



## SATURNevo

ZCS • ZMS • ZGS

**CENTRIFUGAL PUMPS**

**FOR SEAWATER AND CORROSIVE FLUIDS**

**ENTIRELY MADE OF FIBERGLASS**

**CLOSE OR LONG COUPLED**

**50 Hz**



SINCE 1975

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# FIBERGLASS CENTRIFUGAL PUMPS

## FOR SEAWATER AND CORROSIVE LIQUIDS

The evolved **SATURNevo** range consists of horizontal centrifugal single-stage pumps compliant with ANSI/ASME B73.1 standards. The pump casing are made of FRP (fiberglass reinforced polyester) which neither requires protective coatings or metallic armour. ARGAL's **SATURNevo** series offers the durability and strength at par with metal alloy construction.

Our **SATURNevo** range is offered in three configurations - **ZGS** - long coupled with bearing housing and coupling (offered with SS or FRP base frames), **ZMS** - close coupled - and **ZCS** - a compact design for the narrow places.

### CHEMICAL RESISTANCE AND MECHANICAL STRENGTH

Argal offers various formulations of resins to cover a broad range of corrosive chemicals and moderately abrasive liquids.

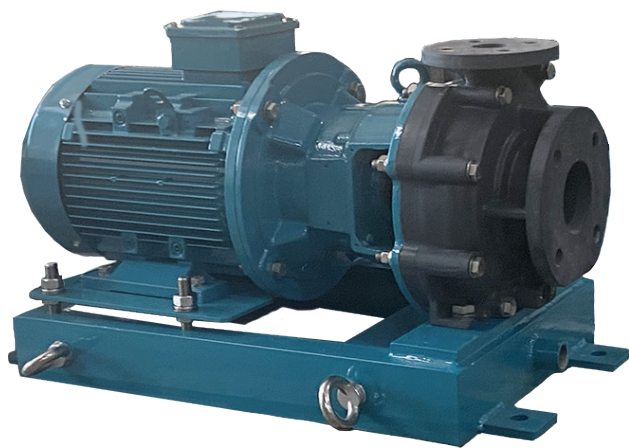
### 5 VERSIONS OF CONSTRUCTION

**V1G**: for corrosive liquids including acids, alkalis, detergents, brine and sea water.

**V1X**: for operation in ATEX areas.



**ZGS Pump** 6x4x10  
(V1G)



**ZMS Pump** 3x2x6  
(V1G)

### EXAMPLES OF APPLICATION

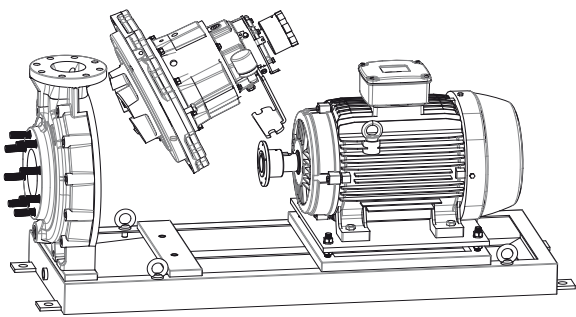
SECTORS	APPLICATIONS
Aquariums/Zoos	Saltwater
Chemical Process	Acids Chemical waste Waste Water
Desalination	Filtration Seawater Intake Chemical Transfer Concentrated Brine
Electric Utilities	Coal pile run-off
Electronics	Acids Chemical waste
Metal Finishing	Chromic acids Pickling acids Plating solutions
Petrochemical	Acids Chemical waste
Pharmaceutical	Organic Solvents
Pulp and Paper	Bleach
Mining	Abrasives and Corrosives
Scrubbers/Odor Control	Acids and Caustics

## LONG-COUPLED "G"

The coupling of the pump to the motor with a flexible joint delivers an extended operational life to the mechanical parts of the pump and therefore is the preferred solution for heavy duty application and continuous applications. The back pull-out construction allows for dismantling the support of the pump and some hydraulic parts subjected to periodic inspection without disconnecting the casing from the piping of the plant or removing the electric motor from the base plate.

## BACK PULL-OUT SYSTEM

ZGS pumps with elastic coupling are equipped with the back pull-out system that allows the dismantling of the internal and mechanic parts of the pump without disconnecting the casing from the fittings and without moving the motor.



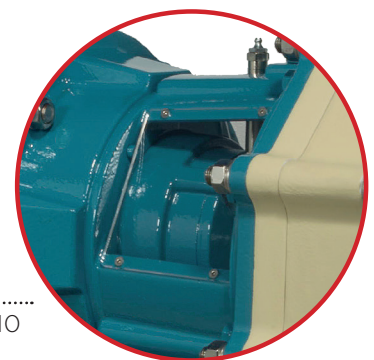
**ZGS Pump** 6x4x10  
(V1G)

## CLOSE-COUPLED "M"

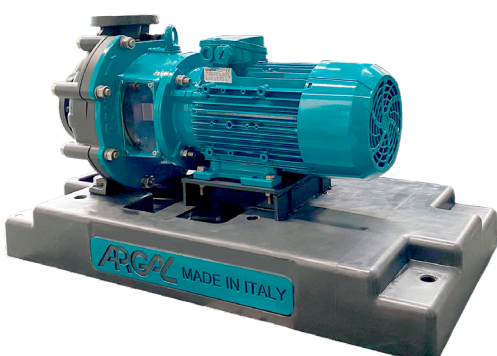
The close-coupled series offers installations for proposed for power requirements for up to 37 kW with significant mechanical advantages. The shaft of the pump is supported by a bearing located in the lantern; this bearing counter s the radial load of the shaft and by reducing its overhung section, it reduces the loads on the bearings of the electric motor contributing to extend the pump lifecycle. This solution is characterised by the reduction of the overall dimensions and allows installing these pumps in plants and compact systems.

## ZMS'S PLUS a unique solution

The rolling bearing is intentionally located in the lantern junction to the electric motor for supporting the radial charges. It also reduces the cantilever extremity of the shaft and thus the charge carried by the motor bearings: a longer life cycle is ensured.



**Details ZMS** 3x2x10  
rolling bearing



**ZCS Pump** 8x6x10  
(V1G)

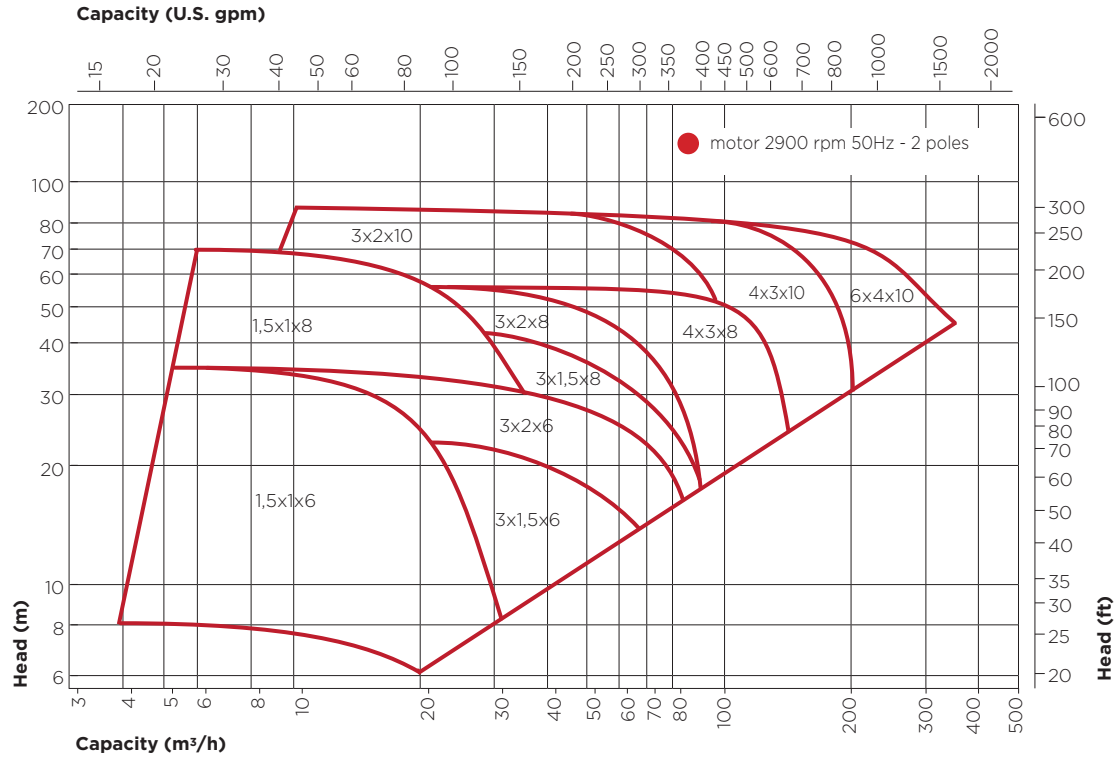
## ZCS a compact solution

This special version was conceived for resolving the issues linked to narrow spaces. **ZCS** pumps are available up to size 12x10x16, sharing the same performance characteristics as **ZMS** pumps.

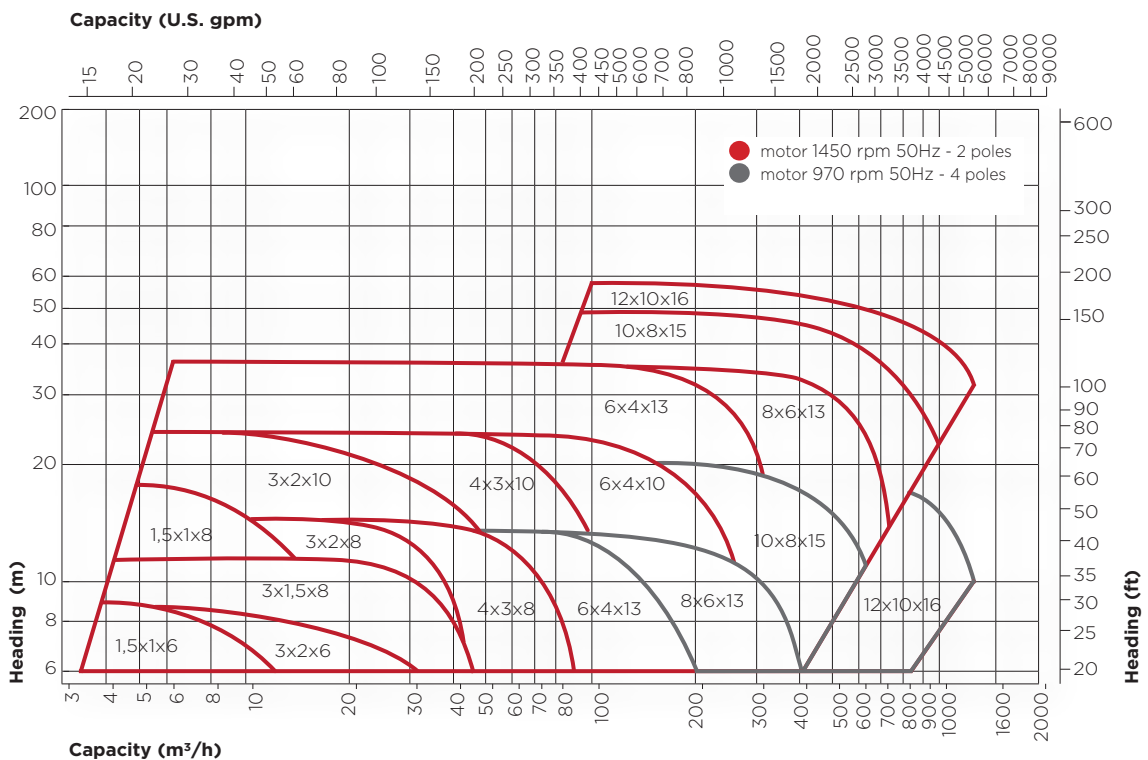
## CONSTRUCTION & CURVES

### 50 Hz

#### 3500 rpm



#### 1450 - 970 rpm



## SEAL FLUSHING

Seals are usually flushed by the pumped liquid or by an external clean liquid if necessary. Single, double or cartridge models are available with different material constructions.

TR5 - TR8



BF8



MTR5-MTR8



CS8



CS8-F



MC8



## MATERIALS

MOD.	External single		Internal single			Double flushed		
	TR5-1	TR8-1	BF8-1*	CS8-1**	CS8/F-1***	MTR5-1	MTR8-1	MC8-1
Primary stamp	Crane 8-1T		Flowserve Allpac 481	Crane 5610		Crane 8-1T back to back		Crane 5610
API plan	02		03			54		
Fixed materials°	SiC		SiC			SiC	SiC	SiC
Rotating materials°	graphite	SiC	SiC			graphite	SiC	SiC
Back seal	carbon ceramic					carbon ceramic		

## APPLICATIONS

MOD.	TR5-1	TR8-1	BF8-1*	CS8-1**	CS8/F-1***	MTR5-1	MTR8-1	MC8-1
Acid mixtures Mixtures concentrated with fluorine. Strong and hot concentrated alkalis			x	x	x			
Clean chemical liquids; hot/cold; concentrated/diluted	x	x						
Liquids with gas formation				x	x	x	x	x
abrasive liquids		x	x	x	x		x	x
precipitation risk solutions				x	x	x	x	x
Liquids with solids			x	x	x		x	x
Exam of suspended solids (to correlate):								
• max. Quantity in weight (%)	3	3	6	10	10	3	3	6
• max dimensions (inches)	0.02	0.02	0.12	0.19	0.19	0.02	0.02	0.12
• max hardness index (Mohs)	3	6	6	6	6	3	3	6

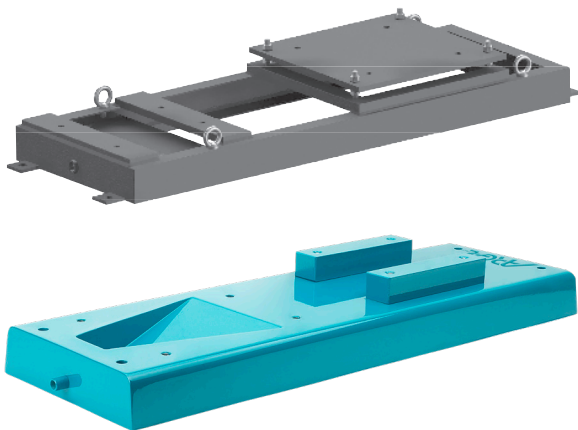
\* external flushing similar to API plan 11 - \*\* external flushing similar to API plan 11

\*\*\* external flushing - ° in contact with the pumped liquid - must be compatible

## WHY CHOOSING A SATURNevo PUMP ?

Summable into 4 significant details:

- the volute casing is made of only one piece guaranteeing a total robustness, shock-resistance and regular thickness.
- the blade shape of the impellers with augmented-energetical-efficiency three-dimensional development and less NPSH required. Blades are internally reinforced with carbon fiber.
- a new external system for even better performance of the pump: it is now possible to adjust the impeller position closer to the volute casing by relocating the shaft only.
- the feet and flanges are reinforced in kevlar



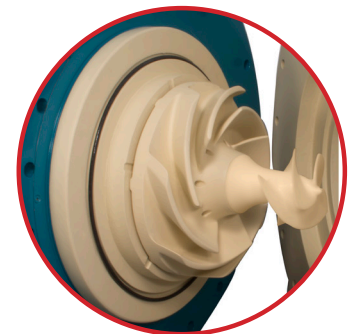
### BASEPLATE

Made of carbon steel profiles, painted with anti-corrosion enamel and provided with a system to adjust the position of the motor to ease its alignment with the pump.

Also available in fiberglass: an alternative which offers high chemical resistance with no need for protective coating.

### INDUCER

Extra component to facilitate the hydrodynamic of the aspiring zone: it lowers the NPSH value, it reduces the fluid losses significantly. It can be installed if during the suction phase the pump meets unexcepted fluid turbulence and excessive vibrations.



### PRE-FILTER

Located in front of the pump and directly linked to inlet pipe flange, the pre-filter holds the liquid's rough impurities to avoid the pump to be damaged. Equipped with large basket and easy-to-clean. An obstruction detector with alarm signal can be added.

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