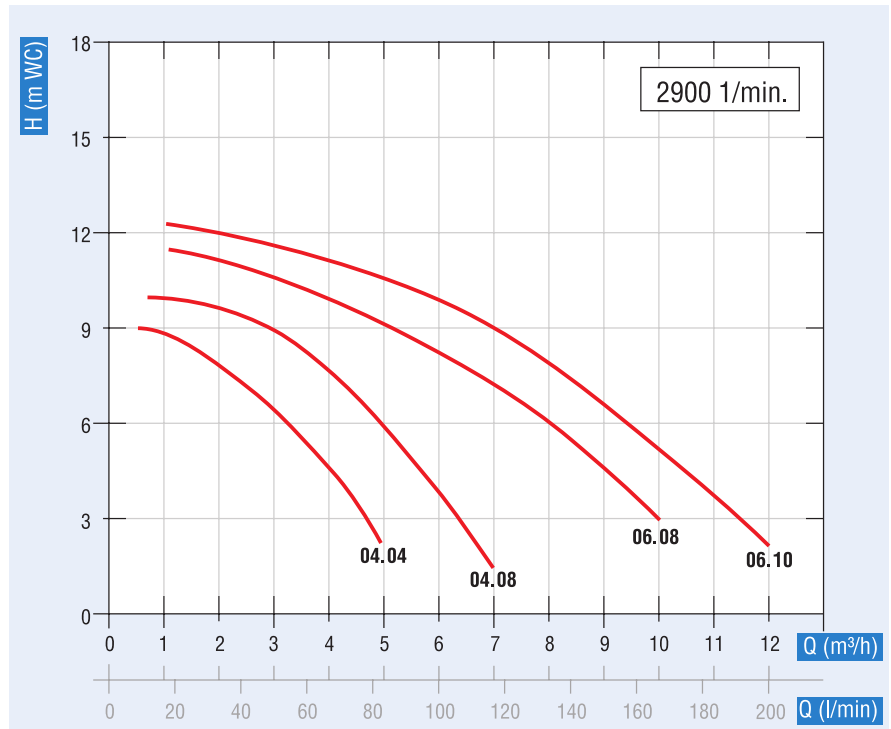
Adequate for solids through the use of **silicon carbide** slide bearings

Corrosion resistant

Adequate for hypochlorite solutions, bromine and chromium compounds through the use of **Rulon®** slide bearings

Performance curve

Single performance curve in 50 Hz and 60 Hz on request.



Type	WR			GF			GX	
Category 2 (acc. to ATEX)	no			no			yes	ATEX
Volute casing	Polypropylene (glass fibre reinforced)			ECTFE (carbon fibre filled)			ECTFE (carbon fibre filled)	
Rear casing								
Centrifugal impeller								
Operating temperature	-5 up to +80 °C			-20 up to +100 °C			-20 up to +100 °C	
Environment temperature	0 up to +40 °C			-20 up to +40 °C			-20 up to +40 °C	
Bearing system	R ₁	X ₁	N ₁	R ₂	X ₂	N ₂	R ₂	N ₂
Guide bearing	HD-carbon	SiC	Rulon®	HD-carbon	SiC	Rulon®	HD-carbon	Rulon®
Shaft	ceramics			SiC			SiC	
Thrust ring	ceramics			SiC			SiC	
O ring	Viton® ¹⁾			Viton® ^{1) 2)}			Viton® ^{1) 2)}	
Screws	SS			SS			SS	

On request: ¹⁾EPDM and ²⁾FFKM (Kalrez®)

Technical data		04.04			04.08			06.08			06.10		
Motor selection		N	P	S	N	P	S	N	P	S	N	P	S
Inlet-Ø	BSP	G 3/4 IT			G 1 OT			G 1 1/4 OT			G 1 1/4 OT		
Outlet-Ø	BSP	G 3/4 OT			G 1 OT			G 1 1/4 OT			G 1 1/4 OT		
Hose connector	mm	25.5			—			—			—		
Inlet and outlet flange	DN	—			25			32			32		
Density max.	kg/dm³	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8
Motor power (IEC) 50 Hz	kW	0.18	0.25	0.37	0.25	0.37	0.55	0.37	0.55	0.75	0.55	0.75	1.1
Motor	3-Phase 400 V / 50 Hz, IP 55 (1-Phase 230 V / 50 Hz)												

*Special voltages on request Viton® and Kalrez® are registered Trademarks of DuPont Performance Elastomers. Rulon® is a registered Trademark of Saint-Gobain. OT = Outer thread IT = Inner thread

Lutz Horizontal Centrifugal Pumps

TMR: Absolutely safe for dry running

For almost all liquids

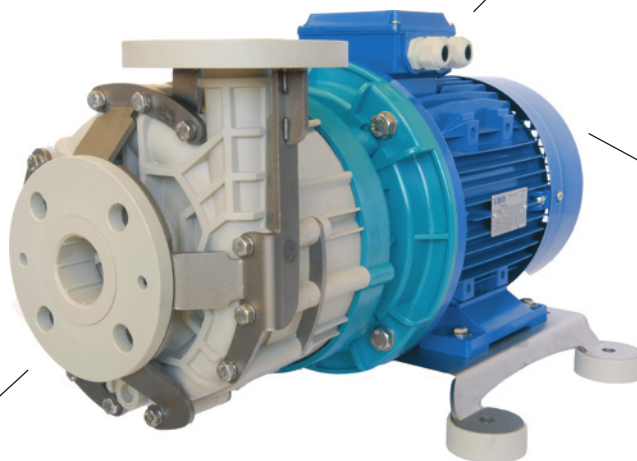
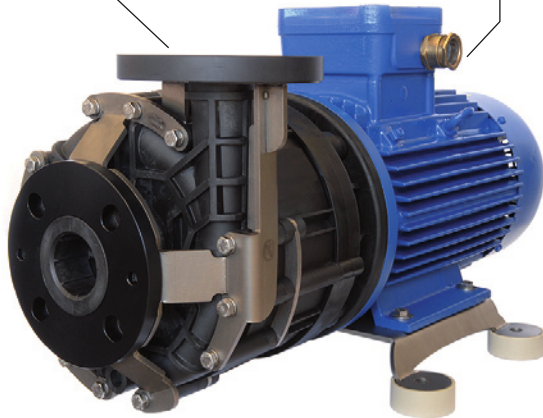
The use of high-quality materials in the housing and bearing ensure pumps of the TMR series have excellent chemical and mechanical properties. In addition to pure liquids, suspensions containing small amounts of solids and high-density liquids can also be pumped.

Designed for dry running

The patented “magnetic axial thrust self-aligning system” makes it possible to operate all TMR pumps with HD carbon slide bearings (“R” bearing system) under dry running conditions for a limited amount of time with no danger.

Sturdy design

The housing has reinforcing ribs for pressure bearing. A metallic protection plate (G2 optional) provides additional stability and protects the pump housing from mechanical damage caused by fluctuating system pressures.



Lower downtimes

Assembly or disassembly of the pump housing does not require special tools, plus the simple design, using few wearing parts and components, all ensure a quick and simple maintenance.

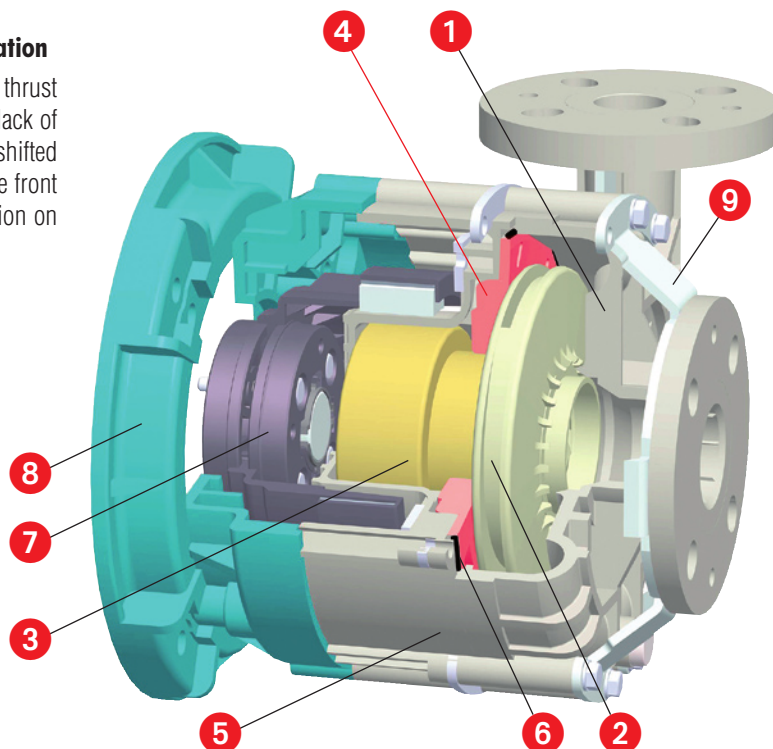
Suction and discharge connections

Suction and discharge connections, are available with threads (BSP, NPT) or flanges (ISO, ANSI).

The operating principle of magnetic axial thrust compensation

Introducing an additional magnetic field ensures permanent axial thrust compensation. If dry running occurs due to a drop in pressure, lack of liquid or for other reasons, the impeller assembly is automatically shifted by the additional magnetic field to a neutral position between the front and back axial bearings. In this position there is negligible friction on the axial bearings.

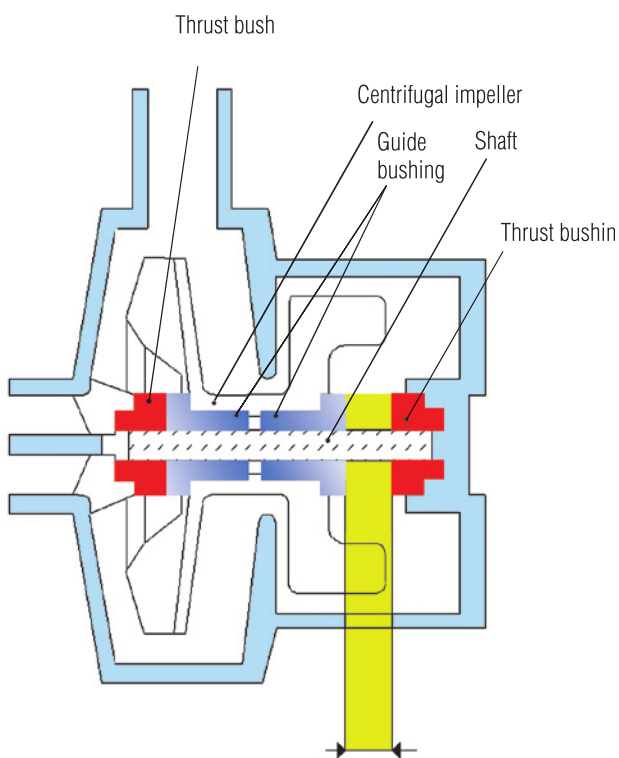
- 1 Pump housing
- 2 Impeller
- 3 Permanent magnet
- 4 **Central disk with additional magnetic field**
- 5 Rear casing
- 6 O ring
- 7 Drive magnet
- 8 Bracket
- 9 Guard plate



EU-Patent No. 1152151

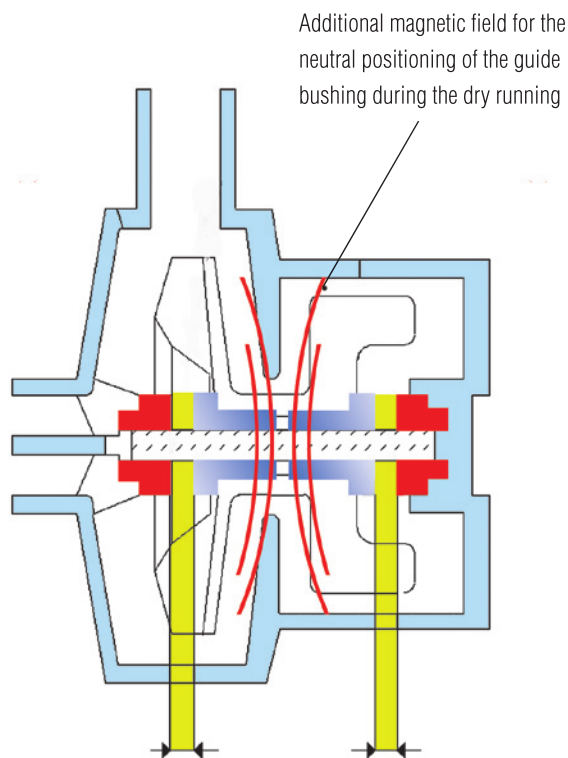
US-Patent No. 6,551,075

Normal running



**Generously dimensioned guide bushing
for continuous operation**

Dry running operation



**Contact free operation
upon dry running**

Lutz Horizontal Centrifugal Pumps

TMR G2 Series: Absolutely safe for dry running for medium quantities

✓ Absolutely safe for dry running

The "R" version is suitable for dry running by means of a patented magnetic "two axial directions self-aligning system".
(Version WR and GF)

✓ High performance

TMR range gives up to 30 m³/h and 30 m delivery head, covers densities up to 1.8 kg/dm³ and viscosities up to 150 mPas.

✓ High system availability

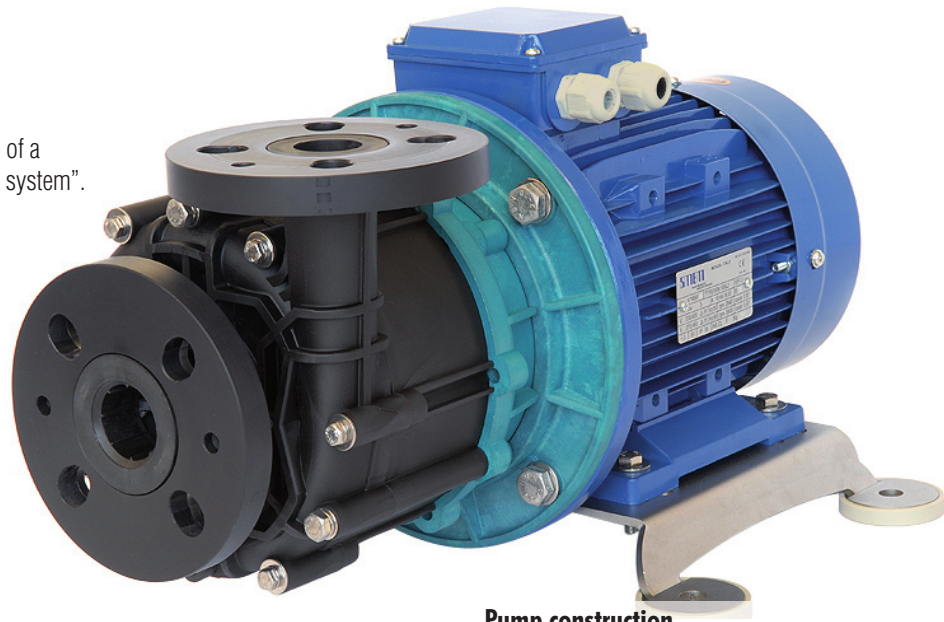
Due to the special design characteristics, the pumps can even be used under the heaviest conditions.

✓ Variable connection possibilities

Various threads and flanges are possible.
(BSP, NPT, ISO, ANSI)

✓ Also suitable for combustible media

Design GX approved according to ATEX.

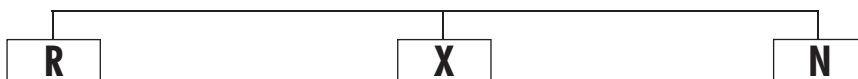


EU-Patent No. 1152151
US-Patent No. 6,551,075

Pump construction

- Patented two axial directions self-aligning system
- **Pump material**
WR: Polypropylene
(glass fibre reinforced)
GF/GX: ECTFE
(carbon fibre filled)
- **Bearing material**
HD-carbon, silicon carbide,
Rulon®, ceramics
- **Housing seal**
Viton®, EPDM or Kalrez®
- **Drive magnet**
Neodymium-Iron-Boron

Bearing systems TMR G2



Designed for dry running

Designed for dry running through the use of **HD carbon** slide bearings



Adequate for solids

Adequate for solids through the use of **silicon carbide** slide bearings

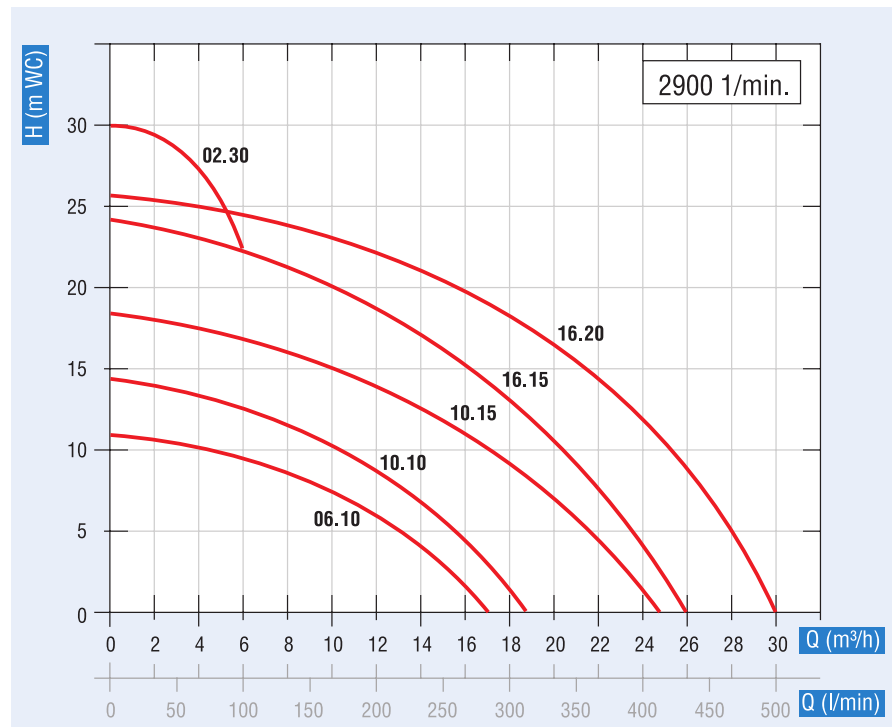


Corrosion resistant

Adequate for hypochlorite solutions, bromine and chromium compounds through the use of **Rulon®** slide bearings

Performance curve

Single performance curve in 50 Hz and 60 Hz on request.



Type	WR			GF			GX	
Category 2 (acc. to ATEX)	no			no			yes	AtEx
Volute casing	Polypropylene (glass fibre reinforced)			ECTFE (carbon fibre filled)			ECTFE (carbon fibre filled)	
Rear casing								
Centrifugal impeller								
Operating temperature	-5 up to +80 °C			-20 up to +100 °C			-20 up to +100 °C	
Environment temperature	0 up to +40 °C			-20 up to +40 °C			-20 up to +40 °C	
Bearing system	R ₁	X ₁	N ₁	R ₂	X ₂	N ₂	R ₂	N ₂
Guide bearing	HD-carbon	SiC	Rulon®	HD-carbon	SiC	Rulon®	HD-carbon	Rulon®
Shaft	ceramics			SiC			SiC	
Thrust ring	ceramics			SiC			SiC	
O-ring	Viton® ¹⁾			Viton® ^{1) 2)}			Viton® ^{1) 2)}	
Screws	SS			SS			SS	

On request: ¹⁾EPDM and ²⁾FFKM (Kalrez)

Type TMR		06.10			10.10			10.15			16.15			16.20			02.30		
Motor selection		N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S
Ø Inlet	BSP	G 1 1/2" OT			G 1 1/2" OT			G 1 1/2" OT			G 1 1/2" OT			G 1 1/2" OT			G 1 1/2" OT		
Ø Outlet	BSP	G 1 1/4" OT			G 1 1/4" OT			G 1 1/4" OT			G 1 1/4" OT			G 1 1/4" OT			G 1 1/4" OT		
Suction and pressure flange ISO	Suction (mm)	40			40			40			40			40			40		
	Pressure (mm)	32 (40*)			32 (40*)			32 (40*)			32 (40*)			32 (40*)			32 (40*)		
Density max.	kg/dm³	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8
Power (IEC) 50 Hz	kW	0.55	0.75	1.1	0.75	1.1	1.5	1.1	1.5	2.2	1.5	2.2	3	2.2	3	—	2.2	3	—
Motor		3-Phase 400 V / 50 Hz / IP 55 (1- Phase 230 V / 50 Hz < 3 kW)																	

*On request Viton® and Kalrez® are registered Trademarks of DuPont Performance Elastomers. Rulon® is a registered Trademark of Saint-Gobain. OT= Outer thread IT= Inner thread

Lutz Horizontal Centrifugal Pumps

TMR G3 Series: Absolutely safe for dry running for large quantities

✓ Absolutely safe for dry running

The "R" version is suitable for dry running by means of a patented magnetic "two axial directions self-aligning system". (Version WR and GF)

✓ High performance

TMR range gives up to 48 m³/h and 42 m delivery head, covers densities up to 1.8 kg/dm³ and viscosities up to 150 mPas.

✓ High system availability

Due to the special design characteristics, the pumps can even be used under the heaviest conditions.

✓ Protection plate

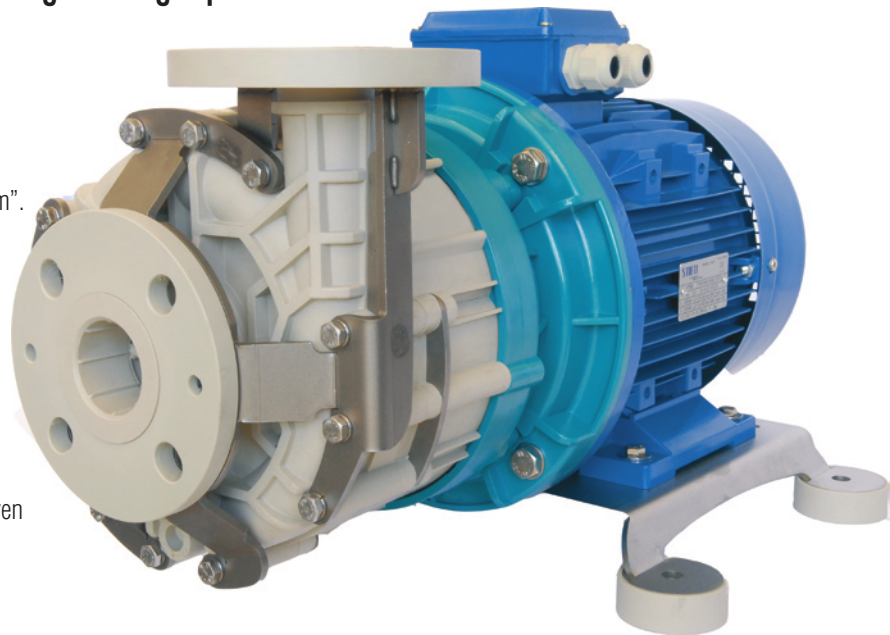
Protects the pump housing against mechanical damage.

✓ Variable connection possibilities

Various threads and flanges are possible. (BSP, NPT, ISO, ANSI)

✓ Also suitable for combustible media

Design GX approved according to ATEX.



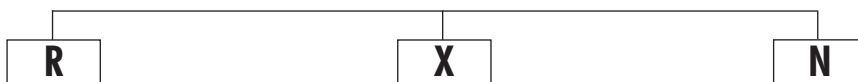
Pump construction

- Patented two axial directions self-aligning system
- **Pump material**
WR: Polypropylene (glass fibre reinforced)
GF/GX: ECTFE (carbon fibre filled)
- **Bearing material**
HD-carbon, silicon carbide, Rulon®, ceramics
- **Housing seal**
Viton®, EPDM or Kalrez®
- **Drive magnet**
Neodymium-Iron-Boron

EU-Patent No. 1152151

US-Patent No. 6,551,075

Bearing systems TMR G3



Designed for dry running

Designed for dry running through the use of **HD carbon** slide bearings



Adequate for solids

Adequate for solids through the use of **silicon carbide** slide bearings

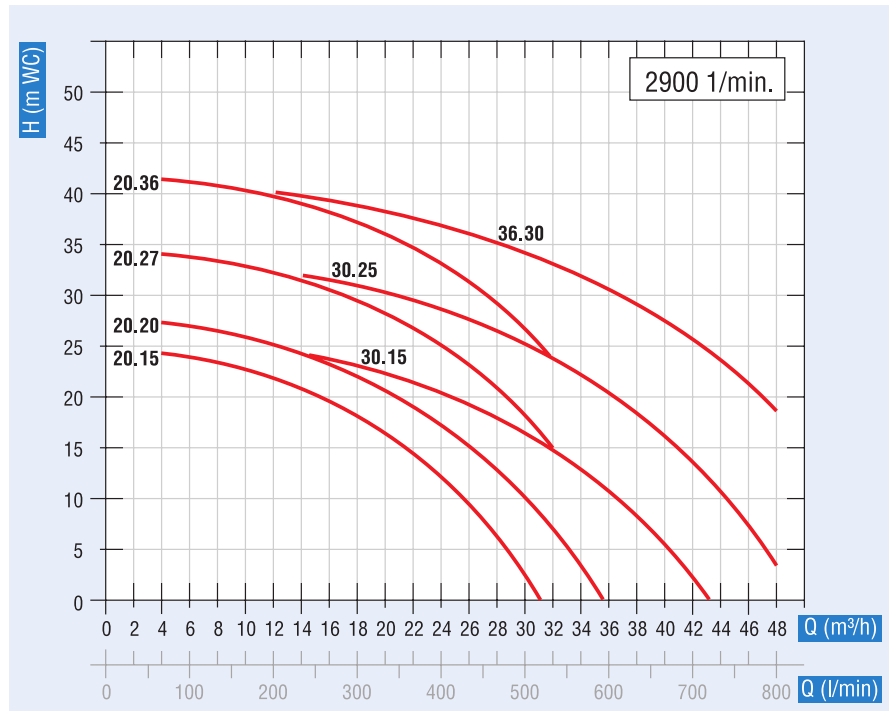


Corrosion resistant

Adequate for hypochlorite solutions, bromine and chromium compounds through the use of **Rulon®** slide bearings

Performance curve

Single performance curve in 50 Hz and 60 Hz on request.



Type	WR			GF			GX	
Category 2 (acc. to ATEX)	no			no			yes	AtEx
Volute casing	Polypropylene (glass fibre reinforced)			ECTFE (carbon fibre filled)			ECTFE (carbon fibre filled)	
Rear casing								
Centrifugal impeller								
Operating temperature	-5 up to +80 °C			-20 up to +100 °C			-20 up to +100 °C	
Environment temperature	0 up to +40 °C			-20 up to +40 °C			-20 up to +40 °C	
Bearing system	R ₁	X ₁	N ₁	R ₂	X ₂	N ₂	R ₂	N ₂
Guide bearing	HD-carbon	SiC	Rulon®	HD-carbon	SiC	Rulon®	HD-carbon	Rulon®
Shaft	ceramics			SiC			SiC	
Thrust ring	ceramics			SiC			SiC	
O ring	Viton® ¹⁾			Viton® ^{1) 2)}			Viton® ^{1) 2)}	
Screws	SS			SS			SS	

On request: ¹⁾EPDM and ²⁾FFKM (Kalrez®)

Technical data		20.15			20.20			20.27			20.36			30.15			30.25			36.30		
Motor selection		N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S
Ø Inlet	BSP	G 2 OT			G 2 OT			G 2 OT			G 2 OT			G 2 OT			G 2 OT			G 2 OT		
Ø Outlet	BSP	G 1 1/2 OT			G 1 1/2 OT			G 1 1/2 OT			G 1 1/2 OT			G 1 1/2 OT			G 1 1/2 OT			G 1 1/2 OT		
Suction and pressure flange ISO	Suction (mm)	50			50			50			50			50			50			50		
	Pressure (mm)	40			40			40			40			40			40			40		
Density max.	kg/dm³	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8	1.05	1.35	1.8
Power (IEC) 50 Hz	kW	2.2	3	4	3	4	5.5	4	5.5	7.5	5.5	7.5	—	4	5.5	7.5	5.5	7.5	—	7.5	—	—
Motor		3-Phase 400 V / 50 Hz, IP 55																				

Viton® and Kalrez® are registered Trademarks of DuPont Performance Elastomers. Rulon® is a registered Trademark of Saint-Gobain. OT = Outer thread IT = Inner thread