



DEBEM

— MADE IN ITALY —

INDUSTRIAL PUMPS

General Catalogue

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Debem has been active in the liquid transfer sector for over 30 years.

A cutting edge company, specialised in pumps for numerous industries and for highly demanding environments.

Our close collaboration with the end user and our customer's feedback have been the key factors of the company's philosophy. We have developed a virtuous system of research and development of the product and service, which has garnered growing appreciation from leading companies in different sectors.

Debem's impressive growth is reflected in the difference between the original small premises

and the current large warehouse. Debem offers its customers new and effective services, providing them with technical and commercial information to make it easier to choose the most suitable product and meet every operating requirement.

Our customers can count on a call centre able to resolve questions tied to product selection and the most suitable chemical compatibility for their requirements.

Moreover we also provide a technical support service that can respond to any queries of a technical nature, about the installation, pump optimisation, system or about the fluid pumping process.

Debem's technical office, alongside the research and development department, is constantly developing new projects and innovating current products. Our primary objective of customer satisfaction has led to the development of a modular design of the pumps, which allows for tailor-made and custom assemblies with components and materials that are ideally suited for their use. One of our company's strengths is the development of our in-house R&D department, which

is quite unusual for a small company, but something that has certainly borne its fruits. Initially introduced to improve our existing products (by researching the use of new materials, rationalising the spaces used, optimising the existing technology) and reducing costs without affecting the already high quality standards, the research project has allowed us to develop highly innovative products, such as the BOXER and CUBIC series, which represent the pinnacle of our research.

CERTIFICATIONS



ATEX:

All the BOXER air operated pumps are ATEX certified and are explosion proof protected, in compliance with the directive 2014/34/EU and the harmonised European standards EN-60079-10 and EN 1127-1.



IECEx:

The BOXER air operated pumps are IECEx certified and are explosion proof protected, in compliance with the international IECEx standards and the standards IEC 60079-10 and EN 1127-1. The BOXER air operated pumps are produced in compliance with IECEx, with class Ex h IIB T4 Gb and Ex h IIIB T135° Db for uses in the presence of flammable gases and dust.

ISO 9001:2015 certification



DEBEM has decided to use 100% Zero Impact® certified renewable energy.



DEBEM: TRADITION AND INNOVATION

Debem Srl traces its roots to 1975, when its founder, Marco De Bernardi, thanks to the theoretical and practical experience garnered in the field, decided to tackle his first independent project: an industrial pump and in particular a 1.5 HP plastic centrifugal pump. The prototype was an immediate success, so much so that he decided to risk everything and go it alone, creating his own line of industrial pumps. The main sectors that he focused on were the chemical industry, in all its variants, and

the textile industry. At the time the latter was particularly successful in Italy and Varese was in many ways its beating heart. As the demand for pumps continued growing, Debem increased its product range, always striving to be ahead of the times and looking for new solutions to overcome the difficulties of the production process. The continuous technical research and industrial innovation led to the first patent in 1987, which covered the engineering study of the air-operated system of

the distributor. This design is still in use in Debem's air-operated double diaphragm pumps and has even been copied by various Italian and international competitors. The new design, utterly unique for the time, met with immediate and extensive success. This triggered an exponential growth that over the years confirmed Debem's role as one of Italy's points of excellence in the production of pumps, and especially air-operated double diaphragm pumps.



Debem, 1980



Pumps for the chemical, textile, food, graphic, leather, ceramic, electronic, galvanic, paint, oil and sanitary industry.





Our strengths

Choosing DEBEM means putting your trust in a company driven by passion that has built a business based on values, tradition, innovation, people, experience and professionalism.

Innovative and technologically advanced pumps built with materials and components resistant to aggressive conditions



History

Over 30 years of innovation, research, quality and excellence.



Made in Italy Patents

The products are entirely designed, patented and built in Italy by Debem.



International distribution

Debem's products can count on an extensive global distribution (see network).



Materials and Technologies

Debem's products are constructed with the finest quality, certified Italian materials. We use the latest generation technologies in line with the industry 4.0 standards.



Service and consultancy

A call centre able to resolve questions tied to product selection and the most suitable chemical compatibility for their requirements. Support service that responds to technical, installation and pump optimisation queries.



Custom solutions

Debem's air-operated double diaphragm pumps can be customised based on the customer's requirements and application needs.



Research&Development - Innovation

Debem's technical office, alongside the research and development department, is constantly developing new projects and innovating current products.



Optimal emergency management

Extremely quick deliveries of finished products and of spare parts for every pump model in the catalogue.

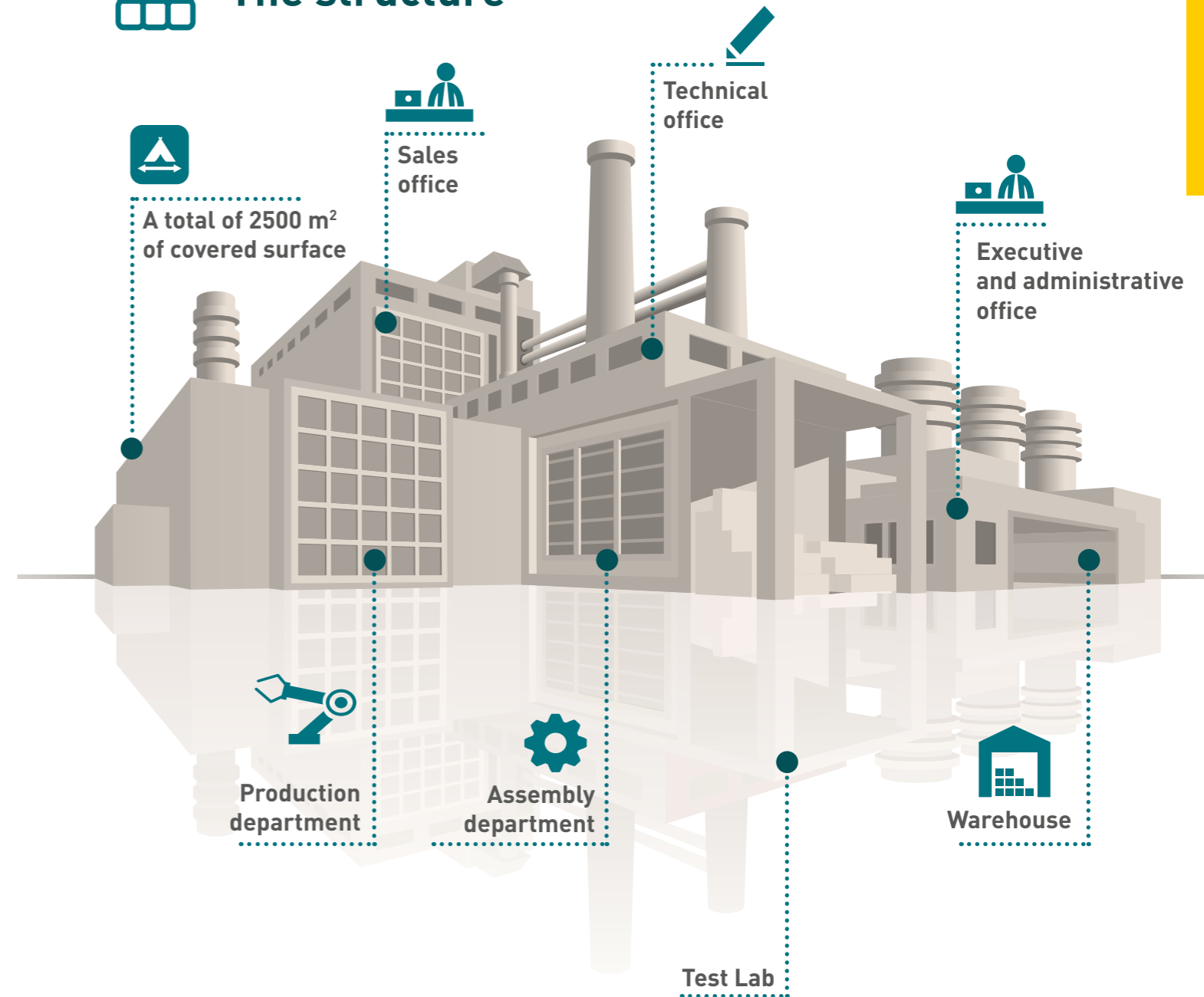


Quality

All the products that leave the company are stamped with a code that includes the production data entered into a database, to ensure utmost quality through every stage of the production process.



The structure



We are very happy to present the new DEBEM TEST-LAB, an internal analysis and product refinement laboratory. Open to the public for technical courses and certified tests for customers, it is Italy's first IECEx certified laboratory for air-operated pumps. Consisting of a 4000-litre polypropylene anti-cavitation tank with a compartmentalised structure, the TEST-LAB features two air lines to supply the pumps up to 6000 NL/min and three fluid lines to provide up to 3000 L/min. The technical equipment includes digital instruments certified to analyse air consumption, flow rate and hydraulic head, with a centralised data collection and graphics for issuing test certificates.



NORTH AND CENTRAL AMERICA

- MEXICO
- PANAMA
- USA

SOUTH AMERICA:

- ARGENTINA
- BRAZIL
- CHILE
- COLUMBIA
- ECUADOR
- PERU
- VENEZUELA

NORTHERN AFRICA:

- ALGERIA
- EGYPT
- MOROCCO
- TUNISIA

SOUTHERN AFRICA:

- SOUTH AFRICA

MIDDLE EAST:

- SAUDI ARABIA
- BAHRAIN
- UNITED ARAB EMIRATES
- ISRAEL
- OMAN
- QATAR
- SYRIA

ASIA:

- CHINA
- KOREA
- INDIA
- INDONESIA
- MALAYSIA
- SINGAPORE
- TAIWAN
- THAILAND
- VIETNAM

EUROPE:

- AUSTRIA
- BELGIUM
- BELARUS
- BULGARIA
- CYPRUS
- DENMARK
- FRANCE
- GEORGIA
- GERMANY
- UNITED KINGDOM
- GREECE
- IRELAND
- ITALY
- LITHUANIA
- NORWAY
- NETHERLANDS
- POLAND
- PORTUGAL
- CZECH REPUBLIC
- ROMANIA
- RUSSIA
- SPAIN
- SWEDEN
- SWITZERLAND
- TURKEY
- HUNGARY
- UKRAINE

OCEANIA:

- AUSTRALIA

Air-operated double diaphragm pumps



CUBIC



BOXER



REMOTE CONTROL



FULLFLOW

Our air-operated diaphragm pumps are sturdy and powerful, self-priming (dry negative vacuum), also in demanding conditions. They can transfer liquids with high viscosity and/or with suspended solids.

Pulsation dampers



EQUAFLUX

Automatic diaphragm pulsation dampers. Compressed air-driven devices that are installed on the delivery side of air-operated pumps. They minimise the pulsations of the fluid and the consequent vibrations, or water hammer, to protect the process equipment.

Electric centrifugal pumps



DM
HORIZONTAL
MAGNETIC DRIVE



KM
HORIZONTAL
MAGNETIC DRIVE



MB
HORIZONTAL
WITH MECHANICAL
SEALS



IM
VERTICAL
CENTRIFUGAL PUMPS

Resin centrifugal pumps with horizontal axis mechanical seal, with magnetic drive and vertical axis centrifugal pumps.

Drum transfer pumps

TR
DRUM TRANSFER
PUMPS



Compressed air motor

Electric motor

Compressed air or electrical motor driven drum transfer pumps, with the motor installed in direct drive or with a drive coupling. Their portable design renders them ideally suited to quickly transfer clean corrosive liquids from drums.



THE MAIN APPLICATION SECTORS



AUTOMOTIVE



CERAMIC, STONE, MARBLE,
GLASS AND MINING
INDUSTRY



GALVANIC AND ELECTRONIC
INDUSTRY



GRAPHIC
INDUSTRY



TEXTILE AND LEATHER
INDUSTRY



PRODUCTION AND STORAGE
OF BIODIESEL



CHEMICAL
INDUSTRY



PACKING, GLUE,
PAPER AND PAPER MILLS



MECHANICAL AND
METALLURGIC INDUSTRY



WATER AND SLUDGE
TREATMENT



PAINT
INDUSTRY



OIL & GAS



GOLD PROCESSING
INDUSTRY

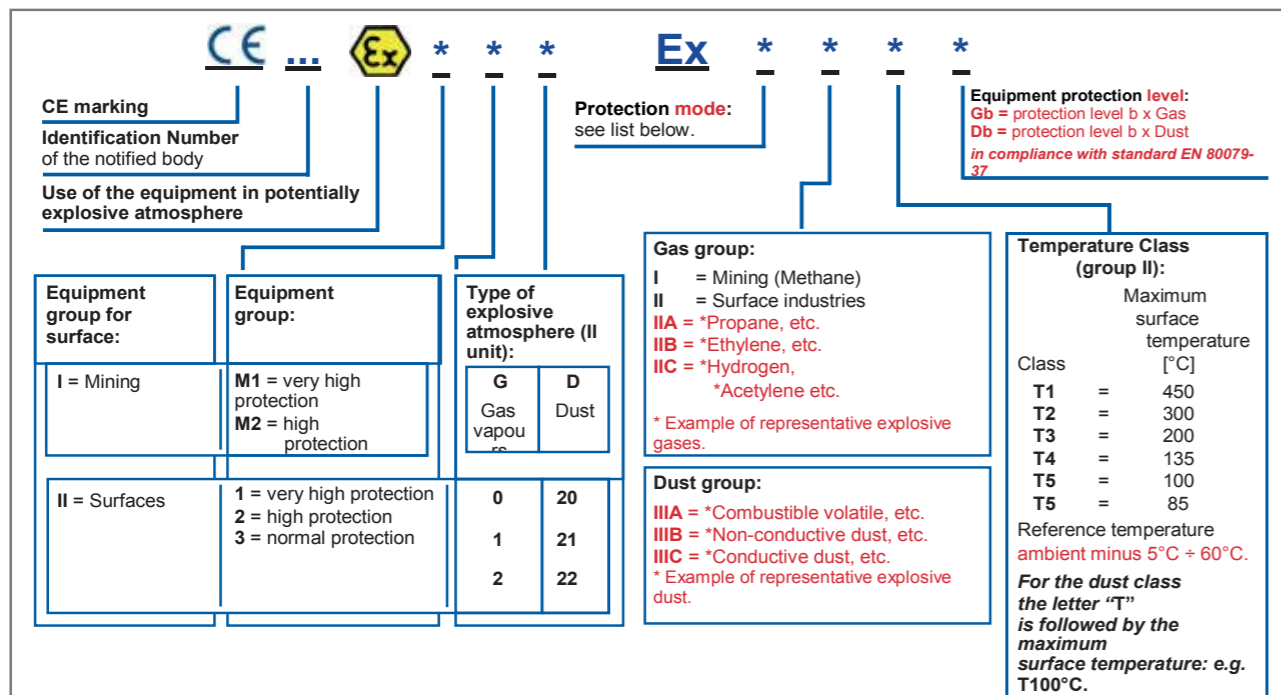


ATEX CONFORMITY

Ex All the BOXER air operated pumps are ATEX certified and are explosion proof protected, in compliance with the directive 2014/34/EU and the harmonised European standards EN-60079-10 and EN 1127-1. They are constructed in compliance with ATEX **Ex II 3 G Ex h IIB T4 Gb** and **Ex II 3 D Ex h IIIB T135° Db** for use in "Zone 2- Zone 22" (in the presence of flammable gases and dust).

On specific request during the order, the pumps can be supplied in CONDUCT version in compliance with ATEX **Ex II 2 G Ex h IIB T4 Gb** and **Ex II 2 D Ex h IIIB T135° Db** for use in "Zone 1 - Zone 21".

ATTENTION
The identification plate of the pump includes the ATEX marking and the equipment category. **Before the installation always check the compliance with the classification of the installation "zone". The equipment user is responsible for classifying their installation zone.**
See below for the definition of the ATEX marking of each execution.



- Ex** : safety symbol in agreement with DIN 40012 appendix A.
- II3G/II3D** : surface equipment for use in zones where the presence of combustible gases, fumes or fogs, as well as dust, in the air is improbable or rare and for short periods, during the operation in the external and internal zone (Zone 2 - Zone 22).
- II2G/II2D** : surface equipment for use in zones with the occasional presence of combustible gases, fumes or fogs, as well as dust, in the air during the normal operation (EN 1127-1 par. 6.3), in the external and internal zone (Zone 1- Zone 21).
- Ex h** : equipment in protection mode «c», or «b», or «k», in agreement with standard EN 80079-37.
- IIB** : except for the following gases: hydrogen, acetylene, carbon sulphide.
- IIIB** : except for the following dust: conductive dust
- T4/T135°C** : temperature class admitted. The user must process fluids in temperature in compliance with this classification, taking into account the indications of this manual and the applicable legislative requirements. The user must also take into account the explosive temperature of the combustible gases, fumes, fog or dust in the air present in the zone of use.

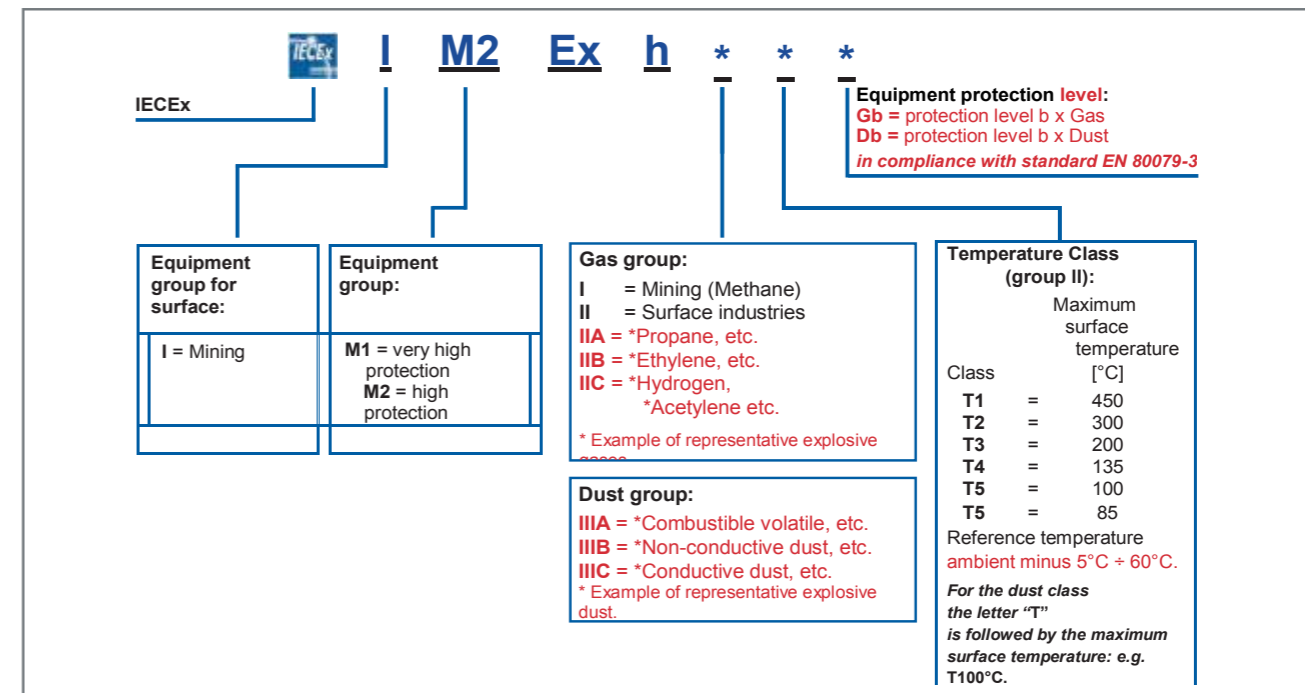
The technical file is deposited with the certifying body, TÜV NORD CERT in Hanover.

IECEX CONFORMITY

IECEX All the BOXER air operated pumps are IECEx certified and are explosion proof protected, in compliance with the international IECEx standards in compliance with standards EN-60079-10 and EN 1127-1.

The BOXER air operated pumps are constructed in the CONDUCT version, in compliance with IECEx, with class **Ex h IIB T4 Gb** and **Ex h IIIB T135° Db**.

ATTENTION
The identification plate of the pump includes the IECEx marking and the equipment category. **Before the installation always check the compliance with the classification of the installation "zone". The equipment user is responsible for classifying their installation zone.**
The IECEx compliant pumps are not available with Hytel components and do not have a different usage specification in relation to the ambient temperature indicated on the plate.
See below for the definition of the IECEx marking of each execution.



- Ex h** : equipment in protection mode «c», «b», or «k», in agreement with standard EN 80079-37.
- IIB** : except for the following gases: hydrogen, acetylene, carbon sulphide.
- IIIB** : except for the following dust: conductive dust
- T4/T135°C** : temperature class admitted. The user must process fluids in temperature in compliance with this classification, taking into account the indications of this manual and the applicable legislative requirements. The user must also take into account the explosive temperature of the combustible gases, fumes, fog or dust in the air present in the zone of use.

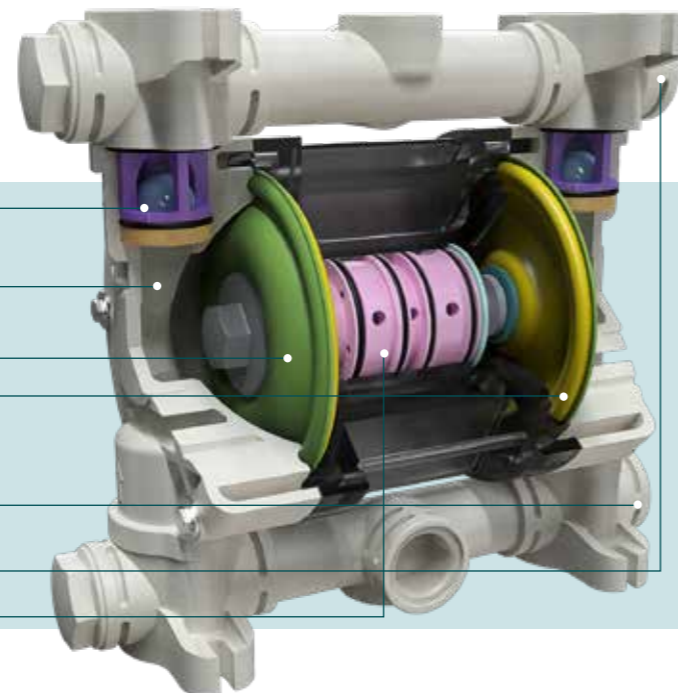
The technical file is deposited with the certifying body IEC EUROFINS (Certificate EX-3935).

Main advantages

The **CUBIC diaphragm mini pumps and the BOXER diaphragm pumps** feature high levels of performance. Their considerable power and sturdiness render them ideal for pumping highly viscous liquids, even with suspended solids. The pneumatic stall-prevention circuit guarantees a safe operation, without requiring lubricated air. These pumps have achieved unprecedented levels of versatility due to their dry self-priming capacity with a considerable suction head, the ability to fine-tune the

speed without losses of pressure as well as the possibility of empty-running without suffering damage. The vast range of construction materials allows us to select the best chemical compatibility with the fluid and/or the environment, without neglecting the operating temperature range. **Their construction principle makes them ideally suited for demanding applications with high levels of humidity or in potentially explosive atmospheres (ATEX and IECEx certification).**

- Constructed in PP, PP+CF, PVDF, ECTFE, PTFE, ALUMINIUM, AISI 316 STAINLESS STEEL, AISI 316 L STAINLESS STEEL
- Use in explosive atmospheres (ATEX certification zone 1 – 2, IECEx certification)
- Suitable for demanding applications and in atmospheres with high levels of humidity
- Dry-running
- Dry self-priming
- Supply with non-lubricated air
- Patented stall-prevention pneumatic circuit
- Adjustable flow rate and head
- Fine adjustment of the speed at constant pressure
- Possibility of split manifolds (two suctions and two deliveries)
- Bench or ceiling installation
- Customisable positions
- Easy maintenance and parts replacement
- Excellent ratio between performance and costs
- Operating temperature:
 - PP / PP+CF from +3°C to +65°C
 - PVDF / ECTFE from +3°C to +95°C
 - AISI 316 / AISI 316 L / Aluminium from +3°C to 95°C



- A = ball valves
- B = pumping chamber
- C1 = product-side diaphragm
- C2 = air-side diaphragm
- D = suction manifold
- E = delivery manifold
- F = pneumatic exchanger

BOXER DIAPHRAGM PUMPS AND CUBIC DIAPHRAGM MINI PUMPS

PLASTIC BOXER



- ATEX ZONE 1 - AVAILABLE ON REQUEST
 - II 2G Ex h IIB T4 Gb
 - II 2D Ex h IIIB T135°C Db X
 - Ex h IIB T4 Gb
 - Ex h IIIB T135°C Db
- ATEX ZONE 2 - STANDARD ON ALL MODELS
 - II 3G Ex h IIB T4 Gc
 - II 3D Ex h IIIB T135°C Dc X
 - I M2 Ex h I Mb X

IECEx

The plastic BOXER range is designed for demanding uses, for very aggressive and acid liquids, in the numerous applications of the chemical industry.

MATERIALS PP, PP+CF, PVDF, ECTFE, PTFE
Max dry suction 5m



METAL BOXER



- ATEX ZONE 1 - AVAILABLE ON REQUEST
 - II 2G Ex h IIB T4 Gb
 - II 2D Ex h IIIB T135°C Db X
 - Ex h IIB T4 Gb
 - Ex h IIIB T135°C Db
- ATEX ZONE 2 - STANDARD ON ALL MODELS
 - II 3G Ex h IIB T4 Gc
 - II 3D Ex h IIIB T135°C Dc X
 - I M2 Ex h I Mb X

IECEx

The metal BOXER range is designed for demanding uses, for solvent-based liquids and for numerous uses in the paint industry.

MATERIALS ALUMINIUM, AISI 316 STAINLESS STEEL, AISI 316 L STAINLESS STEEL
Max dry suction 5m



CUBIC



- ATEX ZONE 1 - AVAILABLE ON REQUEST
 - II 2G Ex h IIB T4 Gb
 - II 2D Ex h IIIB T135°C Db X
- ATEX ZONE 2 - STANDARD ON ALL MODELS
 - II 3G Ex h IIB T4 Gc
 - II 3D Ex h IIIB T135°C Dc X

This range of pumps, with their unique design and compact dimensions, can be used in series in small spaces.

MATERIALS PP, PP+CF, ECTFE
Max dry suction 3m



PATENTED STALL-PREVENTION COAXIAL PNEUMATIC EXCHANGER

Debem pumps use a patented stall-prevention coaxial pneumatic exchanger. This device introduces compressed air to change the equilibrium of the pressure of the diaphragms, assisted by a stall-prevention circuit, that guarantees optimal performance, even in the most critical conditions. The control part (spool) and the power part (exchanger) are both housed inside the pump in a single block, which limits further losses of load when compressed air flows in the pump. The Debem pneumatic exchanger is easy to repair and/or replace. The internal exchanger

is built entirely with plastic parts (except for the shaft connecting the two diaphragms), rendering it resistant to corrosive fluids and fumes.

The Debem exchanger is pre-lubricated, therefore the supply air for the pump does not require lubrication, quite the opposite, it must be dried and free of impurities, such as oil, dust or condensation. Debem's pneumatic exchanger (unique in its kind) is built with an extremely low number of parts, making parts replacement and maintenance extremely easy.



- Low cost of spare parts (single or kit)
- Easy installation
- Self-lubricated system
- No metal parts (only the shaft)
- Stall-prevention system
- Long life of the device: more than 50,000,000 cycles

Amongst the lowest air consumptions on the market

The air consumption data (expressed in NL/minute) of Debem's pumps are real and checked, with certified state of the art instruments and are amongst the lowest available on the market today. Debem's pumps have been specifically designed to optimise the space on the back of the diaphragms. The volumetric space profiles are developed to guarantee the total dilation of the diaphragms with very small air volumes. Debem's pumps are designed to optimise the consumption of air, regardless of whether electronic control systems are used. Our competitors sell this option as an accessory but

certain misleading advertising would have you believe that this is a production standard. Be suspicious of all companies that claim technical data without having the instruments necessary to determine their veracity.

Debem can count on its own new-concept test bench, with state of the art certified instruments, designed to test and certify the parameters of its own products and the efficiency of the pumps, in compliance with the latest applicable standards and in line with the new European project for INDUSTRIA 4.0.



The diaphragms are the parts subjected to the greatest stresses during suction and pumping, whilst also having to resist the chemical attack and temperature of the liquid and the mechanical fatigue. Their correct assessment and selection is therefore of fundamental importance for the life of the diaphragm, as well as for the investment decisions and maintenance costs. A modern design process, destructing testing, as well as an in-depth analysis of the results have allowed Debem to develop the **new generation LONG LIFE diaphragms**. Thanks to their profile and construction shape, these products offer a larger working surface and improved redistribution of the load, reducing the stress and yield of the material to a minimum.

BOXER / CUBIC FAMILY

RUBBER DIAPHRAGMS

They are produced with rubber mixtures and special additives that improve their chemical characteristics as well as their mechanical flexural and resistance characteristics. These diaphragms have a nylon cloth reinforcement that improves stress distribution.

NBR

Inexpensive and particularly suited for petroleum-based liquids, oil and abrasive fluids.

EPDM

Good resistance to acids, alkaline and abrasion as well as a good flexibility also at low temperatures.



BOXER FAMILY

THERMOPLASTIC DIAPHRAGMS

Made with thermoplastic polymers, these diaphragms provide a high level of mechanical resistance and stress distribution.

HYTREL®

Exceptionally tough and elastic return: a high resistance to impact, flex fatigue and creep: excellent flexibility at low temperatures and at high temperatures it maintains most of its properties. It is also resistant to the attack of many industrial chemicals, oils and solvents.

SANTOPRENE®

Excellent resistance to acid and alkaline fluids, high flexural resistance and good abrasion resistance.



BOXER / CUBIC FAMILY

PTFE DIAPHRAGMS

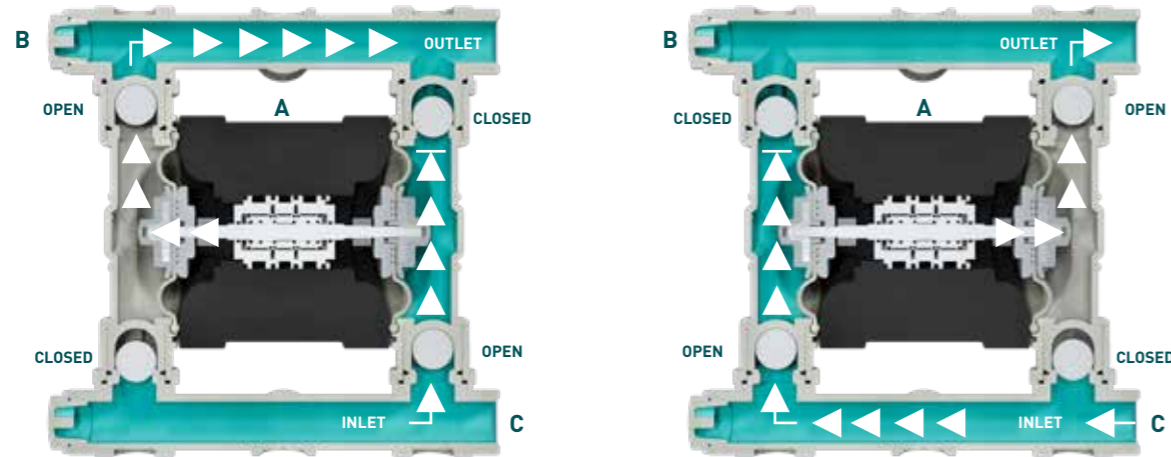
This material is known for its considerable resistance to temperature and chemical and corrosive agents. Diaphragms in Debem PTFE undergo a double heat treatment to increase their elasticity and service life. A sample of each batch is subject to destructive tests to check their compliance with the technical requirements. This diaphragm can be installed combined with one of the ones examined earlier, in order to increase the resistance to the corrosive chemical agents and temperature of the fluid.



How does it work?

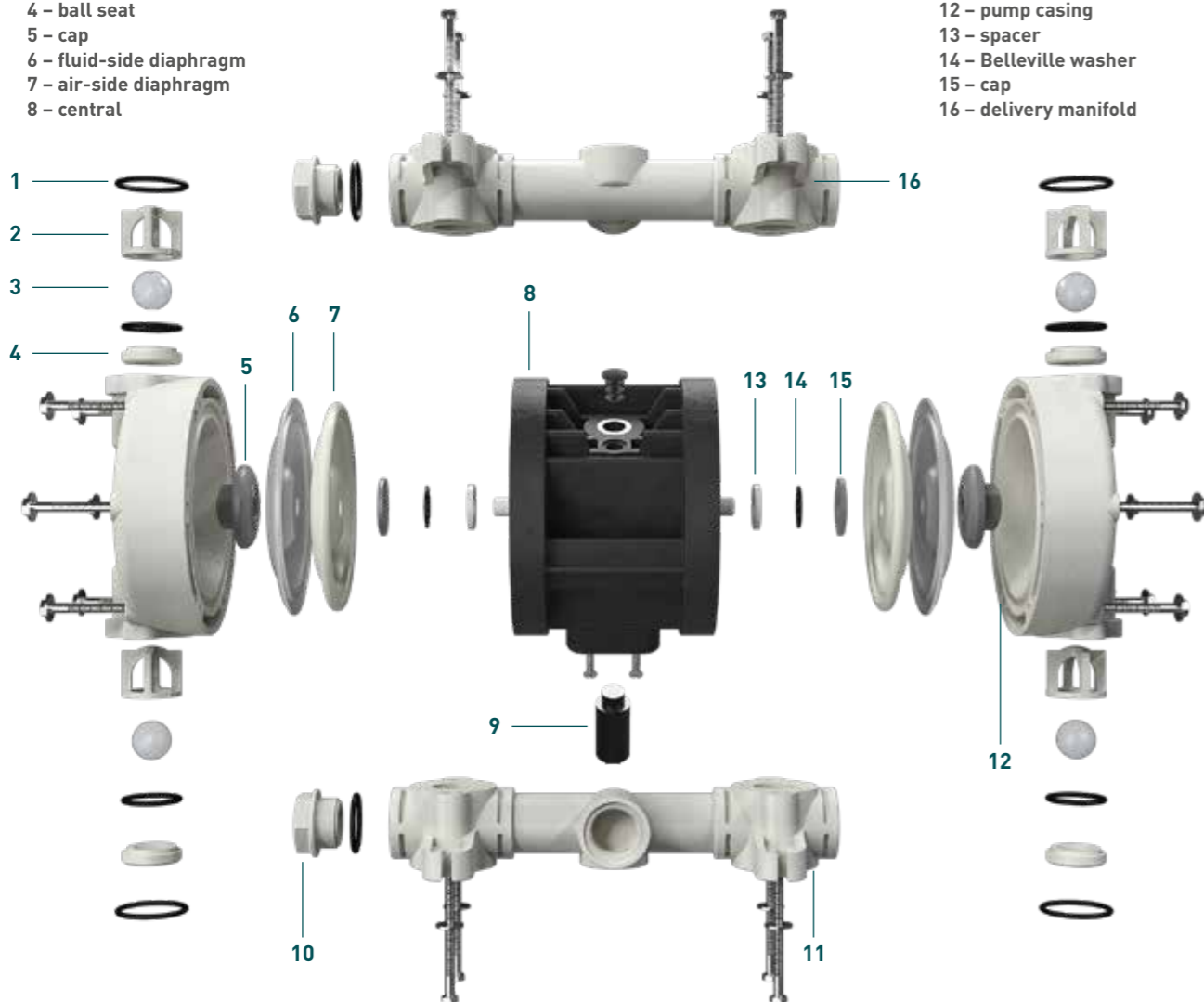
The compressed air introduced by the pneumatic exchanger (A) behind one of the two diaphragms generates the compression and pushes the product in the delivery duct (B) at the same time, the opposing diaphragms that

is integral with the exchanger shaft creates a vacuum and intakes the liquid (C). Once the stroke has been completed, the pneumatic exchanger diverts the compressed air behind the opposing diaphragm and the cycle is reversed.



- 1 - o-ring
- 2 - cage
- 3 - ball
- 4 - ball seat
- 5 - cap
- 6 - fluid-side diaphragm
- 7 - air-side diaphragm
- 8 - central

- 9 - silencer filter
- 10 - cap
- 11 - vacuum manifold
- 12 - pump casing
- 13 - spacer
- 14 - Belleville washer
- 15 - cap
- 16 - delivery manifold



Installations



SELF-PRIMING

BOXER / CUBIC FAMILY



SPLIT SUCTION and DELIVERY

BOXER FAMILY



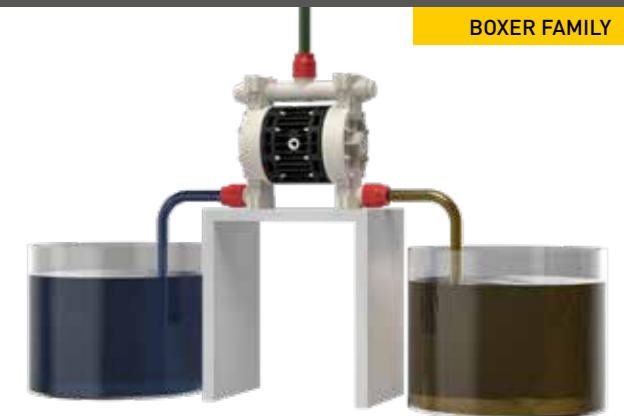
UNDER HEAD

BOXER / CUBIC FAMILY



SPLIT SUCTION

BOXER FAMILY



IMMERSED

BOXER / CUBIC FAMILY



DRUM TRANSFER

BOXER / CUBIC FAMILY





Debem's CUBIC diaphragm pumps are fitted with a centrally-positioned coaxial pneumatic motor.

The ATEX - IECEx certified air-operated double diaphragm pumps, with their unique design and limited size, are ideally suited to be installed directly on industrial equipment for the chemical sector, to pump ink and paint, on printing machines, in oil circulation and in applications where moderate quantities of fluid must be pumped in small spaces. The CUBIC range includes the MIDGETBOX pump which is currently the smallest and highest performing pump on the market for the chemical sector.

- Product designed and constructed in Italy
- PATENTED stall-prevention pneumatic circuit
- Operates with non-lubricated air
- Self-priming
- Dry operation
- ATEX certification for ZONE 1 - ZONE 2
- IECEx certification
- Adjustable operating speed
- Extremely versatile
- Suitable for pumping fluids in demanding applications
- Suitable for continuous use

CUBIC PUMPS CODES ENCODING

ex. ICU15P-NTTPV- - Internal distributor, Cubic 15, PP casing, NBR air side diaphragm, PTFE product side diaphragm, PTFE balls, PP ball seats, Viton® o-ring.

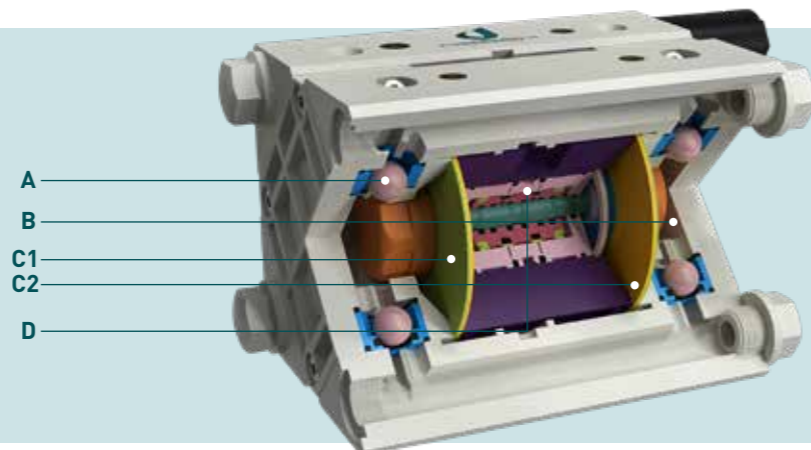
I	CU15	P	N	T	T	P	V	-	-
INTERNAL DISTRIBUTOR	PUMP MODEL	PUMP CASING	AIR-SIDE DIAPHRAGM	FLUID-SIDE DIAPHRAGM	BALLS	BALL SEATS	O-RING*	SPLIT MANIFOLD	CONDUCT VERSION
I	MID - Midgetbox (available only in PP/PP+CF) CU15 - Cubic 15	P - Polypropylene EC - ECTFE (Halar) PC - PP+CF	N - NBR	T - PTFE	G - Pyrex® A - AISI 316 T - PTFE	R - PPS-V K - PEEK' P - PP EC - ECTFE A - AISI 316 I - PE-UHMW	D - EPDM V - Viton® N - NBR T - PTFE	X Split manifold Y NPT thread J Spacer on shaft	C*

1) Only for MIDGETBOX

*C version CONDUCT for standard ATEX ZONE 1Ex II 2/2GD c IIB T135°C



A = ball valves
B = pumping chamber
C1 = product-side diaphragm
C2 = air-side diaphragm
D = pneumatic exchanger



Specifications and types



Suction / delivery connections	G 1/4" f (*)
Air fitting	G 1/8" f
Max flow rate*	6 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	3 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	0 mm
Noise level	60 dB
Volume per stroke	3.2 cc

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIB T135°C Dc X
CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIB T135°C Db X

(*) Available with NPT connections (on request)

*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
** The value depends on the configuration of the pump.



PP

Midgetbox



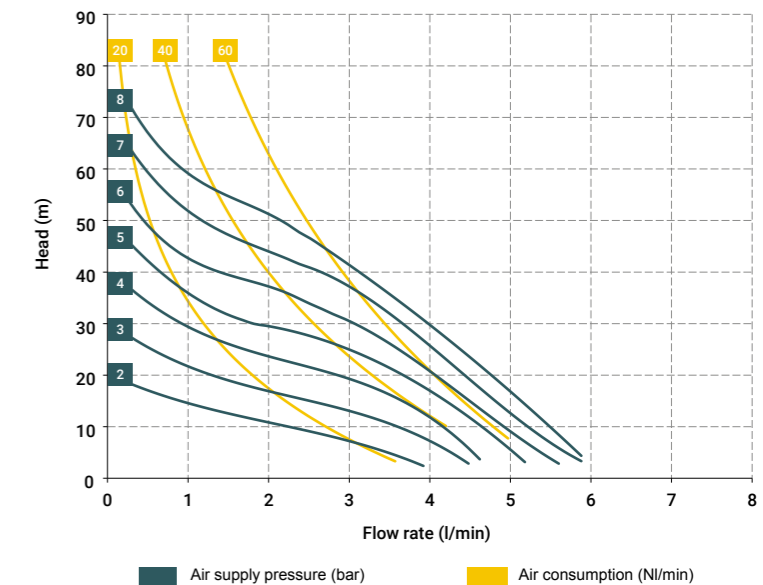
Maximum Dimensions

Height	75 mm
Width	121 mm
Depth	60 mm



Construction materials (casing and manifolds) and net weight

Polypropylene (with glass additive)	0.52 Kg Temp. 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	0.52 Kg Temp. 3°C min. 65°C max



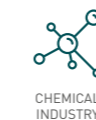
MAIN APPLICATION SECTORS



GRAPHIC INDUSTRY



WATER AND SLUDGE TREATMENT



CHEMICAL INDUSTRY



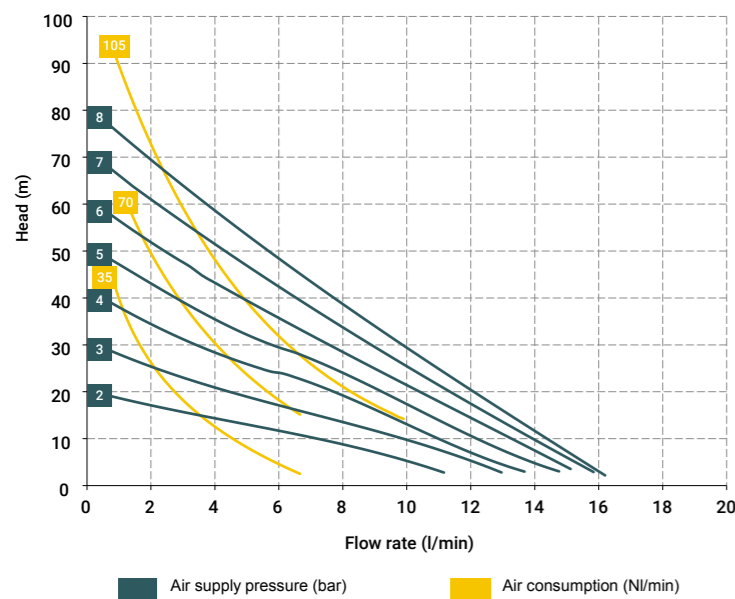
GALVANIC AND ELECTRONIC INDUSTRY

Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X
 CONDUCT: II 2G Ex h IIb T4 Gb - II 2D Ex h IIIB T135°C Db X



Suction / delivery connections	G 3/8" f (*)
Air fitting	G 3/8" f
Max flow rate*	17 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	3 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	0.5 mm
Noise level	65 dB
Volume per stroke	10.3 cc

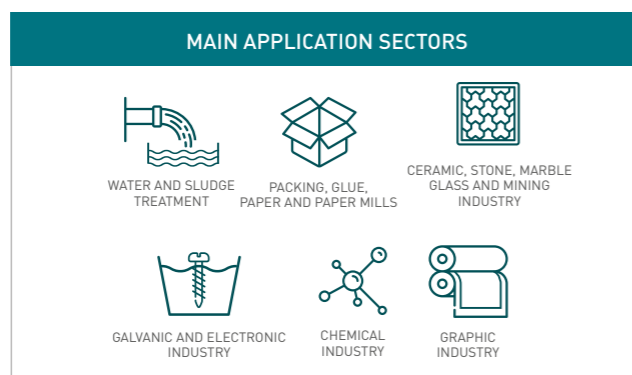


Cubic diaphragm pumps: high performance levels, excellent power and sturdiness, ideal for pumping liquids with high apparent viscosity, even if containing suspended solids. Particularly suited for small spaces.

[*] Available with NPT connections (on request)

*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.

** The value depends on the configuration of the pump.



PP Cubic 15

Maximum Dimensions	
Height	105 mm
Width	201 mm
Depth	105 mm
Construction materials (casing and manifolds) and net weight	
Polypropylene (with glass additive)	1.35 Kg Temp. 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	1.35 Kg Temp. 3°C min. 65°C max
Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	



ECTFE Cubic 15

Maximum Dimensions	
Height	105 mm
Width	201 mm
Depth	105 mm
Construction materials (casing and manifolds) and net weight	
ECTFE	1. Kg Temp. 3°C min. 95°C max
Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	

Air-operated double diaphragm volumetric pumps, ATEX – IECEx certified, constructed in polypropylene or PVDF in the plastic version or in aluminium or AISI 316 L for the metal versions. BOXER pumps are ideal for pumping liquids with high apparent viscosity, even if containing suspended solids. The vast range of materials available for the parts in contact with the flu-

id, such as pump casings and manifolds, diaphragms, balls, ball seats and o-rings, makes them compatible with any type of fluid present on the market. They can be used in numerous applications such as the following industries: chemical, graphic, paint, galvanic, ceramic, naval, textile, leather, mechanical, oil and many more.

- **Product designed and constructed in Italy**
- **PATENTED stall-prevention pneumatic circuit**
- **Operates with non-lubricated air**
- **Self-priming**
- **Dry operation**
- **ATEX certification for ZONE 1 - ZONE 2**
- **IECEx certification**
- **Adjustable operating speed**
- **Extremely versatile**
- **Suitable for pumping liquids with high viscosity and demanding applications**
- **Possibility of pumping fluids containing suspended solids**
- **Possibility of suspended installation**
- **Manifolds can be supplied with stainless steel reinforcement rings for pumps in PP – PP+CF – PVDF**
- **Nozzles available with clamp connections and DIN 11851 (only pumps in AISI 316)**
- **LONG LIFE profile diaphragms (available in different elastomers) for greater resistance and longer life**
- **Suitable for continuous use**

BOXER PUMPS CODES ENCODING

ex. IB50-P-HTTPV--
Internal distributor, Boxer 50, PP casing, Hytrel® air side diaphragm, PTFE product side diaphragm, PTFE balls, PP ball seats, Viton® o-ring.

I	B50-	P	H	T	T	P	V	-	-
INTERNAL DISTRIBUTOR	PUMP MODEL	PUMP CASING	AIR-SIDE DIAPHRAGM	FLUID-SIDE DIAPHRAGM	BALLS	BALL SEATS	O-RING	SPLIT MANIFOLD	CONDUCT VERSION
I	B7 Boxer 7 B15 Boxer 15 MICR Microboxer MIN Miniboxer B35 Boxer 35 B50 Boxer 50 B81 Boxer 81 B90 Boxer90 B100 Boxer 100 B150 Boxer 150 B251 Boxer 251 B252 Boxer 252 B502 Boxer 502 B522 Boxer 522 B503 Boxer 503	P - Polypropylene FC - PVDF+CF PC - PP+CF AL - Aluminium A - AISI 316	N - NBR D - EPDM H - Hytrel M - Santoprene	T - PTFE	T - PTFE A - AISI 316 D - EPDM N - NBR	P - Polypropylene F - PVDF A - AISI 316 I - PE-UHMW R - PPS-V L - Aluminium	D - EPDM V - Viton® N - NBR T - PTFE S - Silicone	X* 3* Y* J* W*	C* Z*

*X = split manifold
*3 = 3° central hole on manifold
*Y = "NPT" thread
*J = spacer on shaft
*W = clamp manifold (all only on request)

C = version CONDUCT for standard ATEX ZONE 1 Ex II 2/2GD c IIB T135°C
Z = version for standard IECEx (both only on request)



Specifications and types



Suction / delivery connections	G 1/4" f (*)
Air fitting	G 1/8" f
Max flow rate*	9 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	0.5 mm
Noise level	65 dB
Volume per stroke	3.2 cc

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIB T135°C Dc X - I M2 Ex h I Mb X
CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIB T135°C Db



PP Boxer 7

Maximum Dimensions	
Height	120 mm
Width	138 mm
Depth	68 mm

Construction materials (casing and manifolds) and net weight	
Polypropylene (with glass additive)	0.7 Kg Temp. 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	- Temp. 3°C min. 65°C max

PVDF Boxer 7

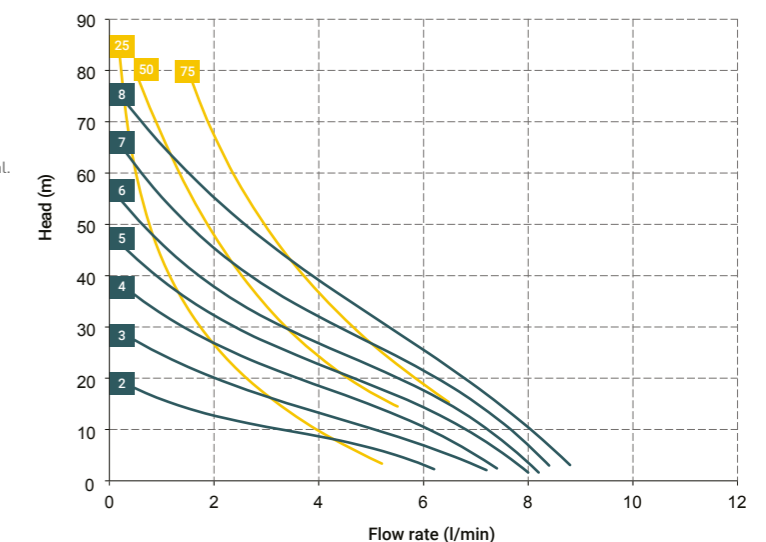
Maximum Dimensions	
Height	120 mm
Width	138 mm
Depth	68 mm

Construction materials (casing and manifolds) and net weight	
PVDF	- Temp. 3°C min. 95°C max

(*) Available with NPT connections (on request)

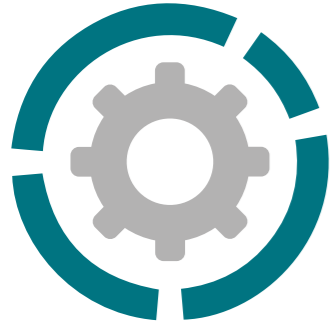
*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
** The value depends on the configuration of the pump.

MAIN APPLICATION SECTORS

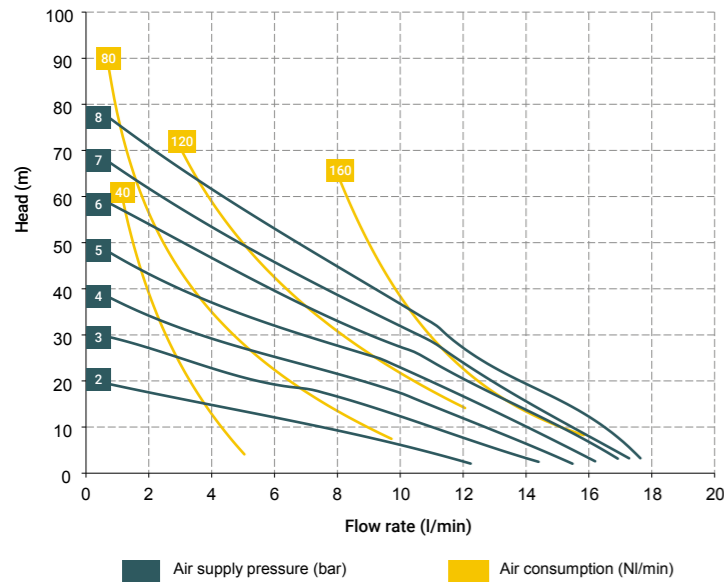


Specifications and types

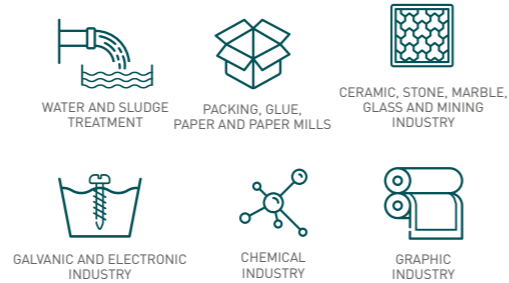
STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIb T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 3/8" f (*)
Air fitting	G 3/8" f
Max flow rate*	17 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	3 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	0.5 mm
Noise level	65 dB
Volume per stroke	10.3 cc



MAIN APPLICATION SECTORS



(*) Available with Clamp or NPT connections (only on request)
 *The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
 ** The value depends on the configuration of the pump.



PVDF Boxer 15

Maximum Dimensions	
Height	151 mm
Width	148 mm
Depth	80 mm
Construction materials (casing and manifolds) and net weight	
PVDF	1.38 Kg Max 3°C min. 95°C max
Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	



ALU Boxer 15

Maximum Dimensions	
Height	141 mm
Width	153 mm
Depth	80 mm
Construction materials (casing and manifolds) and net weight	
ALU	1.9 Kg Max 3°C min. 95°C max



PP Boxer 15

Maximum Dimensions	
Height	151 mm
Width	148 mm
Depth	80 mm
Construction materials (casing and manifolds) and net weight	
Polypropylene (with glass additive)	1.1 Kg Max 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	1.1 Kg Max 3°C min. 65°C max
Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	

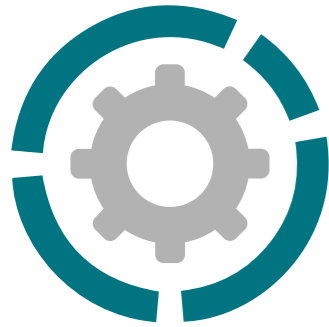


AISI 316 L steel Boxer 15

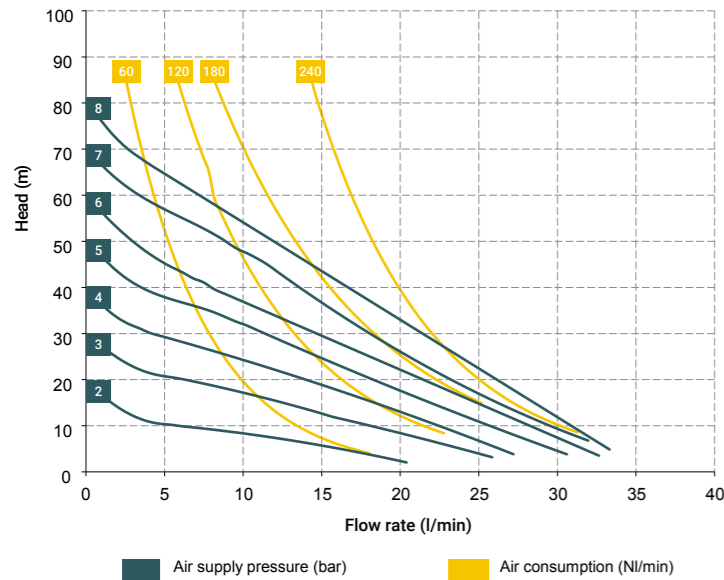
Maximum Dimensions	
Height	141 mm
Width	153 mm
Depth	80 mm
Construction materials (casing and manifolds) and net weight	
AISI 316 L	2.4 Kg Max 3°C min. 95°C max
Construction materials (casing and manifolds) available on request	
DUPLEX/W.DUPLEX	

Specifications and types

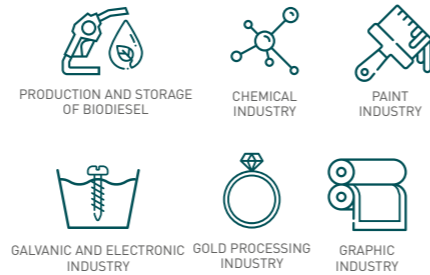
STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 1/2" f (*)
Air fitting	G 1/4" f
Max flow rate*	35 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	2 mm
Noise level	65 dB
Volume per stroke	30 cc



MAIN APPLICATION SECTORS



(*) Available with Clamp or NPT connections (only on request)

*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
 ** The value depends on the configuration of the pump.



PVDF Microboxer

Maximum Dimensions	
Height	168 mm
Width	165 mm
Depth	120 mm
Construction materials (casing and manifolds) and net weight	
PVDF	1.98 Kg Max 3°C min. 95°C max
Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	



ALU Microboxer

Maximum Dimensions	
Height	172 mm
Width	164 mm
Depth	120 mm
Construction materials (casing and manifolds) and net weight	
ALU	2.1 Kg Max 3°C min. 95°C max



PP Microboxer

Maximum Dimensions	
Height	168 mm
Width	165 mm
Depth	120 mm
Construction materials (casing and manifolds) and net weight	
Polypropylene (with glass additive)	1.6 Kg Max 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	1.6 Kg Max 3°C min. 65°C max
Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	



AISI 316 L steel Microboxer

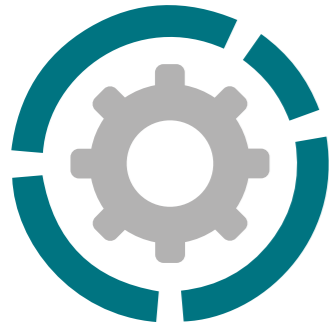
Maximum Dimensions	
Height	171 mm
Width	177 mm
Depth	120 mm
Construction materials (casing and manifolds) and net weight	
AISI 316 L	3.75 Kg Max 3°C min. 95°C max
Construction materials (casing and manifolds) available on request	
DUPLEX/W.DUPLEX	

BOXER 50 / MINIBOXER

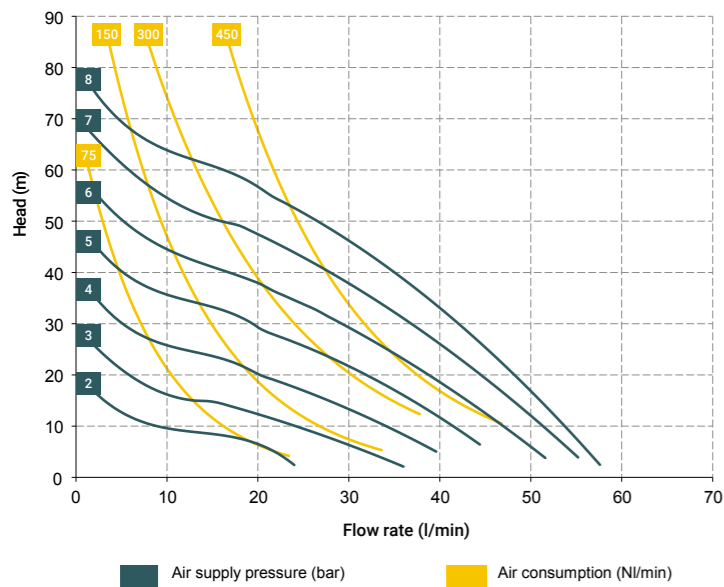


Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIb T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 1/2" or DN 15 (*)
Air fitting	G 3/8" f
Max flow rate*	60 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - pump primed	9,5 m
Max diameter of suspended solids	4 mm
Noise level	70 dB
Volume per stroke	67 cc



MAIN APPLICATION SECTORS

AUTOMOTIVE	PRODUCTION AND STORAGE OF BIODIESEL	PAINT INDUSTRY	CHEMICAL INDUSTRY
GRAPHIC OIL & GAS	CERAMIC, STONE, MARBLE, GLASS AND MINING INDUSTRY	GALVANIC AND ELECTRONIC INDUSTRY	INDUSTRY
GOLD PROCESSING INDUSTRY	MECHANICAL AND METALLURGIC INDUSTRY	PACKING, GLUE, PAPER AND PAPER MILLS	

Legend: ● BOXER 50 ● MINIBOXER



PVDF Boxer 50

	Maximum Dimensions	
	Height	241 mm
	Width	247 mm
	Depth	153 mm
	Construction materials (casing and manifolds) and net weight	
	PVDF	4.25 Kg Max 3°C min. 95°C max
	Construction materials (casing and manifolds) available on request	
	POMc	
	UHMWPE	



ALU Boxer 50

	Maximum Dimensions	
	Height	234 mm
	Width	241 mm
	Depth	153 mm
	Construction materials (casing and manifolds) and net weight	
	ALU	4.07 Kg Max 3°C min. 95°C max

(*) Available with NPT connections (on request)

*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
 ** The value depends on the configuration of the pump.



PP Boxer 50

	Maximum Dimensions	
	Height	241 mm
	Width	247 mm
	Depth	153 mm
	Construction materials (casing and manifolds) and net weight	
	Polypropylene (with glass additive)	3.75 Kg Max 3°C min. 65°C max
	Conductive polypropylene (with carbon additive)	3.75 Kg Max 3°C min. 65°C max
	Construction materials (casing and manifolds) available on request	
	POMc	
	UHMWPE	



MINIBOXER

AISI 316 L steel

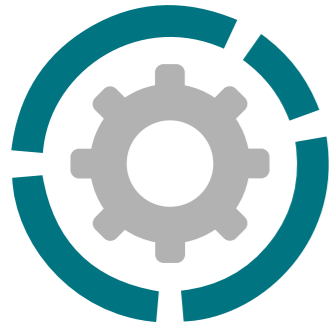
	Maximum Dimensions	
	Height	232 mm
	Width	230 mm
	Depth	153 mm
	Construction materials (casing and manifolds) and net weight	
	AISI 316 L	6.3 Kg Max 3°C min. 95°C max
	Construction materials (casing and manifolds) available on request	
	DUPLEX/W.DUPLEX	

BOXER 81 / BOXER 90

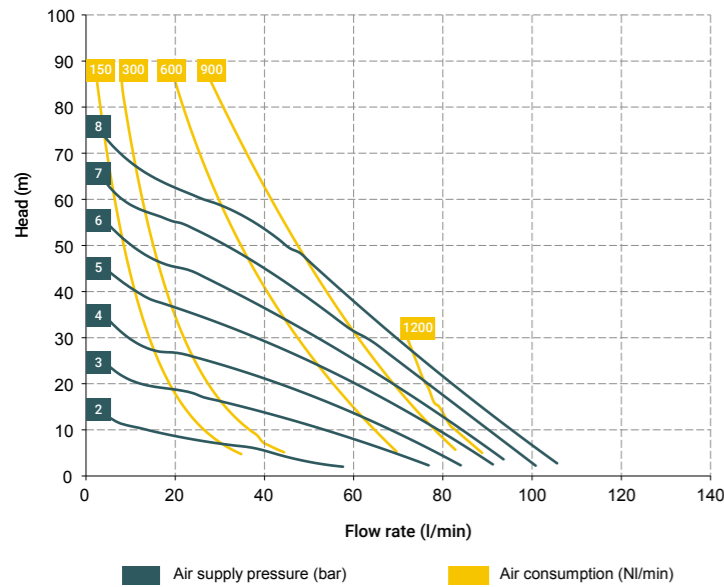


Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 1" or DN 25 (*)
Air fitting	G 3/8" f
Max flow rate*	110 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - pump primed	9,5 m
Max diameter of suspended solids	4 mm
Noise level	70 dB
Volume per stroke	100 cc



(*) Available with NPT connections (on request)

*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
 ** The value depends on the configuration of the pump.

MAIN APPLICATION SECTORS



PVDF

Boxer 81



Maximum Dimensions

Height	274 mm
Width	308 mm
Depth	170 mm



Construction materials (casing and manifolds) and net weight

PVDF	6 Kg
	Max 3°C min.
	95°C max



Construction materials (casing and manifolds) available on request

POMc

UHMWPE



Electropolished AISI 316 steel

Boxer 81



Maximum Dimensions

Height	275 mm
Width	305 mm
Depth	170 mm



Construction materials (casing and manifolds) and net weight

Electropolished AISI 316	10.6 Kg
	Max 3°C min.
	95°C max



Construction materials (casing and manifolds) available on request

DUPLEX/W.DUPLEX



PP

Boxer 81



Maximum Dimensions

Height	274 mm
Width	308 mm
Depth	170 mm



Construction materials (casing and manifolds) and net weight

Polypropylene (with glass additive)	5 Kg
	Max 3°C min.
	65°C max



Conductive polypropylene (with carbon additive)	5 Kg
	Max 3°C min.
	65°C max

Construction materials (casing and manifolds) available on request

POMc

UHMWPE



BOXER 90

ALU



Maximum Dimensions

Height	291 mm
Width	293 mm
Depth	170 mm



Construction materials (casing and manifolds) and net weight

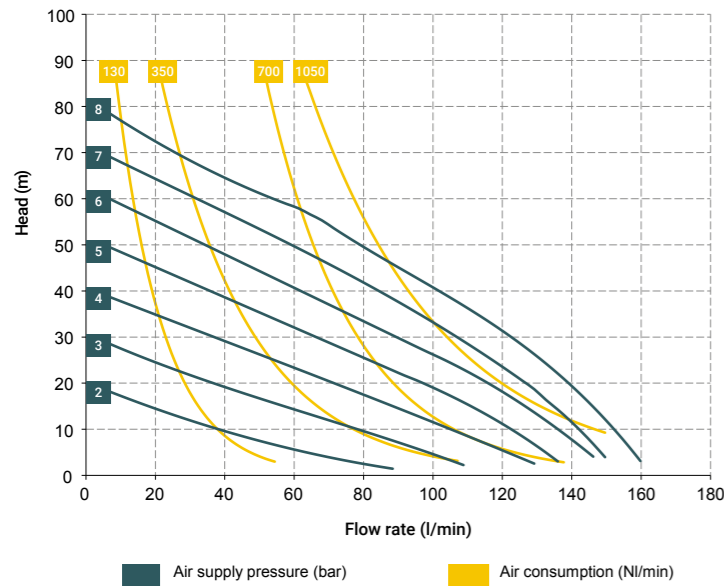
ALU	7 Kg
	Max 3°C min.
	95°C max

Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 1" or DN 25 (*)
Air fitting	G 3/8" f
Max flow rate*	160 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	4 mm
Noise level	75 dB
Volume per stroke	222 cc



(*) Available with NPT connections (on request)

*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
 ** The value depends on the configuration of the pump.

MAIN APPLICATION SECTORS



PVDF Boxer 100

Maximum Dimensions	
Height	325 mm
Width	329 mm
Depth	202 mm
Construction materials (casing and manifolds) and net weight	
PVDF	9.6 Kg Max 3°C min. 95°C max
Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	



ALU Boxer 100

Maximum Dimensions	
Height	324 mm
Width	315 mm
Depth	202 mm
Construction materials (casing and manifolds) and net weight	
ALU	8.5 Kg Max 3°C min. 95°C max



PP Boxer 100

Maximum Dimensions	
Height	325 mm
Width	329 mm
Depth	202 mm
Construction materials (casing and manifolds) and net weight	
Polypropylene (with glass additive)	7.6 Kg Max 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	7.6 Kg Max 3°C min. 65°C max
Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	

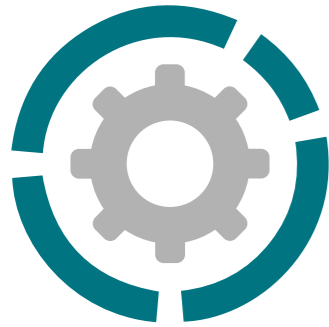


Electropolished AISI 316 steel Boxer 100

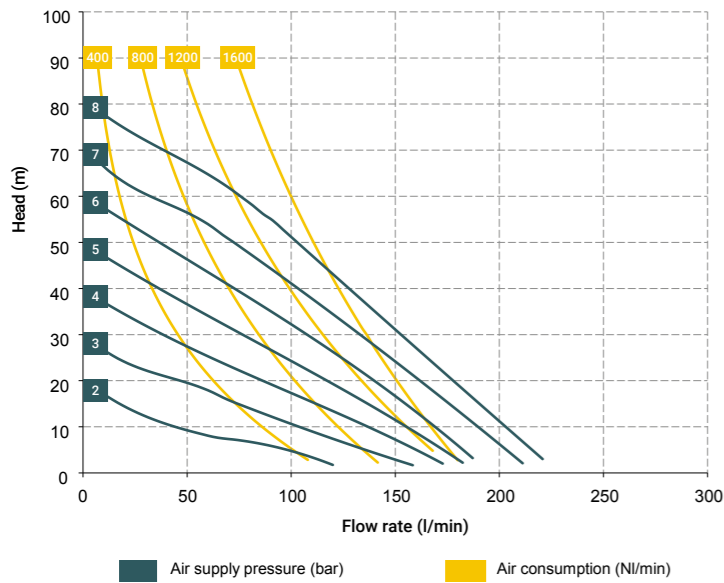
Maximum Dimensions	
Height	327 mm
Width	308 mm
Depth	202 mm
Construction materials (casing and manifolds) and net weight	
Electropolished AISI 316	11.7 Kg Max 3°C min. 95°C max
Construction materials (casing and manifolds) available on request	
DUPLEX/W.DUPLEX	

Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 1 1/4 or DN 32 (*)
Air fitting	G 1/2" f
Max flow rate*	220 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	5 mm
Noise level	75 dB
Volume per stroke	340 cc



MAIN APPLICATION SECTORS

AUTOMOTIVE	PRODUCTION AND STORAGE OF BIODIESEL	WATER AND SLUDGE TREATMENT
GRAPHIC INDUSTRY	CERAMIC, STONE, MARBLE, GLASS AND MINING INDUSTRY	PAINT INDUSTRY
CHEMICAL INDUSTRY	OIL & GAS	PACKING, GLUE, PAPER AND PAPER MILLS
MECHANICAL AND METALLURGIC INDUSTRY	TEXTILE AND LEATHER INDUSTRY	GALVANIC AND ELECTRONIC INDUSTRY

(*) Available with Clamp or NPT connections (only on request)

*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
 ** The value depends on the configuration of the pump.



PVDF		Boxer 150
	Maximum Dimensions	
	Height	386 mm
	Width	399 mm
	Depth	220 mm
	Construction materials (casing and manifolds) and net weight	
	PVDF	14 Kg Max 3°C min. 95°C max
	Construction materials (casing and manifolds) available on request	
	POMc	
	UHMWPE	



ALU		Boxer 150
	Maximum Dimensions	
	Height	388 mm
	Width	394 mm
	Depth	220 mm
	Construction materials (casing and manifolds) and net weight	
	ALU	15 Kg Max 3°C min. 95°C max



PP		Boxer 150
	Maximum Dimensions	
	Height	386 mm
	Width	399 mm
	Depth	220 mm
	Construction materials (casing and manifolds) and net weight	
	Polypropylene (with glass additive)	12 Kg Max 3°C min. 65°C max
	Conductive polypropylene (with carbon additive)	12 Kg Max 3°C min. 65°C max
	Construction materials (casing and manifolds) available on request	
	POMc	
	UHMWPE	



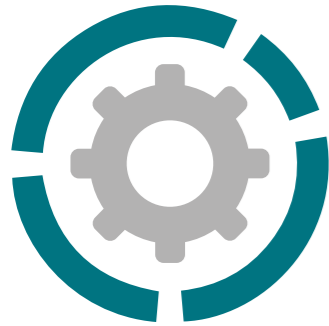
Electropolished AISI 316 steel		Boxer 150
	Maximum Dimensions	
	Height	390 mm
	Width	388 mm
	Depth	220 mm
	Construction materials (casing and manifolds) and net weight	
	Electropolished AISI 316	23 Kg Max 3°C min. 95°C max
	Construction materials (casing and manifolds) available on request	
	DUPLEX/W.DUPLEX	

BOXER 251 / BOXER 252

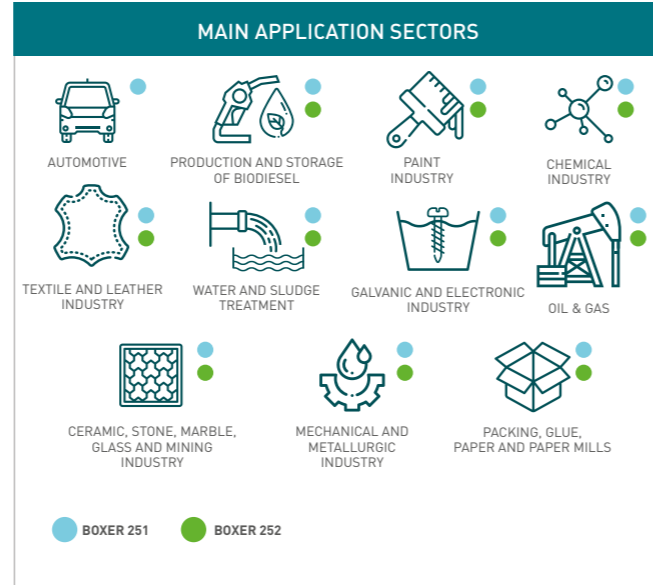
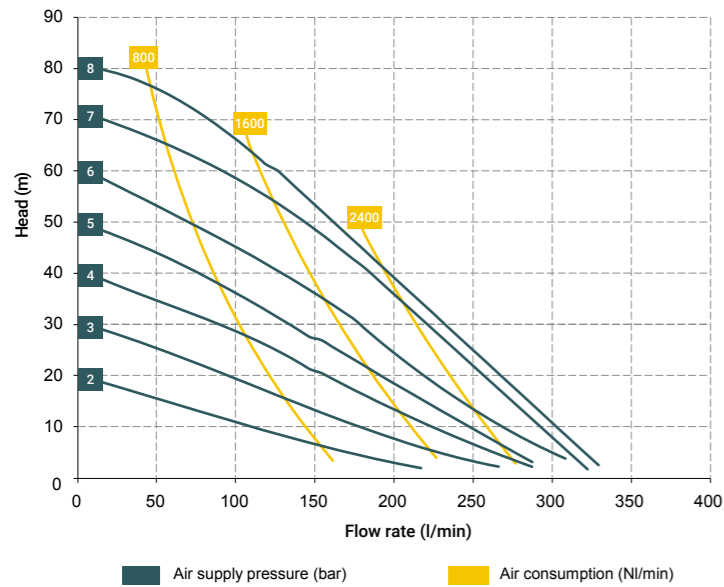


Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 1 1/2" f or DN 40 (*)
Air fitting	G 1/2" f
Max flow rate*	340 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	6 mm
Noise level	80 dB
Volume per stroke	552 cc



PVDF Boxer 251



Maximum Dimensions	
Height	492 mm
Width	493 mm
Depth	254 mm



Construction materials (casing and manifolds) and net weight	
PVDF	20 Kg Max 3°C min. 95°C max



ALU Boxer 251



Maximum Dimensions	
Height	491 mm
Width	490 mm
Depth	254 mm



Construction materials (casing and manifolds) and net weight	
ALU	19 Kg Max 3°C min. 95°C max



PP Boxer 251



Maximum Dimensions	
Height	492 mm
Width	493 mm
Depth	254 mm



Construction materials (casing and manifolds) and net weight	
Polypropylene (with glass additive)	17.5 Kg Max 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	20 Kg Max 3°C min. 65°C max



BOXER 252

Electropolished AISI 316 steel



Maximum Dimensions	
Height	538 mm
Width	417 mm
Depth	254 mm



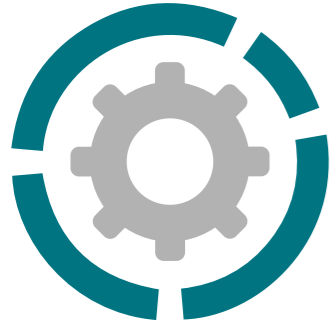
Construction materials (casing and manifolds) and net weight	
Electropolished AISI 316	26.2 Kg Max 3°C min. 95°C max
Construction materials (casing and manifolds) available on request	
DUPLEX/W.DUPLEX	

BOXER 522 / BOXER 502

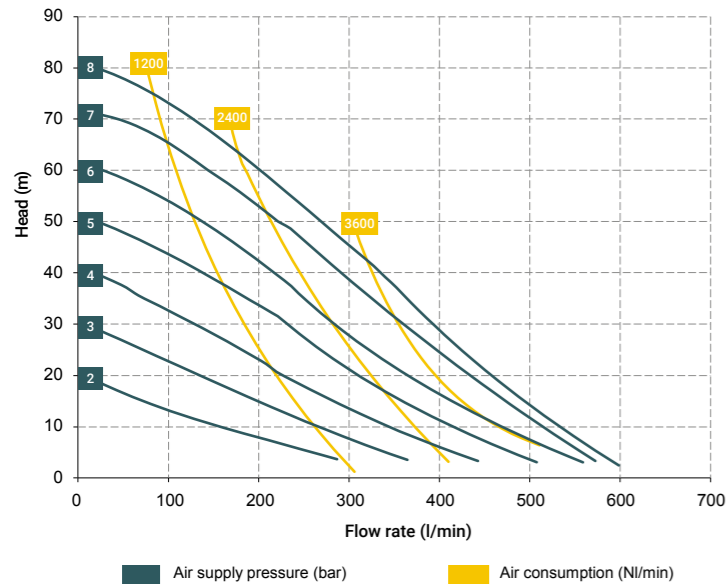


Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 2" f or DN 50 (*)
Air fitting	G 1/2" f
Max flow rate*	600 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	5 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	8 mm
Noise level	80 dB
Volume per stroke	1825 cc



MAIN APPLICATION SECTORS

TEXTILE AND LEATHER INDUSTRY	PRODUCTION AND STORAGE OF BIODIESEL	PAINT INDUSTRY	CHEMICAL INDUSTRY
CERAMIC, STONE, MARBLE, GLASS AND MINING INDUSTRY	WATER AND SLUDGE TREATMENT	GALVANIC AND ELECTRONIC INDUSTRY	OIL & GAS
MECHANICAL AND METALLURGIC INDUSTRY	PACKING, GLUE, PAPER AND PAPER MILLS		

Legend: ● BOXER 522 ● BOXER 502



PVDF

Boxer 522



Maximum Dimensions

Height	650 mm
Width	590 mm
Depth	404 mm



Construction materials (casing and manifolds) and net weight

PVDF	45 Kg Max 3°C min. 95°C max
------	-----------------------------------



BOXER 502

ALU



Maximum Dimensions

Height	621 mm
Width	566 mm
Depth	404 mm



Construction materials (casing and manifolds) and net weight

ALU	37 Kg Max 3°C min. 95°C max
-----	-----------------------------------

(*) Available with NPT connections (on request)

*The curves and performance are referred to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.
 ** The value depends on the configuration of the pump.



PP

Boxer 522



Maximum Dimensions

Height	650 mm
Width	590 mm
Depth	404 mm



Construction materials (casing and manifolds) and net weight

Polypropylene (with glass additive)	38 Kg Max 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	34.5 Kg Max 3°C min. 65°C max



BOXER 502

Electropolished AISI 316 steel



Maximum Dimensions

Height	705 mm
Width	470 mm
Depth	404 mm



Construction materials (casing and manifolds) and net weight

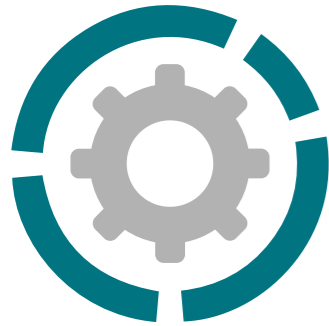
Electropolished AISI 316	54 Kg Max 3°C min. 95°C max
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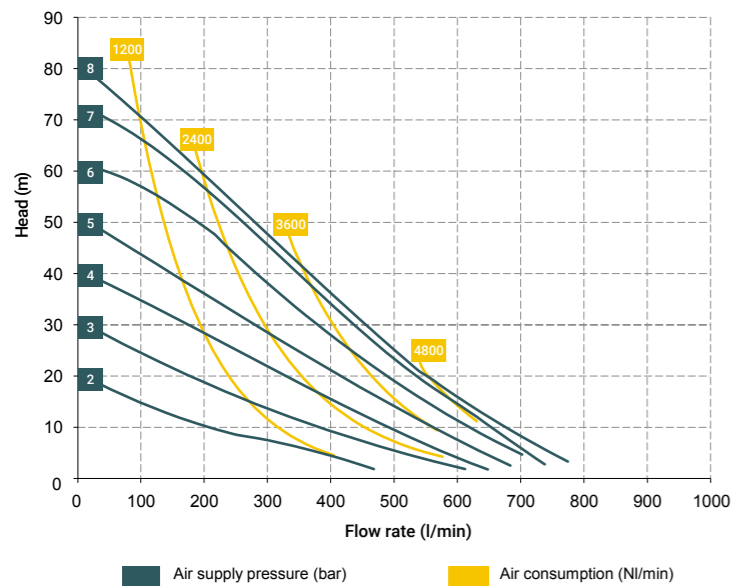
Construction materials (casing and manifolds) available on request DUPLEX/W.DUPLEX

Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc - II 3D Ex h IIIB T135°C Dc X - I M2 Ex h I Mb X
 CONDUCT: II 2G Ex h IIB T4 Gb - II 2D Ex h IIIB T135°C Db X - Ex h IIB T4 Gb - Ex h IIIB T135°C Db



Suction / delivery connections	G 3" f or DN 80 (*)
Air fitting	G 3/4" f
Max flow rate*	800 l/min
Max supply air pressure	8 bar
Max head*	80 m
Max negative suction head - dry-running**	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	10 mm
Noise level	80 dB
Volume per stroke	1825 cc



MAIN APPLICATION SECTORS

TEXTILE AND LEATHER INDUSTRY	PRODUCTION AND STORAGE OF BIODIESEL	PAINT INDUSTRY
CERAMIC, STONE, MARBLE, GLASS AND MINING INDUSTRY	WATER AND SLUDGE TREATMENT	PACKING, GLUE, PAPER AND PAPER MILLS
CHEMICAL INDUSTRY	MECHANICAL AND METALLURGICAL INDUSTRY	OIL & GAS



PVDF Boxer 503



Maximum Dimensions	
Height	726 mm
Width	585 mm
Depth	403 mm



Construction materials (casing and manifolds) and net weight	
PVDF	67 Kg Max 3°C min. 95°C max



ALU Boxer 503



Maximum Dimensions	
Height	806 mm
Width	580 mm
Depth	404 mm



Construction materials (casing and manifolds) and net weight	
ALU	66 Kg Max 3°C min. 95°C max



PP Boxer 503



Maximum Dimensions	
Height	726 mm
Width	585 mm
Depth	403 mm



Construction materials (casing and manifolds) and net weight	
Polypropylene (with glass additive)	50 Kg Max 3°C min. 65°C max
Conductive polypropylene (with carbon additive)	50 Kg Max 3°C min. 65°C max



Electropolished AISI 316 steel Boxer 503



Maximum Dimensions	
Height	826 mm
Width	546 mm
Depth	404 mm



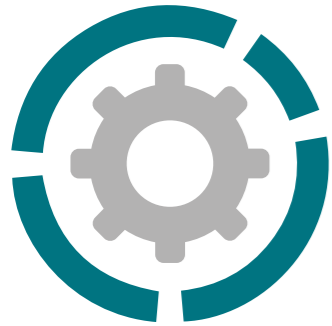
Construction materials (casing and manifolds) and net weight	
Electropolished AISI 316	71 Kg Max 3°C min. 95°C max



Construction materials (casing and manifolds) available on request	
DUPLEX/W.DUPLEX	

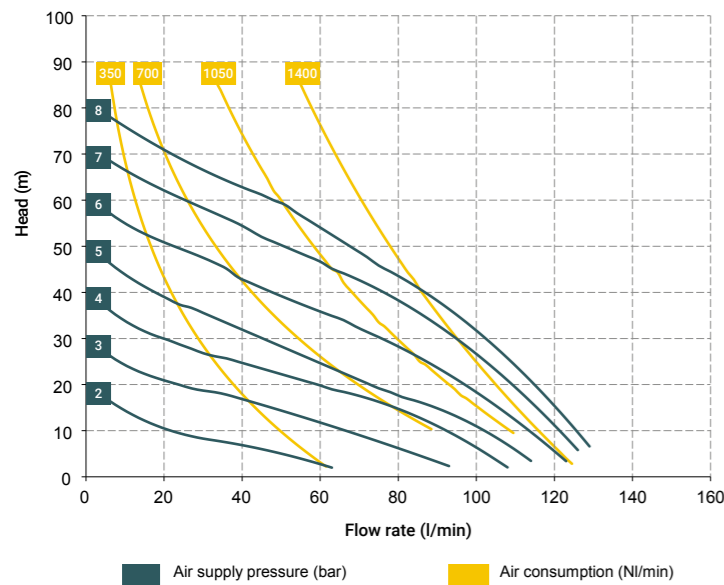
Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIIB T135°C Db (zone 1)



Suction / delivery connections	G 1" flanged ANSI - DN 25
Air fitting	G 3/8" f
Max flow rate	130 l/min
Max supply air pressure	8 bar
Max head	80 m
Max negative suction head - dry-running	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	4 mm
Noise level	75 dB
Volume per stroke	250 cc

- Product designed and constructed in Italy
- PATENTED stall-prevention pneumatic circuit
- Operates with non-lubricated air
- Self-priming
- Dry operation
- Adjustable operating speed
- Extremely versatile
- Suitable for pumping liquids with high viscosity and demanding applications
- Possibility of pumping fluids containing suspended solids
- LONG LIFE profile diaphragms for greater resistance and longer life
- Suitable for continuous use
- Pump made from a solid piece of PTFE
- Non-deformable structure in AISI 316 stainless steel



MAIN APPLICATION SECTORS

CHEMICAL INDUSTRY

The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C.



PTFE FPC 100

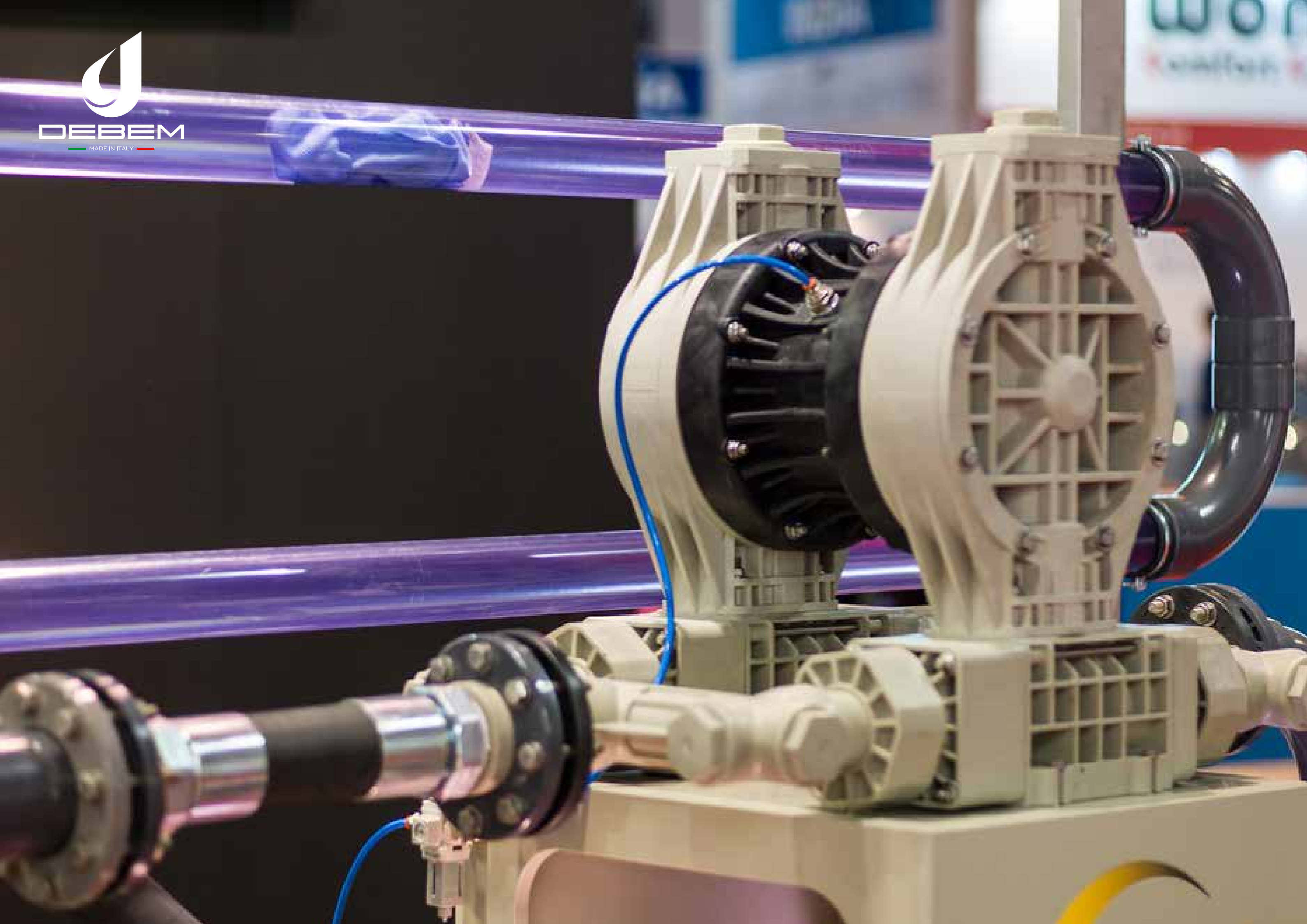


Maximum Dimensions	
Height	300 mm
Width	230 mm
Depth	360 mm



Construction materials (casing and manifolds) and net weight	
PTFE	21.6 Kg Max 3°C min. 95°C max

The Debem FPC100 double diaphragm pump is constructed entirely from a solid piece of PTFE machined with a numeric control machine tool. The pump casing is reinforced with a non-deformable AISI 316 stainless steel structure. All parts in contact with the liquid are made exclusively of PTFE and pump produces a flow rate of 130 l/min.



DEBEM's double diaphragm pumps of the RC line have been designed for all applications that require the pump to be controlled remotely or directly by the machine on which the pump is installed, for example, when measuring or dosing the product.

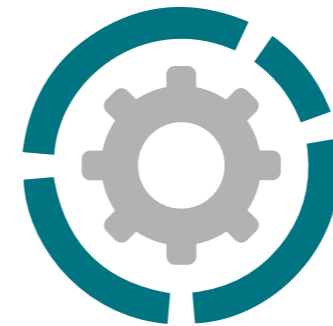
The RC pumps are always operated with compressed air. All the pumps of the RC line are ATEX – IECEx certified, constructed in polypropylene or PVDF in the plastic version or in aluminium or AISI 316 L for the metal ver-

sions. **BOXER pumps are ideal for pumping liquids with high apparent viscosity, even if containing suspended solids.** The vast range of materials available for the parts in contact with the fluid, such as pump casings and manifolds, diaphragms, balls, ball seats and o-rings, makes them compatible with any type of fluid present on the market. They can be used in numerous applications.

- Product designed and constructed in Italy
- Air operation
- Self-priming
- Dry operation
- ATEX certification for ZONE 1 - ZONE 2
- IECEx certification
- Adjustable operating speed
- Extremely versatile
- Suitable for pumping liquids with high viscosity and demanding applications
- Possibility of pumping fluids containing suspended solids
- Possibility of suspended installation
- Manifolds can be supplied with stainless steel reinforcement rings for pumps in PP – PP+CF – PVDF
- LONG LIFE profile diaphragms (available in different elastomers) for greater resistance and longer life
- Suitable for continuous use



Specifications and types



STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIIB T135°C Db (zone 1)

Suction / delivery connections	G 3/8" f
Air fitting rate	G 3/8" f Max flow 17 l/min
Max supply air pressure	8 bar
Max negative suction head - dry-running	3 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	0.5 mm
Noise level	65 dB
Volume per stroke	10.3 cc



PP Scubic 15

	Maximum Dimensions	
	Height	105 mm
	Width	201 mm
	Depth	105 mm
	Construction materials (casing and manifolds) and net weight	
	Polypropylene (with glass additive)	1.35 Kg Temp. 3°C min. 65°C max
	Conductive polypropylene (with carbon additive)	1.35 Kg Temp. 3°C min. 65°C max
	Construction materials (casing and manifolds) available on request	
	POMc	
	UHMWPE	

MAIN APPLICATION SECTORS

CHEMICAL INDUSTRY

GRAPHIC INDUSTRY

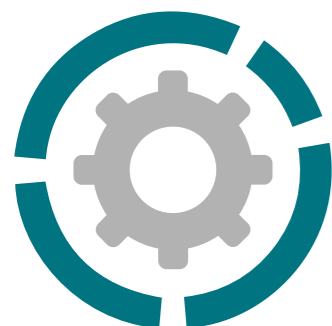


ECTFE Scubic 15

	Maximum Dimensions	
	Height	105 mm
	Width	201 mm
	Depth	105 mm
	Construction materials (casing and manifolds) and net weight	
	ECTFE	1.35 Kg Temp. 3°C min. 95°C max

Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIIB T135°C Db (zone 1)



Suction / delivery connections	G 1/2" f
Air fitting	G 1/4" f
Max flow rate	35 l/min
Max supply air pressure	8 bar
Max negative suction head - dry-running	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	2 mm
Noise level	65 dB
Volume per stroke	30 cc



MAIN APPLICATION SECTORS



PVDF Smicro



Maximum Dimensions	
Height	168 mm
Width	165 mm
Depth	120 mm



Construction materials (casing and manifolds) and net weight	
PVDF	1.9 Kg Max 3°C min. 95°C max



Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	



ALU Smicro



Maximum Dimensions	
Height	172 mm
Width	164 mm
Depth	120 mm



Construction materials (casing and manifolds) and net weight	
ALU	2 Kg Max 3°C min. 95°C max



PP Smicro



Maximum Dimensions	
Height	168 mm
Width	165 mm
Depth	120 mm



Construction materials (casing and manifolds) and net weight	
Polypropylene (with glass additive)	1.6 Kg Max 3°C min. 65°C max



Construction materials (casing and manifolds) available on request	
Conductive polypropylene (with carbon additive)	1.6 Kg Max 3°C min. 65°C max

Construction materials (casing and manifolds) available on request	
POMc	
UHMWPE	



AISI 316 L steel Smicro



Maximum Dimensions	
Height	171 mm
Width	177 mm
Depth	120 mm



Construction materials (casing and manifolds) and net weight	
AISI 316 L	3.8 Kg Max 3°C min. 95°C max



Construction materials (casing and manifolds) available on request	
DUPLEX/W.DUPLEX	

SBOXER 50 / SMINI

AIR-OPERATED DOUBLE DIAPHRAGM PUMPS WITHOUT DISTRIBUTOR



Specifications and types

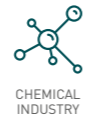
STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIIB T135°C Db (zone 1)



Suction / delivery connections	G 1/2" f or DN 15 - Clamp or NPT on request
Air fitting	G 3/8" f
Max flow rate	60 l/min
Max supply air pressure	8 bar
Max negative suction head - dry-running	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	4 mm
Noise level	70 dB
Volume per stroke	67 cc



MAIN APPLICATION SECTORS



PVDF Sboxer 50

	Maximum Dimensions	
	Height	241 mm
	Width	247 mm
	Construction materials (casing and manifolds) and net weight	
	PVDF	1.9 Kg Max 3°C min. 95°C max
	Construction materials (casing and manifolds) available on request	
	POMc	
	UHMWPE	



ALU Sboxer 50

	Maximum Dimensions	
	Height	234 mm
	Width	241 mm
	Construction materials (casing and manifolds) and net weight	
	ALU	2 Kg Max 3°C min. 95°C max



PP Sboxer 50

	Maximum Dimensions	
	Height	241 mm
	Width	247 mm
	Construction materials (casing and manifolds) and net weight	
	Polypropylene (with glass additive)	1.6 Kg Max 3°C min. 65°C max
	Conductive polypropylene (with carbon additive)	1.6 Kg Max 3°C min. 65°C max
	Construction materials (casing and manifolds) available on request	
	POMc	
	UHMWPE	



SMINI

AISI 316 L steel

	Maximum Dimensions	
	Height	232 mm
	Width	230 mm
	Construction materials (casing and manifolds) and net weight	
	AISI 316 L	3.8 Kg Max 3°C min. 95°C max
	Construction materials (casing and manifolds) available on request	
	DUPLEX/W.DUPLEX	

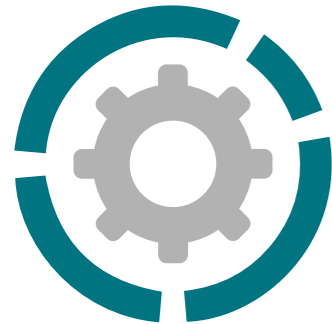
SBOXER 100

AIR-OPERATED DOUBLE DIAPHRAGM PUMPS WITHOUT DISTRIBUTOR



Specifications and types

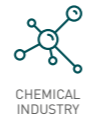
STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIB T135°C Db (zone 1)



Suction / delivery connections	G 1" f or DN 25 - NPT on request
Air fitting	G 3/8" f
Max flow rate	160 l/min
Max supply air pressure	8 bar
Max negative suction head - dry-running	4 m
Max negative suction head - pump primed	9.5 m
Max diameter of suspended solids	4 mm
Noise level	75 dB
Volume per stroke	222 cc



MAIN APPLICATION SECTORS



PVDF Sboxer 100



Maximum Dimensions	
Height	325mm
Width	329 mm
Depth	202 mm



Construction materials (casing and manifolds) and net weight

PVDF	8.5 Kg Max 3°C min. 95°C max
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Construction materials (casing and manifolds) available on request

POMc	
UHMWPE	



ALU Sboxer 100



Maximum Dimensions	
Height	324 mm
Width	315 mm
Depth	202 mm



Construction materials (casing and manifolds) and net weight

ALU	8.2 Kg Max 3°C min. 95°C max
-----	------------------------------------



PP Sboxer 100



Maximum Dimensions	
Height	325 mm
Width	329 mm
Depth	202 mm



Construction materials (casing and manifolds) and net weight

Polypropylene (with glass additive)	7.5 Kg Max 3°C min. 65°C max
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Conductive polypropylene (with carbon additive)	7.5 Kg Max 3°C min. 65°C max
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Construction materials (casing and manifolds) available on request

POMc	
UHMWPE	



Electropolished AISI 316 steel Sboxer 100



Maximum Dimensions	
Height	327 mm
Width	308 mm
Depth	202 mm



Construction materials (casing and manifolds) and net weight

Electropolished AISI 316	11 Kg Max 3°C min. 95°C max
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Construction materials (casing and manifolds) available on request

DUPLEX/W.DUPLEX	
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FULLFLOW 502

AIR-OPERATED DOUBLE DIAPHRAGM PUMPS WITH FLAP CIRCUIT

The new FULLFLOW 502 pump is fitted with flaps instead of balls, which allow the passage of large-sized solids, reducing at the same time the crushing normally associated to the passage through balls and cages. Even though the maximum diameter for the passage of solids of 45 mm is not exclusive, the uniqueness for this type of pumps lies in the maximum length of the solids: 600 mm. Similarly, the pump features an exclusive

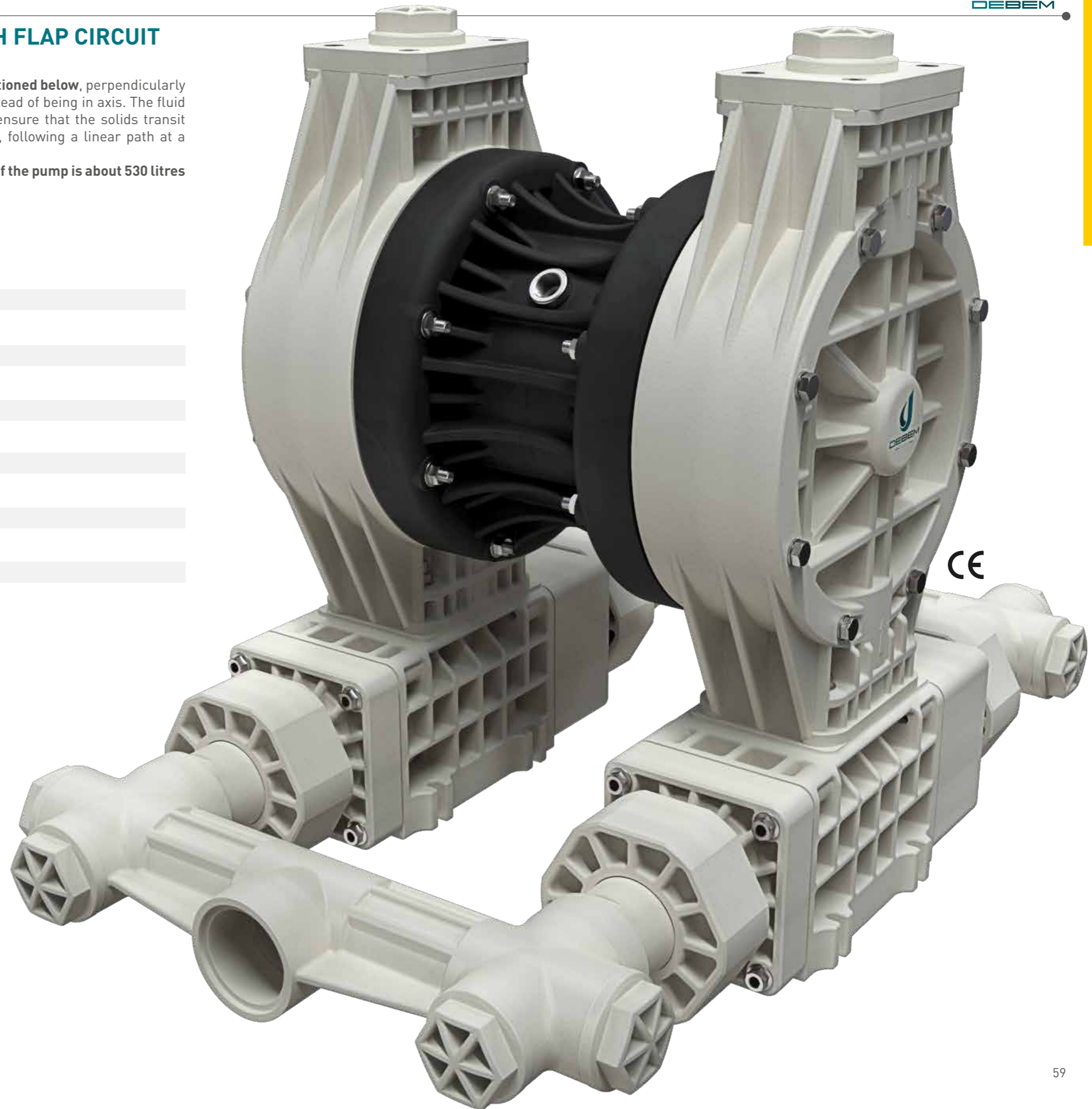
patented flap circuit positioned below, perpendicularly to the fluid chambers instead of being in axis. The fluid dynamics of this choice ensure that the solids transit outside the pump casing, following a linear path at a lower level to the pump.

The maximum flow rate of the pump is about 530 litres per minute.

- Polypropylene casing
- Flap in EPDM and NBR, core in AISI 316 steel, always in contact with the fluid
- Can be split in suction and delivery
- Fittings: G 2" 1/2 f or DN 65
- Air fitting: 1/2"
- Supply: min. 2 bar – max 4 bar
- Max. flow rate: 530 l/min
- Max. head: 40 m
- Max. dry suction: 3.5 m
- Max. flooded negative suction: 8 m
- Max. solids diameter: 45 mm
- Max. solid filaments length: 600 mm*

*On request it can be configured for greater lengths. Consult the sales office.

The new FULLFLOW 502 pump is fitted with flaps instead of balls, that allow the passage of large-sized solids



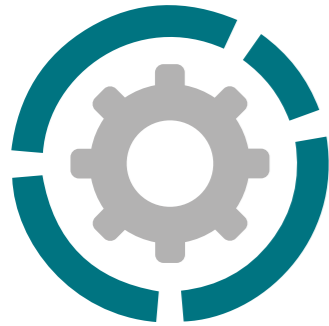
FULLFLOW 502

AIR-OPERATED DOUBLE DIAPHRAGM PUMPS WITH FLAP CIRCUIT

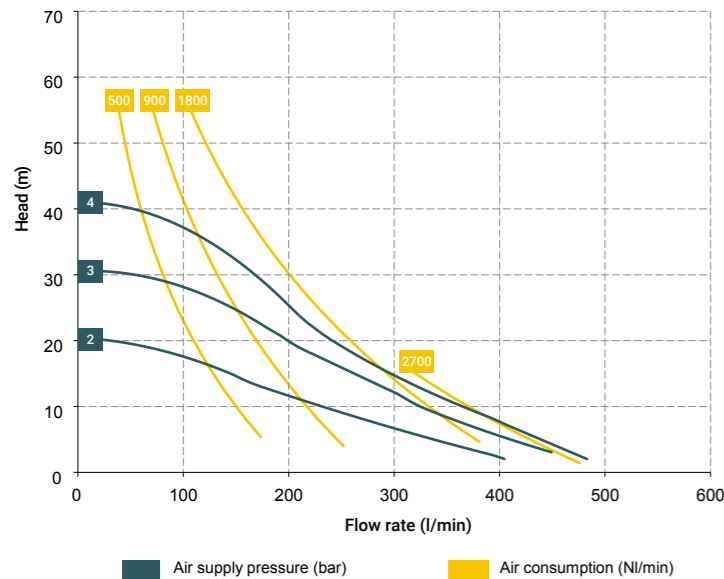


Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIB T135°C Db (zone 1)

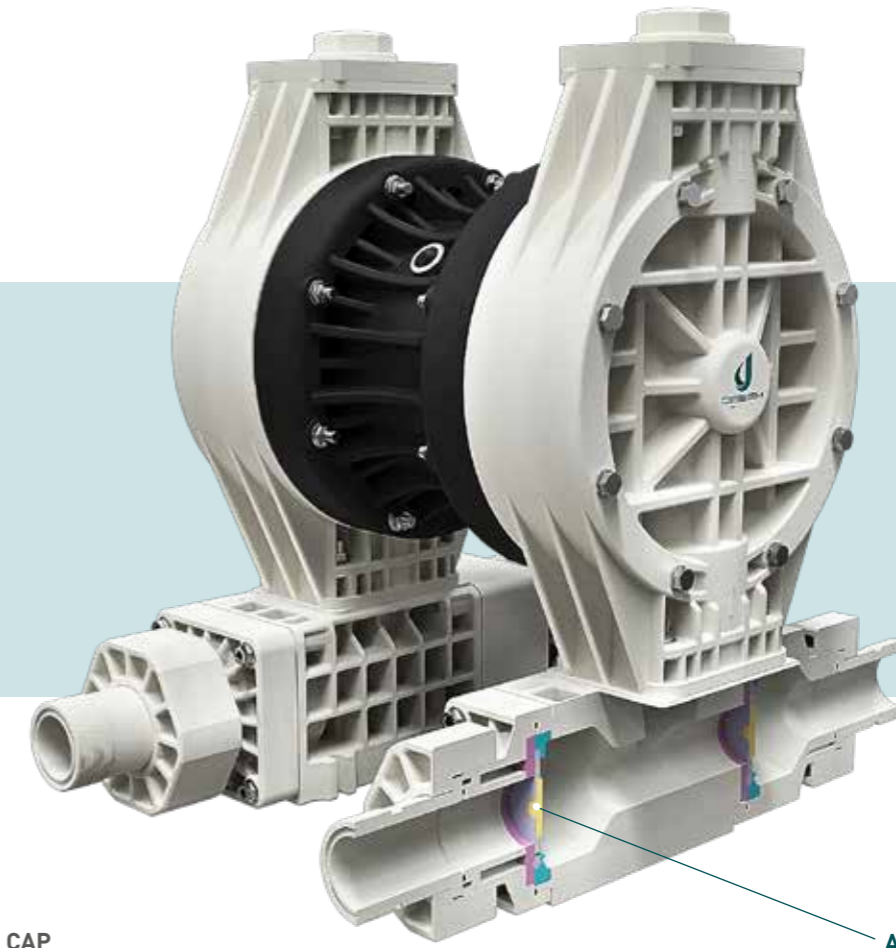


Suction / delivery connections	G 2"1/2 or DN 65
Air fitting	G 1/2" f
Max flow rate*	530 l/min
Max supply air pressure	4 bar
Max head*	40 m
Max negative suction head - dry-running**	3.5 m
Max diameter of suspended solids	45 mm
Max length of solids	600 mm



MAIN APPLICATION SECTORS

- CERAMIC, STONE, MARBLE, GLASS AND MINING INDUSTRY
- WATER AND SLUDGE TREATMENT
- TEXTILE AND LEATHER INDUSTRY
- PACKING, GLUE, PAPER AND PAPER MILLS
- GALVANIC AND ELECTRONIC INDUSTRY



A = CAP
 B = FLAP SEAT
 C = FLAP WEAR RING

* The performance values refer to primed pumps (with water at 20°C) with open outlet and vary based on the construction materials.
 ** Attention: average values of the different materials configurations for ball and ball seat.



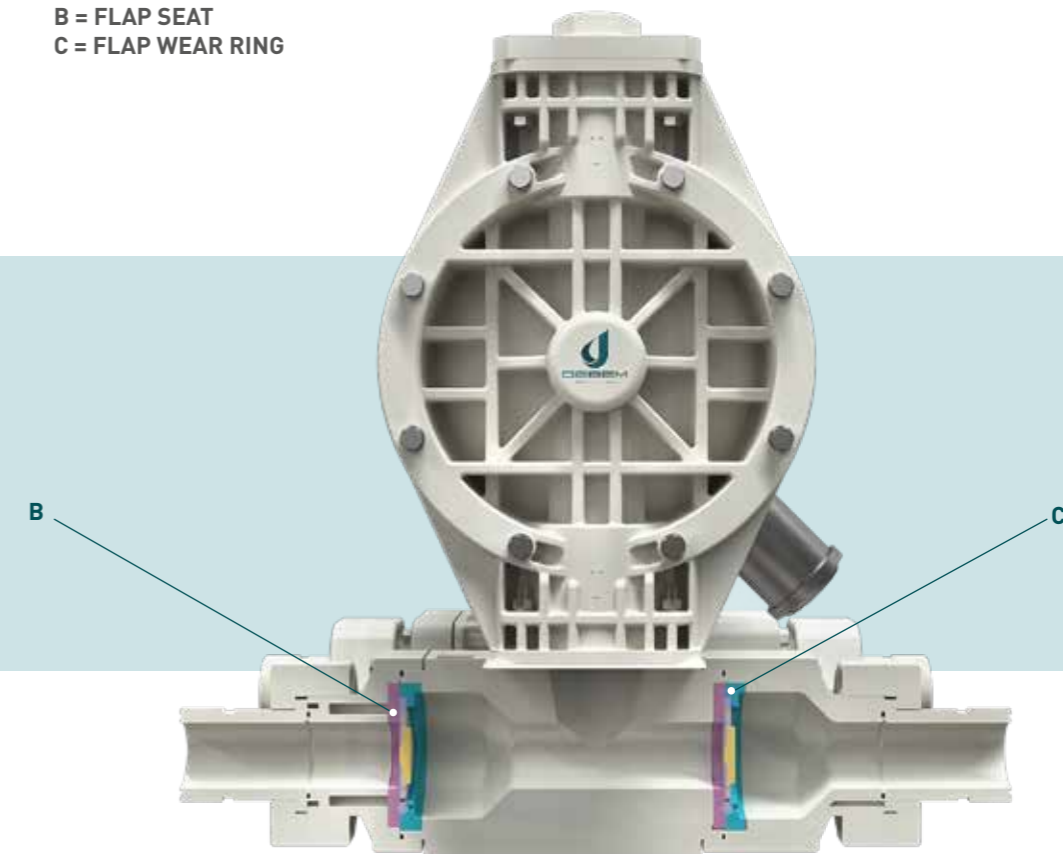
PP

Maximum Dimensions

Height	691 mm
Width	580 mm
Depth	952 mm

Construction materials (casing and manifolds) and net weight

Polypropylene (with glass additive)	55 Kg
	Max 3°C min.
	65°C max



The type of fluid, the temperature and the operating environment are the factors that influence the selection of the pump materials and its correct chemical compatibility.

The table below is included by way of example. For more information don't hesitate to contact the Debem technical support. We have collected the information from reliable sources. Debem, not having carried any verification of the data, cannot be held responsible for the correctness of the information. The table refers to pure polypropylene and PVDF. Our plastic materials contain glass and carbon additives that could influence the chemical

compatibility of the pump. The user, with their in-depth knowledge of their product, can make the most accurate decision regarding the chemical compatibility.

WARNING
The information in this table has been supplied to Debem from other reliable sources and must be used EXCLUSIVELY as a guide in selecting the materials for the pump parts in contact with the fluid, such as: Pump casing and manifolds, diaphragms, balls, ball seats and o-rings. The assessment of the chemical reaction listed in this table refers to an exposure period of 48 hours. Debem has no knowledge of the

possible effects after this period. Debem does not guarantee (neither expressly nor implicitly) that the information contained in this table is accurate or complete or that any material is suitable for any use.

DANGER
Changes in the chemical behaviour during handling, due to factors such as temperature, pressure and concentrations, could trigger issues in the pump. Use adequate protections and/or personal protection equipment when installing the pump in the circuit or when performing maintenance on the pump. Read the use and maintenance manual before any operation on the pump.

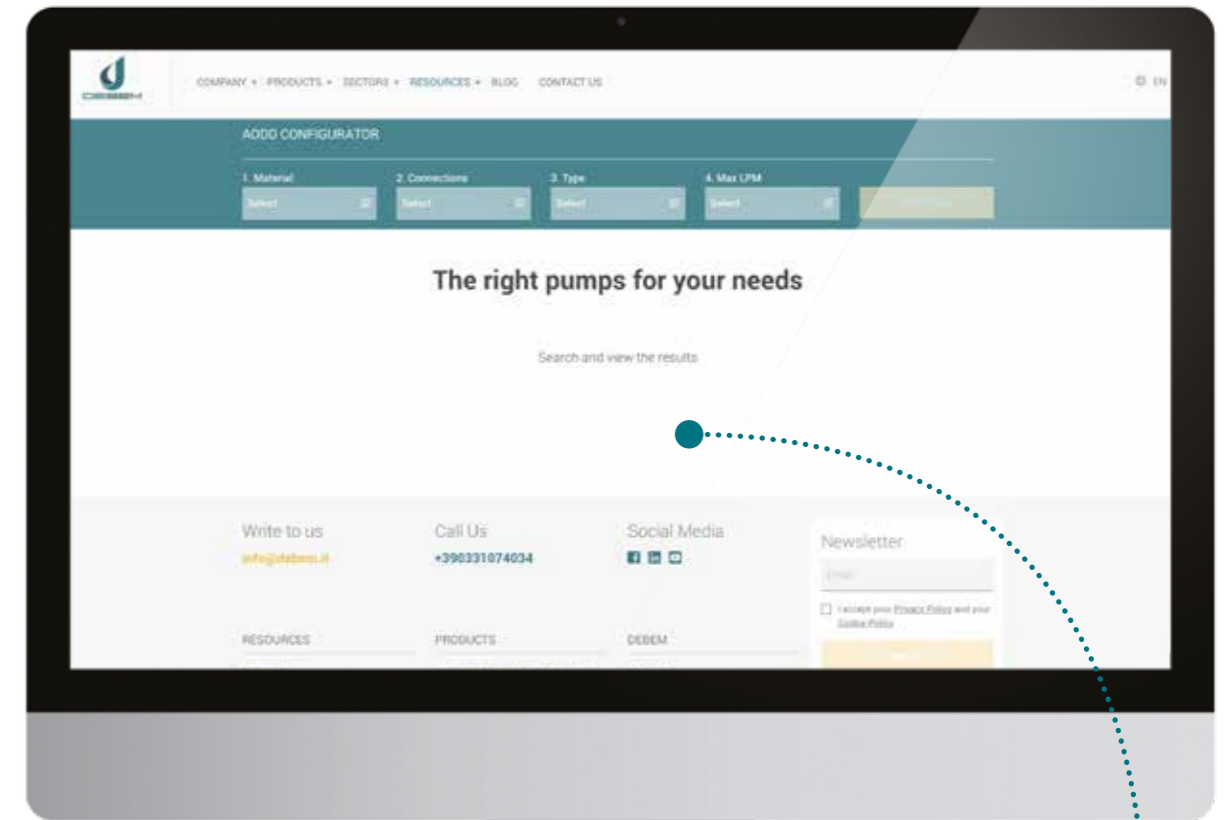
SUBSTANCE	Polypropylene	PVDF ECTFE (Halair®)	Aluminium	Stainless steel AISI 316 steel	NBR (Perbunan®)	EPDM (Dutra®)	PTFE (Teflon®)	PPS-V (Ryton®)	FPM (Vitron®)	Santoprene®	PE-UHMW (Polyzen®)
Acetaldehyde	A1	D	B	A	D	A	A	A	D	-	B
Acetamide	A1	C	A	A	A	A	A	A	B	-	-
Vinyl acetate	B1	A2	A1	B	D	B2	A2	-	A1	-	D
Acetylene	A1	A	A	A	B	A	A	A	A	-	-
Vinegar	A	B	D	A	B	A	A	A	A	-	A
Acetone	A	D	A	A	D	A	A	A	D	A1	A2
Fatty acids	A	A	A	A	B	D	A	-	A	D	A

A = Excellent
B = Good
C = Poor (not recommended)
D = Serious attack (not recommended)

- = Information not available
1 = Satisfactory up to 22°C (72°F)
2 = Satisfactory up to 48°C (120°F)



For more information don't hesitate to contact the Debem technical support. We have collected the information from reliable sources. Debem, not having carried any verification of the data, cannot be held responsible for the correctness of the information.

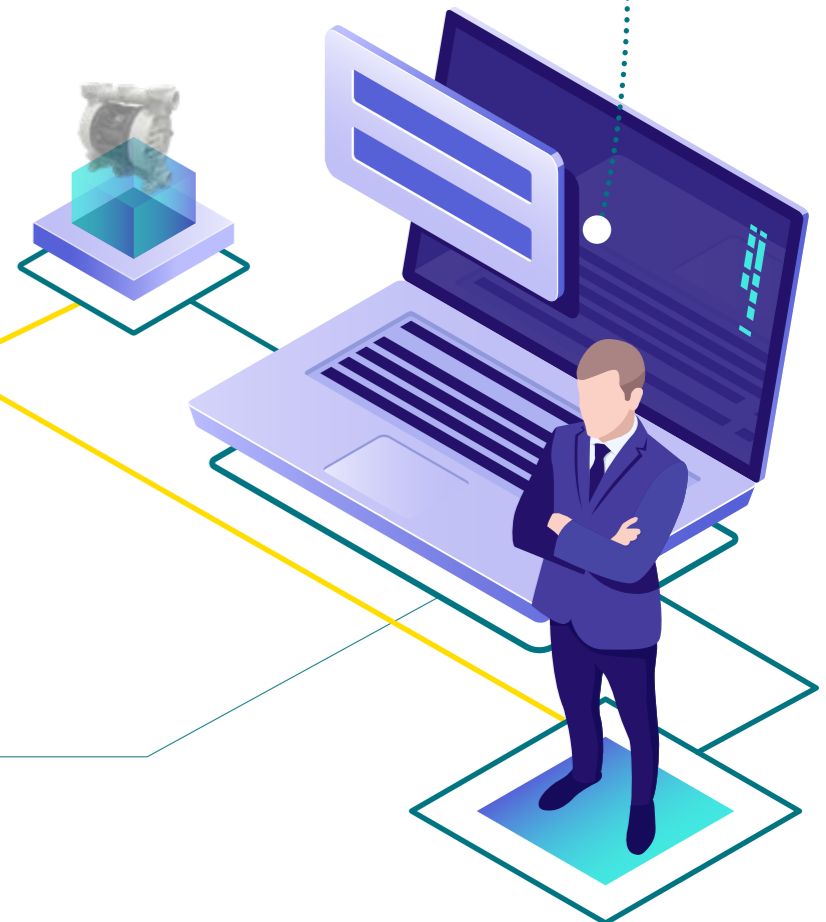


CONFIGURE THE MOST SUITABLE DEBEM INDUSTRIAL PUMP FOR YOUR REQUIREMENTS IN JUST A FEW SIMPLE CLICKS

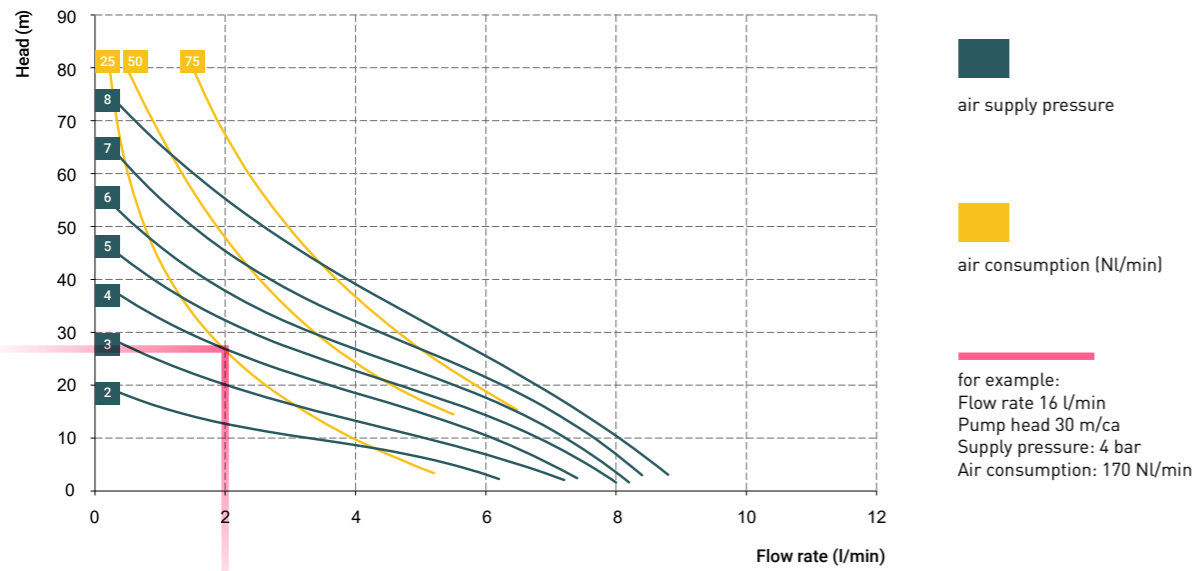


Go to www.debem.com and in the RESOURCES section you will find the pumps configurator, which will help you in choosing the most suitable solution from the various products available.

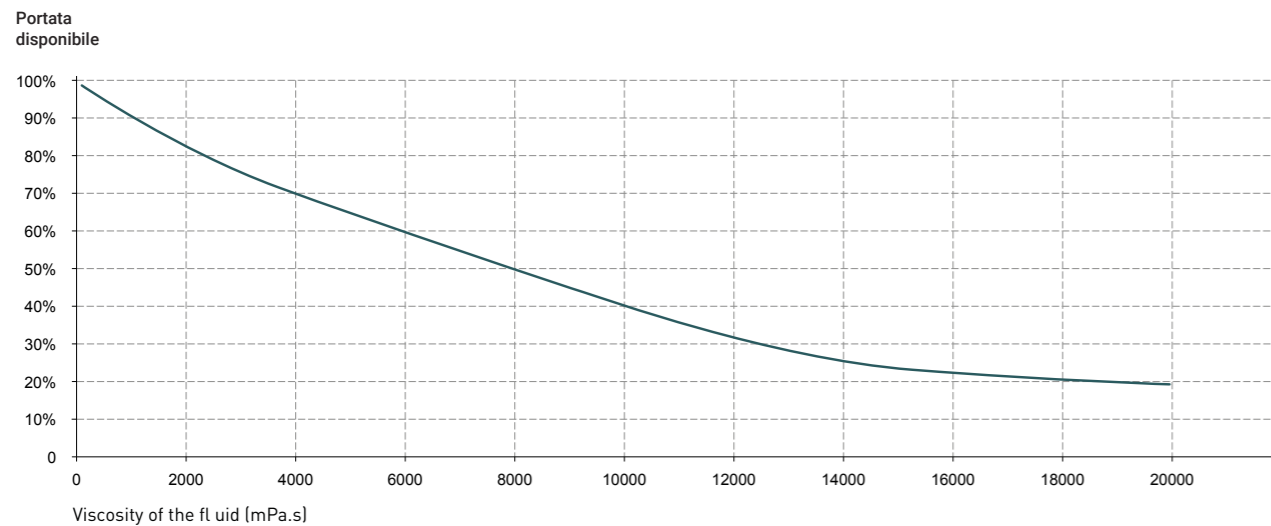
www.debem.com



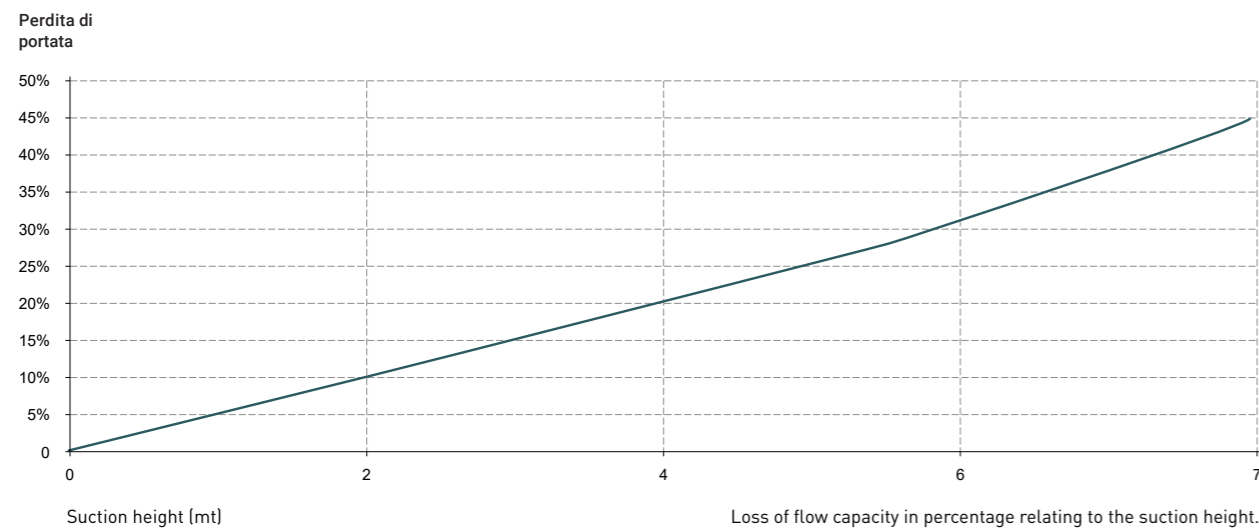
EXAMPLE ILLUSTRATING THE GRAPHIC READING OF THE PERFORMANCE



DECREASE IN THE FLOW RATE RELATING TO THE VISCOSITY



BOXER PUMPS - LOSS OF FLOW CAPACITY ON THE SUCTION HEIGHT



COMPRESSORS TABLE

Air consumption Compressor approximate power

NI/min HP

50	0.5
100	1
200	2
250	2.5
350	3.5
450	4.5
550	5.5
850	8.5
1000	10
1500	15
2000	20
3500	30
4000	40

The power effectively absorbed by the compressor is about =70% of the value indicated in the table. We recommend using a compressor with a tank.

DISPLACEMENT CAPACITY TABLE

Pump type Displacement

BOXER 7	3.2 cc
BOXER 15	10.3 cc
MICROBOXER	30 cc
MINIBOXER/B50	67 cc
BOXER 81/90	100 cc
BOXER 100	222 cc
BOXER 150	340 cc
BOXER 251/252	522 cc
BOXER 502/522	1,825 cc
BOXER 503	1,852 cc

Attention: when operating with an OPEN OUTLET, the actual flow rate is much higher than the ratio between number of cycles measured and displacement, due to the quantity of movement.

AUTOMATIC PULSATION DAMPERS

The EQUAFLUX dampers are used with fluids with a high apparent viscosity, also with large suspended solids..

They adapt automatically to the system conditions, without any manual adjustments or calibrations. The high capacity of minimising pulsations, vibrations and water hammer renders this component ideal for protecting the system, providing a regular outlet flow.

The vast range of construction materials allows us to select the best chemical compatibility with the fluid

and/or the environment, without neglecting the correct temperature range. The dampers are also available for use in potentially explosive atmospheres (ATEX certification).

The EQUAFLUX is operated by the same compressed air that drives the pump. The compressed air, introduced in the counter-pressure chamber (behind the diaphragm), creates a self-adjusting pneumatic damping cushion based on the pressure exerted by the pump.

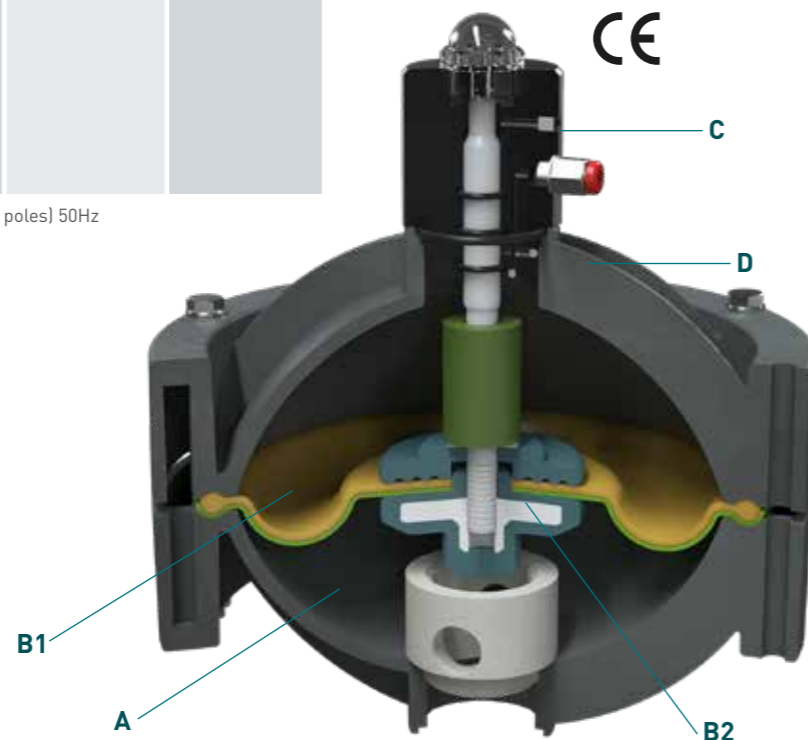
- Product designed and constructed in Italy
- Operates with non-lubricated air
- High performance and strength
- Suitable for minimising pulsating flows
- Suitable for minimising vibrations during the operation of the pump

EQUAFLUX DAMPERS CODES ENCODING

ex. EQ100PCHTC
Equaflux 100 PP+CF, Hytrel®, air side diaphragm, PTFE product side diaphragm, conduct.

EQ100 DAMPER MODEL	PC DAMPER CASING	H AIR-SIDE DIAPHRAGM	T PRODUCT-SIDE DIAPHRAGM	C CONDUCT VERSION
EQ 51 - Equaflux 51 EQ 100 - Equaflux 100 EQ 200 - Equaflux 200 EQ 302 - Equaflux 302 EQ 303 - Equaflux 303	P - Polypropylene FC - PVDF+CF R - PPS-V A - AISI 316 (excluded EQ 303) AL - Aluminium PC - PP + CF	H - Hytrel® M - Santoprene® D - EPDM N - NBR	T - PTFE	(zone 1) II 2/2GD c IIB T135°C C - on request

* Three-phase asynchronous eurotension motor fitted as standard (2 poles) 50Hz
** Available only for IM 80/90 pumps



- A = expansion chamber
- B1 = air-side diaphragm
- B2 = fluid-side diaphragm
- C = automatic pneumatic valve
- D = pneumatic chamber

EQUAFLUX 51

Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIB T135°C Dc (zone 2)
CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIB T135°C Db (zone 1)



Fitting Product	Air fitting	Operating pressure	Application	Material* (half-casing in contact with the fluid)	Weight	Operating time	Dim. (mm)
G 3/4"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Midgetbox, Cubic15 Boxer7, Boxer15 Microboxer, Boxer35	Polypropylene	0.5 Kg	from +3°C to +65°C	121x117
G 3/4"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Midgetbox, Cubic15 Boxer7, Boxer15 Microboxer, Boxer35	PP + CF	0.5 Kg	from +3°C to +65°C	121x117
G 3/4"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Cubic15, Boxer7, Boxer15 Microboxer, Boxer35	PVDF	0.5 Kg	from +3°C to +95°C	121x117
G 3/4"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer7, Boxer15 Microboxer, Boxer35	PPS	0.6 Kg	from +3°C to +95°C	121x117
G 1/2"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer7, Boxer15 Microboxer, Boxer35	AISI 316 L steel	1.33 Kg	from +3°C to +95°C	133x117

*Material on request: • UHMWPE • POMc • DUPLEX/S.DUPLEX

AIR SIDE HALF-CASING MATERIAL

- PP
- PP+CF
- ALUMINIUM

DIAPHRAGM MATERIALS

- NBR
- EPDM
- Hytrel
- Santoprene
- PTFE

CAPS MATERIALS

- Polypropylene (with glass additive)
- Conductive polypropylene (with carbon additive)
- PVDF
- PPS
- Natural ECTFE
- AISI 316 L

EQUAFLUX 100



Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIIB T135°C Db (zone 1)



Fitting Product	Air fitting	Operating pressure	Application	Material* (half-casing in contact with the fluid)	Weight	Operating time	Dim. (mm)
G 1"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer50, Boxer81	Polypropylene	1.5 Kg	from +3°C to +65°C	177x170
G 1"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer50, Boxer81	PP+CF	1.5 Kg	from +3°C to +65°C	177x170
G 1"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer50, Boxer81	PVDF	1.7 Kg	from +3°C to +95°C	177x170
G 1"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer50, Boxer90	PPS	1.7 Kg	from +3°C to +95°C	177x170
G 1"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Miniboxer, Boxer81	Electropolished AISI 316 steel	2.56 Kg	from +3°C to +95°C	183.2x151

*Material on request: • UHMWPE • POMc • DUPLEX/S.DUPLEX

AIR SIDE HALF-CASING MATERIAL

- PP
- PP+CF

DIAPHRAGM MATERIALS

- NBR
- EPDM
- Hytrel
- Santoprene
- PTFE

CAPS MATERIALS

- Polypropylene (with glass additive)
- Conductive polypropylene (with carbon additive)
- PVDF
- PPS
- Natural ECTFE
- AISI 316 L

EQUAFLUX 200

Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIIB T135°C Db (zone 1)



Fitting Product	Air fitting	Operating pressure	Application	Material* (half-casing in contact with the fluid)	Weight	Operating time	Dim. (mm)
G 1 1/2"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer100, Boxer150 Boxer251	Polypropylene	3.8 Kg	from +3°C to +65°C	283.2x254
G 1 1/2"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer100, Boxer150 Boxer251	PP+CF	3.8 Kg	from +3°C to +65°C	283.2x254
G 1 1/2"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer100, Boxer150 Boxer251	PVDF	4.5 Kg	from +3°C to +95°C	283.2x254
G 1 1/2"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer100, Boxer150 Boxer251	PPS	4.5 Kg	from +3°C to +95°C	283.2x254
G 1 1/2"	Ø 6 mm	Min 2 Bar - Max 8 Bar	Boxer100, Boxer150 Boxer252	Electropolished AISI 316 steel	7.45 Kg	from +3°C to +95°C	264.7x254

*Material on request: • UHMWPE • POMc • DUPLEX/S.DUPLEX

AIR SIDE HALF-CASING MATERIAL

- PP
- PP+CF

DIAPHRAGM MATERIALS

- NBR
- EPDM
- Hytrel
- Santoprene
- PTFE

CAPS MATERIALS

- Polypropylene (with glass additive)
- Conductive polypropylene (with carbon additive)
- PVDF
- Natural ECTFE
- AISI 316 L
- Alluminio

EQUAFLUX 302



Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIIB T135°C Db (zone 1)



Fitting Product	Air fitting	Operating pressure	Application	Material* (half-casing in contact with the fluid)	Weight	Operating time	Dim. (mm)
G 2"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer522	Polypropylene	23 Kg	from +3°C to +65°C	398x516
G 2"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer522	PP + CF	23 Kg	from +3°C to +65°C	398x516
G 2"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer522	PVDF	28.5 Kg	from +3°C to +95°C	398x516
G 2"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer502	ALU	26 Kg	from +3°C to +95°C	356x352
G 2"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer502	Electropolished AISI 316 steel	32 Kg	from +3°C to +95°C	356x352

*Material on request: • DUPLEX/S.DUPLEX

AIR SIDE HALF-CASING MATERIAL

- Central boxer 502/503 (PP)

DIAPHRAGM MATERIALS

- NBR
- EPDM
- Hytrel
- Santoprene
- PTFE

CAPS MATERIALS

- Polypropylene (with glass additive)
- Conductive polypropylene (with carbon additive)
- PVDF
- Aluminium
- AISI 316 L

EQUAFLUX 303

Specifications and types

STANDARD: II 3G Ex h IIB T4 Gc, II 3D Ex h IIIB T135°C Dc (zone 2)
 CONDUCT: II 2G Ex h IIB T4 Gb, II 2D Ex h IIIB T135°C Db (zone 1)



Fitting Product	Air fitting	Operating pressure	Application	Material* (half-casing in contact with the fluid)	Weight	Operating time	Dim. (mm)
G 3"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer503	Polypropylene	23 Kg	from +3°C to +65°C	398x516
G 3"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer503	PP + CF	23 Kg	from +3°C to +65°C	398x516
G 3"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer503	PVDF	28.5 Kg	from +3°C to +95°C	398x516
G 3"	Ø 8 mm	Min 2 Bar - Max 8 Bar	Boxer503	ALU	29 Kg	from +3°C to +95°C	356x352

*Material on request: • DUPLEX/S.DUPLEX

AIR SIDE HALF-CASING MATERIAL

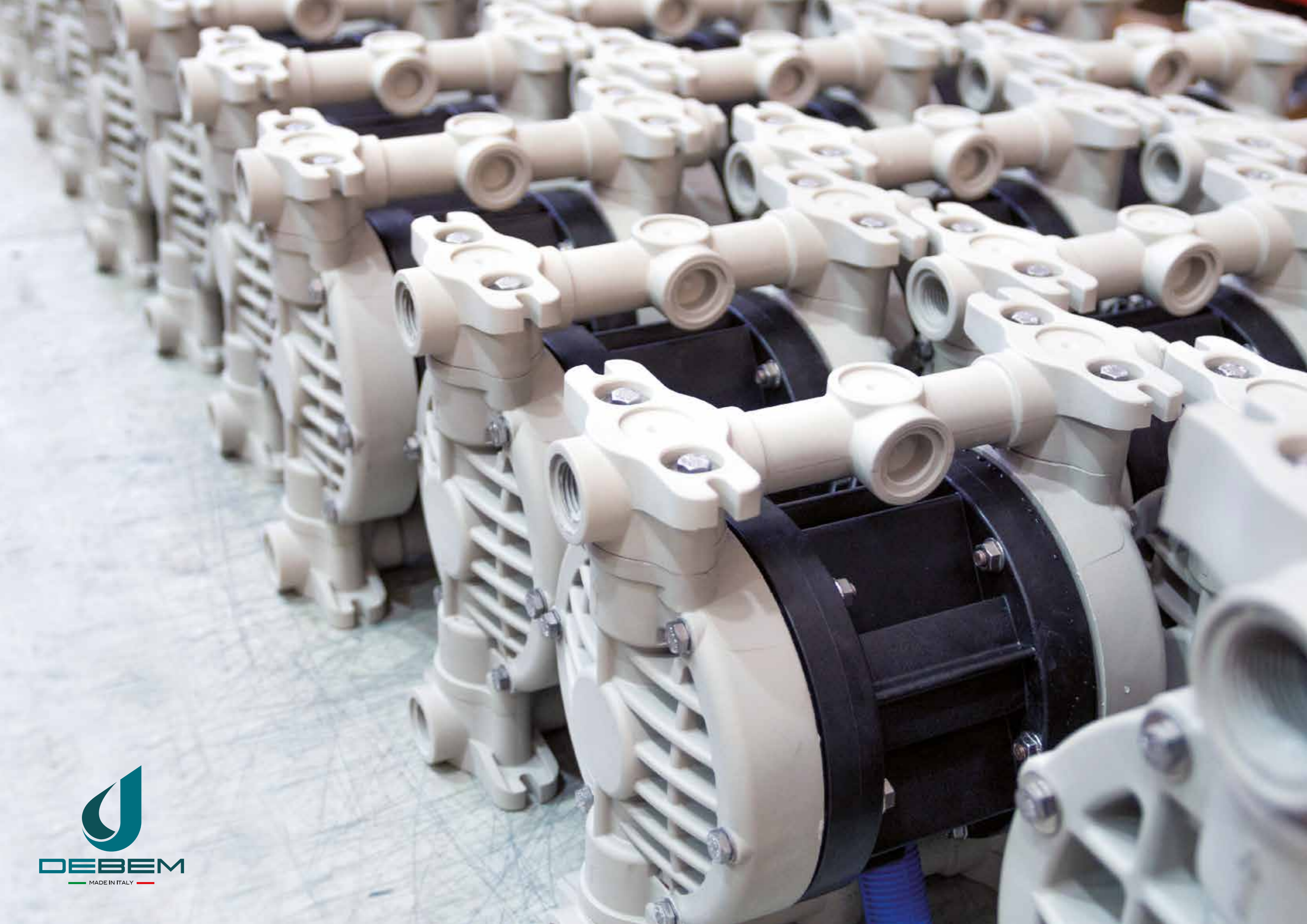
- Central boxer 502/503 (PP)

DIAPHRAGM MATERIALS

- NBR
- EPDM
- Hytrel
- Santoprene
- PTFE

CAPS MATERIALS

- Polypropylene (with glass additive)
- Conductive polypropylene (with carbon additive)
- PVDF
- AISI 316 L
- Alluminio



MAGNETIC DRIVE CENTRIFUGAL PUMPS

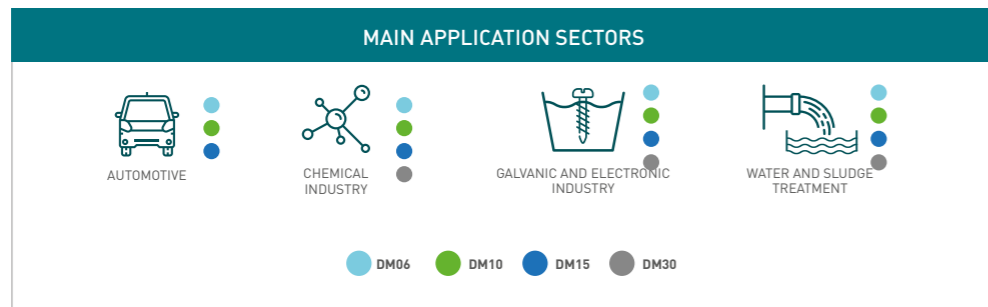
Debem's magnetic drive centrifugal pumps are the ideal solution for numerous applications: laboratory machines, medical equipment, photographic developing machines, X-ray processes, silver recovery systems, graphics industry, heat exchangers, aquariums, water treatment, filtering systems, galvanic and chemical industry and the transfer of acids and corrosive fluids.

The DM pumps must be installed exclusively with the axis horizontal under head. Suitable devices must be included to avoid the dry-operation and the formation of vortices and the possible suction of air.

The DM pumps must operate exclusively with the PUMP FLOODED

The pumps are driven by a pair of magnets: the outer magnet is positioned on the motor shaft and transmits the motion to the inner magnet integrated with the hermetically sealed impeller. The pump impeller is not physically fixed to the motor shaft, thereby eliminating the need for seals and consequently any leaks of the liquid being pumped due to wear. The pumping unit is constructed with a low number of components, rendering maintenance extremely easy. The materials used as standard are polypropylene (PP) and polyvinylidene fluoride (PVDF). The pumps cannot operate dry. Dirty liquids can reduce their life.

- Product designed and constructed in Italy
- Constructed in polypropylene or PVDF
- Under head use
- Extremely easy to maintain
- Suitable for continuous use

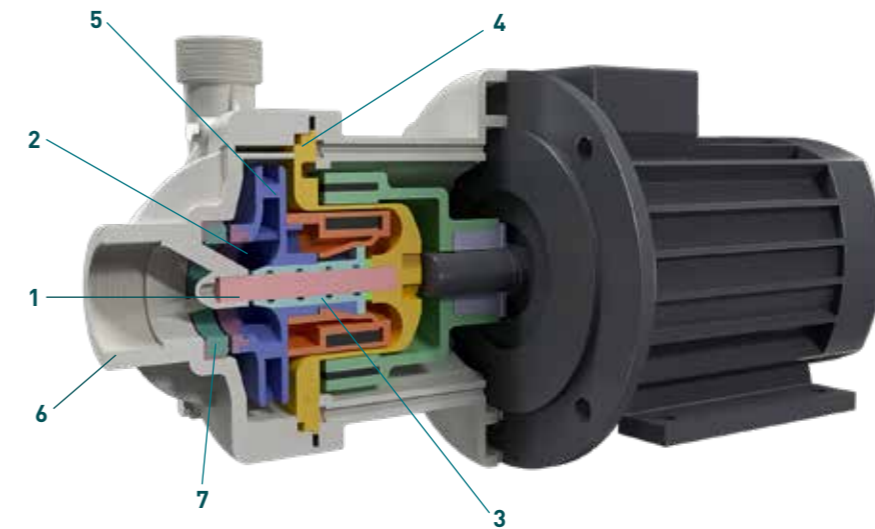


DM PUMPS CODES ENCODING

ex. DM10P-SD1BE071
DM10 PP, standard thrust bearing, EPDM o-ring, Ø 98 mm impeller, BSP fitting, MEC motor flange, 071 casing.

DM10	P	S	D	1	B	E	071
PUMP MODEL	PUMP CASING	THRUST BEARING	O-RING	IMPELLER	FITTING	MOTOR FLANGE	CASING
DM06 DM10 DM15 DM30	P - Polypropylene FC - PVDF+CF	S - Standard (ceramic + PTFE Graphite)	D - EPDM V - Viton®	DM06 1=Ø 81 2=Ø 70 3=Ø 65 DM10 1=Ø 98 2=Ø 85 3=Ø 70 DM15 1=Ø 123 2=Ø 108 3=Ø 90 DM30 1=Ø 134 2=Ø 122 3=Ø 110	N - NPT B - BSP	E - MEC U* - NEMA	DM06 063 071 DM10 071 080 DM15 090 DM30 090 100 112

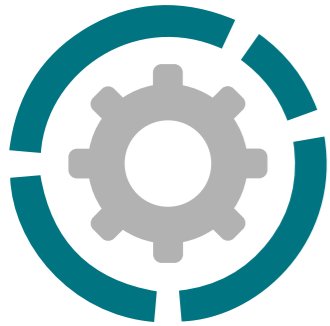
* Only the pump can be supplied, with American flange, for coupling with NEMA motor



Components	Materials
1 Shaft	Alumina ceramic 99.7%
2 Impeller thrust bearing	PTFE + 30% Graphite
3 Bushing	PTFE + 30% Graphite
4 O-Ring	Viton®/EPDM
5 Impeller	PP/PVDF+CF
6 Pump casing	PP/PVDF+CF
7 Head thrust bearing	Alumina ceramic 99.7%



Specifications and types

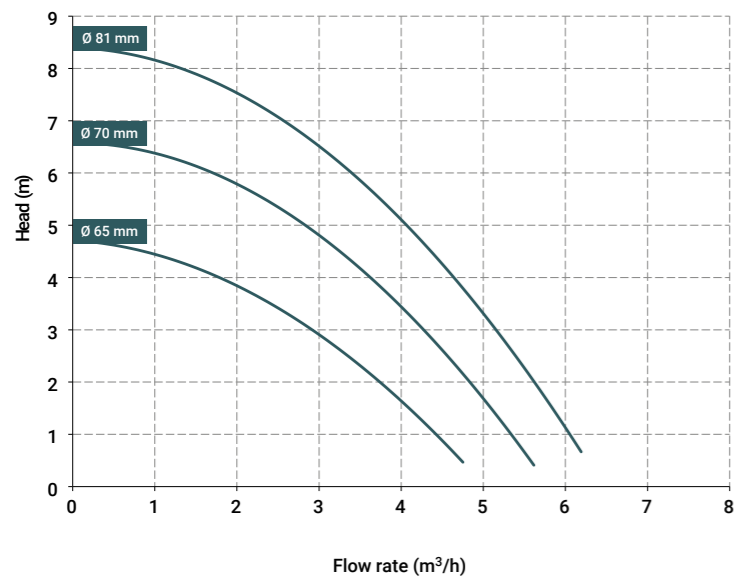


Suction fittings	G 1" f or DN 25 - NPT
Delivery fittings	G 3/4" m or DN 20 - NPT
Max flow rate	7 m ³ /h
Max head	8.5 m
Viscosity up to	150 cps

PP



PVDF



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

IMPELLER	Motor 0.25 Kw (0.35 HP) so PP*	Motor 0.37 Kw (0.5 HP)
Ø 81 mm (Standard)	up to 1.2 g/cm ³	up to 1.8 g/cm ³
Ø 70 mm	up to 1.5 g/cm ³	up to 2 g/cm ³
Ø 65 mm	up to 1.8 g/cm ³	up to 2 g/cm ³

Operating temperature:

PP	from +3°C to +65°C, 2 Kg
PVDF	from +3°C to +95°C, 2.25 Kg

Specifications and types

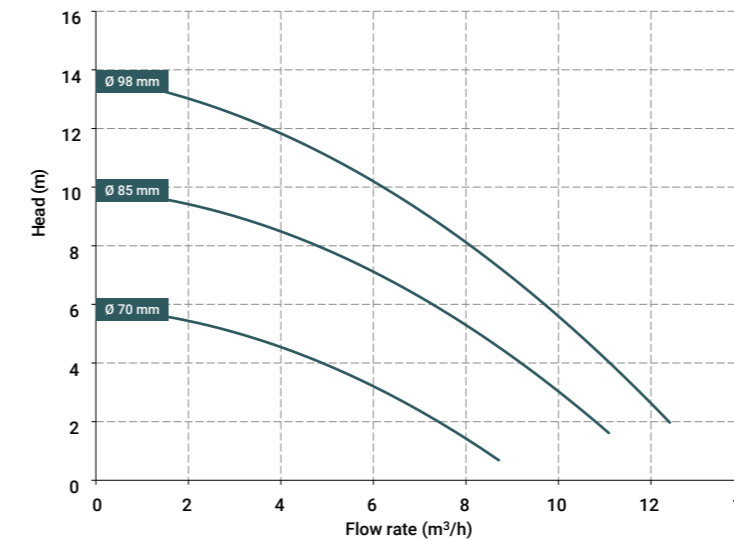


Suction fittings	G 1 1/2" f or DN 40 - NPT
Delivery fittings	G 1" m or DN 25 - NPT
Max flow rate	13 m ³ /h
Max head	14 m
Viscosity up to	150 cps

PP



PVDF



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

IMPELLER	Motor 0.55 Kw (3 HP)	Motor 0.75 Kw (4 HP)
Ø 98 mm (Standard)	up to 1.1 g/cm ³	up to 1.5 g/cm ³
Ø 85 mm	up to 1.6 g/cm ³	up to 2 g/cm ³
Ø 70 mm	up to 2 g/cm ³	up to 2 g/cm ³

Operating temperature and weights:

PP	from +3°C to +65°C, 2.2 Kg
PVDF	from +3°C to +95°C, 2.5 Kg

Standard electric motor:

Kw 0.25 HP 0.35

Casing B3+B5 RPM 2900
Three-phase 230/400 V
 50/60 HZ
 2 Poles IE1 Protection IP55
 Ambient temperature -30°C + 45°C

Kw 0.37 HP 0.5

Casing B3+B5 RPM 2900
Three-phase 230/400 V
 50/60 HZ
 2 Poles IE1 Protection IP55
 Ambient temperature -30°C + 45°C

Kw 0.25 HP 0.35

Casing B3+B5 RPM 2900
Single-phase
 Ambient temperature -30°C + 45°C

Kw 0.37 HP 0.5

Casing B3+B5 RPM 2900
Single-phase
 Ambient temperature -30°C + 45°C

Electric motors available on request:

SINGLE-PHASE
 ATEX
 NEMA 56C*
 *[only pump available, with American flange, for coupling with NEMA motor - the motor is not available in our standard]

Standard electric motor:

Kw 0.55 HP 0.75

Casing B3+B5 RPM 2900
Three-phase 230/400 V - 50/60 HZ
 2 Poles IE1 Protection IP55
 Ambient temperature -30°C + 45°C

Kw 0.75 HP 1

Casing B3+B5 RPM 2900
Three-phase 230/400 V - 50/60 HZ
 2 Poles IE3 Protection IP55
 Ambient temperature -30°C + 45°C

Kw 0.55 HP 0.75

Casing B3+B5 RPM 2900
Single-phase
 Ambient temperature -30°C + 45°C

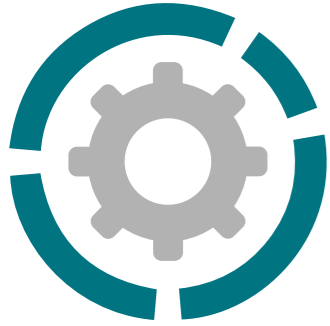
Kw 0.75 HP 1

Casing B3+B5 RPM 2900
Single-phase
 Ambient temperature -30°C + 45°C

Electric motors available on request:

SINGLE-PHASE
 ATEX
 NEMA 56C* / 143TC
 *[only pump available, with American flange, for coupling with NEMA motor - the motor is not available in our standard]

Specifications and types

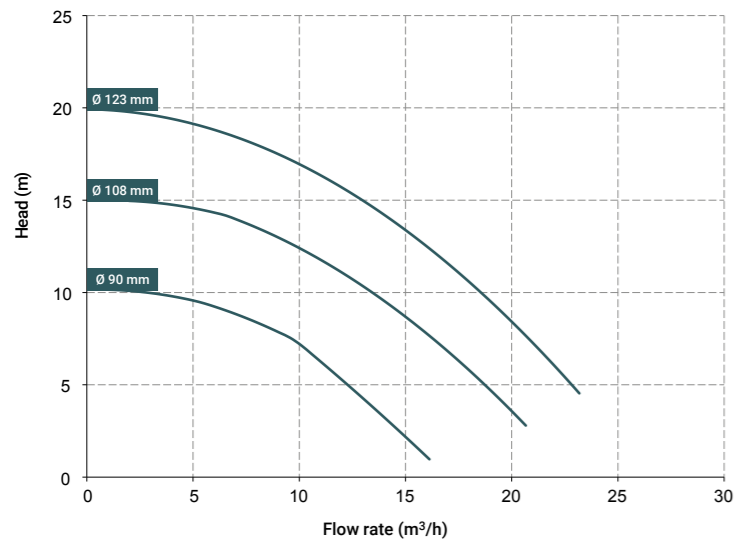


Suction fittings	G 1"1/2 f or DN 40 - NPT
Delivery fittings	G 1"1/4 m or DN 32 - NPT
Max flow rate	23.5 m ³ /h
Max head	20 m
Viscosity up to	150 cps

PP



PVDF



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

IMPELLER	Motor 1.5 Kw (2 HP)	Motor 2.2 Kw (3 HP)
Ø 123 mm (Standard)	up to 1.1 g/cm ³	up to 1.8 g/cm ³
Ø 108 mm	up to 1.6 g/cm ³	up to 2 g/cm ³
Ø 90 mm	up to 2 g/cm ³	up to 2 g/cm ³

Operating temperature and weights:

PP	from +3°C to +65°C, 4.5 Kg
PVDF	from +3°C to +95°C, 5.2 Kg

Standard electric motor:

Kw 1.5 HP 2

Casing B3+B5 RPM 2900
Three-phase 230/400 V - 50/60 HZ
 2 Poles IE3 Protection IP55
 Ambient temperature -30°C + 45°C

Kw 2.2 HP 3

Casing B3+B5 RPM 2900
Three-phase 230/400 V - 50/60 HZ
 2 Poles IE3 Protection IP55
 Ambient temperature -30°C + 45°C

Kw 1.5 HP 2

Casing B3+B5 RPM 2900
Single-phase
 Ambient temperature -30°C + 45°C

Kw 2.2 HP 3

Casing B3+B5 RPM 2900
Single-phase
 Ambient temperature -30°C + 45°C

Electric motors available on request:

SINGLE-PHASE
 ATEX
 NEMA 145TC
 *[only pump available, with American flange, for coupling with NEMA motor - the motor is not available in our standard]

Specifications and types

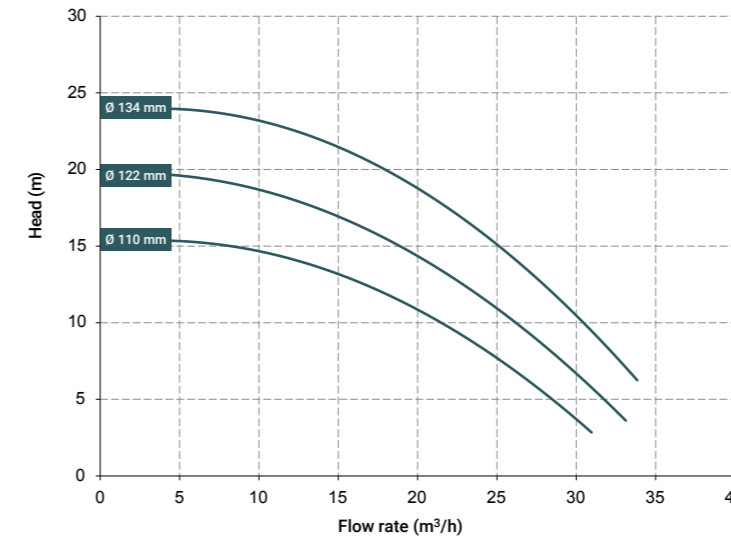


Suction fittings	G 2" f or DN 50 - NPT
Delivery fittings	G 1"1/2 m or DN 40 - NPT
Max flow rate	35 m ³ /h
Max head	8.5 m
Viscosity up to	150 cps

PP



PVDF



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

IMPELLER	Motor 2.2 Kw (3 HP)	Motor 3 Kw (4 HP)	Motor 4 Kw (5.5 HP)
Ø 134 mm (Standard)	up to 1.1 g/cm ³	up to 1.5 g/cm ³	up to 1.8 g/cm ³
Ø 122 mm	up to 1.4 g/cm ³	up to 2 g/cm ³	up to 2 g/cm ³
Ø 110 mm	up to 1.8 g/cm ³	up to 2 g/cm ³	up to 2 g/cm ³

Operating temperature and weights:

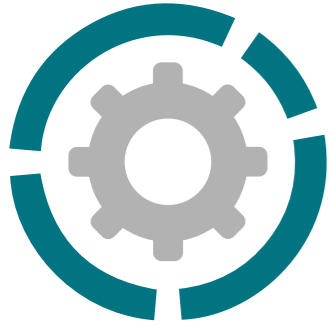
PP	from +3°C to +65°C, 6 Kg
PVDF	from +3°C to +95°C, 7 Kg

Electric motors available on request:

SINGLE-PHASE
 ATEX
 NEMA 145TC* / 184TC*

*[only pump available, with American flange, for coupling with NEMA motor - the motor is not available in our standard]

Specifications and types

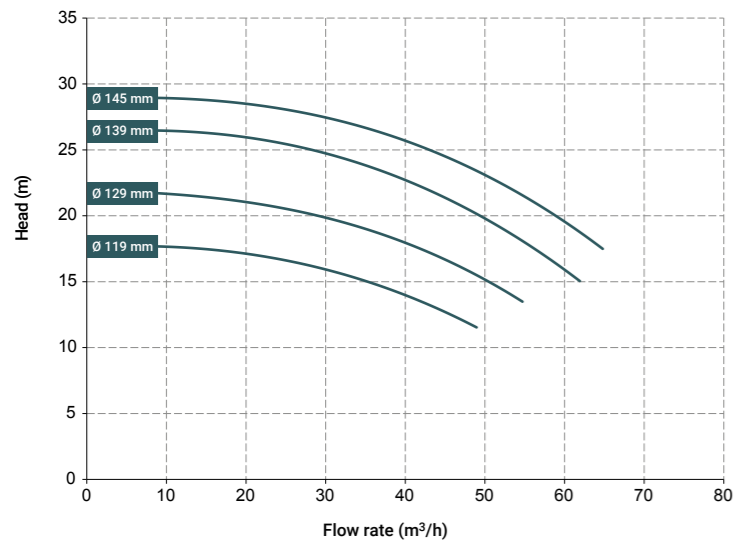


Suction fittings	G 3" f or DN 80 - NPT on request
Delivery fittings	G 2" 1/2 m or DN 65 - NPT on request
Max flow rate	65 m ³ /h
Max head	29 m
Viscosity up to	150 cps

PP



PVDF



Standard electric motor:

Kw 4 HP 5.5

Casing B3+B5 RPM 2900

Three-phase 230/400 V - 50/60 HZ

ATEX available on request

Kw 5.5 HP 7.5

Casing B3+B5 RPM 2900

Three-phase 400/690 V - 50/60 HZ

ATEX available on request

Kw 7.5 HP 10

Casing B3+B5 RPM 2900

Three-phase 400/690 V - 50/60 HZ

ATEX available on request



Operating temperature and weights:

PP	from + 3°C to + 65°C, 33 Kg
PVDF	from + 3°C to + 95°C, 34,5 Kg

MAIN APPLICATION SECTORS



IMPELLER

- Ø 145 mm (Standard)
- Ø 139 mm
- Ø 129 mm
- Ø 119 mm

The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

HORIZONTAL CENTRIFUGAL PUMPS

The horizontal centrifugal pumps with a resin casing, are driven by a direct drive electric motor (max 3000 RPM) to transfer and/or empty liquids quickly, with flow rates from 6 to 75 m3/hour.

Their unique open impeller design allows them to pump even very dirty fluids with an apparent viscosity up to 500 cps (at 20°C) and small-sized suspended solids.

They are available in two version with different internal mechanical seal, based on their use, TL (lip seal) and TS (bellows seal).

They are driven by the impeller that, integrated with the shaft and the electric motor (direct drive), is rotated creating, due to centrifugal effect, a suction on the central duct and a delivery on the peripheral duct.

- Product designed and constructed in Italy
- Constructed in polypropylene or PVDF
- Under head use
- Weld-free
- Usable with fluids containing suspended solids
- Extremely easy to maintain
- Suitable for continuous use
- Available with:
 - Mechanical bellows seal (new generation "Self-locking" system)
 - Aisi 304 spring - Seal ring in SILICON CARBIDE + CERAMIC / SILICON CARBIDE + SILICON CARBIDE
 - Lip seal: VITON® or EPDM

MB PUMPS CODES ENCODING

ex. MB080--P-TLVN
MB 80 PP, Viton® lip seal, three-phase motor.

MB80	P	TLV	N
PUMP MODEL	MATERIAL CASING	TYPE OF SEAL	MOTOR
MB 80 - MB 80 MB 100 - MB 100 MB 110 - MB 110 MB 120 - MB 120 MB 130 - MB 130 MB 140 - MB 140 MB 150 - MB 150 MB 155 - MB 155 MB 160 - MB 160 MB 180 - MB 180	P - Polypropylene FC - PVDF+CF	TLV - Viton® lip seal TLD - EPDM lip seal TSV - Viton® bellows seal TSD - EPDM bellows seal	N* - Three-phase motor M - Single-phase motor A - ATEX motor

* Three-phase asynchronous eurotension motor fitted as standard (2 poles) 50Hz

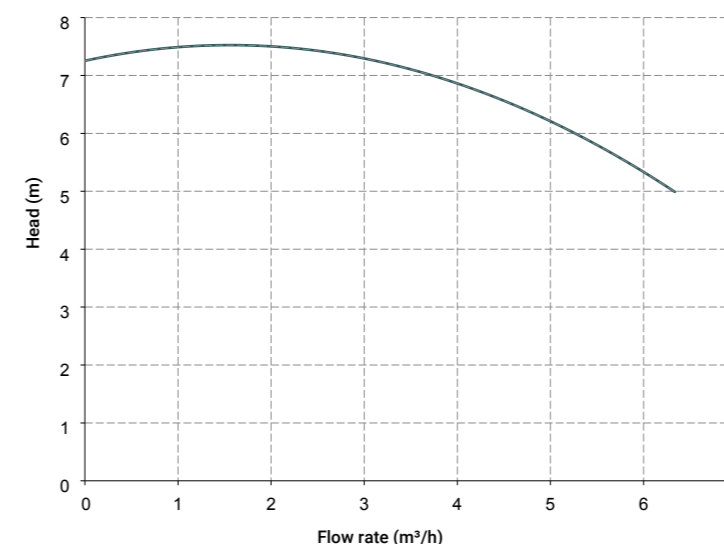


Specifications and types



Suction fittings	G 1 1/2 f or DN 40
Delivery fittings	G 1" m or DN 25
Max flow rate	6 m3/h
Max head	7.5 m
Viscosity up to	500 cps
Standard open impeller	Ø 85 mm H 9 mm *
Passing solids	Ø max 5 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	1.7 Kg* Max 3°C min. 65°C max
PVDF (with carbon additive)	2.2 Kg* Max 3°C min. 95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	0.37
HP	0.5
Box	B3 + B14
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE1 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

PP



PVDF



MAIN APPLICATION SECTORS



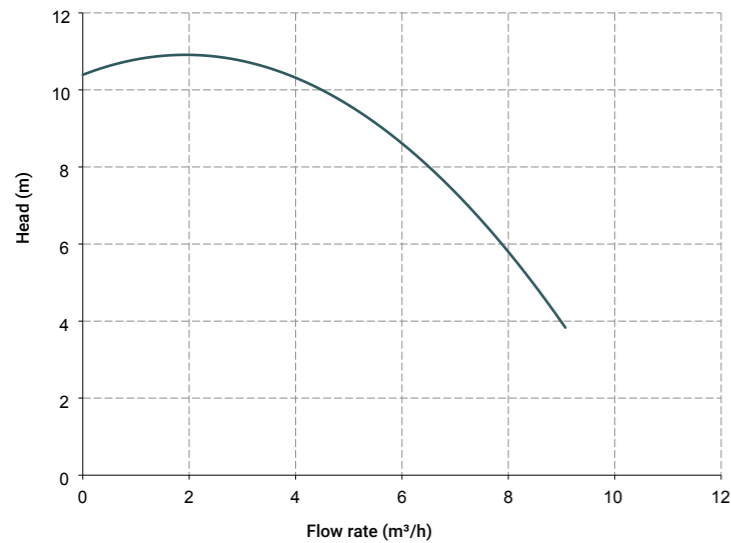
MB 100

Specifications and types



Suction fittings	G 1 1/2" f or DN 40
Delivery fittings	G 1" m or DN 25
Max flow rate	9 m ³ /h
Max head	10.5 m
Viscosity up to	500 cps
Standard open impeller	Ø 97 mm H 12 mm *
Passing solids	Ø max 7 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	1.7 Kg* Max 3°C min. 65°C max
PVDF (with carbon additive)	2.2 Kg* Max 3°C min. 95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	0.55
HP	0.75
Box	B3 + B14
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE1 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

PP



PVDF



MAIN APPLICATION SECTORS

AUTOMOTIVE

CHEMICAL INDUSTRY

WATER AND SLUDGE TREATMENT

GALVANIC AND ELECTRONIC INDUSTRY

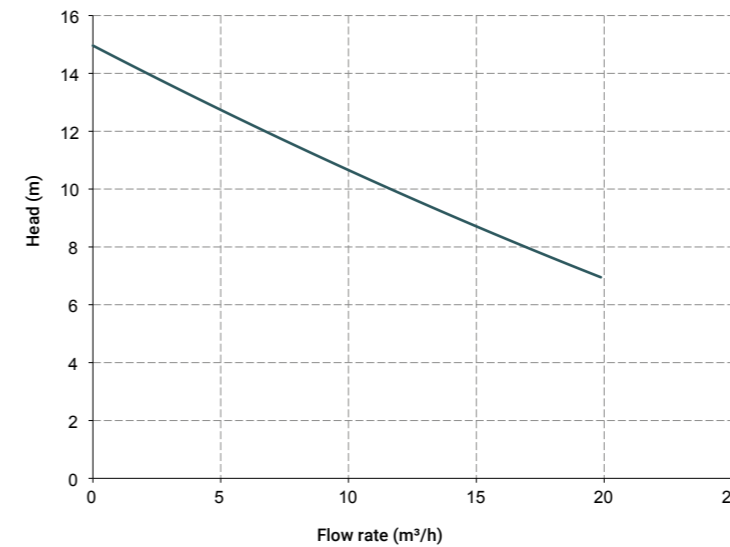
MB 110

Specifications and types



Suction fittings	G 2" m or DN 50
Delivery fittings	G 1 1/2" m or DN 40
Max flow rate	20 m ³ /h
Max head	15 m
Viscosity up to	500 cps
Standard open impeller	Ø 130 mm H 4 mm *
Passing solids	Ø max 2 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	3.4 Kg* Max 3°C min. 65°C max
PVDF (with carbon additive)	4.3 Kg* Max 3°C min. 95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	1.1
HP	1.5
Box	B3 + B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

MAIN APPLICATION SECTORS

AUTOMOTIVE

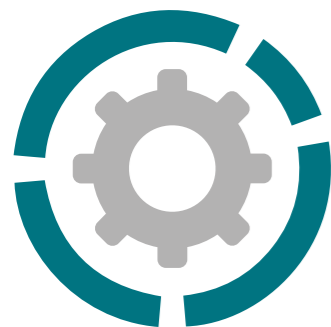
CHEMICAL INDUSTRY

WATER AND SLUDGE TREATMENT

GALVANIC AND ELECTRONIC INDUSTRY

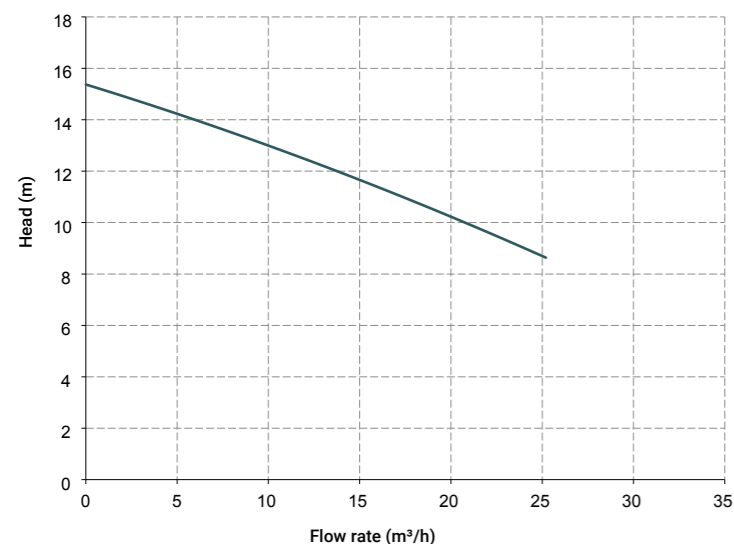
MB 120

Specifications and types



Suction fittings	G 2" m or DN 50
Delivery fittings	G 1 1/2 m or DN 40
Max flow rate	25 m ³ /h
Max head	15 m
Viscosity up to	500 cps
Standard open impeller	Ø 120 mm H 8 mm *
Passing solids	Ø max 6 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	3.8 Kg*
	Max 3°C min.
	65°C max
PVDF (with carbon additive)	4.9 Kg*
	Max 3°C min.
	95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	1.5
HP	2
Box	B3 + B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

PP



PVDF



MAIN APPLICATION SECTORS

AUTOMOTIVE

CHEMICAL INDUSTRY

WATER AND SLUDGE TREATMENT

GALVANIC AND ELECTRONIC INDUSTRY

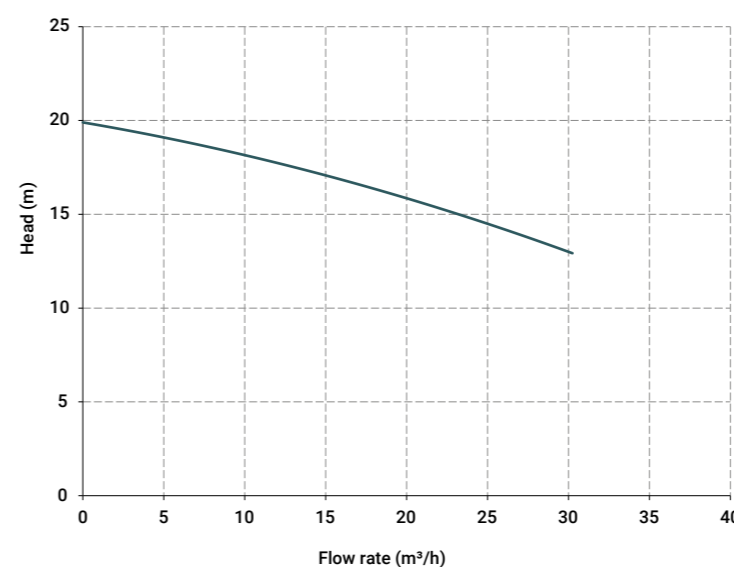
MB 130

Specifications and types



Suction fittings	G 2" m or DN 50
Delivery fittings	G 1 1/2 m or DN 40
Max flow rate	30 m ³ /h
Max head	20 m
Viscosity up to	500 cps
Standard open impeller	Ø 130 mm H 8 mm *
Passing solids	Ø max 6 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	3.8 Kg*
	Max 3°C min.
	65°C max
PVDF (with carbon additive)	4.9 Kg*
	Max 3°C min.
	95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	2.2
HP	3
Box	B3 + B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

PP



PVDF



MAIN APPLICATION SECTORS

CHEMICAL INDUSTRY

WATER AND SLUDGE TREATMENT

GALVANIC AND ELECTRONIC INDUSTRY

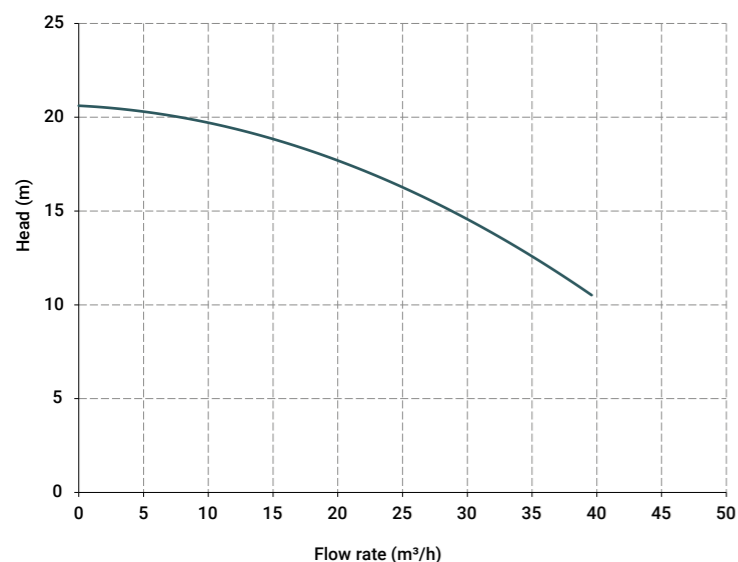
MB 140

Specifications and types



Suction fittings	G 2" m or DN 50
Delivery fittings	G 1 1/2 m or DN 40
Max flow rate	40 m ³ /h
Max head	21 m
Viscosity up to	500 cps
Standard open impeller	Ø 130 mm H 14 mm *
Passing solids	Ø max 12 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	4 Kg*
	Max 3°C min.
	65°C max
PVDF (with carbon additive)	5 Kg*
	Max 3°C min.
	95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	3
HP	4
Box	B3 + B14
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

PP



PVDF



MAIN APPLICATION SECTORS

AUTOMOTIVE

CHEMICAL INDUSTRY

WATER AND SLUDGE TREATMENT

GALVANIC AND ELECTRONIC INDUSTRY

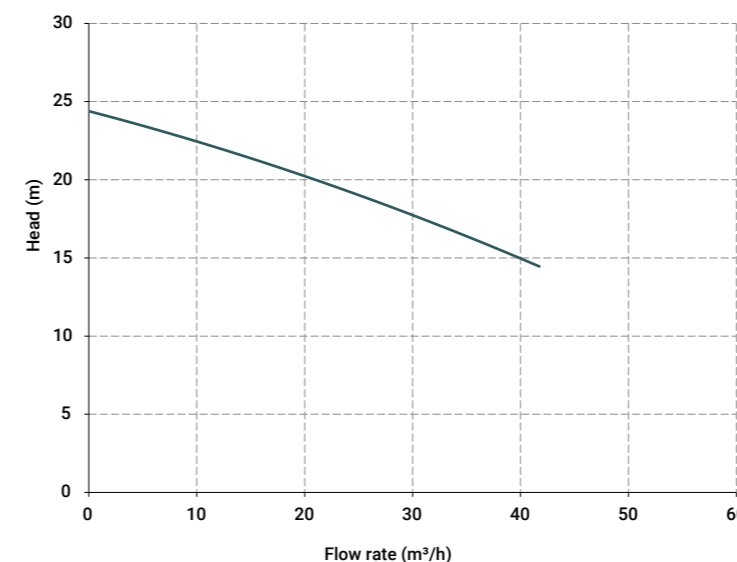
MB 150

Specifications and types



Suction fittings	G 2 1/2 f or DN 65
Delivery fittings	G 2" m or DN 50
Max flow rate	42 m ³ /h
Max head	24 m
Viscosity up to	500 cps
Standard open impeller	Ø 160 mm H 5.5 mm -10° *
Passing solids	Ø max 2 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	8.1 Kg*
	Max 3°C min.
	65°C max
PVDF (with carbon additive)	11 Kg*
	Max 3°C min.
	95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	4
HP	5.5
Box	B3 + B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
ATEX	on request

PP



PVDF



MAIN APPLICATION SECTORS

CHEMICAL INDUSTRY

WATER AND SLUDGE TREATMENT

GALVANIC AND ELECTRONIC INDUSTRY

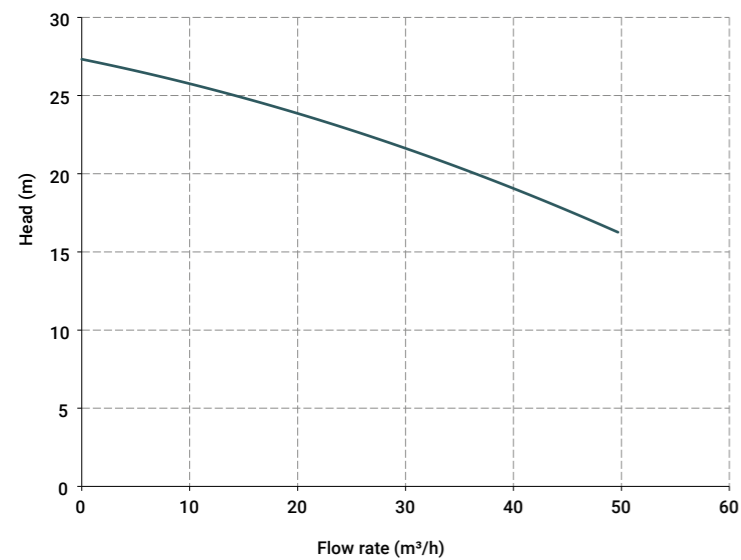
MB 155

Specifications and types



Suction fittings	G 2" 1/2 f or DN 65
Delivery fittings	G 2" m or DN 50
Max flow rate	50 m ³ /h
Max head	27 m
Viscosity up to	500 cps
Standard open impeller	Ø 162 mm H 4 mm -10° *
Passing solids	Ø max 3 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	9.5 Kg*
	Max 3°C min.
	65°C max
PVDF (with carbon additive)	12.4 Kg*
	Max 3°C min.
	95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	5.5
HP	7.5
Box	B3 + B5
RPM	2900
THREE-PHASE	400/690 V
	50/60 Hz
	2 poles
	IE3 efficiency class
	IP55 protection rating
	Ambient temperature -30°C + 45°C
	Aluminium/Cast iron
ATEX	on request

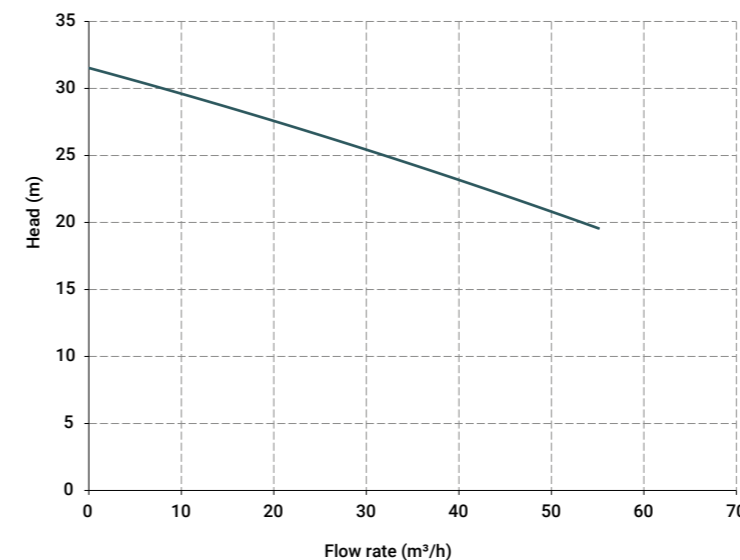
MB 160

Specifications and types



Suction fittings	G 2" 1/2 f or DN 65
Delivery fittings	G 2" m or DN 50
Max flow rate	55 m ³ /h
Max head	32 m
Viscosity up to	500 cps
Standard open impeller	Ø 162 mm H 11 mm -10° *
Passing solids	Ø max 9 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	9.8 Kg*
	Max 3°C min.
	65°C max
PVDF (with carbon additive)	12.2 Kg*
	Max 3°C min.
	95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	7.5
HP	10
Box	B3 + B5
RPM	2900
THREE-PHASE	400/690 V
	50/60 Hz
	2 poles
	IE3 efficiency class
	IP55 protection rating
	Ambient temperature -30°C + 45°C
	Aluminium/Cast iron
ATEX	on request



PP



PVDF

MAIN APPLICATION SECTORS



CHEMICAL INDUSTRY



WATER AND SLUDGE TREATMENT



GALVANIC AND ELECTRONIC INDUSTRY



PP



PVDF

MAIN APPLICATION SECTORS



CHEMICAL INDUSTRY

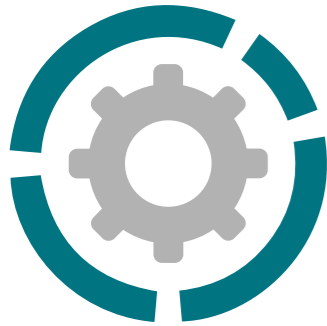


WATER AND SLUDGE TREATMENT



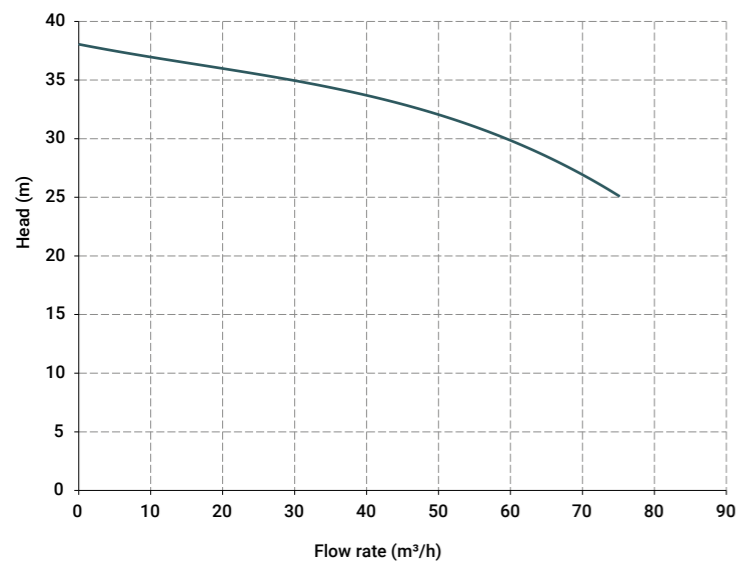
GALVANIC AND ELECTRONIC INDUSTRY

Specifications and types



Suction fittings	G 2" 1/2 f or DN 65
Delivery fittings	G 2" m or DN 50
Max flow rate	75 m ³ /h
Max head	38 m
Viscosity up to	500 cps
Standard open impeller	Ø 176mm H 15 mm -10 ° *
Passing solids	Ø max 9 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Pump casing construction material, operating temperature and net weight

Polypropylene (with glass additive)	9.9 Kg*
	Max 3°C min.
	65°C max
PVDF (with carbon additive)	12.2 Kg*
	Max 3°C min.
	95°C max

* The weights refer to the pump without the motor

Standard electric motor:

Kw	11
HP	15
Box	B3 + B5
RPM	2900
THREE-PHASE 400/690 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
ATEX	on request

PP



PVDF



MAIN APPLICATION SECTORS



CHEMICAL INDUSTRY

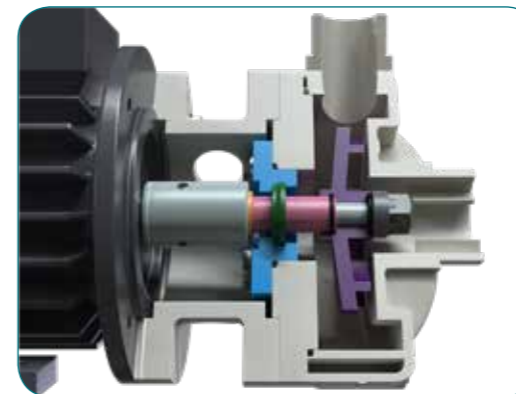


WATER AND SLUDGE TREATMENT

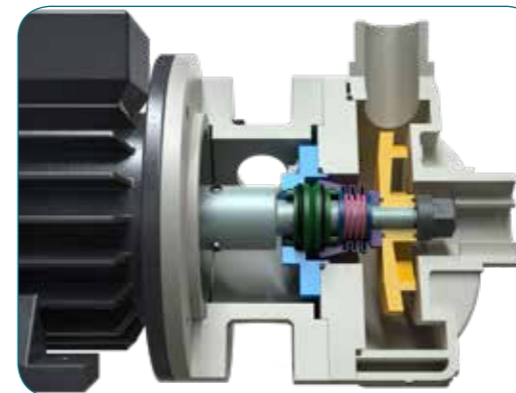


GALVANIC AND ELECTRONIC INDUSTRY

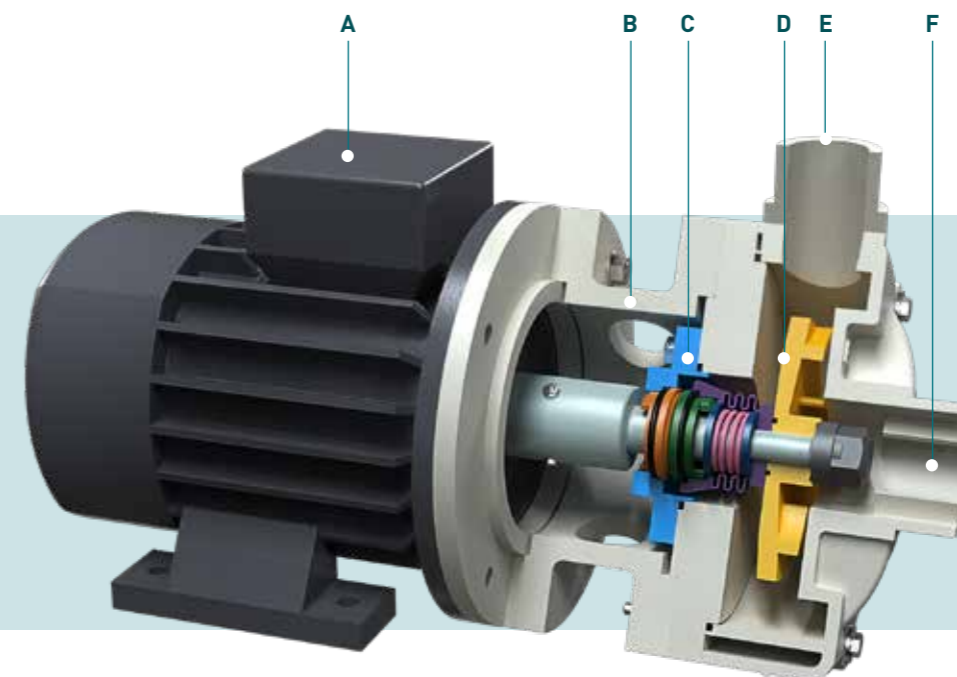
TL = lip seal



TS = bellows seal



Pump	Motor power
MB 80	0.37 Kw - 0.5 HP
MB 100	0.55 Kw - 0.75 HP
MB 110	1.1 Kw - 1.5 HP
MB 120	1.5 Kw - 2 HP
MB 130	2.2 Kw - 3 HP
MB 140	3 Kw - 4 HP
MB 150	4 Kw - 5.5 HP
MB 155	5.5 Kw - 7.5 HP
MB 160	7.5 Kw - 10 HP
MB 180	11 Kw - 15 HP



A = electric motor
 B = inspection lantern
 C = mechanical seal
 D = impeller
 E = delivery duct
 F = suction duct

VERTICAL CENTRIFUGAL PUMPS

The IM series vertical centrifugal pumps with a resin casing, are high performance pumps for fixed installations with the pump immersed directly in the tank. They are driven by a direct drive electric motor (max 3000 RPM) to quickly empty the fluid, with flow rates from 6 to 170 m³/hour and head up to 40 m.

The unique construction shape of this type of pump, as well as not using internal mechanical seals (subject to considerable wear), guarantees the collection in the tank of any accidental spillages of fluid. The open impeller design allows them to pump (in continuous flow) even very dirty

fluids with an apparent viscosity up to 500 cps (at 20°C) and small-sized suspended solids. The vast range of construction materials available for the pump allows us to select the best chemical compatibility with the fluid and/or the environment, without neglecting the correct temperature range.

They are driven by the impeller that, integrated with the shaft and the electric motor (direct drive), is rotated at a set speed creating, due to centrifugal effect, a suction on the central duct and a delivery on the peripheral duct.

- Product designed and constructed in Italy
- Constructed in polypropylene or PVDF
- Normalised electric motor
- Support lantern and connection between pump and motor with a flexible coupling
- Usable with fluids containing suspended solids
- Suitable for continuous use



IM PUMPS CODES ENCODING

ex. IM140P-V-0800-N
IM140 PP, O-Ring Viton®, altezza colonna 800 mm, motore trifase

IM140	P	V	0800	N
PUMP MODEL	PUMP MATERIAL	O-RING	COLUMN HEIGHT	MOTOR
IM 80 - IM 80 IM 90 - IM 90 IM 95 - IM 95 IM 110 - IM 110 IM 120 - IM 120 IM 130 - IM 130 IM 140 - IM 140 IM 150 - IM 150 IM 155 - IM 155 IM 160 - IM 160 IM 180 - IM 180 IM 200 - IM 200	P - Polypropylene FC - PVDF+CF	D - EPDM V - Viton®	0250 - 250 mm** 0500 - 500 mm 0800 - 800 mm 1000 - 1000 mm 1250 - 1250 mm	N* - Three-phase motor M - Single-phase motor A - ATEX motor

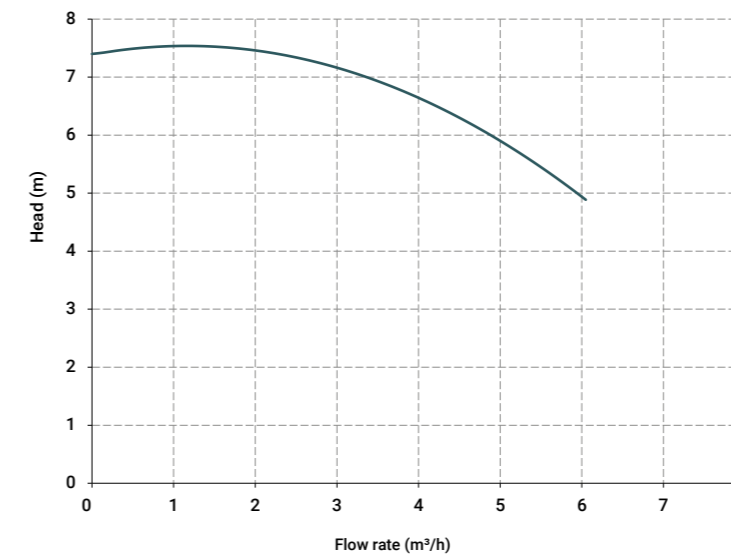
* Three-phase asynchronous eurotension motor fitted as standard (2 poles) 50Hz
** Available only for IM 80/90 pumps

Specifications and types



Suction fittings	G 1 1/2 f or DN 40
Delivery fittings	G 1" m or DN 25
Max flow rate	6 m ³ /h
Max head	7.5 m
Viscosity up to	500 cps
Standard open impeller	Ø 85 mm H 9 mm *
Passing solids	Ø max 7 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Standard electric motor:

Kw	0.37
HP	0.5
Box	B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE1 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

Column length PP* weight PVDF* weight

250	6.5 Kg	7 Kg
500	7.5 Kg	8 Kg
800	10.5 Kg	11 Kg
1000**		

* The weights refer to the pump without the motor
** Special version

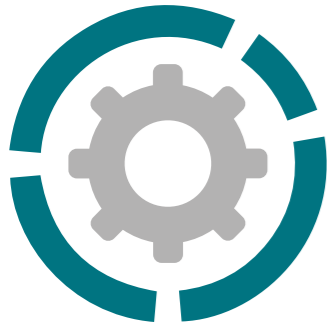
Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

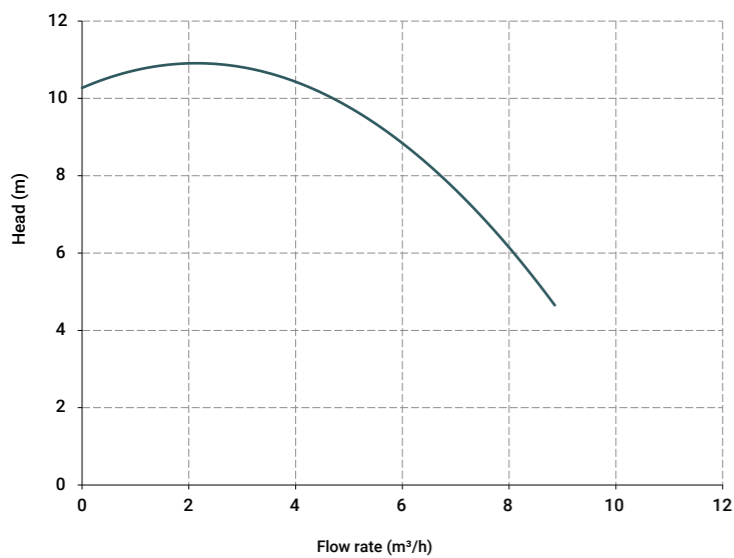


Specifications and types



Suction fittings	G 1 1/2 f or DN 40 on request
Delivery fittings	G 1" m or DN 25 on request
Max flow rate	9 m3/h
Max head	10.5 m
Viscosity up to	500 cps
Standard open impeller	Ø 97 mm H 12 mm *
Passing solids	Ø max 10 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Standard electric motor:

Kw	0.55
HP	0.75
Box	B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

Column length	PP* weight	PVDF* weight
250	6.5 Kg	7 Kg
500	7.5 Kg	8 Kg
800	10.5 Kg	11 Kg
1000**		

* The weights refer to the pump without the motor
** Special version

Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

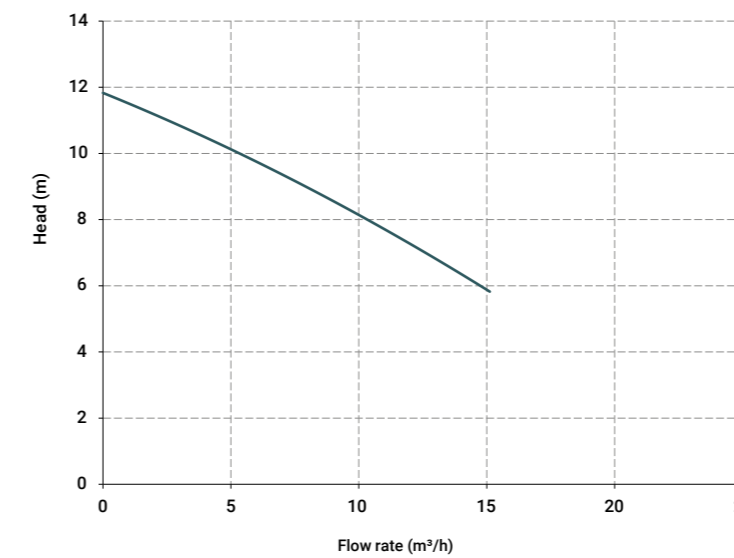


Specifications and types



Suction fittings	G 2" m or DN 50 on request
Delivery fittings	G 1 1/2 m or DN 40 on request
Max flow rate	13 m3/h
Max head	12 m
Viscosity up to	500 cps
Standard open impeller	Ø 100 mm H 7 mm *
Passing solids	Ø max 6 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Standard electric motor:

Kw	0.75
HP	1
Box	B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

Column length	PP* weight	PVDF* weight
500	15 Kg	16 Kg
800	19 Kg	20 Kg
1000	22 Kg	23 Kg
1250	24 Kg	25 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

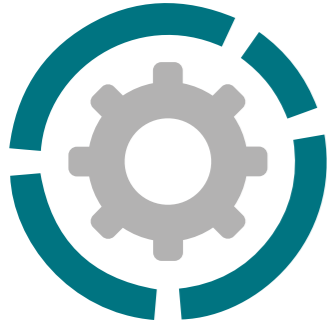
Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

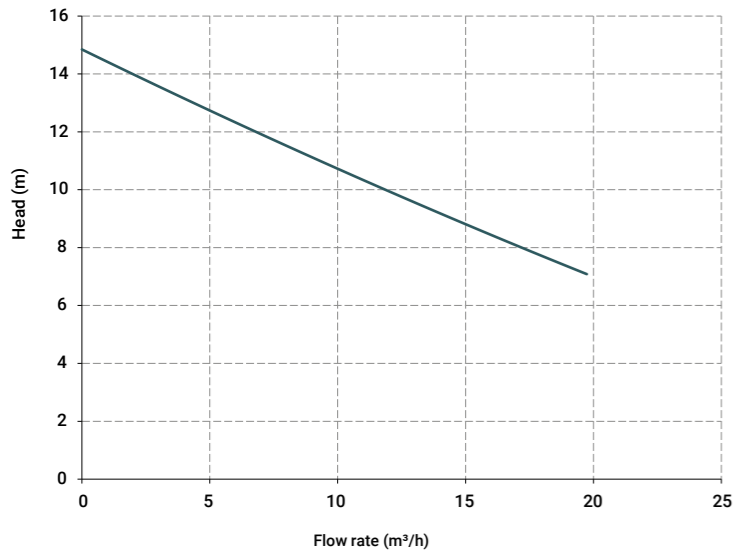


Specifications and types



Suction fittings	G 2" m or DN 50 on request
Delivery fittings	G 1 1/2 m or DN 40 on request
Max flow rate	20 m ³ /h
Max head	15 m
Viscosity up to	500 cps
Standard open impeller	Ø 120 mm H 8 mm *
Passing solids	Ø max 6 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

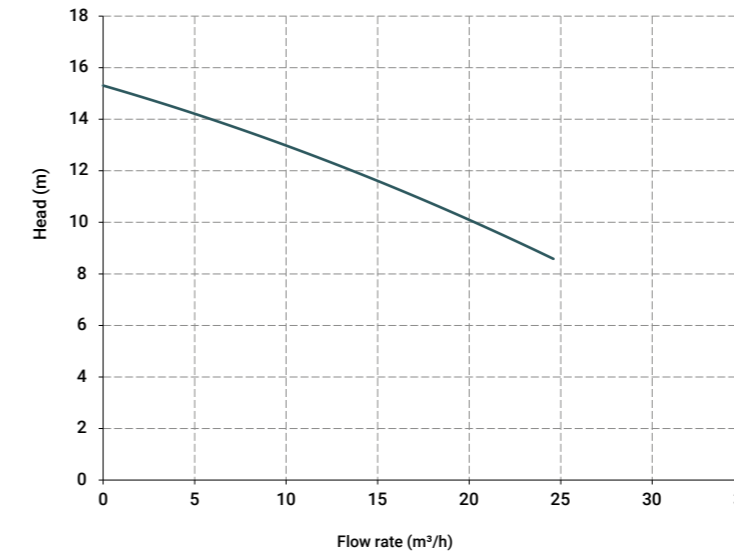


Specifications and types



Suction fittings	G 2" m or DN 50 on request
Delivery fittings	G 1 1/2 m or DN 40 on request
Max flow rate	25 m ³ /h
Max head	15.5 m
Viscosity up to	500 cps
Standard open impeller	Ø 125 mm H 8 mm *
Passing solids	Ø max 6 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).



Standard electric motor:

Kw	1.1
HP	1.5
Box	B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

Column length

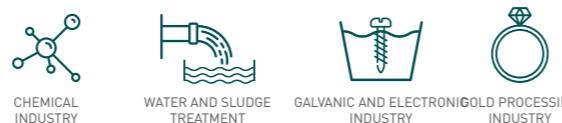
Column length	PP* weight	PVDF* weight
500	15 Kg	16 Kg
800	19 Kg	20 Kg
1000	22 Kg	23 Kg
1250	24 Kg	25 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS



Standard electric motor:

Kw	1.5
HP	2
Box	B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

Column length

Column length	PP* weight	PVDF* weight
500	15 Kg	16 Kg
800	19 Kg	20 Kg
1000	22 Kg	23 Kg
1250	24 Kg	25 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

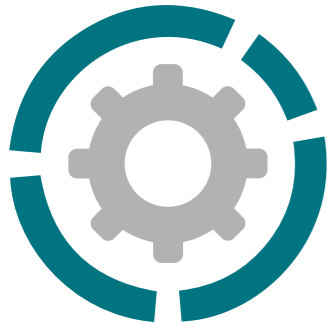
Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

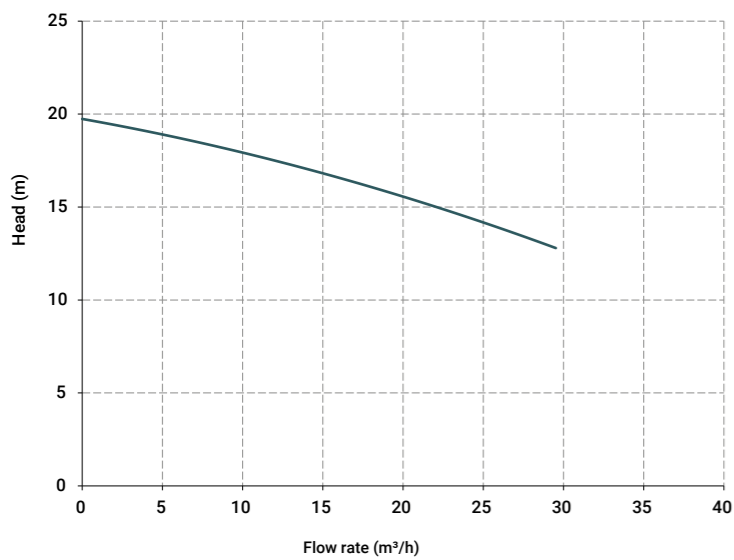


Specifications and types



Suction fittings	G 2" m or DN 50 on request
Delivery fittings	G 1 1/2 m or DN 40 on request
Max flow rate	30 m ³ /h
Max head	20 m
Viscosity up to	500 cps
Standard open impeller	Ø 130 mm H 8 mm *
Passing solids	Ø max 6 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

Standard electric motor:

Kw	2.2
HP	3
Box	B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

Column length

Column length	PP* weight	PVDF* weight
500	15 Kg	16 Kg
800	19 Kg	20 Kg
1000	22 Kg	23 Kg
1250	24 Kg	25 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

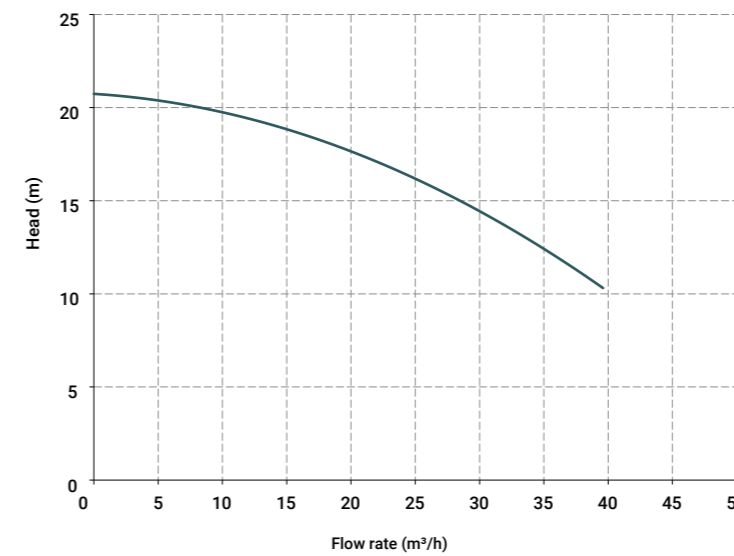


Specifications and types



Suction fittings	G 2" m or DN 50 on request
Delivery fittings	G 1 1/2 m or DN 40 on request
Max flow rate	40 m ³ /h
Max head	21 m
Viscosity up to	500 cps
Standard open impeller	Ø 130 mm H 14 mm *
Passing solids	Ø max 12 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

Standard electric motor:

Kw	3
HP	4
Box	B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
SINGLE-PHASE	on request
ATEX	on request

Column length

Column length	PP* weight	PVDF* weight
500	15 Kg	16 Kg
800	19 Kg	20 Kg
1000	22 Kg	23 Kg
1250	24 Kg	25 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

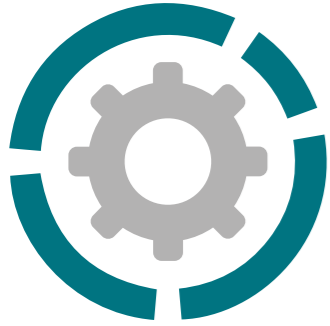
Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

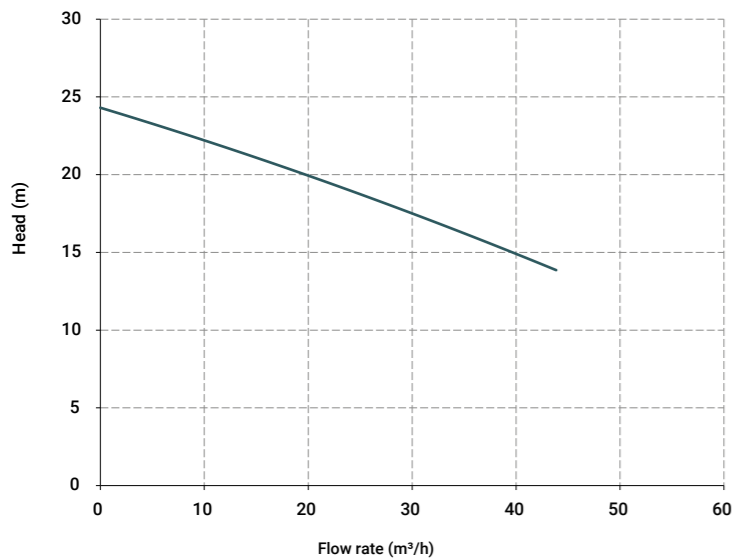


Specifications and types



Suction fittings	G 2" 1/2 f or DN 65 on request
Delivery fittings	G 2" m or DN 50 on request
Max flow rate	42 m ³ /h
Max head	24 m
Viscosity up to	500 cps
Standard open impeller	Ø 160 mm H 4 mm -10° *
Passing solids	Ø max 2 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

Standard electric motor:

Kw	4
HP	5.5
Box	B5
RPM	2900
THREE-PHASE 230/400 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C	
+ 45°C	
Aluminium/Cast iron	on request
ATEX	

Column length

Column length	PP* weight	PVDF* weight
500	28 Kg	30 Kg
800	31 Kg	33 Kg
1000	33 Kg	35 Kg
1250	36 Kg	38 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

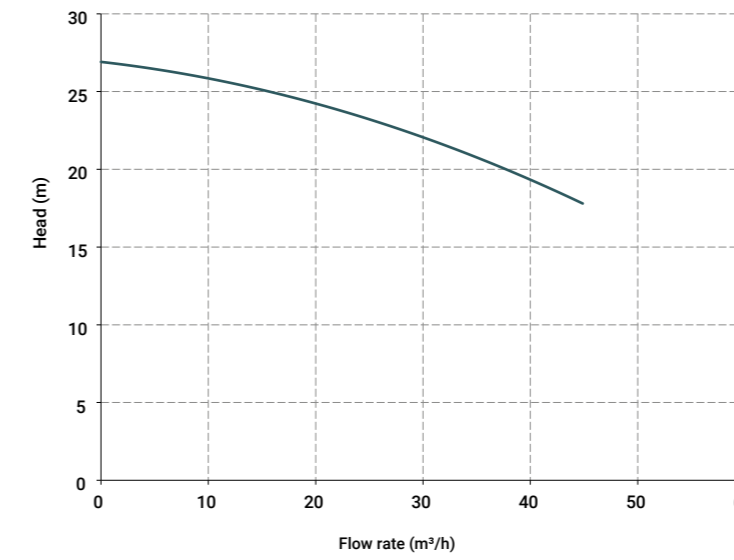


Specifications and types



Suction fittings	G 2" 1/2 f or DN 65 on request
Delivery fittings	G 2" m or DN 50 on request
Max flow rate	42 m ³ /h
Max head	27 m
Viscosity up to	500 cps
Standard open impeller	Ø 162 mm H 4 mm -10° *
Passing solids	Ø max 2 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

Standard electric motor:

Kw	5.5
HP	7.5
Box	B5
RPM	2900
THREE-PHASE 400/690 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C	
+ 45°C	
Aluminium/Cast iron	on request
ATEX	

Column length

Column length	PP* weight	PVDF* weight
500	28 Kg	30 Kg
800	31 Kg	33 Kg
1000	33 Kg	35 Kg
1250	36 Kg	38 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

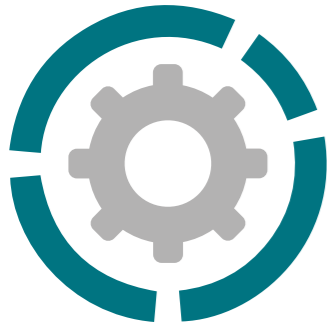
Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

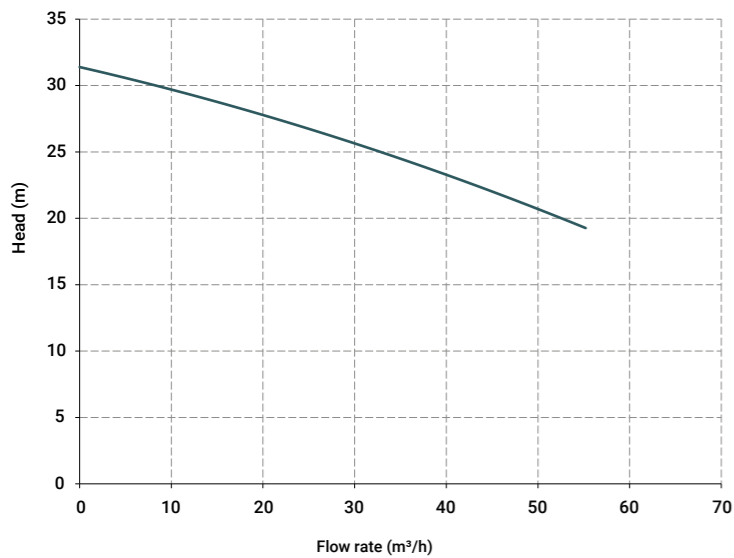


Specifications and types



Suction fittings	G 2" 1/2 f or DN 65 on request
Delivery fittings	G 2" m or DN 50 on request
Max flow rate	55 m ³ /h
Max head	32 m
Viscosity up to	500 cps
Standard open impeller	Ø 162 mm H 11 mm -10° *
Passing solids	Ø max 9 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

Standard electric motor:

Kw	7.5
HP	10
Box	B5
RPM	2900
THREE-PHASE 400/690 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
ATEX	on request

Column length

Column length	PP* weight	PVDF* weight
500	31 Kg	33 Kg
800	34 Kg	36 Kg
1000	36 Kg	38 Kg
1250	39 Kg	41 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

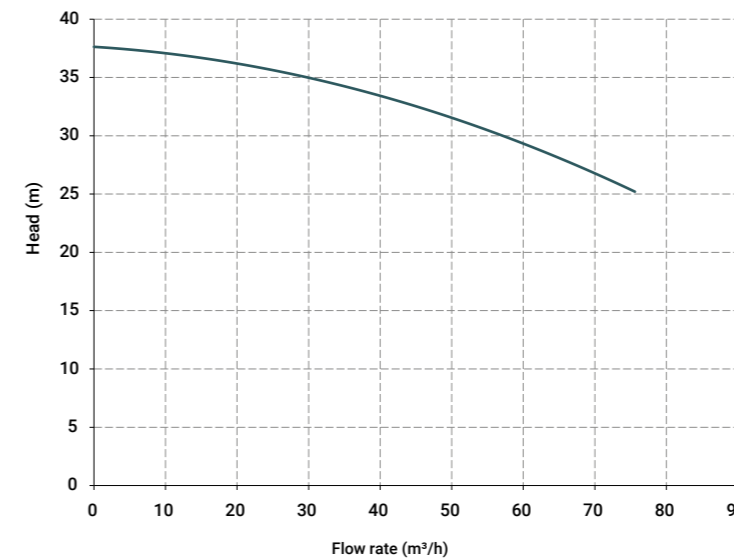


Specifications and types



Suction fittings	G 2" 1/2 f or DN 65 on request
Delivery fittings	G 2" m or DN 50 on request
Max flow rate	75 m ³ /h
Max head	38 m
Viscosity up to	500 cps
Standard open impeller	Ø 176 mm H 13 mm -10° *
Passing solids	Ø max 11 mm

* Special versions are available on request for the fluid pumped



The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

Standard electric motor:

Kw	11
HP	15
Box	B5
RPM	2900
THREE-PHASE 400/690 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	
ATEX	on request

Column length

Column length	PP* weight	PVDF* weight
500	31 Kg	33 Kg
800	34 Kg	36 Kg
1000	36 Kg	38 Kg
1250	39 Kg	41 Kg
1400**		

* The weights refer to the pump without the motor
** Special version

Operating temperature:

PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

MAIN APPLICATION SECTORS

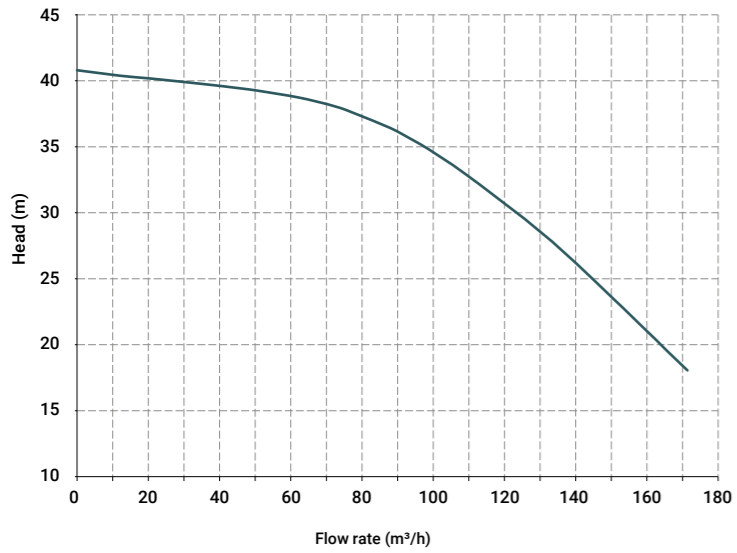


Specifications and types



Suction fittings	G 3" 1/2 f or DN 90 on request
Delivery fittings	G 3" m or DN 80 on request
Max flow rate	170 m ³ /h
Max head	41 m
Viscosity up to	500 cps
Standard open impeller	Ø 175 mm H 18.4 mm *
Passing solids	Ø max 15 mm
Available column length (mm)	800 / 1000 / 1250

* Special versions are available on request for the fluid pumped

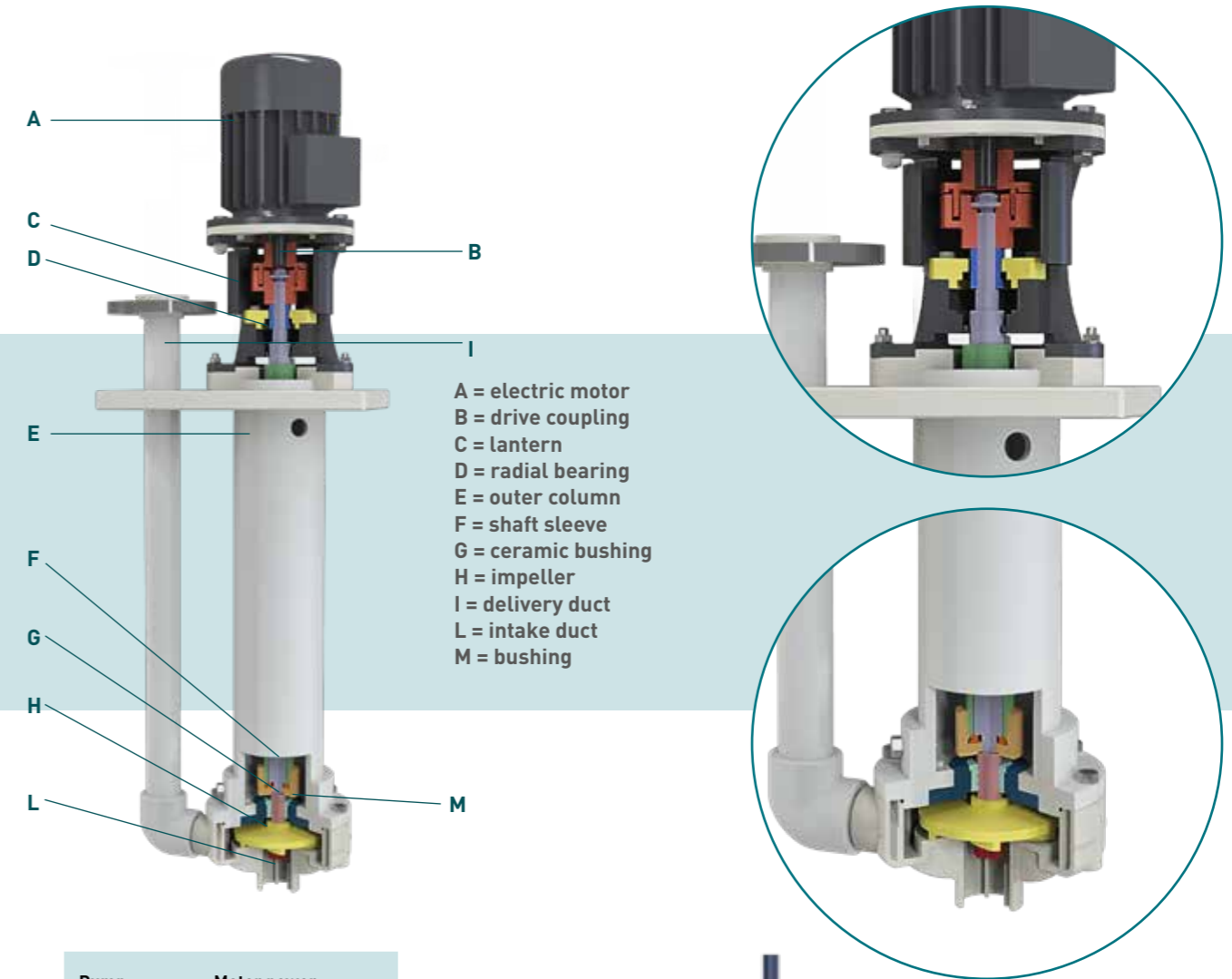
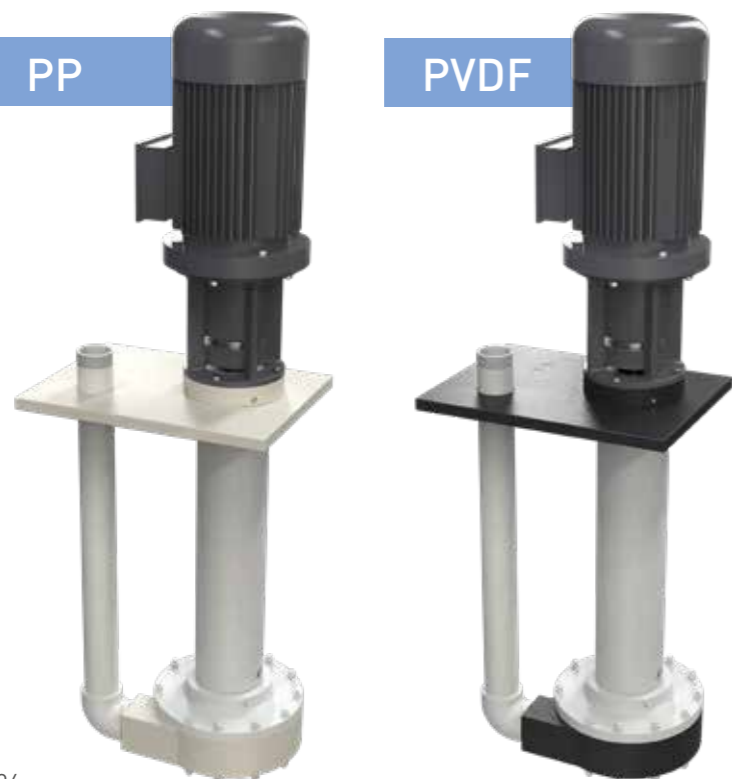


The curves and the performances refer to pumps with immersed suction and open delivery outlet, with water at 20°C and vary based on the composition materials and 50 Hz two-pole motor (2900 rpm).

Standard electric motor:	
Kw	18.5
HP	25
Box	B5
RPM	2900
THREE-PHASE 400/690 V	
50/60 Hz	
2 poles	
IE3 efficiency class	
IP55 protection rating	
Ambient temperature -30°C + 45°C	
Aluminium/Cast iron	on request
ATEX	

Operating temperature:	
PP	from +3°C to +65°C
PVDF	from +3°C to +95°C

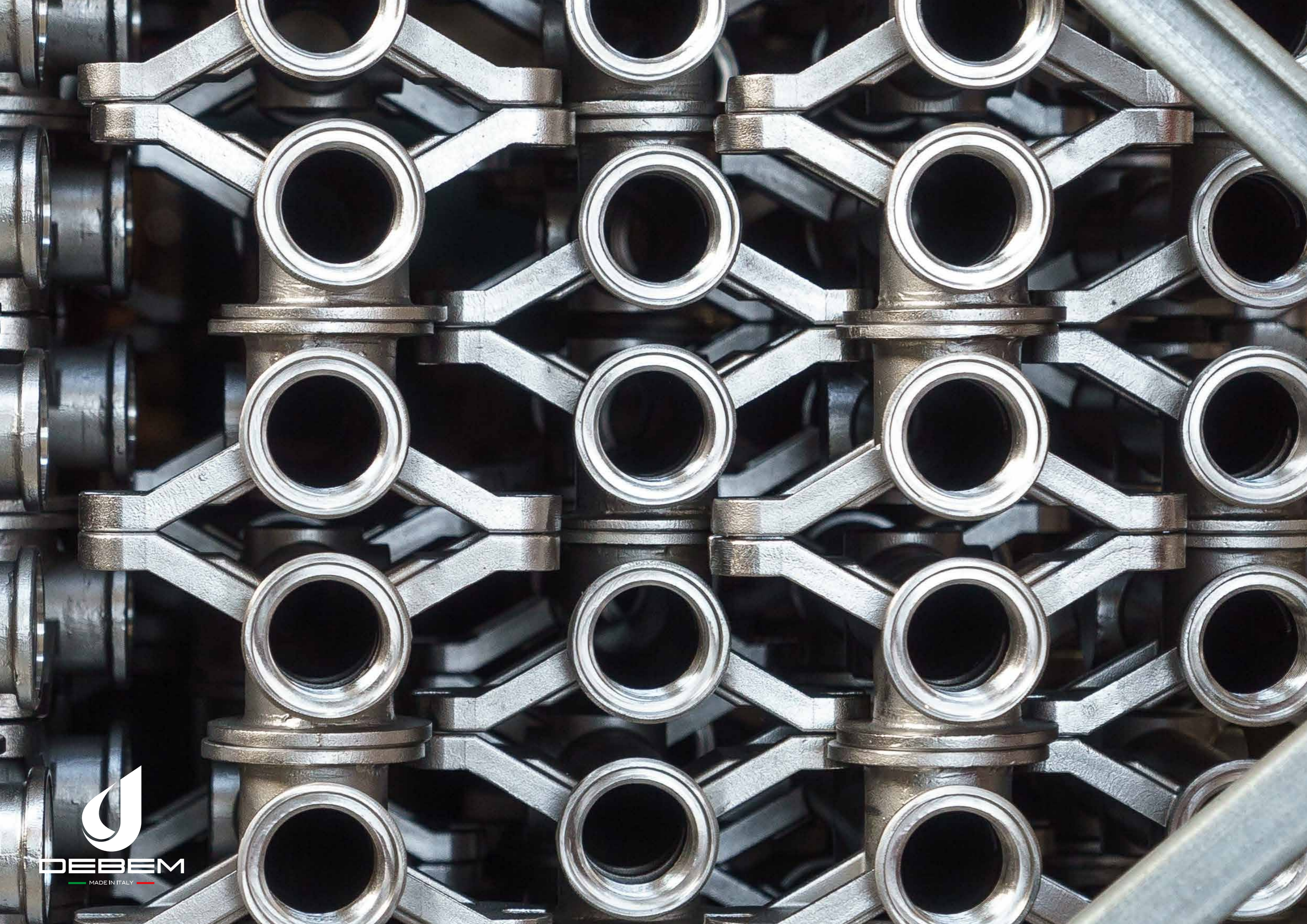
MAIN APPLICATION SECTORS



- A = electric motor
- B = drive coupling
- C = lantern
- D = radial bearing
- E = outer column
- F = shaft sleeve
- G = ceramic bushing
- H = impeller
- I = delivery duct
- L = intake duct
- M = bushing

Pump	Motor power
IM 80	0.37 Kw - 0.5 HP
IM 90	0.55 Kw - 0.75 HP
IM 95	0.75 Kw - 1 HP
IM 110	1.1 Kw - 1.5 HP
IM 120	1.5 Kw - 2 HP
IM 130	2.2 Kw - 3 HP
IM 140	3 Kw - 4 HP
IM 150	4 Kw - 5.5 HP
IM 155	5.5 Kw - 7.5 HP
IM 160	7.5 Kw - 10 HP
IM 180	11 Kw - 15 HP
IM 200	18.5 Kw - 25 HP





DRUM TRANSFER PUMPS

The drum transfer pumps consist of a dip tube, at the end of which the open impeller is fitted. It is secured to the drive shaft, connected to the pump with a ring nut. The operation consists of an impeller integrated with the shaft, connected to the electric or pneumatic motor with a coupling joint.

The transfer pumps must be used exclusively vertically

and with the pump immersed in the fluid. Dry-running or the presence of air bubbles could damage the shaft guide internal bushing. These portable drum transfer pumps are ideally suited for pumping corrosive fluids and work by being immersed in the liquid. Their construction shape has been designed to collect any product spillages in the drum.

- Product designed and constructed in Italy
- Portable
- Suitable for corrosive fluids
- Possibility of adjusting the flow rate (in the version with pneumatic motor)
- No mechanical seals
- Easy to disassemble
- Viscosity up to 900 cps
- Max flow rate 90 l/minute

TR PUMPS CODES ENCODING

ex. TRPH1200
TR PP, Hastelloy shaft, dip tube length 1200 mm

TR	P	H	1200
PUMP MODEL	MATERIAL PUMP	MATERIAL SHAFT	LENGTH HOSE
TR - Drum transfer	P - Polypropylene F - PVDF A - AISI 316	H - Hastelloy A - AISI 316	0900 - 900 mm 1200 - 1200 mm



Pneumatic motor

TRP - Polypropylene casing

Dip tube	Ø 42 mm
Hose holder	Ø 25 mm
Max Operating temp.	65° C
Total weight in Kg	1.4 for length of 900 mm / 1.7 for length of 1200 mm
Material Dip tube	Polypropylene
Material Shaft	HASTELLOY or AISI 316
Material Impeller	ECTFE
Material Suction outlet	Polypropylene
Material Seal gasket in contact with the fluid - MIM	Viton®
Length mm	900 or 1200
Max Operating temp.	from 3°C to 65°C



Electric motor



Pneumatic motor

TRP - PVDF casing

Dip tube	Ø 40 mm
Hose holder	Ø 25 mm
Max Operating temp.	95° C
Total weight in Kg	1.6 for length of 900 mm / 1.9 for length of 1200 mm
Material Dip tube	PVDF
Material Shaft	HASTELLOY
Material Impeller	ECTFE
Material Suction outlet	ECTFE
Material Seal gasket in contact with the fluid - MIM	Viton®
Length mm	900 or 1200
Max Operating temp.	from 3°C to 95°C



Electric motor



Pneumatic motor

TRA - AISI 316 casing

Dip tube	Ø 42.5 mm
Hose holder	Ø 25 mm
Max Operating temp.	95° C
Total weight in Kg	4.3 for length of 900 mm / 5.3 for length of 1200 mm
Material Dip tube	AISI 316 steel
Material Shaft	AISI 316 steel
Material Impeller	ECTFE
Material Suction outlet	ECTFE
Material Seal gasket in contact with the fluid - MIM	Viton®
Length mm	900 or 1200
Max Operating temp.	from 3°C to 95°C



Electric motor

TR - Drum transfer pumps

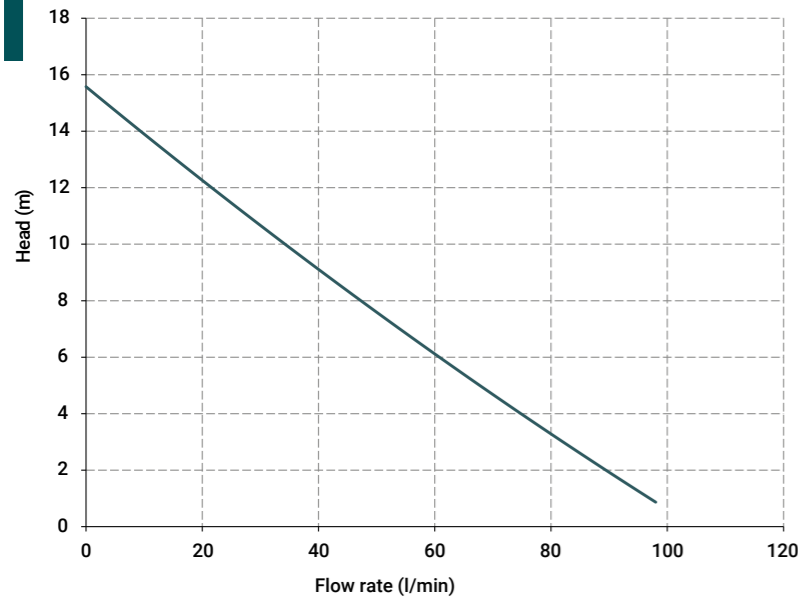
TR-EL SERIES - Electric motor

Drum transfer pumps with 800 Watt electric motor and open impeller that allows the continuous pumping of clean corrosive fluids with apparent viscosity up to 900 cps. The pump is fitted with a safety switch to prevent any accidental restarts after a drop in the power supply.

Electric motors technical specifications

Power	800 Watt
Voltage	230 V sin-
gle-phase	
IP54	protection rating
Class	F
Flow rate	90 l/minute
Viscosity	900 cps
Density	1.6 g/cm ³
Weight in Kg	3.8
ATEX motor	on request

(NB: The electric cable is supplied without socket)
Contact the sales office for information on the ATEX motor



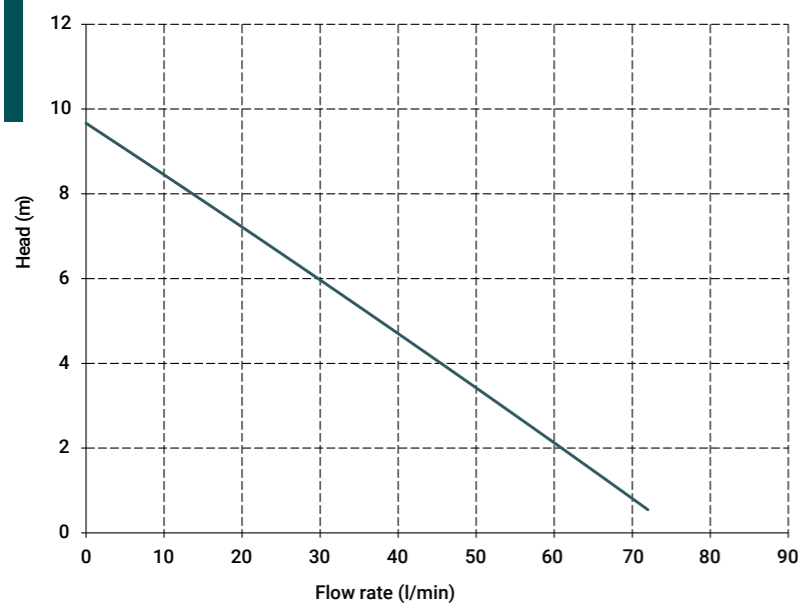
TR-PM SERIES - Pneumatic motor

Drum transfer pumps with pneumatic motor and open impeller that allows the continuous pumping of clean corrosive fluids with apparent viscosity up to 600 cps. The pump allows the flow rate adjustment.

Pneumatic motors technical specifications

Pneumatic motor	Standard
Power	0.42 HP (300 Watt)
Flow rate	70 l/minute
Viscosity	600 cps
Density	1.2 g/cm ³
Weight in Kg	1.1
ATEX motor	on request

Contact the sales office for information on the ATEX motor



MAIN APPLICATION SECTORS



AUTOMOTIVE



CHEMICAL INDUSTRY



OIL & GAS



GALVANIC AND ELECTRONIC INDUSTRY

	AUTOMOTIVE	CHEMICAL INDUSTRY	OIL & GAS	GALVANIC AND ELECTRONIC INDUSTRY
TRA - ELECTRIC MOTOR	●	●	●	
TRA - PNEUMATIC MOTOR	●	●	●	
TRF - ELECTRIC MOTOR	●	●	●	●
TRF - PNEUMATIC MOTOR	●	●	●	●
TRP - ELECTRIC MOTOR	●	●	●	●
TRP - PNEUMATIC MOTOR	●	●	●	●

DUST PUMPS

BOXER FAMILY

The special DUST KIT lets you transform a normal BOXER double diaphragm pump (normally used to pump fluids), into a pump that can aspirate various types of dust.



FOOT VALVES

BOXER FAMILY

Check valves are designed to be installed vertically at the end of the suction pipes of centrifugal and pneumatic pumps. They function as check valves that prevent the suction hose from emptying so that the pumps remain always primed. Sizes available: 1", 1" 1/4, 1" 1/2, 2", 3". Construction material: PP and PVDF.



TRUCK FOR BOXER PUMPS

BOXER FAMILY

Equipment used to move the pump. The pump is blocked with the fixing holes.



CYCLE COUNTER

BOXER FAMILY

Device that is installed on the pneumatic circuit of diaphragm pumps. It measures the number of strokes performed by the diaphragms and therefore the number of cycles. This device can be used to activate various types of controls, such as for example, the litres of liquid delivered by the pump, according to its displacement capacity, and to remotely control its operation.



PRESSURE BOOSTER

BOXER FAMILY

In certain applications the pump has to push the product with a higher pressure than the operating pressure (which normally in a system does not exceed 6-7 bar). For these situations we have designed pressure boosters with different compression ratios, according to their use. The component uses the same compressed air that feeds the pump as driving fluid.



REINFORCEMENT RINGS

BOXER FAMILY

Steel rings press-fitted on the manifolds of the PP and PVDF pumps prevent them from breaking or being damaged when connecting the pump to the circuit.



BATCH CONTROLLER

BOXER FAMILY

Mechanical batch controller with 5-digit display and start/stop button. Pneumatically driven it doesn't require any electrical connection. Designed to control Debem's air-operated double diaphragm pumps.



AIR REGULATION KIT

BOXER FAMILY

The kit is designed to regulate and/or set the pressure of the compressed air. It consists of: compressed air reduction filter, fixing bracket, reducer, pressure gauge, Elaston hose (5 m), tap and fittings.



ACCESSORIES

Debem offers a wide range of accessories for all the types of pumps in its catalogue. Accessories from other manufacturers or designed and built directly by the company, which are the result of our technical experience and specific research in pump applications.



MICROVALVES

BOXER FAMILY



These valves are used to manually regulate the pump air supply flow rate.

ANTI-VIBRATION FEET KIT

BOXER FAMILY



These help to decrease the vibrations produced by the pump during its operation.

ELECTRICALLY OR PNEUMATICALLY DRIVEN

BOXER FAMILY

THREE WAY VALVES



They are used to remotely switch the pump on or off.

VALVES, FITTINGS AND PIPES

BOXER - CUBIC - MB - DM - IM - TR FAMILY



Valves and fittings in polypropylene, PVC and stainless steel. High-resistance clamps for spiral hoses. Reinforced hoses made with food-grade PVC with metal reinforcement, designed to be installed on the delivery/suction side of pumps with hose holders and locking clamps.

Hose made with polyethylene, a high density material, with a spiral, covered in rubber, to be applied on the delivery/suction side of the pump. Flexible and crushproof the hose is supplied complete with swivel fittings and plate type clamps. High chemical resistance.

FLANGE KIT

BOXER - MB - DM - IM - FAMILY



Device that is installed on the pneumatic circuit of diaphragm pumps. It measures the number of strokes performed by the diaphragms and therefore the number of cycles. This device can be used to activate various types of controls, such as for example, the litres of liquid delivered by the pump, according to its displacement capacity, and to remotely control its operation.

QUICK FITTINGS

BOXER FAMILY



Designed for the chemical sector, they provide a high level of resistance and can be used with reinforced hoses. Max operating pressure 13 bar.

IM FILTER

IM FAMILY



Filters the suction fluid. For pumps in the IM series Construction material polypropylene and PVDF.

DISPENSERS

TR FAMILY



Built with Polypropylene, aluminium, stainless steel or PVDF. They include a lever used to control the delivery.

FLOW METERS

TR FAMILY



The flow meters are installed exclusively on drum transfer pumps and are used to measure the pump's instantaneous flow rate, or the total number of litres delivered. They include a display for the reading. They are built in polypropylene or PVDF.

DIP TUBE FILTER

TR FAMILY



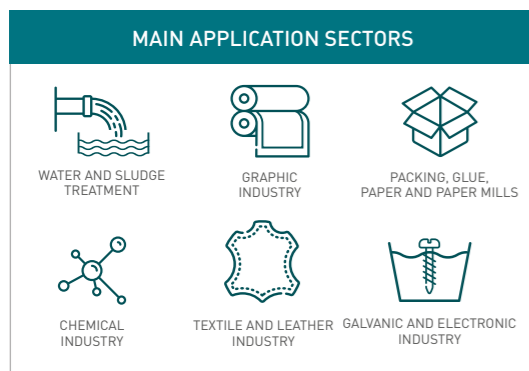
Filters the suction fluid. For TR series drum transfer pumps. Construction material polypropylene and stainless steel.

PUMP PROTECTION BASKET STRAINER

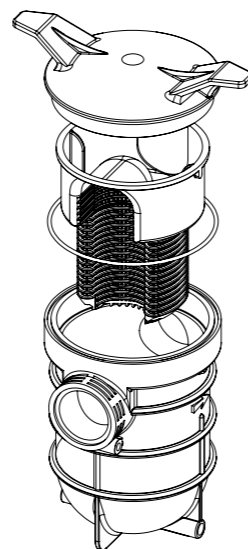
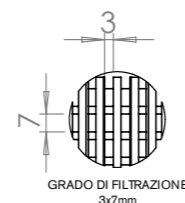
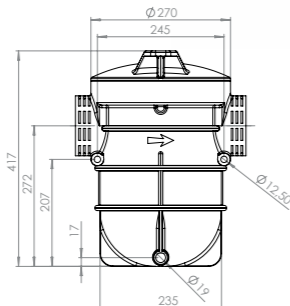
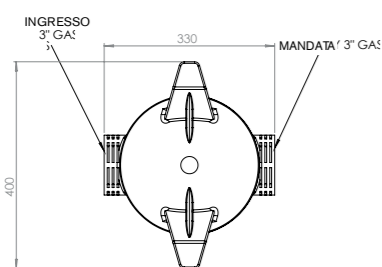
Thanks to the large total passage surface of the basket, pump protection filters are **ideally suited to be installed on the suction side of the pump, to protect them from suspended solids, filaments, algae and foreign bodies**, without causing excessive drops in capacity. They can be used in **industrial applications** such as

the **chemical industry, water treatment, fish farming, galvanic industry, leather and textile industry, paper industry, graphic industry** and many more. Built in **PP** or **PVDF** No metal parts, Basket is easy to inspect and remove, Operating pressure 1 bar. Available with the following fittings: 1" ½ f, 2" f, 2" ½ f, 3" f.

- Product designed and constructed in Italy
- No metal parts
- Basket is easy to inspect and remove
- Built in PP and PVDF
- Operating pressure 1 bar



BOXER - MB FAMILY



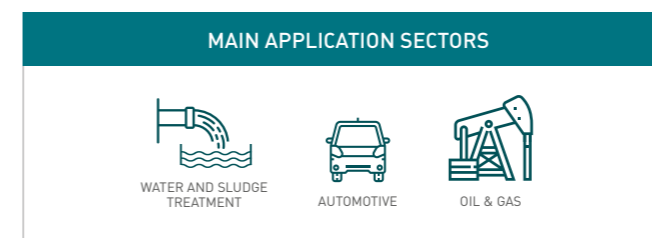
MIXERS and PERISTALTIC PUMPS



MIXERS: E/EH/F/FR/H/J/RV

The compact submerged mixers are designed for a wide range of applications, regardless of the shape and size of the basin. Uses: water treatment plants, biogas plants, production of liquid feedstuffs, transport vehicles, etc.

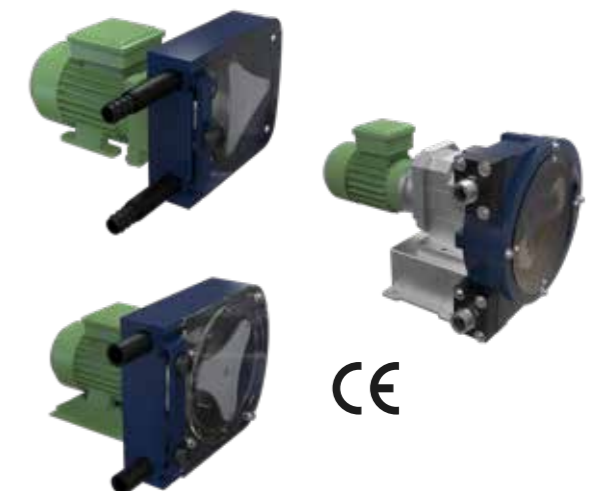
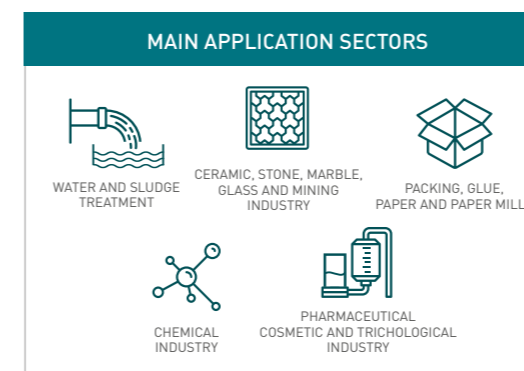
- Product designed and constructed in Italy
- Built in PP, PVDF, AISI 316
- Great versatility

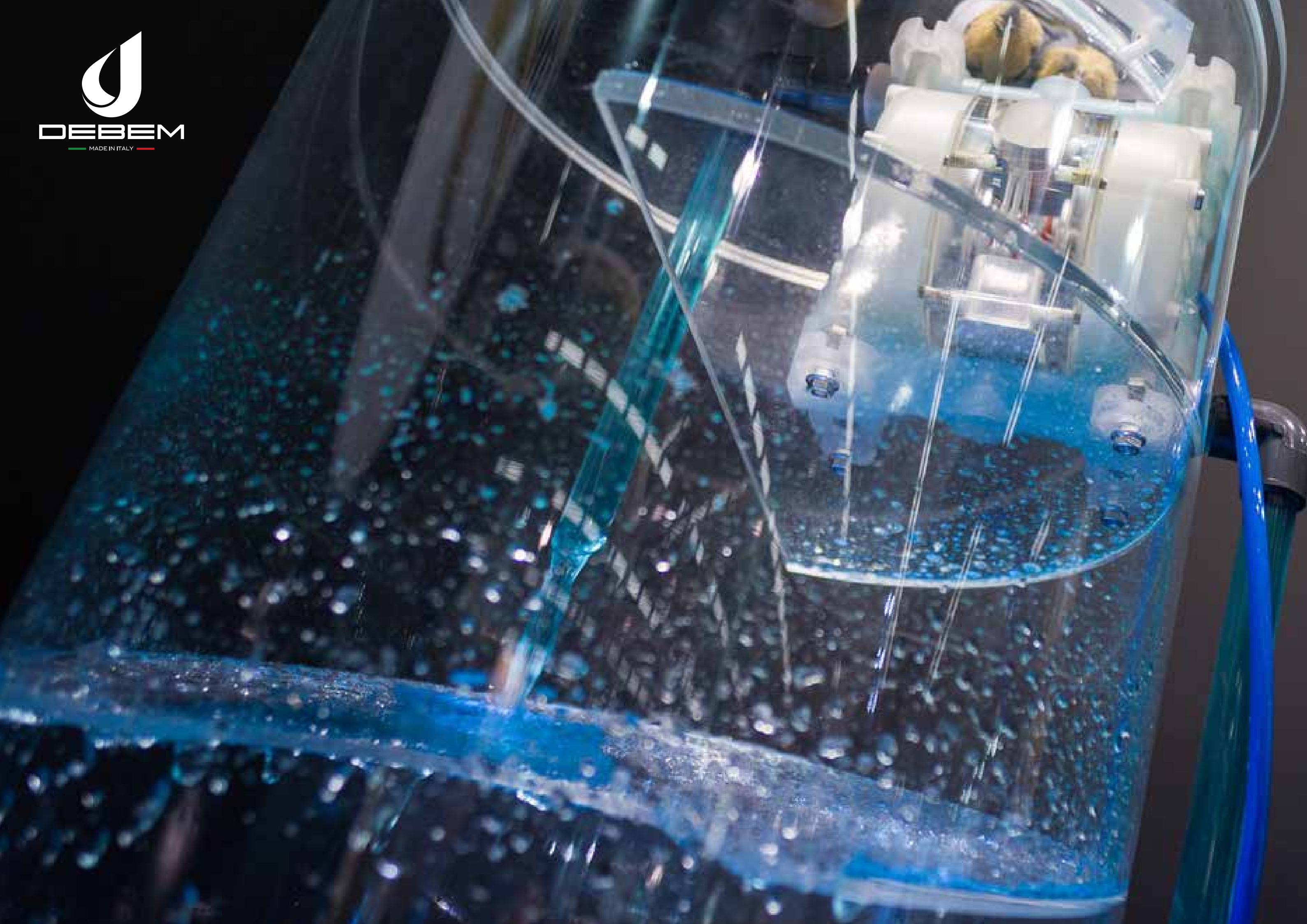


PERISTALTIC PUMPS:

Peristaltic pumps operate with a 'flowing pressure' exerted on a flexible hose with rollers, rotating parallel to an axis, and supported by a rollers holder.

These types of pumps are ideal in sectors such as **water treatment, chemical industry, food and cosmetics industry, mining, ceramic and building industries** and in **paper mills**.







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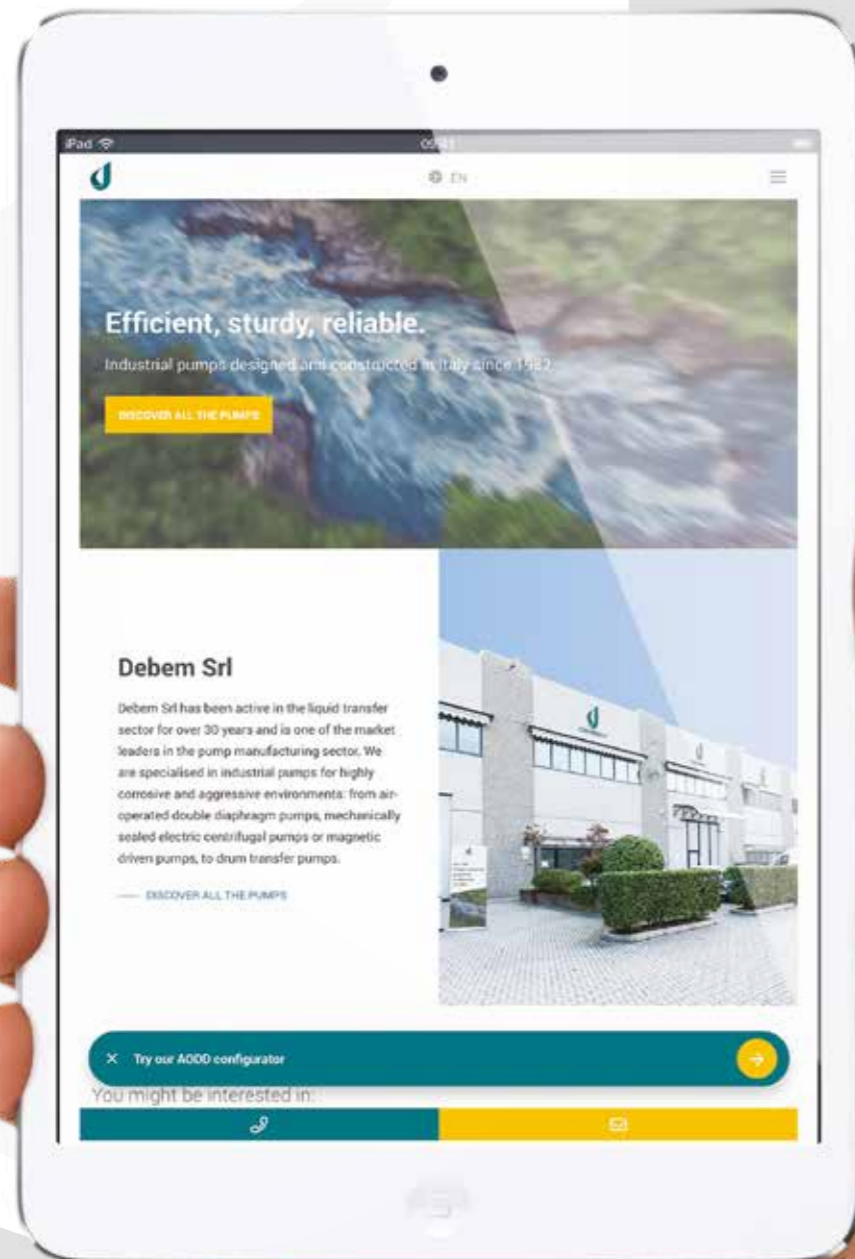
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