ZENIT®

water technology

AERATION AND MIXING SYSTEMS

motralec
4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48
Demande de prix / e-mail : service-commercial@motralec.com
www.motralec.com

THE ZENIT GROUP

One Group, One Goal

The Zenit Group ranks among the top national and international names in the design and manufacture of water treatment technologies.
Its core business is the design and manufacture of submersible electric pumps for domestic and industrial use.

Not just electric pumps

Thanks to the knowledge and experience it has acquired over the years Zenit has also featured on the market with aeration and mixing products, providing a comprehensive range of items designed to meet the most demanding needs.

Character of Success

A solid tradition, dynamism and a penchant for innovation are the salient qualities that have led to Zenit's constant, steady growth, without ever losing sight of Its origins and objectives.

Uncompromising Quality

Shrewd corporate decision making has enabled the Zenit Group to carve out for itself considerable portions of the market in which it operates, thus ensuring its customers high technological content and ever-innovative services.

The Customer First and Foremost

Its product differentiation in relation to that of competitors has enabled Zenit to establish with its customers a relationship of growing respect. Zenit is aware of the importance of customer satisfaction and it constantly strives to increase the fidelity of its customers.
We understand the value of finding a willing, efficient and competent business partner and every day at Zenit we work with these objectives in mind to consolidate and increase the faith our customers have placed in us.

Many Members .... a single Group

Today Zenit is a Group that manages to have direct control over the markets it operates in, thanks to a targeted territorial presence. The Group is composed of four very distinct units that operate by pursuing a single, common, shared goal.
Zenit Italia: production site and sales office for Italy.
Zenit Pumps Suzhou: production site and sales office for China.
Zenit Asia Pacific: sales office for South East Asia.
Zenit Europe: sales office for Europe.

People, Product, Passion

The current structure of the Zenit Group is the result of a successful combination of entrepreneurial strategies and insights that have led to integration between company and globalisation. Bolstered by the conviction that the path we have undertaken is the right one, we can proceed along it together towards a single goal, guided by the 3P formula that has been our constant companion: People - Product - Passion.

INDEX

AERATION AND MIXING SYSTEMS

As well as its vast range of submersible electric pumps, Zenit offers a line of aeration and mixing products for the highly specialised civil and industrial wastewater treatment sector.

The Zenit product mix comprises:

- 9" and 12" disc-shaped and 2" tubular diffusers with elastomer membranes providing high oxygen transfer efficiency
- Venturi-type submerged aerators, which ensure an efficient combined mixing and aeration action and are especially suitable for homogenization tanks and storing water from the first rainfall
- mixers and flow-makers with self-cleaning propellers from 285 mm to 2100 mm in diameter with a rotation speed from 1000 to 27 rpm.

As well as supplying products of outstanding quality, Zenit provides its customers with assistance during product selection and plant design, and supervision during assembly.

TESTING AND INSPECTION DEPARTMENT

Constantly working to improve the quality of its products, Zenit has completed the construction of its new testing tank at the San Cesario sul Panaro (Modena) production location.

This structure, 8 metres square and 10 metres deep (6.50 metres underground) is capable of containing 600 m^3 of water (head of 9.50 m) and will fulfil a large number of functions thanks to the large number of tests it will be able to perform, and its overall versatility.

Tests will be possible not only on submersible electric pumps but also on all aeration and mixing products.

Specifically, measurement will be possible of:

- flow rate - head - efficiency (up to DN 800)
- NPSH
- operating life
- oxygen transfer
- air output
- thrust measurement
- flow configuration
- degree of mixing

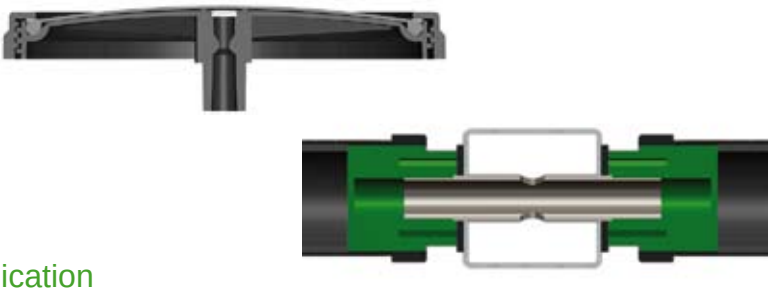
1 AIR DIFFUSERS




The Zenit range includes both disc-shaped and tubular membrane air diffusers.
Both models are fitted with high-quality membranes with perforation ensuring high oxygen transfer with low pressure drop, minimising the relative energy consumption.
Disc-shaped diffusers can be fitted with ball check valves.
Zenit is able to design the most efficient aeration system for the customer's specifications, and supply the complete system, including detailed assembly plans.

Operating Principle

During operation, the membrane inflates to open the tiny holes and allow the air to flow out in the form of fine bubbles. When the blower stops, the membrane deflates and pressure of the water pushes it back into contact with the supporting disc.
In this condition, the holes are closed and the central part, free from holes and specially shaped, acts as a check valve, ruling out all possible inflow of liquid.



Application

Membrane air diffusers are generally used in water treatment and purification processes where slurries have to be aerated to activate biological organic matter oxidation and nitrification processes.
They are also used in pre-aeration and aeration processes in oxidation tanks and aerobic digestion plants for civil and industrial sludges.

1.1 OXYPLATE 9-12

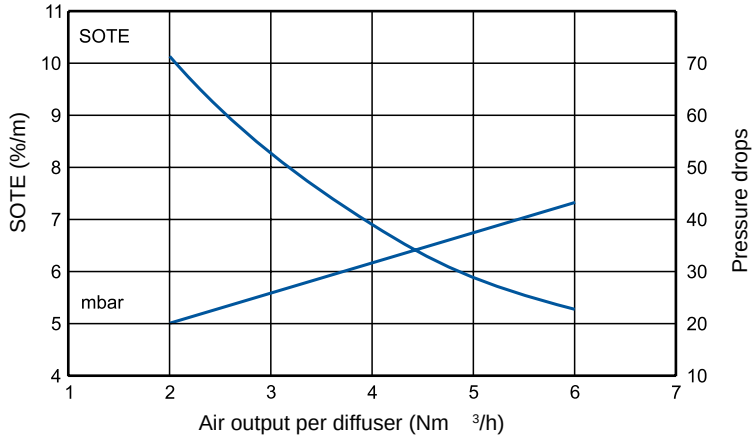
Disc-shaped air diffusers

Description and applications

Disc-shaped diffusers having elastomer membrane with tiny holes for application in water treatment processes in reactors with continuous or intermittent aeration, especially recommended for high-efficiency permanent installations.
The quality, design and membrane hole size ensure unbeatable efficiency in terms of the ideal oxygen transfer-pressure drop balance.

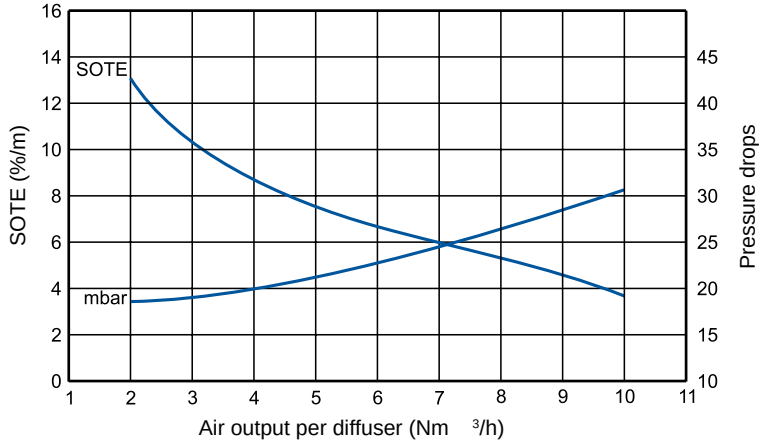
Performance

OXYPLATE 9



EPDM LP membrane, fine bubbles
Oxygen transfer under ATV M209
Density 6.5%

OXYPLATE 12



EPDM LP membrane, fine bubbles
Oxygen transfer under ATV M209
Density 5.3%

Technical characteristics

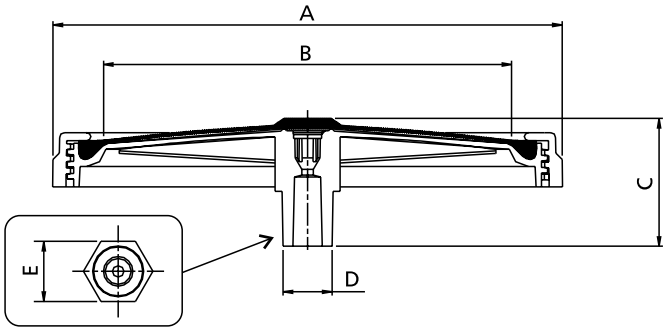
		OXYPLATE 9”	OXYPLATE 12”
Outside diameter	mm	270	340
Min. operating flow rate	Nm³/h	2	2
Max. operating flow rate	Nm³/h	6	10
Limit flow rate *	Nm³/h	10	15
Active surface area	m²	0,038	0,06
Membrane thickness	mm	2 ± 0,15	2 ± 0,15

Data with fine-bubble EPDM LP membrane
* No more than 10 min/day for membrane cleaning, tests, etc.

Construction materials

	OXYPLATE 9”	OXYPLATE 12”
Diffuser body	PP GF 30	PP GF 30
Ring-nut	PP GF 30	PP GF 30
Membrane	EPDM LP / SILICONE	EPDM LP

Overall dimensions and weights



	A	B	C	D	E	Kg
OXYPLATE 9”	270	220	76	3/4 NPT	32	0.7
OXYPLATE 12”	340	310	76	3/4 NPT	32	1.2

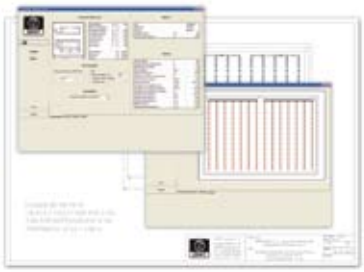
Measurements in mm

Accessories and components

ZENIT is able to design and build complete aeration systems comprising disc-shaped diffusers and preassembled PVC air distribution networks.

The high degree of standardisation, combined with the use of special components manufactured by ZENIT itself, allows the construction of simple, reliable, quick-to-install systems which are surprisingly inexpensive in spite of the use of top-quality materials such as PVC PN10 pipelines and stainless steel mounts.

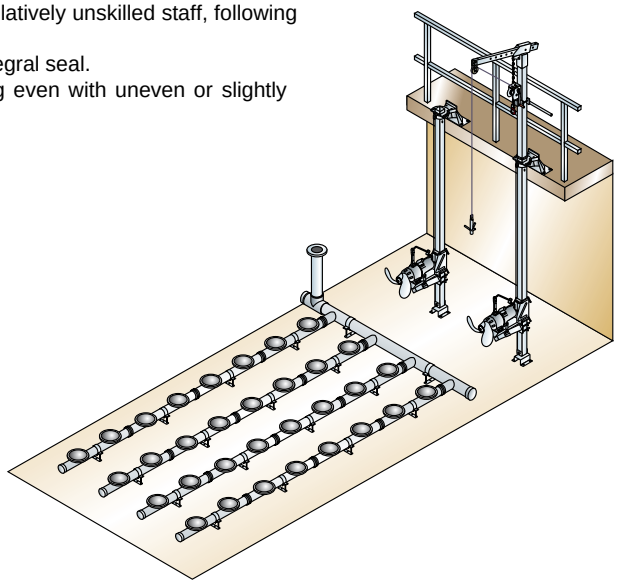
To facilitate the installation and servicing of its diffuser systems, Zenit has produced a series of tools that make every procedure quick and effective.



The use of dedicated software packages makes system design a quick operation, from the process to the optimal layout, through to cost analysis and generation of the bill of materials.

Installations

Preassembled systems are designed for quick, easy installation even by relatively unskilled staff, following the detailed instructions provided.
All connections are made by means of special self-aligning flanges with integral seal.
The supports are easily height-adjustable (up to 20 cm) to allow levelling even with uneven or slightly sloping tank bottoms



1.2 OXYTUBE 2

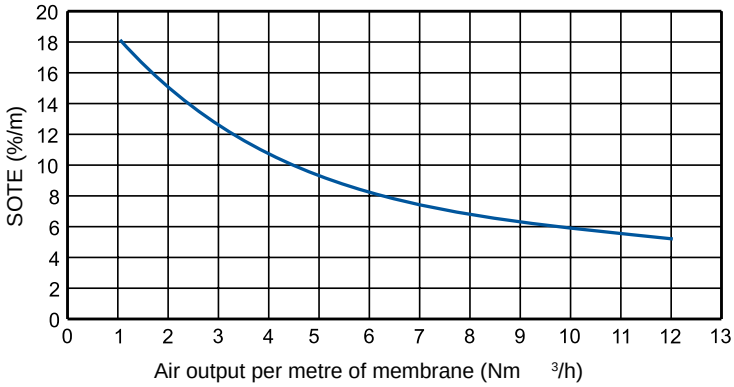
Tubular air diffusers

Description and applications

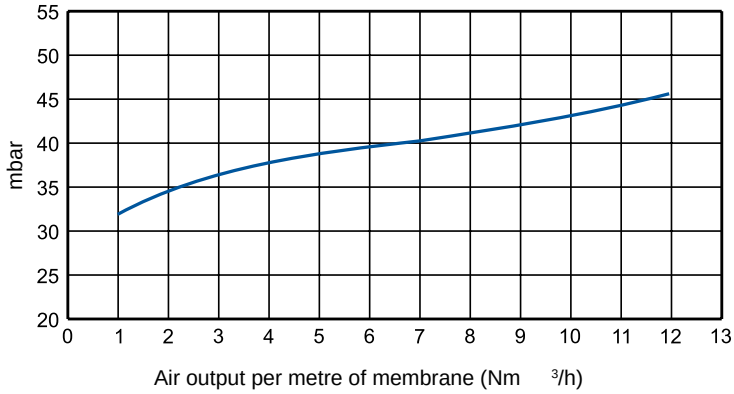
Especially recommended for the construction of removable aeration systems and in all cases where a large output surface area is required with only a small number of air distribution pipelines.
Diffusers basically consist of a head with threaded connection, the rigid polypropylene support and the tubular membrane in elastomer with tiny holes, secured with stainless steel band clamps.

Performance

Oxygen transfer
density 10% - test to ATV-M 209



Pressure drops



Technical characteristics

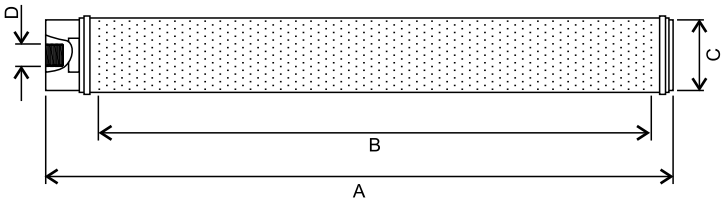
		OXYTUBE 2-500	OXYTUBE 2-750	OXYTUBE 2-1000
Support diameter	mm	63	63	63
Length of perforated section	mm	500	750	1000
Min. operating flow rate	Nm3/h	1	2	3
Max. operating flow rate	Nm3/h	6	9	12
Limit flow rate *	Nm3/h	10	15	20
Active surface area	m2	0,09	0,135	0,18
Membrane thickness	mm	1,7±0,2	1,7±0,2	1,7±0,2

Data with fine-bubble EPDM LP membrane.
* No more than 10 min/day for membrane cleaning, tests, etc.

Construction materials

Membrane	EPDM LP / SILICONE
Support	PP
Head	PP GF 30
Band clamps	V2A (stainless steel 1.4301 – AISI 304)
Gasket	EPDM th. 4 mm
Connector	V2A (stainless steel 1.4301 – AISI 304)

Overall dimensions and weights



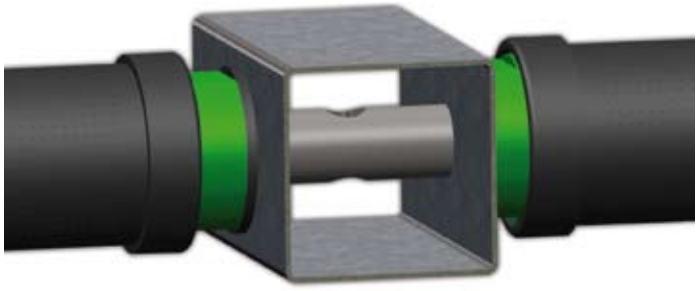
	A	B	C	D	Kg
OXYTUBE 500	560	500	63	3/4” WR	0.8
OXYTUBE 750	810	750	63	3/4” WR	1.1
OXYTUBE 1000	1060	1000	63	3/4” WR	1.3

Measurements in mm

Accessories and components

Membranes made of different materials are available for different applications:

- ‡ EPDM LP with low plasticiser content (<15%) for civil wastewater with some industrial input and industrial wastewater with low fat, oil and hydrocarbon content. Maximum operating temperature 80 °C.
- ‡ SILICONE for industrial wastewater with high fat and hydrocarbon content. Maximum operating temperature 100 °C.



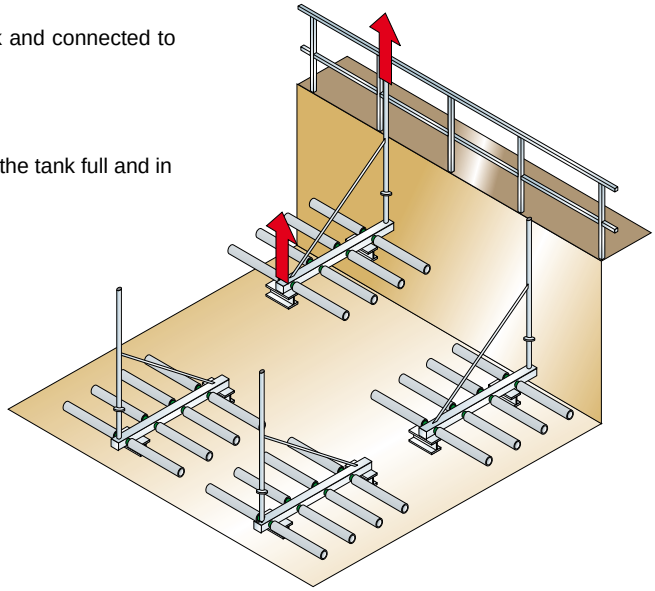
- ‡ Stainless steel connectors for installation of diffusers in pairs facing each other on square manifold of 80x80 mm or 100x100 mm.
- ‡ Adaptors for manifolds with ready-made holes.

Removable systems

Especially recommended for small/medium sized systems, or in general in all cases where it is not possible to empty the tank for maintenance. These systems are built with stainless steel supply assemblies comprising basically a square manifold on which the diffusers are installed in facing pairs, a down-pipe, one or more stiffener tie-rods and a draining system.

The individual assemblies are simply placed on the bottom of the tank and connected to the main air pipeline with a flange.
Stability is ensured by counterweights that also act as feet.

No runner or anchor systems are required.
The individual assembles are therefore easy to remove and install with the tank full and in operation.



2 SUBMERGED AERATORS

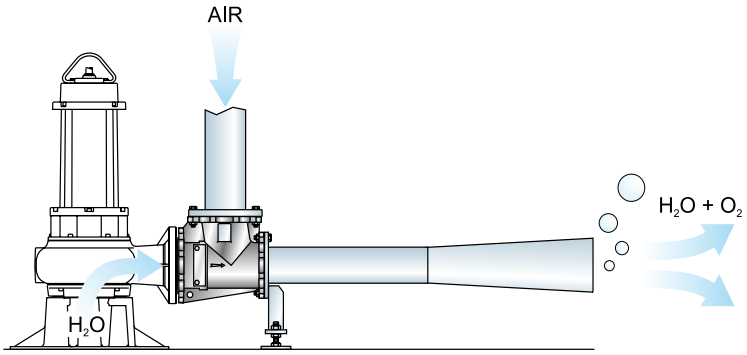
Venturi-type submerged aerators ensure an efficient combined mixing and aeration action and they are especially suitable for homogenization tanks and storing water from the first rainfall.
They are made by connecting submersible pumps with power levels up to 30 kW to channel-type hydraulic units with large free passage combined with “OXY” series ejector devices.
OXY 80 and 150 units have a polyurethane (Vulkollan) diaphragm, easily replaceable without dismantling the pump from the ejector thanks to a patented system. The OXY80 device has a flange suitable for connection to electric pumps having size 80 and 100 delivery ports.

For unbeatable versatility, Zenit has created three different product lines, called respectively:

‡ OXY
‡ SYSTEM OXY
‡ JETOXY

Operating Principle

In OXY devices, the liquid conveyed is mixed with the air by the “Venturi” effect, creating a mixture containing medium-fine air bubbles that increase the contact surface area and provide highly efficient oxygen exchange.



Application

OXY submerged oxygenation systems are used in civil and industrial wastewater and sludge treatment plants, or whenever combined oxygenation and mixing are required.
These systems can be installed without emptying the tank.

Key to product codes

OXY 8055

- Diaphragm diameter
- Flange size
- Product family

2.1 OXY 50

Submerged aerators

CHARACTERISTICS

- Cast iron structure (GJL-250)
- Suitable for use with DRO and DGO pumps
- can be permanently coupled to the pump or mounted on the bottom of the tank using the automatic coupling system (DAC type)

COMPOSITION OF OXY 50

- OXY body (cone + integral diaphragm)
- Sliding flange with gasket and stainless steel screws
- Pipe guide

A special technical detail on the OXY body allows mechanical fixing (using screws) between the ejector output flange and the sliding flange connected to the pump, creating a rigid system even suitable for mobile installation.

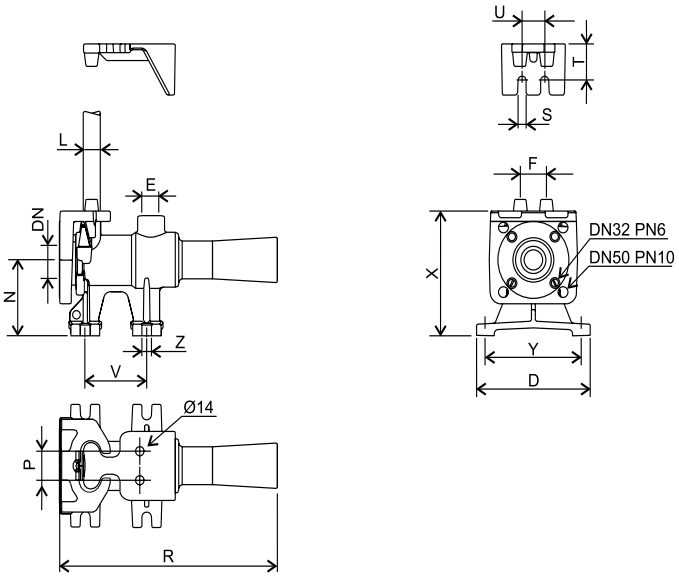
Construction materials

Body
Diffuser cone
Nuts and bolts
Paintwork

Models

‡ OXY 5027

Overall dimensions

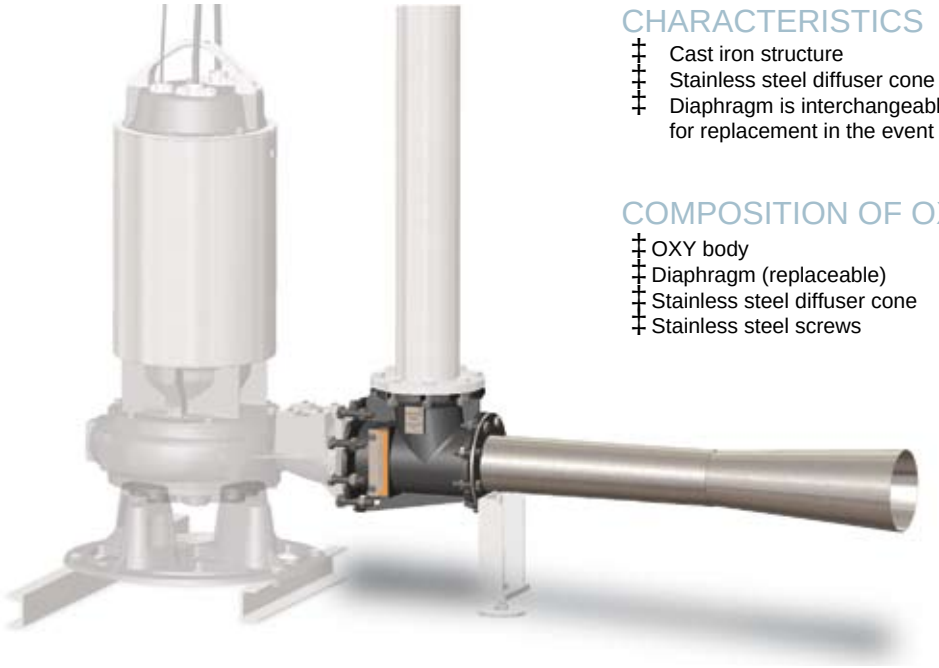


Measurements in mm

	DN	D	E	F	L	N	P	R	S	T	U	V	X	Y	Z	Kg
OXY 5027	DN32 PN6 - DN50 PN10	170	3/4”	40	3/4”	105	40	325	12	50	35	90	170	140	14	10

2.2 OXY 80-150

Submerged aerators



CHARACTERISTICS

- Cast iron structure
- Stainless steel diffuser cone
- Diaphragm is interchangeable for flow rate adjustment or for replacement in the event of wear (PATENTED SYSTEM)

COMPOSITION OF OXY 80-150

- OXY body
- Diaphragm (replaceable)
- Stainless steel diffuser cone
- Stainless steel screws

Construction materials

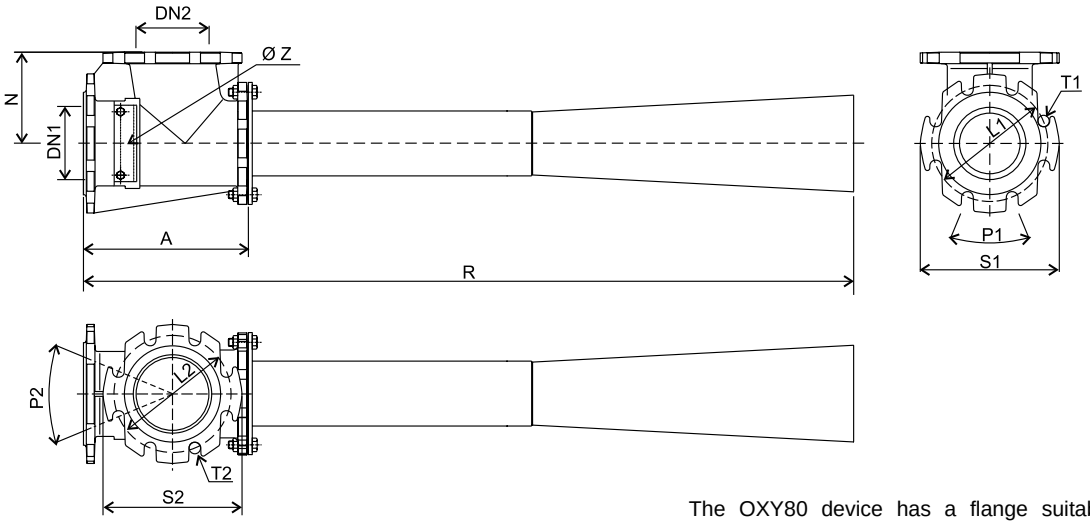
Body	Cast iron GJL-250
Diffuser cone	AISI 304 Stainless Steel
Diaphragm	Vulkollan
Nuts and bolts	A2 steel
Paintwork	Environment-friendly epoxy-vinyl

Models

- OXY 8055
- OXY 8063
- OXY 15080
- OXY 15095

OXY 80 and 150 range units can be combined with the horizontal coupler feet of the same diameter (DAC H).
This combination allows the OXY body to be fixed to the bottom of the tank for easier pump maintenance, and also allowing it to be used in more than one point (not simultaneously).

Overall dimensions



The OXY80 device has a flange suitable for connection to electric pumps having size 80 and 100 delivery ports.

	Z	A	DN1	DN2	L1	L2	N	P1	P2	R	S1	S2	T1	T2	Kg
OXY 8055	55	250	100	100	160-180	180	145	45°-90°	45°	1000	200	220	17	20	19
OXY 8063	63	250	100	100	160-180	180	145	45°-90°	45°	1000	200	220	17	20	19
OXY 15080	80	340	150	150	240	240	190	45°	45°	1500	285	285	24	24	48
OXY 15095	95	340	150	150	240	240	190	45°	45°	1500	285	285	24	24	48

Measurements in mm

2.3 SYSTEM OXY 50

SYSTEM OXY 50 COMPOSITION

- OXY body (cone + integral diaphragm)
- Sliding flange with gasket and stainless steel screws
- Pipe guide
- Galvanised steel base

A special technical detail on the OXY body allows mechanical fixing (using screws) between the ejector output flange and the sliding flange connected to the pump, creating a rigid system even suitable for mobile installation.

Models

	OXY System	OXY Ejector		Intake pipeline	
	DN (mm)	Nr.	Tipo	L max. (m) *	DN (mm)
S-OXY 50 1/5027	50	1	5027	**	50 **

* Maximum installation depth ** Intake pipeline not supplied
For overall dimensions, see drawing of JETOXY 50

2.4 SYSTEM OXY 80÷300

SYSTEM OXY 80÷300 COMPOSITION

- OXY body
- Diaphragm (interchangeable)
- Stainless steel diffuser cone
- Stainless steel screws
- Air intake line with flue filter and galvanised steel lifting hook
- Connecting tie-rod between pump and intake pipeline
- Galvanised steel/spheroidal cast iron base

Models

	OXY System	OXY Ejector		Intake pipeline	
	DN (mm)	Nr.	Tipo	L max. (m) *	DN (mm)
S-OXY 80 1/8055 35	80/100	1	8055	3,50	100
S-OXY 80 1/8055 50	80/100	1	8055	5,00	100
S-OXY 80 1/8063 35	80/100	1	8063	3,50	100
S-OXY 80 1/8063 50	80/100	1	8063	5,00	100
S-OXY 150 1/15080 35	150	1	15080	3,50	150
S-OXY 150 1/15080 50	150	1	15080	5,00	150
S-OXY 150 1/15095 35	150	1	15095	3,50	150
S-OXY 150 1/15095 50	150	1	15095	5,00	150
S-OXY 250 2/15095 35	250	2	15095	3,50	200
S-OXY 250 2/15095 50	250	2	15095	5,00	200
S-OXY 300 2/15095 35	300	2	15095	3,50	200
S-OXY 300 2/15095 50	300	2	15095	5,00	200

* Maximum installation depth

2.4 JETOXY 50

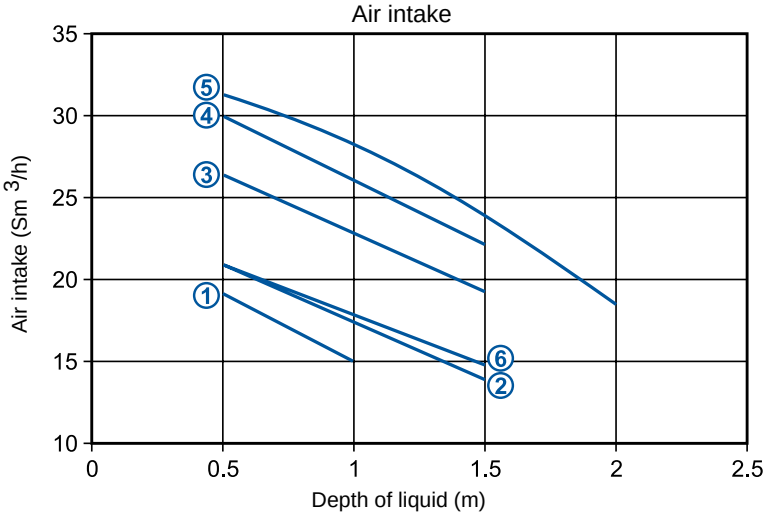
Submerged aeration systems

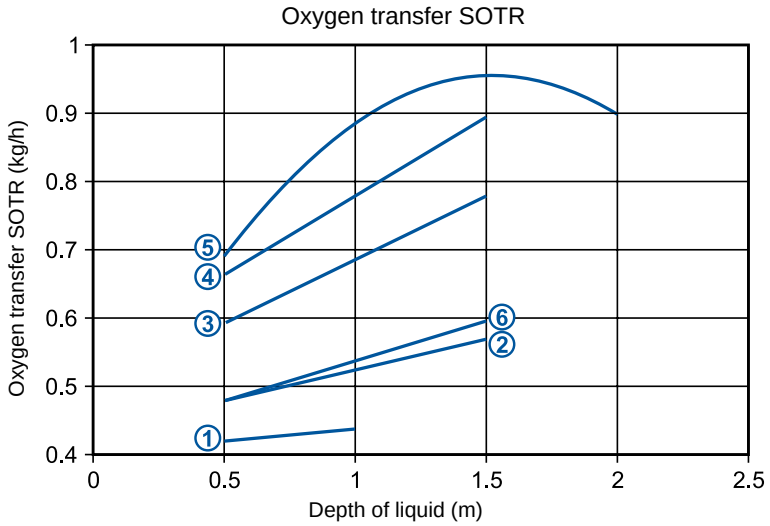
JETOXY50 SYSTEMS comprise a Venturi-type ejector coupled to a submersible electric pump rated from 0.37 to 1.5 kW with open multi-channel or vortex impeller.
JETOXYSYSTEM models can be selected on the basis of the performance curve best suited to requirements, optimising consumption.

Application

Fish farms, small water treatment tanks, holding pits.

Performance of models with DG hydraulic units for soiled water

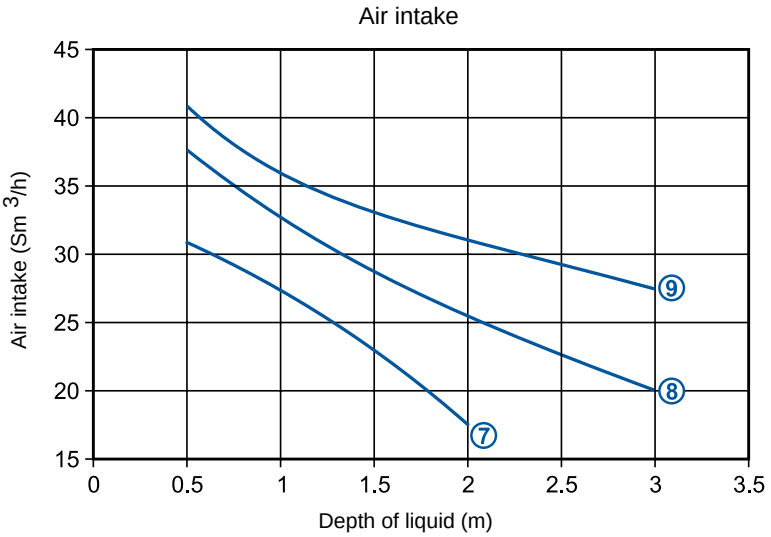


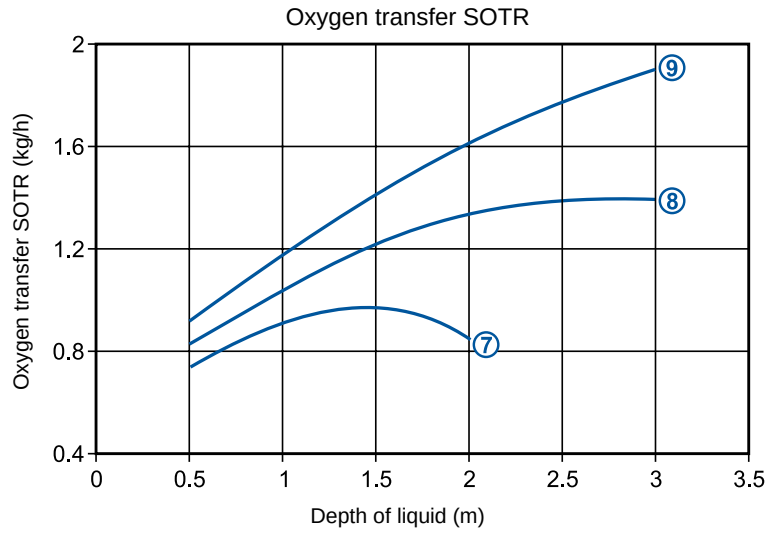


Curve	Model	Ejector			Electric pump			
		No.	Type	ø diaphragm (mm)	Model	kW	A	Poles
1	J-OXY 1 DGO 50/2	1	5027	27	DGO 50/2/G50H A	0,37	0,94	2
2	J-OXY 1 DGO 75/2	1	5027	27	DGO 75/2/G50H A	0,55	1,4	2
3	J-OXY 1 DGO 100/4	1	5027	27	DGO 100/4/G50H A	0,63	1,9	4
4	J-OXY 1 DGO 100/2	1	5027	27	DGO 100/2/G50H A	0,88	2,3	2
5	J-OXY 1 DGO 150/2	1	5027	27	DGO 150/2/G50H A	1,1	2,7	2
6	J-OXY 1 DGO 200/2	1	5027	27	DGO 200/2/G50H A	1,5	3,6	2

The technical data in the table refer to power supply voltage 400V/3/50Hz. Refer to the technical catalogue for a full view of the voltages available.

Performance of models with DG hydraulic units for clean water

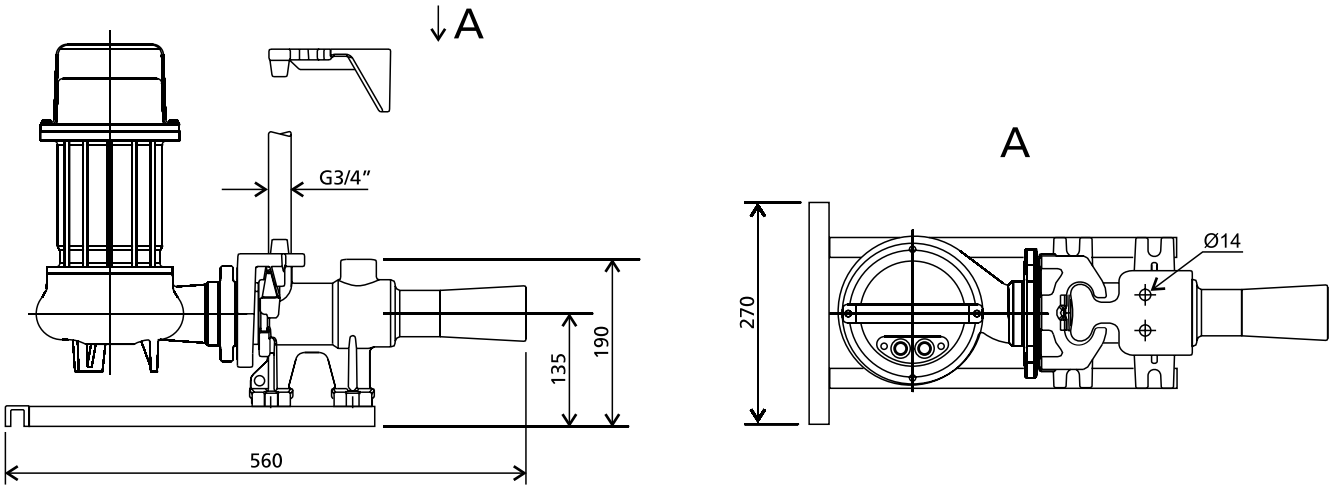




Curve	Model	Ejector			Electric pump			
		No.	Type	ø diaphragm (mm)	Model	kW	A	Poles
7	J-OXY 1 DRO 100/2	1	5027	27	DRO 100/2/G50H A	0,88	2,3	2
8	J-OXY 1 DRO 150/2	1	5027	27	DRO 150/2/G50H A	1,1	2,7	2
9	J-OXY 1 DRO 200/2	1	5027	27	DRO 200/2/G50H A	1,5	3,6	2

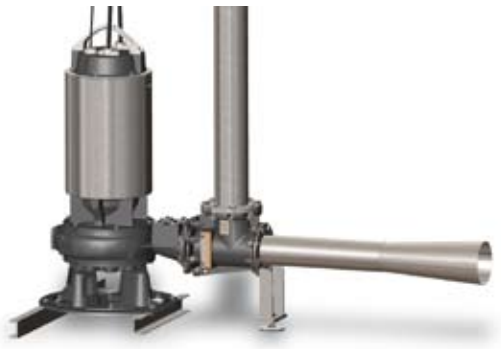
The technical data in the table refer to power supply voltage 400V/3/50Hz. Refer to the technical catalogue for a full view of the voltages available.

Overall dimensions



2.5 JETOXY 80÷300

Submerged aeration systems

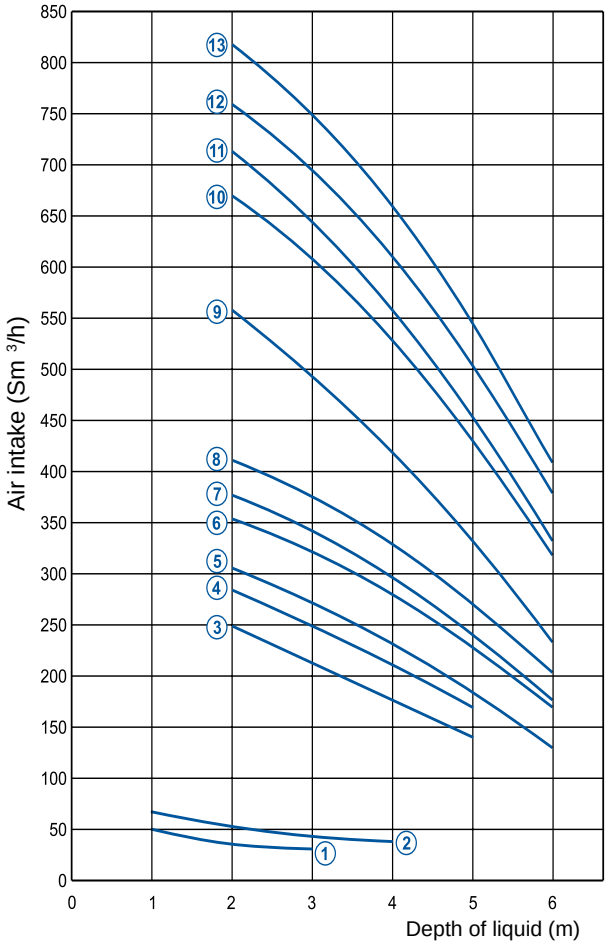


JETOXY 80÷300 units comprise one or more Venturi-type ejector with replaceable diaphragm coupled to a submersible electric pump rated from 2.2 to 30 kW.
Open multi-channel, open single-channel, and closed single or dual-channel impellers may be used depending on the type of liquid to be processed.

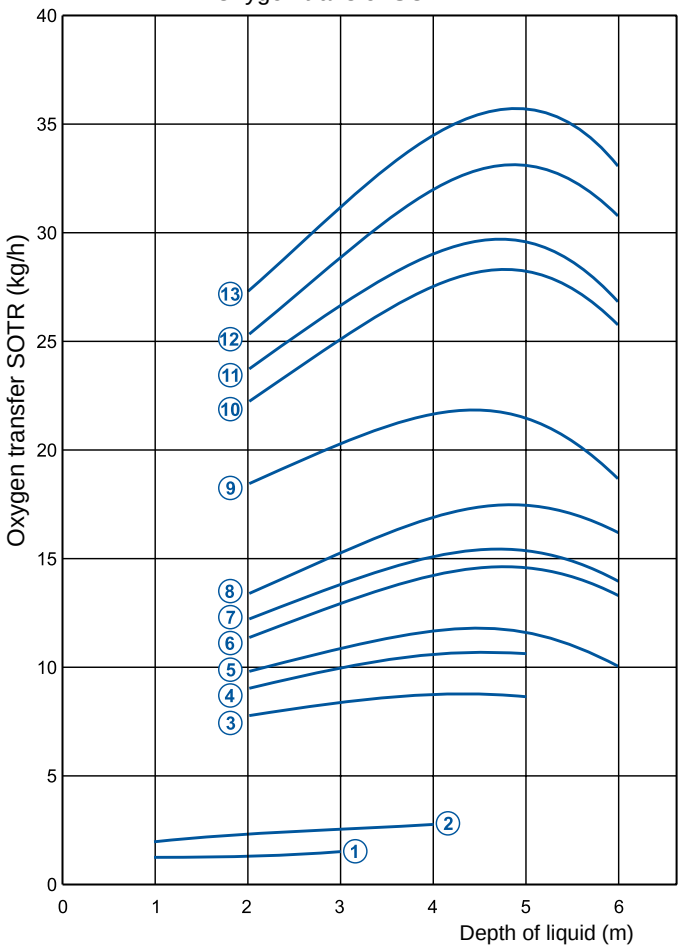
Application

Holding, homogenisation and stabilisation tanks, first rainfall collection tanks, oxidation tanks.

Air intake



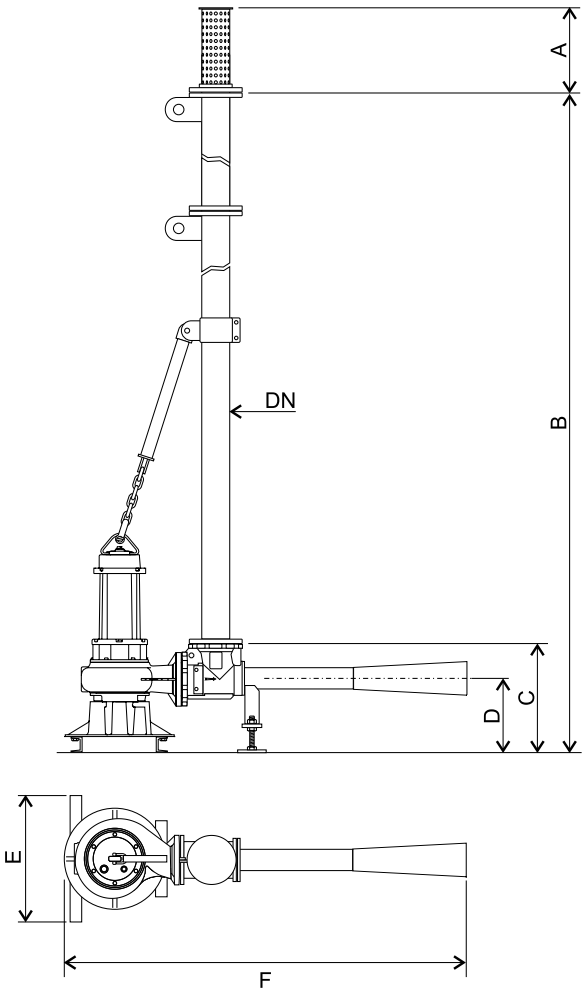
Oxygen transfer SOTR

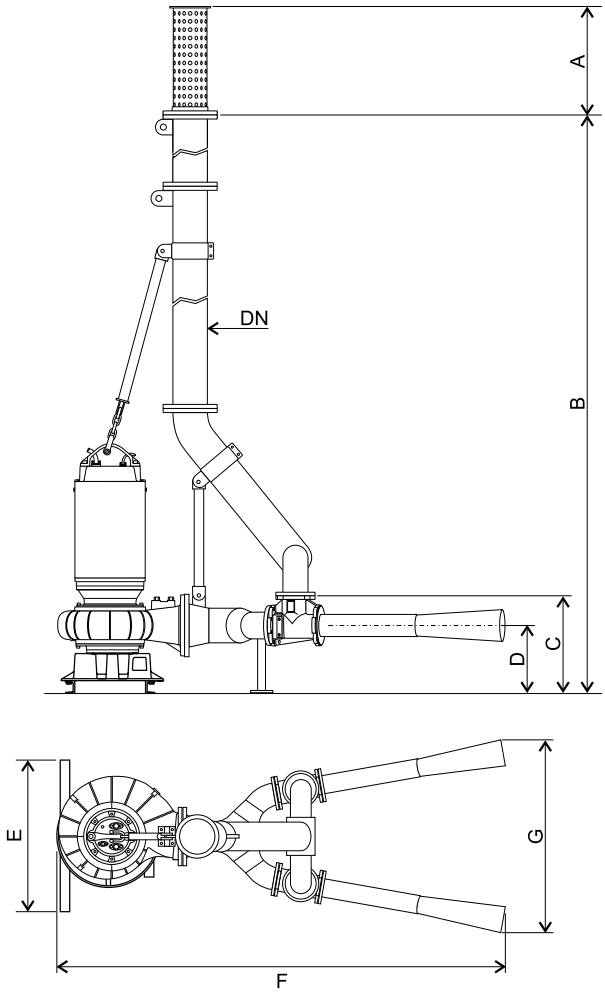


Curve	Model	Ejector			Elettropompa					Intake pipeline		System **
		No.	Type	ø diaphragm	Model	P1 (kW)	P2 (kW)	A	Poli	Max L. (m)*	DN (mm)	P1 (kW)
1	J-OXY 1/35 MAN 300/4	1	8055	55	MAN 300/4/80 A	2,9	2,2	5,8	4	3,5	100	2,8
2	J-OXY 1/35 MAN 400/4	1	8055	55	MAN 400/4/80 A	3,8	3,0	7,3	4	3,5	100	3,3
3	J-OXY 1/35(50) DRP 750/4	1	15095	95	DRP 750/4/150 A	7,9	6,5	14,9	4	3,5(5)	150	7,8
4	J-OXY 1/35(50) SMP 750/6	1	15095	95	SMP 750/6/200 A	8,1	6,1	15,2	6	3,5(5)	150	8,0
5	J-OXY 1/35(50) DRP 1000/4	1	15095	95	DRP 1000/4/150 A	10,8	8,9	20,0	4	3,5(5)	150	10,1
6	J-OXY 1/35(50) SBP 1500/6	1	15095	95	SBP 1500/6/200 A	15,7	12,3	28,2	6	3,5(5)	150	13,0
7	J-OXY 1/35(50) SMP 1500/4	1	15095	95	SMP 1500/4/150 A	15,8	13,6	28,2	4	3,5(5)	150	16,0
8	J-OXY 1/35(50) DRP 2000/4	1	15095	95	DRP 2000/4/150 A	19,6	16,4	36,0	4	3,5(5)	150	18,4
9	J-OXY 2/35(50) SBP 1500/6	2	15095	95	SBP 1500/6/250 A	15,7	12,3	28,2	6	3,5(5)	200	15,5
10	J-OXY 2/35(50) SBN 2500/6	2	15095	95	SBN 2500/6/250 A	22,8	18,5	40,0	6	3,5(5)	200	22,7
11	J-OXY 2/35(50) SBN 3000/4	2	15095	95	SBN 3000/4/250 A	26,0	22,0	43,5	4	3,5(5)	200	25,0
12	J-OXY 2/35(50) SBN 3000/6	2	15095	95	SBN 3000/6/250 A	26,7	22,0	46,0	6	3,5(5)	200	25,7
13	J-OXY 2/35(50) SBN 4000/4	2	15095	95	SBN 4000/4/250 A	36,0	30,0	61,0	4	3,5(5)	200	34,6

The technical data in the table refer to power supply voltage 400V/3/50Hz. Refer to the technical catalogue for a full view of the voltages available.
* Maximum installation depth with standard intake pipelines. For greater depths, contact our technical service.
** Power absorbed from the mains throughout the working range

Dimensions and weights





SYSTEM OXY

Model	Dimensions (mm)						max. submergence (m)			
							3.5 m		5.00 m	
	A	C	D	E	F	G	B	Kg	B	Kg
S-OXY 80 1/8055(63) 35	340	450	300	800	-	-	4050	105	-	-
S-OXY 150 1/15080(95) 35	480	450	300	1200	-	-	4050	194	-	-
S-OXY 250 2/15095 35	690	635	450	1200	-	1420	4330	356	-	-
S-OXY 80 1/8055(63) 50	340	450	300	800	-	-	-	-	5550	125
S-OXY 150 1/15080(95) 50	480	450	300	1200	-	-	-	-	5550	271
S-OXY 250 2/15095 50	690	635	450	1200	-	1420	-	-	5830	400

JETOXY

Model	Dimensions (mm)							max. submergence (m)			
								3.5 m		5.00 m	
	A	C	D	E	F	G	DN	B	Kg	B	Kg
J-OXY 1/35 MAN 300/4	340	450	300	800	1150	-	100	4050	191	-	-
J-OXY 1/35 MAN 400/4	340	450	300	800	1150	-	100	4050	194	-	-
J-OXY 1/35(50) DRP 750/4	480	450	300	1200	1590	-	150	4050	317	5550	353
J-OXY 1/35(50) SMP 750/6	480	450	300	1200	1800	-	150	4050	369	5550	405
J-OXY 1/35(50) DRP 1000/4	480	450	300	1200	1590	-	150	4050	325	5550	361
J-OXY 1/35(50) SBP 1500/6	480	450	300	1200	1800	-	150	4050	424	5550	460
J-OXY 1/35(50) SMP 1500/4	480	450	300	1200	1800	-	150	4050	385	5550	421
J-OXY 1/35(50) DRP 2000/4	480	450	300	1200	1800	-	150	4050	407	5550	443
J-OXY 2/35(50) SBP 1500/6	690	635	450	1200	3170	1420	200	4330	609	5850	653
J-OXY 2/35(50) SBN 2500/6	690	635	450	1200	3200	1420	200	4330	836	5850	880
J-OXY 2/35(50) SBN 3000/4	690	635	450	1200	3100	1420	200	4330	758	5850	802
J-OXY 2/35(50) SBN 3000/6	690	635	450	1200	3200	1420	200	4330	876	5850	920
J-OXY 2/35(50) SBN 4000/4	690	635	450	1200	3100	1420	200	4330	774	5850	818

3 MIXERS AND FLOW-MAKERS

Nowadays, submerged mixers are the key components of modern water treatment systems. They are mainly used in equalisation, homogenisation and denitrification processes, for phosphate extraction and where liquids have to be mixed or stirred to reduce sedimentation.

ZENIT PROpeller series mixers feature:

- Low operating costs, thanks to high efficiency leading to minimal energy consumption
- Versatility, since they can be installed in tanks of any shape and size
- Flexibility, thanks to the large assortment of installation accessories allowing correct positioning in any point in the tank
- Easy installation and maintenance provided by quick hoisting structures and a vast range of accessories allowing the user to adjust and position the machine exactly as required.

Choosing the right mixer for every application is no simple matter: there are a large number of factors to consider, and experience plays a vital role.

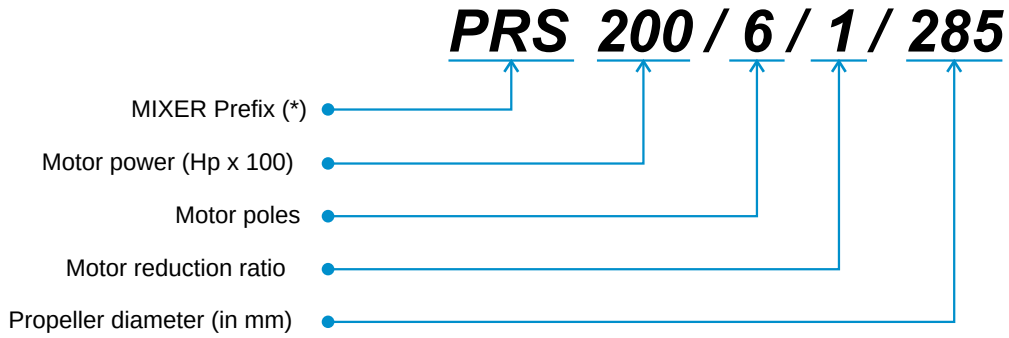
To select exactly the right product, users must consider how the following parameters interact:

- shape, size and geometry of the tank
- material and friction level of tank walls
- items generating resistance inside the tank (pipelines, aerators, etc.).
- distance between the mixer propeller and the walls of the tank
- the type of liquid for treatment and its specific weight
- distance between mixers (for multiple installations)

ZENIT helps you to choose the right PROpeller

ZENIT helps you to choose the mixer best suited to your needs by placing its decades of experience in water treatment at your service. Simply contact our Customer Service engineers with the details of your system for a quick reply specifying the best mixer for your installation.

Key to product codes

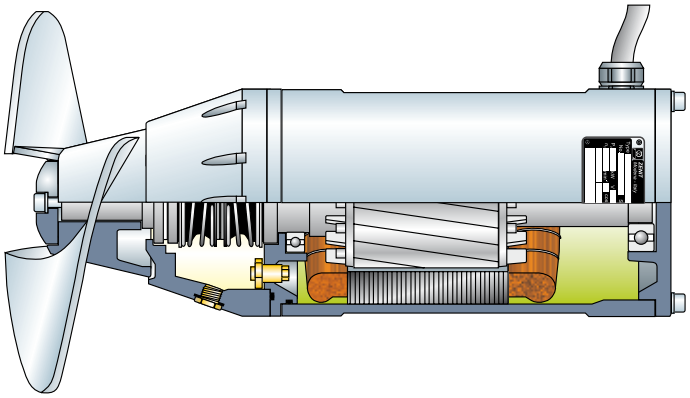


(*) PRS - cast iron casing - direct transmission
PRX - stainless steel casing - direct transmission
PRO - cast iron casing - with reduction gear

3.1 PRS-PRX-PRO
Submerged mixers

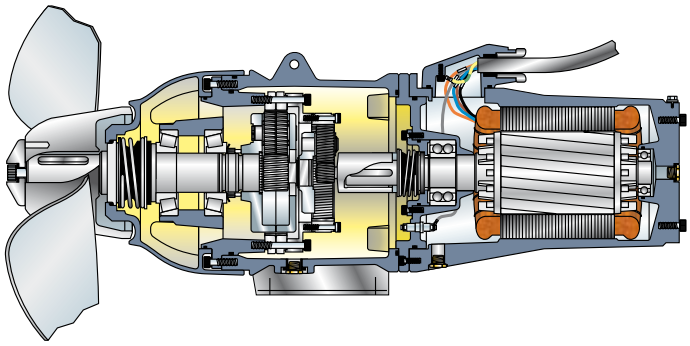
Description and application

Zenit PRS, PRX and PRO series mixers are built in cast iron or stainless steel.
The propellers, of self-cleaning design, are up to 850 mm in diameter.
The electric motors are rated from 1.1 to 15 kW and have 4, 6 or 8 poles; transmission may be direct or by means of a planetary reduction gear.
They are used in mixing processes where large quantities of liquid have to be kept in motion to prevent sedimentation. The galvanised iron or stainless steel mounting accessories provide outstanding flexibility and allow mixers to be correctly positioned even if several are installed in the same tank.



PRS
- Cast iron structure
- Propeller in Fe 510 iron
- Motors from 1.5 to 3.0 kW, with 6 and 8 poles
- From 750 to 1000 rpm, direct transmission
- Suitable for applications with max 3% solid content

PRX
- Structure in AISI 316 stainless steel
- Propeller in AISI 316 stainless steel
- Motors from 1.5 to 3.0 kW, with 6 and 8 poles
- From 750 to 1000 rpm, direct transmission
- Suitable for applications with max 3% solid content

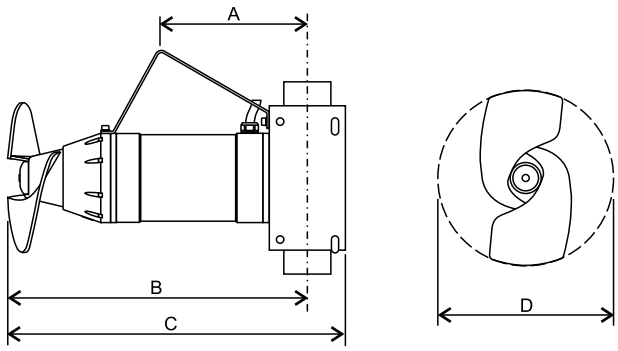


PRO
- Cast iron structure
- Propeller in Fe 510 iron
- Motors from 1.1 to 15 kW, with 4 poles
- From 222 to 350 rpm, transmission with reduction gear
- Suitable for applications with max 12% solid content

Technical characteristics

	P1	P2	current						propeller			
	(kW)	(kW)	operating	startup	poles	start	cable	rpm	thrust N	Ø mm	no. of blades	material
PRS 200/6/1/285	1.9	1.5	3.6	25	6	DOL	7x1.5	1000	390	285	2	Fe 510 D
PRS 300/6/1/325	3.0	2.2	6.4	45	6	DOL	7x1.5	1000	530	325	2	Fe 510 D
PRS 400/6/1/360	4.2	3.0	7.8	55	6	DOL	7x1.5	1000	650	360	2	Fe 510 D
PRS 200/8/1/380	2.1	1.5	5.8	41	8	DOL	7x1.5	750	465	380	2	Fe 510 D
PRS 350/8/1/440	3.4	2.5	7.1	50	8	DOL	7x1.5	750	600	440	2	Fe 510 D
PRX 200/6/1/285	1.9	1.5	3.6	25	6	DOL	7x1.5	1000	390	285	2	AISI 316
PRX 300/6/1/325	3.0	2.2	6.4	45	6	DOL	7x1.5	1000	530	325	2	AISI 316
PRX 400/6/1/360	4.2	3.0	7.8	55	6	DOL	7x1.5	1000	650	360	2	AISI 316
PRX 200/8/1/380	2.1	1.5	5.8	41	8	DOL	7x1.5	750	465	380	2	AISI 316
PRX 350/8/1/440	3.4	2.5	7.1	50	8	DOL	7x1.5	750	600	440	2	AISI 316
PRO 150/4/7/540	1.7	1.1	3.0	21	4	DOL	7x1.5	222	295	540	2	Fe 510 D
PRO 200/4/6/540	2.1	1.5	3.9	27	4	DOL	7x1.5	268	405	540	2	Fe 510 D
PRO 300/4/6/550	2.8	2.2	5.2	36	4	DOL	7x1.5	268	575	550	2	Fe 510 D
PRO 400/4/4/540	4.0	3.0	7.2	51	4	DOL	7x1.5	350	805	540	2	Fe 510 D
PRO 550/4/4/550	5.0	4.0	8.6	60	4	DOL	7x1.5	350	980	550	2	Fe 510 D
PRO 750/4/4/600	7.2	5.5	12.5	88	4	Y/ '	12x2.5	350	1450	600	2	Fe 510 D
PRO 1000/4/4/640	9.0	7.5	15.2	105	4	Y/ '	12x2.5	350	1950	640	2	Fe 510 D
PRO 1500/4/6/800	15.1	11.0	25.4	178	4	Y/ '	12x2.5	268	3400	800	2	Fe 510 D
PRO 2000/4/6/850	17.9	15.0	29.8	210	4	Y/ '	12x2.5	268	4600	850	2	Fe 510 D

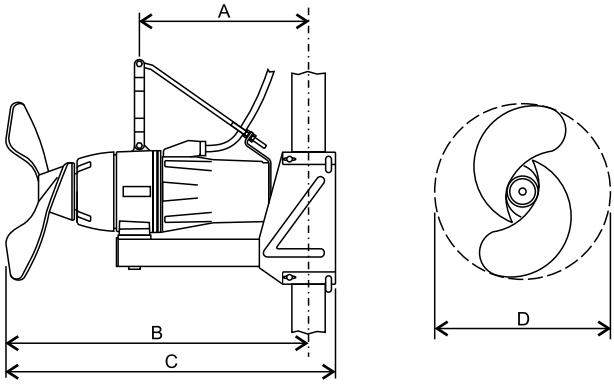
Overall dimensions and weights



	A	B	C	D	Kg
PRS 200/6/1/285	260	585	670	285	59
PRS 300/6/1/325	260	585	670	325	59
PRS 400/6/1/360	260	585	670	360	59
PRS 200/8/1/380	250	577	660	380	66
PRS 350/8/1/440	250	577	660	440	67

	A	B	C	D	Kg
PRX 200/6/1/285	260	585	670	285	59
PRX 300/6/1/325	260	585	670	325	59
PRX 400/6/1/360	260	585	670	360	59
PRX 200/8/1/380	250	577	660	380	66
PRX 350/8/1/440	250	577	660	440	67

Measurements in mm

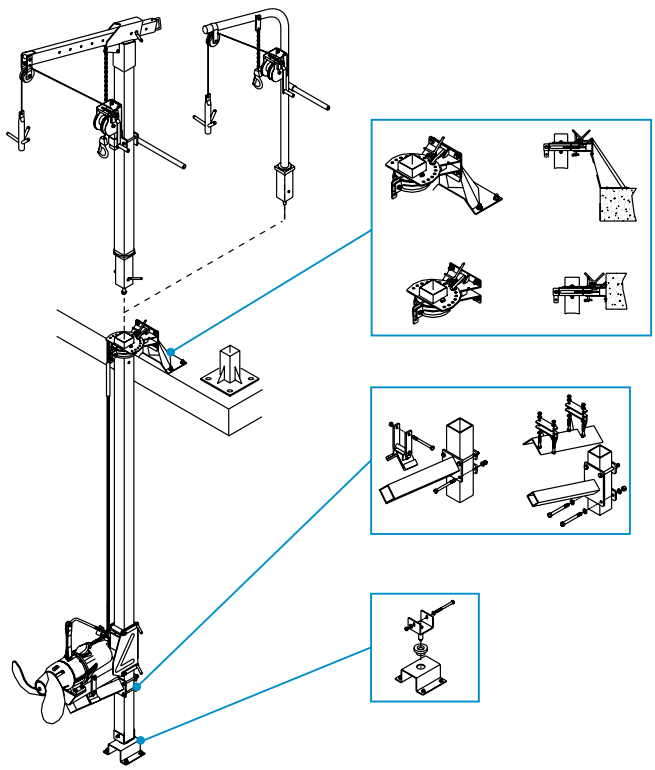


	A	B	C	D	Kg
PRO 150/4/7/540	450	988	1070	540	141
PRO 200/4/6/540	450	988	1070	540	136
PRO 300/4/6/550	450	978	1060	550	141
PRO 400/4/4/540	450	988	1070	540	138
PRO 550/4/4/550	450	978	1060	550	138
PRO 750/4/4/600	540	1123	1220	600	223
PRO 1000/4/4/650	540	1123	1220	640	229
PRO 1500/4/6/800	650	1313	1410	800	314
PRO 2000/4/6/850	625	1313	1410	850	337

Measurements in mm

Installation

PROpeller mixers can be supplied with a full range of installation accessories, which allow mounting and simplify maintenance in tanks of all kinds, as well as ensuring that the mixer is correctly positioned in the tank thanks to the various adjustments possible.

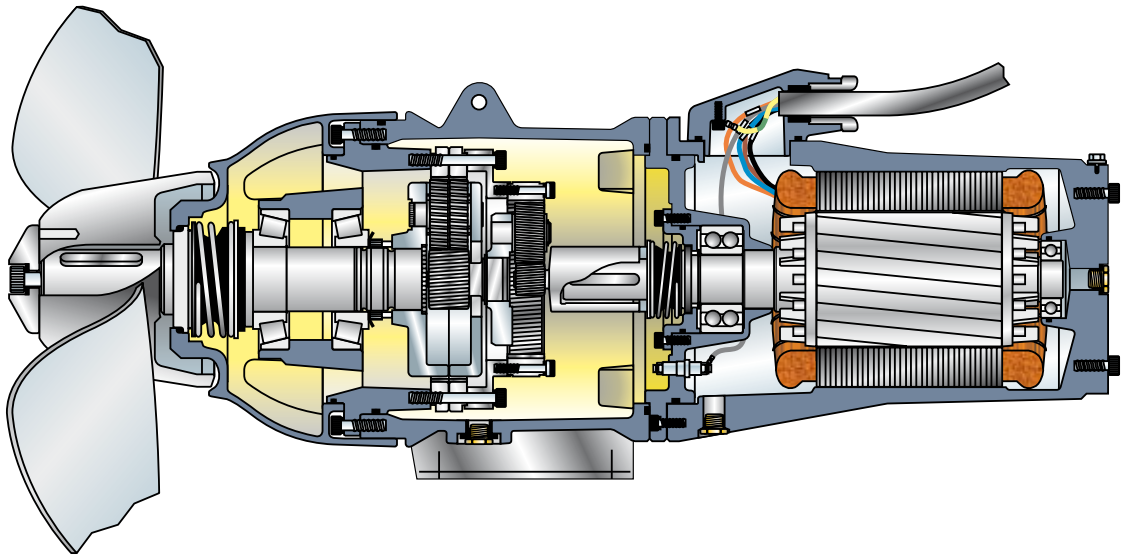


The mixer is supplied as standard with a runner and hoisting hook. All structural work can be supplied in hot-galvanised iron or stainless steel.
Various installation accessories are available for large-sized mixers on request.
All lifting systems are built with a rugged structure to guarantee efficiency and durability.
An additional advantage comes from full dismantlability into individual pieces, allowing the system to be assembled even without lifting equipment.
Thanks to a special connection on the top, all Zenit posts allow the lifting system to be removed for use on more than one installation.

3.2 PRO
Flow-maker

Description and applications

Zenit PRO series flow-makers are built in cast iron or stainless steel.
The propellers, of self-cleaning design, are up to 2,100 mm in diameter.
The electric motors are rated from 0.8 to 5.5 kW with 4 or 6 poles; units have planetary reduction gear.
The large propeller rotating at low rpm allows a large mass of water to be kept in motion at low speed.
They are mainly used in oxidation and denitrification tanks and in all installations where the formation of sediment on the bottom of the tank has to be prevented.

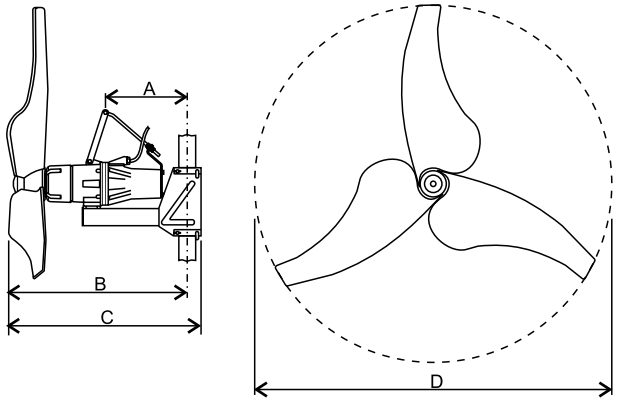


- Cast iron structure
- Propeller in AISI 316
- Motors from 0.8 to 5.5 kW, with 4-6 poles
- From 27 to 148 rpm, transmission with reduction gear
- Suitable for applications with max 1 or 3% solid content

Technical characteristics

	P1	P2	current						propeller			
	(kW)	(kW)	operating	startup	poles	start	cable	rpm	thrust N	Ø mm	no. of blades	material
PRO 100/6/7/620	1.3	0.8	2.95	21	6	DOL	7x1.5	148	290	620	3	AISI 316
PRO 150/6/7/660	1.8	1.1	4.3	30	6	DOL	7x1.5	148	410	660	3	AISI 316
PRO 200/6/7/700	2.2	1.5	4.7	33	6	DOL	7x1.5	148	550	700	3	AISI 316
PRO 300/6/7/750	3.0	2.2	6.4	45	6	DOL	7x1.5	148	800	750	3	AISI 316
PRO 400/6/7/800	4.2	3.0	7.8	55	6	DOL	7x1.5	148	1040	800	3	AISI 316
PRO 150/4/46/1900	1.7	1.1	3.0	21	4	soft start	7x1.5	33	1200	1900	2	AISI 316
PRO 200/4/46/2000	2.1	1.5	3.9	27	4	soft start	7x1.5	33	1600	2000	2	AISI 316
PRO 200/6/38/1700	2.2	1.5	4.7	33	6	soft start	7x1.5	27	1600	1700	3	AISI 316
PRO 300/4/46/1700	3.0	2.2	5.2	36	4	soft start	7x1.5	33	1800	1700	3	AISI 316
PRO 400/4/38/1750	4.2	3.0	7.2	51	4	soft start	7x1.5	40	2200	1750	3	AISI 316
PRO 550/4/46/2100	5.0	4.0	8.6	60	4	soft start	7x1.5	33	2600	2100	3	AISI 316
PRO 550/4/13/1040	5.0	4.0	8.6	60	4	soft start	7x1.5	119	1400	1040	3	AISI 316
PRO 750/4/38/2000	7.2	5.5	12.5	88	4	soft start	12x2.5	43	3200	2000	3	AISI 316

Overall dimensions and weights

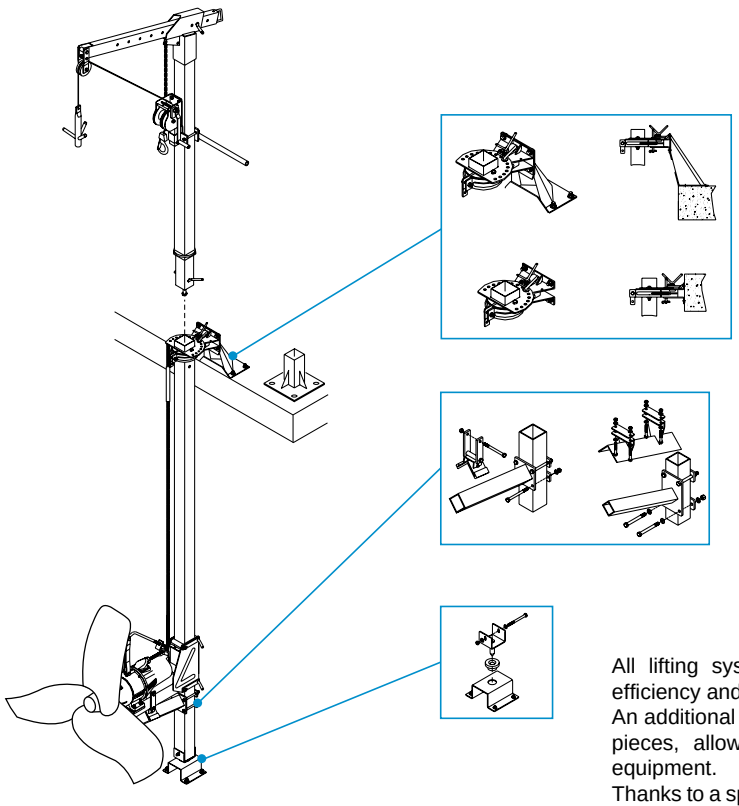


	A	B	C	D	Kg
PRO 100/6/7/620	460	893	975	620	137
PRO 150/6/7/660	460	893	975	660	137
PRO 200/6/7/700	460	893	975	700	139
PRO 300/6/7/750	460	908	990	750	139
PRO 400/6/7/800	410	923	1005	800	143
PRO 150/4/46/1900	600	1144	1241	1900	206
PRO 200/4/46/2000	600	1144	1241	2000	207
PRO 200/6/38/1700	630	1107	1204	1700	207
PRO 300/4/46/1700	630	1107	1204	1700	207
PRO 400/4/38/1750	600	1144	1241	1750	207
PRO 550/4/46/2100	655	1210	1300	2100	282
PRO 550/4/13/1040	535	1074	1171	1040	175
PRO 750/4/38/2000	685	1325	1425	2000	322

Measurements in mm

Installation

PRO flow-makers can be supplied with a full range of installation accessories, which allow mounting and simplify maintenance in tanks of all kinds, as well as ensuring that the mixer is correctly positioned in the tank thanks to the various adjustments possible.
The mixer is supplied as standard with a runner and hoisting hook. All structural work can be supplied in hot-galvanised iron or stainless steel.



All lifting systems are built with a rugged structure to guarantee efficiency and durability.
An additional advantage comes from full dismantlability into individual pieces, allowing the system to be assembled even without lifting equipment.
Thanks to a special connection on the top, all Zenit posts allow the lifting system to be removed for use on more than one installation.

motralec
4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48
Demande de prix / e-mail : service-commercial@motralec.com
www.motralec.com