



## ROUTE

TMR • ZMR

**CENTRIFUGAL PUMPS  
FOR HANDLING CORROSIVE LIQUIDS  
MAG-DRIVEN OR MECH-SEALED  
PP • E-CTFE  
50 Hz - 60Hz**



SINCE 1975

EN

# HORIZONTAL CENTRIFUGAL PUMPS

## FOR CORROSIVE FLUIDS, CLEAN AND WITH SOLIDS

Our **ROUTE** series of thermoplastic pumps are available in magnetic driven and mechanical seal versions for pumping a diverse range of chemicals with impurities and suspended solids. A patented system for dry running without damage is available for the magnetic driven "T" version. **ARGAL's** ex-proof configuration made of PP or E-CTFE + carbon fiber makes **ROUTE** pumps ideal for operating in explosive atmospheres.

WR



### ROUTE TMR

Magnetic-driven close-coupled pumps

GF



### ROUTE ZMR

Mechanical sealed close-coupled pumps

GX



## CONSTRUCTION

TMR (G2-G3 sizes)	WR	GF	GX*
<b>Volute casing</b>	GFR/PP	CFF/E-CTFE	CFF/E-CTFE
<b>Rear casing</b>			
<b>Centrifugal impeller</b>			
<b>OR gasket</b>	FKM (1)	FKM (1); (2)	FKM (1); (2)

(1) EPDM and (2) FFKM on request - (\*) Compliant to ATEX 94/9/EC

## MATERIALS

VERSION	REINFORCED POLYMERS	MIN. TEMP.	MAX. TEMP.	ENVIRONMENT TEMP.
<b>WR</b>	GFR/PP	-5°C (23°F)	80°C (176°F)	0±40°C (14±104°F)
<b>GF</b>	CFF/E-CTFE	-20°C (-4°F)	100°C (212°F)	-20±40°C (-4±104°F)
<b>GX*</b>	CFF/E-CTFE	-20°C (-4°F)	100°C (212°F)	-20±40°C (-4±104°F)

Note: Maximum inlet pressure: 1,5 bar - (\*) Compliant to ATEX 94/9/ EC

## FOR ALL CHEMICALS

The **ROUTE** pumps are ideal for all chemicals at low and medium temperatures with the bodies made of WR or GF:

- **Loaded fluids, lightly abrasive**

The different internal configurations of the materials allow to pump both clean fluids and with solids in suspension or moderately abrasive.

- **Heavy fluids**

Strong magnetic coupling made of rare-earth materials (Neodymium Iron Boron) and "N" (standard), "P" (powered) or "S" (strongly powered) versions allow to pump liquids with 1.05 - 1.35 - 1.8 specific gravity respectively.

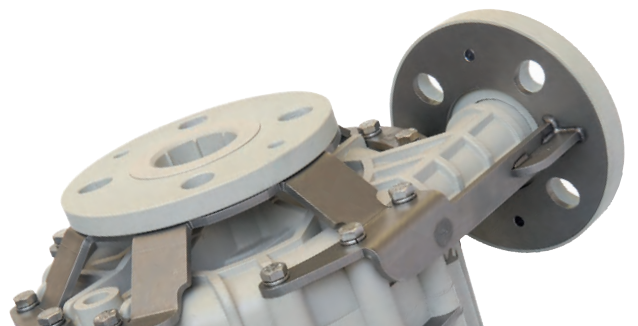
## ATEX

**ROUTE** pumps made of PP or E-CTFE + carbon fiber are perfect for operating into **EXplosive ATmospheres**. They can run in **Group II** areas and **category 1, 2, 3** according to the level of protection. Thanks to the carbon fiber, they are ideal for gaseous atmospheres (**Zone 1, Zone 2**).

## MAIN APPLICATIONS

- Water and wastewater treatments
- Surface treatments
- Chemical and pharmaceutical processes
- Lithium battery storage
- Semiconductors
- Photovoltaic

View of stainless steel reinforced flat-face flange connections



## MAGNETIC DRIVE “T”

**The magnetic driven pump does not have rotating seal.** The pump is sealed with an O-ring static gasket placed between the volute and the rear casing. The magnetic driven pumps can be coupled to standard NEMA motors without disassembling the pump.

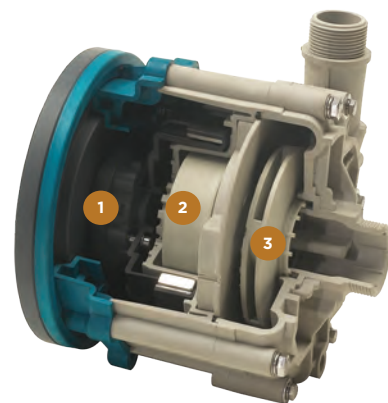
### GUIDING SYSTEMS

TMR (G2-G3 sizes)	WR			GF			GX	
	R1	X1	N1	R2	X2	N2	R2	N2
Guide bushing	Carbon HD	SiC	GFR/PTFE	Carbon HD	SiC	GFR/PTFE	Carbon HD	GFR/PTFE
Thrust bush	CER			SiC			SiC	
Shaft	CER			SiC			SiC	

R2 - standard conditions P2 - critical conditions X2 - extreme conditions

### DRY-RUNNING PATENTED (OPTIONAL)

The impeller subjected to different hydraulic load is free to move axially. Two rings which are limit devices of its excursion fix the work-space it engages during the standard operation. In case of anomalies due to pressure loss while dry-running, the extra magnetic field calls back the impeller to the neutral position.



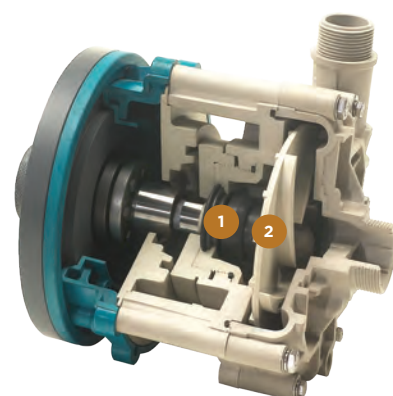
- 1 Magnetic-driven assembly
- 2 Centrifugal impeller (magnetic part)
- 3 Centrifugal impeller (covered type)

## MECHANICAL TRANSMISSION “Z”

In the sealed version, the impeller is mounted on the motor shaft and leakage in the motor is prevented by mechanical seals of appropriate material. The mechanical seal allows the transfer of liquids with solids and abrasives.

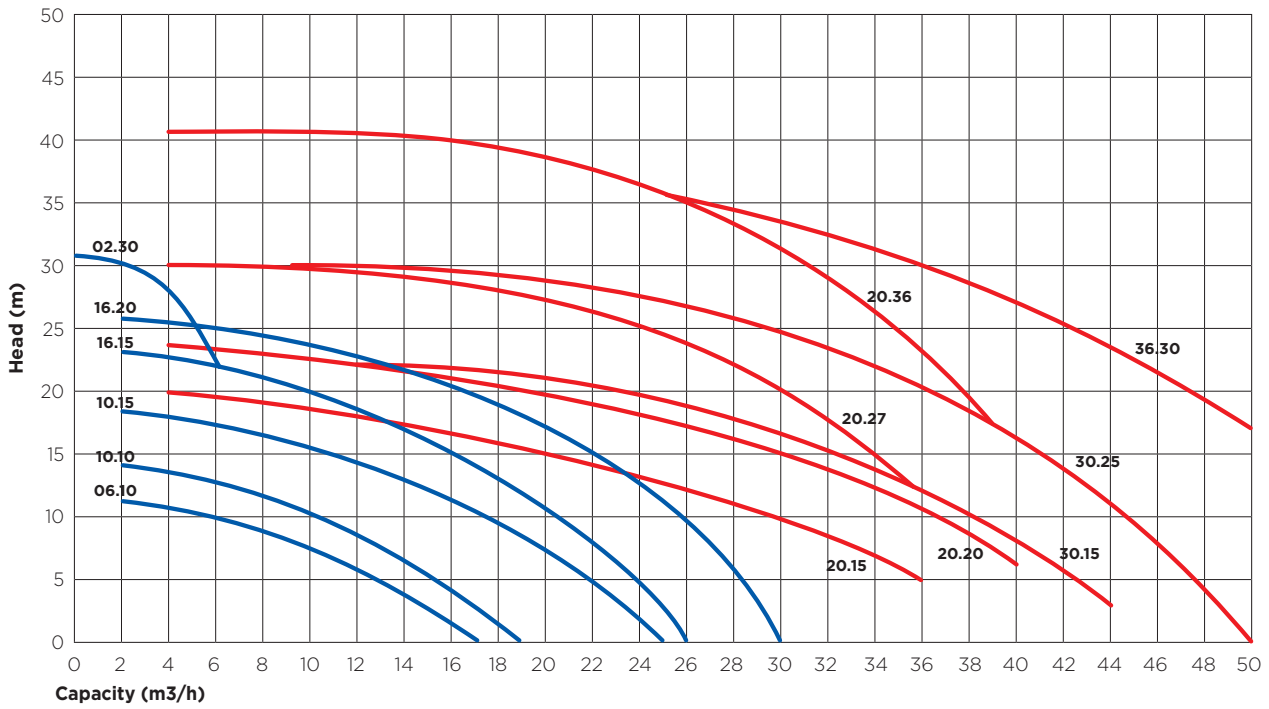
### MECHANICAL SEALS

CONSTRUCTION	MODEL	ROTATING PART	FIXED RING	BELLOW	WORKING CONDITIONS	
INTERNAL SINGLE	BS5	CARBON	CER	FKM	LOW COST (easy maintenance)	
	BS7		SiC			
	BS6	SiC	CER		LOW COST HARD PARTICLES (easy maintenance)	
	BS8-BF3**		SiC			HARD PARTICLES
EXTERNAL SINGLE	SF1	GFR/PTFE	CER	PTFE	NORMAL USE	
	SF2		SiC			
	TS5	CARBON	CER	FKM		
	TS7		SiC			
	TS6	SiC	CER		HARD PARTICLES	
	TS8		SiC			
DOUBLE	MSF1	GFR/PTFE	CER		PTFE	CRITICAL
	MSF2		SiC			
	MTS5	CARBON 2nd rotating part CARBON	CER	FKM		
	MTS7		SiC 2nd: CER			
	MTS6	SiC	CER		EXTREME	
	MTS8		SiC			

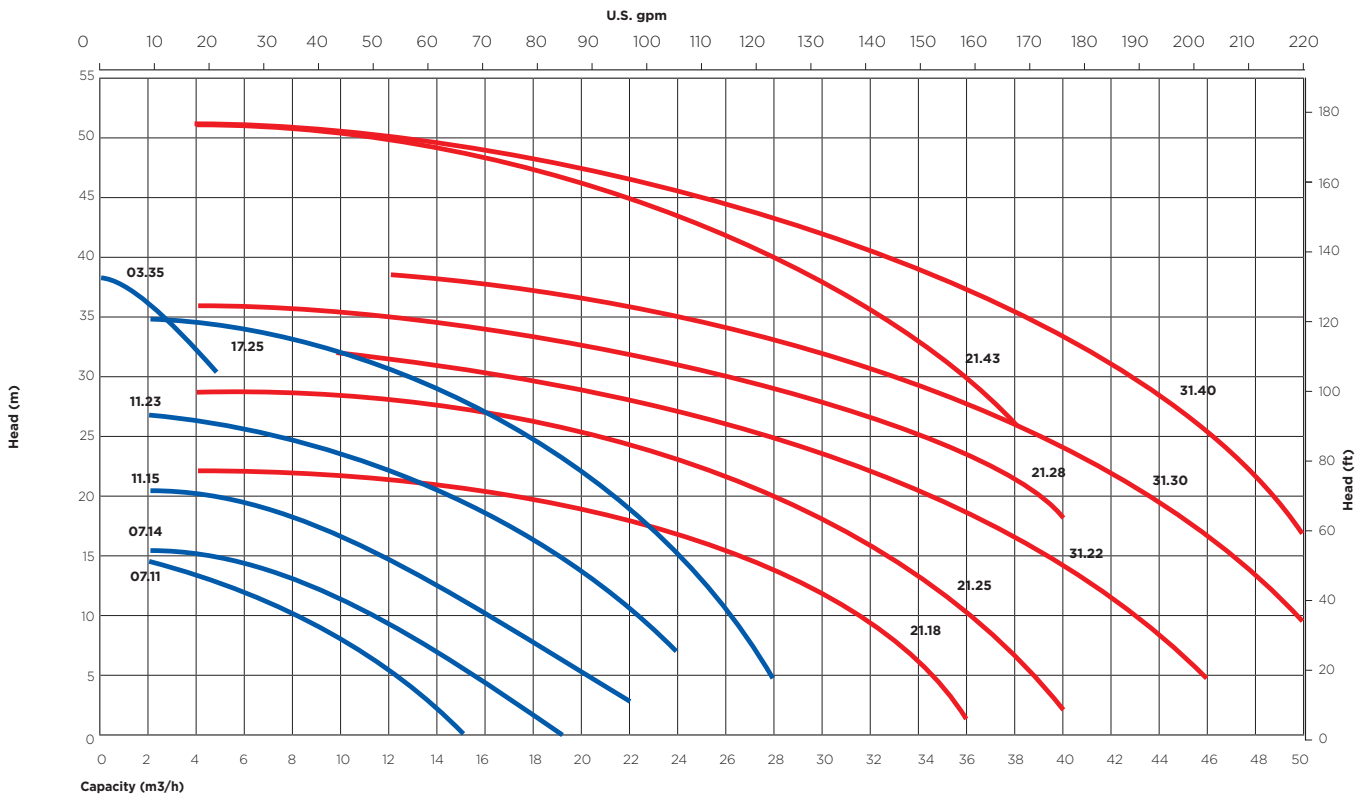


- 1 Internal mechanical seal
- 2 Centrifugal impeller (open type)

● G3 Curves 2900 r.p.m. -50Hz  
● G2



● G3 Curves 2900 r.p.m. -60Hz  
● G2



NOTES: All curves are referred to: water at 20°C - viscosity 1 \*E - specific gravity 1 kg/dm<sup>3</sup>



Flanged version with armour

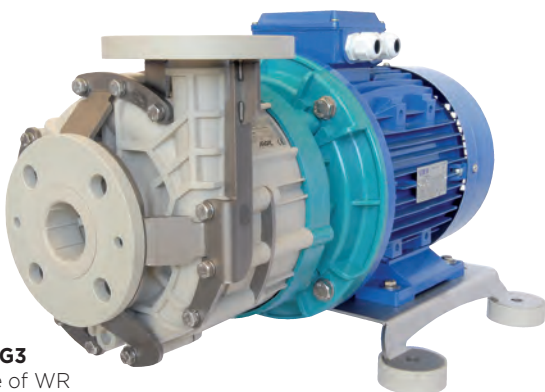
Std flanged version

Std threaded version

Threaded version with armour

## ARMOUR

A stainless-steel armor was designed to fit all models to protect the front casing from accidental mechanical shocks of various nature (e.g.: start up with vacuum in inlet piping with possible tubing excursions due to elastic brackets or thermal elongation). The guard plate is optional for the G3 size of pumps.

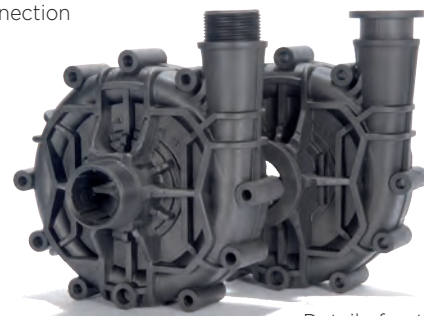


**ZMR G3**  
made of WR

## BASEPLATE

The base for anchorage of the pump is in stainless steel with ground terminals in chemical-resistant thermoplastic materials. It is supplied upon request.

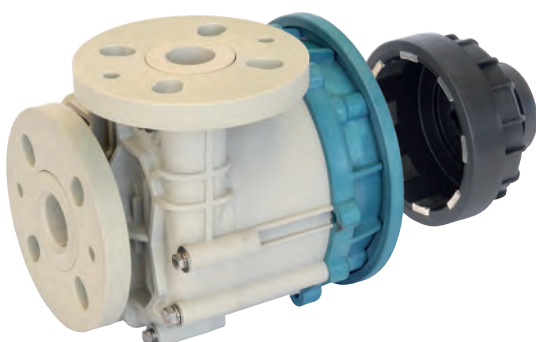
"BSP" outlet cylindrical threaded connection



Detail of outlet flanged connection directly to the plant flange

## VARIOUS CONNECTIONS

Connections with BSP cylindrical thread or NPT; flanges ISO, ANSI, JIS.



## WET-END

The complete casing (or wet-end) of any magnetic driven **ROUTE** pump can easily be detached from the other parts, without opening it.

MECH-SEALED  
& MAG-DRIVEN  
CENTRIFUGAL  
PUMPS

AIR-METERING  
& AODD PUMPS  
PULSATION  
DAMPENERS

SELF-PRIMING  
PUMPS



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