



ZENIT

A TSURUMI PUMP COMPANY

civil/industrial 50/60Hz



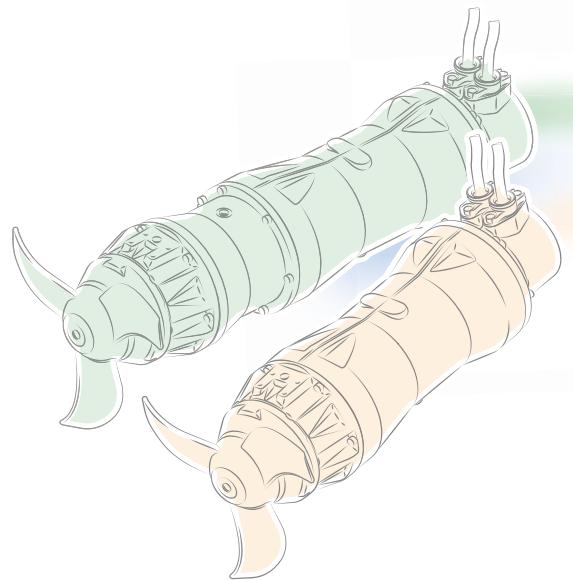
HIGH-EFFICIENCY  
MIXING SYSTEMS

series  
**Mixer**

# Why Mixers?

Essential components of water treatment and purification plants, the new **Zenit** mixers share the stylish looks, reliability and new-concept high-efficiency motors of the **UNIQA** range.

# Mixer SERIES



The low propeller rpm, necessary in applications with sludges containing high solid concentrations, is achieved by means of a rugged planetary reduction gearbox rather than motors with a high number of poles, for greater mechanical reliability.

Submerged mixers are the most practical, efficient solution for mixing liquids in water treatment and purification plants. Suitably installed in tanks, these devices apply a force varying depending on the propeller diameter, shape and rotation speed to the liquid in which they are immersed, and keep the mass of fluid in motion to boost homogenisation and prevent sediment formation.

They can be adopted in single or multiple installations, or in combination with bottom aeration systems, depending on the process in which they are used. Their efficiency class IE3 motors, already applied on the **Zenit UNIQA** range of submersible pumps, keep running costs down, with low energy use and limited maintenance. Models available also with ATEX certification **ATEX**. Their complete compatibility and vast assortment of accessories allow them to be installed in any point of the tank, both for optimal mixing and for use as replacements for obsolete devices in existing systems.



P2 [kW]  
0.75 ÷ 4.5

50/60Hz Motor

4 - 6 - 8 poles  
DIRECT TRASMISSION



Propeller Ø [mm]

200 - 300 - 400



P2 [kW]  
4.0 ÷ 7.5

50/60Hz Motor

4 poles  
REDUCTION GEARS



Propeller Ø [mm]

650

# One range, a thousand applications

**Zenit ZMD and ZMR** series mixers can be used in equalisation, denitrification and homogenisation processes in industrial and civil plants.

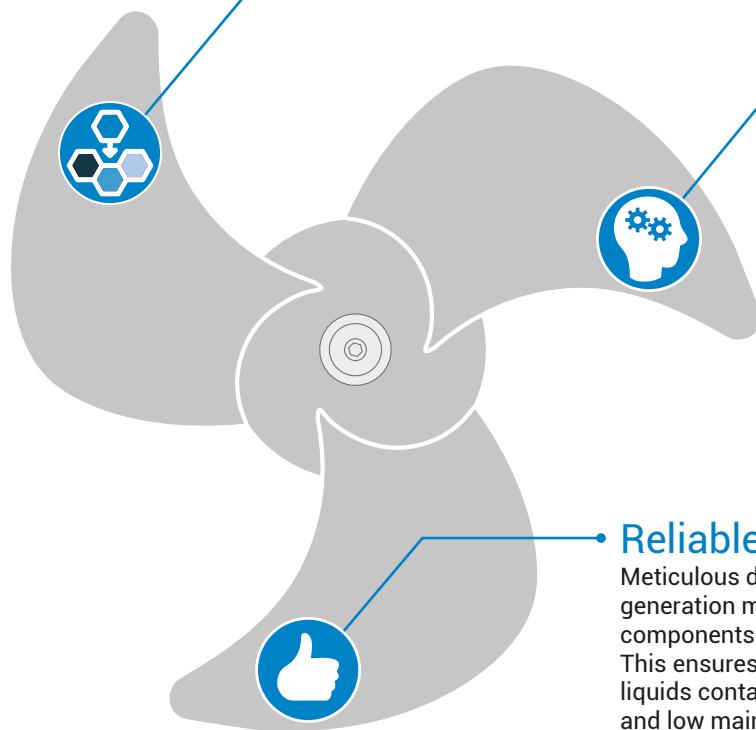
Their construction characteristics make them rugged and versatile, ideal for any application.



## • Modular

The ZMD and ZMR range of mixers is built on a **modular criterion** in which high-efficiency motors evolved from the UNIQA units are coupled with propellers with different shapes, sizes and materials.

This means greater flexibility when selecting the product, which can be configured specifically for the application, and for liquids with different densities and concentrations.



## • Innovative

**Zenit** mixers are built with innovative materials and include **state-of-the-art engineering solutions** developed in a modern department which also conducts performance and endurance tests on the parts most subject to wear.

This guarantees lower energy consumption and exceptional versatility, making them suitable for any type of installation.

## • Reliable

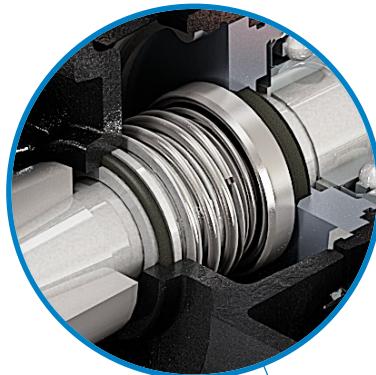
Meticulous design, machining on latest-generation machining centres and high quality components make **Zenit** mixers highly reliable.

This ensures a **long working life** even with liquids containing high solid concentrations, and low maintenance, guaranteeing trouble-free, continuous system operation.

# Your guide to Zenit Mixers

## MOTOR

Premium IE3 class cold-running motor for high efficiency and minimal energy use. Isolation class H (180°C). 50 Hz and 60 Hz versions.



## MECHANICAL SEALS

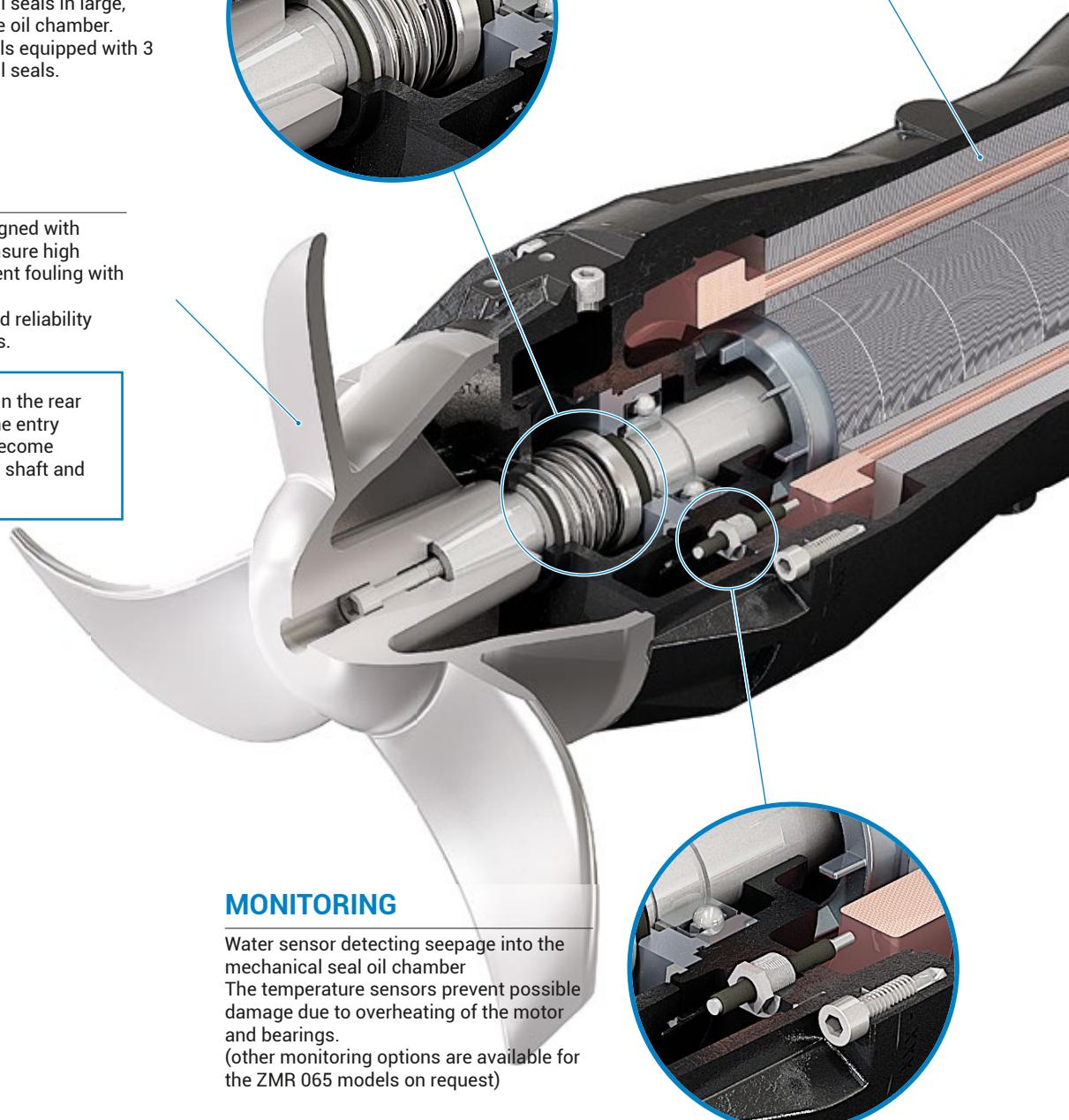
Two silicon carbide (SiC) mechanical seals in large, inspectable oil chamber. ZMR models equipped with 3 mechanical seals.

## PROPELLER

Stainless steel propeller, designed with specially shaped blades to ensure high hydraulic efficiency and prevent fouling with filaments and solids.

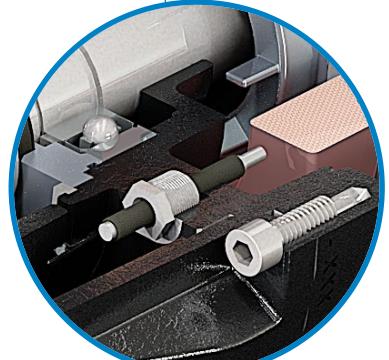
Extra thick for ruggedness and reliability even in heavy-duty conditions.

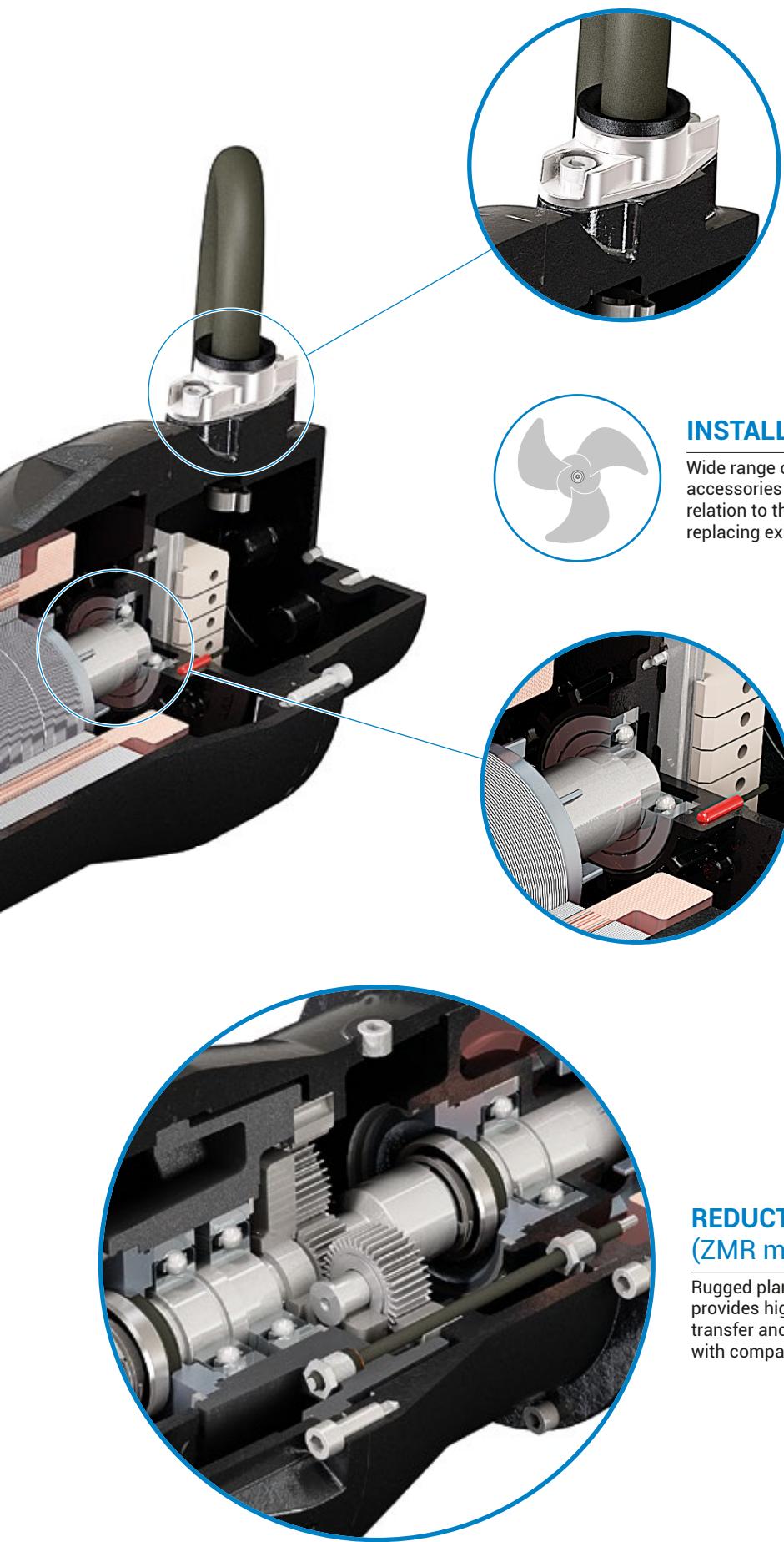
A special chopper system in the rear of the propeller prevents the entry of filaments which could become entangled around the drive shaft and impair its operation.



## MONITORING

Water sensor detecting seepage into the mechanical seal oil chamber  
 The temperature sensors prevent possible damage due to overheating of the motor and bearings.  
 (other monitoring options are available for the ZMR 065 models on request)





## CABLE GLAND

Innovative cable gland system with cable holder. The universal thread ring-nut can be removed to fix a rigid or flexible duct to the cable gland to protect the cable from physical and mechanical stresses.

## INSTALLATION

Wide range of rugged stainless steel accessories for optimal installation in relation to the system layout and when replacing existing devices.

## BEARINGS

Ball bearings with lifetime lubrication designed to guarantee 100,000 working hours.  
Temperature sensor on request.

## REDUCTION GEARBOX (ZMR models)

Rugged planetary reduction gearbox which provides high reduction ratios and torque transfer and withstands heavy radial loads, with compact size and light weight.

## Characteristics

50Hz	Motor			Propeller		
	P <sub>2</sub> [kW]	Poles [no.]	Speed [rpm]	Propeller Ø [mm]	Thrust [N]	Speed [rpm]
<b>DIRECT TRASMISSION</b>						
ZMD 020	0.75 ÷ 1.5	4	1450	200	155 ÷ 230	1450
ZMXD 020	0.75 ÷ 1.1	4	1396	200	155 ÷ 210	1396
ZMD 030	1.5 ÷ 3.2	6	960	300	350 ÷ 820	960
ZMD 040	3.0 ÷ 4.5	8	750	400	480 ÷ 1060	750
<b>REDUCTION GEARS</b>						
ZMR 065	3.0 ÷ 7.5	4/6	960 ÷ 1450	650	800 ÷ 2100	177 ÷ 300
60Hz	Motor			Propeller		
	P <sub>2</sub> [kW]	Poles [no.]	Speed [rpm]	Propeller Ø [mm]	Thrust [N]	Speed [rpm]
<b>DIRECT TRASMISSION</b>						
ZMD 020	1.1 ÷ 1.5	4	1750	200	225 ÷ 230	1750
ZMD 030	1.5 ÷ 3.2	6	1150	300	420 ÷ 730	1150
ZMD 040	4.5	8	875	400	970	875
<b>REDUCTION GEARS</b>						
ZMR 065	4.0 ÷ 7.5	4	1750	650	1365 ÷ 2125	245 ÷ 307

Models available also with ATEX certification



## Installation and accessories

To guarantee top mixer performance, **ZENIT** has developed a wide range of accessories for adjusting devices' positions in the tank and lifting and removing them without having to drain the system. Designed for easy installation and generously sized to guarantee durability, accessories are available in galvanised or stainless steel.

The recommended installation modes are:

### BOTTOM INSTALLATION (fig. A)

Permanent installation, with the mixer connected to a base anchored to the bottom of the tank. A special adjustment plate allows the mixer's horizontal and vertical position to be set as specifically required by the system.

### PENDULAR INSTALLATION (fig. B)

Mobile installation in which the mixer can be both installed and removed with the tank full. The mixer is suspended from a suspension pipe and fixed to a mounting bracket; it can be adjusted both horizontally and vertically.

### MAST INSTALLATION (fig. C and D)

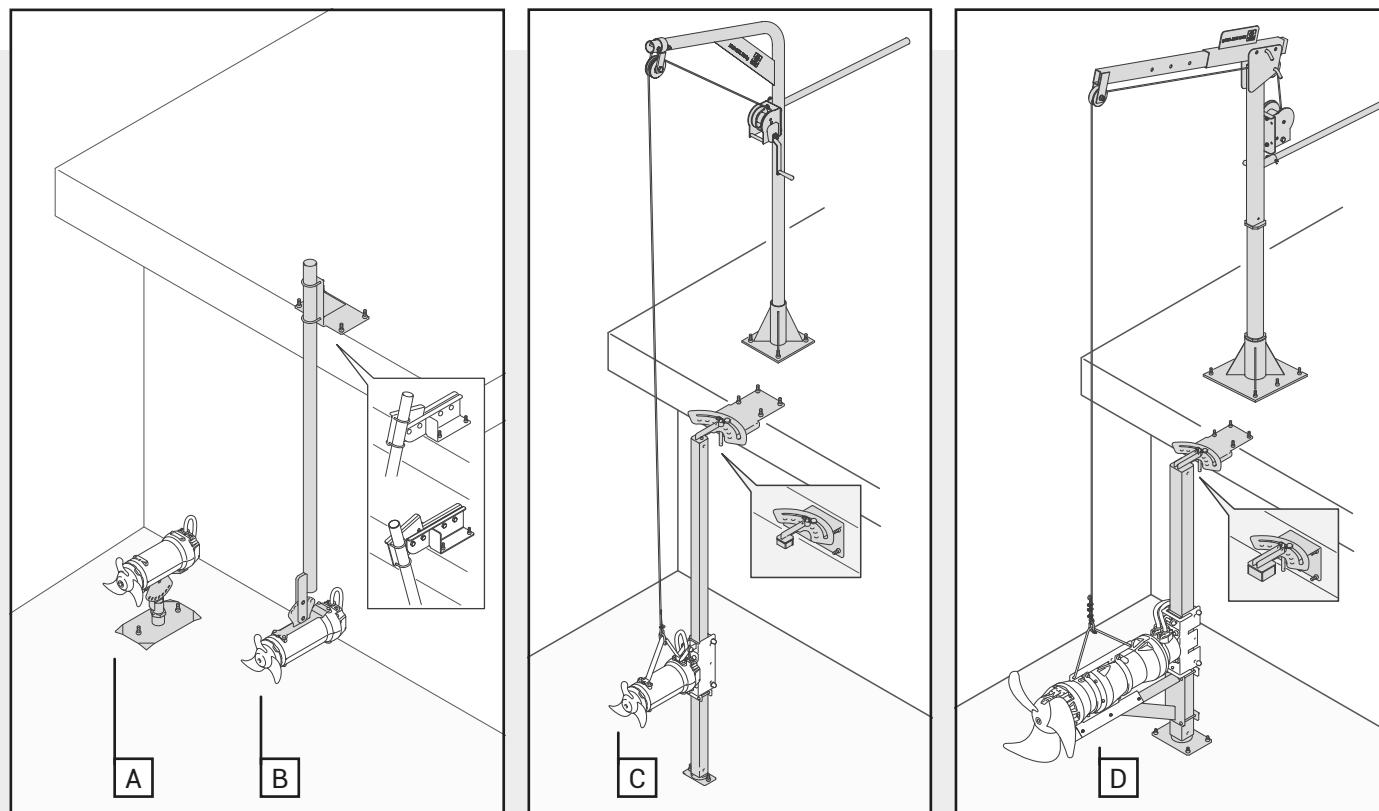
The most widely used installation mode, suitable for mixers of any shape and size. The mixer, fitted with a runner which is also compatible with existing installations, slides along a square post and can be removed with no need to drain the tank, thanks to rugged lifting jib cranes. The mixer can be horizontally adjusted for the best possible position, while vertical adjustment is possible with the aid of special optional runners..

## Construction materials

	ZMD/ZMR [Standard]	ZMD/ZMR [Optional]	ZMxD
<b>Motor complex</b>	EN-GJL 250 grey cast iron	-	Stainless steel
<b>Propeller</b>	Stainless steel	Duplex / With Vulkollan coating	Stainless steel
<b>Shaft</b>	AISI 431 stainless steel	-	AISI 431 stainless steel
<b>Mechanical seals</b>	2 SiC in oil chamber	-	2 SiC in oil chamber
<b>Nuts and bolts</b>	A2-70 Stainless Steel	A4-70 stainless steel	A4-70 stainless steel
<b>Gaskets</b>	NBR	Viton	NBR
<b>Hook</b>	AISI 304 stainless steel	AISI 316 stainless steel	Acciaio INOX AISI 304
<b>Motor bracket</b>	AISI 304 stainless steel	AISI 316 stainless steel	Acciaio INOX AISI 304
<b>Paintwork</b>	Bicomponent epoxy paint 200 µm	Bicomponent epoxy paint 400 µm	-

## Operating limits

Max. ambient temperature	40°C
Max. immersion depth	20 m
pH of treated liquid	6-14
Max. starts/hour	20 (evenly distributed)
Max. acoustic pressure	70 dB
Duty	S1 – continuous operation
Density of treated liquid	1100 Kg/m³





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 For further information, visit [www.zenit.com](http://www.zenit.com)