Environmental Technology

Components for water treatment and industrial facilities

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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

CONTENT

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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

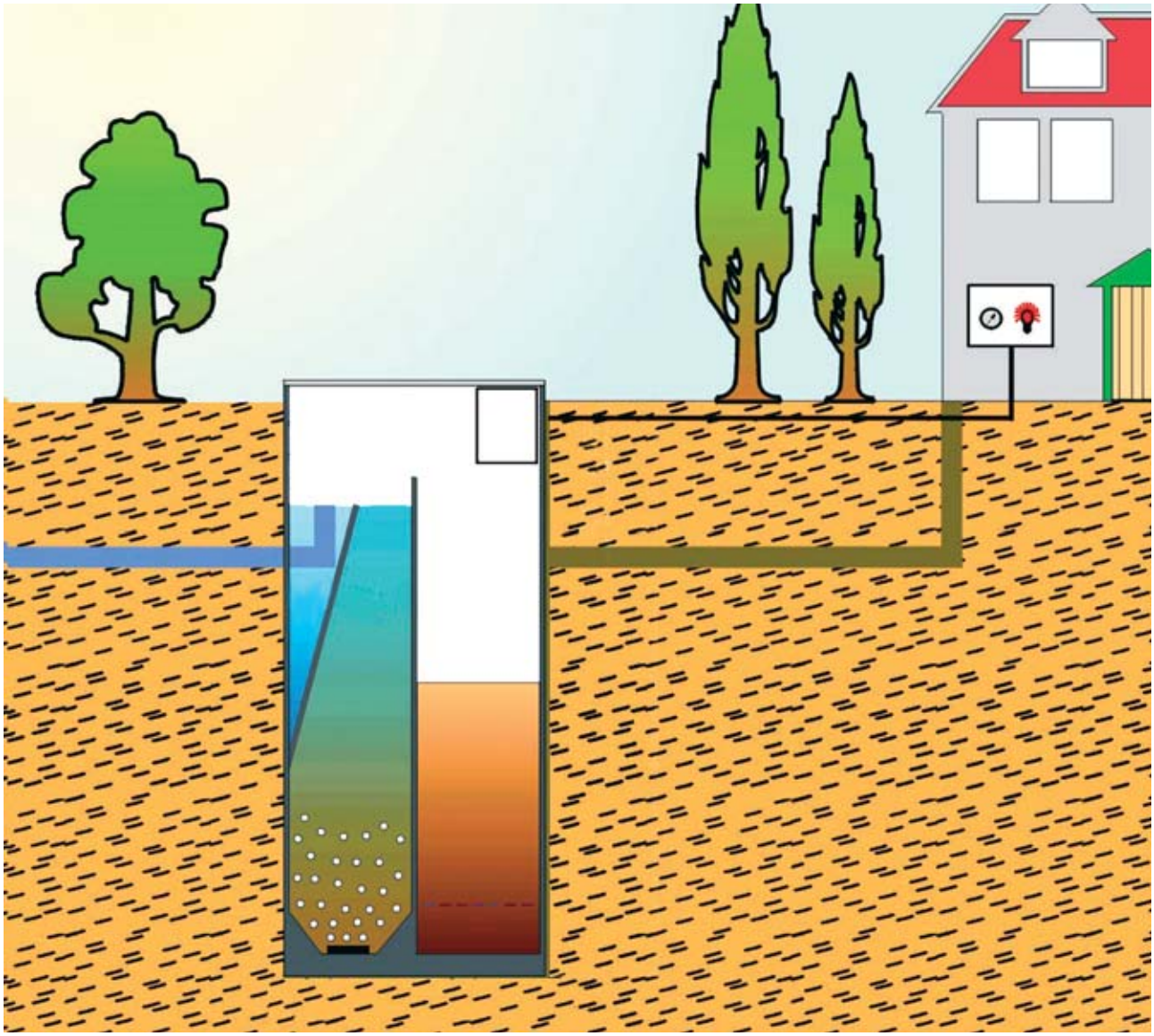
Advantages

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

DIAPHRAGM PUMPS

Examples of use

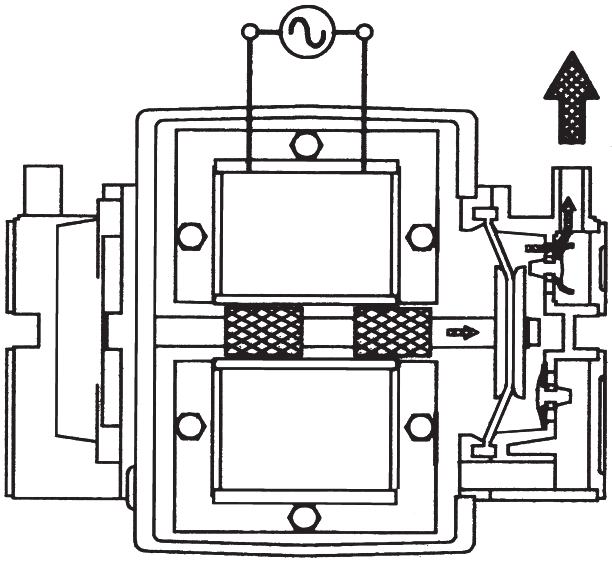
Blowers and vacuum pumps are ideally suited for applications where minimum energy consumption, delivery of absolutely oil-free air, near silent operation and a minimum of simple maintenance are either prerequisites or of great advantage.



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.

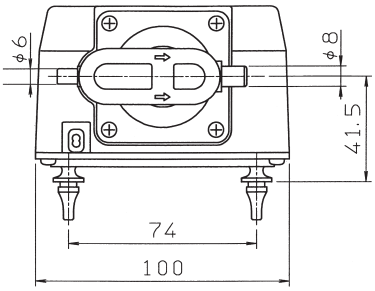
OEM assembly pump

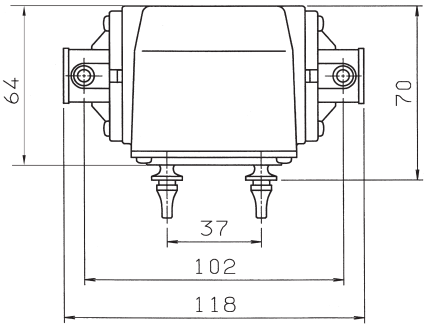
MK-10 / MK-10-12V / MK-10-24V

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

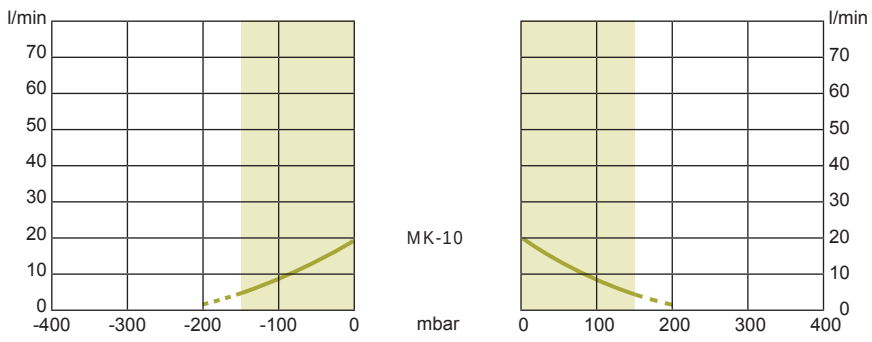
[2)] The pneumatic values do not correspond for mixed operation, i. e. with both vacuum on the suction port and pressure on the outlet

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

[4)] Values at 50 Hz

Performance data

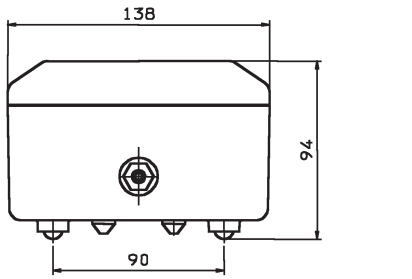
Optimal operating span

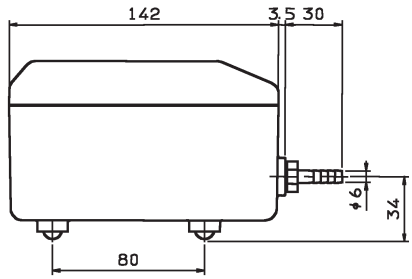


Phoe-niX series
MKC-510V

Product characteristics
- Connecting hose and air distributor included in delivery

Dimensions



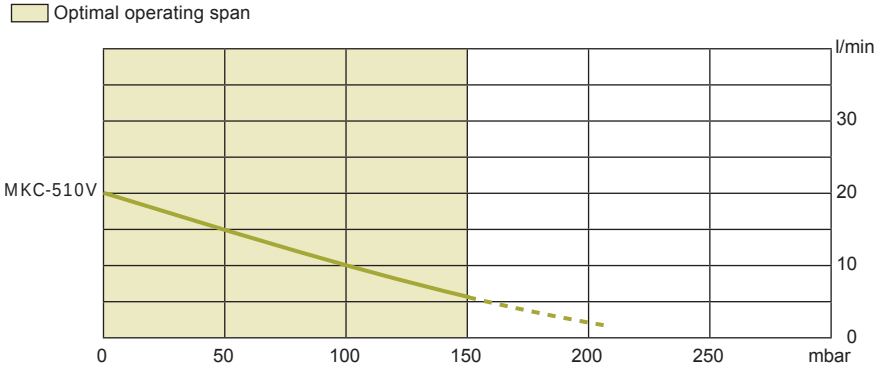


Technical data

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



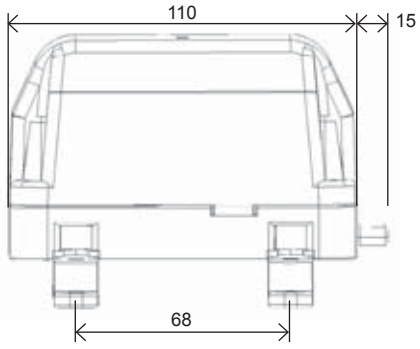
TPS series

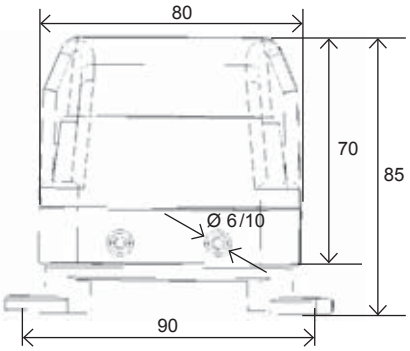
TPS-5 / TPS-10 / TPS-15 / TPS-20

Product characteristics

- Pressure and vacuum possible
- compact design
- TPS-5 and TPS-10 also available with FE-Magnet

Dimensions





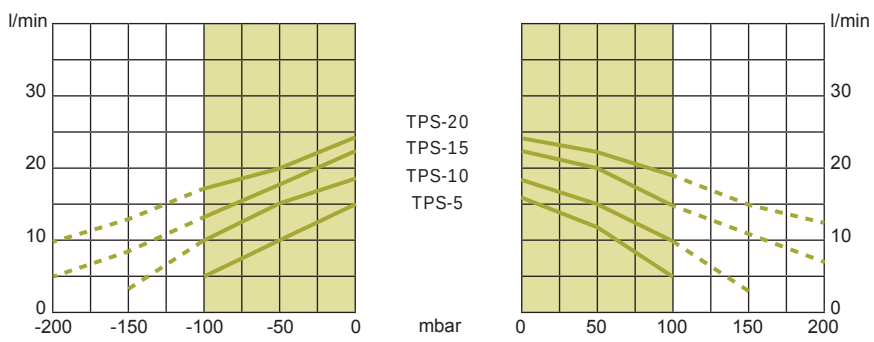
Technical data

Model		Pressure	Vacuum	TPS-5	TPS-10	TPS-15	TPS-20
Air flow[1]	l/min	0 mbar	0 mbar rel	16/15	19/18	22/22	24/24
		50 mbar	- 50 mbar rel	12/10	15/15	20/17	22/20
		100 mbar	- 100 mbar rel	5/5	10/10	15/13	19/17
		150 mbar	- 150 mbar rel	-	5/3	11/8	15/13
		200 mbar	- 200 mbar rel	-	-	7/5	12/10
Voltage[2]	VAC			230			
Power consumption	W		100 mbar	3	6	11	18
Noise level	dB(A)			28	29	32	33
Dimensions	mm		L x W x H	110 x 90 x 85			
Connection	mm		Ø outside	6 / 10			
Net weight	kg			0.9			

[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



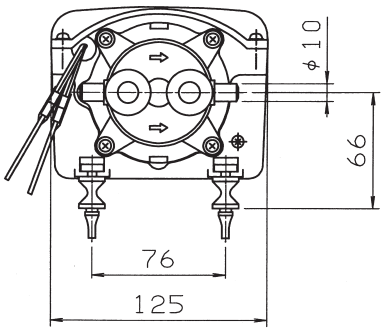
OEM assembly pump

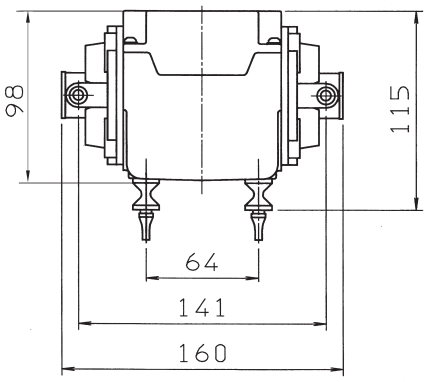
SV-20 / SV-30 / SV-40 / SV-50

Product characteristics

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

Dimensions





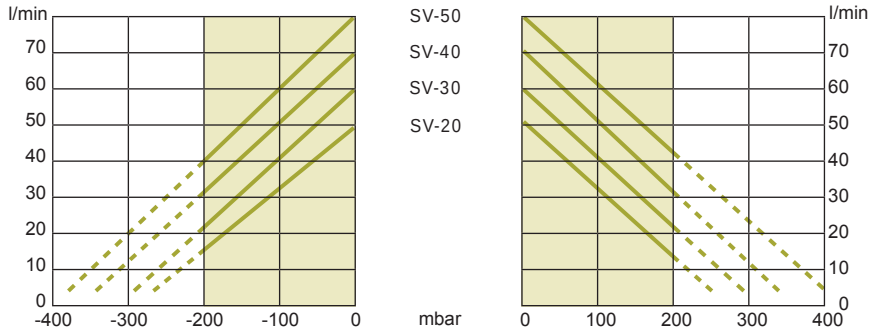
Technical data

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



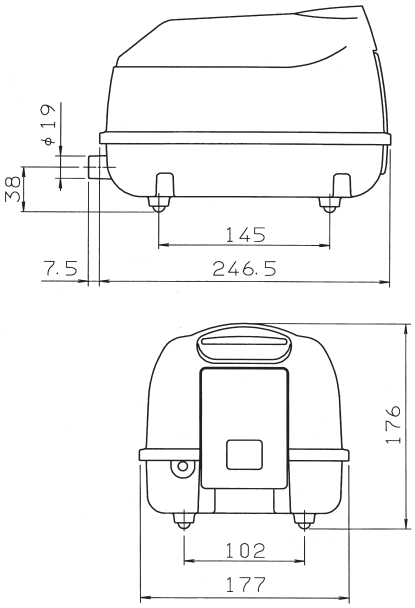
SLL series

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

Product characteristics

- Integrated overload protection
- Connecting hose included in delivery

Dimensions

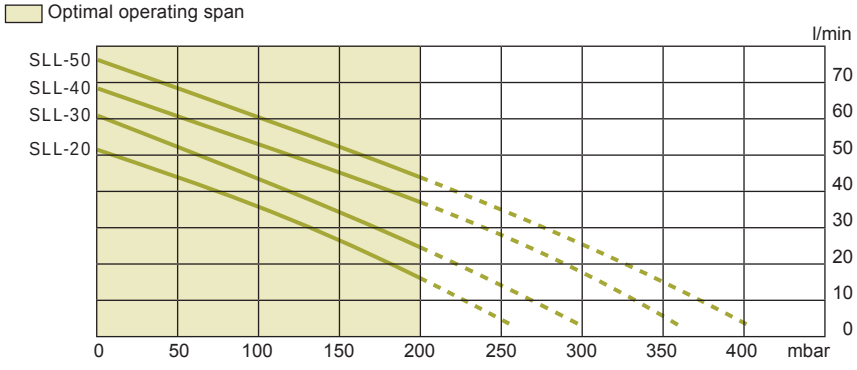


Technical data

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



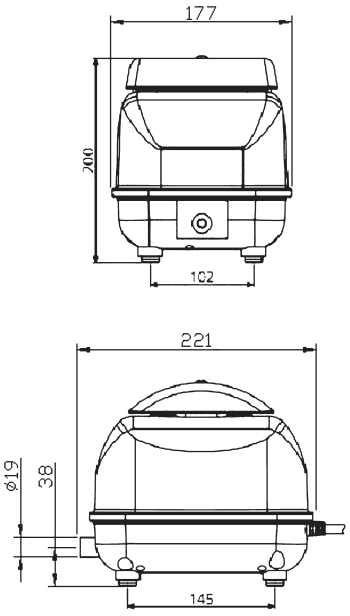
JDK series

JDK-20 / JDK-30 / JDK-40 / JDK-50

Product characteristics

- Compact design
- Low energy consumption
- High quality plastic housing
- Connecting hose included in delivery

Dimensions

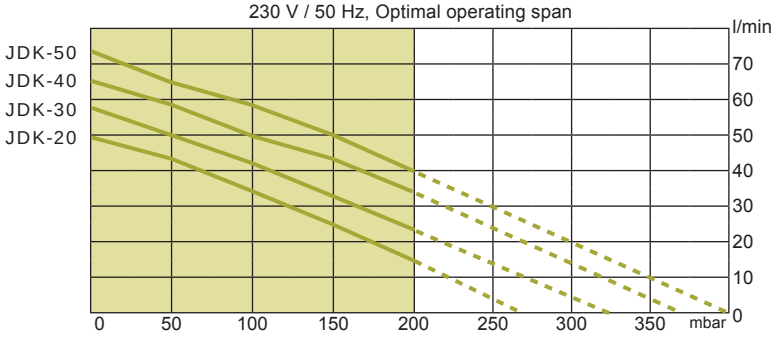


Technical data

Modell		Pressure	JDK-20	JDK-30	JDK-40	JDK-50
Air flow[1]	l/min	0 mbar	50	58	65	72
		50 mbar	43	50	59	65
		100 mbar	34	41	50	59
		150 mbar	25	32	43	50
		200 mbar	15	23	34	40
Voltage[2]	VAC		230			
Power consumption	W	200 mbar	16	25	35	42
Noise level	dB(A)		30	32	33	36
Dimensions	mm	L x W x H	221 x 177 x 200			
Connection	mm	Ø outside	19			
Net weight	kg		4.5			

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

Performance data



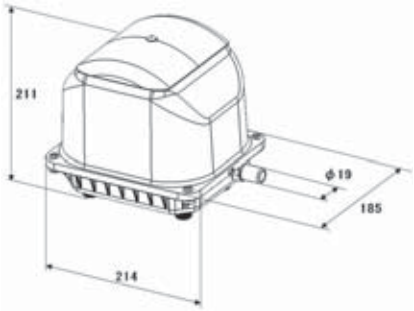
JDK series

JDK-60 / JDK-80 / JDK-100

Product characteristics

- Compact design
- Low energy consumption
- Protective switch inclusive
- Optional with fault alarm lamp or signal cable
- Connecting hose included in delivery
- Optional with metal housing

Dimensions

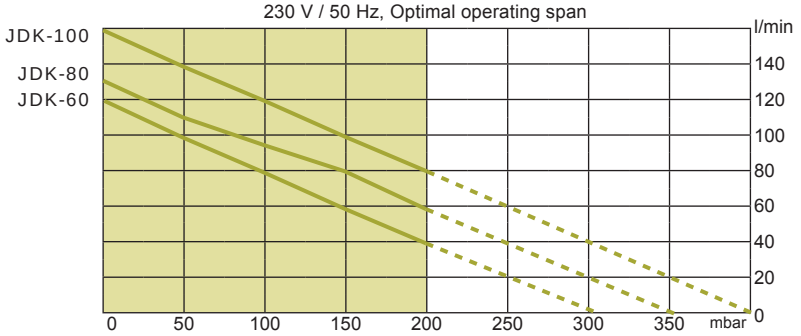


Technical data

Modell		Pressure	JDK-60	JDK-80	JDK-100
Air flow[1]	l/min	0 mbar	120	130	160
		50 mbar	100	115	140
		100 mbar	80	95	120
		150 mbar	60	80	100
		200 mbar	40	60	80
Voltage[2]	VAC		230		
Power consumption	W	200 mbar	27	42	65
Noise level	dB(A)		≤ 36	≤ 38	≤ 42
Dimensions	mm	L x W x H	214 x 185 x 211		
Connection	mm	Ø outside	19		
Net weight	kg		6.4		

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

Performance data



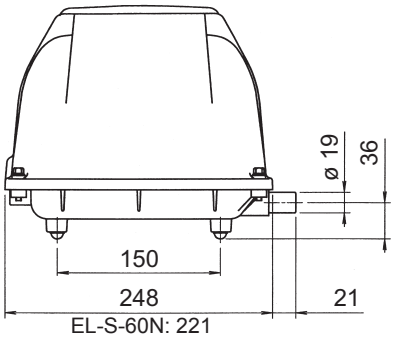
EL-S single system

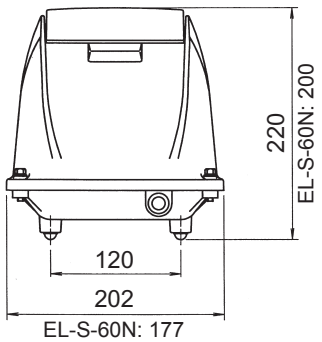
EL-S-60N / EL-S-60 / EL-S-80-15
EL-S-80-17 / EL-S-100 / EL-S-120 / EL-S-150

Product characteristics

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

Dimensions



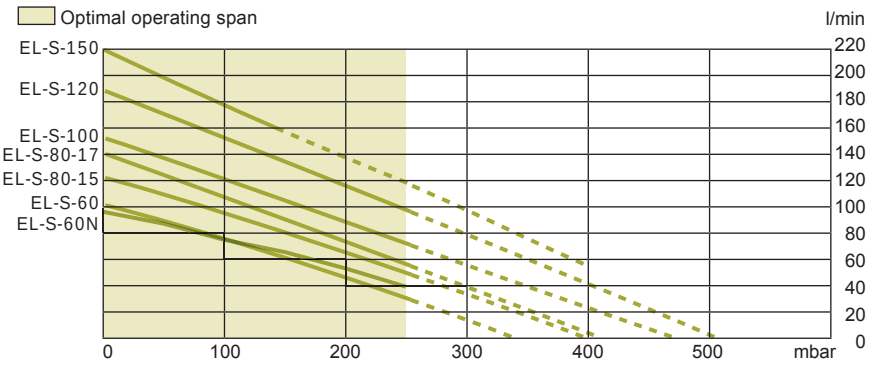


Technical data

Model			EL-S-60N [3]	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	98	105	127	142	152	190	224
		50 mbar	88	96	115	131	142	176	205
		100 mbar	76	83	102	113	130	156	182
		150 mbar	64	68	87	95	112	138	170
		200 mbar	52	54	73	77	94	123	148
		250 mbar	40	40	56	59	77	105	120
Voltage [2]	V		230	230					
Power consumption	W	200 mbar	48	44	74	71	92	120	150
Noise level	dB(A)		43	36	40	40	42	47	58
Dimensions	mm	L x W x H	221 x 177 x 200	249 x 202 x 220					
Connection	mm	Ø outside	19	19					
Net weight	kg		4.4	8.5	8.5	8.5	8.5	9	9

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

Performance data

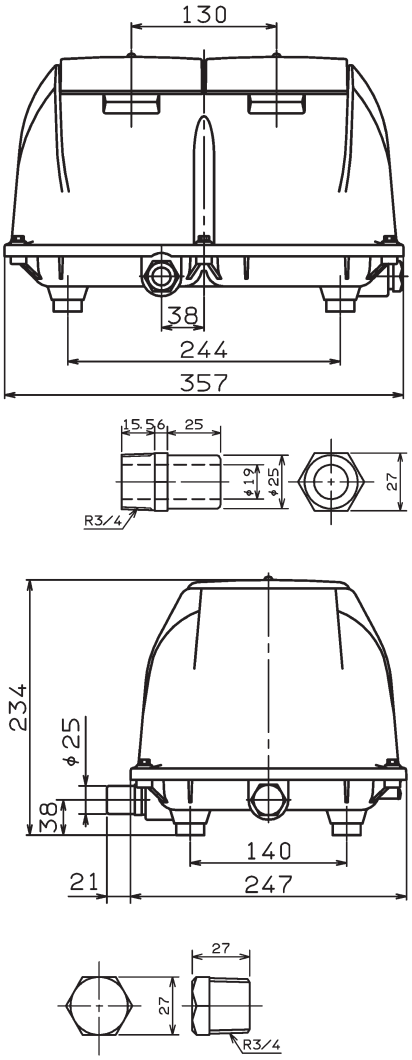


EL-S Serie
twin system
EL-S-120W / EL-S-150W / EL-S-200W
EL-S-250W / EL-S-300W

Product characteristics

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

Dimensions

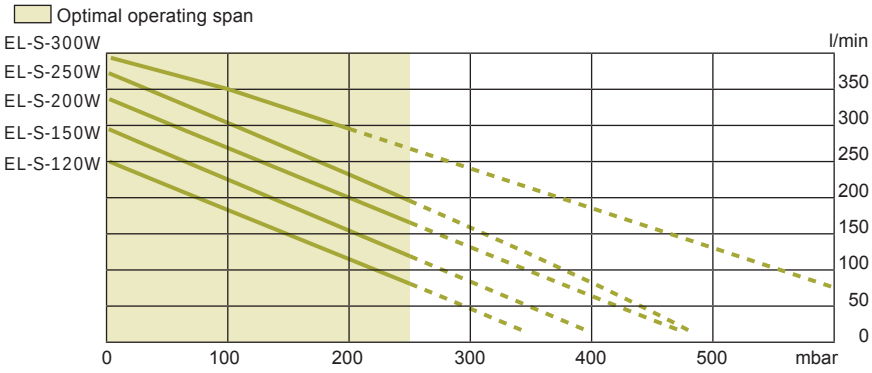


Technical data

Model			EL-S-120W	EL-S-150W	EL-S-200W	EL-S-250W	EL-S-300W
Air flow[1]	l/min	0 mbar	240	290	330	360	400
		50 mbar	215	250	270	320	380
		100 mbar	185	218	250	290	350
		150 mbar	156	196	225	262	310
		200 mbar	127	165	196	233	–
		250 mbar	95	135	170	205	–
Voltage[2]	V		230				
Power consumption	W	200 mbar	120	149	210	241	320
Noise level	dB(A)		43	44	45	55	60
Dimensions	mm	L x W x H	268.5 x 357 x 234				
Connection	mm	Ø outside	25	25	25	25	25
Net weight	kg		16	16	16	16	16.5

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

Performance data



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

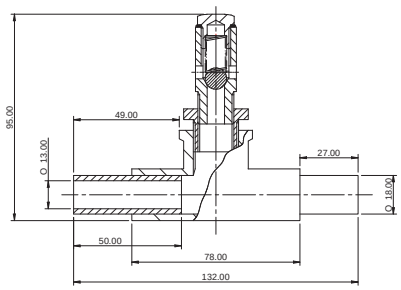
Magnet Kits

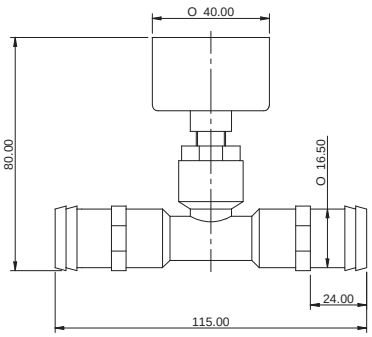
Accessories

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, EL and JDK 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)

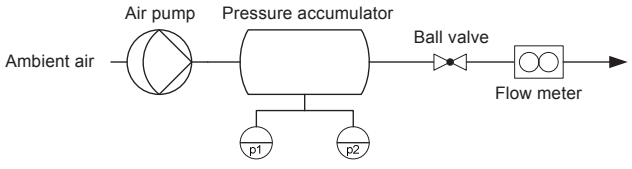
Our diaphragm pumps of the EL- and JDK-series are equipped with an auto-stop function. It interrupts the power supply to the motor should a diaphragm ever be broken. This prevents further consequential damage, which could be severe, to the diaphragm pumps and the connected systems.

Fault alarm lamp (optional)

To indicate any diaphragm fault optically, every pump of the EL-S and JDK-S 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.

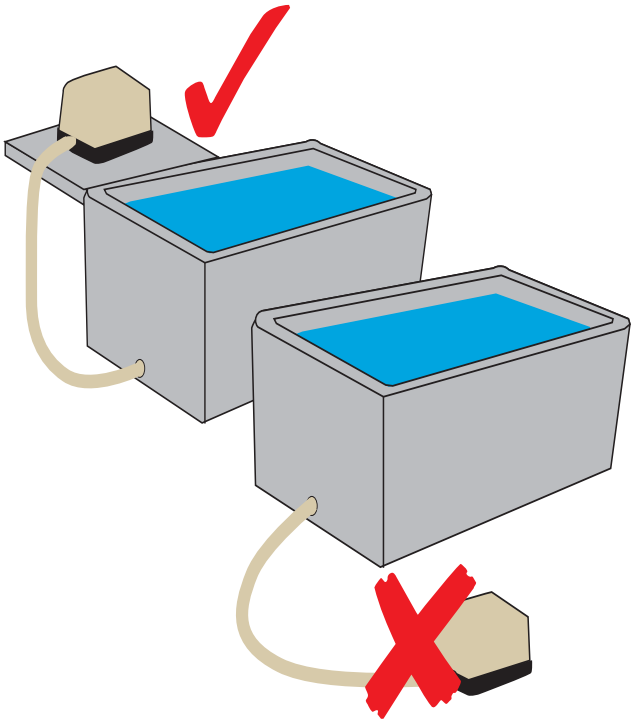


Installation and operation

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 on page 49ff.)

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

TSC series 23

TDC series 28

Accessories 38

Note: new item numbers – conversion on p. 39

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.

Applications

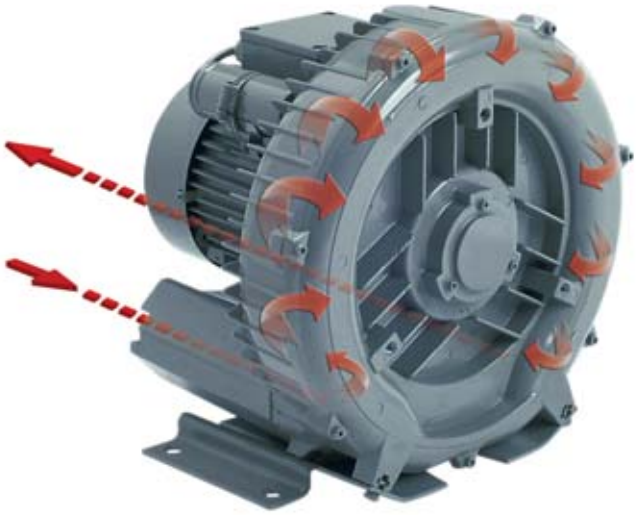
Aeration
- Swimming pools and whirlpools
- Ponds and aquaria
- Sewage plants and fluidisation systems

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

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

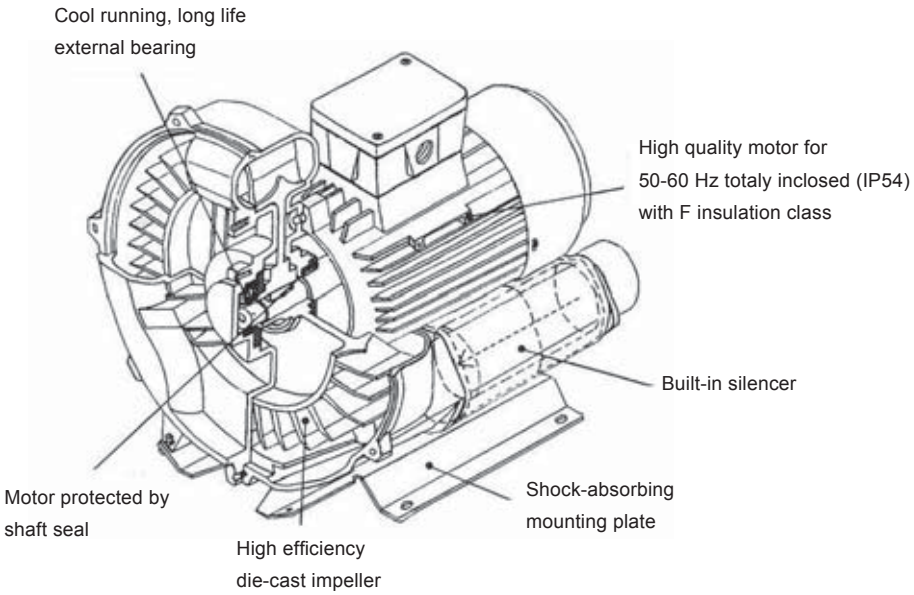
The side channel blowers are equipped with built-in silencers. The carrier plate is also silencing. A maximum degree of noise reduction is achieved. The noise level during operation is only 55 dB to 80 dB, depending on the model.

100 % oil-free air

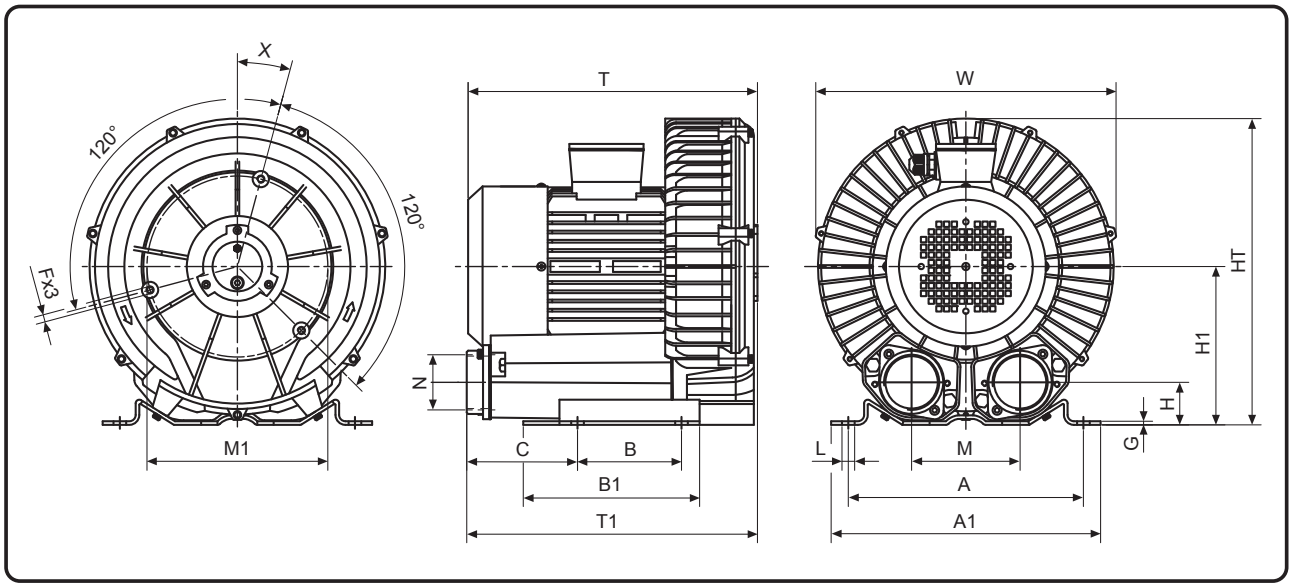
Due to the contactless rotation of the impellers, lubrication is not necessary. The compression procedure is dry and oil-free and the gas to be compressed is not polluted.

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.



Overall dimensions for single stage blowers



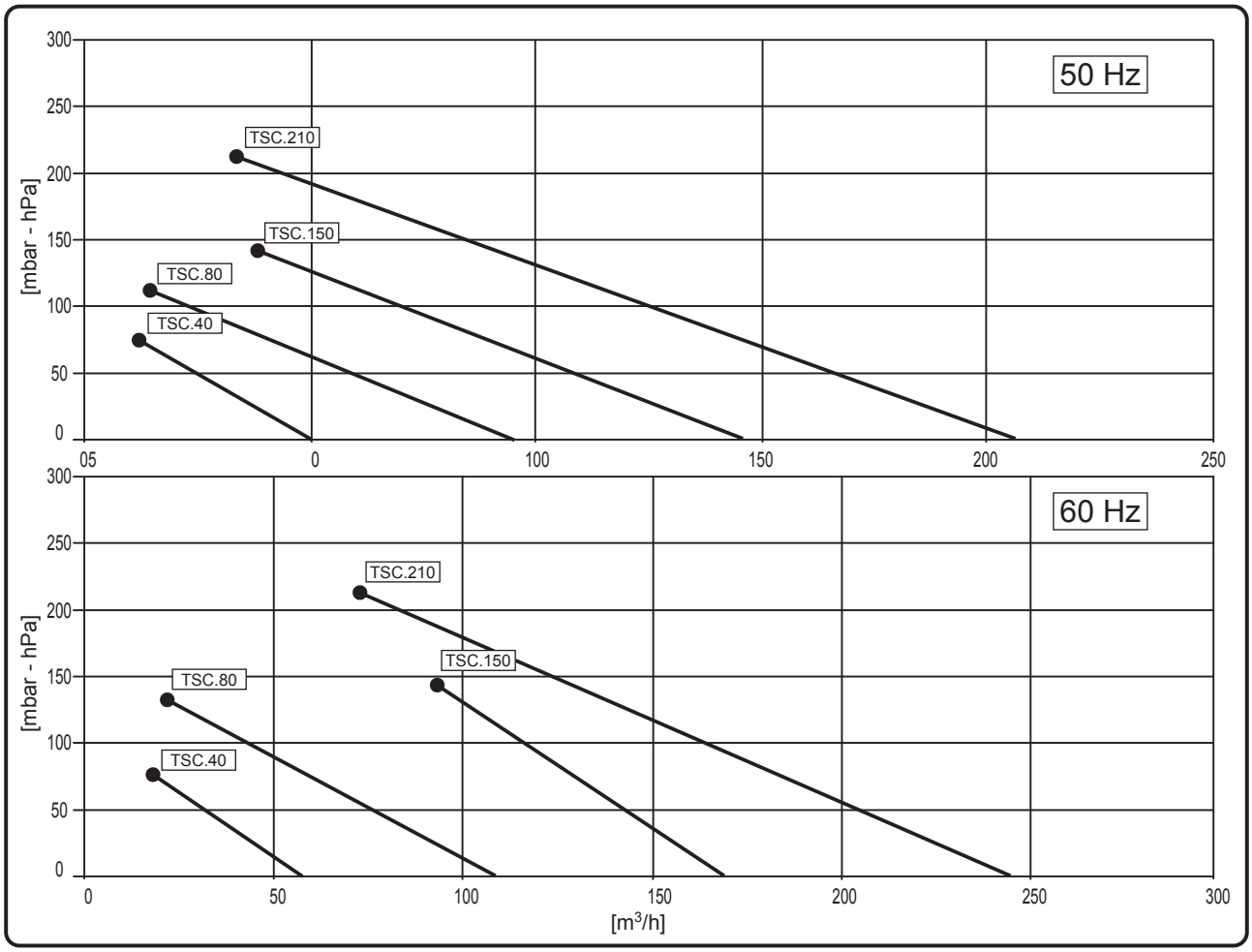
Blowers with single phase motor

Model	Code	A	A1	B	B1	C	F	G	H	H1	HT	L	M	ØM1	N	T	T1	W	X
TSC.40	9401020	165	186	–	100	122	–	2	38	108	214	Ø12	70	–	1“G	210	205	200	–
TSC.80	9401021	205	227	83	108	95	M6	3	42	130	249	Ø10	90	140	1-1/4“G	251	257	248	0°
TSC.150	9401022	225	257	95	130	98	M6	2,5	45	153	301	Ø12	115	175	1-1/2“G	284	273	285	0°
TSC.210	9401023	260	298	115	195	123	M8	4	47	175	339	Ø14	120	200	2“G	320	322	332	0°

Blowers with three phase motor

Model	Code	A	A1	B	B1	C	F	G	H	H1	HT	L	M	ØM1	N	T	T1	W	X
TSC.40	9402050	165	186	–	100	122	–	2	38	108	214	Ø12	70	–	1“G	210	205	200	–
TSC.80	9402051	205	227	83	108	95	M6	3	42	130	249	Ø10	90	140	1-1/4“G	251	257	248	0°
TSC.150	9402052	225	257	95	130	98	M6	2,5	45	153	301	Ø12	115	175	1-1/2“G	284	273	285	0°
TSC.150-1	9402053	225	257	95	130	98	M6	2,5	45	153	301	Ø12	115	175	1-1/2“G	284	273	285	0°
TSC.150-1	9402054	225	257	95	130	98	M6	2,5	45	153	301	Ø12	115	175	1-1/2“G	284	273	285	0°
TSC.210	9402055	260	298	115	195	123	M8	4	47	175	339	Ø14	120	200	2“G	320	322	332	0°
TSC.310	9402056	290	332	140	180	113	M8	5	50	195	382	Ø14	125	240	2“G	370	362	383	0°
TSC.310-1	9402057	290	332	140	180	113	M8	5	50	195	382	Ø14	125	240	2“G	370	362	383	0°
TSC.310-2	9402058	290	332	140	180	113	M8	5	50	195	382	Ø14	125	240	2“G	370	362	383	0°
TSC.550	9402059	365	430	280	315	193	M12	30	96	280	512	Ø15	145	405	2-1/2“G	462	490	464	15°
TSC.550-0	9402061	365	430	280	315	193	M12	30	96	280	512	Ø15	145	405	2-1/2“G	462	490	464	15°
TSC.550-1	9402060	365	430	280	315	193	M12	30	96	280	512	Ø15	145	405	2-1/2“G	462	490	464	15°
TSC.1100	9402062	360	415	600	636	13	M12	28	95	306	576	Ø16	210	490	4“G	632	715	560	0°
TSC.1100-1	9402063	360	415	600	636	13	M12	28	95	306	576	Ø16	210	490	4“G	632	715	560	0°

Selection chart for single stage single phase motor blowers for suction usage

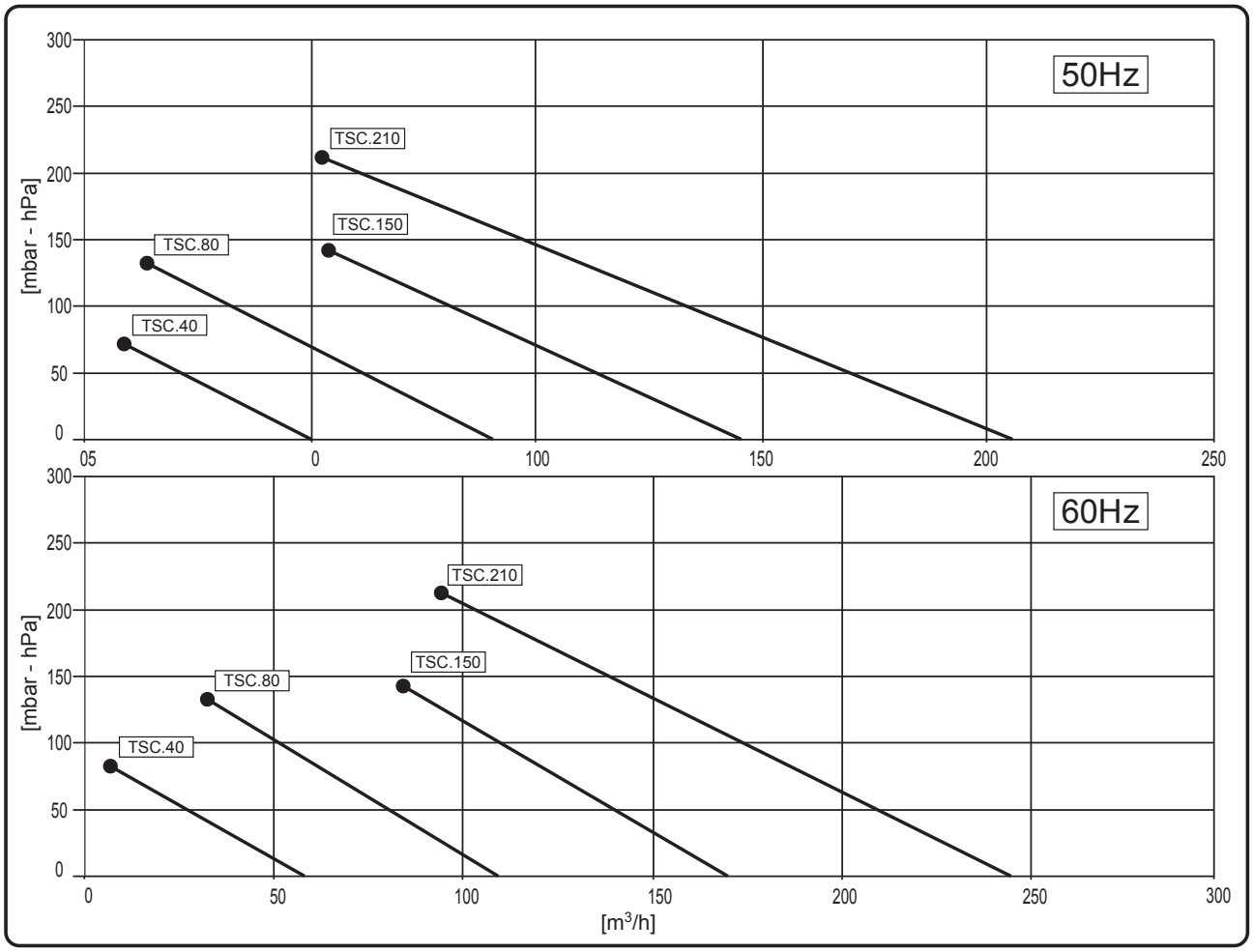


Curves refers to 1013 mbar (abs.) pression and 20°C temp. (tollerance ±10%).

Model	Code	kW		V	A		m³/h		mbar		dB(A)		kg	Ø ´´G
		50 Hz	60 Hz	±5 %	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
TSC.40	9401020	0,2	0,25	115 / 230	3,4 / 1,7	3,6 / 1,8	50	60	70	75	52	55	7	1“
TSC.80	9401021	0,37	0,45	115 / 230	5,6 / 2,8	5,8 / 2,9	90	108	110	130	58	61	12	1-¼“
TSC.150	9401022	0,75	0,90	115 / 230	13 / 6,5	14 / 7	145	170	140	140	63	64	18	1-½“
TSC.210	9401023	1,5	1,8	230	12,3	13	205	245	210	210	70	73	27,5	2“

Attention: Never exceed the maximum Δp shown in the diagrams and in the tables, as a function of installed power. If required, install a relief valve.

Selection chart for single stage single phase motor blowers for compression usage

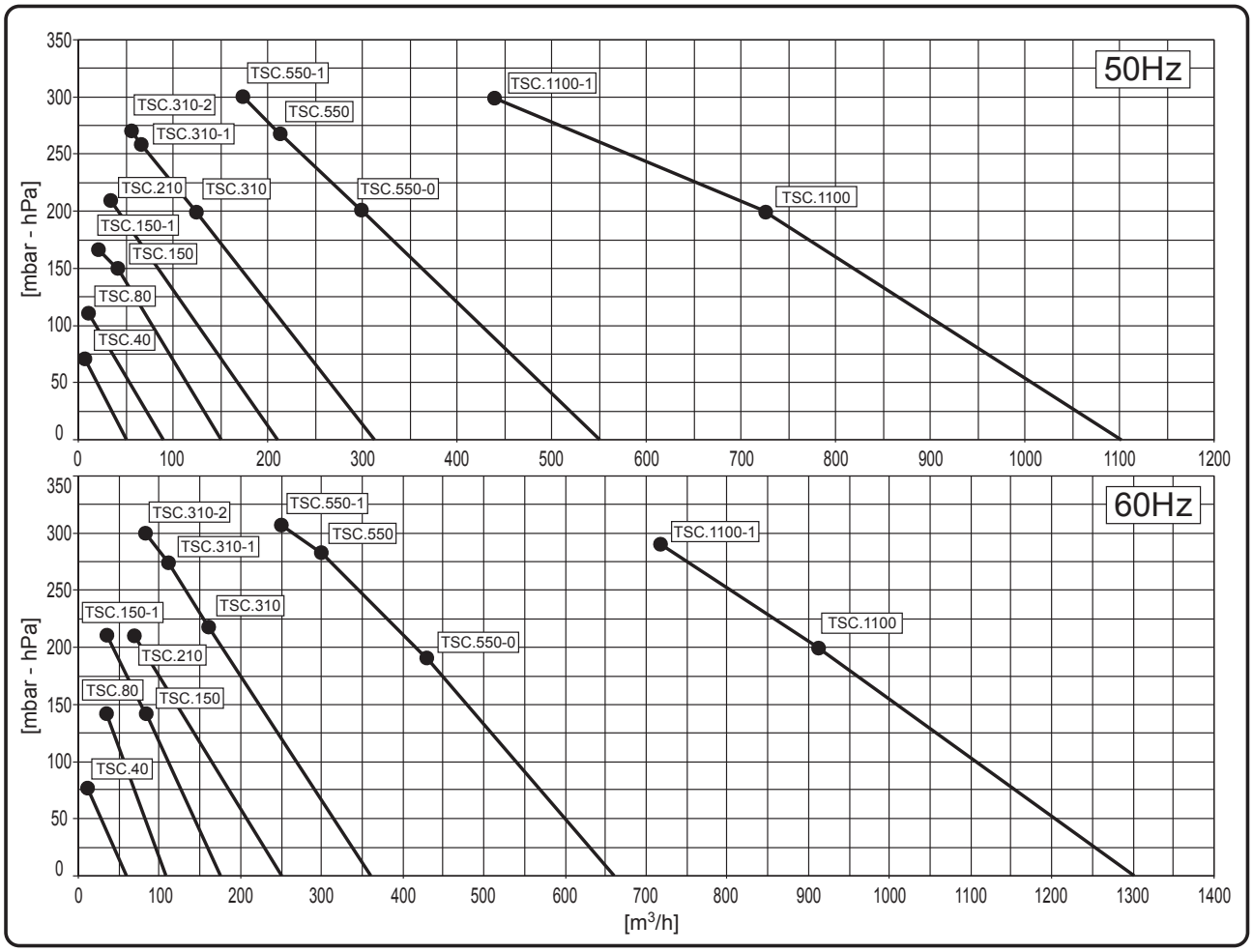


Curves refers to 1013mbar (abs.) pression and 20°C temp. (tollerance ±10%).

Model	Code	kW		V	A		m³/h		mbar		dB(A)		kg	Ø ´´G
		50 Hz	60 Hz	±5 %	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
TSC.40	9401020	0,2	0,25	115 / 230	3,4 / 1,7	3,6 / 1,8	50	60	70	80	52	55	7	1“
TSC.80	9401021	0,37	0,45	115 / 230	5,6 / 2,8	5,8 / 2,9	90	108	130	140	58	61	12	1-¼“
TSC.150	9401022	0,75	0,90	115 / 230	13 / 6,5	14 / 7	145	170	140	140	63	64	18	1-½“
TSC.210	9401023	1,5	1,8	230	12,3	13	205	245	220	220	70	73	27,5	2“

Attention: Never exceed the maximum Δp shown in the diagrams and in the tables, as a function of installed power. If required, install a relief valve.

Selection chart for single stage three phase motor blowers for suction usage

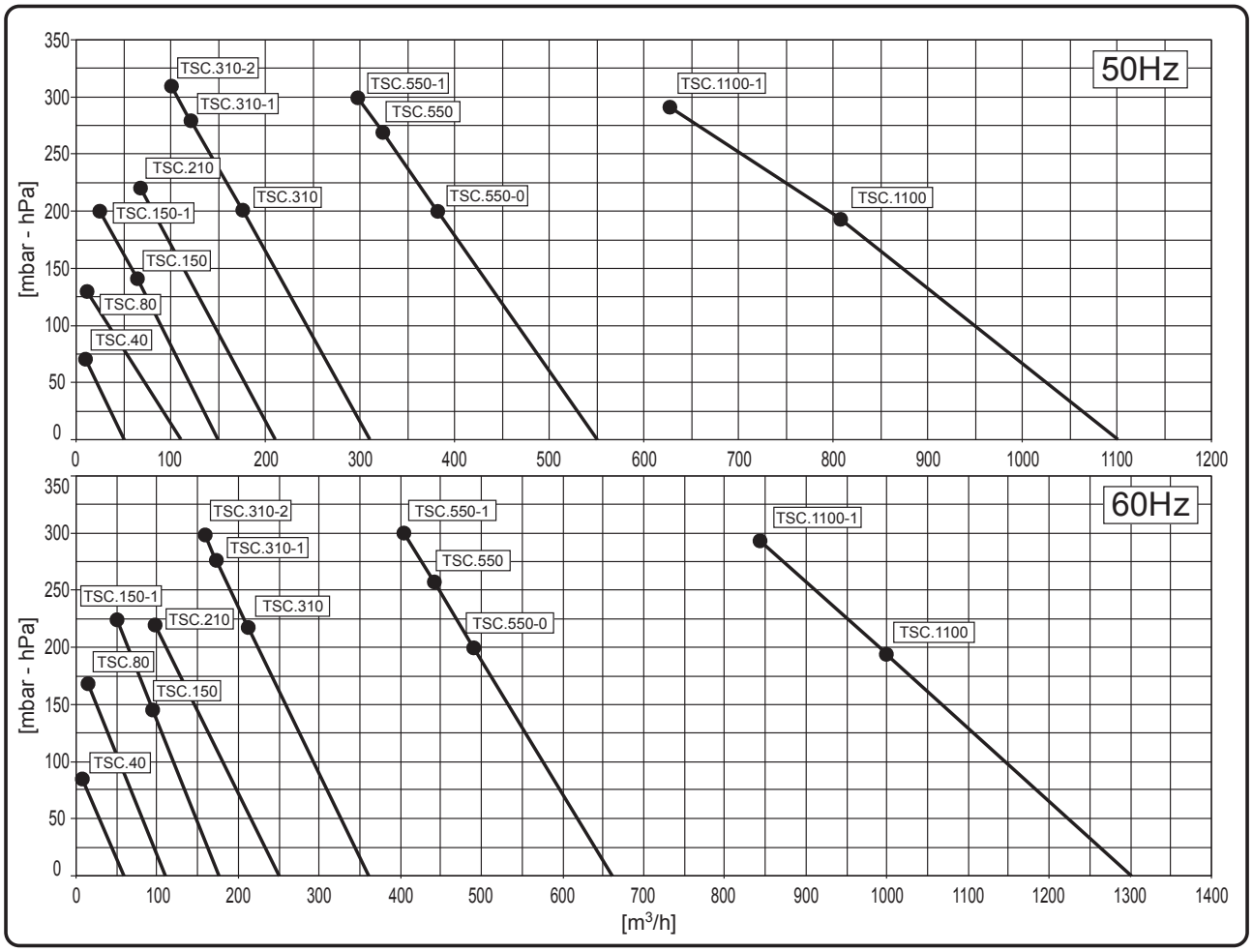


Curves refers to 1013mbar (abs.) pression and 20°C temp. (tollerance ±10%).

Model	Code	kW		V ±5 %	A	V ±5 %	A	m³/h		mbar		dB(A)		kg	Ø ´´G
		50 Hz	60 Hz	50 Hz D/Y	50 Hz	60 Hz D/Y	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
TSC.40	9402050	0,2	0,25	220-255/380-440	0,9/0,5	220-277/380-480	1,1/0,6	50	60	70	75	52	55	7	1“
TSC.80	9402051	0,37	0,45	220-255/380-440	2,1/1,2	220-277/380-480	2,3/1,3	90	108	110	140	58	61	12	1-¼“
TSC.150	9402052	0,75	0,90	220-255/380-440	3,3/1,9	220-277/380-480	3,6/2,1	150	175	150	140	63	64	17,5	1-½“
TSC.150-1	9402053	1,3	1,5	220-255/380-440	4,6/2,7	220-277/380-480	5,2/3,0	150	175	175	205	64	65	19	1-½“
TSC.150-1	9402054	1,3	1,5	380-440/660-760	2,7/1,56	380-480/660-830	3/1,73	150	175	175	205	64	65	19	1-½“
TSC.210	9402055	1,5	1,8	220-255/380-440	6,7/3,9	220-277/380-480	7,0/4,0	210	250	210	210	70	73	26,5	2“
TSC.310	9402056	2,2	2,7	220-255/380-440	9,7/5,6	220-277/380-480	11,3/6,5	310	360	200	220	72	77	37,5	2“
TSC.310-1	9402057	3,0	3,6	220-255/380-440	12,5/7,2	220-277/380-480	13,5/7,8	310	360	260	280	72	77	40	2“
TSC.310-2	9402058	4	4,8	220-255/380-440	14,2/8,2	220-277/380-480	16,2/9,3	310	360	270	300	72	77	41	2“
TSC.550	9402059	5,5	6,5	220-255/380-440	21/12	220-277/380-480	26,6/15,3	550	660	270	280	74	79	83,5	2-½“
TSC.550-0	9402061	4	4,6	220-255/380-440	17,3/10	220-277/380-480	21/12	550	660	200	180	73	78	83,5	2-½“
TSC.550-1	9402060	7,5	9	380-440/660-760	15,1/8,7	380-480/660-830	19,1/11	550	660	300	310	74	79	90	2-½“
TSC.1100	9402062	9	11	380-440/660-760	20,2 /11,7	440-480/760-830	20,8/12	1100	1300	200	200	76	81	123	4“
TSC.1100-1	9402063	13	15	380-440/660-760	26,3/15,2	440-480/760-830	28,9/16,7	1100	1300	300	290	76	81	133	4“

Attention: Never exceed the maximum Δp shown in the diagrams and in the tables, as a function of installed power. If required, install a relief valve

Selection chart for single stage three phase motor blowers for suction usage

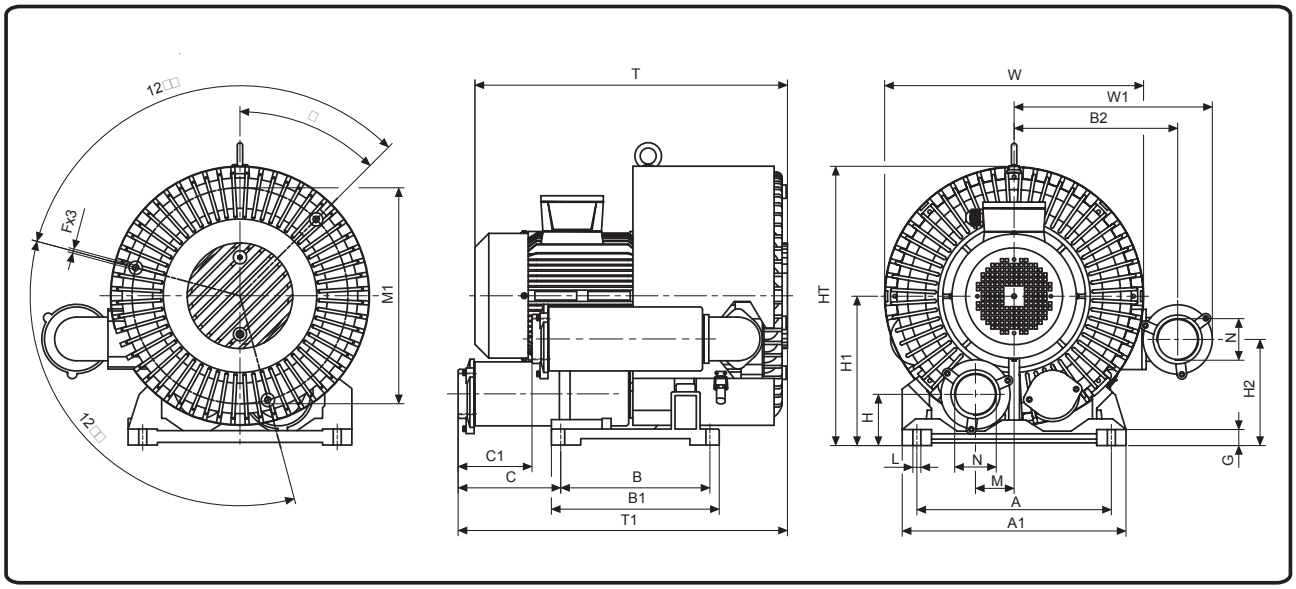


Curves refers to 1013mbar (abs.) pression and 20°C temp. (tollerance ±10%).

Model	Code	kW		V ±5 %	A	V ±5 %	A	m³/h		mbar		dB(A)		kg	Ø ´´G
		50 Hz	60 Hz	50 Hz D/Y	50 Hz	60 Hz D/Y	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
TSC.40	9402050	0,2	0,25	220-255/380-440	0,9/0,5	220-277/380-480	1,1/0,6	50	60	70	80	52	55	7	1“
TSC.80	9402051	0,37	0,45	220-255/380-440	2,1/1,2	220-277/380-480	2,3/1,3	90	108	130	170	58	61	12	1-¼“
TSC.150	9402052	0,75	0,90	220-255/380-440	3,3/1,9	220-277/380-480	3,6/2,1	150	175	140	140	63	64	17,5	1-½“
TSC.150-1	9402053	1,3	1,5	220-255/380-440	4,6/2,7	220-277/380-480	5,2/3,0	150	175	200	220	64	65	19	1-½“
TSC.150-1	9402054	1,3	1,5	380-440/660-760	2,7/1,56	380-480/660-830	3/1,73	150	175	200	220	64	65	19	1-½“
TSC.210	9402055	1,5	1,8	220-255/380-440	6,7/3,9	220-277/380-480	7,0/4,0	210	250	220	220	70	73	26,5	2“
TSC.310	9402056	2,2	2,7	220-255/380-440	9,7/5,6	220-277/380-480	11,3/6,5	310	360	200	220	72	77	37,5	2“
TSC.310-1	9402057	3,0	3,6	220-255/380-440	12,5/7,2	220-277/380-480	13,5/7,8	310	360	280	280	72	77	40	2“
TSC.310-2	9402058	4	4,8	220-255/380-440	14,2/8,2	220-277/380-480	16,2/9,3	310	360	310	300	72	77	41	2“
TSC.550	9402059	5,5	6,5	220-255/380-440	21/12	220-277/380-480	26,6/15,3	550	660	270	260	74	79	83,5	2-½“
TSC.550-0	9402061	4	4,6	220-255/380-440	17,3/10	220-277/380-480	21/12	550	660	200	200	73	78	83,5	2-½“
TSC.550-1	9402060	7,5	9	380-440/660-760	15,1/8,7	380-480/660-830	19,1/11	550	660	300	300	74	79	90	2-½“
TSC.1100	9402062	9	11	380-440/660-760	20,2 /11,7	440-480/760-830	20,8/12	1100	1300	190	180	76	81	123	4“
TSC.1100-1	9402063	13	15	380-440/660-760	26,3/15,2	440-480/760-830	28,9/16,7	1100	1300	290	290	76	81	133	4“

Attention: Never exceed the maximum Δp shown in the diagrams and in the tables, as a function of installed power. If required, install a relief valve

Overall dimensions for double stage blowers



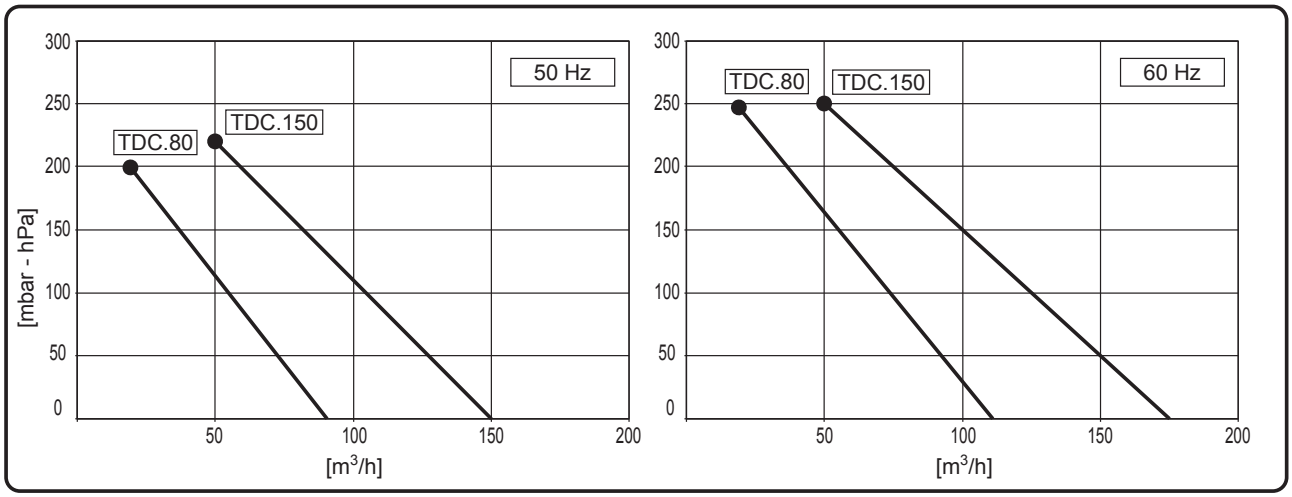
Blowers with single phase motor

Model	Code	A	A1	B	B1	B2	C	C1	F	G	H	H1	H2	HT	L	M	ØM1	N	T	T1	W	W1	X
TDC.80	9404010	205	227	83	108	181	95	40	M6	3	42	130	110	272	Ø10	46	140	1-1/4“G	312	318	283	211	51°
TDC.150	9404011	225	257	95	130	197	98	76	M6	3	45	153	153	313	Ø12	58	175	1-1/2“G	416	350	320	235	60°

Blowers with three phase motor

Model	Code	A	A1	B	B1	B2	C	C1	F	G	H	H1	H2	HT	L	M	ØM1	N	T	T1	W	W1	X
TDC.80	9403030	205	227	83	108	181	95	40	M6	3	42	130	110	272	Ø10	46	140	1-1/4“G	312	318	283	211	51°
TDC.150	9403031	225	257	95	130	197	98	76	M6	3	45	153	153	313	Ø12	58	175	1-1/2“G	416	350	320	235	60°
TDC.150-1	9403032	225	257	95	130	197	98	76	M6	3	45	153	153	313	Ø12	58	175	1-1/2“G	416	350	320	235	60°
TDC.210	9403033	260	298	115	155	242	123	42	M8	4	47	175	140	360	Ø14	60	200	2“G	463	412	369	284	51°
TDC.210-1	9403034	260	298	115	155	242	123	42	M8	4	47	175	140	360	Ø14	60	200	2“G	463	412	369	284	51°
TDC.310	9403035	290	332	140	180	252	113	79	M8	5	50	195	158	407	Ø15	62	240	2“G	467	459	424	294	51°
TDC.310-1	9403036	290	332	140	180	252	252	218	M8	5	98	195	158	407	Ø15	155	240	2“G	585	598	424	294	51°
TDC.550	9403037	365	420	280	315	307	193	139	M12	30	96	280	199	523	Ø15	73	405	2-1/2“G	587	618	486	373	60°
TDC.550-1	9403038	365	420	280	315	307	308	254	M12	30	121	280	199	523	Ø15	143	405	2-1/2“G	759	733	486	373	60°

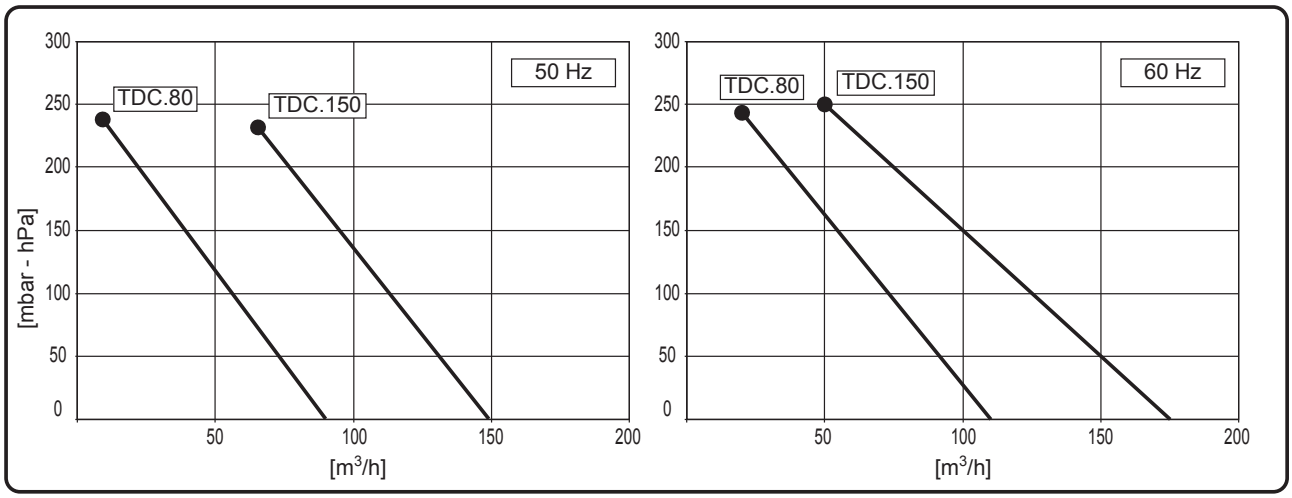
Selection chart for double stage single phase motor blowers for suction usage



Curves refers to 1013mbar (abs.) pression and 20°C temp. (tollerance ±10%).

Model	Code	kW		V	A		m³/h		mbar		dB(A)		kg	Ø ´´G
		50 Hz	60 Hz	±5 %	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
TDC.80	9404010	0,75	0,90	115 / 230	13 / 6,5	14 / 7	90	108	200	245	60	66	18	1-¼“G
TDC.150	9404011	1,5	1,8	230	10	11	150	175	220	250	66	69	31	1-½“G

Selection chart for double stage single phase motor blowers for compression usage



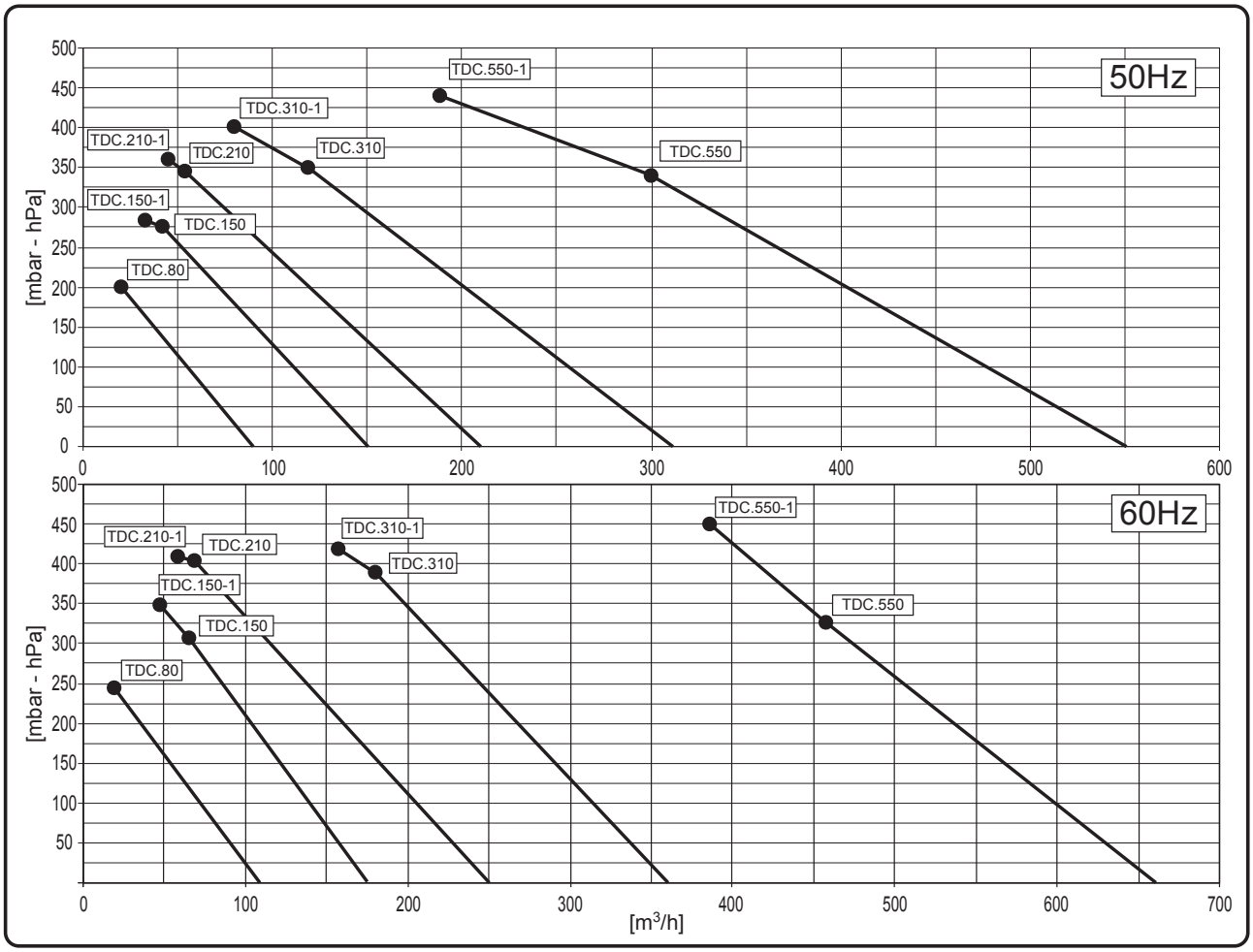
Curves refers to 1013mbar (abs.) pression and 20°C temp. (tollerance ±10%).

Model	Code	kW		V	A		m³/h		mbar		dB(A)		kg	Ø ´´G
		50 Hz	60 Hz	±5 %	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
TDC.80	9404010	0,75	0,90	115 / 230	13 / 6,5	14 / 7	90	108	240	245	60	66	18	1-¼“G
TDC.150	9404011	1,5	1,8	230	10	11	150	175	235	250	66	69	31	1-½“G

Attention: Never exceed the maximum Δp shown in the diagrams and in the tables, as a function of installed power. If required, install a relief valve

SIDE CHANNEL BLOWERS

Selection chart for double stage three phase motor blowers for suction usage.



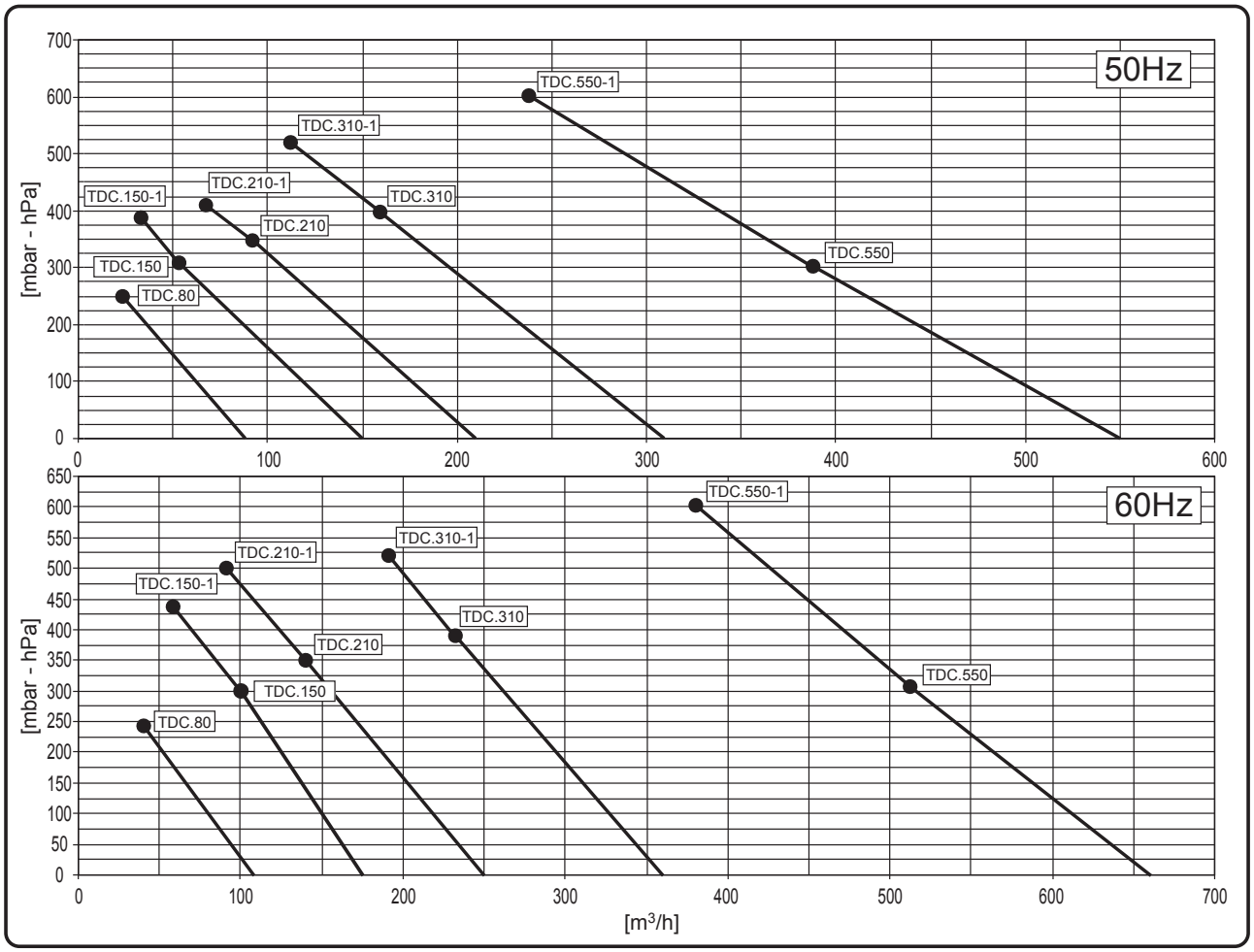
Curves refers to 1013mbar (abs.) pression and 20°C temp. (tollerance ±10%).

Model	Code	kW		V ±5 %	A	V ±5 %	A	m³/h		mbar		dB(A)		kg	Ø ´´G
		50 Hz	60 Hz	50 Hz D/Y	50 Hz	60 Hz D/Y	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
TDC.80	9403030	0,75	0,90	220-255/380-440	3,3/1,9	255-277/440-480	3,6/2,1	90	108	200	245	60	66	18	1-¼“
TDC.150	9403031	1,5	1,8	220-255/380-440	6,7/3,9	255-277/440-480	7,0/4,0	150	175	275	300	66	69	30	1-½“
TDC.150-1	9403032	2,2	2,7	220-255/380-440	7,8/4,5	255-277/440-480	9,5/5,5	150	175	280	350	66	69	32,5	1-½“
TDC.210	9403033	3,0	4,0	220-255/380-440	9,7/5,6	255-277/440-480	10,7/6,2	210	250	345	400	74	77	43,5	2“
TDC.210-1	9403034	4	4,8	220-255/380-440	14,3/8,2	255-277/440-480	16,2/9,3	210	250	355	410	74	77	45	2“
TDC.310	9403035	4	4,8	220-255/380-440	14,3/8,2	255-277/440-480	16,2/9,3	310	360	350	390	75	79	56	2“
TDC.310-1	9403036	5,5	6,5	220-255/380-440	21/12	255-277/440-480	26,6/15,3	310	360	410	420	75	79	58	2“
TDC.550	9403037	7,5	9	380-440/660-760	15,1/8,7	440-480/760-830	19,1/11	550	660	340	330	76	81	120	2-½“
TDC.550-1	9403038	11	13	380-440/660-760	25 /14,4	440-480/760-830	27,5/15,9	550	660	440	450	76	81	149	2-½“

Attention: Never exceed the maximum Δp shown in the diagrams and in the tables, as a function of installed power.
If required, install a relief valve

SIDE CHANNEL BLOWERS

Selection chart for double stage three phase motor blowers for compression usage.



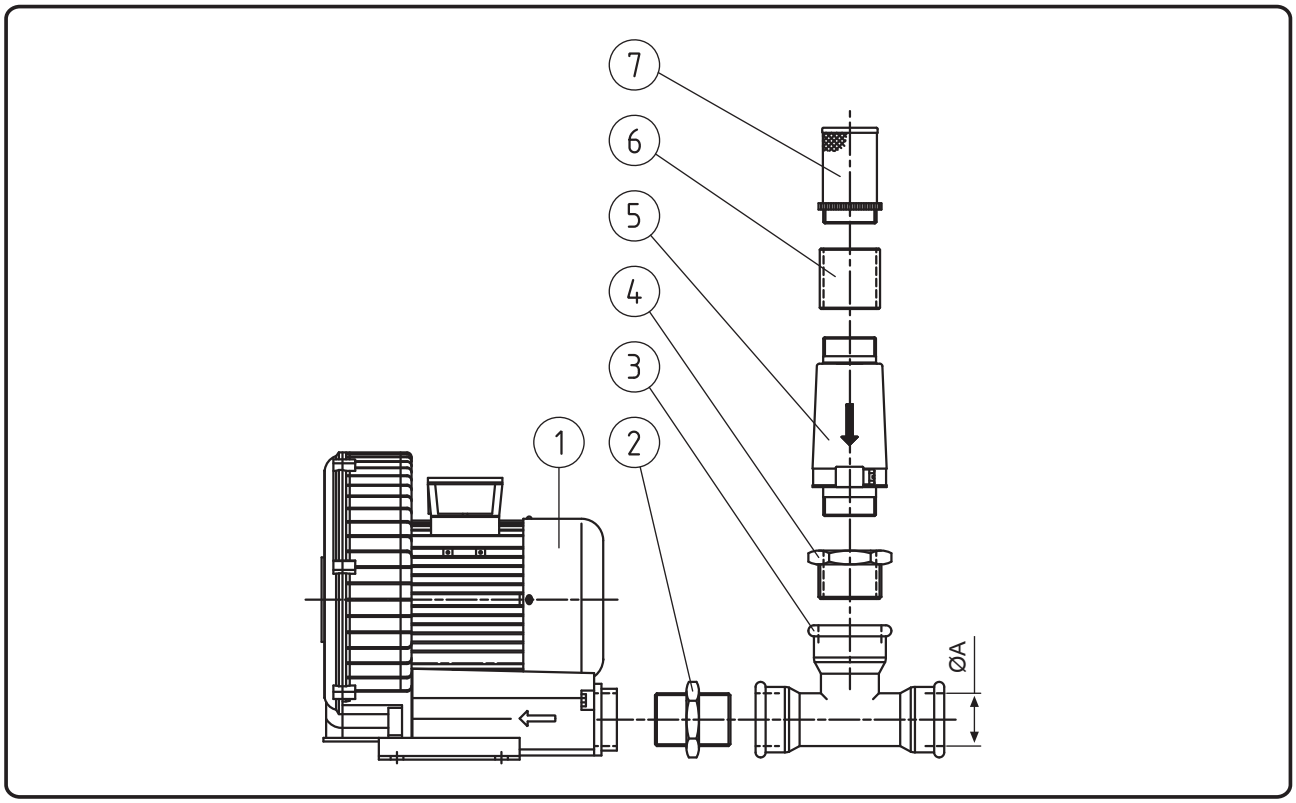
Curves refers to 1013mbar (abs.) pression and 20°C temp. (tollerance ±10%).

Model	Code	kW		V ±5 %	A	V ±5 %	A	m³/h		mbar		dB(A)		kg	Ø ´´G
		50 Hz	60 Hz	50 Hz D/Y	50 Hz	60 Hz D/Y	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
TDC.80	9403030	0,75	0,90	220-255/380-440	3,3/1,9	255-277/440-480	3,6/2,1	90	108	240	245	60	66	18	1-¼“
TDC.150	9403031	1,5	1,8	220-255/380-440	6,7/3,9	255-277/440-480	7,0/4,0	150	175	320	300	66	69	30	1-½“
TDC.150-1	9403032	2,2	2,7	220-255/380-440	7,8/4,5	255-277/440-480	9,5/5,5	150	175	375	435	66	69	32,5	1-½“
TDC.210	9403033	3,0	4,0	220-255/380-440	9,7/5,6	255-277/440-480	10,7/6,2	210	250	350	350	74	77	43,5	2“
TDC.210-1	9403034	4	4,8	220-255/380-440	14,3/8,2	255-277/440-480	16,2/9,3	210	250	410	500	74	77	45	2“
TDC.310	9403035	4	4,8	220-255/380-440	14,3/8,2	255-277/440-480	16,2/9,3	310	360	390	390	75	79	56	2“
TDC.310-1	9403036	5,5	6,5	220-255/380-440	21/12	255-277/440-480	26,6/15,3	310	360	510	520	75	79	58	2“
TDC.550	9403037	7,5	9	380-440/660-760	15,1/8,7	440-480/760-830	19,1/11	550	660	310	310	76	81	120	2-½“
TDC.550-1	9403038	11	13	380-440/660-760	25 /14,4	440-480/760-830	27,5/15,9	550	660	600	600	76	81	149	2-½“

Attention: Never exceed the maximum Δp shown in the diagrams and in the tables, as a function of installed power. If required, install a relief valve

Preset vacuum relief valves for single stage blowers

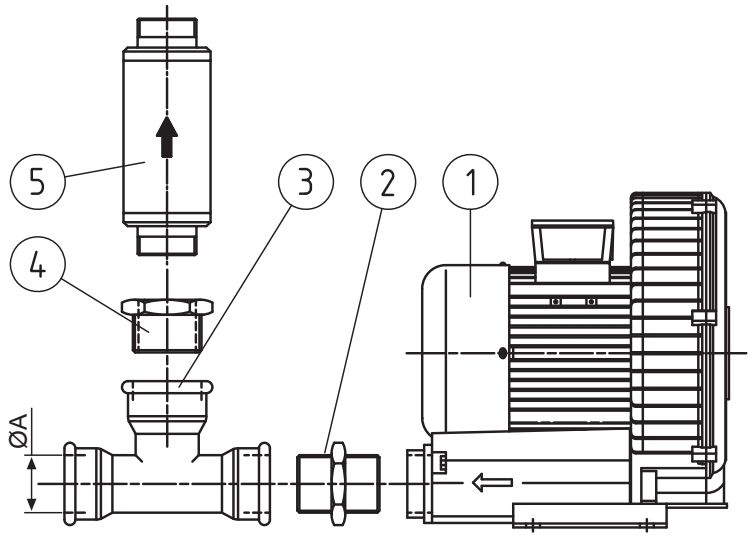
The relief valves are accessories that limit the vacuum value achievable by the blowers. Therefore they must be used whenever there is the possibility of operation with blower intake completely closed.



1	2	3	4	5	6	7	Ø A
9401020	2001010	2106063	- - - - -	9407009	5002011	1802017	1-¼“G
9401021	2201014	2106063	- - - - -	9407009	5002011	1802017	1-¼“G
9401022	2201011	2106056	- - - - -	9407009	5002011	1802017	1-½“G
9401023	2201007	2106047	- - - - -	9407005	5002011	1802017	2“G
9402050	2001010	2106063	- - - - -	9407009	5002011	1802017	1-¼“G
9402051	2201014	2106063	- - - - -	9407009	5002011	1802017	1-¼“G
9402052	2201011	2106056	- - - - -	9407009	5002011	1802017	1-½“G
9402053	2201011	2106056	- - - - -	9407008	5002011	1802017	1-½“G
9402054	2201011	2106056	- - - - -	9407008	5002011	1802017	1-½“G
9402055	2201007	2106047	- - - - -	9407014	5002011	1802017	2“G
9402056	2201007	2106047	- - - - -	9407006	5002011	1802017	2“G
9402057	2201007	2106047	- - - - -	9407008	5002011	1802017	2“G
9402058	2201007	2106047	- - - - -	9407014	5002011	1802017	2“G
9402059	2201008	2106057	- - - - -	9407019	5002016	1802025	2-½“G
9402060	2201008	2106057	- - - - -	9407020	5002016	1802025	2-½“G
9402061	2201008	2106057	- - - - -	9407019	5002016	1802025	2-½“G
9402062	2201016	2106095	- - - - -	9407018	5002016	1802025	4“G
9402063	2201016	2106095	- - - - -	9407019	5002016	1802025	4“G

Preset pressure relief valves for single stage blowers

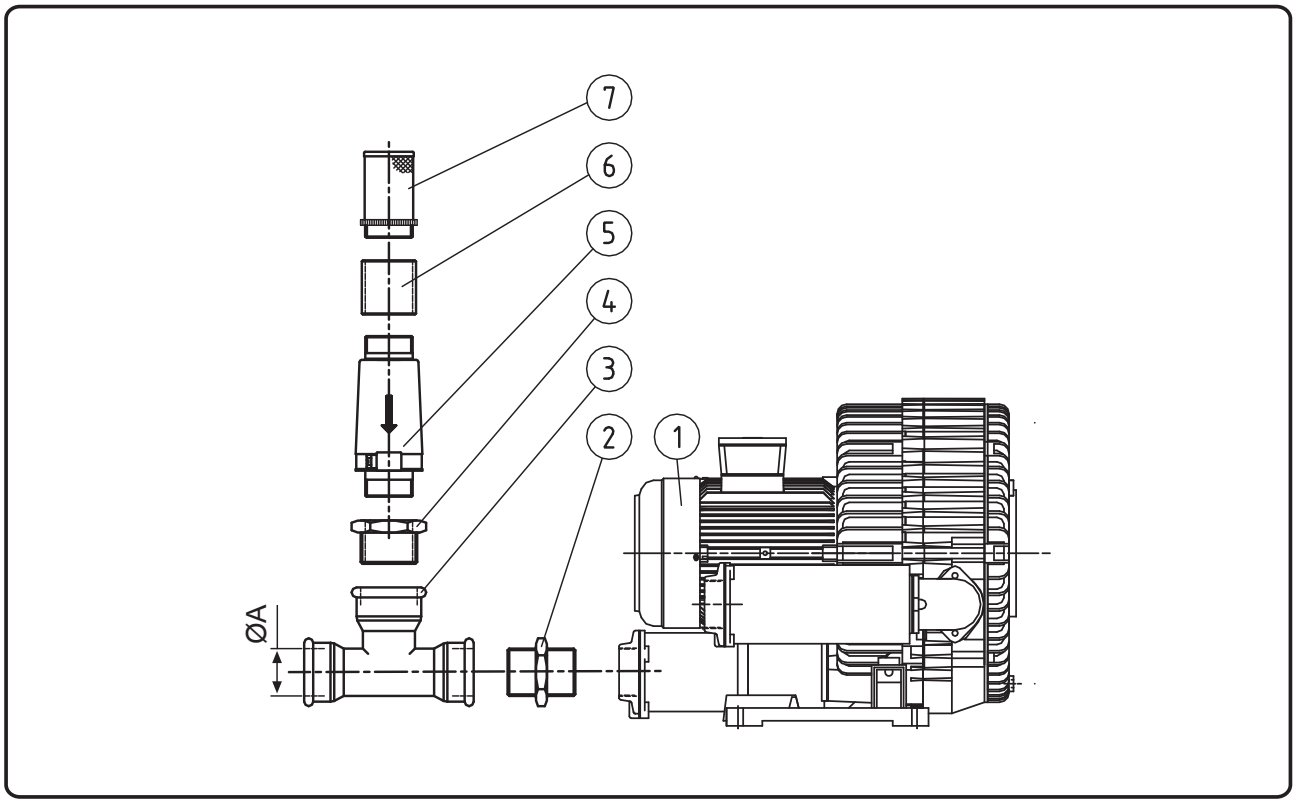
The relief valves are accessories that limit the pressure value achievable by the blowers. Therefore they must be used whenever there is the possibility of operation with blower exhaust completely closed.



1	2	3	4	5	Ø A
9401020	2001010	2106063	- - - - -	9408019	1-¼“G
9401021	2201014	2106063	- - - - -	9408008	1-¼“G
9401022	2201011	2106056	- - - - -	9408008	1-½“G
9401023	2201007	2106047	- - - - -	9408016	2“G
9402050	2001010	2106063	- - - - -	9408019	1-¼“G
9402051	2201014	2106063	- - - - -	9408005	1-¼“G
9402052	2201011	2106056	- - - - -	9408008	1-½“G
9402053	2201011	2106056	- - - - -	9408007	1-½“G
9402054	2201011	2106056	- - - - -	9408007	1-½“G
9402055	2201007	2106047	- - - - -	9408016	2“G
9402056	2201007	2106047	- - - - -	9408006	2“G
9402057	2201007	2106047	- - - - -	9408016	2“G
9402058	2201007	2106047	- - - - -	9408009	2“G
9402059	2201008	2106057	- - - - -	9408022	2-½“G
9402060	2201008	2106057	- - - - -	9408023	2-½“G
9402061	2201008	2106057	- - - - -	9408022	2-½“G
9402062	2201016	2106095	- - - - -	9408020	4“G
9402063	2201016	2106095	- - - - -	9408021	4“G

Preset vacuum relief valves for double stage blowers

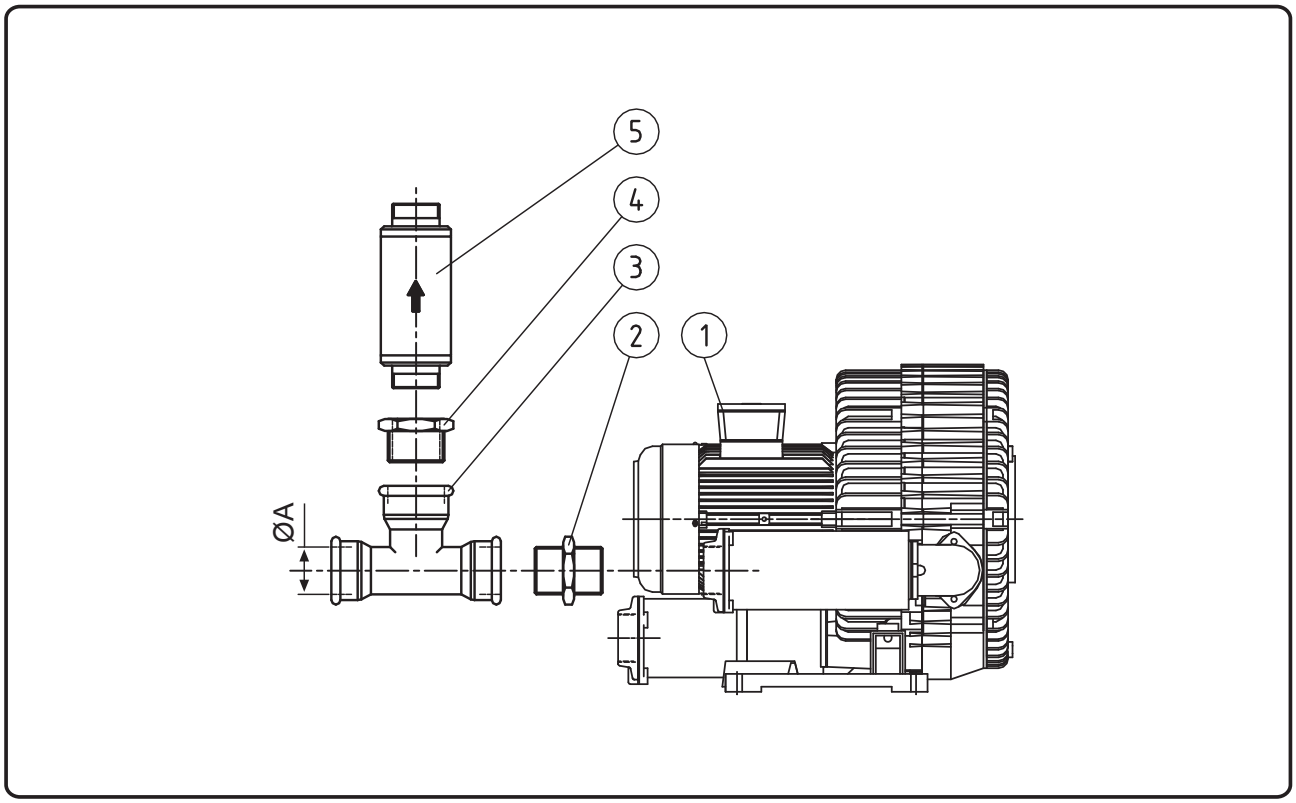
The relief valves are accessories that limit the vacuum value achievable by the blowers. Therefore they must be used whenever there is the possibility of operation with blower intake completely closed.



1	2	3	4	5	6	7	Ø A
9403030	2201014	2106063	- - - - -	9407006	5002011	1802017	1-¼“G
9403031	5001023	2106056	- - - - -	9407010	5002011	1802017	1-½“G
9403032	5001023	2106056	- - - - -	9407011	5002011	1802017	1-½“G
9403033	5001024	2106047	- - - - -	9407011	5002011	1802017	2“G
9403034	5001024	2106047	- - - - -	9407015	5002011	1802017	2“G
9403035	5001024	2106047	- - - - -	9407017	5002011	1802017	2“G
9403036	5001024	2106047	- - - - -	9407012	5002011	1802017	2“G
9403037	2201008	2106057	- - - - -	9407021	5002016	1802025	2-½“G
9403038	2201008	2106057	2001035	9407015	5002011	1802017	2-½“G
9404010	2201014	2106063	- - - - -	9407013	5002011	1802017	1-¼“G
9404011	5001023	2106056	- - - - -	9407014	5002011	1802017	1-½“G

Preset pressure relief valves for double stage blowers

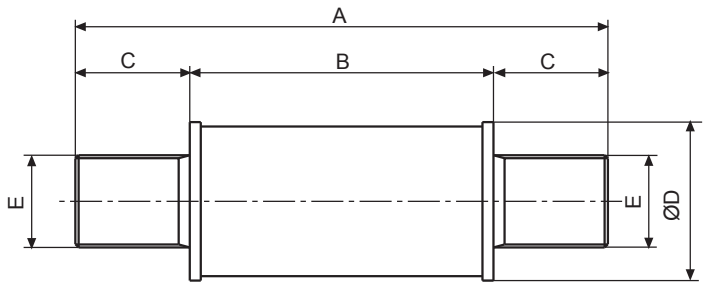
The relief valves are accessories that limit the pressure value achievable by the blowers. Therefore they must be used whenever there is the possibility of operation with blower exhaust completely closed.



1	2	3	4	5	Ø A
9403030	2201014	2106063	- - - - -	9408016	1-¼“G
9403031	5001023	2106056	- - - - -	9408009	1-½“G
9403032	5001023	2106056	- - - - -	9408014	1-½“G
9403033	5001024	2106047	- - - - -	9408011	2“G
9403034	5001024	2106047	- - - - -	9408013	2“G
9403035	5001024	2106047	- - - - -	9408011	2“G
9403036	5001024	2106047	- - - - -	9408014	2“G
9403037	2201008	2106057	- - - - -	9408023	2-½“G
9403038	2201008	2106057	- - - - -	9408024	2-½“G
9404010	2201014	2106063	- - - - -	9408015	1-¼“G
9404011	5001023	2106056	- - - - -	9408015	1-½“G

Double connection additional silencers

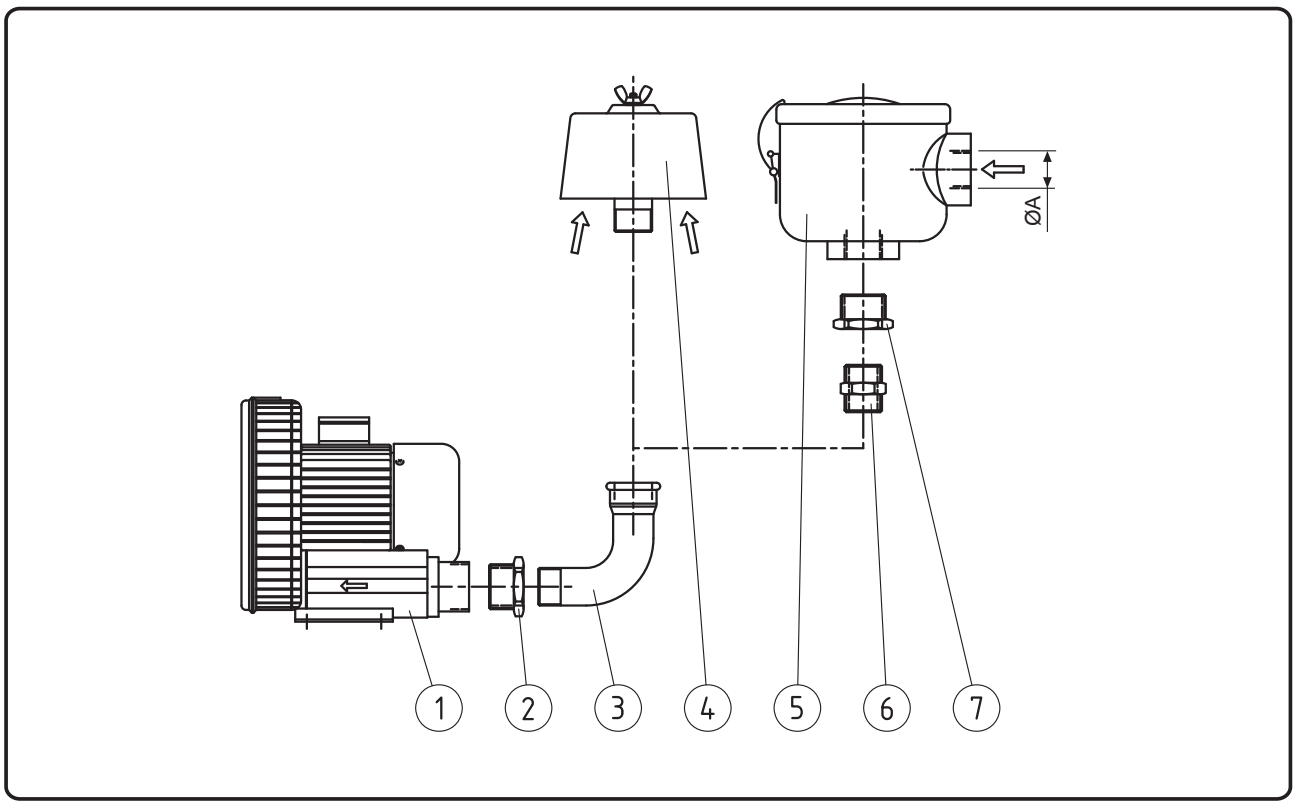
This series of silencers was designed to keep down the noise generated by the incoming or outgoing air flow from the side channel turbine (reduction of 2÷5 dB(A) depending on the kind of turbine and working conditions). The application with double threaded attachment allows you to insert the silencer in the intake or outlet line.



Typ	Code	A	B	C	Ø D	E
SAD.1	9409000	178	138	20	69	1“G
SAD.1-1/4	9409001	242	138	52	69	1-¼“G
SAD.1-1/2	9409002	232	168	32	80	1-½“G
SAD.2	9409003	262	198	32	89	2“G
SAD.2-1/2	9409004	262	198	32	100	2-½“G
SAD.4	9409005	480	400	40	152	4“G

Inlet filters

These filters have been especially designed to be used on the inlet of side channel blowers. The maintenance and the element replacement is very easy thanks to the design of the filter. The painted metallic bowl of the filter is fixed to the body by a wing screw (FAS) or clamps (FCM).

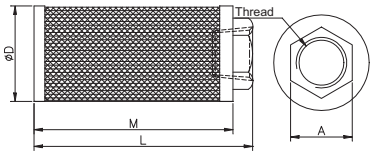


1	2	3	4	5	6	7	Ø A
9401020 - 9402050	- - - - -	2101017	9001058	9001022	2001010	- - - - -	1-1/4“G
9401021 - 9402051	2001034	2101017	9001058	9001017	2001010	- - - - -	1-1/4“G
9401022 - 9402052	- - - - -	2101016	9001060	9001018	2201011	- - - - -	1-1/2“G
9401053 - 9402054	- - - - -	2101016	9001060	9001018	2201011	- - - - -	1-1/2“G
9401023 - 9402055	- - - - -	2101018	9001061	9001019	2201007	- - - - -	2“G
9402056	- - - - -	2101018	9001061	9001040	2201007	2001044	2-1/2“G
9402057 - 9402058	- - - - -	2101018	9001061	9001040	2201007	2001044	2-1/2“G
9402059	- - - - -	2101019	9001062	9001041	2201008	2001048	3“G
9402060 - 9402061	- - - - -	2101019	9001062	9001041	2201008	2001048	3“G
9402062 - 9402063	- - - - -	2101026	9001086	9001087	2201016	- - - - -	4“G
9403030	2001034	2101017	9001058	9001017	2001010	- - - - -	1-1/4“G
9403031 - 9403032	5001023	2101028	9001060	9001018	2201011	- - - - -	1-1/2“G
9403033 - 9403034	5001024	2101027	9001061	9001019	2201007	- - - - -	2“G
9403035 - 9403036	5001024	2101027	9001061	9001040	2201007	2001044	2-1/2“G
9403037 - 9403038	- - - - -	2101019	9001062	9001041	2201008	2001048	3“G
9404010	2001034	2101017	9001058	9001017	2001010	- - - - -	1-1/4“G
9404011	5001023	2101028	9001060	9001018	2201011	- - - - -	1-1/2“G

The technical characteristics of filter pos. 4 and 5 are available in the technical catalogue.

Accessories

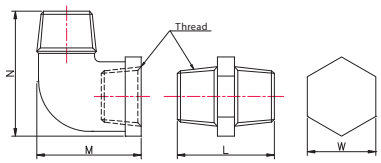
Filter



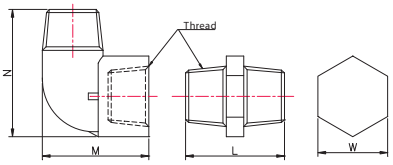
Type	Thread	A mm	D mm	L mm	M mm	Filtration mesh	m³/h	Weight kg
MF-08	1"	42	58	170	155	100	48	0.20
MF-10	1 1/4"	54	71	186	170	100	90	0.35
MF-12	1 1/2"	65	85	196	182	100	156	0.49
MF-16	2"	75	103	215	202	100	312	0.65
MF-20	2 1/2"	97	148	274	252	100	576	1.20
MF-32	4"	142	208	380	357	100	1134	2.45

Elbow and Bend

BC Type



BP Type

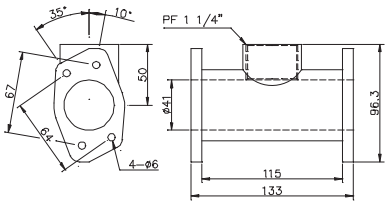


Type	Thread	L mm	M mm	N mm	W mm	Weight kg	Material
BC-10	1"	52	52	73	38	0.36	Cast Iron
BC-12	1 1/4"	56	65	90	47	0.57	Cast Iron
BC-15	1 1/2"	60	73	97	54	0.87	Cast Iron
BC-20	2"	67	85	120	65	1.30	Cast Iron
BP-20	2"	75	94	110	67	0.28	Plastic
BC-25	2 1/2"	76	105	137	82	1.86	Cast Iron
BC-40	4"	96	165	233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

Tee Pipe

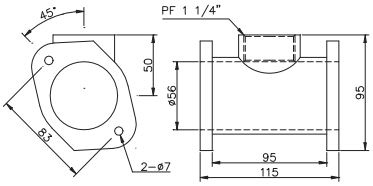
TP-01

Suitable for 1 1/4“ and 1 1/2“



TP-02

Suitable for 2“



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

Conversion

old item number and model name	new model name	new item number	alternative name of the item (old)	
BIBUS side channel blower - single stage 400V				
RT-1003	TSC.40	9402050	TSB.40	9402030
RT-2005	TSC.80	9402051	TSB.80	9402031
RT-3009	TSC.150	9402052	TSB.150	9402032
RT-3011	- [1]	-	-	-
RT-3015	TSC.150-1	9402053	TSB.150-1	9402043
	1.3kW, 400/690V, 50/60Hz	9402054		
RT-4011	- [1]	-	-	-
RT-4015	- [1]	-	-	-
RT-4019	TSC.210	9402055	TSB.210	9402033
	1.8kW, 400/690V, 60Hz	9402064		
RT-4026	- [1]	-	-	-
RT-5026	TSC.310	9402056	TSB.310	9402034
RT-6037	TSC.310-1	9402057	TSB.310-1	9402035
RT-6046	TSC.310-2	9402058	TSB.310-2	9402036
RT-7063	TSC.550	9402059	TSB.550	9402037
	TSC.550-0 (4kW, 230/400V, 50/60Hz)	9402061		
	6.5kW, 400/690V, 60Hz	9402065		
RT-8086	TSC.550-1	9402060	TSB.550-1	9402038
RT-9110	TSC.1100	9402062	TSB.1100	9402039
RT-9150	TSC.1100-1	9402063	TSB.1100-1	9402040
RT-9220	- [1]	-	-	-
side channel blower - single stage 230V				
RT-1003-1	TSC.40	9401020	TSB.40	9401013
RT-2005-1	TSC.80	9401021	TSB.80	9401014
RT-3009-1	TSC.150	9401022	TSB.150	9401015
RT-4015-1	- [1]	-	-	-
RT-4018-1	TSC.210	9401023	TSB.210	9401016
side channel blower - double stage 400V				
RT-23009	TDC.80	9403030	TDB.80	9403018
RT-33019	TDC.150	9403031	TDB.150	9403019
RT-33026	TDC.150-1	9403032	TDB.150-1	9403020
RT-43037	TDC.210	9403033	TDB.210	9403021
RT-43046	TDC.210-1	9403034	TDB.210-1	9403022
RT-63046	TDC.310	9403035	TDB.310	9403023
RT-63063	TDC.310-1	9403036	TDB.310-1	9403024
RT-63086	- [1]	-	-	-
RT-64063	- [1]	-	-	-
RT-64086	- [1]	-	-	-
RT-83086	TDC.550	9403037	TDB.550	9403025
RT-83130	TDC.550-1	9403038	TDB.550-1	9403026
RT-83190	- [1]	-	-	-
RT-84086	- [1]	-	-	-
RT-84130	- [1]	-	-	-
side channel blower - double stage 230V				
RT-23009-1	TDC.80	9404010	TDB.80	9404005
RT-33015-1	TDC.150	9404011	TDB.150	9404006
RT-33018-1	- [1]	-	-	-

[1] Minimum order quantity and lead time on request.

CONTROL UNITS

BonBloc 42

BonBloc compact 44

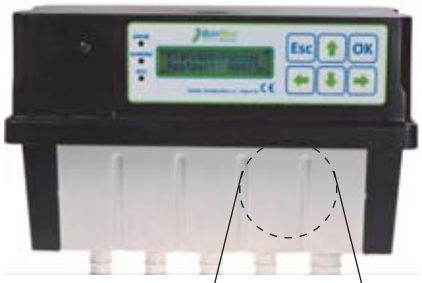
Sequetrol 46

Applications

Controller for small sewage plants

Advantages

- Easy to install and connect
- Water-level control without float switch
- Individually equipped
- Easily programmable
- GSM-module as option

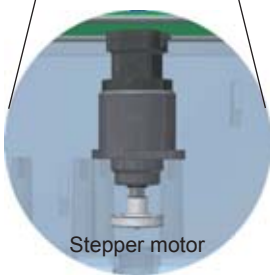


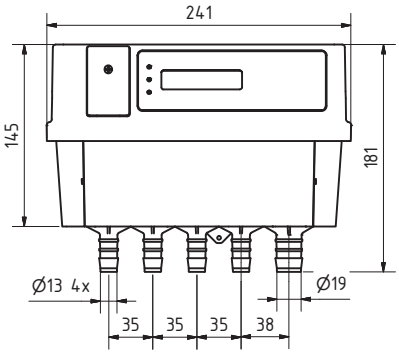
BonBloc

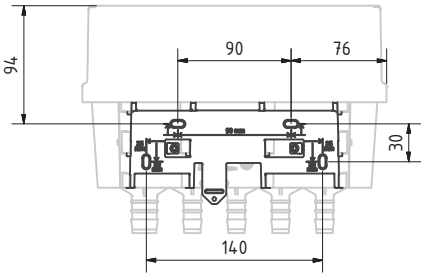
BonBloc

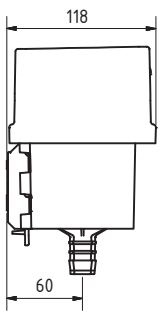
Energy-saving valve unit with integrated programmable controller for small wastewater treatment plants.

(Also available without integrated controller - then potentially compatible to almost every other control system.)


Stepper motor







- ➔ 4 motor-driven valves
- ➔ 1 air inlet: ¾“
  4 outlets: ½“
- ➔ Easily programmable control unit
- ➔ Up to 4 relay outputs
- ➔ Water-level control for up to 2 tanks using pressure sensors
- ➔ GSM-module as option

Why use the BonBloc?

- Outstanding price-performance ratio due to the integrated design and the absence of 230V solenoid valves
- Easy to install and connect
- Quiet valve operation
- Saves approx. 95% energy compared to units using standard solenoid actuated valves
- Water-level control without float switch (using a pressure sensor)
- Up to 4 relay outputs offer a comfortable connection of accessory devices
- Individually equipped (display, keypad, connectors) according to customer requirements
- Sequence program can be easily created and modified with the PC software MenuMaker
- Password protected operating levels and updateable firmware and software
- IP54 casing, optionally UV-resistant for outdoor installation

BonBloc details

Idea:

SBR wastewater treatment plants normally use a control unit and a valve module. These are installed separately and have to be connected using costly cables and connectors.

The BonBloc integrates both, the controller and the valves into a single compact and easy to install device.

Nevertheless we can offer you the well-equipped BonBloc with its wide functionality for a competitive price.

Valves:

Instead of conventional solenoid valves we use reliable stepper motors from the automotive industry. These new valves have been successfully tested since 2008 in real waste water treatment plants.

Why stepper motors? First, they consume energy only during opening or closing of the valve, there-fore saving 95% of energy when compared to conventional valves. That is about 90kWh per year or 15€, and the trend is rising.

Secondly, our valves are, due to the smoother and slower movement, much quieter than solenoid actuated valves.

Control unit:

The control unit of the BonBloc has already proved itself as a separate device in thousands of wastewater treatment plants all over Europe.

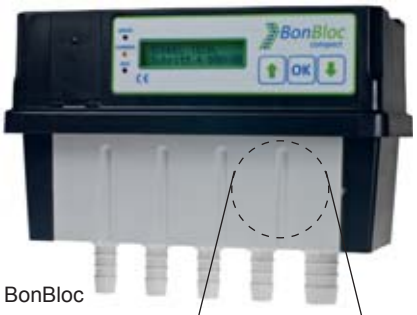
The extend of the system functionality can be tailored to match your individual needs.

We can offer you zero to six push buttons; anything from three LEDs to a graphical LCD display; from a simple sequence control up to a event-driven control system with water-level controls utilizing pressure sensors; analog / digital inputs, relay outputs, GSM-module and a handy memory stick for pro-gramming the control and the read-out of the protocols - we are flexible!

The BonBloc is also available with features, such as, acoustic signaling of predefined conditions, a sequence program permanently saved in the EEPROM and additional EEPROM memory for event-logging. To ensure continuous signaling during power outage or the function of the GSM-module, a set of NiMH rechargeable batteries can be supplied.

All electrical connections are implemented using cost-effective and universally compatible screw type terminals.

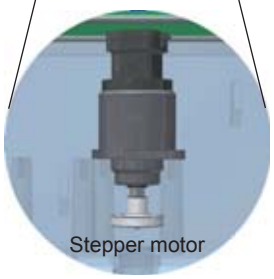
Attribute	Value
Dimensions (l x w x h); weight	118 x 241 x 181 mm; 1,9 kg
Ambient temperature	-20°C to +50°C
Protection classification / UV-Resistance (casing)	IP 54 / UV-resistant casing as option
Functions, sequence program, alarms, GSM-communication, display messages (also foreign-languages)	All according to customer request and requirement. Sequence programs are designed and adapted by the wastewater treatment plant manufacturer by means of a clear and easy-to-use PC-software.
Display / LED	According to customer request, illuminated (backlit) graphical or alphanumeric LCD, alternatively numeric LED display (e.g. 6-digit) Additionally up to 3 LED (colors as requested)
Signal-input	Up to 4 x digital inputs or a combination of digital and analog (0-10V) inputs Pressure sensor 0-400mbar
Data interface	RS-232 (using adapter-cable)
Electrical output	According to customer request, up to 4 relays e.g. 230V / 300VA
Power supply during mains failure	2x NiMH rechargeable batteries (size AA), optionally mignon batteries
Compressed air inlet	¾“ or 1“ fittings
Compressed air outlet	½“ or 3/4“ fittings
Maximum pressure	450 mbar
Power supply	230 VAC, 12 W max.



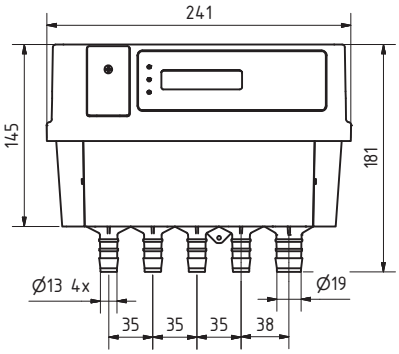
BonBloc

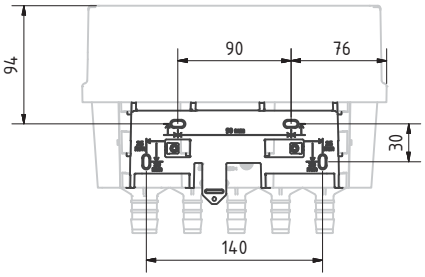
BonBloc compact

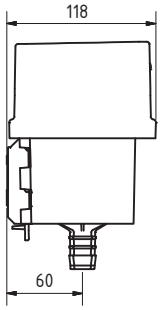
Reasonably priced programmable controller for small wastewater treatment plants with integrated energy-saving valve unit



Stepper motor







- ➔ All relevant control functions within a compact casing
- ➔ 4 motor-driven valves
- ➔ 1 air inlet: ¾“
  4 outlets: ½“
- ➔ Easily programmable via Excel®-Sheet
- ➔ Up to 4 relay outputs
- ➔ GSM-module as option

Why use the BonBloc compact?

- Outstanding price-performance ratio due to the integrated design and absence of 230V solenoid valves
- Option of the BonBloc with a reduced set of features
- Easy to install and connect
- Quiet valve operation
- Saves approx. 95% energy compared to units using standard solenoid actuated valves
- Up to 4 relay outputs offer a comfortable connection of accessory devices
- Sequence program can be easily created and modified using Excel® table
- Password protected system-menu provides access to manual control and easy changing of step times
- IP54 casing, optionally UV-resistant for outdoor installation

BonBloc compact details

Idea:

SBR wastewater treatment plants normally use a control unit and a valve module. These are installed separately and have to be connected using costly cables and connectors.

The BonBloc compact integrates both, the controller and the valves into a single compact and easy to install device. No more cable spaghetti!

The unit is equipped with a reduced set of features than its bigger brother, the BonBloc. Nevertheless it offers all the comfort you need for most of the applications at a very competitive price.

Valves:

Instead of conventional solenoid valves we use reliable stepper motors from the automotive industry. These new valves have been successfully tested since 2008 in real waste water treatment plants.

Why stepper motors? First, they consume energy only during opening or closing of the valve, therefore saving 95% of energy when compared to conventional valves. That is about 90kWh per year or 15€, and the trend is rising.

Secondly, our valves are, due to the smoother and slower movement, much quieter than solenoid actuated valves.

Control unit:

Three buttons, three LEDs, an alphanumeric LCD display - regarding its operability our BonBloc compact leaves nothing to be desired. The device can be equipped with pressure and current sensing to monitor the compressor.

Using the digital inputs up to three float switches or other signal sources can be connected (depending on equipment version). Up to four reliable relays can control the compressor and other devices (e.g. UV-lamp, dosing of chemicals).

The GSM-module will reliably send SMS if any alarm occurs. The BonBloc compact can even be remotely controlled and recalled by GSM (both available from 2012).

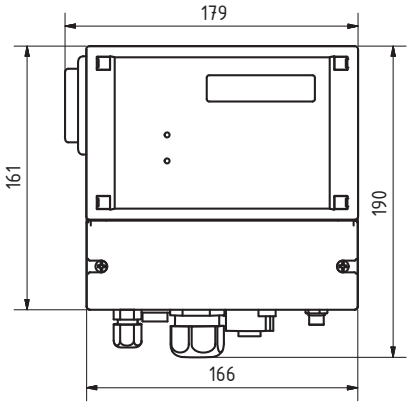
The BonBloc compact is also equipped with features, such as acoustic signaling of predefined conditions, a sequence program permanently saved in the EEPROM and a set of NiMH rechargeable batteries (or normal batteries) to ensure continuous signaling during power outage or the function of the GSM-module.

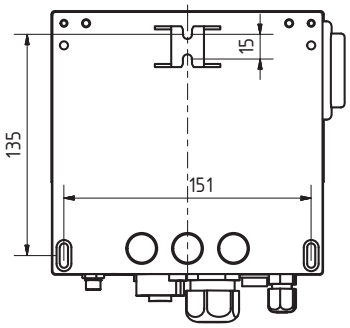
All electrical connections are implemented using cost-effective and universally compatible screw type terminals.

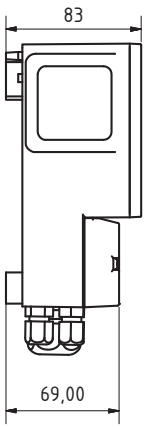
Attribute	Wert
Dimensions (l x w x h); weight	118 x 241 x 181 mm; 1,9 kg
Ambient temperature	-20°C bis +50°C
Protection classification / UV-Resistance (casing)	IP 54 / UV-resistant casing as option
Functions, sequence program, alarms, GSM-communication, display messages (also multi-lingual)	All according to customer request and requirement. Sequence programs are designed and adapted by the wastewater treatment plant manufacturer by means of an Excel®-sheet.
Display / LED	Illuminated (backlit) alphanumeric LCD Additionally up to 3 LED (colors as requested)
Signal-inputs	Up to 3 x digital inputs, Pressure sensor 0-400mbar
Data interface	RS-232 (using adapter-cable)
Electrical output	According to customer request, up to 4 relays e.g. 230V / 300VA
Power supply during mains failure	2x NiMH rechargeable batteries (size AA), optionally mignon batteries
Compressed air inlet	¾" or 1“ fittings
Compressed air outlet	½" or 3/4“ fittings
Maximum pressure	450 mbar
Power supply	230 VAC, 12 W max.

Sequetrol

Programmable controller for small wastewater treatment plants with water-level control without float switch







- ➔ Easily programmable
- ➔ Water-level control for up to 2 tanks using pressure sensors
- ➔ Up to 8 + 1 relay outputs
- ➔ Individually equipped (display, keypad, connectors) according to customer requirements
- ➔ GSM-module as option

Why use the Sequetrol control unit?

- Water-level control without expensive and unreliable float switches means no more electricity carrying parts in the cesspool.
- Easy and accurate monitoring of the water-level & its rate of change
- Reliable technology proven in thousands of installations
- Up to 8 + 1 relay outputs (8 x 230VAC, 1 x low voltage) offer easy connection of accessory devices
- Individually equipped (display, keypad, connectors) according to customer requirements
- Sequence program can be easily created and modified with the PC software MenueMaker
- Password protected operating levels, updateable firmware and software
- Power supply during mains failure for the control and for the GSM-module (failure message) as option

Sequetrol details

Sequetrol was designed as a comfortable and reasonably priced control unit for small wastewater treatment plants.

Water-level control:

The innovative water-level control utilizing pressure sensors allows cost-effective detection of preset water levels and continuous level measurement without the use of failure-prone float-switches.

Beyond that, the Sequetrol control unit is especially suited for more sophisticated control algorithms particularly where incoming/outgoing water flow or its rate of change is employed as a control variable.

Interfaces and connectors:

The optional analogue input can be utilized for a further optimization of the wastewater treatment process. Properties, such as the turbidity of the treated water can be analyzed.

Up to four external digital signals can be monitored and processed within the control algorithm.

In addition the Sequetrol control can be equipped with an RS-232, RS-485 or a USB bus interface, so other „intelligent“ peripheral devices or control panels can be connected to the system. Up to 8 relay outputs for 230VAC offer a comfortable connection of solenoid valves, diaphragm compressors or other loads.

The optional GSM module can be used to send alarm and status text messages or to receive control commands.

All electrical connections are made using reverse polarity protected plugs with IP54 rating. Of course the type of connectors can be changed according to customer requirements.

Equipment:

The extent of the system functionality and the design of the front panel of the Sequetrol control unit can be tailored to match your individual needs.

We can offer you zero to six push buttons; anything from three LEDs to a graphical LCD display; from a simple sequence control up to an event-driven control system with water-level control utilizing pressure sensors; analog/digital inputs, relay outputs, GSM module and a handy memory stick for programming the control and the readout of the protocols - we are flexible!

The Sequetrol is also available with features, such as, acoustic signaling of predefined conditions, a sequence program permanently stored in the EEPROM and additional EEPROM memory for event-logging. To ensure continuous signaling and operation of the GSM module during power outage a set of NiMH rechargeable batteries can be supplied.

Attribute	Value
ns (l x w x h), weight	83 x 179 x 190 mm; 1,5 kg
Ambient temperature	-20°C bis +55°C
Protection classification	IP 54
Functions, sequence program, alarms, GSMcommunication, display messages (also foreign-languages)	All according to customer request and requirement. Sequence programs are designed and adapted by the wastewater treatment plant manufacturer by means of a clear and easy-to-use PCsoftware.
Display / LED	According to customer request, illuminated (backlit) graphical or alphanumeric LCD, alternatively numeric LED display (e.g. 6-digit) Additionally up to 3 LED (colors as requested)
Signal-input	Up to 4 x digital inputs or a combination of digital and analog (0-10V) inputs
Data interface	RS-232 (optional RS-485)
Electrical output	According to customer request, up to 8 relays 230V / 300VA + 1 x low voltage
Power supply during mains failure	4x mignon batteries, optionally NiMH rechargeable batteries (size AA)
Power supply	230 VAC, 6 VA max.

DIFFUSERS

Disc diffusers 50

Tube diffusers 52

Common information on diffusers 54

Applications

Aeration

- Water treatment and environmental technology
- Waste water treatment plants
- Ponds and fish tanks
- Aeration of tanks containing chemichal and biological liquids

Aqua-air- and design pillars

Advantages

- Different membrane material available
- Low installation costs
- Non-standard slots are provided on request
- Low Maintenance

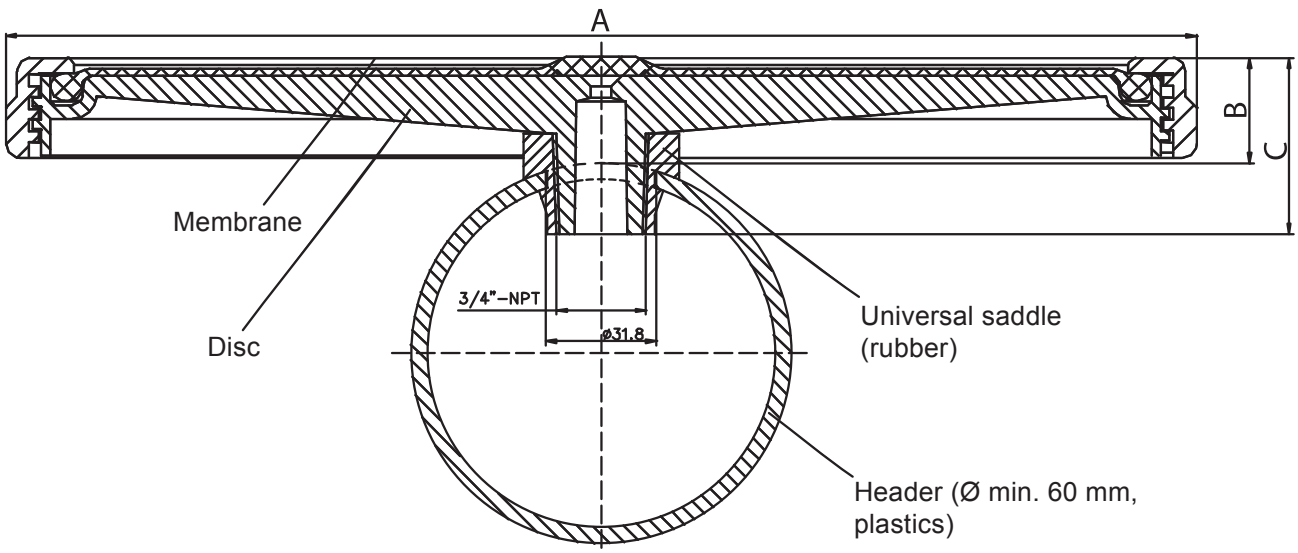
Disc diffusers
HD 270 / HD 340

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

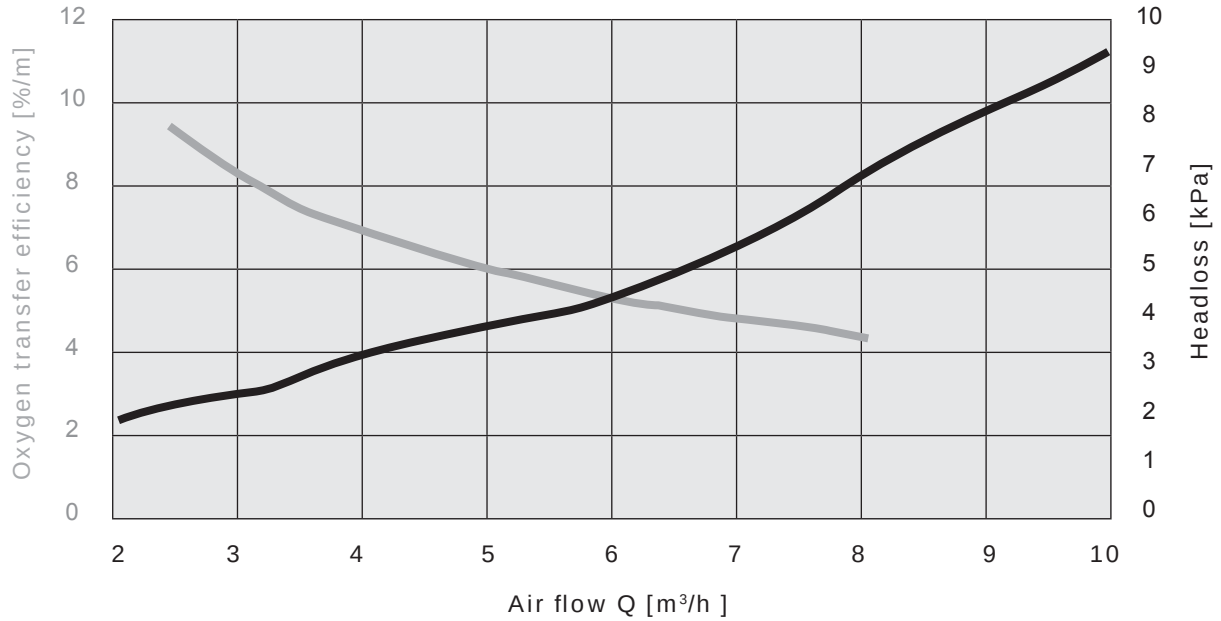
Properties of typical membranes

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

TD-63/2100 / TD-63/2075 / TD-63/2050

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
TD-63/2100	1000	1060	63	64–66	0.180	1.3
TD-63/2075	750	810	63	64–66	0.135	1.1
TD-63/2050	500	560	63	64–66	0.090	0.8

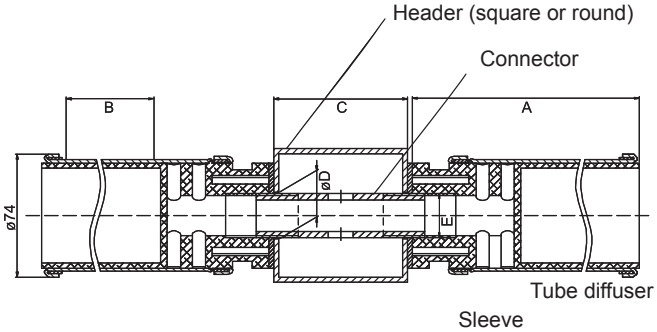
Other lengths on request.

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

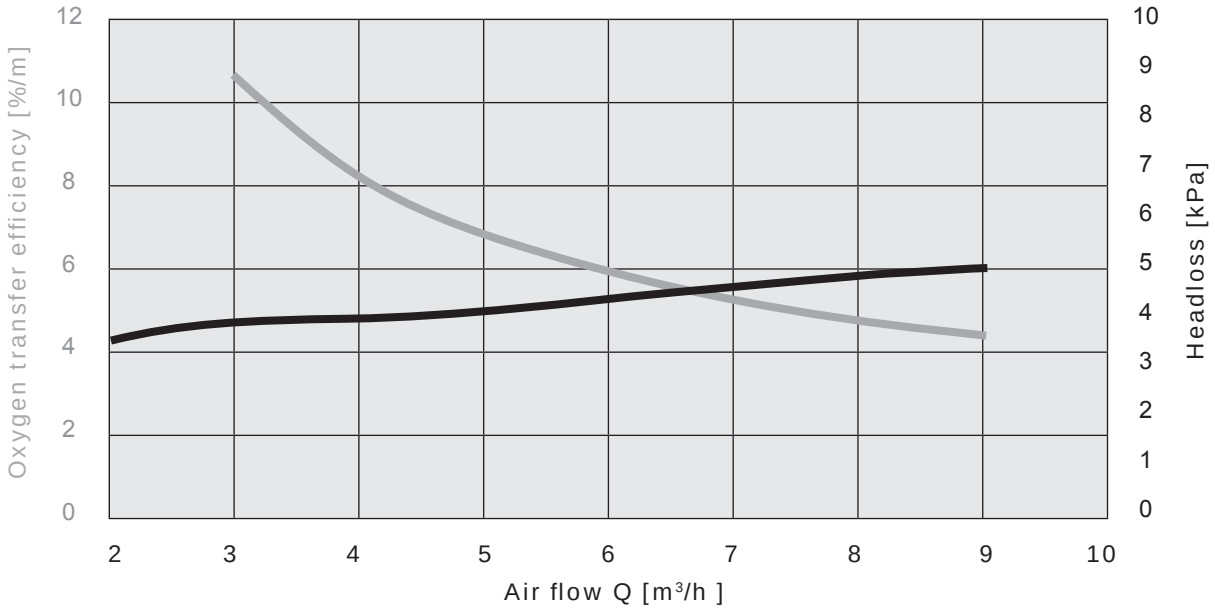
Properties of typical membranes

Membrane	Standard	Low plasticizer	Silicone
Material	EPDM 7311 / 003	EPDM 6367	
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
TD-63/2100	3 - 12	20
TD-63/2075	2 - 9	15
TD-63/2050	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.

BIBUS Technology - network of competencies

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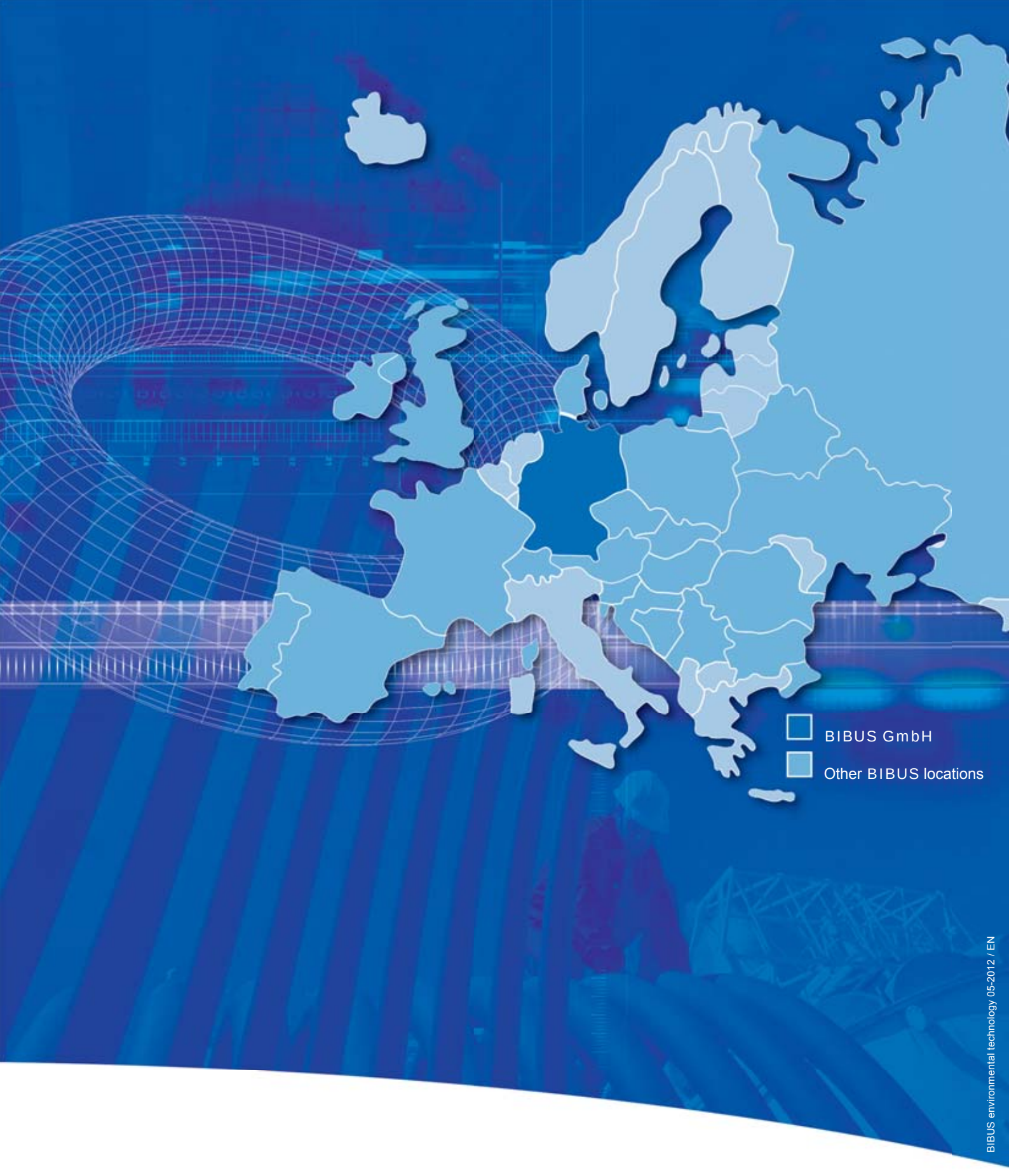

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