PENTAIR JUNG PUMPEN

BREEZE

BREEZE PRESSURE PIPE CLEANING SYSTEM

Breeze MH

Flushing block

Control

DESCRIPTION

Odour problems are a perennial concern where sewers are concerned. Odours develop due to the solid matter and lack of oxygen contained in the wastewater. Longer conveying distances and added collection of wastewater in a pumping station increase the residence times, and result in the wastewater starting to decay within the sewer. Once this decaying process has started, there is no stopping it.

Practical operation has shown that after some 2 hours, the oxygen content decreases to such an extent through bacterial decomposition that corrosive hydrogen sulphide forms.

The objective must therefore be to maintain a high level of oxygen in the wastewater and to convey it as rapidly as possible to the treatment plant.

Take advantage of our extensive experience and request a free system design from us (compliant with DWA directive A 116) to suit your particular application. The ideal duration of the flushing process and the flow velocities will be computed for each section of the pressure pipe using a special computer programme.

Breeze units offer the following options:

- Ventilation of the wastewater in the sump (PSV)
- Ventilation of the wastewater in the pressure pipe (SH)
- Flushing and partial discharge of the pressure pipe (MH)

Aeration of the sump
The Breeze PSV is used in collection chambers to maintain the oxygen content of the wastewater. Air bubbles are introduced into the wastewater in the pump sump with a special air hose.

Aeration of the pressure pipe
Breeze SH is used in pressure pipes which are laid with only positive gradients. A compressor introduces air into the pressure pipe and supplies the wastewater with oxygen.

Flushing of the pressure pipe
Breeze MH is used for flushing pressure pipes. Besides providing oxygen, the compressed air is also used to attain the minimum flow velocity of the wastewater in the pressure pipe.

PATENTED CONTROL

All systems incorporate a microprocessor control with a display and patented software. This ensures that in addition to the conventional fixed flushing times (time and duration), variable flushing times are triggered automatically by the control depending upon actual wastewater volumes. Demand-oriented flushing results in high system efficiency and helps to prevent or reduce odour emissions.

It goes without saying that shutdown periods can be set for the weekend or at night to prevent any potential nuisance caused by compressor noise.

By selecting a suitable location, the Breeze MH can optionally even flush out several pressure pipes at different times. This reduces investment costs since one unit can perform the work of up to three units.

FLUSHING BLOCK

The compact and corrosion-resistant flushing block incorporates the necessary components, such as a manometer, pressure switch, load transfer and sound absorber.

BREEZE PSB

PRESSURE PIPE FLUSHING

DESCRIPTION

The Breeze PSV is used in collection chambers to maintain the oxygen content of the wastewater.

Air bubbles are introduced into the wastewater in the pump sump with a special air hose. The oil-free compressor operates until the pump level is reached and the pump continues conveying the wastewater into the pressure pipe.

The system is controlled in an energy-efficient way. Operation is paused if volumes of wastewater are too large and so short idle periods result before the pumping operation re-starts. If volumes are low and idle times are accordingly long, compressed air is continuously introduced into the wastewater to prevent the wastewater from "collapsing" and causing unpleasant odours.

To ensure safe operation, the sewage pump must be vented with a flushing pipe.

Similar to illustration

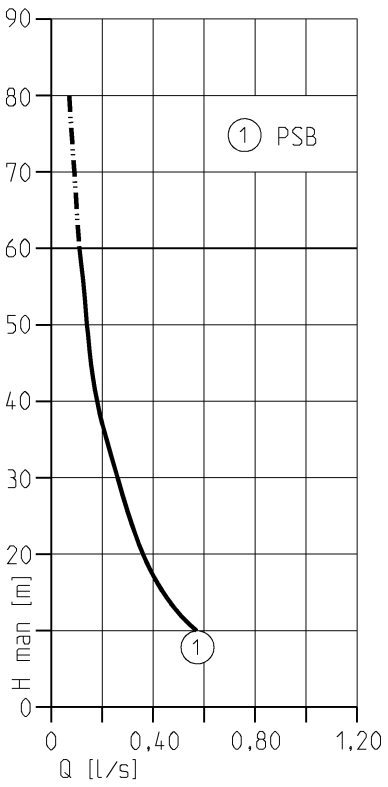
Control

Flushing block

PERFORMANCE

Type	Flow rate H_{man} [m]	10	20	30	40	50	60
Breeze PSB	Q [l/s]	0.57	0.36	0.26	0.18	0.14	0.11

PERFORMANCE



BREEZE PSB

PRESSURE PIPE FLUSHING

SCOPE OF SUPPLY

The oil-free compressor, control unit in plastic housing with transparent cover (protection category IP 44) and flushing block are fully installed in the empty housing. 10 m pressure hose, non-return valve and 7.5 m aeration hose are supplied loose.

Empty housing with a separate plinth in fibre-glass reinforced polyester including exhaust vent with exhaust air grid and supply air grid. Door with three-point lock and profile half cylinder.

Microprocessor control with display, Manual-0-Automatic selector switch, safety thermostat and main switch.

UNIT

Designation	Weight	Code No.
Breeze PSV	90 kg	**JP48757**

ACCESSORY

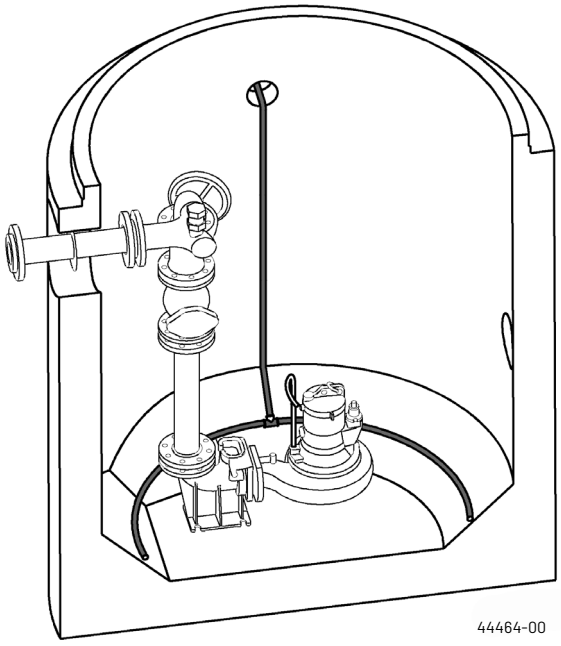
Designation	Code No.
Flushing pipe, type 0	**JP45408**
Flushing pipe, type I	**JP28221**
Flushing pipe, type II	**JP28222**
Flushing pipe, type III	**JP28223**

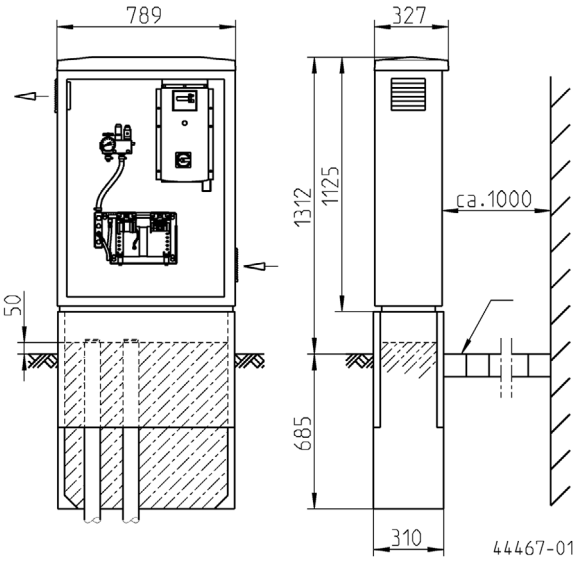
Flushing type selection see accessory Multistream/Multifree

TECHNICAL DATA

Type	Voltage	Motor rating kW		Current	Rotational speed	Max. operating noise	Max. compressor pressure	Operating pressure	Fusedelay
	V	P1	P2	A	min-[1]	dB (A)	bar	max.bar	A
Breeze PSV	1/N/PE~230	0.74	0.45	3.4	1380	67	8	6	16

Dimensions of Breeze PSV (mm)





BREEZE SH

PRESSURE PIPE FLUSHING

DESCRIPTION

If residence times are too long, the pressure pipe line must also be selectively ventilated. Breeze SH is used in pressure pipes which are laid with only positive gradients. An oil-free compressor introduces air into the pressure pipe. The air then rises to the highest point of the pipeline and supplies the wastewater with oxygen.

To maintain the oxygen concentration in the wastewater, as a rule of thumb a quantity of air amounting to 10% of the pipe contents should be introduced every two hours.

Similar to illustration

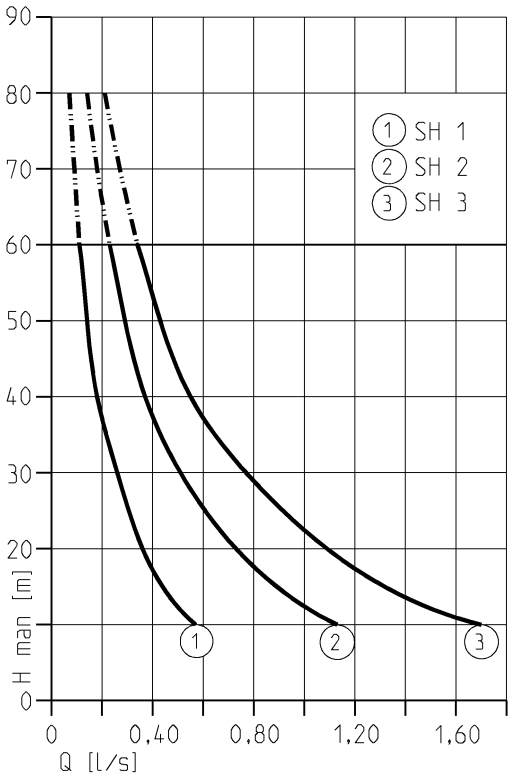
Control

Flushing block

PERFORMANCE

Type	Flow rate H_{man} [m]	10	20	30	40	50	60
Breeze SH1		0.57	0.36	0.26	0.18	0.14	0.11
Breeze SH2	Q [l/s]	1.14	0.72	0.52	0.36	0.28	0.22
Breeze SH3		1.71	1.08	0.78	0.54	0.42	0.33

PERFORMANCE



BREEZE SH

PRESSURE PIPE FLUSHING

SCOPE OF SUPPLY

The oil-free compressors, control unit in plastic housing with transparent cover (protection category IP 44) and flushing block are fully installed in the empty housing. 5 m pressure hose and non-return valve are supplied loose.

Empty housing with a separate plinth in fibre-glass reinforced polyester including exhaust vent with exhaust air and supply air grilles. Door with three-point lock and profile half cylinder.

Microprocessor control with display, Manual-0-Automatic selector switch, safety thermostat and main switch.

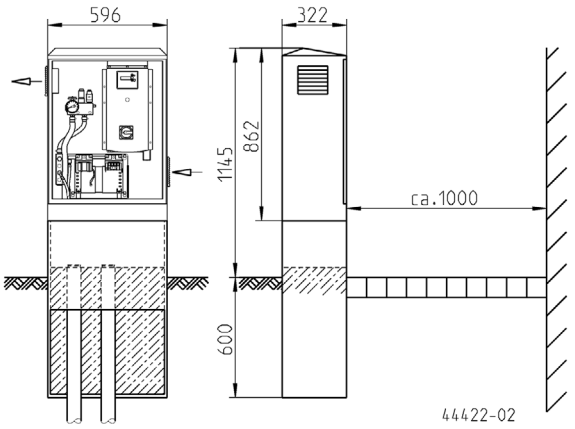
UNITS

Designation	Weight	Code No.
Breeze SH 1	90 kg	**JP48754**
Breeze SH 2	98 kg	**JP48755**
Breeze SH 3	118 kg	**JP48756**
Accessory		
Pressure hose, 10 m		**JP44703**

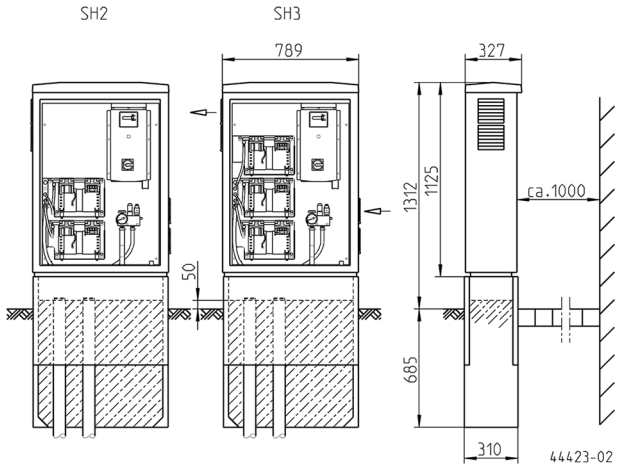
TECHNICAL DATA

Type	Voltage	Motor rating kW		Current	Rotational speed	Max. operating noise	Max. compressor pressure	Operating pressure	Fuse (delay)
	V	P1	P2	A	min^{-1}	dB (A)	bar	max.bar	A
Breeze SH 1	1/N/PE~230	0.69	0.42	3.3	1425	67	8	6	16
Breeze SH 2	1/N/PE~230	1.34	0.84	6.6	1425	70	8	6	16
Breeze SH 3	1/N/PE~230	2.00	1.26	9.9	1425	72	8	6	16

Dimensions SH 1 (mm)



Dimensions SH 2 and SH 3 (mm)



BREEZE MH

PRESSURE PIPE FLUSHING

DESCRIPTION

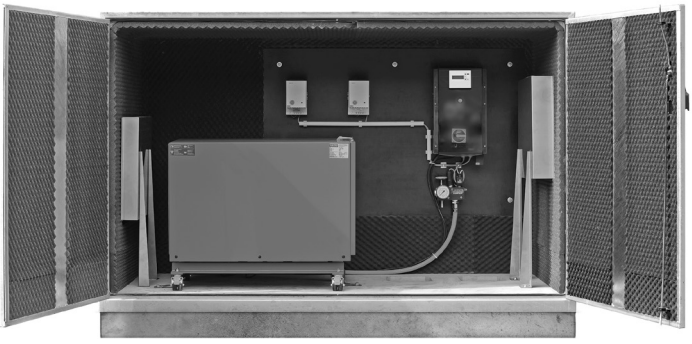
If residence times are long, the pressure piping must be systematically flushed out. A compressor introduces air into the pipe line to

- shorten the residence time of the wastewater
- introduce oxygen into the wastewater
- reduce H_2S formation
- loosen deposits through high flow velocities

A minimum flow velocity of 0.7 m/s must be attained at all parts of the pressure pipe, including at the largest cross section. If the pump does not reach the specified velocity, the Breeze MH units are used in support. They blow compressed air directly into the pipe and so effect a partial discharge of the piping.

The ideal duration of the flushing process and the flow velocity are computed for each section of the pressure pipe using a special computer programme.
A minimum flow velocity of v > 0.7 m/s must be ensured in all sections of the pressure pipe, including at the largest cross section.

Breeze MH 1 to MH 4 can also be used with additional sound proofing in particularly sensitive areas. Noise emissions can be reduced by up to 10 dB (A) in this way.



Breeze MH 2 S (with additional sound proofing)

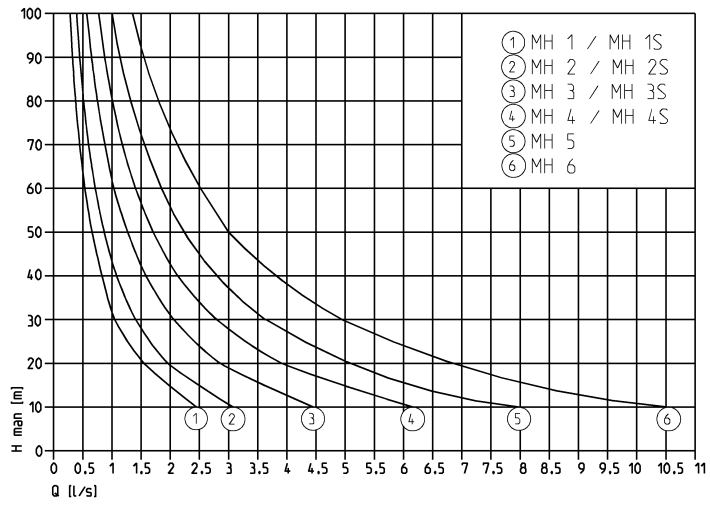
Flushing block

Control

PERFORMANCE

Type	H_{man} [m]	10	20	30	40	50	60
Breeze MH 1(S)	Q [l/s]	2.5	1.6	1.1	0.8	0.7	0.5
Breeze MH 2(S)		3.1	2.0	1.4	1.1	0.9	0.7
Breeze MH 3(S)		4.5	2.9	2.1	1.6	1.3	1.0
Breeze MH 4(S)		6.2	3.9	2.8	2.1	1.7	1.4
Breeze MH 5		8.0	5.1	3.7	2.8	2.2	1.8
Breeze MH 6		10.7	6.9	4.3	3.8	3.0	2.5

PERFORMANCE



BREEZE MH

PRESSURE PIPE FLUSHING

SCOPE OF SUPPLY

The piston compressor with sound absorber, control unit in plastic housing with transparent cover (protection category IP 44) and flushing block are fully installed in a joint-free concrete box. 5 m pressure hose and non-return valve are supplied loose.

Washed concrete box (S-type units with additional sound proofing), doubled-winged galvanised sheet door, supply and exhaust air openings with weather protection grille, double locking with a profile half cylinder.

Microprocessor control with display, Manual-0-Automatic selector switch, safety thermostat and main switch.

UNITS

Designation	Weight	Code No.
Breeze MH 1	1430 kg	**JP43751**
Breeze MH 2	1445 kg	**JP43752**
Breeze MH 3	1505 kg	**JP43753**
Breeze MH 4	1505 kg	**JP43754**
Breeze MH 5	1560 kg	**JP43755**
Breeze MH 6	1605 kg	**JP43756**
with additional sound proofing		
Breeze MH 1S	1465 kg	**JP43757**
Breeze MH 2S	1480 kg	**JP43758**
Breeze MH 3S	1540 kg	**JP43759**
Breeze MH 4S	1540 kg	**JP43760**

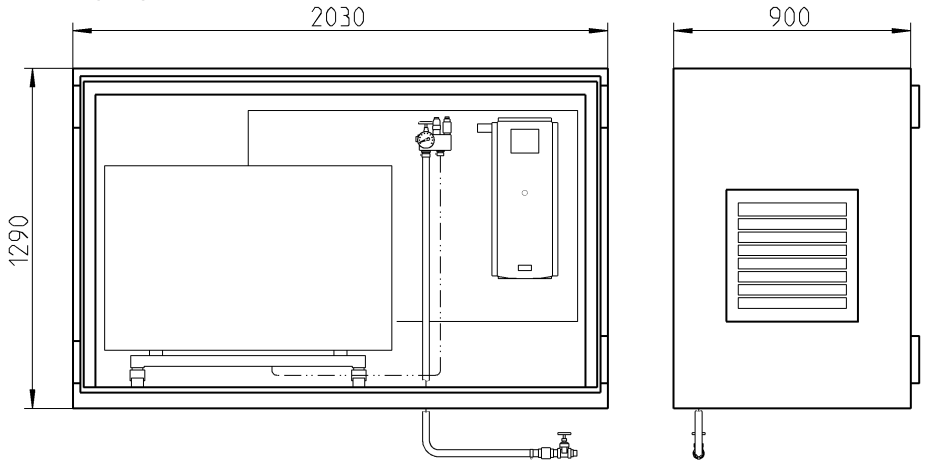
ACCESSORY

Designation		Code No.
Flushing device for 2 pipes, fitting by manufacturer		**JP44272**
Flushing device for 3 pipes, fitting by manufacturer		**JP44273**
Pre-fabricated foundation	1000 kg	**JP48554**
Pressure hose, 10 m		**JP44703**
Additional heating element		**JP30370**
Ventilator partitional wall (MH1S-MH4S)		**JP44370**
Surcharge for oil level check		**JP29849**

TECHNICAL DATA

Type	Voltage	Motor output		Current	Rotational speed	Max. operating noise		Max. compressor pressure	Operating pressure	Pre-fuse (delay)
	V	P1 kW	P2 kW	A	min^{-1}	dB(A)		bar	max. bar	A
Breeze MH 1(S)	3x230/400	2.21	1.7	7.9/4.6	1450	66	(56)	10	6	20
Breeze MH 2(S)	3x230/400	3.08	2.4	10.7/6.2	1450	67	(57)	10	6	25
Breeze MH 3(S)	3x230/400	3.65	3.0	11.7/6.8	1450	67	(57)	10	6	25
Breeze MH 4(S)	3x400/690	5.00	4.0	10.0/5.8	1450	68	(58)	10	6	25
Breeze MH 5	3x400/690	6.70	5.5	12.0/6.9	1450	70		10	6	25
Breeze MH 6	3x400/690	9.40	7.5	18.0/10.4	1450	72		10	6	35

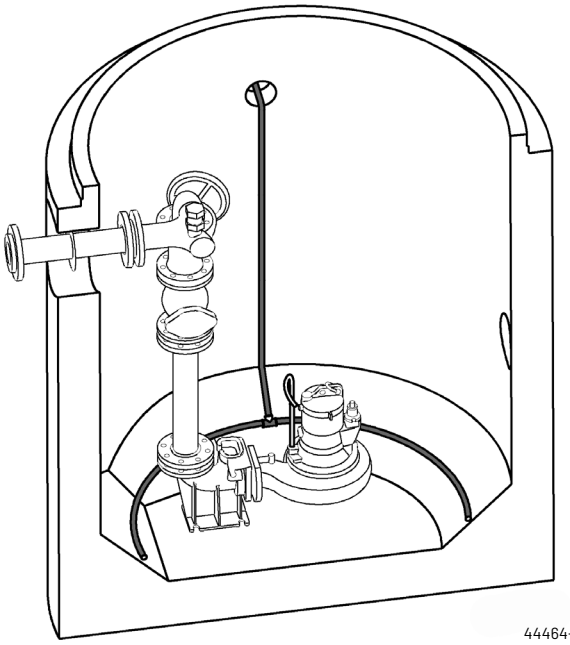
Dimensions Breeze MH (mm)



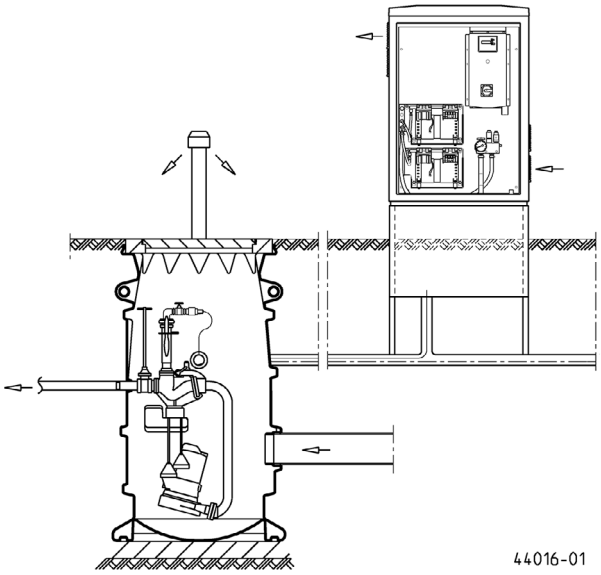
44425-00

BREEZE
EXAMPLE OF INSTALLATION

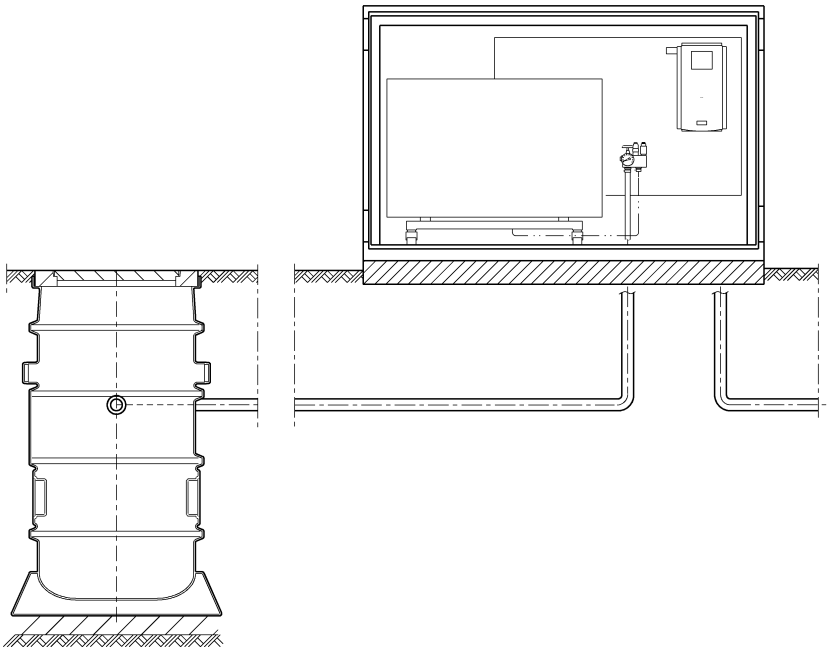
Example of installation Breeze PSV

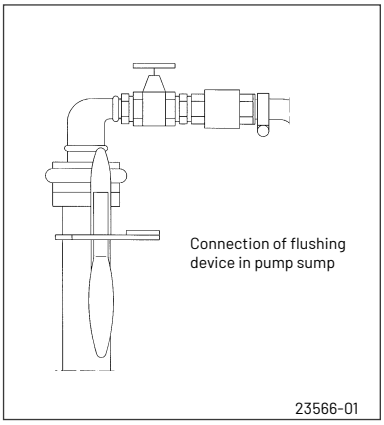


Example of installation Breeze SH



Example of installation Breeze MH





44426-00

JUNG PUMPEN GmbH | Industriestraße 4-6 | 33803 Steinhagen | Germany | Phone +49 5204 170 | info@jung-pumpen.de | www.jung-pumpen.en