

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.



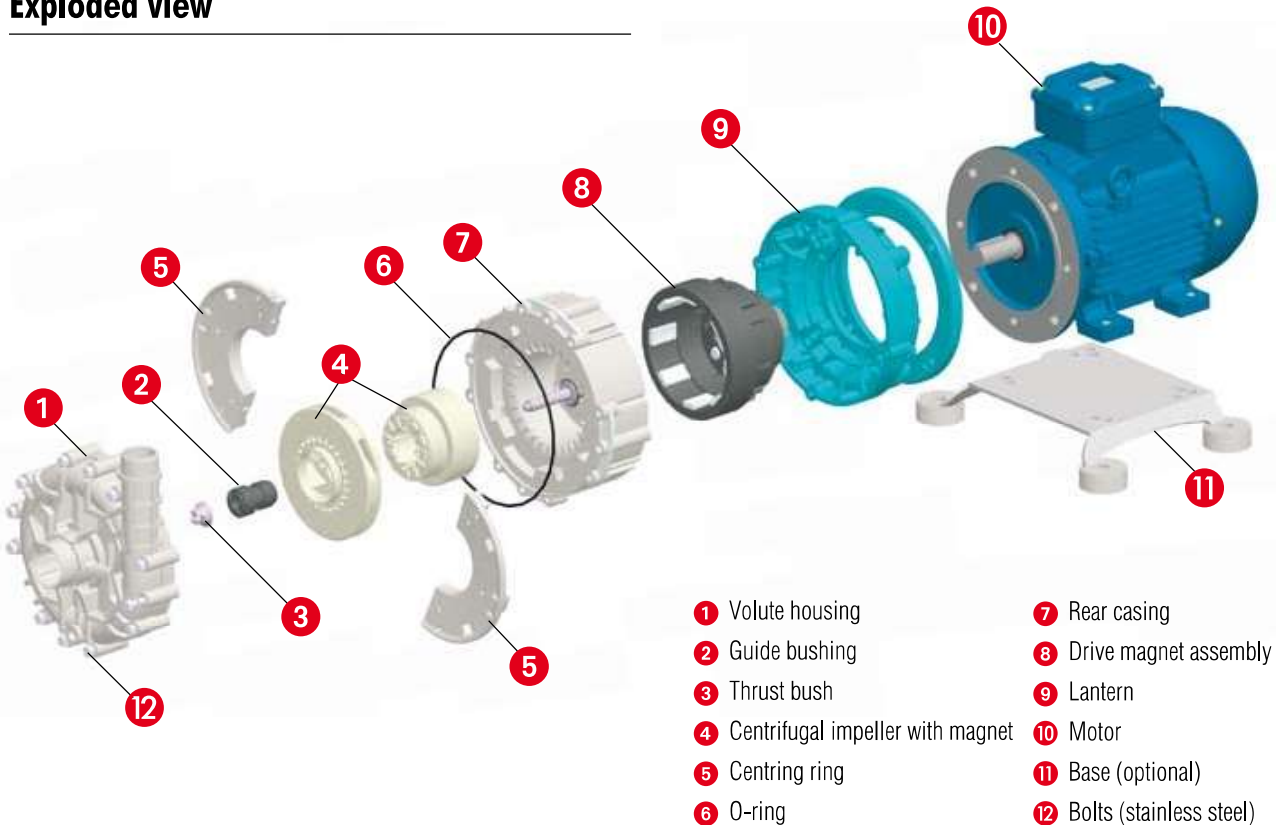
Lower downtimes

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).

Exploded view

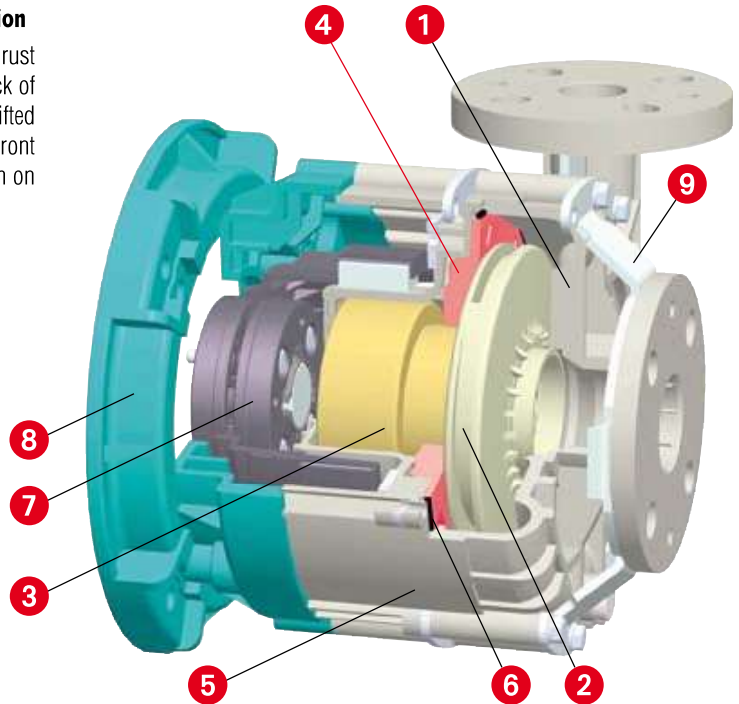


Magnetic axial thrust compensation

The operating principle of magnetic axial thrust compensation

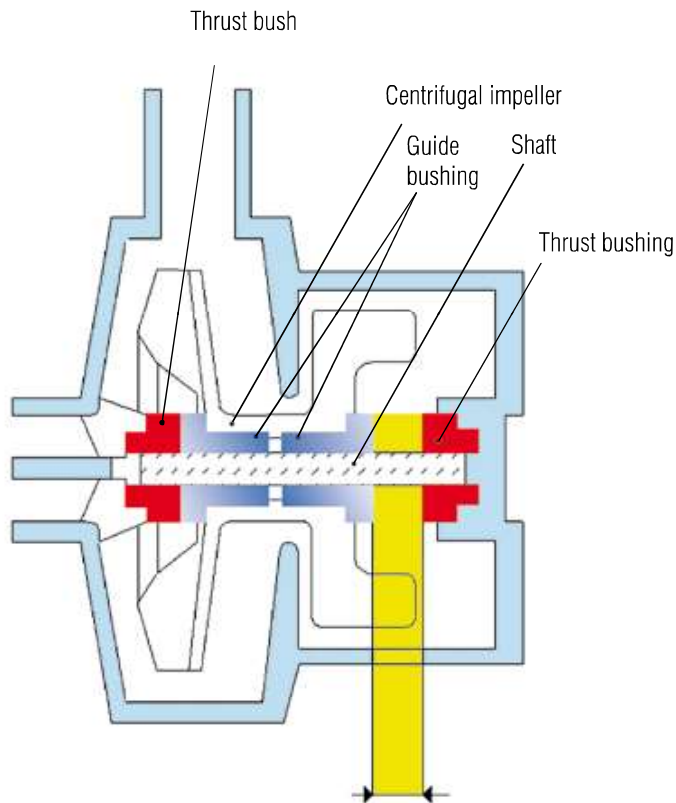
Introducing an additional magnetic field ensures permanent axial thrust compensation. If dry running occurs due to a drop in pressure, lack of liquid or for other reasons, the impeller assembly is automatically shifted by the additional magnetic field to a neutral position between the front and back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



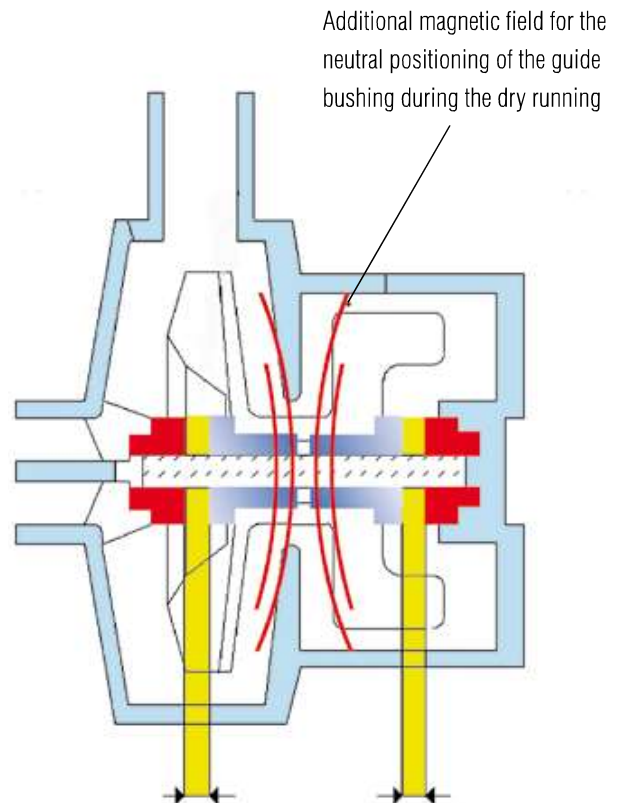
EU-Patent No. 1152151
US-Patent No. 6,551,075

Normal running



Generously dimensioned guide bushing for continuous operation

Dry running operation



Contact free operation upon dry running

Lutz Horizontal Centrifugal Pumps

TMR G3 Series

General Description

The G3 pump was designed to meet the continuous demand of the marketplace. Excess friction is eliminated by controlling the impeller movement through the use of an additional magnetic field. This patented solution is called the two axial directions self-aligning system.

Features

The G3 is defined as “sealless” because the rear casing divides the two magnetic units, creating a sealless hermetic case all around the impeller. The drive magnet system excludes any type of rotating seal. The only needed seal is provided by an O-ring gasket between the volute casing and the rear casing. Another benefit of the G3 is that it allows the pumping of any chemical, at low or medium temperature, with pumps made of GFR-PP (glass fibre reinforced polypropylene) or CFF-E-CTFE (Etylene-Chloro Trifluoro Etylene carbon fibre filled). Due to the internal materials of the pump, you can pump both clean fluids and mediums with solids in suspension, or those that are moderately abrasive. Liquids with a specific gravity up to 1.8 kg/dm³ can be pumped at maximum flow with the correct corresponding pump: N-standard, P-powered or S-strong-powered, respectively.



Pump construction

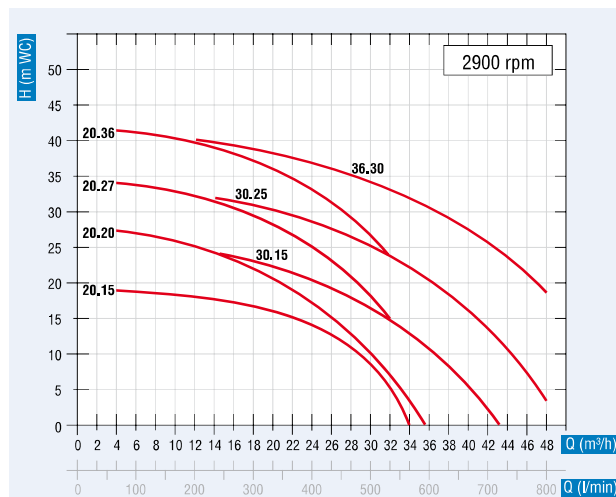
- Patented two axial directions self-aligning system
- SS armoured housing
- **Pump material**
WR: Polypropylene (glass fibre reinforced)
GF/GX: ECTFE (carbon fibre filled)
- **Bearing material**
 HD-carbon, silicon carbide, Rulon®, ceramics
- **Housing seal**
 Viton®, EPDM or Kalrez®
- **Drive magnet**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

EU-Patent No. 1152151

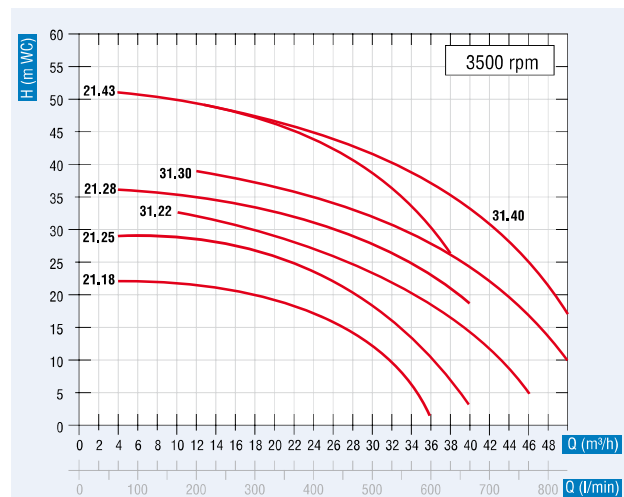
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Performance curve

50 Hz



60 Hz



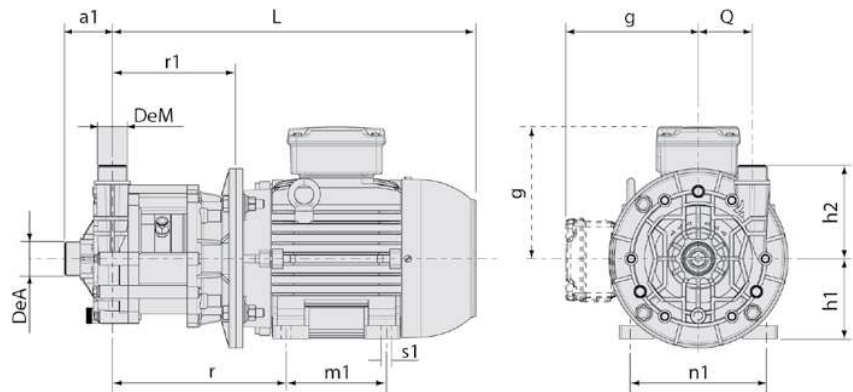
*Being prepared Single performance curve in 50 Hz and 60 Hz on request.

TMR G3 Series


Technical Data

TMR G3	21.18			21.25			21.28			21.43			31.22			31.30			31.40
IEC-Size	100L	112M	132SA	112M	132SA	132SB	132SA	132SA	160MA	132SB	160MA	132SA	132SB	160MA	132SB	160MA	160MA		
De M (BSP/NPT)	1 1/2"			1 1/2"			1 1/2"			1 1/2"			1 1/2"			1 1/2"			
De A (BSP/NPT)	2"			2"			2"			2"			2"			2"			
DNM	40			40			40			40			40			40			
DNA	50			50			50			50			50			50			
a1	70			70			70			70			70			70			
L	512	521	578	521	578		578	743	578	743		578	743	578	743	743			
Q	96			96			96			96			96			96			
h1	100	112	132	112	132	132	132	160	132	160	132	160	132	160	160	160			
h2	160			160			160			160			160			160			
r1	198	218	198	218		218	248	218	248		218	248	218	248	248	248			
m1	140			140			140	210	140	210	140	210	140	210	210	210			
n1	160	190	216	190	216	216	254	216	254	216	254	216	254	254	254	254			
s1	10			10			10	14	10	14	10	14	10	14	14	14			
g	155	168	181	168	181	181	215	181	215	181	215	181	215	215	215	215			
d x z (ISO)	18x4			18x4			18x4			18x4			18x4			18x4			
d x z (ANSI)	16-19x4			16-19x4			16-19x4			16-19x4			16-19x4			16-19x4			

Dimensions with IEC-Motor



Dimensions in mm

Type	WR			GF			GX	
Category 2 (acc. to ATEX)	no			no			yes 	
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	21.18	21.25	21.28	21.43	31.22	31.30	31.40																
Motor selection	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S								
∅ Inlet	BSP		G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT	G 2 OT								
∅ 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	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	50	50	50	50	50	50								
	Pressure (mm)		40	40	40	40	40	40	40	40	40	40	40	40	40								
Density max.	kg/dm ³		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) 60 Hz	kW		3	4	5.5	4	5.5	7.7	5.5	7.5	11	7.5	11	–	5.5	7.5	11	7.5	11	–	11	–	–
Motor	3-Phase 460 V / 60 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