Environmental and industrial technology

Components for water / wastewater treatment and industrial uses

BIBUS®

SUPPORTING YOUR SUCCESS

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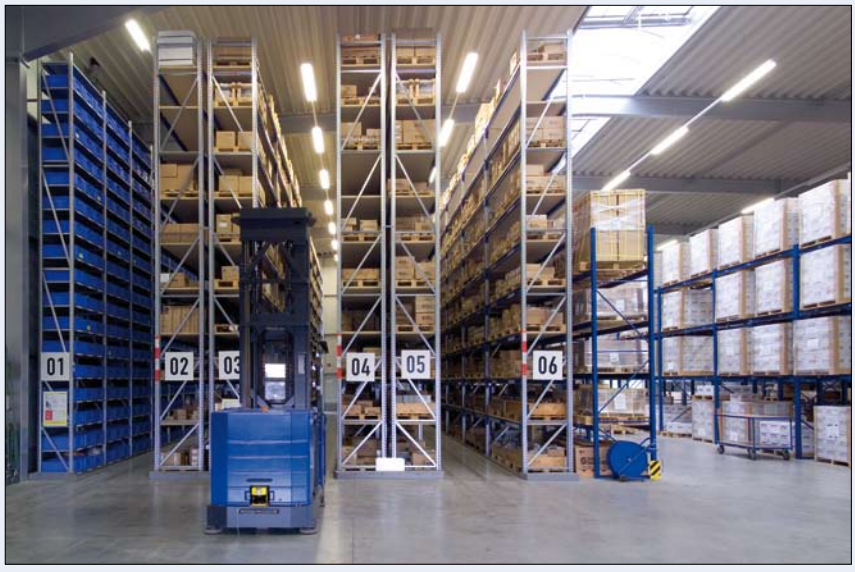
BIBUS - Network of competencies

We are the link between the manufacturing plants and our customers. Our many years of trading partnerships are based on continuity and trust. In this way we achieve the best possible conditions for our customers. Over 60 years of experience in the specialist areas of pneumatics, mechatronics and hydraulics have made BIBUS a leading provider in European industry.

Efficient logistics - our customers make the highest demands

We guarantee a high degree of availability for our more then 250,000 standard articles. Modern warehouse systems with barcodes and mobile data logging terminals ensure an efficient flow of goods.



We provide specific service and repairs in 18 European countries and guarantee a high degree of availability of spare parts throughout the product life cycle.

Quality

Quality and the relevant qualifications go without saying at BIBUS.

CERTIFIED IQNet MANAGEMENT SYSTEM

Zertifiziertes Managementsystem SQS Reg. No. 10338 ISO 9001:2000

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DIAPHRAGM PUMPS

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Applications

Water treatment and environmental technology
- Domestic sewage plants
- Grease trapping
- Air ventilation of waste water
- Biogas production

Aquacultur
- Aeration of Koi and garden ponds
- Filter systems
- Aeration of chemical and biological bath

Medical and health technology
- Scent systems and odor neutralisation
- Tank pressuration
- Airbeds and decubitus mattresses
- Underwater massages and whirlpools
- Compression therapy
- Inhalation devices and nebulizer

Aeration of fuel cell stacks

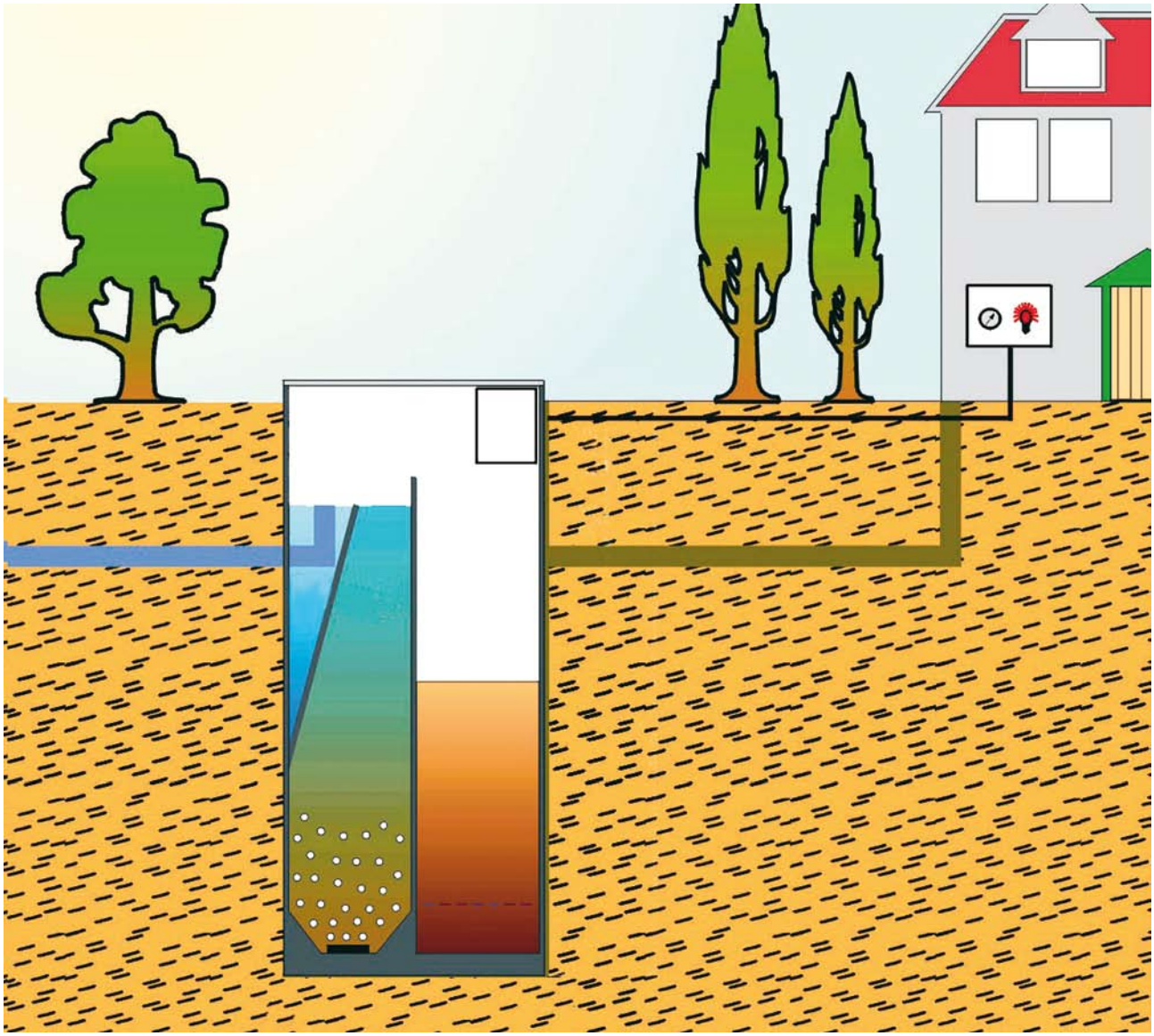
Aqua-air-lights and design pillars

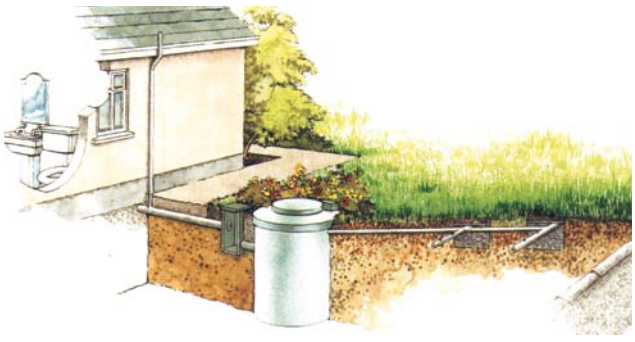
Advantages

- Long life expectancy
- Low power consumption
- High degree of efficiency
- Low vibration
- Low noise
- Oil-free operation
- Constant air flow
- Simple maintenance

Examples of use

Blowers and vacuum pumps are ideally suited for applications where minimum energy consumption, delivery of absolutely oil-free air, near silent operation and a minimum of simple maintenance are either prerequisites or of great advantage.

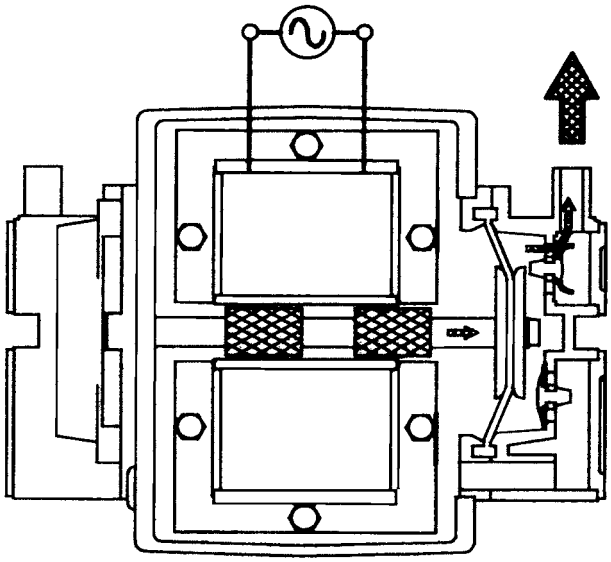




DIAPHRAGM PUMPS

Operating principle

The activated electromagnets put a permanent magnet into oscillation movements. The magnet holder moves now at the same frequency as that of the power supply - normally 50 Hz respectively 60 Hz - back and forth between the electromagnets and sets a diaphragm going on both sides, which then changes the valve box volume. By discharging via the valves, both pressure and vacuum can be realized.



Choose the right pump capacity

The technical specifications from different diaphragm pump manufacturers are based on various reference pressure levels. We therefore recommend that you compare the performance data of the diaphragm pumps exactly.

We are happy to advise you so that you find the correct model for your application.

Your advantages

Long life expectancy

Motor and pump parts are combined in one single construction. The compact and light construction form and the simple mechanism guarantee a long and reliable period of operation.

High degree of efficiency

The principle of electromagnetic oscillation, which practically has no mechanical friction, minimises power consumption and provides a high degree of efficiency.

Low noise level

The soundproof casing and the muffler integrated in the tank base reduce operating noise.

Low vibration

Motor and pump parts are separated by a vibration-isolating rubber, so only low vibration consists.

Completely oil-free

The oil-free operation guarantees a dry and unadulterated air flow.

Pulsation-free air flow

Specially formed pump chambers and the muffler integrated in the tank base provide an air flow, which is practically pulsation-free.

Weatherproof

The SLL and EL series are rainproof and weatherproof. However, they should not be exposed to direct sunlight, rain or snow.

Universal service kits

For each model series service kits are available. They are vacuum-packed in aluminium foil for better and longer life/storage.

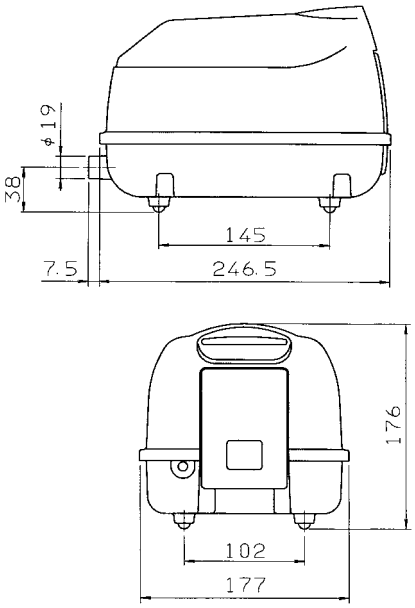
SLL series

SLL-20 / SLL-30 / SLL-40 / SLL-50

Product characteristics

- Integrated overload protection
- Connecting hose included in delivery

Dimensions

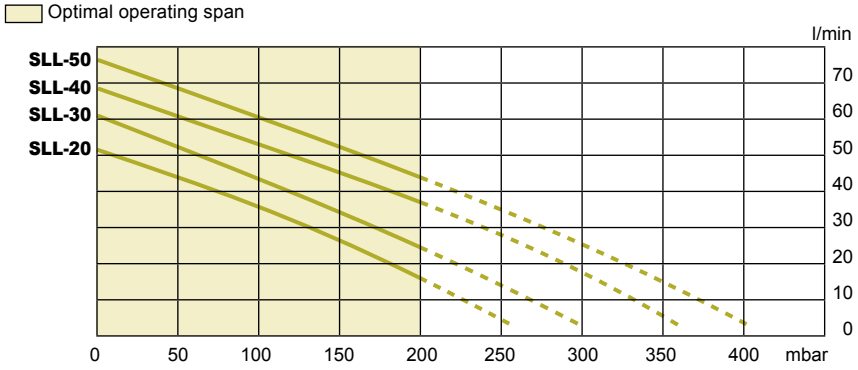


Technical data

Model			SLL-20	SLL-30	SLL-40	SLL-50
Air flow[1]	l/min	0 mbar	52	60	68	75
		50 mbar	44	52	60	68
		100 mbar	36	43	53	61
		150 mbar	28	34	45	53
		200 mbar	18	26	36	44
Voltage[2]	VAC		230	230	230	230
Power consumption	W	180 mbar	18	27	41	53
Noise level	dB(A)		30	32	33	37
Dimensions	mm	L x W x H	254 x 177 x 176			
Connection	mm	Ø outside	19	19	19	19
Net weight	kg		4.5	4.5	4.5	4.5

[1] Product performance may vary +/- 10% from performance curves
[2] Values at 50 Hz

Performance data



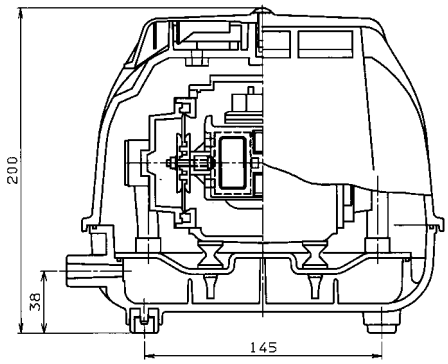
EL-N series

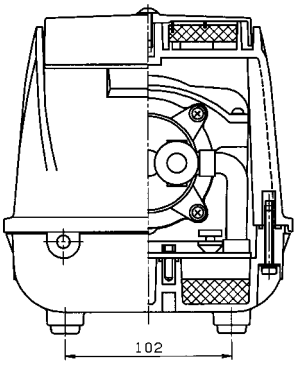
EL-S-60N

Product characteristics

- Integrated overload protection
- Protective switch inclusive
- High quality plastic housing
- Compact design
- Optional with fault alarm lamp and integrated signal cable
- Connecting hose included in delivery

Dimensions



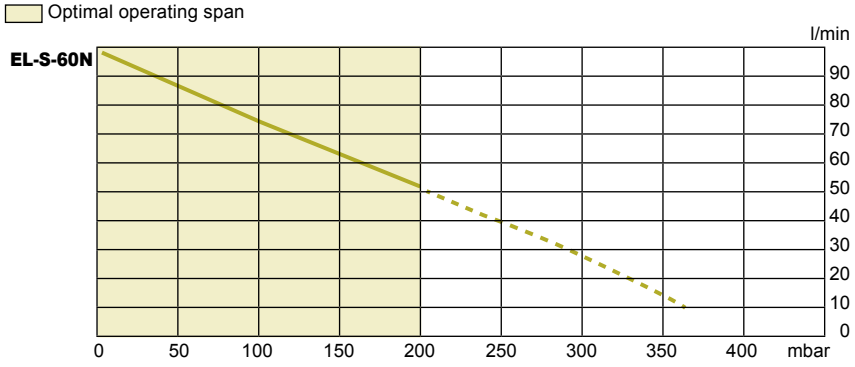


Technical data

Model			EL-S-60N
Air flow[1]	l/min	0 mbar	98
		50 mbar	88
		100 mbar	76
		150 mbar	64
		200 mbar	52
		250 mbar	40
Voltage[2]	VAC		230
Power consumption	W	200 mbar	48
Noise level	dB(A)		43
Dimensions	mm	L x W x H	221 x 177 x 200
Connection	mm	Ø outside	19
Net weight	kg		4.4

[1] Product performance may vary +/- 10% from performance curves
[2] Values at 50 Hz

Performance data



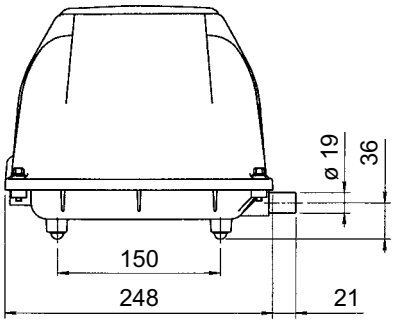
EL-S single system

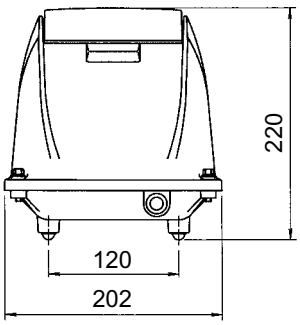
EL-S-60 / EL-S-80-15 / EL-S-80-17
EL-S-100 / EL-S-120 / EL-S-150

Product characteristics

- Integrated overload protection
- Protective switch inclusive
- Optional with fault alarm lamp or integrated signal cable
- Connecting hose included in delivery

Dimensions



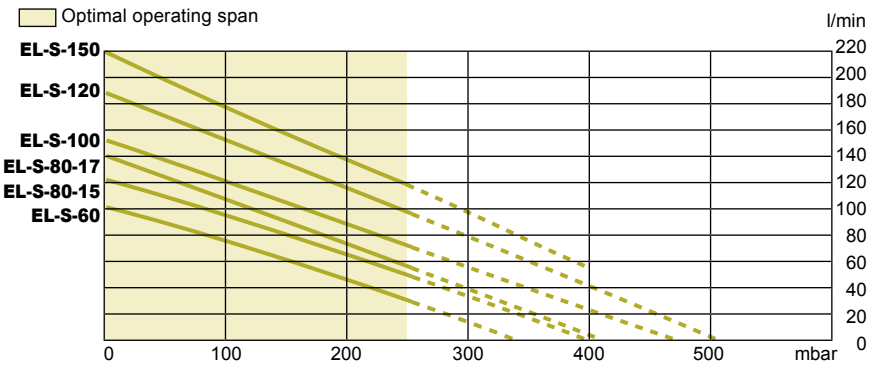


Technical data

Model			EL-S-60	EL-S-80-15	EL-S-80-17	EL-S-100	EL-S-120	EL-S-150
Air flow[1]	l/min	0 mbar	105	127	142	152	190	224
		50 mbar	96	115	131	142	176	205
		100 mbar	83	102	113	130	156	182
		150 mbar	68	87	95	112	138	170
		200 mbar	54	73	77	94	123	148
		250 mbar	40	56	59	77	105	120
Voltage[2]	V		230	230	230	230	230	230
Power consumption	W	200 mbar	44	74	71	92	120	150
Noise level	dB(A)		36	40	40	42	55	58
Dimensions	mm	L x W x H	249 x 202 x 220					
Connection	mm	Ø outside	19	19	19	19	19	19
Net weight	kg		8.5	8.5	8.5	8.5	9	9

[1] Product performance may vary +/- 10% from performance curves
[2] Values at 50 Hz

Performance data



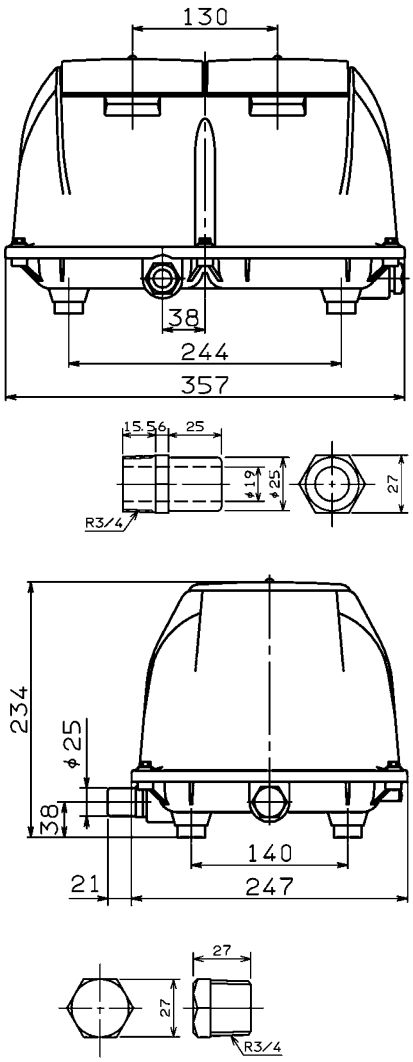
EL-S twin system

EL-S-120W / EL-S-150W
EL-S-200W / EL-S-250W

Product characteristics

- Integrated overload protection
- Protective switch inclusive
- Optional with fault alarm lamp or integrated signal cable
- Twin outlet for alternative port position

Dimensions

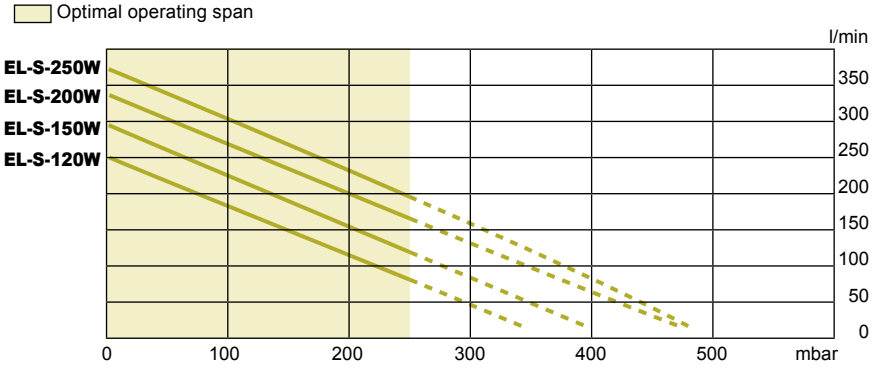


Technical data

Model			EL-S-120W	EL-S-150W	EL-S-200W	EL-S-250W
Air flow[1]	l/min	0 mbar	240	290	330	360
		50 mbar	215	250	270	320
		100 mbar	185	218	250	290
		150 mbar	156	196	225	262
		200 mbar	127	165	196	233
		250 mbar	95	135	170	205
Voltage[2]	V		230	230	230	230
Power consumption	W	200 mbar	120	149	210	241
Noise level	dB(A)		43	44	45	55
Dimensions	mm	L x W x H	268.5 x 357 x 234			
Connection	mm	Ø outside	25	25	25	25
Net weight	kg		16	16	16	16

[1] Product performance may vary +/- 10% from performance curves
[2] Values at 50 Hz

Performance data



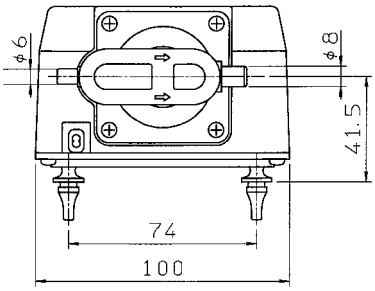
OEM assembly pump

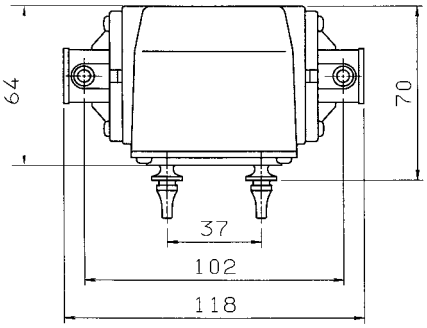
MK-10 / MK-10-12V / MK-10-24V

Product characteristics

- Pressure and vacuum (optional) possible
- Compact design
- OEM assembly pump without overall cover

Dimensions





Technical data

Model		Pressure	Vacuum	MK-10	MK-10-12V	MK-10-24V
Air flow[1) 2)]	l/min	0 mbar	0 mbar rel	20	20	20
		50 mbar	- 50 mbar rel	15	15	15
		100 mbar	- 100 mbar rel	11	11	11
		150 mbar	- 150 mbar rel	6	6	6
Voltage[4)]	V			230	12[3)]	24[3)]
Power consumption	W	100 mbar		7-8		
Noise level	dB(A)			38	38	38
Dimensions	mm	L x W x H		118 x 100 x 70		
Connection	mm	Ø outside		6/8	6/8	6/8
Net weight	kg			0.7	0.7	0.7

This model is offered in standard design only as a pressure pump. Please advise when ordering if you would like it as a vacuum version (rebuilding required).

[1)] Product performance may vary +/- 10% from performance curves

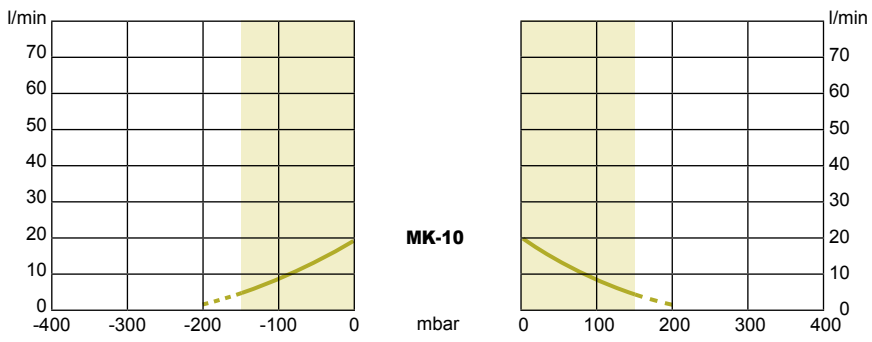
[2)] The pneumatic values do not correspond for mixed operation, i. e. with both vacuum on the suction port and pressure on the outlet

[3)] Please note: voltage of MK-10-12V and MK-10-24V is AC

[4)] Values at 50 Hz

Performance data

Optimal operating span



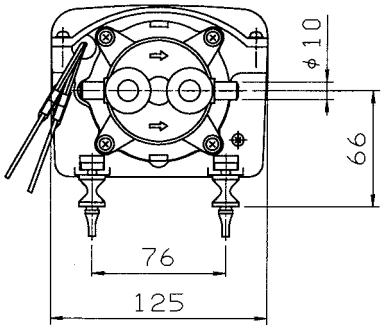
OEM assembly pump

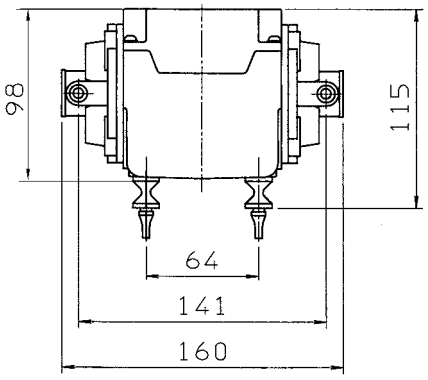
SV-20 / SV-30 / SV-40 / SV-50

Product characteristics

- Pressure and vacuum possible
- Compact design
- OEM assembly pump without overall cover

Dimensions





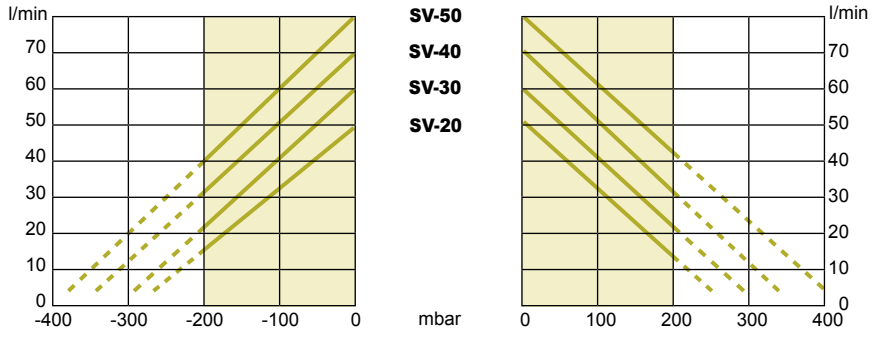
Technical data

Model		Pressure	Vacuum	SV-20	SV-30	SV-40	SV-50
Air flow[1) 2)]	l/min	0 mbar	0 mbar rel	50	60	68	75
		50 mbar	- 50 mbar rel	40	50	60	70
		100 mbar	- 100 mbar rel	32	40	52	60
		150 mbar	- 150 mbar rel	23	30	42	50
		200 mbar	- 200 mbar rel	15	20	32	40
Voltage[3)]	V			230	230	230	230
Power consumption	W	180 mbar		18	27	41	53
Noise level	dB(A)			44	46	47	49
Dimensions	mm	L x W x H		160 x 125 x 115			
Connection	mm	Ø outside		10	10	10	10
Net weight	kg			2.5	2.5	2.5	2.5

[1)] Product performance may vary +/- 10% from performance curves
[2)] The pneumatic values do not correspond for mixed operation, i. e. with both vacuum on the suction port and pressure on the outlet
[3)] Values at 50 Hz

Performance data

Optimal operating span



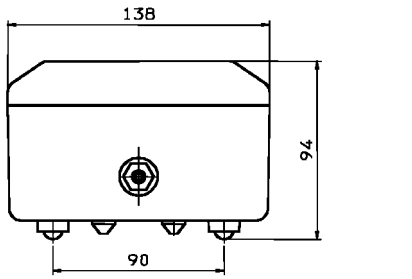
Phoe-niX series

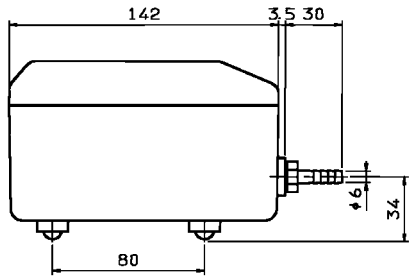
MKC-510V

Product characteristics

• Connecting hose and air distributor included in delivery

Dimensions





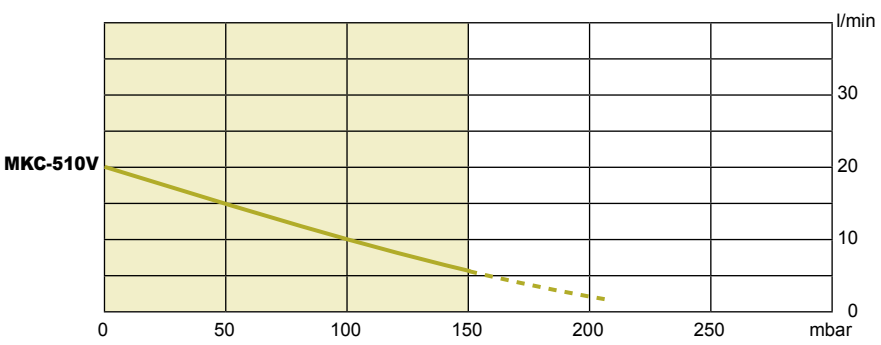
Technical data

Model			MKC-510V
Air flow[1]	l/min	0 mbar	20
		50 mbar	15
		100 mbar	11
		150 mbar	6
Voltage[2]	VAC		230
Power consumption	W	100 mbar	9
Noise level	dB(A)		30
Dimensions	mm	L x W x H	175.5 x 138 x 94
Connection	mm	Ø outside	6
Net weight	kg		1.2

[1] Product performance may vary +/- 10% from performance curves
[2] Values at 50 Hz

Performance data

Optimal operating span



Service Kits

With our light- and dust-resistant replacement part sets, you can replace the worn parts of the pumps quickly and inexpensively. The systems can be started up again within a short time. You do not have to invest in a new diaphragm pump.

Diaphragm and Diaphragm Repair Kits

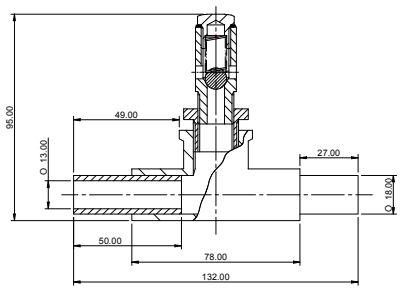
Magnet Kits

Accessories

To provide your pump with dependable protection against backpressure, we suggest installing a pressure relief valve in the pumps discharge line.

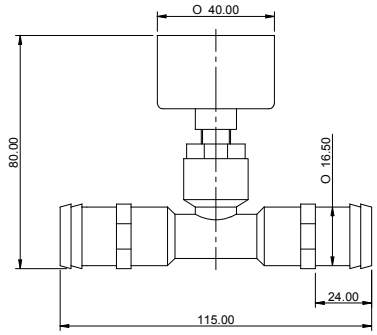
This allows the pump to return to a safe working design pressure by venting any excess pressure to the atmosphere.

Therefore we provide a back pressure gauge. The pressure relief valve and back pressure gauge are both of compact construction and maintenance free.



Pressure Relief Valve 3/4“

Pressure Relief Setting	Dimensions (L x W x H)	Connection	Net Weight
0.20 bar	132 x 30 x 95 mm	18 Ø mm	0.5 kg



Back Pressure Gauge 3/4“

Pressure Gauge Range	Dimensions (L x W x H)	Connection	Net Weight
0 - 1 bar	115 x 40 x 80 mm	16.5 Ø mm	0.25 kg

Technical References

The following explanations are to help interpret technical data, performance diagrams and dimensioned drawings correctly.

Air flow

Air flow in reference to the corresponding operating pressure

Optimal operating span

Pressure range at which the diaphragm pump can operate continuously.
Special care is necessary, when the pump is operating in the range of maximum working pressure. Please enquire our technical support for special cases.

Power consumption

Input wattage that appears at the stated pressure. The power consumption is at open flow. An exact curve about power consumption is available on request.

Operation mode

Our pumps are designed and produced for permanent operation if the use complies with the operating conditions.

Power supply

All data given refer to an electricity supply of 230VAC / 50Hz, with variations up to +/- 10% are acceptable. All models also run with a frequency of 60 Hz, however with varying performance. Models for other tensions are available on request.

Overload protection

The SLL, SV and EL series are supplied with an integrated thermal overload protection. The contact breaks when the temperature of the windings reaches hazard value of the probe at 130°C until the coil has cooled down below 120°C.

Protection class

Phoe-niX series: IPX4, SLL series: IP45, EL series: IP44

Ambient temperature

The maximum ambient and suction temperature ranges from -10 to +40°C.

Insulation class

All models have the insulation class „E“, which corresponds to a temperature limit of 120°C.

Life expectancy

The working life depends on the operating conditions (duty cycle, operation pressure or vacuum, etc.) and the work environment (ambient temperature, air quality, ventilation, maintenance, etc.).

Protective switch (auto stopper)

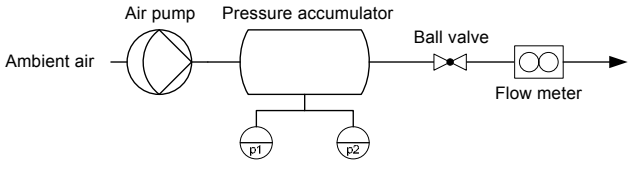
Our diaphragm pumps are equipped with an auto-stop function and an LED lamp that signals a possible diaphragm break on the outer enclosure. In addition, the auto-stop function interrupts the power supply to the motor should a diaphragm ever be broken. This prevents further consequential damage, which could be severe, to the diaphragm pumps and the connected systems.

Fault alarm lamp (optional)

To indicate any diaphragm fault optically, every pump of the EL series is provided with a fault alarm lamp. On customer request there is also the possibility to register faults alternatively by an integrated signal cable.

Test conditions

The information presented in this catalogue is based on technical data and test results of nominal units. The measured values refer to a power supply of 230VAC / 50 Hz and an ambient temperature of 15 to 25 °C. The volume flows were measured with air.

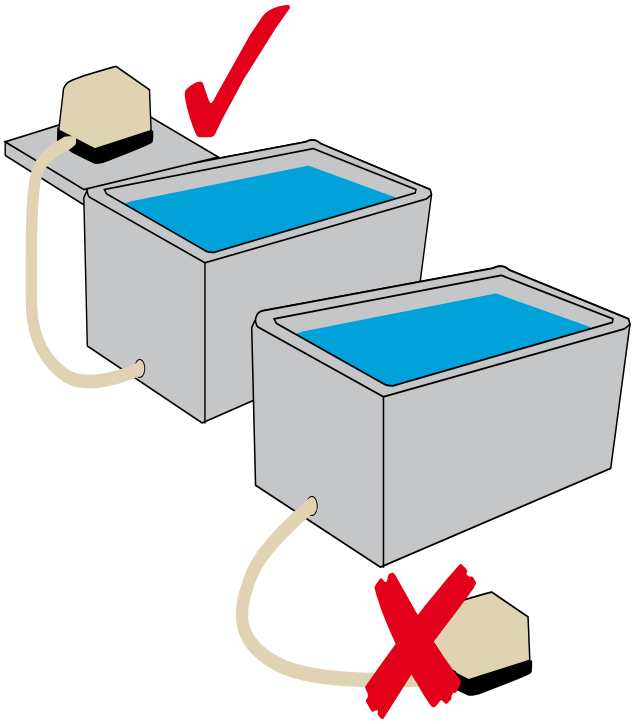


Installation and operation

Installation

The pump must always be installed above the water level. If the pump is set below, the back-flowing water can cause an electrical short circuit.

The pump should be installed at least 10 cm higher than the foundation on a stable platform. If installed on an unstable base, noise from vibrations can result. The pump must be located on a levelled platform to prevent biased strain on the diaphragm that could lead to reduced component life of the blower.



Ambience

Ensure that the unit has good ventilation, especially when subjected to severe operating conditions. If installed in a control cabinet, sufficient ventilation by louvered vents is essential. A cool ambience will ensure longer diaphragm and valve life. The diaphragm blowers are weatherproof. However, they should not be exposed to direct sunlight, rain or snow.

Air quality

The diaphragm pumps are specially developed for transporting air. They should not be operated in a dusty environment. The blocked filter may cause overheating. The atmosphere humidity should not be higher than 90%. Inflammable or aggressive gases and vapours should not enter the pump as the flow path leads to current-carrying parts.

Piping

Select tube size, lengths and accessories to keep pressure loss as small as possible.

Apply:

- straight piping and as short as possible
- tubing, which diameter is bigger than the port of the unit (inside diameter min. 19 mm, respective 25 mm for EL twin system)
- large radius bends and no elbows
- valves of bigger diameter than the blower's connector port
- smooth-running valves that provide the lowest pressure drop
- low air loss diffusers for aeration (also see accessories on page 78)

Maintenance

Clean the filter regularly and replace broken diaphragms immediately. Complete repair kits are available.

Storage

The pumps may not be stored at less than -10°C. The permanent magnet would be weakened in such a case, and the performance would not be as expected. The pump may not be stored in direct sunlight or at high temperatures to maintain the rubber parts flexible.

SIDE CHANNEL BLOWERS

RT-1 / RT-2 / RT-3 / RT-4 series **23**

RT-4 / RT-5 / RT-6 / RT-7 / RT-8 / RT-9 series **24**

RT-23 / RT-33 / RT-43 / RT-63 / RT-83 series **25**

Applications

Aeration
- Swimming pools and whirlpools
- Ponds and aquaria
- Sewage plants and fluidisation systems

Drying
- Electronic components
- Plastic profiles

Cleaning
- Printing machines
- Paper cutting equipment
- Cloth cutter

Compressed air
- Gas and vapours compression
- Powder and granule conveyor

Vacuum
- Packing machines
- Filling stations
- Chemical and medical process technology
- Oven drying

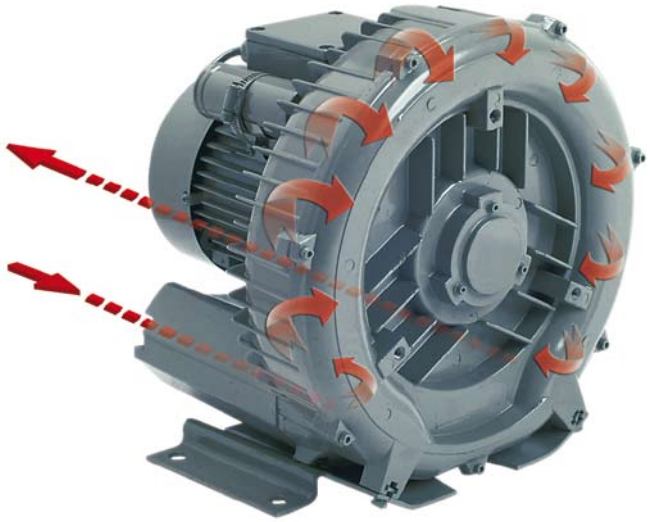
Advantages

- Pulsation-free discharge
- No vibration and dynamic stability
- Minimal maintenance
- Easy installation
- Low noise level
- 100% oil-free air
- Long life expectancy

SIDE CHANNEL BLOWERS

Operating principle

Side channel blowers consist of a ring-shaped housing. Side channel and the rotor opposite create a working area between intake and blow-out connections. The blade segments of the rotor suck in the gas and create radial pressure during turning. The centrifugal force causes the gas to be pressed to the outside in the side channel. This creates a circular current between channel and blade segments.
Due to the radial pressure, the gas to be compressed in the chamber begins turning. The spiral swirling compresses the gas several times and causes the pressure to rise. At the end of the chamber the compressed gas is then pushed pulsation-free by the rotor through the blow-out connection.



Setup of side channel blowers in parallel provides a maximum amount of air.

Setup of side channel blowers in series increases the individual high/low pressure.

Examples of use

Side channel blowers are used for applications which require more pressure or vacuum power than a centrifugal blower is able to provide.

The compression procedure is absolutly oil-free and provides applications where pollution of the gas is not allowed.

There are many application areas of side channel blowers, both in pressure and vacuum operation.

Side channel blowers are used for a wide variety of applications in the following industries:

- food and beverage industry
- paper and printing industry
- medical technology
- packaging industry
- water aeration and treatment
- textile industry
- plastics industry
- manufacturing industry
- environmental technology
- and many more

Your advantages

Operating principle

The impeller sucks in the gas to be compressed through the input connection, compresses it with spiral swirling and pushes it out again through the output connection. This process occurs as a continuous air current and is thus pulsation-free.

No vibration

The side channel blower is mounted on a carrier plate which is particularly vibration-absorbent. Possible agitations caused by rotor operation are reduced as far as possible.

Minimal, simple maintenance

The impeller of the side channel blowers is mounted directly on the motor shaft. During operation, rotation is completely contactless and lubrication is thus not necessary. This makes operation almost maintenance-free even during continuous operation.

Easy Installation

The installation of the devices is without any problems. The side channel blowers are ready for connexion. Mount in desired axis position, connect the connections to the system, perform electrical installation and the device is ready for operation.

Low noise level

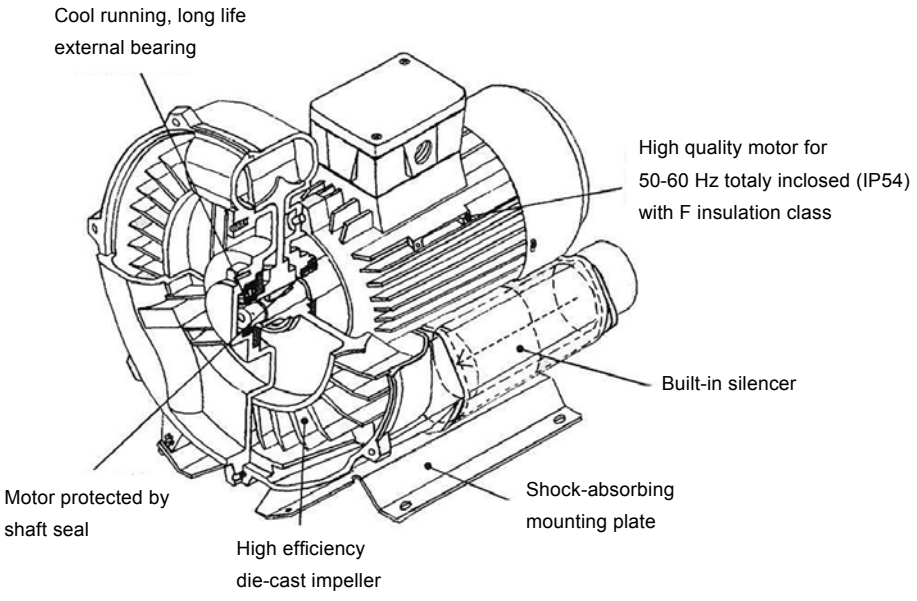
The side channel blowers are equipped with built-in silencers. The carrier plate is also silencing. A maximum degree of noise reduction is achieved. The noise level during operation is only 55 dB to 80 dB, depending on the model.

100 % oil-free air

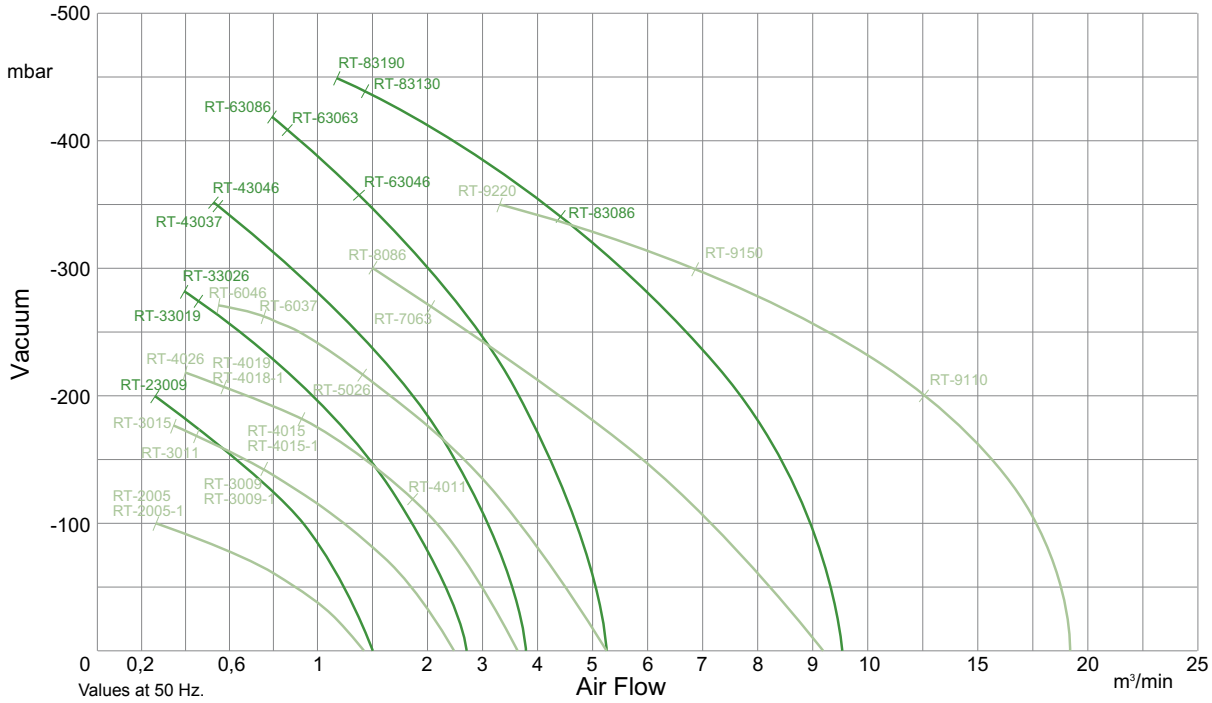
Due to the contactless rotation of the impellers, lubrication is not necessary. The compression procedure is dry and oil-free and the gas to be compressed is not polluted.

Long life expectancy

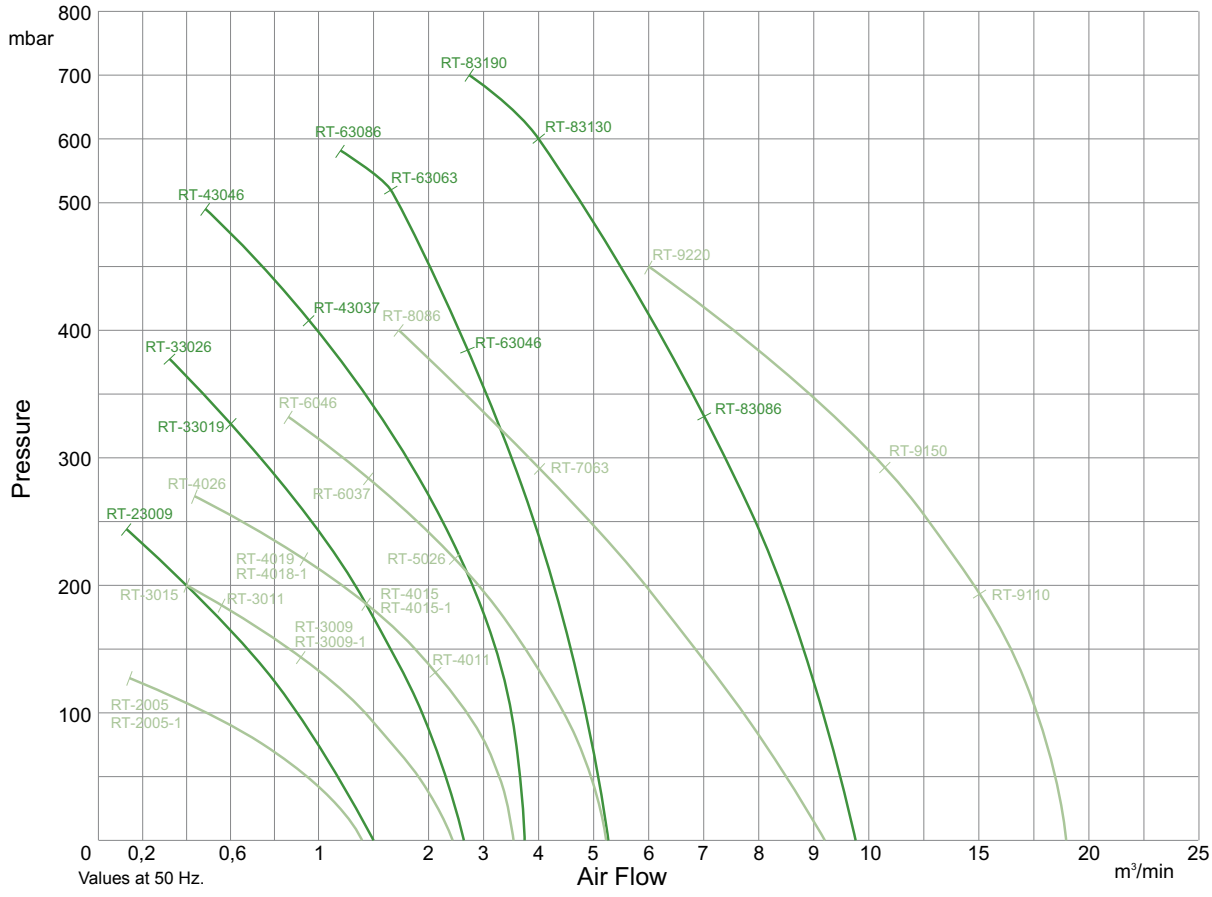
The impeller is designed for high performance. The high-quality motor is enclosed in its own capsule and is protected by shaft sealing. Although the device's maintenance requirements are low, it has a long life span.



Suction curve



Blowing curve



RT-1 / RT-2 / RT-3 / RT-4 series

Product characteristics
- Power 0.2 to 1.3 kW
- Connection size 1" to 2"

Technical data

Model		RT-1003	RT-1003-1	RT-2005	RT-2005-1	RT-3009	RT-3009-1	RT-3011	RT-3015	RT-4011	RT-4015	RT-4015-1
Current phase		3	1	3	1	3	1	3	3	3	3	1
Voltage	VAC	400	220	400	220	400	220	400	400	400	400	220
Frequency	Hz	50	50	50	50	50	50	50	50	50	50	50
Motor power	kW	0.2	0.2	0.4	0.4	0.75	0.75	0.9	1.3	0.9	1.3	1.3
Max. air flow	m^3/min	0.8	0.8	1.4	1.4	2.4	2.4	2.4	2.4	3.6	3.6	3.6
Vacuum	mbar	70	70	110	110	140	140	165	175	130	180	180
Pressure	mbar	70	70	130	130	140	140	180	200	130	180	180
Noise level	dB	53	53	58	58	63	63	63	63	70	70	70
Connection size P		1" (25 mm)	1" (25 mm)	1¼" (32 mm)	1¼" (32 mm)	1 ½" (40 mm)				2" (50 mm)		
Net weight	kg	6.5	6.5	11	11.5	14.5	15	15.5	16	20.5	22	22.5

RT-4 / RT-5 / RT-6 / RT-7 / RT-8 / RT-9 series

Product characteristics
- Power 1.75 to 20.0 kW
- Connection size 2" to 4"

Technical data

Model		RT-4019	RT-4026	RT-5026	RT-4018-1	RT-6037	RT-6046	RT-7063	RT-8086	RT-9110	RT-9150	RT-9220
Current phase		3	3	3	1	3	3	3	3	3	3	3
Voltage	VAC	400	400	400	220	400	400	400	400	400	400	400
Frequency	Hz	50	50	50	50	50	50	50	50	50	50	50
Motor power	kW	1.75	2.2	2.2	1.5	3.4	4	5.5	7.5	9	13	20
Max. air flow	m^3/min	3.6	3.6	5.2	3.6	5.2	5.2	9.2	9.2	18.9	18.9	18.9
Vacuum	mbar	210	220	230	210	260	270	270	300	200	300	350
Pressure	mbar	220	270	230	220	280	330	300	400	200	300	450
Noise level	dB	70	70	72	70	72	72	74	74	76	76	76
Connection size P		2" (50 mm)				2" (50 mm)		2½" (64 mm)		4“ (100 mm)		
Net weight	kg	23	26	32	23	35	38	78	82	100	112	159

RT-23 / RT-33 / RT-43 / RT-63 / RT-83 series

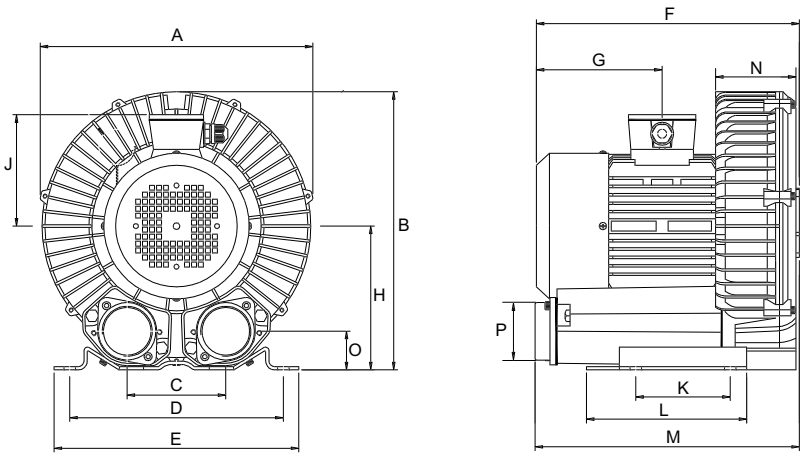
Product characteristics

- Power 1.5 to 9.6 kW
- Connection size 1 ¼" to 2 ½"

Technical data

Model		RT-23009	RT-33019	RT-33026	RT-43037	RT-43046	RT-23009-1	RT-63046	RT-63063	RT-63086	RT-83086	RT1-83130	RT1-83190
Current phase		3	3	3	3	3	1	3	3	3	3	3	3
Voltage	VAC	400	400	400	400	400	220	400	400	400	400	400	400
Frequency	Hz	50	50	50	50	50	50	50	50	50	50	50	50
Motor power	kW	0.75	1.75	2.2	3.4	4	0.75	4	5.5	7.5	7.5	11	16
Max. air flow	m^3/min	1.5	2.6	2.6	3.7	3.7	1.5	5.2	5.2	5.2	9.6	9.6	9.6
Vacuum	mbar	200	275	280	345	355	200	360	410	420	320	430	450
Pressure	mbar	240	320	375	410	460	240	380	515	580	320	600	700
Noise level	dB	60	66	66	74	74	60	75	75	75	76	76	76
Connection size P		1¼" (32 mm)	1½" (40 mm)		2" (50 mm)		1¼" (32 mm)	2" (50 mm)			2½" (64 mm)		
Net weight	kg	17	25	28	43	45	17	55	72	81	112	142	160

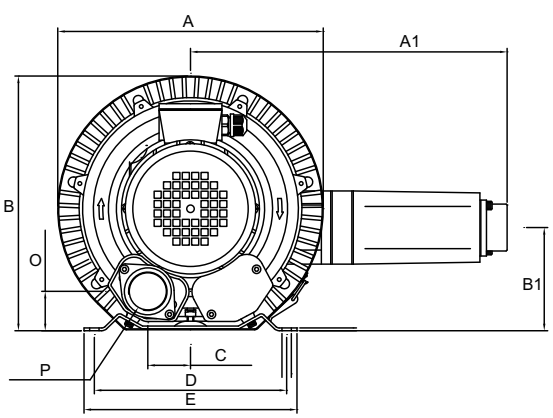
Dimensions single stage

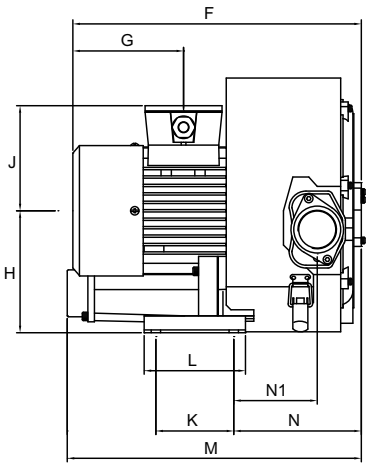


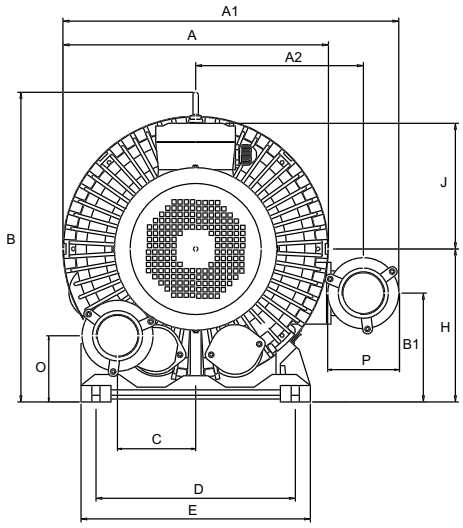
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
RT-1003	208.5	213.5	71.0	165.0	186.0	209.5	72.0	108.0	142.0	-	100.0	205.0	54.0	38.0	1"
RT-1003-1	208.5	213.5	71.0	165.0	186.0	209.5	72.0	108.0	142.0	-	100.0	205.0	54.0	38.0	1"
RT-2005	248.0	249.0	91.0	205.0	227.0	239.0	118.0	130.0	112.0	83.0	108.0	245.0	63.0	42.0	1 1/4"
RT-2005-1	248.0	249.0	91.0	205.0	227.0	239.0	118.0	130.0	112.0	83.0	108.0	245.0	63.0	42.0	1 1/4"
RT-3009	285.0	301.0	115.0	225.0	257.0	279.0	106.0	153.0	124.0	90.0	130.0	264.0	76.0	45.0	1 1/2"
RT-3011	285.0	301.0	115.0	225.0	257.0	279.0	106.0	153.0	124.0	90.0	130.0	264.0	76.0	45.0	1 1/2"
RT-3015	285.0	301.0	115.0	225.0	257.0	279.0	106.0	153.0	124.0	90.0	130.0	264.0	76.0	45.0	1 1/2"
RT-3009-1	285.0	301.0	115.0	225.0	257.0	279.0	106.0	153.0	124.0	90.0	130.0	264.0	76.0	45.0	1 1/2"
RT-4011	332.0	338.5	120.0	260.0	298.0	320.0	153.0	175.0	135.5	115.0	195.0	321.5	98.0	47.0	2"
RT-4015	332.0	338.5	120.0	260.0	298.0	320.0	153.0	175.0	135.5	115.0	195.0	321.5	98.0	47.0	2"
RT-4015-1	332.0	338.5	120.0	260.0	298.0	320.0	153.0	175.0	135.5	115.0	195.0	321.5	98.0	47.0	2"
RT-4018-1	332.0	338.5	120.0	260.0	298.0	320.0	153.0	175.0	135.5	115.0	195.0	321.5	98.0	47.0	2"
RT-4019	332.0	338.5	120.0	260.0	298.0	320.0	153.0	175.0	135.5	115.0	195.0	321.5	98.0	47.0	2"
RT-4026	332.0	338.5	120.0	260.0	298.0	320.0	153.0	175.0	135.5	115.0	195.0	321.5	98.0	47.0	2"
RT-5026	383.0	416.5	125.0	290.0	332.0	370.0	154.0	195.0	160.0	140.0	180.0	362.0	120.0	50.0	2"
RT-6037	383.0	416.5	125.0	290.0	332.0	370.0	154.0	195.0	160.0	140.0	180.0	362.0	120.0	50.0	2"
RT-6046	383.0	416.5	125.0	290.0	332.0	370.0	154.0	195.0	160.0	140.0	180.0	362.0	120.0	50.0	2"
RT-7063	464.0	567.0	145.0	365.0	420.0	462.0	160.0	280.0	188.0	280.0	315.0	490.0	140.0	96.0	2 1/2"
RT-8086	464.0	567.0	145.0	365.0	420.0	462.0	160.0	280.0	188.0	280.0	315.0	490.0	140.0	96.0	2 1/2"
RT-9110	560.0	629.0	210.0	360.0	415.0	621.5	178.5	306.0	230.0	600.0	638.5	710.0	213.0	95.0	4"
RT-9150	560.0	629.0	210.0	360.0	415.0	621.5	178.5	306.0	230.0	600.0	638.5	710.0	213.0	96.0	4"
RT-9220	560.0	629.0	210.0	360.0	415.0	621.5	178.5	306.0	230.0	600.0	638.5	710.0	213.0	97.0	4"

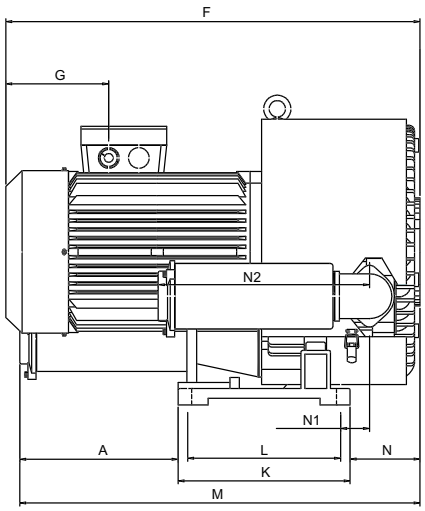
Values in mm.
Drawings similar in desígn: Please contact our technical support for detailed drawings of your requested side channel blower.

Dimensions double stage







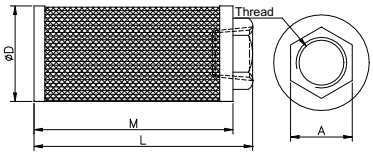


	A	A1	A2	B	B1	C	D	E	F	G	H	J	K	L	M	N	N1	N2	O	P
RT-23009	283.0	338.0	-	272.0	110.0	46.0	205.0	227.0	308.0	118.0	130.0	112.0	83.0	108.0	314.0	136.0	89.0	-	42.0	1 1/4"
RT-23009-1	283.0	338.0	-	272.0	110.0	46.0	205.0	227.0	308.0	118.0	130.0	112.0	83.0	108.0	314.0	136.0	89.0	-	42.0	1 1/4"
RT-33019	320.0	350.0	-	313.0	153.0	58.0	225.0	257.0	411.0	153.0	153.0	136.0	90.0	130.0	345.0	154.0	104.0	-	45.0	1 1/2"
RT-33019-1	320.0	350.0	-	313.0	153.0	58.0	225.0	257.0	411.0	153.0	153.0	136.0	90.0	130.0	345.0	154.0	104.0	-	45.0	1 1/2"
RT-33026	320.0	350.0	-	313.0	153.0	58.0	225.0	257.0	411.0	153.0	153.0	136.0	90.0	130.0	345.0	154.0	104.0	-	45.0	1 1/2"
RT-43037	369.0	443.0	-	374.0	140.0	60.0	260.0	298.0	458.0	154.0	175.0	160.0	115.0	155.0	407.0	170.0	110.0	-	47.0	2"
RT-43046	369.0	443.0	-	374.0	140.0	60.0	260.0	298.0	458.0	154.0	175.0	160.0	115.0	155.0	407.0	170.0	110.0	-	47.0	2"
RT-63046	424.0	454.0	-	417.0	158.0	62.0	290.0	332.0	467.0	154.0	195.0	160.0	140.0	180.0	459.0	206.0	132.0	-	50.0	2"
RT-63063	424.0	454.0	-	416.5	158.0	155.0	290.0	332.0	584.5	159.5	195.0	187.5	140.0	180.0	598.0	206.0	132.0	-	98.0	2"
RT-63086	424.0	454.0	-	416.5	158.0	155.0	290.0	332.0	584.5	159.5	195.0	187.5	140.0	180.0	598.0	206.0	132.0	-	98.0	2"
RT-83086	486.0	615.0	307.0	567.0	199.0	72.5	365.0	420.0	586.5	159.5	280.0	176.5	280.0	315.0	618.0	128.0	53.0	387.0	96.0	2 1/2"
RT-83130	486.0	615.0	307.0	567.0	199.0	143.0	365.0	420.0	758.0	189.0	280.0	230.0	280.0	315.0	733.0	260.0	128.0	387.0	121	2 1/2"
RT-83190	486.0	615.0	307.0	567.0	199.0	143.0	365.0	420.0	758.0	189.0	280.0	230.0	280.0	315.0	733.0	260.0	128.0	387.0	121	2 1/2"

Values in mm.
Drawings similar in desígn: Please contact our technical support for detailed drawings of your requested side channel blower.

Accessories

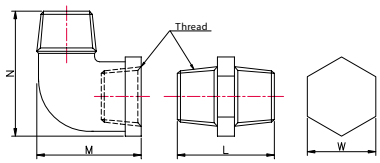
Filter



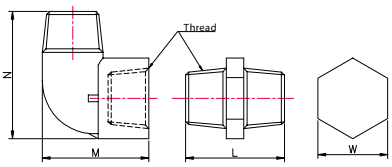
Type	Thread	A mm	D mm	L mm	M mm	Filtration mesh	Flow l/min	Weight kg
MF-08	1"	42	58	170	155	100	110	0.20
MF-10	1 1/4"	54	71	186	170	100	210	0.35
MF-12	1 1/2"	65	85	196	182	100	285	0.49
MF-16	2"	75	103	215	202	100	395	0.65
MF-20	2 1/2"	97	148	274	252	100	750	1.20
MF-32	4"	142	208	380	357	100	1000	2.45

Elbow and Bend

BC Type



BP Type

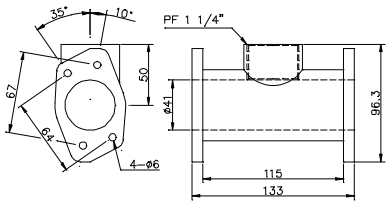


Type	Thread	L mm	M mm	N mm	W mm	Weight kg	Material
BC-10	1"	52	52	73	38	0.36	Cast Iron
BC-12	1 1/4"	56	65	90	47	0.57	Cast Iron
BC-15	1 1/2"	60	73	97	54	0.87	Cast Iron
BC-20	2"	67	85	120	65	1.30	Cast Iron
BP-20	2"	75	94	110	67	0.28	Plastic
BC-25	2 1/2"	76	105	137	82	1.86	Cast Iron
BC-40	4"	96	165	233	121	5.40	Cast Iron

Tee Pipe

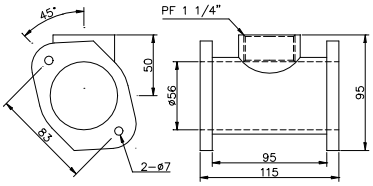
TP-01

Suitable for: RT-2, RT-3, RT-23, RT-33 series



TP-02

Suitable for: RT-4, RT-5, RT-6, RT-43, RT-63, RT-64 series



Adjustable Pressure & Vacuum Relief Valve

Type		Thread	Range mbar
PVC	**RV-03**	PF-1 1/4"	0 to 300
	RV-36	PF-1 1/4"	300 to 600
Aluminium	**RV-A03**	PF-1 1/4"	0 to 300
	RV-A36	PF-1 1/4"	300 to 600

Side Channel Blowers Selections Guide

Pressure

Model	0 mbar	50 mbar		75 mbar		100 mbar		125 mbar		150 mbar		175 mbar		200 mbar		225 mbar		250 mbar		300 mbar		350 mbar		400 mbar		450 mbar		500 mbar		550 mbar		600 mbar		700 mbar		max. value
	m³/min	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	
RT-1xxx	0,8	0,38	0,20																															60 mbar = 0.25 m³/min
RT-2xxx	1,4	1,00	0,40	0,80	0,40	0,50	0,40																											130 mbar = 0.22 m³/min
RT-3xxx	2,4	1,90	0,75	1,65	0,75	1,40	0,75	1,20	0,75	0,90	0,90	0,65	0,90	0,35	1,30																			200 mbar = 0.35 m³/min
RT-4xxx	3,6	3,20	0,90	2,95	0,90	2,70	0,90	2,60	0,90	2,25	0,90	2,00	0,90	1,60	1,50	1,25	1,50	0,73	2,20															270 mbar = 0.35 m³/min
RT-5xxx	5,2	4,95	2,20	4,40	2,20	4,30	2,20	3,85	2,20	3,75	2,20	3,20	2,20	3,10	2,20	2,50	2,20																	230 mbar = 2.60 m³/min
RT-6xxx	5,2	4,95	3,4t0	4,40	3,40	4,30	3,40	3,85	3,40	3,75	3,40	3,20	3,40	3,10	3,40	2,50	3,40	2,15	3,40	1,20	4,00													330 mbar = 0.75 m³/min
RT-7xxx	9,2	8,40	5,50	8,00	5,50	7,75	5,50	7,30	5,50	6,90	5,50	6,20	5,50	5,92	5,50	5,45	5,50	4,95	5,50	4,00	5,50													300 mbar = 4.00 m³/min
RT-8xxx	9,2	8,40	7,50	8,00	7,50	7,75	7,50	7,30	7,50	6,90	7,50	6,20	7,50	5,92	7,50	5,45	7,50	4,95	7,50	4,00	7,50	2,60	7,50	1,85	7,50									400 mbar = 1.80 m³/min
RT-9xxx	18,9	18,00	9,00	17,50	9,00	17,00	9,00	16,70	9,00	16,00	9,00	15,30	9,00	14,50	9,00	14,00	13,00	12,60	13,00	9,70	13,00	8,50	20,00	6,60	20,00	5,00	20,00							450 mbar = 5.00 m³/min
RT-23xxx	1,5	1,18	0,75	1,00	0,75	0,90	0,75	0,75	0,75	0,65	0,75	0,53	0,75	0,40	0,75	0,30	0,75																	240 mbar = 0.16 m³/min
RT-33xxx	2,6	2,20	1,75	2,10	1,75	1,95	1,75	1,80	1,75	1,68	1,75	1,45	1,75	1,30	1,75	1,20	1,75	1,05	1,75	0,75	1,75	0,60	2,20											375 mbar = 0.32 m³/min
RT-43xxx	3,7	3,40	3,40	3,20	3,40	3,00	3,40	2,95	3,40	2,75	3,40	2,55	3,40	2,30	3,40	2,15	3,40	2,00	3,40	1,60	3,40	1,35	3,40	1,00	3,40	0,73	4,00							495 mbar = 0.60 m³/min
RT-63xxx	5,2	4,80	4,00	4,70	4,00	4,55	4,00	4,40	4,00	4,30	4,00	4,20	4,00	4,00	4,00	3,75	4,00	3,65	4,00	3,30	4,00	3,05	4,00	2,60	5,50	2,20	5,50	1,80	5,50	1,45	7,50			580 mbar = 1.15 m³/min
RT-83xxx	9,6	9,10	7,50	9,00	7,50	8,80	7,50	8,70	7,50	8,40	7,50	8,30	7,50	8,15	7,50	7,80	7,50	7,60	7,50	7,40	7,50	6,70	11,00	6,40	11,00	5,80	11,00	5,00	11,00	4,60	11,00	4,00	11,00	2,40	16,00	700 mbar = 2.40 m³/min

Values at 50 Hz.

Suction

Model	0 mbar	-50 mbar		-75 mbar		-100 mbar		-125 mbar		-150 mbar		-175 mbar		-200 mbar		-225 mbar		-250 mbar		-275 mbar		-300 mbar		-325 mbar		-350 mbar		-375 mbar		-400 mbar		-425 mbar		-450 mbar		max. value
	m³/min	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	m³/min	kW	
RT-1xxx	0,8	0,38	0,20																															70 mbar = 0.18 m³/min
RT-2xxx	1,4	0,98	0,40	0,72	0,40	0,41	0,40																											110 mbar = 0.22 m³/min
RT-3xxx	2,4	1,85	0,75	1,60	0,75	1,25	0,75	1,05	0,75	0,75	0,90	0,35	1,30																					175 mbar = 0.35 m³/min
RT-4xxx	3,6	3,00	0,90	2,70	0,90	2,20	0,90	1,80	0,90	1,50	1,30	1,25	1,30	0,80	1,50																			220 mbar = 0.45 m³/min
RT-5xxx	5,2	4,25	2,20	3,70	2,20	3,30	2,20	2,90	2,20	2,30	2,20	1,80	2,20	1,55	2,20	1,25	2,20																	230 mbar = 1.20 m³/min
RT-6xxx	5,2	4,25	3,40	3,70	3,40	3,30	3,40	2,90	3,40	2,30	3,40	1,80	3,40	1,55	3,40	1,25	3,40	1,00	3,40															270 mbar = 0.45 m³/min
RT-7xxx	9,2	8,30	5,50	8,00	5,50	6,50	5,50	5,80	5,50	5,30	5,50	4,50	5,50	4,00	5,50	3,20	5,50	2,80	5,50															270 mbar = 2.00 m³/min
RT-8xxx	9,2	8,30	7,50	8,00	7,50	6,50	7,50	5,80	7,50	5,30	7,50	4,50	7,50	4,00	7,50	3,20	7,50	2,80	7,50	2,10	7,50	1,50	7,50											300 mbar = 1.50 m³/min
RT-9xxx	18,9	18,00	9,00	17,10	9,00	16,50	9,00	15,80	9,00	14,80	9,00	14,10	9,00	12,50	9,00	11,70	13,00	10,50	13,00	8,50	13,00	6,80	13,00	5,20	20,00	3,20	20,00							350 mbar = 3.20 m³/min
RT-23xxx	1,5	1,25	0,75	1,10	0,75	0,90	0,75	0,80	0,75	0,70	0,75	0,45	0,75	0,25	0,75																			200 mbar = 0.25 m³/min
RT-33xxx	2,6	2,20	1,75	2,00	1,75	1,85	1,75	1,65	1,75	1,50	1,75	1,35	1,75	1,20	1,75	1,05	1,75	0,68	1,75	0,45	1,75													280 mbar = 0.25 m³/min
RT-43xxx	3,7	3,40	3,40	3,05	3,40	2,70	3,40	2,60	3,40	2,40	3,40	2,20	3,40	2,00	3,40	1,75	3,40	1,60	3,40	1,20	3,40	0,90	3,40	0,70	3,40	0,50	4,00							355 mbar = 0.40 m³/min
RT-63xxx	5,2	4,70	4,00	4,40	4,00	4,20	4,00	3,75	4,00	3,55	4,00	3,30	4,00	3,05	4,00	2,80	4,00	2,50	4,00	2,30	4,00	2,00	4,00	1,80	4,00	1,50	4,00	1,30	5,50	1,15	5,50			420 mbar = 0.80 m³/min
RT-83xxx	9,6	8,80	7,50	8,60	7,50	8,30	7,50	8,15	7,50	7,80	7,50	7,60	7,50	7,20	7,50	6,80	7,50	6,70	7,50	6,40	7,50	6,00	7,50	5,70	11,00	5,00	11,00	4,90	11,00	2,30	11,00	1,60	11,00	1,20	16,00	450 mbar = 1.20 m³/min

Values at 50 Hz.

SUBMERSIBLE PUMPS

BPS series 33
TPS / TPV series 34
RV series 35
SV / BAV series 36
KS / KSH series 38
DS / DSK series 40
JK series 41
JKH series 42
JKCH series 43
SB series 44
SW series 45
Other pumps 46

Applications

Cleaning and pumping down of liquids of
- Water and waste water tanks
- Fish tanks, Mines, pools and ponds

Garden irrigation
- Reutilisation of process water
- Waterfalls in gardens, fountains

Application at homes
- Septic tanks and water transport
- Pumping down of waste water

Home drainages and dewatering
- Pumping down of ground water and level regulation
- Applications at house building and construction

Agricultural applications
- Irrigation/Dewatering and industrial applications

Advantages

- Great diversification
- Wide fulfilment of demand
- High efficiency
- Permanent further development

SUBMERSIBLE PUMPS

Operating principle

Submersible pumps are very effective.

A wheel turns in a housing. The turning turbine sucks in the liquid through the inlet opening. The rotation accelerates the liquid and pushes it radial outside. The liquid flows out of the housing through the outlet opening.

The most important parameters of a pump are revolution and wheel diameter.
Due to the hydrodynamic operation method, both determine the attained pressure head and delivery rate significant.

Using the full capacity of the pumps the cross sections of pump and hose have to be aligned. A reduction in hose cross section reduces pumping capacity and stresses the turning parts since the pump must now work against increased pressure in the system.

Submersible pumps uses the pumped liquid also as a coolant. To prevent overheating our pumps include a protection against running dry - the so-called floater circuit.

When the water level sinks, the floater circuit automatically switches off the pump. The latest generation of the SM series is now equipped with an integrated chip which regulates continuous monitoring electronically and turns the pump on or off, as necessary.

Our pumps are operated with 230 V.

Other models on request

You can't find the right submersible pump for your application?
Please contact our technical support. We will be glad to help you.

Example of use

Drainage or rain water use

Water is collected from sealed surfaces (roof, terrace, parking space, etc.) and purified via a pre-filter for later use in the household as water for domestic use. Afterward, it is stored in a cement cistern. The water can then be removed, for example with a submersible pump, when needed.

BPS series

BPS-200M / BPS-200MA
BPS-300 / BPS-400

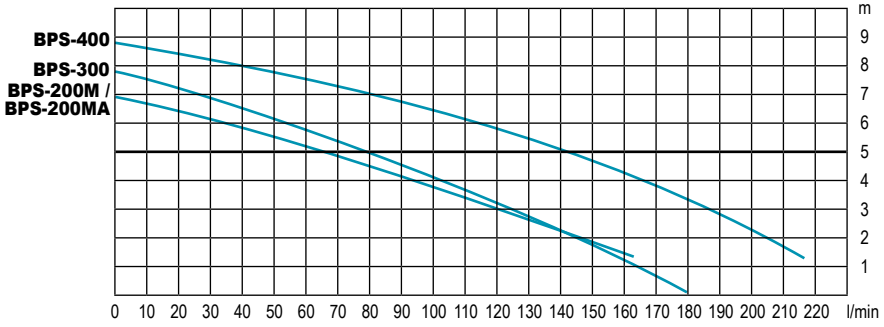
Product characteristics

- Built-in thermal protection switch
- High quality plastic housing for long-term outdoor use
- High efficiency motor with F class insulation and IP68
- BPS-200 is optional available for sea water use
- Optional with vertical switch

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
BPS-200M	230, 50/60	200	2900/3500	4	80	7	160	32	1¼	190 x 155 x 290	10	3.8
BPS-200MA	230, 50/60	200	2900/3500	4	80	7	160	32	1¼	190 x 155 x 290	10	3.8
BPS-300	230, 50/60	300	2900/3500	5	80	8	180	40	1½	196 x 160 x 370	10	6.6
BPS-400	230, 50/60	400	2900/3500	6	120	9	240	50	2	196 x 160 x 370	10	7.6

Performance data



TPS / TPV series

TPS-50 / TPS-200 / TPV-200

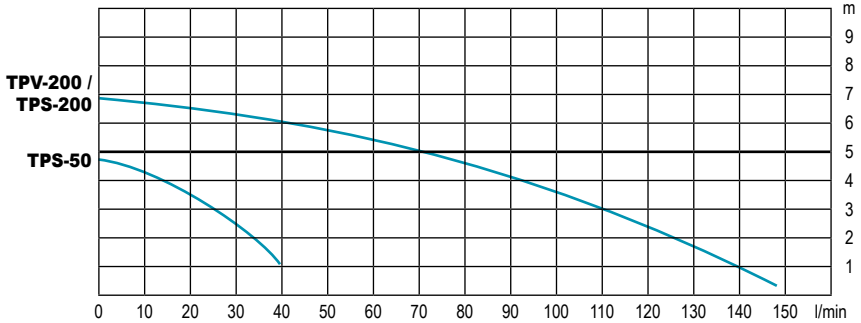
Product characteristics

- Low axial and radial load design
- Designed for 24 hours operation
- Can pass solids from 4 mm (TPS) up to 20 mm (TPV)
- Optional for light acid, alkali and seawater use

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
TPS-50	230, 50/60	80	2900/3500	3	22	4	40	20	¾	114 x 114 x 265	10	2.5
TPS-200	230, 50/60	200	2900/3500	4	120	7	140	32	1½	168 x 146 x 288	10	3.6
TPV-200	230, 50/60	200	2900/3500	4	120	7	140	32	1½	168 x 146 x 288	10	3.6

Performance data



RV series

RV-32 / RV-40

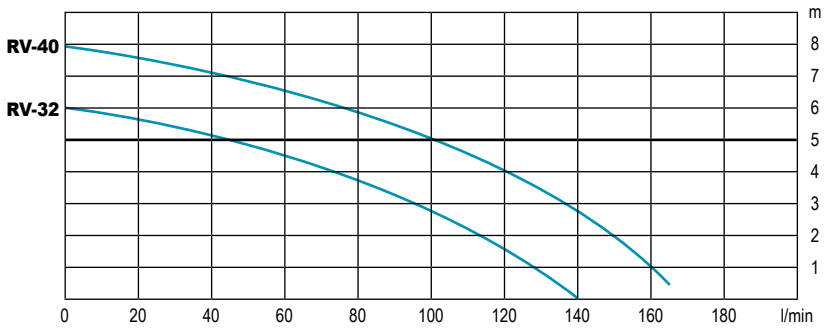
Product characteristics

- Innovative sewage pump with robust plastic housing
- Designed to run continuously without stop for long time
- Can pass solid up to 18 mm
- Double volute chamber to barricade dirty stuff

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
RV-32	230, 50/60	200	2900/3500	4	80	6	130	32	1¼	154 x 143 x 345	10	3.9
RV-40	230, 50/60	250	2900/3500	5	120	8	170	32	1¼	154 x 143 x 345	10	5.9

Performance data



SV series

SV-150 / SV-250 / SV-400
SV-550 / SV-750

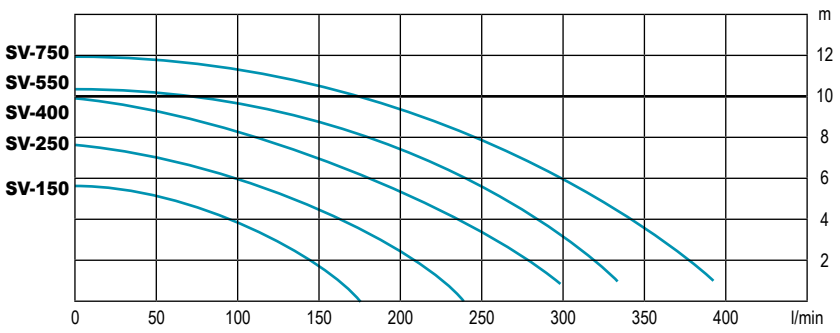
Product characteristics

- Can pass solid from 20 up to 40 mm
- Waste water applications possible
- Non-clogging design
- Built-in thermal protection switch
- Stainless steel motor housing

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
SV-150	230, 50/60	150	2900/3500	4	100	5.7	170	40	1½	415 x 155 x 210	10	8
SV-250	230, 50/60	250	2900/3500	4.5	120	7.5	220	40	1½	415 x 155 x 210	10	9.5
SV-400	230, 50/60	400	2900/3500	6	180	10	300	50	2	435 x 155 x 240	10	12
SV-550	230, 50/60	550	2900/3500	8	220	10	360	80	3	435 x 155 x 260	10	14
SV-750	230, 50/60	750	2900/3500	9	230	11	380	80	3	435 x 155 x 260	10	18

Performance data



BAV series

BAV-150 / BAV-250 / BAV-400 / BAV-550

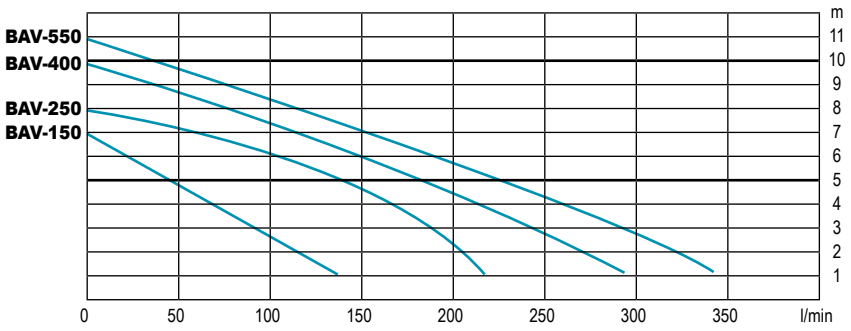
Product characteristics

- Non-clogging vortex impeller
- Built-in thermal protection switch
- Stainless steel motor housing
- Passes solid diameter from 10 up to 35 mm
- Optional with strainer for clean water

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
BAV-150	230, 50/60	150	2900/3500	3.5	60	7	130	32	1¼	190 x 140 x 300	10	5
BAV-250	230, 50/60	250	2900/3500	5	120	8	200	40	1½	200 x 140 x 320	10	6
BAV-400	230, 50/60	400	2900/3500	5	180	10	280	50	2	230 x 160 x 350	10	6.5
BAV-550	230, 50/60	550	2900/3500	6	200	11	340	50	2	230 x 160 x 380	10	10

Performance data



KS series

KS-03 / KS-04 / KS-05 / KS-08 / KS-20 / KS-30 / KS-50 / KS-75 / KS-100

Product characteristics

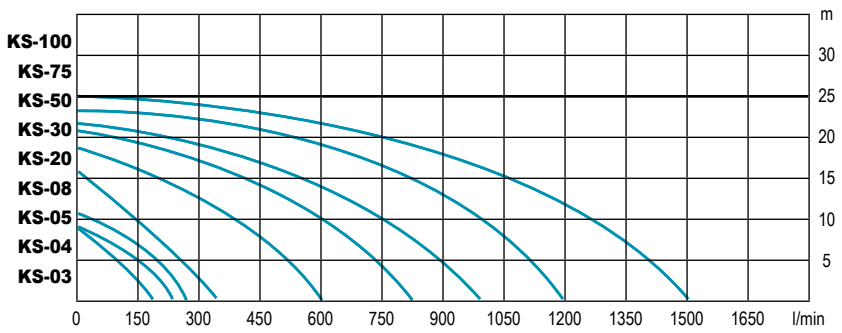
- Motor with IP68 protection and F class insulation
- Low temperature rise for long service life
- Built-in thermal protection switch
- Optional with double mechanical seal (up from KS-08)

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
KS-03	230, 50/60	250	2900/3500	3	130	8	180	40	1½	188 x 141 x 305	10	9
KS-04	230, 50/60	400	2900/3500	5	150	8	220	50	2	208 x 140 x 359	10	11
KS-05	230, 50/60	400	2900/3500	5	160	10	260	50	2	230 x 156 x 375	10	14
KS-08	230, 50/60	750	2900/3500	6	240	13	380	50(80)	2 (3)	290 x 180 x 425	10	21
KS-20	230[1], 50/60	1500	2900/3500	10	300	16	600	80	3	278 x 182 x 475	10	31
KS-30	380, 50/60	2200	2900/3500	10	500	18	800	80	3	390 x 250 x 450	10	42
KS-50	380, 50/60	3700	2900/3500	10	800	21	1100	100	4	450 x 240 x 530	10	48
KS-75	380, 50/60	5600	2900/3500	15	800	23	1300	100	4	550 x 310 x 590	10	60
KS-100	380, 50/60	7500	2900/3500	18	900	26	1600	150	6	550 x 310 x 610	10	70

[1] also available as 380 V version

Performance data



KSH series

KSH-05 / KSH-10 / KSH-20
KSH-30 / KSH-50

Product characteristics

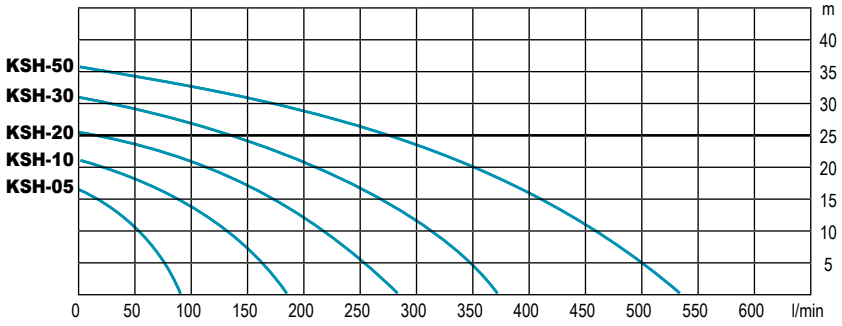
- Motor with IP68 protection and F class insulation
- Low temperature rise for long service life
- Built-in thermal protection switch
- With double mechanical seal

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
KSH-05	230, 50/60	400	2900/3500	10	80	18	120	40	1½	290 x 168 x 422	10	16
KSH-10	230, 50/60	750	2900/3500	15	100	21	200	40	1½	283 x 227 x 465	10	29
KSH-20	230[1], 50/60	1500	2900/3500	15	180	25	320	50	2	283 x 227 x 484	10	32
KSH-30	380, 50/60	2200	2900/3500	18	250	30	420	50	2	395 x 250 x 510	10	42
KSH-50	380, 50/60	3700	2900/3500	20	300	35	550	80	3	455 x 290 x 585	10	50

[1] also available as 380 V version

Performance data



DS / DSK series

DS-05 / DS-20 / DS-30 / DS-50 / DS-100 / DSK-05 / DSK-10 / DSK-20 / DSK-30 / DSK-50

Product characteristics

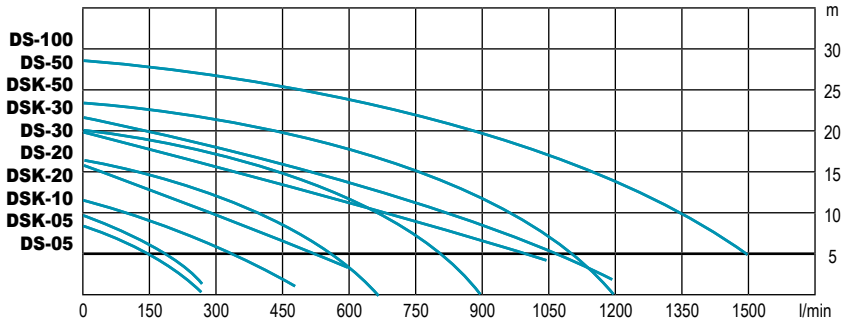
- Motor with IP68 protection and F class insulation
- Low temperature rise for long service life
- Built-in thermal protection switch
- Stainless steel motor housing
- Optional pedestal for easy installation (TDS / TDSK)

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
DS-05	230, 50/60	400	2900/3500	5	160	10	240	50	2	245 x 188 x 420	10	18
DS-20	230[1], 50/60	1500	2900/3500	8	380	15	650	80	3	285 x 223 x 550	10	32
DS-30	380, 50/60	2200	2900/3500	10	550	18	1060	80	3	410 x 240 x 520	10	42
DS-50	380, 50/60	3700	2900/3500	12	600	19	1210	100	4	480 x 250 x 550	10	57
DS-100	380, 50/60	7500	2900/3500	15	1100	26	1500	100	4	530 x 320 x 610	10	75
DSK-05	230, 50/60	400	2900/3500	5	100	8	240	50	2	245 x 188 x 420	10	18
DSK-10	230, 50/60	750	2900/3500	6	250	12	350	50	2	280 x 195 x 420	10	30
DSK-20	230[1], 50/60	1500	2900/3500	8	500	15	650	80	3	280 x 195 x 425	10	35
DSK-30	380, 50/60	2200	2900/3500	10	550	18	800	80	3	410 x 240 x 520	10	46
DSK-50	380, 50/60	3700	2900/3500	12	700	21	1200	100	4	480 x 250 x 550	10	62

[1] also available as 380 V version

Performance data



JK series

JK-05 / JK-10 / JK-20
JK-30 / JK-50 / JK 75

Product characteristics

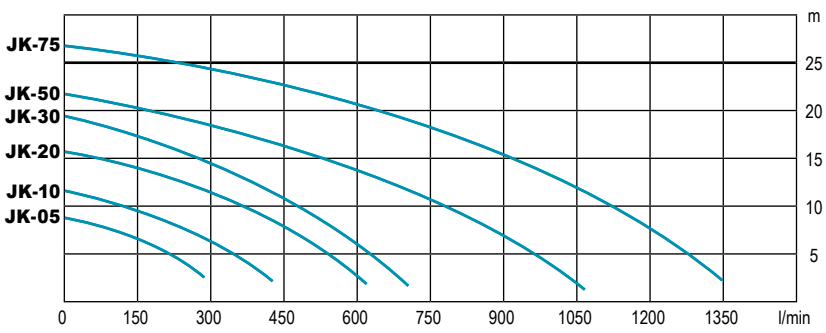
- Non-clogging impeller design for superior operation
- Optional strainer may protect oil seal to prolong life
- Built-in thermal protection switch
- Optional silicon carbide mechanical seal and Tungsten impeller
- Optional pedestal for easy installation (TJK)

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
JK-05	230, 50/60	400	2900/3500	6	150	9	300	50	2	223 x 132 x 395	10	14
JK-10	230, 50/60	750	2900/3500	9	200	12	420	50	2	223 x 132 x 425	10	30
JK-20	230[1], 50/60	1500	2900/3500	12	300	17	620	80	3	390 x 210 x 530	10	32.2
JK-30	380, 50/60	2200	2900/3500	14	320	20	750	80	3	392 x 210 x 550	10	34.5
JK-50	380, 50/60	3700	2900/3500	15	480	23	1100	100	4	525 x 250 x 635	10	45
JK-75	380, 50/60	5500	2900/3500	18	600	25	1350	100	4	525 x 250 x 675	10	54

[1] also available as 380 V version

Performance data



JKH series

JKH-150 / JKH-250
JKH-400 / JKH-750

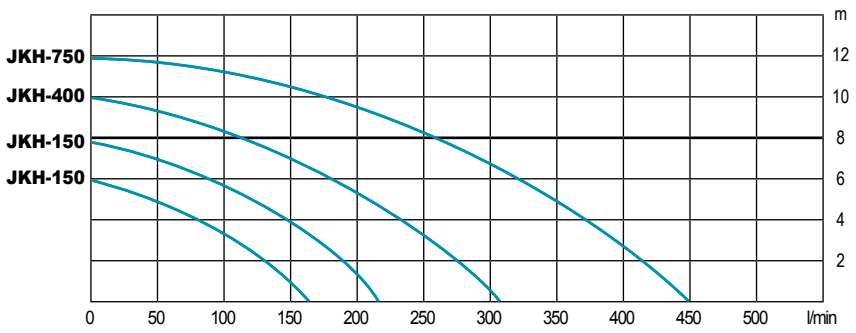
Product characteristics

• Spherical clearance up to 35 mm

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
JKH-150	230, 50/60	150	2900/3500	4	100	6	160	50	2	305 x 152 x 175	10	5,5
JKH-250	230, 50/60	250	2900/3500	5	120	7	220	50	2	320 x 152 x 175	10	6,5
JKH-400	230, 50/60	400	2900/3500	6	180	10	300	50	2	330 x 162 x 180	10	8
JKH-750	230, 50/60	750	2900/3500	8	220	12	450	50	2	350 x 162 x 180	10	11

Performance data



JKCH series

JKCH-30 / JKCH-40 / JKCH-50

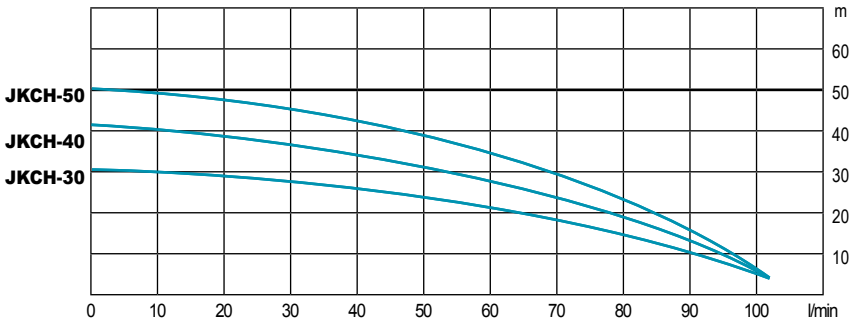
Product characteristics

- Stainless steel housing
- Impellers. diffusers and separators in PPO material and fiber glass
- Built-in thermal protection switch
- Particularly suited for dewatering, irrigation and water boosting from 30 to 60 m head

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
JKCH-30	230, 50/60	800	2900/3500	20	45	31	100	32	1¼	126 x 126 x 454	10	12.8
JKCH-40	230, 50/60	900	2900/3500	25	55	42	100	32	1¼	126 x 126 x 478	10	13.8
JKCH-50	230, 50/60	1100	2900/3500	30	58	52	100	32	1¼	126 x 126 x 530	10	14.8

Performance data



SB series

SB-05 / SB-10 / SB-20
SB-30 / SB-50 / SB-75

Product characteristics

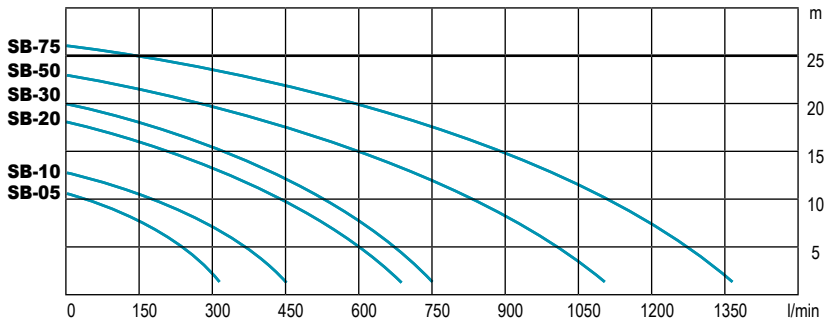
- Non-clogging impeller design for superior operation
- Optional strainer may protect oil seal to prolong life
- Stainless steel for use with sea water and light acid
- Built-in thermal protection switch
- Optional silicon carbide mechanical seal and Tungsten impeller

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
SB-05	230, 50/60	400	2900/3500	6	150	9	300	50	2	223 x 132 x 395	10	14
SB-10	230, 50/60	750	2900/3500	9	200	12	420	50	2	223 x 132 x 425	10	21
SB-20	230[1], 50/60	1500	2900/3500	12	300	17	620	80	3	390 x 210 x 530	10	32.2
SB-30	230[1], 50/60	2200	2900/3500	14	320	20	750	80	3	392 x 210 x 550	10	34.5
SB-50	230[1], 50/60	3700	2900/3500	15	480	23	1100	80 (100)	3 (4)	525 x 250 x 635	10	45
SB-75	380, 50/60	5500	2900/3500	18	600	25	1350	100	4	525 x 250 x 675	10	54

[1] also available as 380 V version

Performance data



SW series

SW-50 / SW-100 / SW-200

Product characteristics

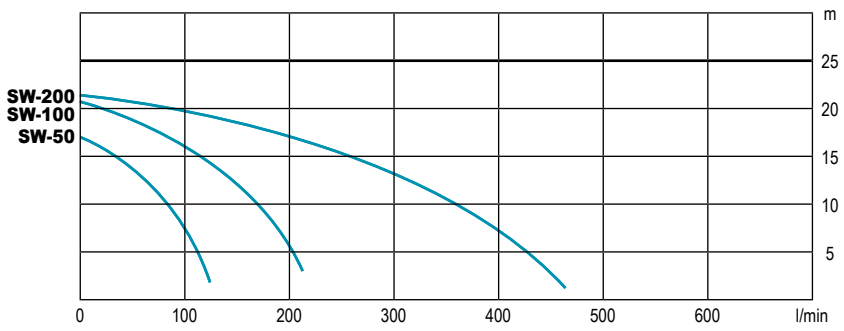
- Two pole high efficient motor
- Stainless steel pump casing with tough fiber glass plastic impeller and diffuser
- Lightweight aluminum motor housing for superior heat transfer

Technical data

Model	Motor power			Pump power				Outlet		Dimensions L x W x H	Standard cable length	Weight
	Voltage	Power	Revolution	Rated		Maximum						
	V, Hz	W	min^{-1}	H (m)	l/min	H (m)	l/min	mm	Inch	mm	m	kg
SW-50	230, 50/60	400	2700/3450	10	70	18	120	25	1	340 x 200 x 160	10	10
SW-100	230, 50/60	750	2700/3450	13	120	20	200	40	1½	400 x 220 x 220	10	18
SW-200	230[1], 50/60	1500	2700/3450	16	250	20	400	50	2	354 x 182 x 220	10	20

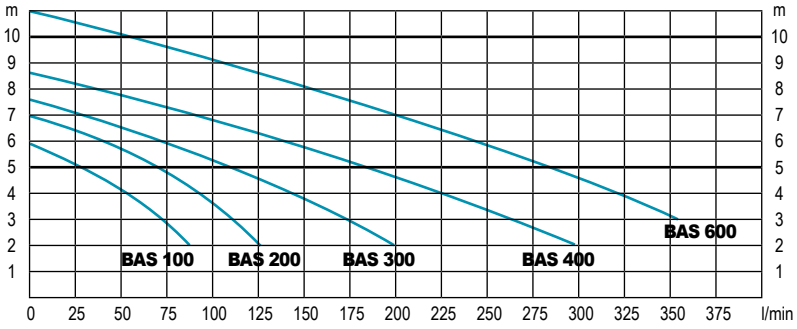
[1] also available as 380 V version

Performance data



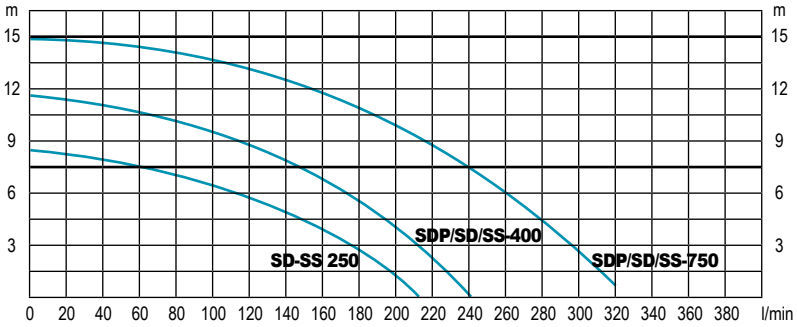
BAS series

BAS-100 / BAS-200 / BAS-300 / BAS-400 / BAS-600



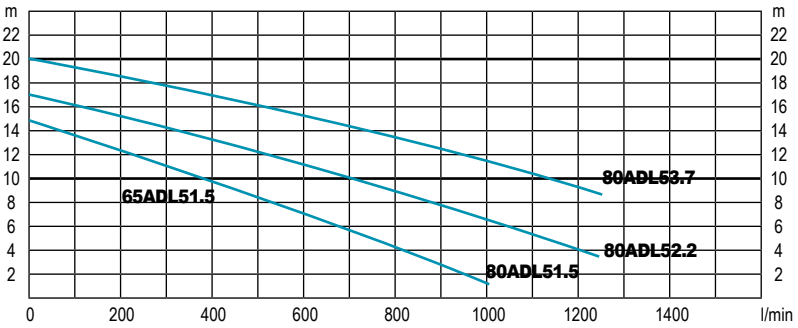
SD / SS / SDP series

SD-250 / SD-400 / SD-750 / SS-250 / SS-400 / SS-750 / SDP-400 / SDP-750



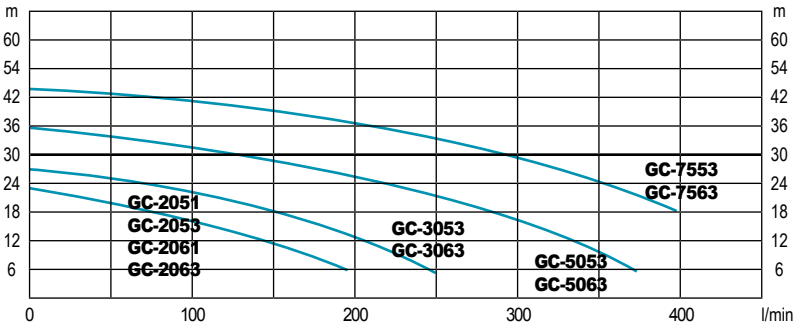
ADL series

65ADL51.5 / 80ADL51.5 / 80ADL52.2 / 80ADL53.7



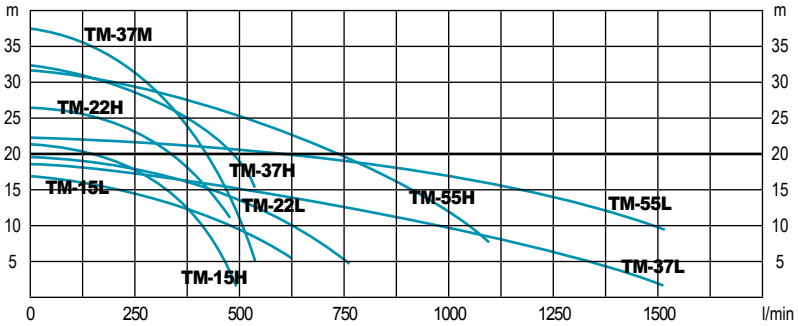
GC series

GC-2051 / GC-2053 / GC-2061 / GC-2063 / GC-3053 / GC-3063 / GC-5053 / GC-5063 / GC-7553 / GC-7563



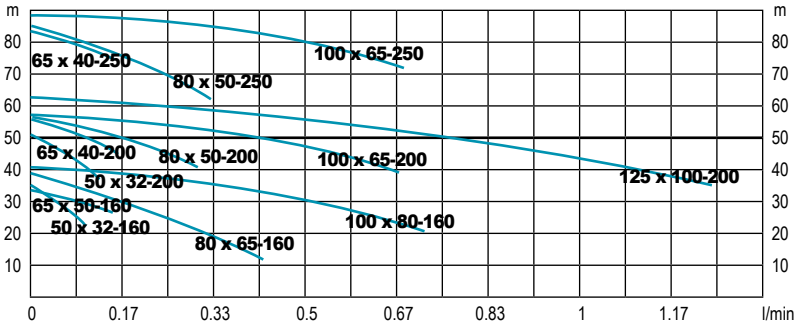
TM series

TM-15H / TM-15L / TM-22H / TM-22L / TM-37H /
TM-37M / TM-37L / TM-55H / TM-55L



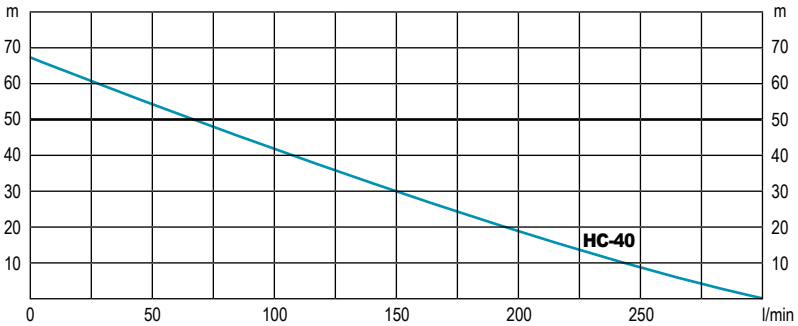
CP series

50 x 32-160 / 50 x 32-200 / 65 x 50-160 / 65 x 40-200 /
65 x 40-250 / 80 x 65-160 / 80 x 50-200 / 80 x 50-250 /
100 x 80-160 / 100 x 65-200 / 100 x 65-250 / 125 x 100-200



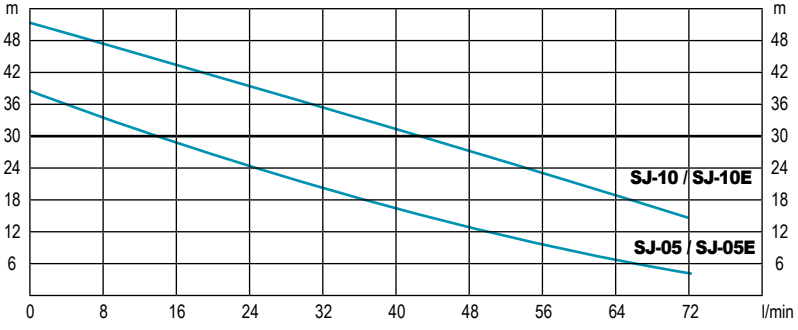
HC-40 series

HC-40



SJ series

SJ-05 / SJ-05E / SJ-10 / SJ-10E



AIR OPERATED DIAPHRAGM PUMPS

Y01.NDP.5	**52**
Y01.DP.10 / Y01.NDP.10	**54**
Y01.NDP.15	**56**
Y01.NDP.20	**58**
Y01.NDP.25	**60**
Y01.NDP.40	**62**
Y01.NDP.50	**64**
Y01.NDP.80	**66**

Applications

Chemical industry
- Acids and alkalies
- Suspensions and solutions

Environmental industry
- Waste water treatment
- Slurries

Pharmaceutical industry and laboratory
- Alcohols, glycerin
- Blood plasma und sterile products
- Ointments and pastes

Ceramics and porcelain industry
- abrasive applications

Food and beverage industry
- Food processing applications (FDA approved)

Paper and print industry
- Printing inks and varnishes
- Solvents
- Dispersions and latex

Petroleum industry
- Tank cleaning and waste oil
- Petroleum and fuels

Tool and Dispenser Systems
- Lubrication
- Cooling

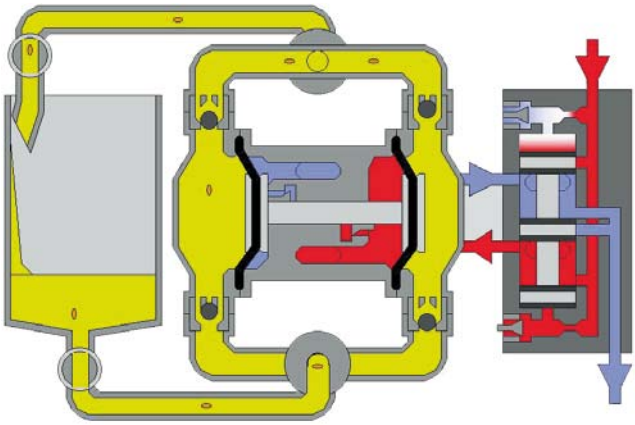
Advantages

- Extended performance diaphragm
- Unrestricted usage of fluid
- Excellent wear resistance
- Simple and safe flow control
- High energy efficiency
- Air driven intrinsically safe (ATEX)
- Non-lube air valve
- Air valve for safe pump start
- Dry start and self priming is possible

AIR OPERATED DIAPHRAGM PUMPS

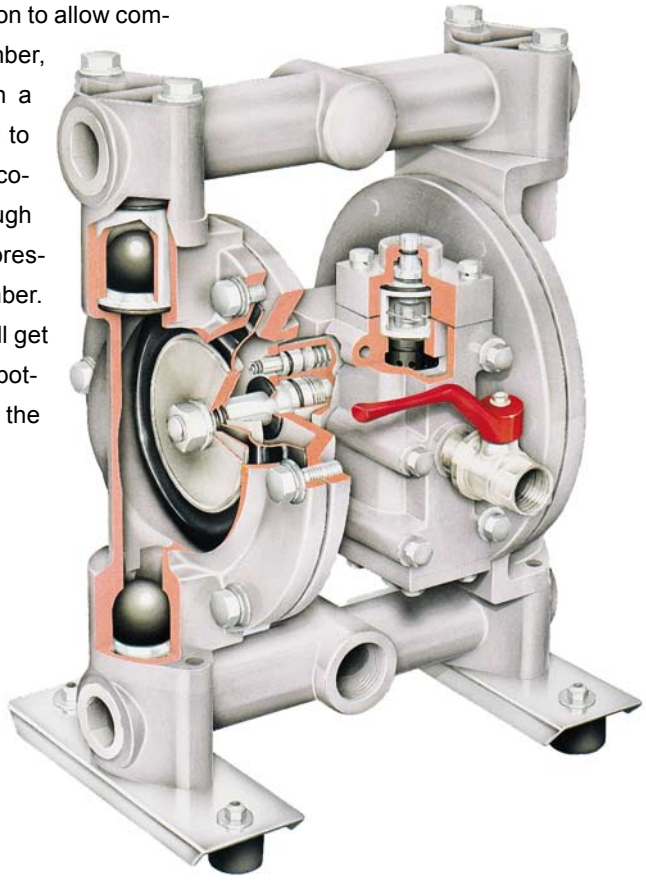
Operating principle

An air driven diaphragm pump will start working with compressed air at 1-7 bar (5 bar for plastic pumps). The compressed air will flow through a valve mechanism to the left or right air chamber.



The two air chambers are separated from the liquid chambers by two flexible diaphragms connected to each other by a centre rod. If the air valve is in a position to allow compressed air to flow into the right air chamber, the left air chamber will exhaust through a muffler. The air flow causes the centre rod to move to the right so the liquid chamber becomes smaller and the liquid is pushed through the valve in the top manifold. The liquid pressure also closes the valve to the right chamber. At the same time the left liquid chamber will get bigger and creates a vacuum so that the bottom valve opens and liquid is pulled into the left chamber.

At the end of the stroke the air valve will switch over and the whole process is reversed. If the liquid outlet of the pump is closed the pump will stop as the air and liquid pressures will be balanced. The diaphragm will have balanced air and liquid pressures on each side which gives a long diaphragm life.



Your advantages

Extended performance diaphragm

The pressure differences on the membrane surface and thus the applicable inner strain are very low in comparison to mechanically driven membrane pumps. The development of a new long-term membrane from a PTFE compound (PTFE foil with EPDM carrier material) allowed 3 properties to be combined at the same time:

- Extremely long membrane service life
- Diffusion density consistency
- Better conductivity (to prevent static charging)

Unrestricted use of fluids

Practically any fluid can be pumped, from clear water to low-boiling-point media to highly viscous fluids and chemically aggressive media. The valves can handle polluted fluids and solids without impairing vacuum capacity. The slow speed of the current flow and the gentle-action pumping make it easy to also pump abrasive and erosive media.

Dry start and self priming

Completely self priming from a dry start, with suction lifts not exceeding 5 meter on fresh water. The dry running capability enables safe installations to be made where the liquid supply is likely to be made intermittent. If source runs dry, the pump continuous to operate without damage by overheating or friction wear until further liquid is available.

Simple and safe flow control

Infinitely variable flow control can be simply by opening or closing a valve on the discharge, or by increasing or decreasing the air supply.

Air driven intrinsically safe (ATEX)

The power source of compressed air is most suitable for operation in potentially explosive environments. The pneumatic drive absolutely spark-free and in order to prevent possible static charging, conductive metal housings or PVDF ones enriched with graphite are available.

Y01.NDP.5

Size 1/4"

Max. discharge volume 10 l/min

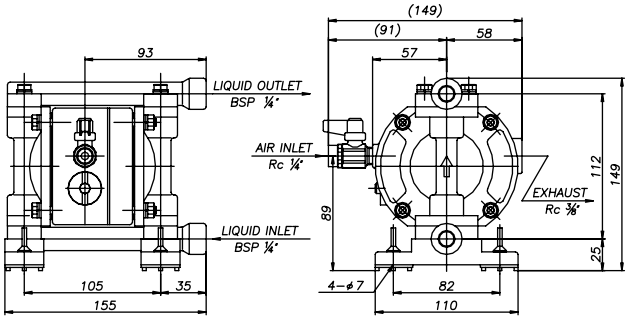
Technical data

Specifications / Pump type		P	V	A	S	
Port dimensions 1/4“ (6mm)	Material inlet	●	●			1/4“ BSP
				●	●	1/4“ BSPT
	Material outlet	●	●			1/4“ BSP
				●	●	1/4“ BSPT
	Air inlet	●	●	●	●	1/4“ BSPT (with ball valve)
	Exhaust	●	●	●	●	Rc 3/8“ (with silencer)
Discharge volume per cycle	Rubber diaphragm					n/a
	PTFE diaphragm	●	●	●	●	13-20 cm³
Air pressure range		●	●	●	●	2–7 bar
Max. discharge pressure		●	●	●	●	7 bar
Maximum size of solid		●	●	●	●	less than Ø 0.2 mm
Weight in kg		1.4	1.45	1.5	3.0	

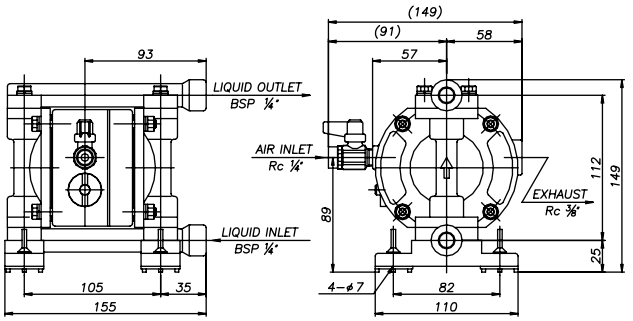
Diaphragm / Wetted materials		P	A	S	V
		Polypropylene (PPG)	**Aluminium (AC4C-T6)**	**Stainless steel (SUS 316)**	**Kynar® (PVDF)**
T	**Teflon® (PTFE)**	Y01.NDP.5.FPT	Y01.NDP.5.FAT	Y01.NDP.5.FST	Y01.NDP.5.FVT

Dimensions

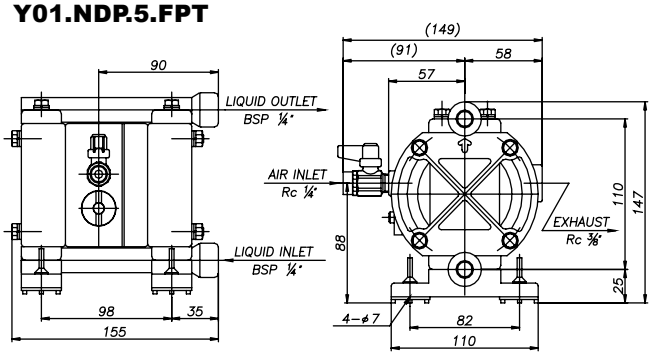
Y01.NDP.5.FAT



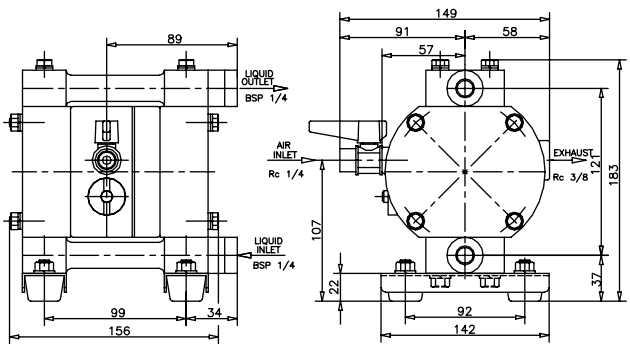
Y01.NDP.5.FST



Y01.NDP.5.FPT

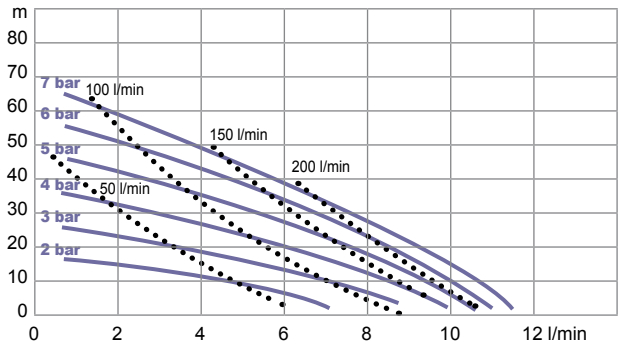


Y01.NDP.5.FVT

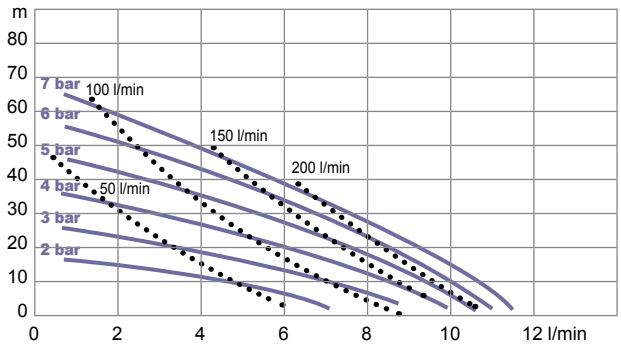


Performance data

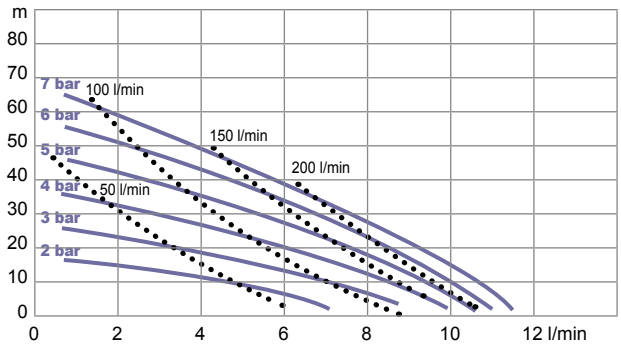
Y01.NDP.5.FAT



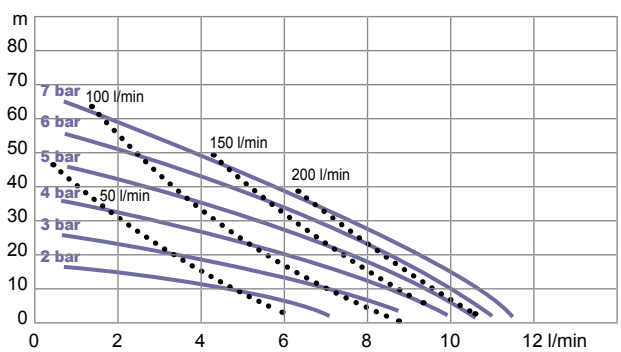
Y01.NDP.5.FST



Y01.NDP.5.FPT



Y01.NDP.5.FVT



Y01.NDP.10
Y01.DP.10
Size 3/8"

Max. discharge volume 20 l/min

Technical data

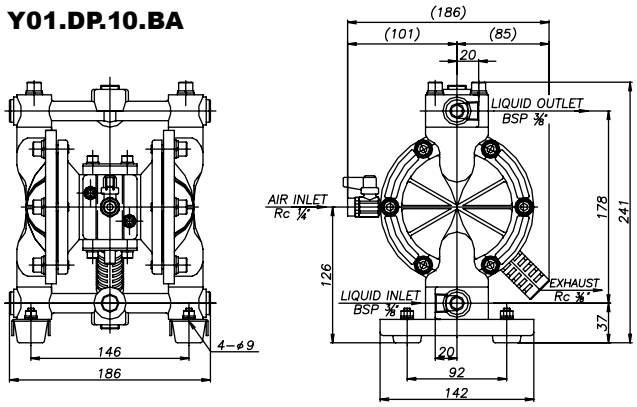
Specifications / Pump type		P (DP)	A	S	T (NDP)	P (NDP)	
Port dimensions 3/8“ (10mm)	Material inlet				●	●	3/8“ BSP
			●	●			3/8“ BSPT
	Material outlet	●			●	●	3/8“ BSP
			●	●			3/8“ BSPT
	Air inlet	●	●	●	●	●	1/4“ BSPT (with ball valve)
	Exhaust	●	●	●	●	●	Rc 3/8“ (with silencer)
Discharge volume per cycle	Rubber diaphragm	●	●	●	●	●	52 cm³
	PTFE diaphragm	●	●	●	●	●	52 cm³
Air pressure range					●		2–5 bar
Air pressure range		●	●	●		●	2–7 bar
Max. discharge pressure					●		5 bar
		●	●	●		●	7 bar
Maximum size of solid		●	●	●	●	●	less than Ø 1.0 mm
Weight in kg		3.3	4.6	5.3	6.0	3.1	

Diaphragm / Wetted materials		P (DP)	A[1]	S	T (NDP)	P (NDP)
		Polypropylene	Aluminium (AC4C-T6)	Stainless steel	Teflon® (PTFE)	Polypropylene
C	Neoprene® (CR)	Y01.DP.10.BPC	Y01.DP.10.BAC	Y01.DP.10.BSC	n/a	Y01.NDP.10.BPC
N	Nitrile (NBR)	Y01.DP.10.BPN	Y01.DP.10.BAN	Y01.DP.10.BSN	n/a	Y01.NDP.10.BPN
E	Nordel® (EPDM)	Y01.DP.10.BPE	Y01.DP.10.BAE	Y01.DP.10.BSE	n/a	Y01.NDP.10.BPE
S	Santoprene® (TPO)[2]	Y01.DP.10.BPS	Y01.DP.10.BAS	Y01.DP.10.BSS	n/a	Y01.NDP.10.BPS
H	Hytrel® (TPEE)[3]	Y01.DP.10.BPC	Y01.DP.10.BAH	Y01.DP.10.BSH	n/a	Y01.NDP.10.BPH
V	Viton® (FPM)	on request	on request	on request	on request	on request
T	Teflon® (PTFE)	Y01.DP.10.BPT	Y01.DP.10.BAT	Y01.DP.10.BST	Y01.NDP.10.BTT	Y01.NDP.10.BPT

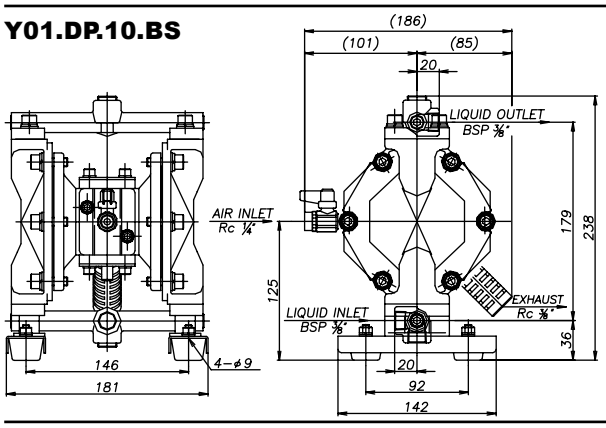
[1] Material of ball guide for Y01.DP.BA series: Polyamide, [2] Material of ball for Santoprene® diaphragm pumps: EPDM
[3] Material of ball, valves and gaskets for Hytrel® diaphragm pumps: PTFE

Dimensions

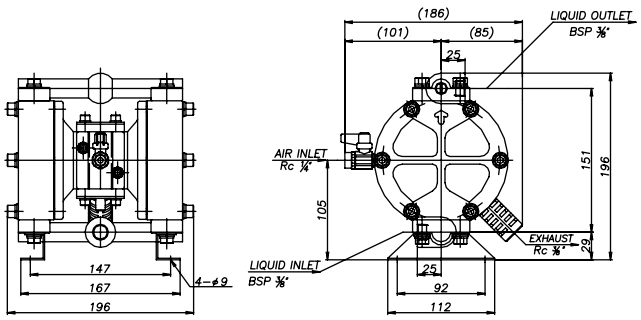
Y01.DP.10.BA



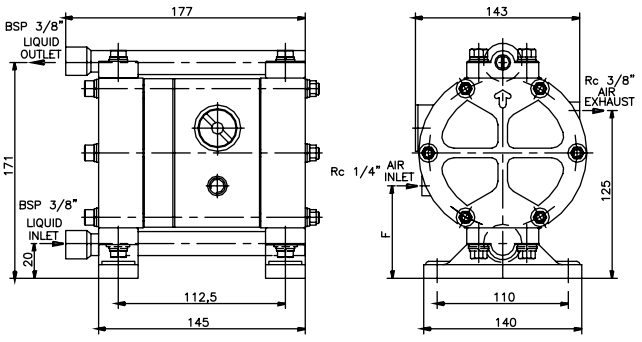
Y01.DP.10.BS



Y01.DP.10.BP

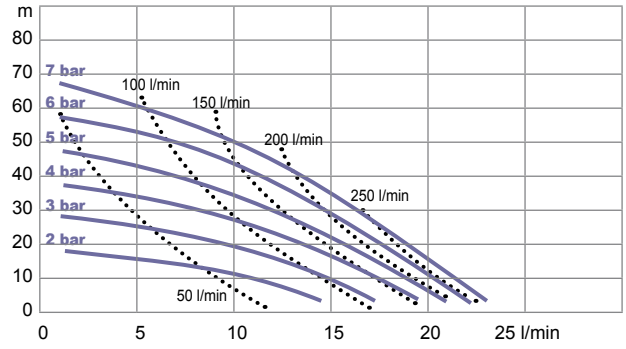


Y01.NDP.10.BPC/E/H/N/S/T

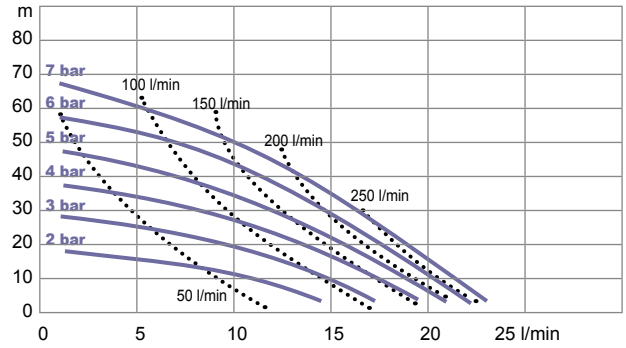


Performance data

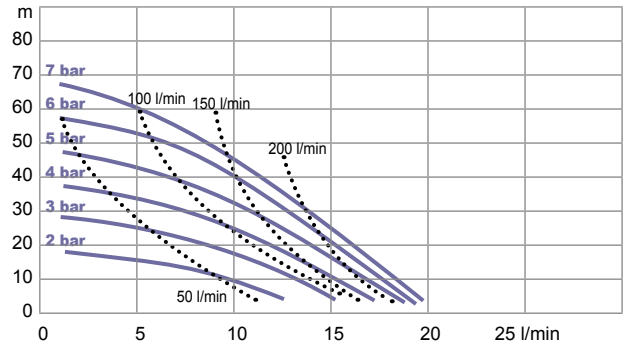
Y01.DP.10.BA



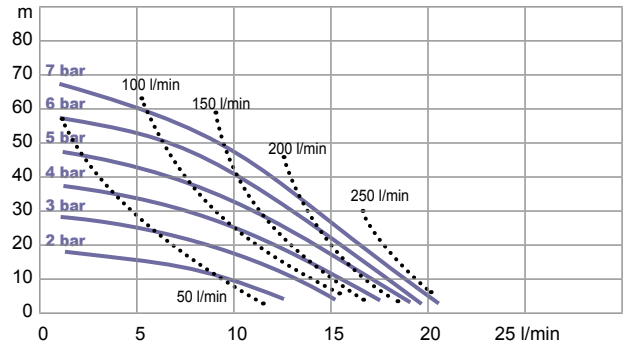
Y01.DP.10.BS



Y01.DP.10.BP



Y01.NDP.10.BPC/E/H/N/S/T



Y01.NDP.15

Size 1/2"

Max. discharge volume 50 l/min

Technical data

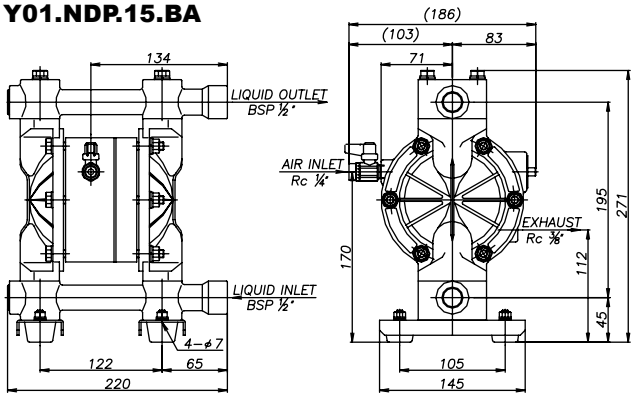
Specifications \ Pump type		P	A	S	V	T	
Port dimensions 1/2" (12mm)	Material inlet	●				●	1/2" BSP
			●	●	●		1/2" BSPT
	Material outlet	●				●	1/2" BSP
			●	●	●		1/2" BSPT
	Air inlet	●	●	●	●	●	1/4" BSPT (with ball valve)
	Exhaust	●	●	●	●	●	Rc 3/8" (with silencer)
Discharge volume per cycle	Rubber diaphragm	●	●	●		●	70 cm³
	PTFE diaphragm	●	●	●	●	●	70 cm³
Air pressure range						●	2–5 bar
		●	●	●	●		2–7 bar
Max. discharge pressure						●	5 bar
		●	●	●	●		7 bar
Maximum size of solid		●	●	●	●	●	less than Ø 1.0 mm
Weight in kg		3.5	4.1	6.2	4.3	3.8	

Diaphragm \ Wetted materials		P	A	S	V	T
		Polypropylene	**Aluminium (AC4C-T6)**	**Stainless steel**	**Kynar® (PVDF)**	**Teflon® (PTFE)**
C	**Neoprene® (CR)**	Y01.NDP.15.FPC	Y01.NDP.15.BAC	Y01.NDP.15.BSC	Y01.NDP.15.FVC	n/a
N	**Nitrile (NBR)**	Y01.NDP.15FPN	Y01.NDP.15.BAN	Y01.NDP.15.BSN	Y01.NDP.15.FVN	n/a
E	**Nordel® (EPDM)**	Y01.NDP.15.FPE	Y01.NDP.15.BAE	Y01.NDP.15.BSE	Y01.NDP.15.FVE	n/a
S	**Santoprene® (TPO)[1)]**	Y01.NDP.15.FPS	Y01.NDP.15.BPC	Y01.NDP.15.BSS	Y01.NDP.15.FVS	n/a
H	**Hytrel® (TPEE)[2)]**	Y01.NDP.15.FPH	Y01.NDP.15.BAH	Y01.NDP.15.BSH	Y01.NDP.15.FVH	n/a
V	**Viton® (FPM)**	on request	on request	on request	Y01.NDP.15.FVV	on request
T	**Teflon® (PTFE)**	Y01.NDP.15.FPT	Y01.NDP.15.BAT	Y01.NDP.15.BST	Y01.NDP.15.FVT	Y01.NDP.15.FTT

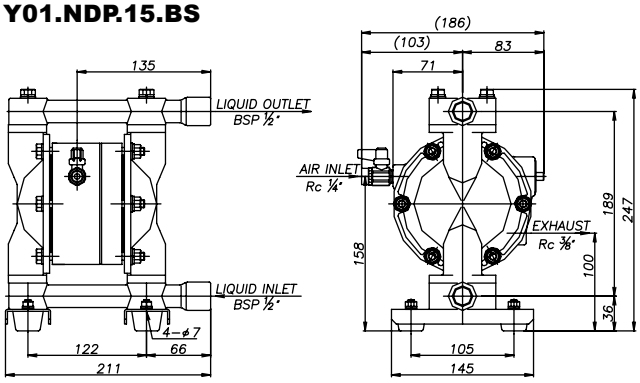
[1)] Material of ball for Santoprene® diaphragm pumps: EPDM
[2)] Material of ball, valves and gaskets for Hytrel® diaphragm pumps: PTFE

Dimensions

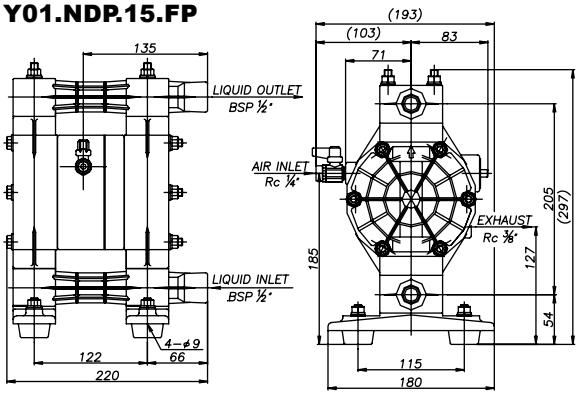
Y01.NDP.15.BA



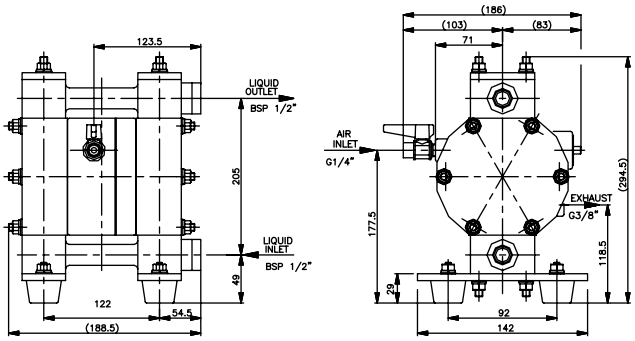
Y01.NDP.15.BS



Y01.NDP.15.FP

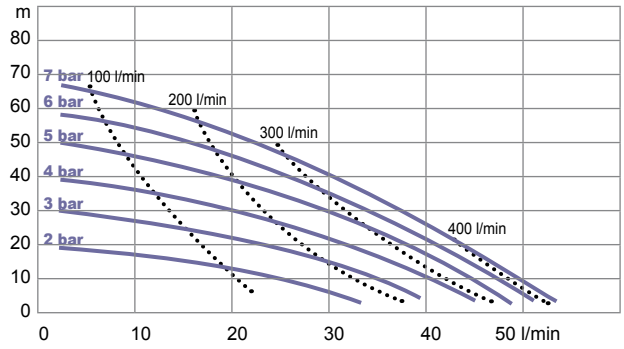


Y01.NDP.15.FTT

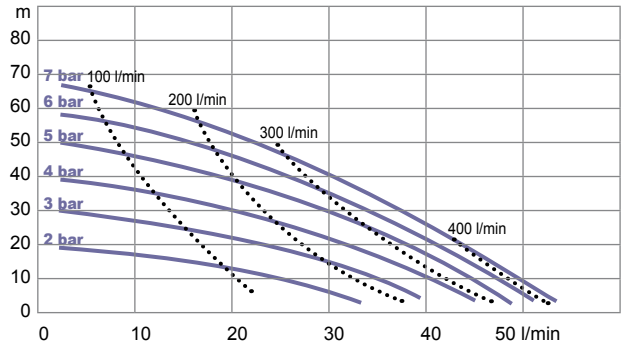


Performance data

Y01.NDP.15.BA



Y01.NDP.15.BS



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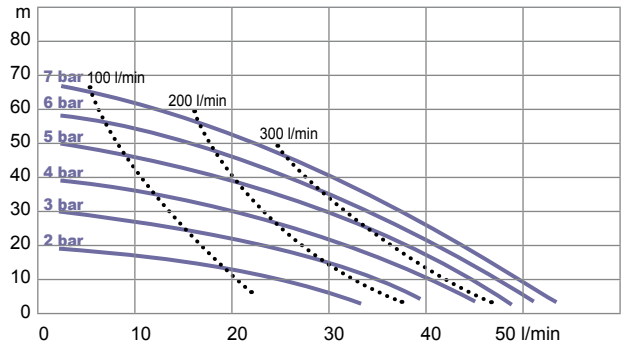
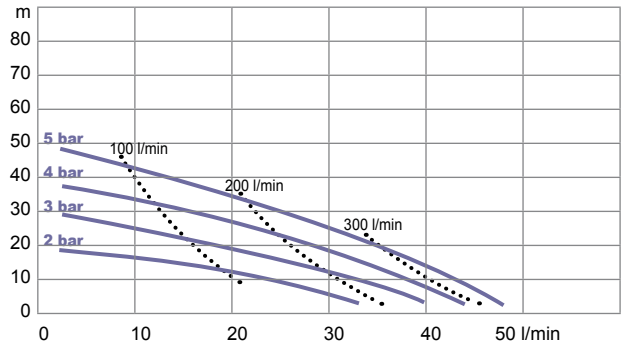


Y01.NDP.15.FTT



Y01.NDP.20

Size 3/4"

Max. discharge volume 110 l/min

Technical data

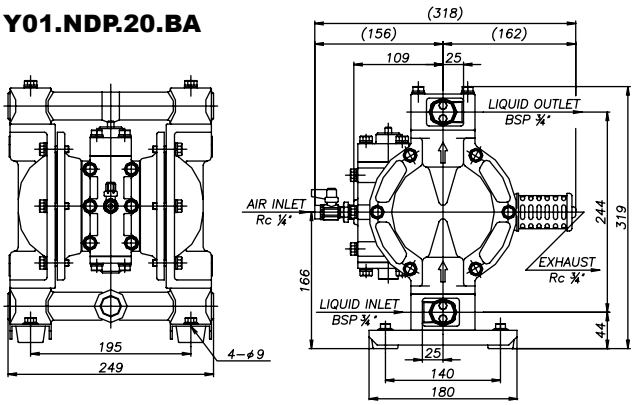
Specifications / Pump type		P	A	S	T	
Port dimensions 3/4“ (20mm)	Material inlet	●			●	3/4“ BSP
			●	●		3/4“ BSPT
	Material outlet	●			●	3/4“ BSP
			●	●		3/4“ BSPT
	Air inlet	●	●	●	●	3/8“ BSPT (with ball valve)
	Exhaust	●	●	●	●	Rc 3/4“ (with silencer)
Discharge volume per cycle	Rubber diaphragm	●	●	●	●	350 cm³
	PTFE diaphragm	●	●	●	●	240 cm³
Air pressure range					●	2–5 bar
		●	●	●		2–7 bar
Max. discharge pressure					●	5 bar
		●	●	●		7 bar
Maximum size of solid		●	●	●	●	less than Ø 2.0 mm
Weight in kg		8	9	14	15	

Wetted materials / Diaphragm		P	A	S	T
		Polypropylene (PPG)	**Aluminium (AC4C-T6)**	**Stainless steel**	**Teflon® (PTFE)[3]**
C	**Neoprene® (CR)**	Y01.NDP.20.BPC	Y01.NDP.20.BAC	Y01.NDP.20.BSC	n/a
N	**Nitrile (NBR)**	Y01.NDP.20.BPN	Y01.NDP.20.BAN	Y01.NDP.20.BSN	n/a
E	**Nordel® (EPDM)**	Y01.NDP.20.BPE	Y01.NDP.20.BAE	Y01.NDP.20.BSE	n/a
S	**Santoprene® (TPO)[1]**	Y01.NDP.20.BPS	Y01.NDP.20.BAS	Y01.NDP.20.BSS	n/a
H	**Hytrel® (TPEE)[2]**	Y01.NDP.20.BPH	Y01.NDP.20.BAH	Y01.NDP.20.BSH	n/a
V	**Viton® (FPM)**	Y01.NDP.20.BVP	Y01.NDP.20.BAV	Y01.NDP.20.BSV	n/a
T	**Teflon® (PTFE)**	Y01.NDP.20.BPT	Y01.NDP.20.BAT	Y01.NDP.20.BST	Y01.NDP.20.BTT

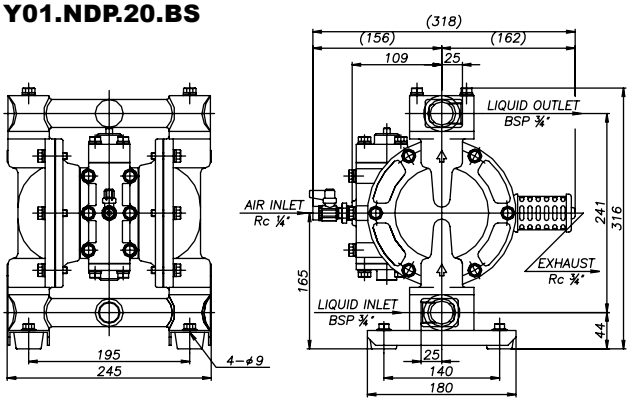
[1] Material of ball for Santoprene® diaphragm pumps: EPDM
[2] Material of ball, valves and gaskets for Hytrel® diaphragm pumps: PTFE
[3] Special pump Y01.NDP.20.BPTU with Ullmann diaphragm available

Dimensions

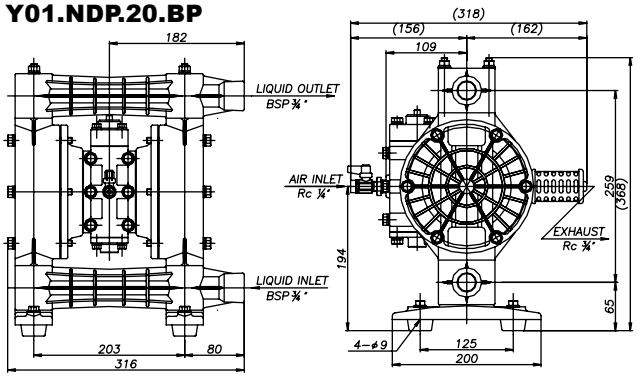
Y01.NDP.20.BA



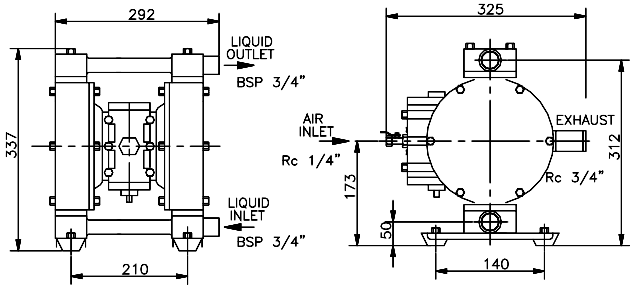
Y01.NDP.20.BS



Y01.NDP.20.BP

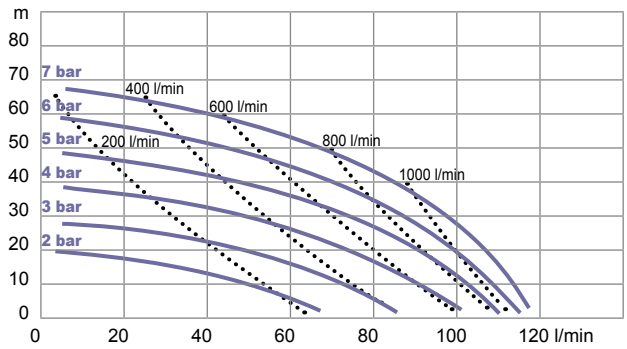


Y01.NDP.20.BTT

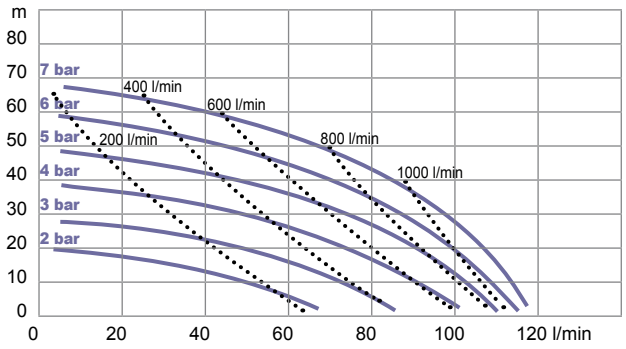


Performance data

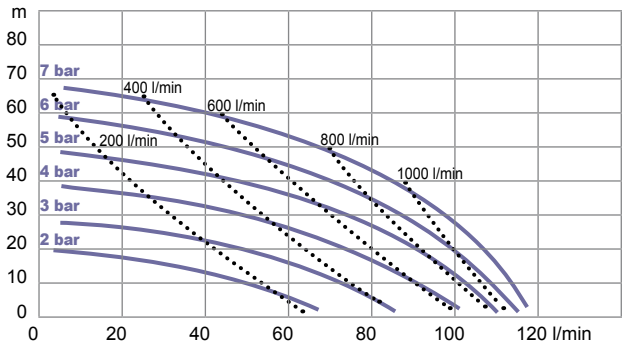
Y01.NDP.20.BA



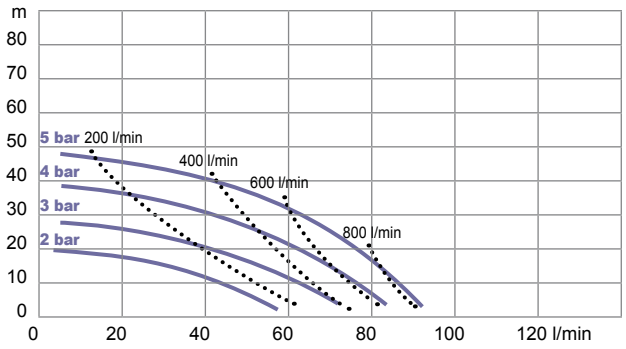
Y01.NDP.20.BS



Y01.NDP.20.BP



Y01.NDP.20.BTT



Y01.NDP.25

Size 1"

Max. discharge volume 160 l/min

Technical data

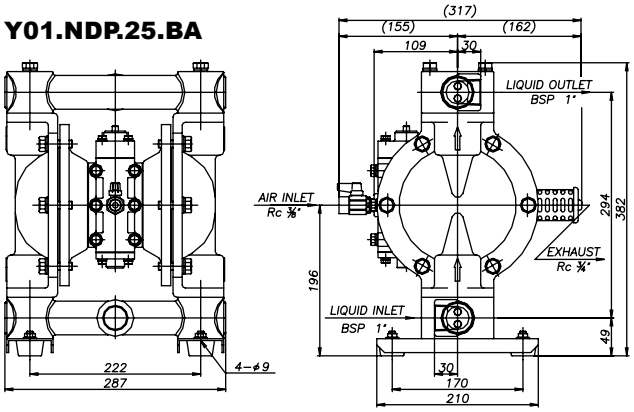
Specifications	Pump type	P	A	S	F	V	T	
Port dimensions 1“ (25mm)	Material inlet	●			●	●	●	1“ BSP
			●	●				1“ BSPT
	Material outlet	●			●	●	●	1“ BSP
			●	●				1“ BSPT
	Air inlet	●	●	●	●	●	●	3/8“ BSPT (with ball valve)
	Exhaust	●	●	●	●	●	●	Rc 3/4“ (with silencer)
Discharge volume per cycle	Rubber diaphragm	●	●	●	●	●	●	600 cm³
	PTFE diaphragm	●	●	●	●	●	●	500 cm³
Air pressure range							●	2–5 bar
		●	●	●	●	●		2–7 bar
Max. discharge pressure							●	5 bar
		●	●	●	●	●		7 bar
Maximum size of solid		●	●	●	●	●	●	less than Ø 3.0 mm
Weight in kg		12.4	13	25	20	12.7	24	

Wetted materials / Diaphragm		P	A	S	F	V	T
		Polypropylene	Aluminium (AC4C-T6)	Stainless steel	Cast iron (FC)	Kynar® (PVDF)	Teflon® (PTFE)[3]
C	Neoprene® (CR)	Y01.NDP.25.BPC	Y01.NDP.25.BSC	Y01.NDP.25.BSC	Y01.NDP.25.BFC	Y01.NDP.25.BVC	n/a
N	Nitrile (NBR)	Y01.NDP.25.BPN	Y01.NDP.25.BAN	Y01.NDP.25.BSN	Y01.NDP.25.BFN	Y01.NDP.25.BVN	n/a
E	Nordel® (EPDM)	Y01.NDP.25.BPE	Y01.NDP.25.BAE	Y01.NDP.25.BSE	Y01.NDP.25.BFE	Y01.NDP.25.BVE	n/a
S	Santoprene® (TPO)[1]	Y01.NDP.25.BPS	Y01.NDP.25.BAS	Y01.NDP.25.BSS	Y01.NDP.25.BFS	Y01.NDP.25.BVS	n/a
H	Hytrel® (TPEE)[2]	Y01.NDP.25.BPH	Y01.NDP.25.BAH	Y01.NDP.25.BSH	Y01.NDP.25.BFH	Y01.NDP.25.BVH	n/a
V	Viton® (FPM)	Y01.NDP.25.BPV	Y01.NDP.25.BAV	Y01.NDP.25.BSV	Y01.NDP.25.BFV	Y01.NDP.25.BVV	n/a
T	Teflon® (PTFE)	Y01.NDP.25.BPT	Y01.NDP.25.BAC	Y01.NDP.25.BAT	Y01.NDP.25.BFT	Y01.NDP.25.BVT	Y01.NDP.25.BTT

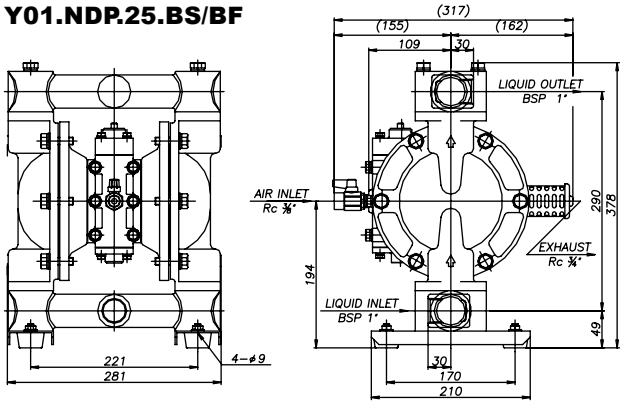
[1] Material of ball for Santoprene® diaphragm pumps: EPDM
[2] Material of ball, valves and gaskets for Hytrel® diaphragm pumps: PTFE
[3] Special pump Y01.NDP.20.BPTU with Ullmann diaphragm

Dimensions

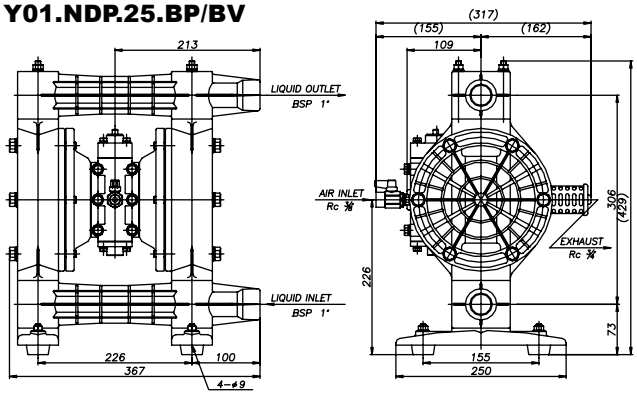
Y01.NDP.25.BA



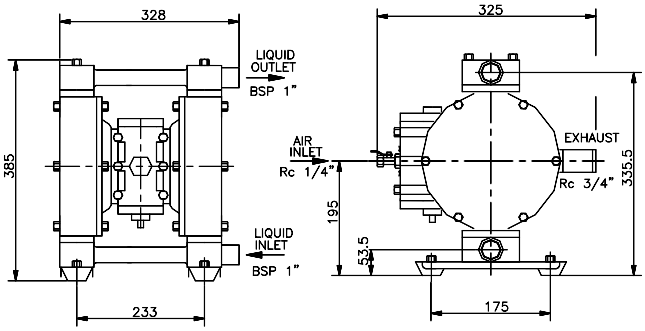
Y01.NDP.25.BS/BF



Y01.NDP.25.BP/BV

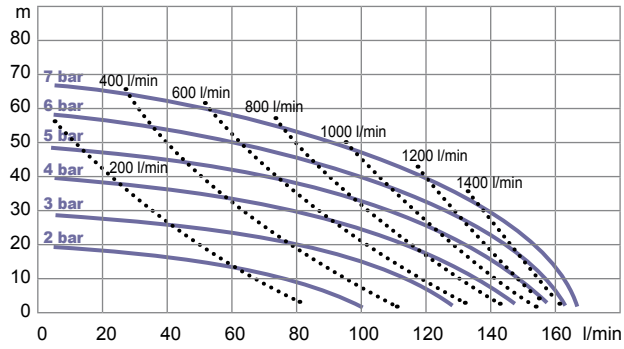


Y01.NDP.25.BTT

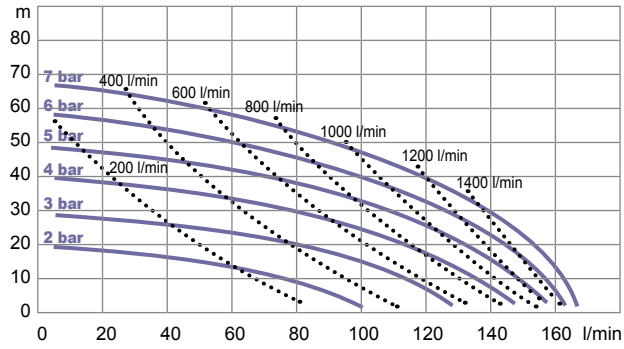


Performance data

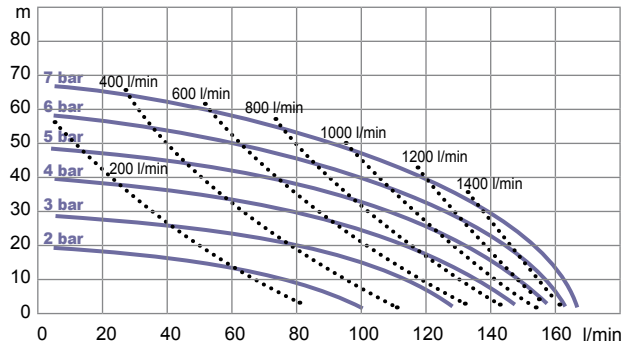
Y01.NDP.25.BA



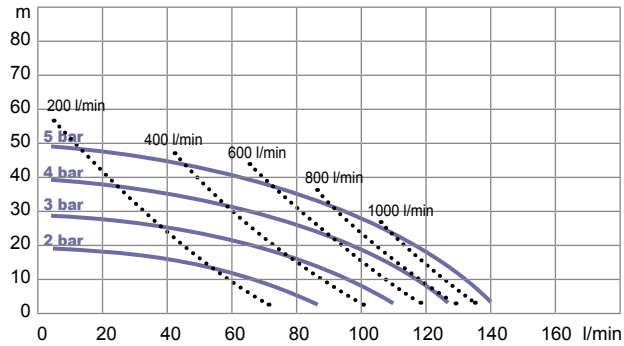
Y01.NDP.25.BS/BF



Y01.NDP.25.BP/BV



Y01.NDP.25.BTT



Y01.NDP.40

Size 1 1/2"

Max. discharge volume 380 l/min

Technical data

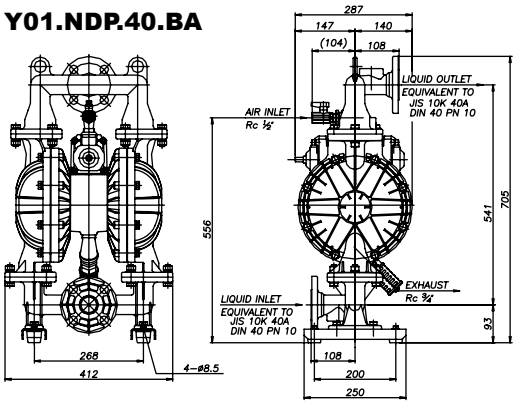
Specifications / Pump type		P	A	S	F	V	
Port dimensions 1 1/2" (40mm)	Material inlet	●	●	●	●	●	1 1/2" DIN flange
	Material outlet	●	●	●	●	●	1 1/2" DIN flange
	Air inlet	●	●	●	●	●	1/2" BSPT (with ball valve)
	Exhaust	●	●	●	●	●	Rc 3/4" (with silencer)
Discharge volume per cycle	Rubber diaphragm	●	●	●	●	●	2800 cm³
	PTFE diaphragm	●	●	●	●	●	1400 cm³
Air pressure range		●	●	●	●	●	2–7 bar
Max. discharge pressure		●	●	●	●	●	7 bar
Maximum size of solid		●	●	●	●	●	less than Ø 7.0 mm
Weight in kg		27	27	43	47	32	

Diaphragm / Wetted materials		P	A	S	F	V
		Polypropylene (PPG)	Aluminium (AC4C-T6)	Stainless steel (SUS 316)	Cast iron (FC)	Kynar® (PVDF)
C	Neoprene® (CR)	Y01.NDP.40.BPC	Y01.NDP.40.BAC	Y01.NDP.40.BSC	Y01.NDP.40.BFC	Y01.NDP.40.BVC
N	Nitrile (NBR)	Y01.NDP.40.BPN	Y01.NDP.40.BAN	Y01.NDP.40.BSN	Y01.NDP.40.BFN	Y01.NDP.40.BVN
E	Nordel® (EPDM)	Y01.NDP.40.BPE	Y01.NDP.40.BAE	Y01.NDP.40.BSE	Y01.NDP.40.BFE	Y01.NDP.40.BVE
S	Santoprene® (TPO)[1]	Y01.NDP.40.BPS	Y01.NDP.40.BAS	Y01.NDP.40.BSS	Y01.NDP.40.BFS	Y01.NDP.40.BVS
H	Hytrel® (TPEE)[2]	Y01.NDP.40.BPH	Y01.NDP.40.BAH	Y01.NDP.40.BSH	Y01.NDP.40.BFH	Y01.NDP.40.BVH
V	Viton® (FPM)	Y01.NDP.40.BPV	Y01.NDP.40.BAV	Y01.NDP.40.BSV	Y01.NDP.40.BFV	Y01.NDP.40.BVV
T	Teflon® (PTFE)	Y01.NDP.40.BPT	Y01.NDP.40.BAT	Y01.NDP.40.BAT	Y01.NDP.40.BFT	Y01.NDP.40.BVT

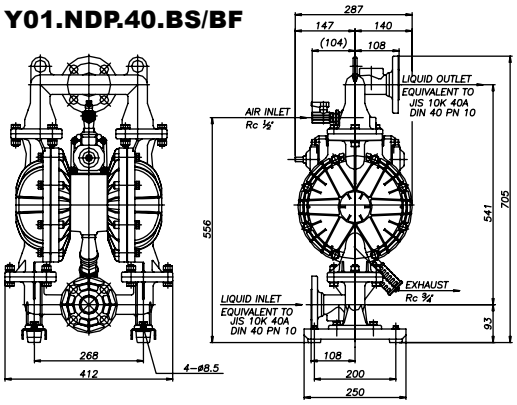
[1] Material of ball for Santoprene® diaphragm pumps: EPDM
[2] Material of ball, valves and gaskets for Hytrel® diaphragm pumps: PTFE

Dimensions

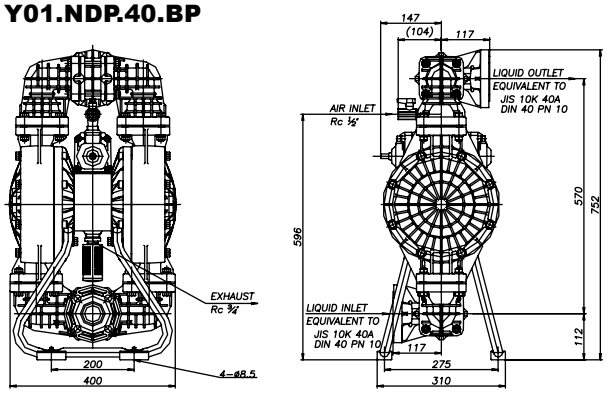
Y01.NDP.40.BA



Y01.NDP.40.BS/BF



Y01.NDP.40.BP



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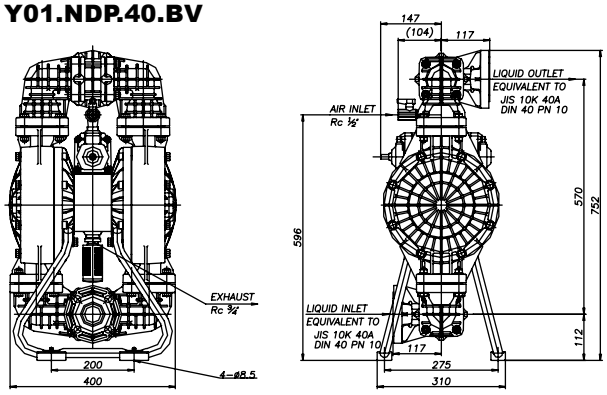
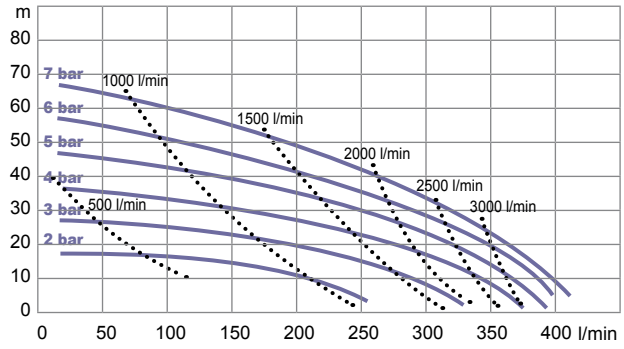
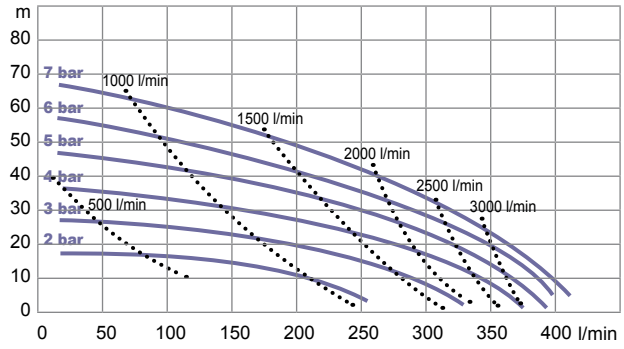


Performance data

Y01.NDP.40.BA



Y01.NDP.40.BS/BF



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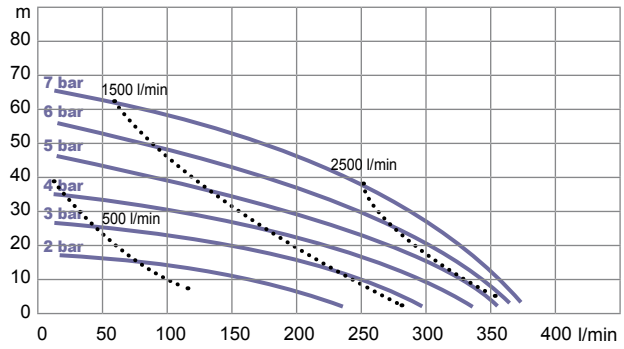
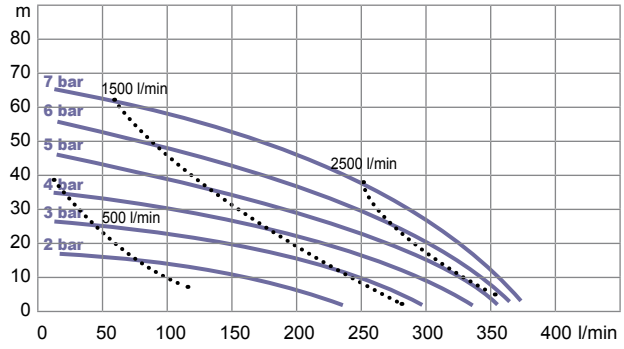


Y01.NDP.40.BV



Y01.NDP.50

Size 2"

Max. discharge volume 600 l/min

Technical data

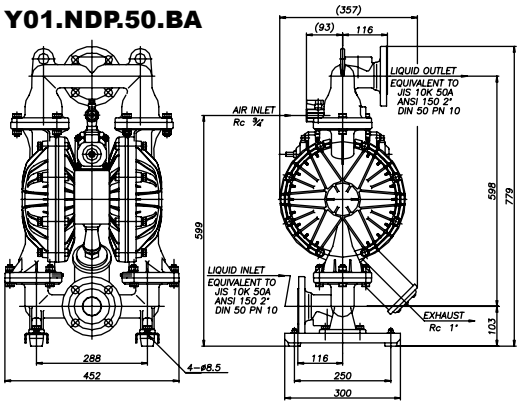
Specifications / Pump type		P	A	S	F	V	
Port dimensions 2“ (50mm)	Material inlet	●	●	●	●	●	2“ DIN flange
	Material outlet	●	●	●	●	●	2“ DIN flange
	Air inlet	●	●	●	●	●	3/4“ BSPT (with ball valve)
	Exhaust	●	●	●	●	●	Rc 1“ (with silencer)
Discharge volume per cycle	Rubber diaphragm	●	●	●	●	●	4300 cm³
	PTFE diaphragm	●	●	●	●	●	2100 cm³
Air pressure range		●	●	●	●	●	2–7 bar
Max. discharge pressure		●	●	●	●	●	7 bar
Maximum size of solid		●	●	●	●	●	less than Ø 8.0 mm
Weight in kg		37	36	63	64	42	

Diaphragm / Wetted materials		P	A	S	F	V
		Polypropylene	**Aluminium (AC4C-T6)**	**Stainless steel**	**Cast iron (FC)**	**Kynar® (PVDF)**
C	**Neoprene® (CR)**	Y01.NDP.50.BPC	Y01.NDP.50.BAC	Y01.NDP.50.BSC	Y01.NDP.50.BFC	Y01.NDP.50.BVC
N	**Nitrile (NBR)**	Y01.NDP.50.BPN	Y01.NDP.50.BAN	Y01.NDP.50.BSN	Y01.NDP.50.BFN	Y01.NDP.50.BVN
E	**Nordel® (EPDM)**	Y01.NDP.50.BPE	Y01.NDP.50.BAE	Y01.NDP.50.BSE	Y01.NDP.50.BFE	Y01.NDP.50.BVE
S	**Santoprene® (TPO)[1)]**	Y01.NDP.50.BPS	Y01.NDP.50.BAS	Y01.NDP.50.BSS	Y01.NDP.50.BFS	Y01.NDP.50.BVS
H	**Hytrel® (TPEE)[2)]**	Y01.NDP.50.BPH	Y01.NDP.50.BAH	Y01.NDP.50.BSH	Y01.NDP.50.BFH	Y01.NDP.50.BVH
V	**Viton® (FPM)**	Y01.NDP.50.BPV	Y01.NDP.50.BAV	Y01.NDP.50.BSV	Y01.NDP.50.BFV	Y01.NDP.50.BVV
T	**Teflon® (PTFE)**	Y01.NDP.50.BPT	Y01.NDP.50.BAT	Y01.NDP.50.BST	Y01.NDP.50.BFT	Y01.NDP.50.BVT

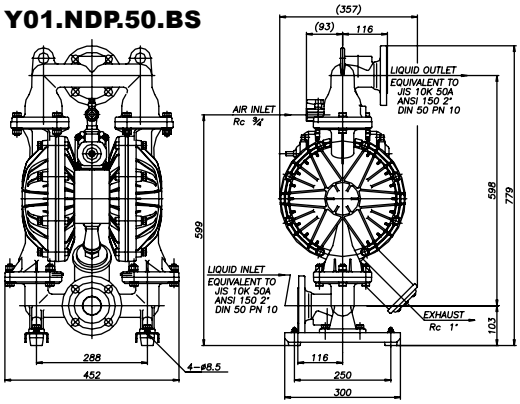
[1)] Material of ball for Santoprene® diaphragm pumps: EPDM
[2)] Material of ball, valves and gaskets for Hytrel® diaphragm pumps: PTFE

Dimensions

Y01.NDP.50.BA



Y01.NDP.50.BS



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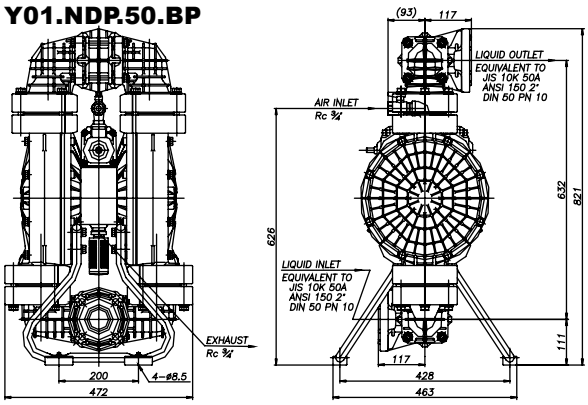
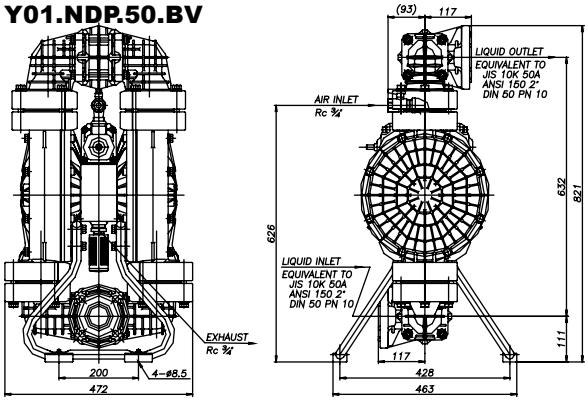
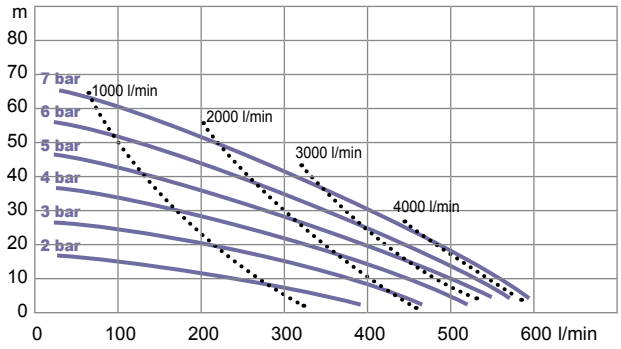


Y01.NDP.50.BV



Performance data

Y01.NDP.50.BA



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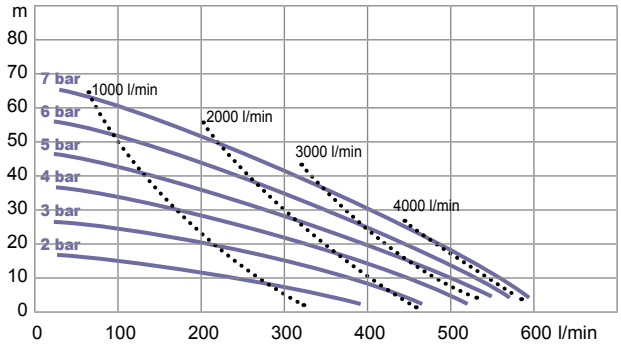

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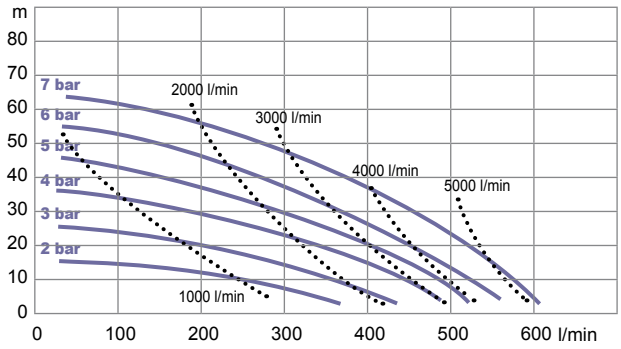

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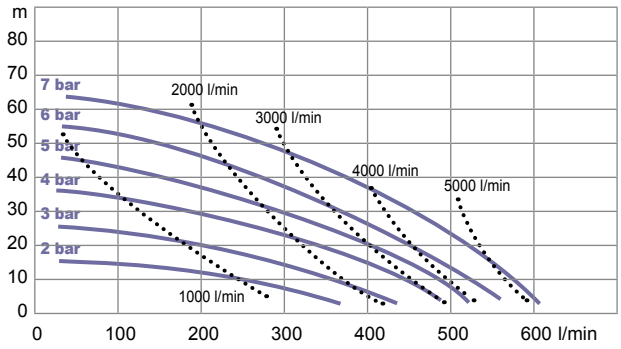


Y01.NDP.80

Size 3"

Max. discharge volume 800 l/min

Technical data

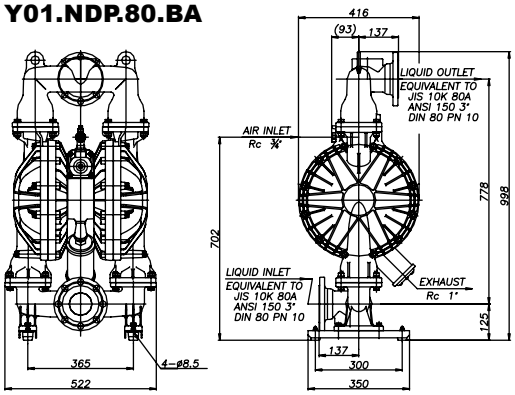
Specifications / Pump type		P	A	S	F	
Port dimensions 3“ (80mm)	Material inlet	●	●	●	●	3“ DIN flange
	Material outlet	●	●	●	●	3“ DIN flange
	Air inlet	●	●	●	●	3/4“ BSPT (with ball valve)
	Exhaust	●	●	●	●	Rc 1“ (with silencer)
Discharge volume per cycle	Rubber diaphragm	●	●	●	●	8500 cm³
	PTFE diaphragm	●	●	●	●	3800 cm³
Air pressure range		●	●	●	●	2–7 bar
Max. discharge pressure		●	●	●	●	7 bar
Maximum size of solid		●	●	●	●	less than Ø 10.0 mm
Weight in kg		64	65	102	112	

Diaphragm / Wetted materials		P	A	S	F
		Polypropylene (PPG)	**Aluminium (AC4C-T6)**	**Stainless steel**	**Cast iron (FC)**
C	**Neoprene® (CR)**	Y01.NDP.80.BPC	Y01.NDP.80.BAC	Y01.NDP.80.BSC	Y01.NDP.80.BFC
N	**Nitrile (NBR)**	Y01.NDP.80.BPN	Y01.NDP.80.BAN	Y01.NDP.80.BSN	Y01.NDP.80.BFN
E	**Nordel® (EPDM)**	Y01.NDP.80.BPE	Y01.NDP.80.BAE	Y01.NDP.80.BSE	Y01.NDP.80.BFE
S	**Santoprene® (TPO)[1)]**	Y01.NDP.80.BPS	Y01.NDP.80.BAS	Y01.NDP.80.BSS	Y01.NDP.80.BFS
H	**Hytrel® (TPEE)[2)]**	Y01.NDP.80.BPH	Y01.NDP.80.BAH	Y01.NDP.80.BSH	Y01.NDP.80.BFH
V	**Viton® (FPM)**	Y01.NDP.80.BPV	Y01.NDP.80.BAV	Y01.NDP.80.BSV	Y01.NDP.80.BFV
T	**Teflon® (PTFE)**	Y01.NDP.80.BPT	Y01.NDP.80.BAT	Y01.NDP.80.BST	Y01.NDP.80.BFT

[1)] Material of ball for Santoprene® diaphragm pumps: EPDM
[2)] Material of ball, valves and gaskets for Hytrel® diaphragm pumps: PTFE

Dimensions

Y01.NDP.80.BA



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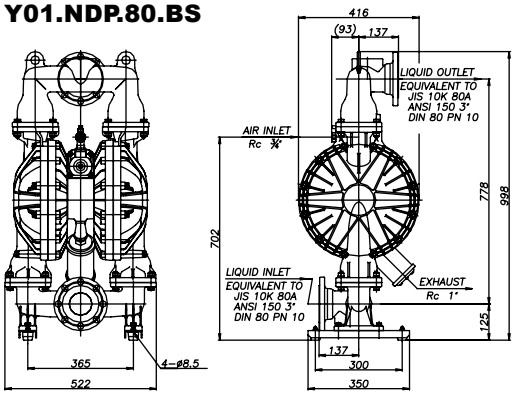

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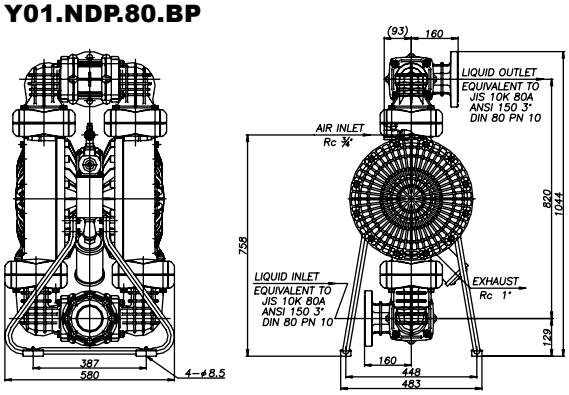
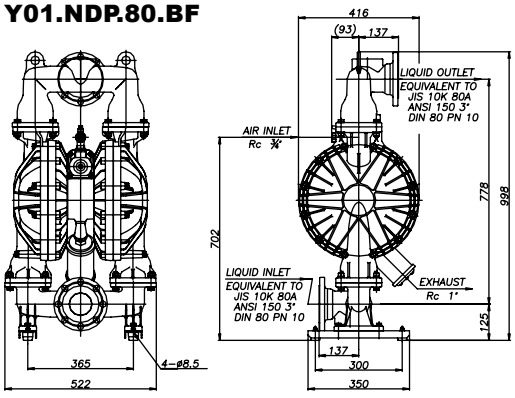
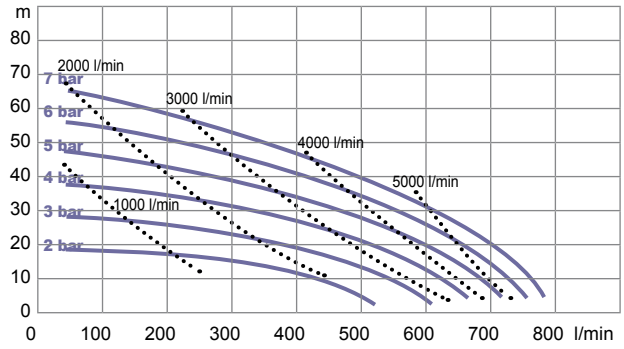


Y01.NDP.80.BF



Performance data

Y01.NDP.80.BA



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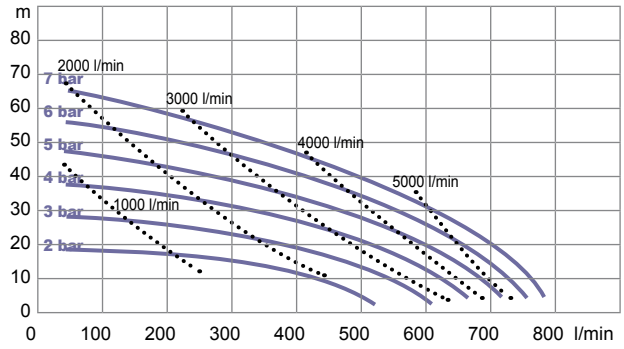

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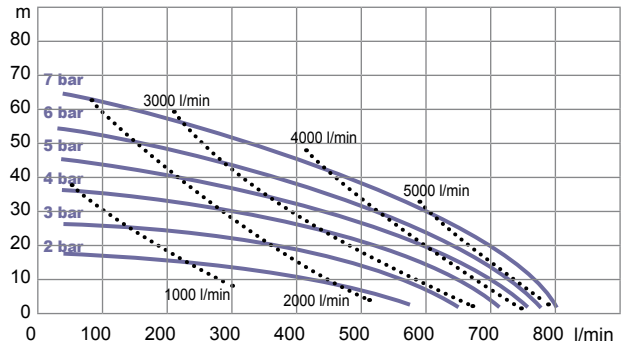

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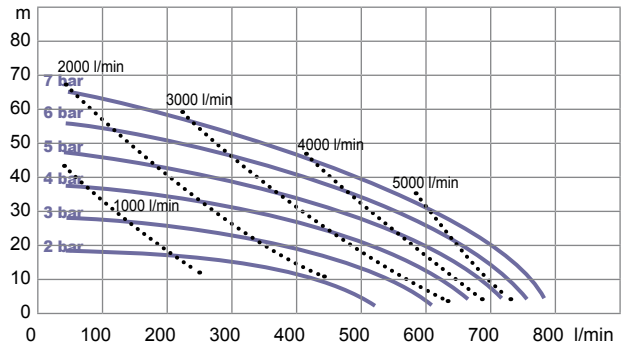
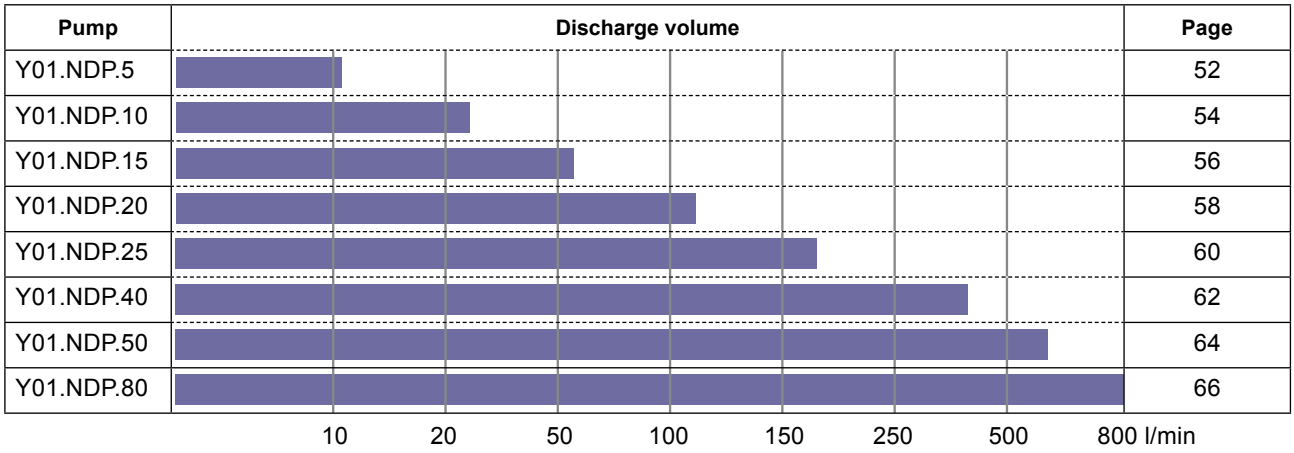


Selecting the pump

The following table provides you with general information on selecting the right pump. To achieve maximum performance, we recommend selecting a pump which will only be using up to 75% of its maximum pumping capacity. In addition to the pumping capacity, the materials of the components which will come in contact with the fluid and which have to be resistant to the liquid to be pumped must be determined. Please consult the table of resistances for this. The performance curves and the test data were determined with water at ambient temperature. Pumping capacity and discharge head change when viscosity, specific weight or other liquid properties change.

Selection diagram



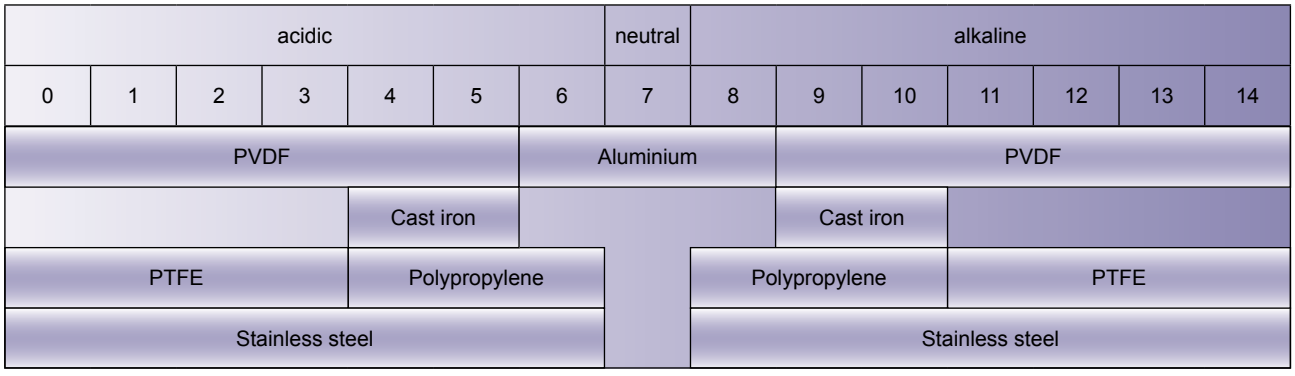
The plastic materials are suitable for most liquids. Special attention is required for higher temperatures and solvents. Membrane service life is very dependent on temperatures, media and applications. Get in touch with us or our local sales representative to discuss your selection or more complex applications.

Other factors to be considered when choosing the correct pump:

- Viscosity (dynamic viscosity in mPa/s or cP)
- Suction lift

pH value

The concentration of acids or bases is specified by a number between 0 and 14, the so-called pH value.



AIR OPERATED DIAPHRAGM PUMPS

Wetted materials of construction

	Properties
Polypropylene (PPG) 0° to 60°C[1)]	- Good chemical, thermal and mechanical resistance - Lightweight material - Glass filled (around 30 %) - Not compatible with concentrated and oxidation acids as well as some solvents
Kynar®, **Polyvinylidene fluoride** (PVDF) 0° to 80°C[1)]	- Good chemical and mechanical resistance - Electrically conductive and flame resistant - Weatherproof - Carbon filled (around 30 %)
Aluminium (AC4L-T6)	- Used in many non-corrosive and low abrasive applications - Electrically conductive - Lightweight material
Stainless steel (SUS316)	- Used in chemically active and high abrasive fluids - Unmagnetic
Cast iron (FC)	- Used in many non-corrosive and non-abrasive applications - Good thermal conductivity and damping features
Teflon® (PTFE) 0° to 100°C[1)]	- Very high chemical resistance (inert to most chemicals) - 100% virgin PTFE

Diaphragm materials

	Properties
🔴[2)] **Nitrile** (NBR) 0° to 70°C[1)]	- High chemical resistance - Properties like rubber - Excellent for oil / petroleum based fluid
⚫[2)] **Neoprene®** (CR) 0° to 70°C[1)]	- Excellent elastomer for use in non-aggressive applications - Good for abrasive materials
🟢[2)] **Nordel®** (EPDM) ⚪[2)] **Nordel®** (EPDM/FDA) FDA –20° to 80°C[1)]	- Good chemical resistance - Great for extremely cold applications - High moisture and ozone / UV resistance
🔵[2)] **Viton®** (FPM) –10° to 120°C[1)]	- Excellent chemical resistance - Great for fluids such as hydrocarbon - Good for high temperature applications
Hytrel® (TPEE) FDA 0° to 80°C[1)]	- Well combination of chemical and mechanical properties - Excellent abrasion-resistant and durable diaphragm - High performance diaphragm
Santoprene® (TPO) 0° to 100°C[1)]	- Good chemical resistance - Excellent abrasion-resistant and durable diaphragm - Good ozone and thermal resistance
Teflon® (PTFE) FDA 0° to 100°C[1)]	- Very high chemical resistance - Wide temperature range - Not recommended for abrasive applications

[1)] Recommended temperature range. The performance diaphragm strongly depends on temperatures, media and applications.
[2)] For easy distinction of the diaphragm materials specific diaphragms are provided with a colour coding.

FDA FDA approved

AIR OPERATED DIAPHRAGM PUMPS

Model	**Y01.NDP**	**Standard type**
	Y01.DP	Parent standard type
	Y01.BDP	Drum pump
	Y01.CDP	Chemline
	Y01.DDP	Dual pump
	Y01.EDP	Electrically controlled

Pump size	5	1/4“
	10	3/8“
	15	1/2“
	20	**3/4“**
	25	1“
	40	1 1/2“
	50	2“
	80	3“

Valve type	**B**	**Ball valve**
	F	Flat valve

Body material wet parts	**A**	**Aluminium** (AC4L-T6)
	S	Stainless steel (SUS 316)
	F	Cast iron (FC)
	P	Polypropylene (PPG)
	X	Polyvinyl chloride (PVC)
	T	Teflon® (PTFE)
	V	Kynar® (PVDF)

Diaphragm materials	C	CR (Neoprene®)
	N	NBR (Nitrile)
	E	**EPDM (Nordel®)**
	H	TPEE (Hytrel®)
	T	PTFE (Teflon®)
	V	FPM (Viton®)
	S	TPO (Santoprene®)

Specials	B	Flange manifold one piece
	C	**Electro polished**
	E	2:1 pump
	X	PP air motor
	U	Ullmann diaphragm (PTFE/EPDM)

Y01.NDP.	20.	B	A	E	C

Other models on request

You can’t find the right air operated diaphragm pump for your application?
Please contact our technical support. We will be glad to help you.

Customer request

Contact us directly and send us your provisional request.
You will find our contact details on the back side.

Customer data

Company
Phone
Contact person
Fax
Address
E-mail
Postcode / City

Project title
Date

Working data

Application
Place of installation
Medium to be pumped
Period of use
Name
Port dimensions
Specific gravity
Temperature
Kinematic viscosity

Accessories

Solid size
Maintenance unit
Proportion of solids
Suction lance
Discharge flow
Inlet data of the material
Pressure

Further Particulars

Suction lift
Quantity to be received
Pipeline dimension
Excepted yearly requirement
Outlet data of the material
Pump used until now
Pressure
Housing
Lifting height
Diaphragm material
Pipeline dimension

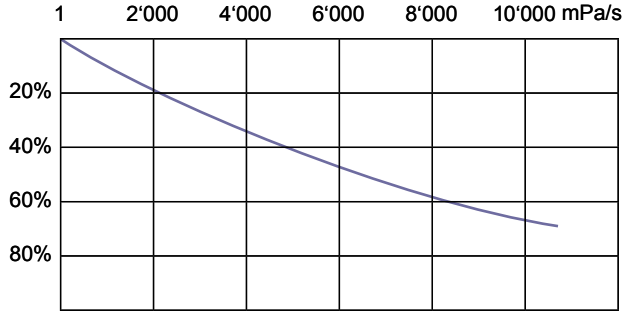
Resistance table

	+ resistant o partially resistant - not resistant	Acid, weak or diluted	Acid, strong or concentrative	Oxidants	Alkalies	Alcohols	Ketone	Aldehyde	Ester	Hydrocarbon, aliphatic	Hydrocarbon, aromatic	Hydrocarbon, halogenated	Ether
Wetted materials	Polypropylene (PPG)	+	-	-	+	+	-	+	-	-	-	o	-
	Kynar® (Polyvinylidene fluoride, PVDF)	+	+	o	+	+	-	+	+	+	+	+	o
	Aluminium (AC4L-T6)	-	-	+	-	+	+	+	+	+	+	o	-
	Stainless steel (SUS316)	o	+	+	+	+	+	+	+	+	+	+	+
	Cast iron (FC)	o	+	-	o	+	+	-	+	+	+	+	+
	Teflon® (PTFE)	+	+	+	+	+	+	+	+	+	+	+	+
Diaphragm materials	Nitrile (NBR)	+	o	-	+	+	-	+	-	-	-	-	-
	Neoprene® (CR)	+	o	+	+	+	-	-	-	-	-	-	-
	Nordel® (EPDM)	+	o	-	+	+	+	+	+	-	-	-	-
	Viton® (FPM)	+	+	+	-	o	-	+	-	+	+	+	+
	Hytrel® (TPEE)	-	-	-	-	+	-	-	-	o	-	+	-
	Santoprene® (TPO)	+	-	-	+	+	+	+	+	-	-	-	-
	Teflon® (PTFE)	+	+	+	+	+	+	+	+	+	+	+	+

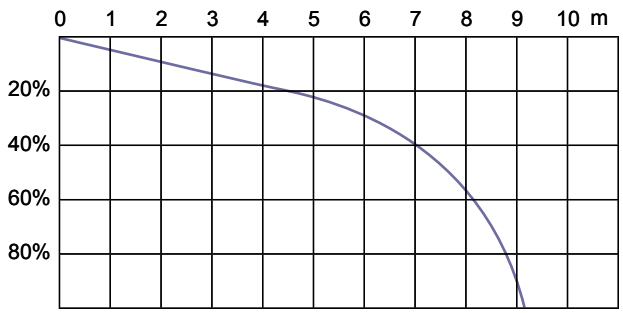
The information provided represents recommendations under certain conditions only. No guarantee. The information may differ according to concentration, period and temperature. For proper details request our operating department.

Capacity decrease

Capacity decrease (%) relating to viscosity of product (mPa/s)



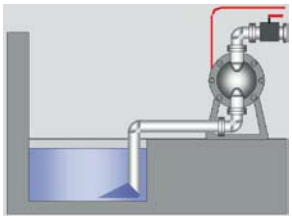
Capacity decrease (%) relating to suction lift (m)



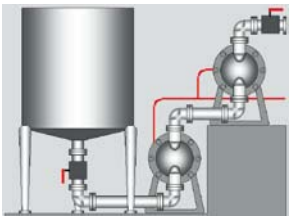
Type of installation

The pumps can also be used underground and, under certain circumstances, submerged. In case of submersion, make sure that the air motor material is resistant to the liquid and that the air outlet is equipped with a snorkel. The standard model of the air motor is made of aluminium or polypropylene, but the motor is also available as an option in coated aluminium and other materials. With submerged installation, also make sure that the liquid input pressure does not exceed 0.5 bar for PTFE (Teflon®) membranes and 1 bar for other membranes.

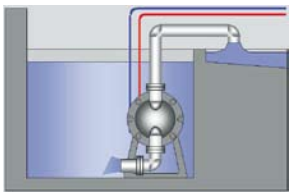
Self priming



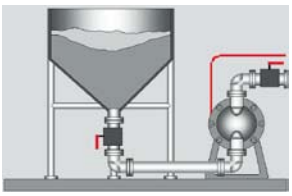
Pressure boosting



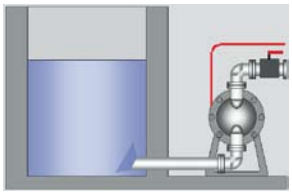
Submerged pump



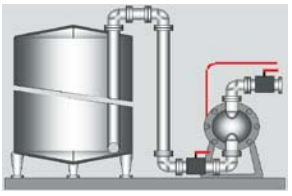
Viscous products



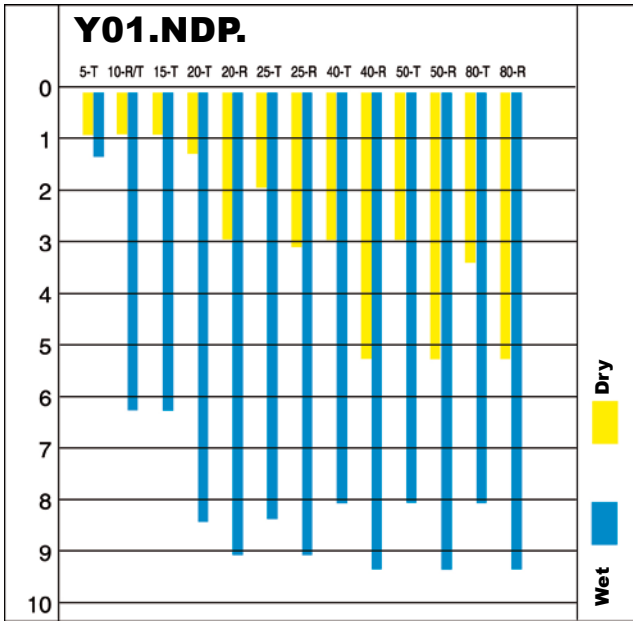
Positive primed pump



«Over the mountain»



Maximum suction lift



The above table shows the suction lift height. „T“ stands for Teflon® (PTFE) membranes. „R“ stands for Rubber (all other membranes). The yellow bars show the average intake height in dry state and the blue bars in wet state.

Accessories filter / regulator

Model	Max. air consumption in Ndm³/min	Air supply in inch	Filter / regulator	Page
Y01.NDP.5	150	1/4	W1000-8G-F-W	52
	200	1/4	W1000-8G-F-W	
Y01.NDP.10	200	1/4	W1000-8G-F-W	54
	250	1/4	W1000-8G-F-W	
Y01.NDP.15	300	1/4	W1000-8G-F-W	56
	400	3/8	W1000-8G-F-W	
Y01.NDP.20	800	3/8	W3000-10G-F-W	58
	1'000	3/8	W3000-10G-F-W	
	1'200	3/8	W3000-10G-F-W	
Y01.NDP.25	1'000	3/8	W3000-10G-F-W	60
	1'400	3/8	W3000-10G-F-W	
	1'600	3/8	W3000-10G-F-W	
Y01.NDP.40	2000	1/2	W4000-15G-F-W	62
	3000	1/2	W4000-15G-F-W	
Y01.NDP.50	3000	3/4	W8000-20G-F-W	64
	4000	3/4	W8000-20G-F-W	
Y01.NDP.80	4000	3/4	W8000-20G-F-W	66
	5000	3/4	W8000-20G-F-W	
	6000	3/4	W8000-20G-F-W	

Air treatment

Product characteristics

- Compact modules
- Lightweight and robust
- High flow rates
- Long life filter element
- Embedded pressure gauge for saving space
- Corrosion resistant bowl guard

WL combinations

Model number	C1010		C3010		C4010			C8010	
	-6G-F-W	-8G-F-W	-8G-F-W	-10G-F-W	-8G-F-W	-10G-F-W	-15G-F-W	-20G-F-W	-25G-F-W
Port size (inch)	G1/8	G1/4	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1
Maximum flow rate[1] in l/min (ANR)	450	630	1'278	1'740	1'428	2'400	3'000	7'020	7'500
Drain capacity[2] in cm³	12		45		80			80	
Min. dosing air flow rate[3] in l/min (ANR)	15		34.8		64.8			64.8	
Oil capacity in cm³	20		85		170			170 (max. 360)	
Weight in kg	0.41		1.15		1.7			4.4	
Dimensions in mm (L x W x H)	76 x 80 x 164.5		79 x 126 x 215		97 x 160 x 280			118 x 200 x 407	

FRL combinations

Model number	C1000		C3000		C4000			C8000	
	-6G-F-W	-8G-F-W	-8G-F-W	-10G-F-W	-8G-F-W	-10G-F-W	-15G-F-W	-20G-F-W	-25G-F-W
Port size (inch)	G1/8	G1/4	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1
Maximum flow rate[1] in l/min (ANR)	450	630	1'278	1'740	1'428	2'400	3'000	7'020	7'500
Drain capacity[2] in cm³	12		45		80			80	
Min. dosing air flow rate[3] in l/min (ANR)	0.25		0.58		1.08			1.08	
Oil capacity in cm³	20		85		170			170 (max. 360)	
Weight in kg	0.41		1.15		1.7			4.4	
Dimensions in mm (L X W x H)	76 x 120 x 141		79 x 189 x 193		97 x 240 x 217			118 x 300 x 302	

Filter / regulator

Model number	W1000		W3000		W4000			W8000	
	-6G-F-W	-8G-F-W	-8G-F-W	-10G-F-W	-8G-F-W	-10G-F-W	-15G-F-W	-20G-F-W	-25G-F-W
Port size (inch)	G1/8	G1/4	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1
Maximum flow rate[1] in l/min (ANR)	840	1‘140	2‘148	2‘430	2‘502	4‘350	4‘740	10‘020	10‘020
Drain capacity[2] in cm³	12		45		80			80	
Weight in kg	0.175		0.6		0.9			2	
Dimensions in mm (L x W x H)	62.5 x 40 x 164.5		66 x 63 x 251		82 x 80 x 280			100 x 100 x 407	

[1] The max. flow rate applies where the primary pressure is 7 bar, set pressure is 5 bar and pressure drop is 1 bar
[2] Applies for manual drainage. Exhaust drain manually if required
[3] Flow rate applies where 5 drops of turbine oil per min. is dosed at the primary pressure 5 bar

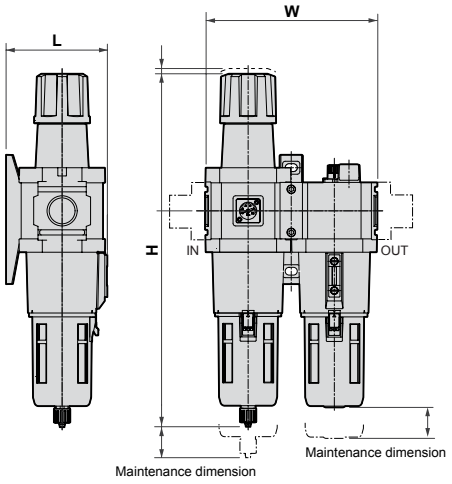
Further models and combinations with automatically exhausting on request.

Technical data and dimensions

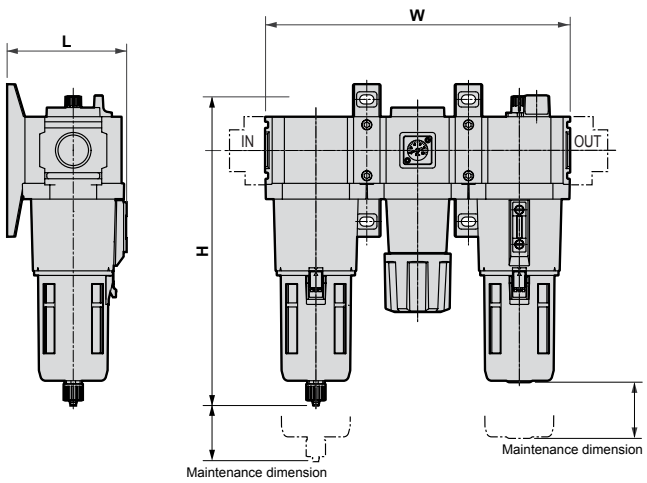
Description	Specifications
Working fluid	Compressed air
Max. working pressure	10 bar
Withstanding pressure	15 bar
Ambient temperature range	5–60 °C
Set pressure range	0.5–8.5 bar
Relief mechanism	Provided
Filtration rate	5 µm
Lubricant[1]	Turbine oil class 1 ISO VG32

[1] Relevant for FRL / WL combinations (spindle oil not available)

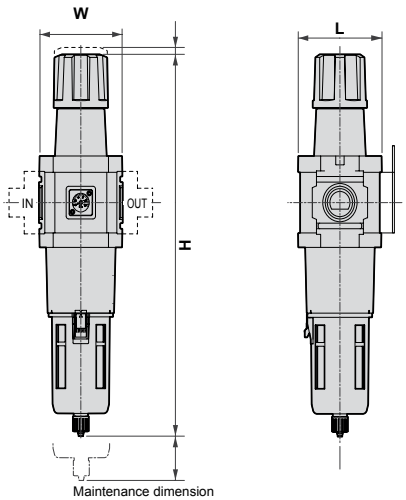
WL combination



FRL combination



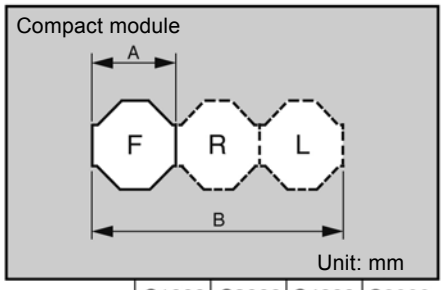
Filter / regulator



Your advantages

Compact module

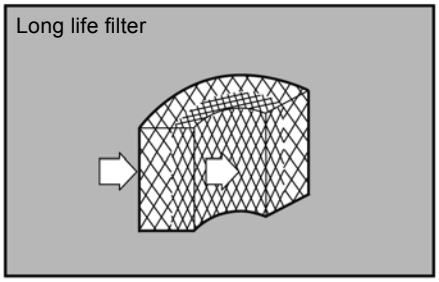
The main dimensions (width and depth) of FRL devices have been integrated into a compact module.
Simple calculation of the accurate assembly dimensions.



	C1000	C3000	C4000	C8000
A	40	63	80	100
B	40 X 3	63 X 3	80 X 3	100 X 3

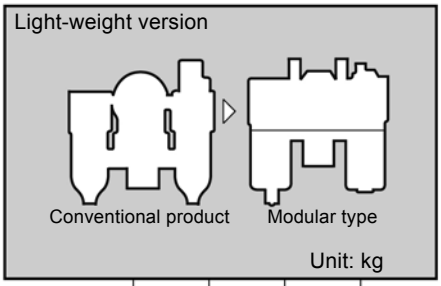
Long life filter element

Die patentierte Chemiefaser der modularen The patented chemical fibre structure of the filter combinations has a rough surface and gradually becomes finer toward the inside. Clogging is greatly reduced, and the element is greatly extended. There is no worry of rust forming.



Weight reduction

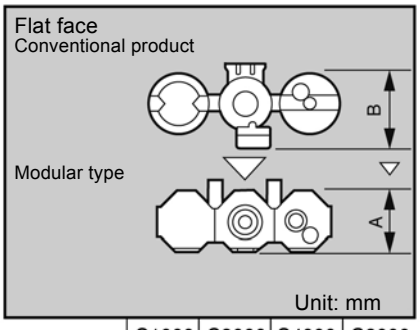
The hybrid material of the body (aluminium die cast, synthetic resin) provides strength and reduces weight by 50% compared to the conventional type.



	C1000	C3000	C4000	C8000
Modular type	0.41	1.15	1.7	4.4
Conventional product	0.7	1.8	3.4	7.2

Embedded pressure gauge for saving space

The conventional protruding pressure gauge wasted space and endangered personnel. A neat design and safety have been realized by embedding the pressure gauge into the body.

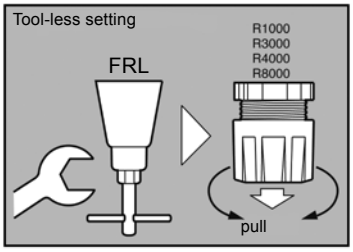


	C1000	C3000	C4000	C8000
Modular type A	57	63	79	100
Conventional product B	74	109	124	131

Simple operation

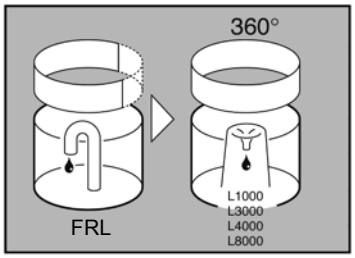
Adjust pressure without tools

Pressure is adjusted with one hand. The knob is locked with a single push, and easily operated when setting pressure.



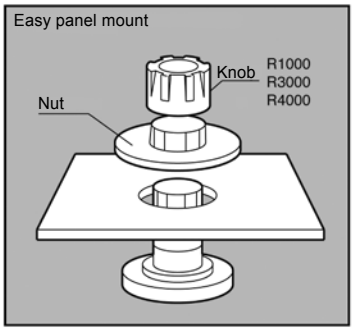
Double plastic structure

A double plastic structure is adopted, so oil dripping can be confirmed from 360°.



Easy install in panels

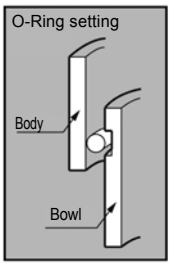
When the panel mounting nut is loosened, the nut acts as a jack and allows the knob to be removed easily. Fix the nut to mount in the panel. When the L-type bracket is used, the body is fixed securely (excluding 8000 series).



One-touch integrated attachment

The integrated bowl and bowl guard are easily attached and removed by operating the latch. The 1000 series has no latch (Confirm that pressure has been released before mounting or removing the bowl and bowl guard).

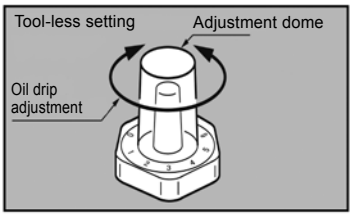
O-ring drop prevention



An O-ring slot is provided on the bowl side to prevent problems caused if the O-ring falls off during bowl attachment and removal. The O-ring does not fall off during maintenance, and a safe and accurate seal is attained.

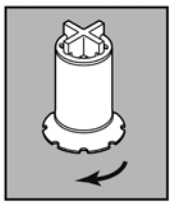
Oil drip adjustment knob with lock

Oil drips are adjusted easily by hand without using tools. A stopper is provided in the opening direction to function as a lock, and increase safety. The numbers on the dial are used as a guide after adjusting dripping. (adjust the oil drip to 0.5 Nm or less).



One-touch removing of integrated filter element

The integrated element is removed by turning the baffle 45° to the left (only 1000 series).



Disc diffusers

HD 270 / HD 340

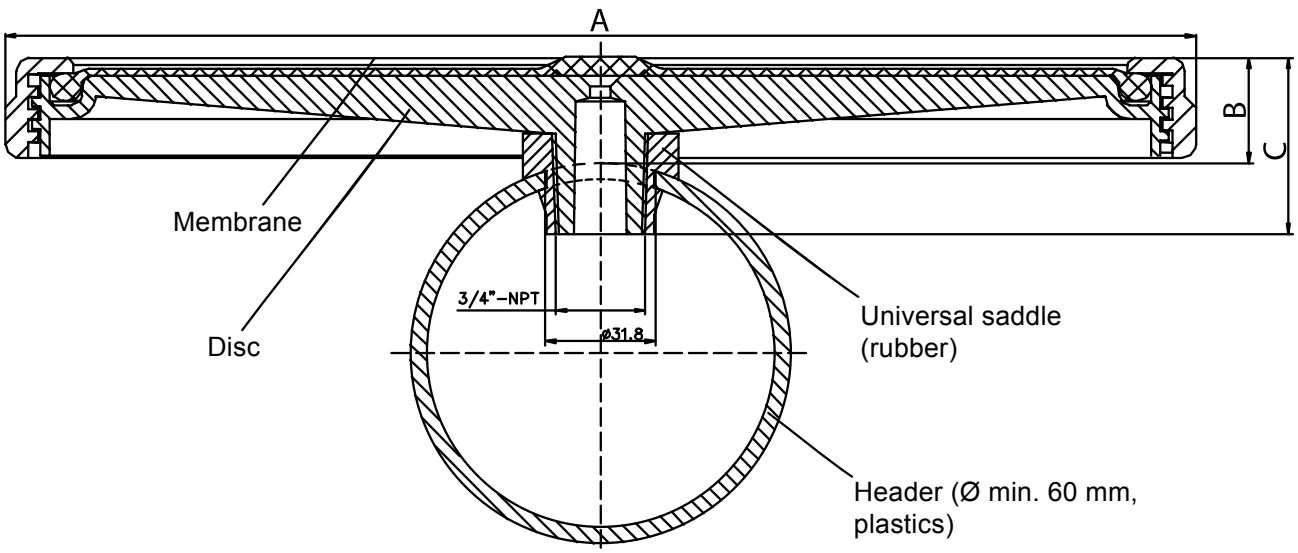
Product characteristics

- Low installation costs
- High reliability
- Great performance
- Low maintenance
- Cost effective design

Dimensions

Type	Height (C) mm	Diameter total (A) mm	Diameter effective mm	Overall height membrane - top of tube (B) mm	Perforated area m^2	Disc material	Membrane material	Total weight kg
HD 270	58	270	220	30	0.037	PP GF 30	EPDM/Silicone	0.60
HD 340	76	340	310	46	0.060	PP GF 30	EPDM	0.85

All diffusers are provided with 3/4" NPT thread.



Type	Permitted wall thickness of header tube mm	Diameter straight-drilled hole mm	Material	Colour
Universal saddle	2–8	31.8 (1 1/4")	EPDM 75 Sh A	Black

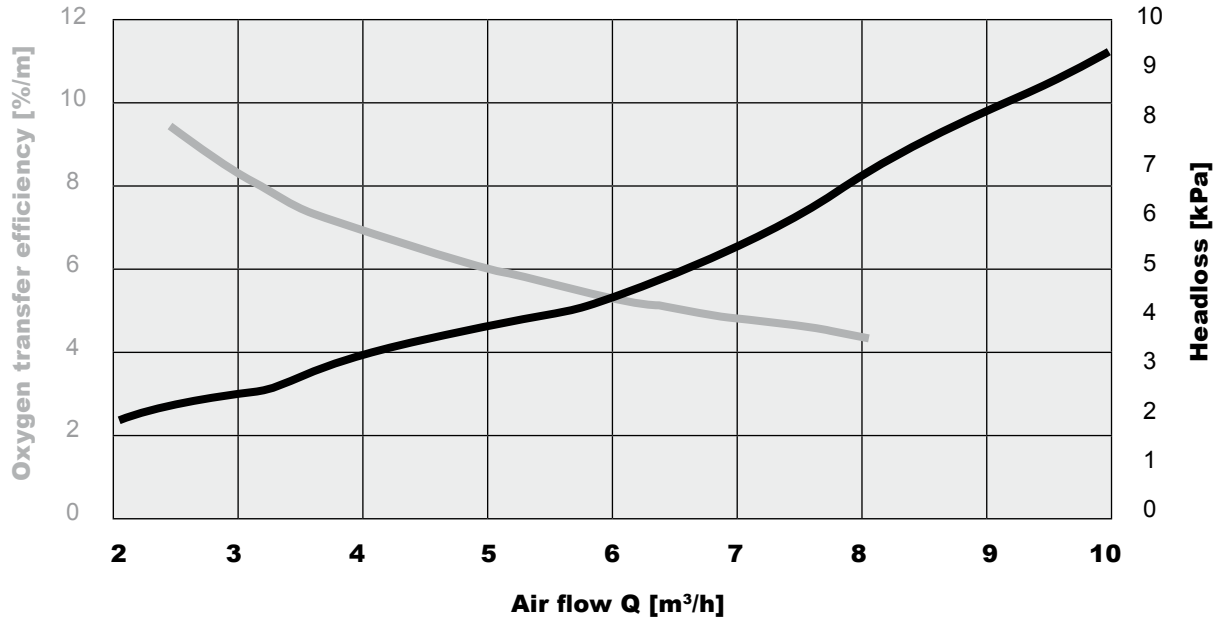
Properties of typical membranes

Membrane	Standard	Low plasticizer	Silicone
Material	**EPDM F 053 A**	**EPDM F057**	
Colour	Black	Black	Green
Wall thickness	2.0 mm ± 0.15 mm	2.0 mm ± 0.15 mm	2.0 mm ± 0.15 mm
Density DIN 53479	< 1.2 g/cm³	< 1.1 g/cm³	< 1.15 g/cm³
Tensile strength DIN 53504	> 7 N/mm²	> 8 N/mm²	> 8 N/mm²
Elongation on break DIN 53504	> 500%	> 500%	> 650%
Tear strength DIN 53507	> 6 N/mm	> 8 N/mm	> 15 N/mm
Hardness DIN 53505	50 ± 5 Shore A	57 ± 5 Shore A	60 ± 5 Shore A
Tension set 100% Tension 24 h, RT	< 5%	< 5%	
Operating temperature	0 to 80°C	0 to 80°C	5 to 100°C
Application	Municiple waste water	Municiple waste water with enhanced industrial rate	Industrial waste water

Other materials and dimensions are available on request.

Oxygen transfer efficiency and headloss

Disc diffuser HD 270 with low plasticizer membrane



Air flow

- The operating conditions depend on the selected material and the slot.
- Non-standard slots are provided on request.
- Shutdown of operation is highly recommended for air flow rates lower than minimum rate.
- Overload air flow rate (e.g. cleaning) should not be applied longer than 10 min. per day.

Type	Operation conditions m_N^3/h	Max. overload / maintenance m_N^3/h
HD 270	1.5 - 6	10
HD 340	2 - 10	15

Tube diffuser

63/2100 D / 63/2075 D / 63/2050 D

Product characteristics

- Low installation costs
- High reliability
- Great performance
- Low maintenance
- Cost effective design

Dimensions

Type	Perforation length mm	Total length mm	Tube diameter mm	ID-sleeve mm	Perforated area m^2	Total weight kg
63/2100 D	1000	1060	63	64–66	0.180	1.3
63/2075 D	750	810	63	64–66	0.135	1.1
63/2050 D	500	560	63	64–66	0.090	0.8

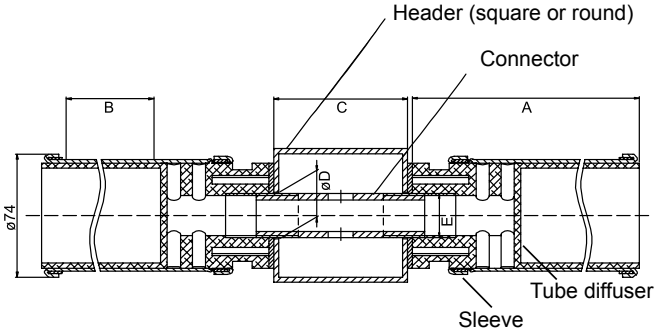
Other lengths on request.

Dimensions for threads and double nipple

Connector	Colour code diffuser mm	Double nipple length for square tube 80 x 80 mm mm	Double nipple length for square tube 100 x 100 mm mm	Double nipple length for tube DN 100 (114,3 mm) mm
1” Whitworth	Blue	130	150	190
3/4” Whitworth	Green	130	150	–
3/4” NPT	Grey	–	–	–

Two tube diffusers are assembled at one tube or square tube by a connector. The tube requires a rubber element adjusted to its diameter. Double nipples for other tube dimensions on request. 3/4” NPT joint: maximal diffuser length 610 mm, the diffuser will be connected to 3/4” NPT weld-on threaded nipple.

Connection of the membrane to the support tube: Standard secure clamp (Stainless steel, 1.4301), Exchange of the membrane is possible without demounting of the supporting body.
Gasket for square tube: 4 mm EPDM flat-gasket
Gasket for tube DN 100: EPDM gasket



A	1060				810				560				Diffuser length
B	1000				750				500				Perforation length
C	80		100		80		100		80		100		Square tube
D	28	35	28	35	28	35	28	35	28	35	28	35	Straight-Drilled Hole
E	3/4	1”	3/4	1”	3/4	1”	3/4	1”	3/4	1”	3/4	1”	Thread

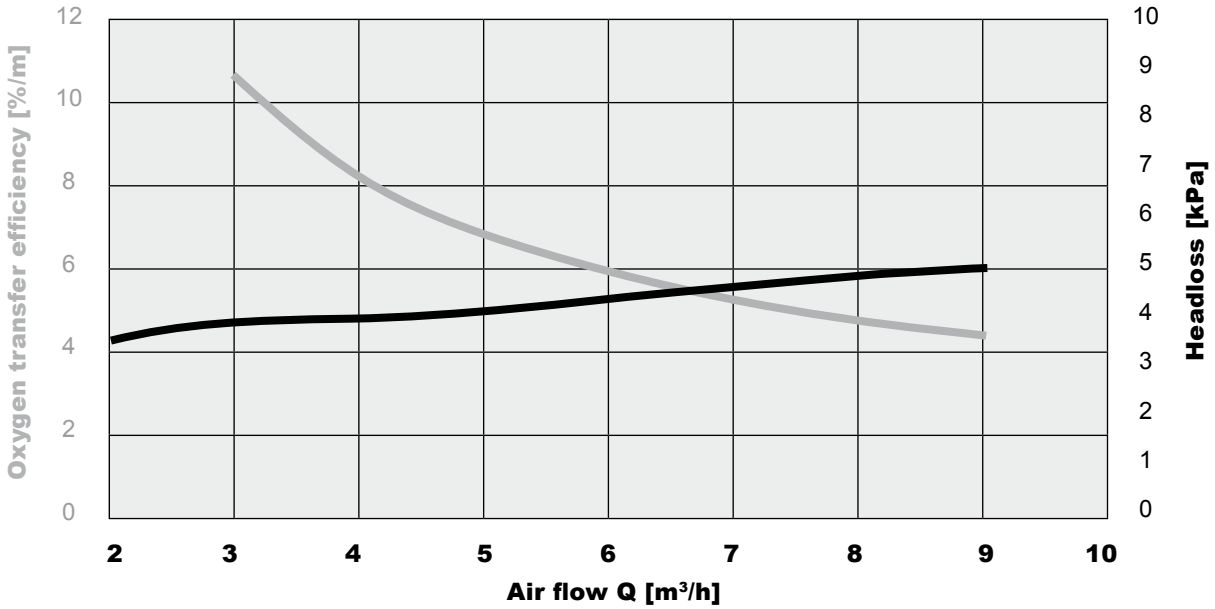
Properties of typical membranes

Membrane	Standard	Low plasticizer	Silicone
Material	EPDM 7312	EPDM 3510	VMQ 6001
Colour	Black	Black	Transparency
Wall thickness	1.9 mm ± 0.2 mm	1.9 mm ± 0.2 mm	1.5 mm ± 0.15 mm
Diameter	65 mm ± 1.9 mm	65 mm ± 1 mm	65 mm ± 1.5 mm
Density DIN 53479	< 1.15 g/cm³	< 1.2 g/cm³	< 1.15 g/cm³
Tensile strength DIN 53504	> 8 N/mm²	> 6.5 N/mm²	> 8 N/mm²
Elongation on break DIN 53504	> 500%	> 400%	> 650%
Tear strength DIN 53507	> 8 N/mm	> 5 N/mm	> 15 N/mm
Hardness DIN 53505	40 ± 5 Shore A	55 ± 5 Shore A 60	60 ± 5 Shore A
Tension set 100% tension 24 h, RT	< 4%	< 4%	
Operating temperature	0 to 80°C	5 to 80°C	5 to 100°C
Application	Municiple waste water	Municiple waste water with enhanced industrial rate	Industrial waste water with heavy pollution by grease, oils and required sediments

Other materials and dimensions are available on request. (e.g. Viton® for extreme exposures).
Support tube material: High quality, waste water resistant polypropylene, connector glas filled

Oxygen transfer efficiency and headloss

Tube diffuser TD 63/2100 with hose EPDM 6367



Air flow

- The operating conditions depend on the selected material and the slot.
- Non-standard slots are provided on request.
- Shutdown of operation is highly recommended for air flow rates lower than minimum rate.
- Overload air flow rate (e.g. cleaning) should not be applied longer than 10 min. per day.

Type	Operation conditions m_N^3/h	max. overload / maintenance m_N^3/h
63/2100 D	3 - 12	20
63/2075 D	2 - 9	15
63/2050 D	1 - 6	10

Information about disc and tube diffusers

Operation method of the diffuser

permanent or intermitted diffusion (not for silicone)

Materials

Various rubber substances are available as materials which have been especially adapted to the basic conditions for waste water. EPDM is the most frequently used of these. This material has been tested over many years in a wide variety of versions and should be used as the material of choice in sewerage plants which treat municipal and industrial waste water.

Silicon can also be used. However, this material is much more apt to tear than EPDM. Since the perforation of the aerators has already damaged the material, the danger of further tearing and resulting destruction of the aerator is much greater than for EPDM aerators. Special silicon compounds and construction measures on the aerator are used to counteract this danger. However, silicon aerators are more prone to damage than EPDM aerators. In addition, silicon material is more expensive than EPDM. Such costs are also reflected in the prices of these aerators.

The conclusion: silicon should only be used in plants which treat waste water which is corrosive to EPDM material. This applies primarily to plants which process a very high proportion of industrial waste water. Grease, oil and aromatic hydrocarbons are the main trouble-makers. Rubber compounds with a reduced amount of softener have also proven effective for waste water with an elevated grease content. The normal softener content of EPDM aerators is approximately 30%. This can be reduced to approx. 10% for plates and approx. 15% for hoses. This makes these membranes much more resistant to the corrosive effects of industrial waste water.

The values specified here may vary depending on basin geometry, pipe length, slits, material, water depth and surface utilization.

Storage

- Diffuser and/or rubber sleeves must be stored factory-packed in a dark, dry, ventilated and dust-free storage space according to DIN 7716. Avoid frost, heat, UV/radiation, dust and working which can cause damage of diffuser and/or packing.
- Do not store outdoors! The storage of rubber parts until installation/starting operation should not exceed one year. At on-site delivery, all rubber and plastic parts must be stored in their original packaging. Crates exposed to direct sunlight must be covered with tarpaulin to protect against UV-radiation.

Maintenance

Diffusers can only be checked, if the activated sludge tank is out of work and empty. That is why normal cleaning must be done at work. Formic acid is used very successfully against carbonating. To keep the pores open, formic acid is sprayed into the compressed air for a short time. Also a regular use with maximum air flow for a short time helps keep the diffuser in good conditions for a long time.

Membrane lifetime

6 - 10 years in municipal waste water treatment plants, depending on waste water influent and operation condition.

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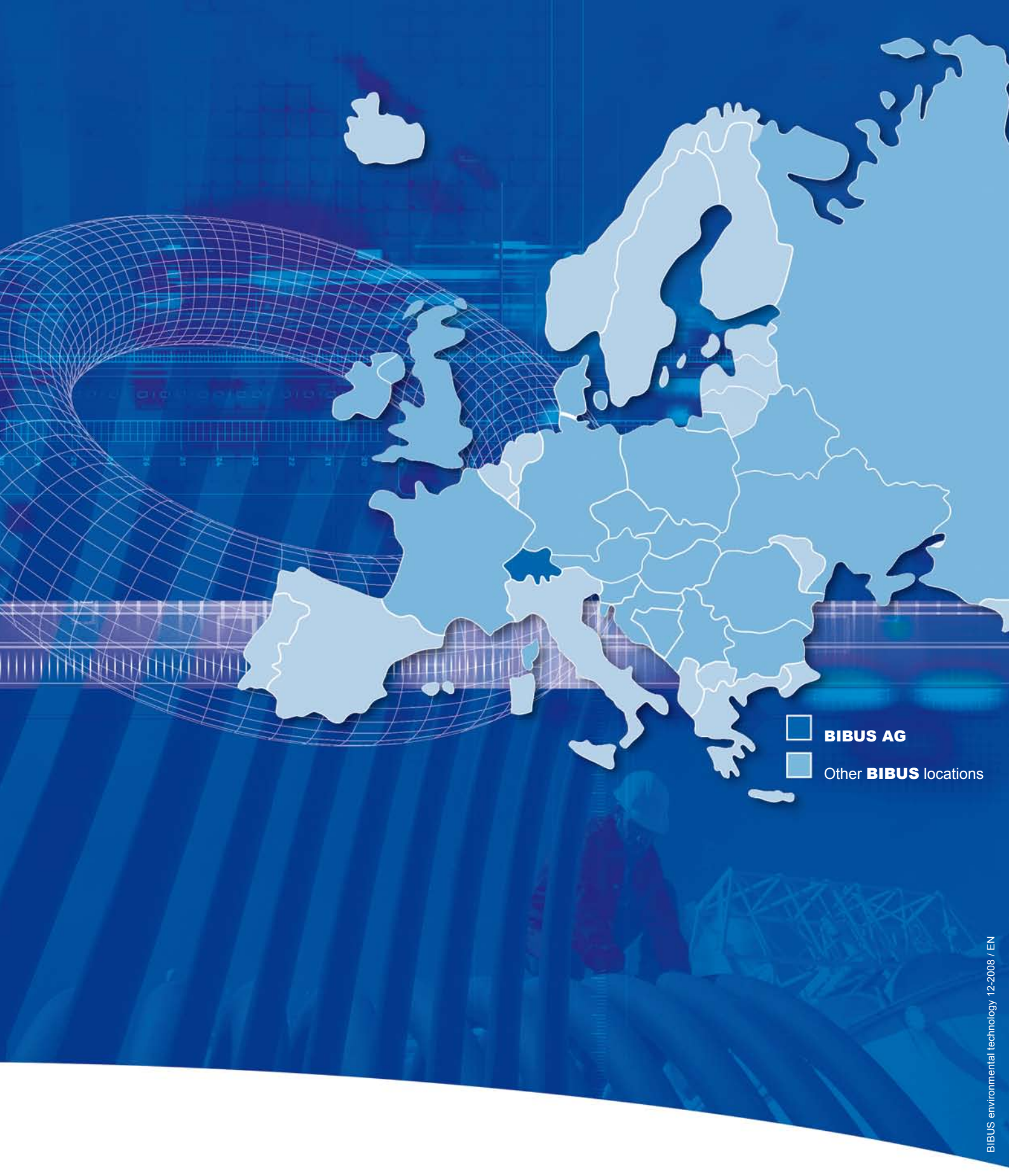

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