1 Sewage Pumping Stations

2 Submersible Pumps - not available

3 Control Panels/Remote Control Systems

4 not available

5 Container

6 Complete Buildings

7 Pipe and Wall Ducting - no more available

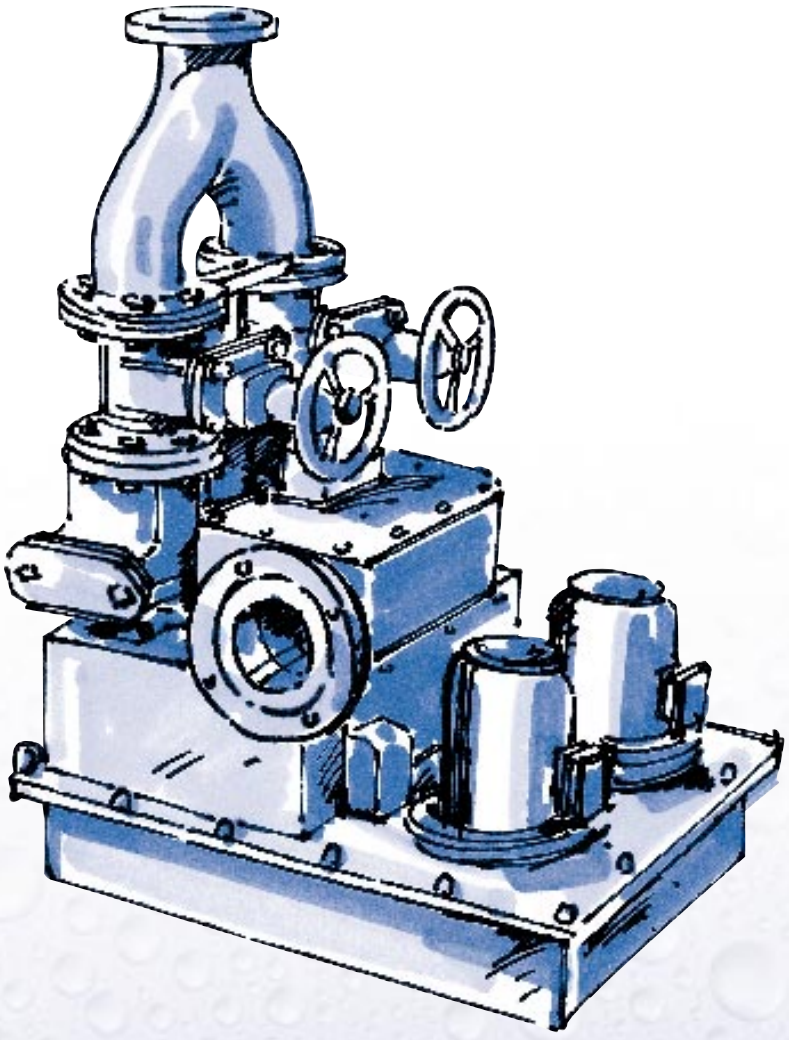
8 Non-return-valves

9 De-aeration Pressure and Relief Valves

10 Start-up relief valve

1 Sewage Pumping Stations

AWALIFT Sewage Pumping Stations
Mechanical Accessories



AWALIFT selection table

Plant selection criteria

There are two decisive factors in choosing the right STRATE pumping station:

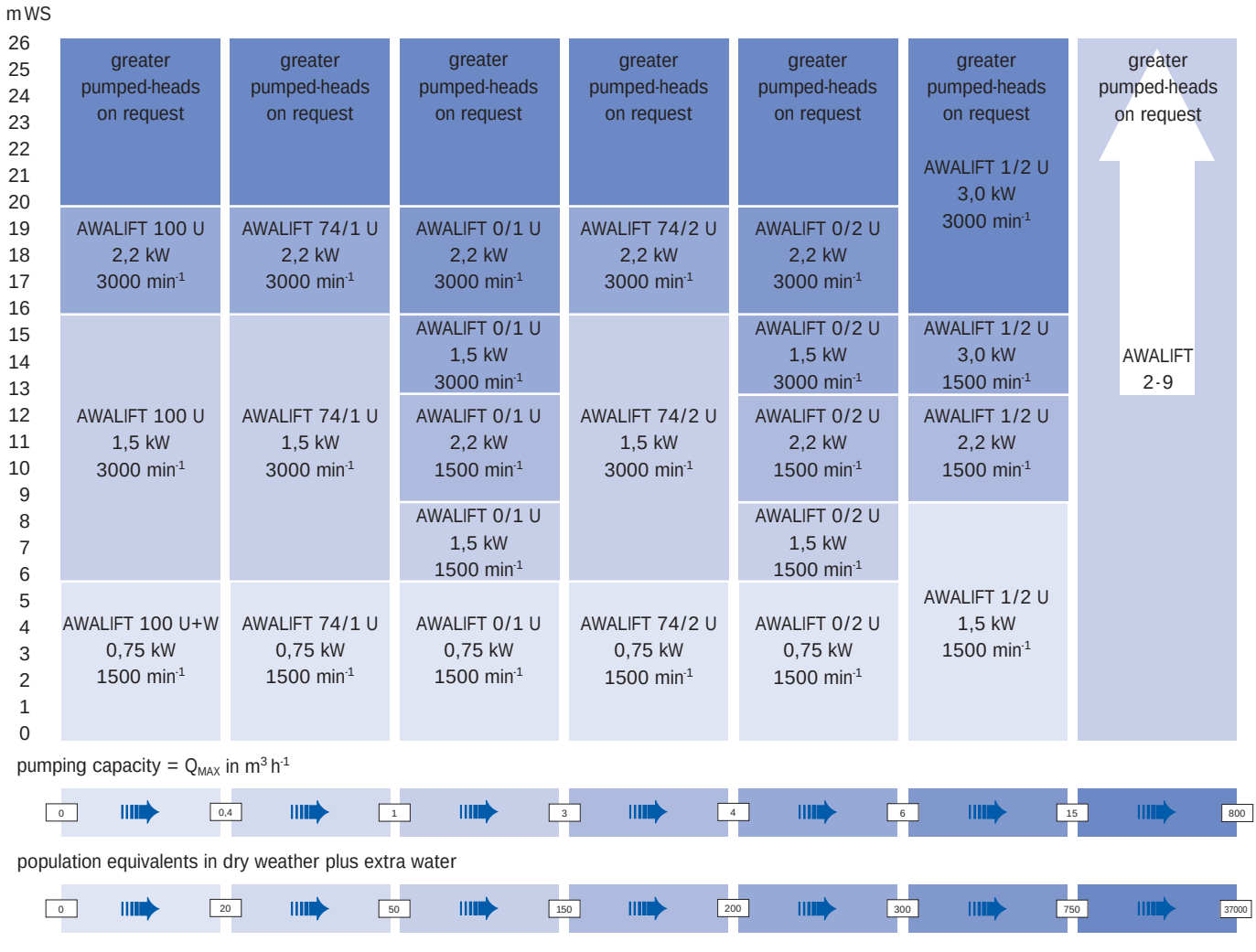
1. The maximum sewage inflow (Q_{MAX}) which determines the pumping capacity.
2. The total pumped head (H_{MAX}) which determines the motor power output.

When you have determined the values of Q_{MAX} and H_{MAX} you can choose the appropriate pumping station from the table below to meet your needs.
For the complete data on outputs, pumping curves and installation dimensions, please refer to the appropriate catalogue pages.

What else must be considered?

DIN 1986 lays down a minimum flow-rate of 0.7ms^{-1}. In DN 100 pipes this corresponds to a minimum pumping rate of 20 m^{-3} h^{-1}. You should check the pump curve, bearing in mind the pumped-head to ensure that you will not fall short of this required flow-rate.

total pumped-head (HMAX) = bar at 20 m^3 h^{-1} pumping rate



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AWALIFT

AWALIFT planning table

The dimensions given here should be considered a guide only and are not binding. Please enquire if specifications don't match your requirements. Special versions are possible.

STRATE pumping stations are available as separate chamber or submersible designs. Further data available in our special brochure.

Planning advice

Only the STRATE system with its solids collecting chamber can demonstrably achieve an efficiency of 70% and higher i.e. STRATE pumps need less power and reduce energy costs by up to 50%.

type	capacity m^3/h^{-1}	PE*	weight kg	tank volume	size mm	Installation depth m	shaft dimensions m	Installation opening m
AWALIFT 100	0,4	20	78	48 l	800 x 420 x 200	0,20	1,00 x 0,70 or Ø 1,00	0,60 x 0,90
AWALIFT 74/1	1	50	112	80 l	860 x 500 x 380	0,40	1,20 x 1,20 or Ø 1,50	0,80 x 0,80
AWALIFT 0/1	3	150	189	112 l	950 x 500 x 525	0,55	1,20 x 1,20 or Ø 1,50	0,80 x 0,80
AWALIFT 74/2	4	200	175	107 l	860 x 660 x 380	0,40	1,50 x 1,50 or Ø 1,50	1,00 x 0,80
AWALIFT 0/2	6	300	320	205 l	1015 x 820 x 535	0,55	1,50 x 1,50 or Ø 2,00	1,00 x 1,00
AWALIFT 1/2x2	15	460	650	580 l	Ø 1000 x 1250	1,00	3,00 x 2,50 or Ø 3,50	1,40 x 1,20
AWALIFT 1/2	15	750	520	430 l	1400 x 800 x 1000	0,75	2,00 x 2,00 or Ø 2,00	1,50 x 1,00
AWALIFT 2/2 flat	36	1700	800	0,85 m^3	Ø 1250 x 1500	1,20	2,50 x 2,50 or Ø 2,40	1,50 x 1,10
AWALIFT 2/2 round	60	2800	800	1,10 m^3	Ø 1250 x 1500	1,20	3,50 x 2,50 or Ø 3,80	1,50 x 1,50
AWALIFT 3/2	80	3700	1000	2,00 m^3	Ø 1400 x 2000	1,60	3,70 x 3,00 or Ø 4,00	1,70 x 1,70
AWALIFT 4/2	120	5600	1500	3,50 m^3	Ø 1800 x 2000	1,60	4,50 x 3,50 or Ø 4,50	2,00 x 2,00
AWALIFT 5/2	150	7000	1700	4,20 m^3	Ø 1800 x 2500	1,90	4,50 x 3,50 or Ø 4,50	2,00 x 2,00
AWALIFT 6/2	200	9300	2000	5,30 m^3	Ø 2000 x 2500	1,90	4,70 x 3,70 or Ø 4,80	2,20 x 2,20
AWALIFT 6/3	250	11600	2300	5,00 m^3	Ø 2000 x 2500	1,90	5,00 x 3,70 or Ø 4,80	2,20 x 2,20
AWALIFT 7/3	350	16300	3500	8,00 m^3	Ø 2500 x 2500	1,90	5,50 x 4,00 or Ø 5,50	2,80 x 2,80
AWALIFT 8/3	400	18600	3800	10,00 m^3	Ø 2500 x 3000	2,30	5,50 x 4,00 or Ø 5,50	2,80 x 2,80
AWALIFT 9/4	600	29000	4500	12,00 m^3	Ø 2800 x 3000	2,30	6,00 x 4,60 or Ø 6,00	3,20 x 3,20
AWALIFT 10/6	800	37000	6300	15,00 m^3	Ø 3800 x 3000	2,30	7,50 x 6,50 or Ø 7,00	4,20 x 4,20

*Population equivalents

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AWALIFT

Sewage pumping stations with single pump

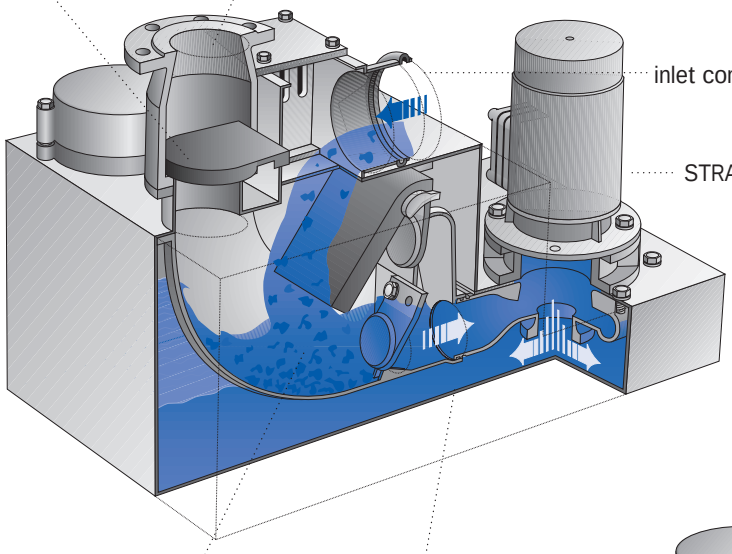
With the STRATE-system

The particular feature of all AWALIFT sewage pumping stations is the STRATE-system, the highly reliable combination of centrifugal pump and solids collecting chamber.

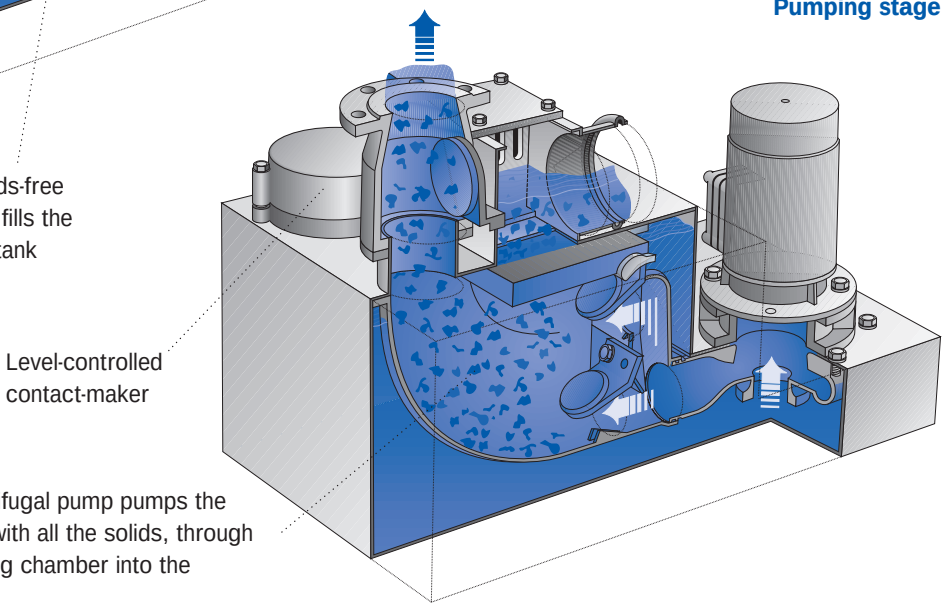
How the STRATE-system works

The sewage flows through the inlet into the solids collecting chamber. The solids are retained in this chamber by the separating valves. The solids-free sewage flows through the valves and through the pump into the holding-tank. Once the holding-tank is full the shut-off valve closes the inlet. The level-controlled pump then switches on and pumps the clean sewage through the solids collecting chamber into the pressure-pipe. The solids collecting chamber is, thus, cleared of all residues. In this way the STRATE-system prevents clogging and so keeps the maintenance costs to a minimum.
Note: all sewage pumping stations with the STRATE-system have patented separating valves, licenced by the Institute of Structural Engineering, which are solely produced by STRATE sewage engineering.

Filling stage



Pumping stage



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AWALIFT

Sewage pumping stations with two or more STRATE-system pumps

Here, too, the particular feature is the STRATE-system; the highly reliable combination of centrifugal pump and solids collecting chamber, i.e. EACH pump has its own solids collecting chamber.

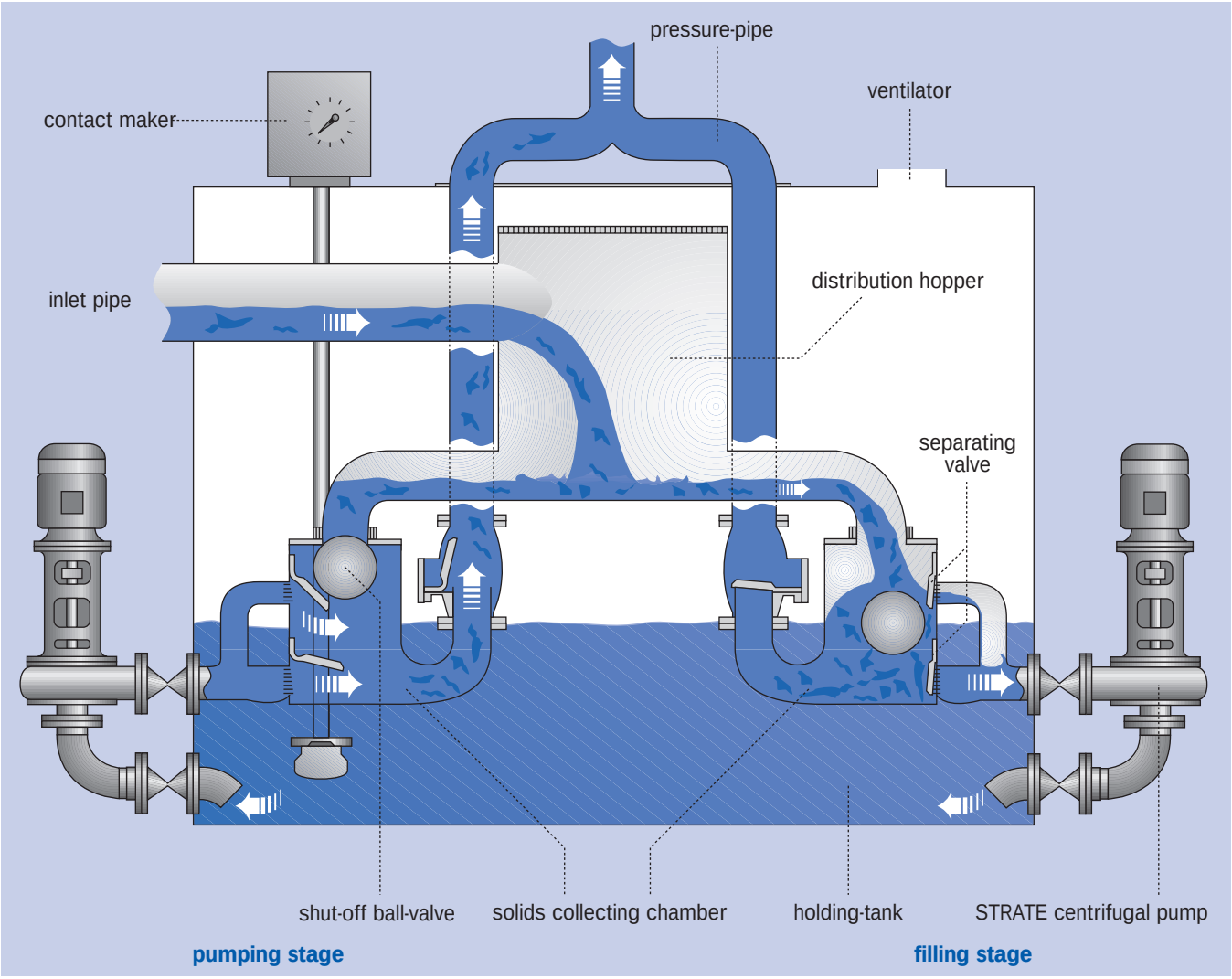
How the STRATE-system works

The sewage flows through the inlet, enters a distribution hopper and flows from there into the solids-collecting chambers. The incoming solids are retained here by the separating valves. The solids-free sewage runs through the separating valves, stationary pumps and into the holding-tank.

Once the tank is full, the level-controlled operating pump is switched on and pumps the clean sewage through the solids collecting chamber into the pressure-pipe. The chamber is, thus, cleared of all residues.

During the pumping stage the incoming sewage flows through the second solids collecting chamber and pump into the holding-tank. The pumps operate alternately. At times of peak load the pumps can be operated in parallel.

The size of the holding-tank and the number of pump and solids chamber units are determined by the incoming flow The STRATE-system with its superior applied technology allows sewage pumping stations to achieve a high efficiency and so to reduce energy requirements with optimum reliability and low maintenance.



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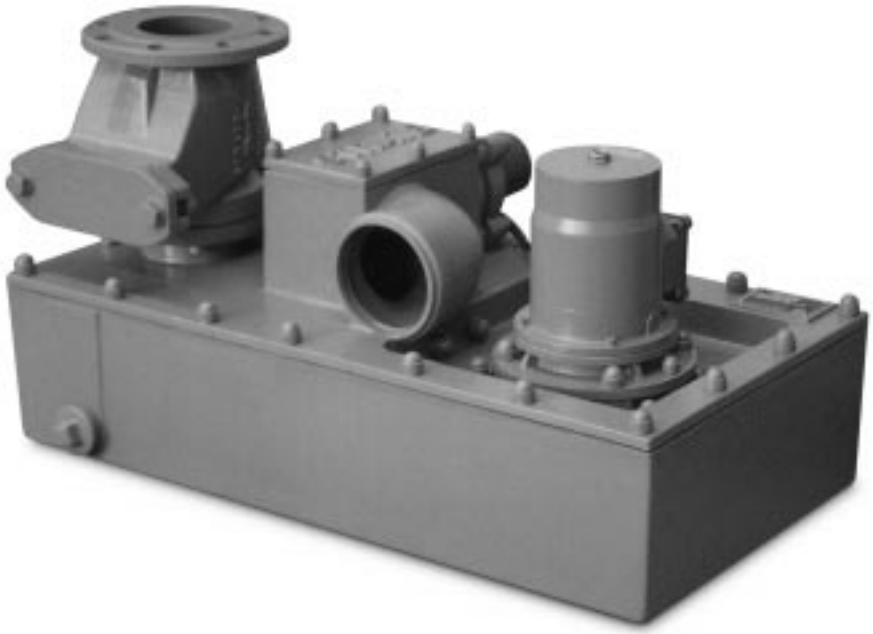
AWALIFT 100

The smallest sewage pumping station with the STRATE-system

The STRATE AWALIFT 100 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a three-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- the stable metal construction allows an almost silent operation
- once installed the gas- and odour-tight STRATE AWALIFT 100 prevents problems in the living area
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head



Pictures inclusive accessories.

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AWALIFT 100

Plant capacity: 0,4 m^3h^{-1} = to 1 WC, 1 shower, 1 wash-basin, 1 washing-machine

Inlet height: pipe bottom 200 mm

Tank dimensions: L = 800 mm, W = 420 mm, H = 200 mm

Tank contents: 48 L

Weight: 78 Kg

Space requirement: 1,00 m x 0,70 m or Ø 1,20 m

Installation opening: 0,60 m x 0,90 m

Inlet connector: Sleeve for plastic drain-pipes DN 100

Pressure-pipe connector: Flange DN 100 · PN 10

Ventilator: connection piece for plastic drain-pipe DN 65 or DN 70

Electrical connector: **100 U** = 400 V, 50 Hz

Protection type: IP 67

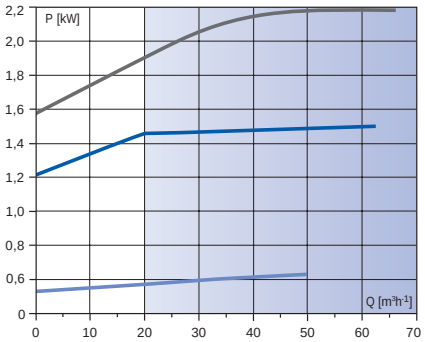
Motor output: 0,75 kW-1500 min^{-1}
1,5 kW-3000 min^{-1}
2,2 kW-3000 min^{-1}

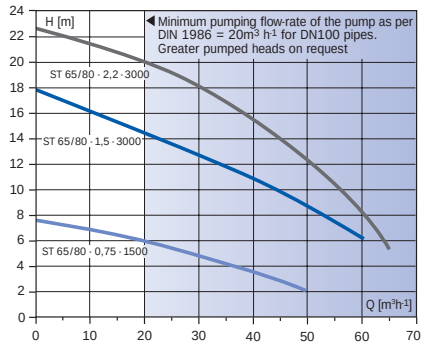
Electrical connector: **100 W** = 230 V, 50 Hz

Protection type: IP 54

Motor output: 1,0 kW-1500 min^{-1}

Pump curves





Description

The fully automatic, floadable STRATE sewage pumping station AWALIFT 100 (PA-I 2801) complies to the requirements of DIN 1986. The model STRATE AWALIFT 100W fulfils these conditions too, but is not available in floadable design. The gas- and water-tight holding tank is in a low-vibration, corrosion-resistant special cast material.
The surfaces are given an additional waterproof coating. The non-clogging solid collecting system with 100 mm free through-flow passage allows a trouble-free, low energy con-suming operation. The station leaves the factory ready for operation.

Application

For draining of floors where toilets are below the back-water level (as per DIN 1986) especially in detached houses but also e.g. to protect rooms where the number of facilities connected is low. Generally the top of the street is taken as the back-water level. Also even where this precaution is not necessary the fitting of a sewage pumping station will avoid any possibility of back-water damage. The pressure-pipe must be installed with a loop above the back-water level. Any deviations from this requirement will need the approval of the appropriate authorities. Where space in the building is limited or where installation is to be out in an open space the STRATE AWALIFTSCHACHT is an economical and reliable means of accommodating the sewage pumping station.

Delivery

The STRATE sewage pumping station AWALIFT 100U (W) consists of:

- Tank with solid collecting-chamber system
- Choice of centrifugal pump ST 65/80
- Non-return valve AWASTOP DN 100 K
- Contact-maker unit with alarm connection
- Switch-gear unit IP 54
- 3m connecting cable

Options

- Inlet connector piece DN 100
- Inlet gate valve DN 100
- Pressure gate valve DN 100
- Pressure-pipe connector piece DN 100
- Alarm unit with Ni-Cd battery, mains-independent
- Hand diaphragm pump

Special accessories available on request.

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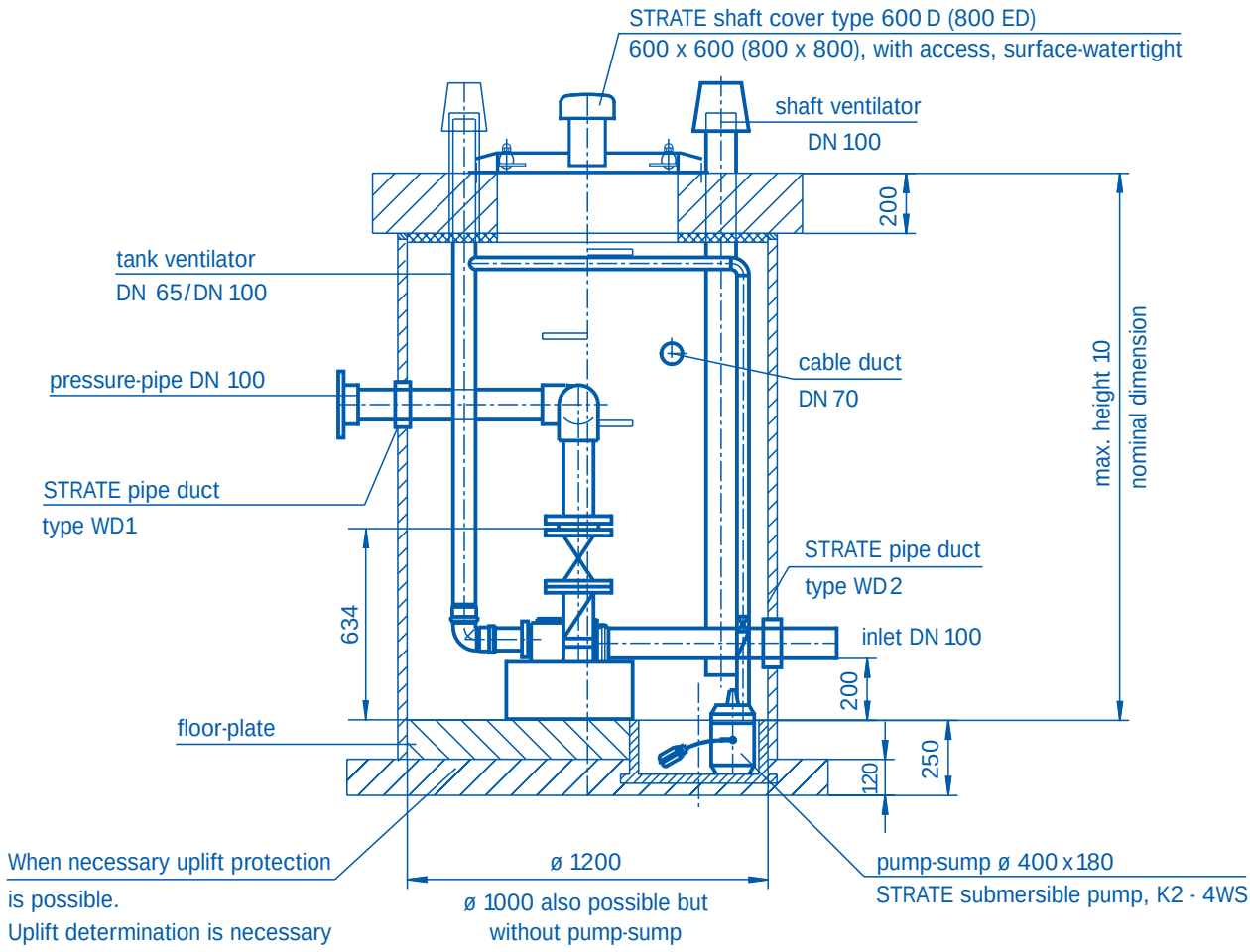

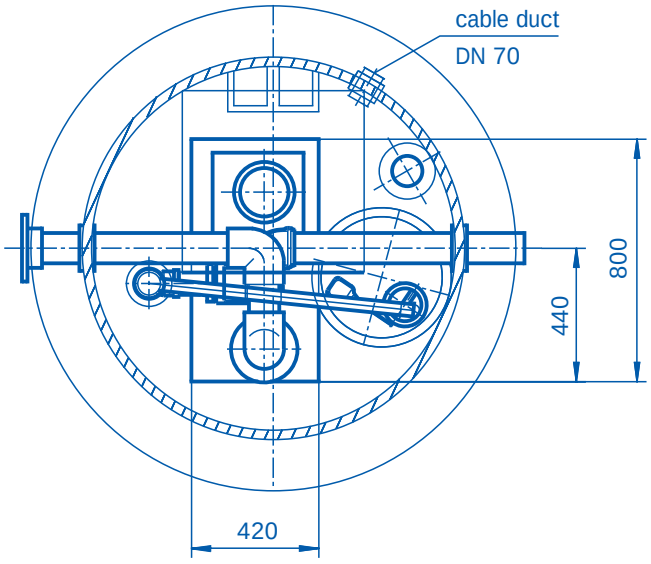

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Scale: 1 : 25	

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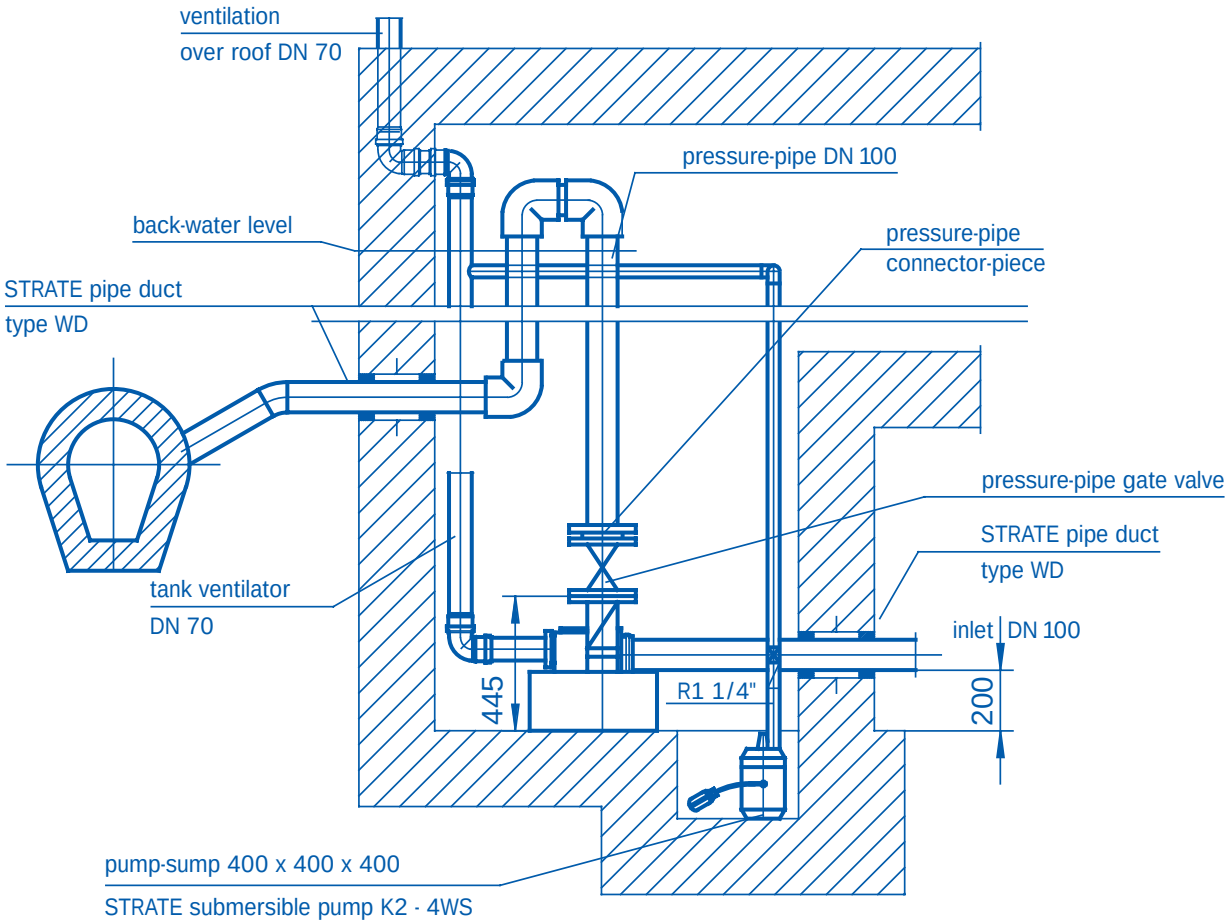

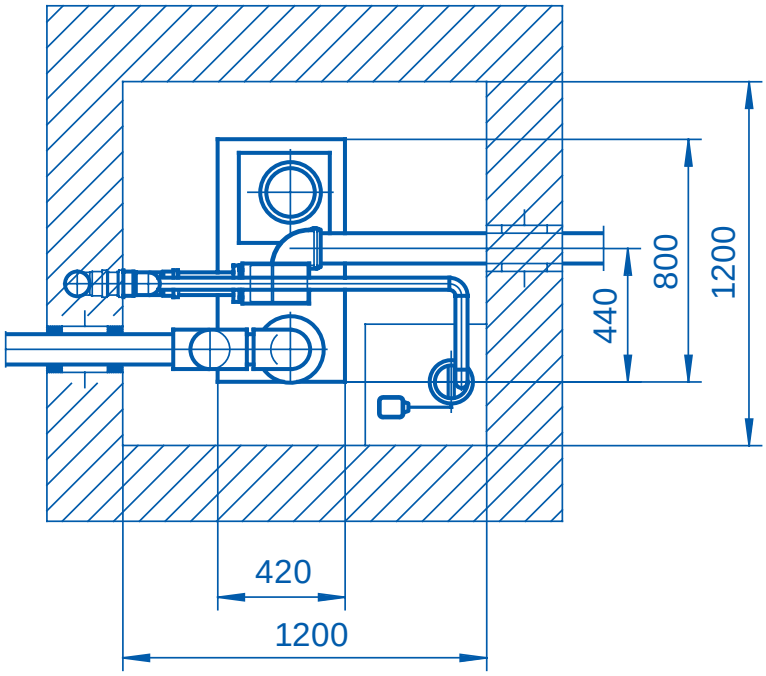

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Scale: 1 : 25	**Installation proposal inside the building**

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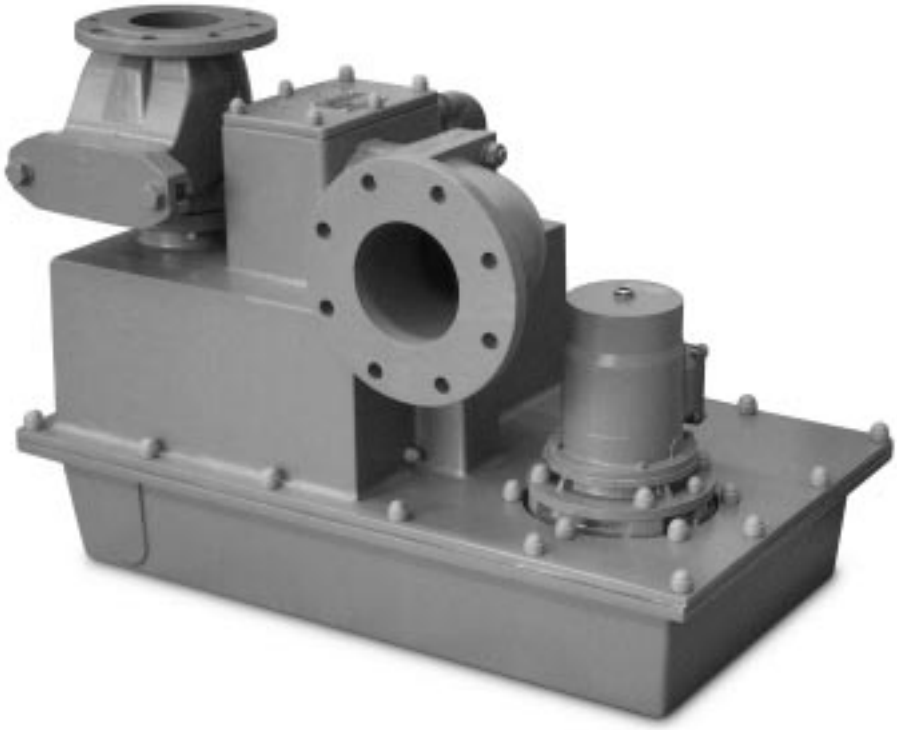
AWALIFT 74/1

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 74/1 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a three-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- the stable metal construction allows an almost silent operation
- once installed the gas- and odour-tight STRATE AWALIFT 74/1 prevents problems in the living area
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head



Pictures inclusive accessories.

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AWALIFT 74/1

Plant capacity: 1 m^3h^{-1} sewage with suspended solids

Inlet height: pipe bottom 400 mm

Tank dimensions: L = 860 mm, W = 500 mm, H = 380 mm

Tank contents: 80 L

Weight: ca. 110 Kg

Space requirement: 1,20 m x 1,20 m or Ø 1,50 m

Installation opening: 0,80 m x 0,80 m

Inlet connector: Flange PN 10 DN 125; optionally flange connector PN 10 DN 150 or DN 200

Pressure-pipe connector: Flange DN 100 - PN 10

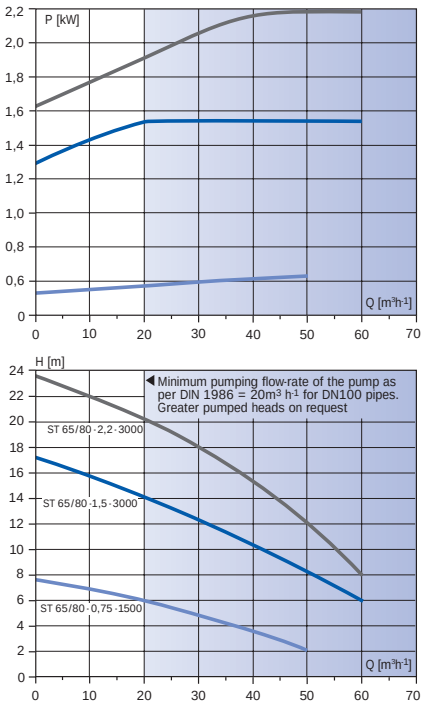
Ventilator: connection piece for plastic drain-pipe DN 65 or DN 70

Electrical connector: 400 V, 50 Hz

Protection type: IP 67

Motor output: 0,75 kW-1500 min^{-1}
1,5 kW-3000 min^{-1}
2,2 kW-3000 min^{-1}

Pump curves



Description

The fully automatic, floadable STRATE sewage pumping station AWALIFT 74/1 (PA - 12486) complies to the requirements of DIN 1986. The holding tank is in a low-vibration, corrosion-resistant special cast material. The surfaces are given an additional waterproof coating. The non-clogging solid collecting system with 100 mm free through-flow passage allows a trouble-free, low energy consuming operation.
The station leaves the factory ready for operation.

Application

For draining of floors where toilets are below the back-water level (as per DIN 1986) . Generally the top of the street is taken as the back-water level. Also even where this precaution is not necessary the fitting of a sewage pumping station will avoid any possibility of back-water damage. This is also necessary where as a result of long distances the natural fall is not adequate.
The pressure-pipe must be installed with a loop above the back-water level. Any deviations from this requirement will need the approval of the appropriate authorities. Where space in the building is limited the STRATE AWALIFTSCHACHT is an economical and reliable means of accommodating the sewage pumping station.

Delivery

The STRATE sewage pumping station AWALIFT 74/1 consists of:

- Tank with solid collecting-chamber system
- Choice of centrifugal pump ST 65/80
- Non-return valve AWASTOP DN 100 K
- Contact-maker unit with alarm connection
- Switch-gear unit IP 54
- 3m connecting cable

Options

- Inlet connector piece DN 125 (DN 150 or DN 200)
- Inlet gate valve DN 100
- Pressure gate valve DN 100
- Pressure-pipe connector piece DN 100
- Alarm unit with Ni-Cd battery, mains-independent
- Hand diaphragm pump

Special accessories available on request.

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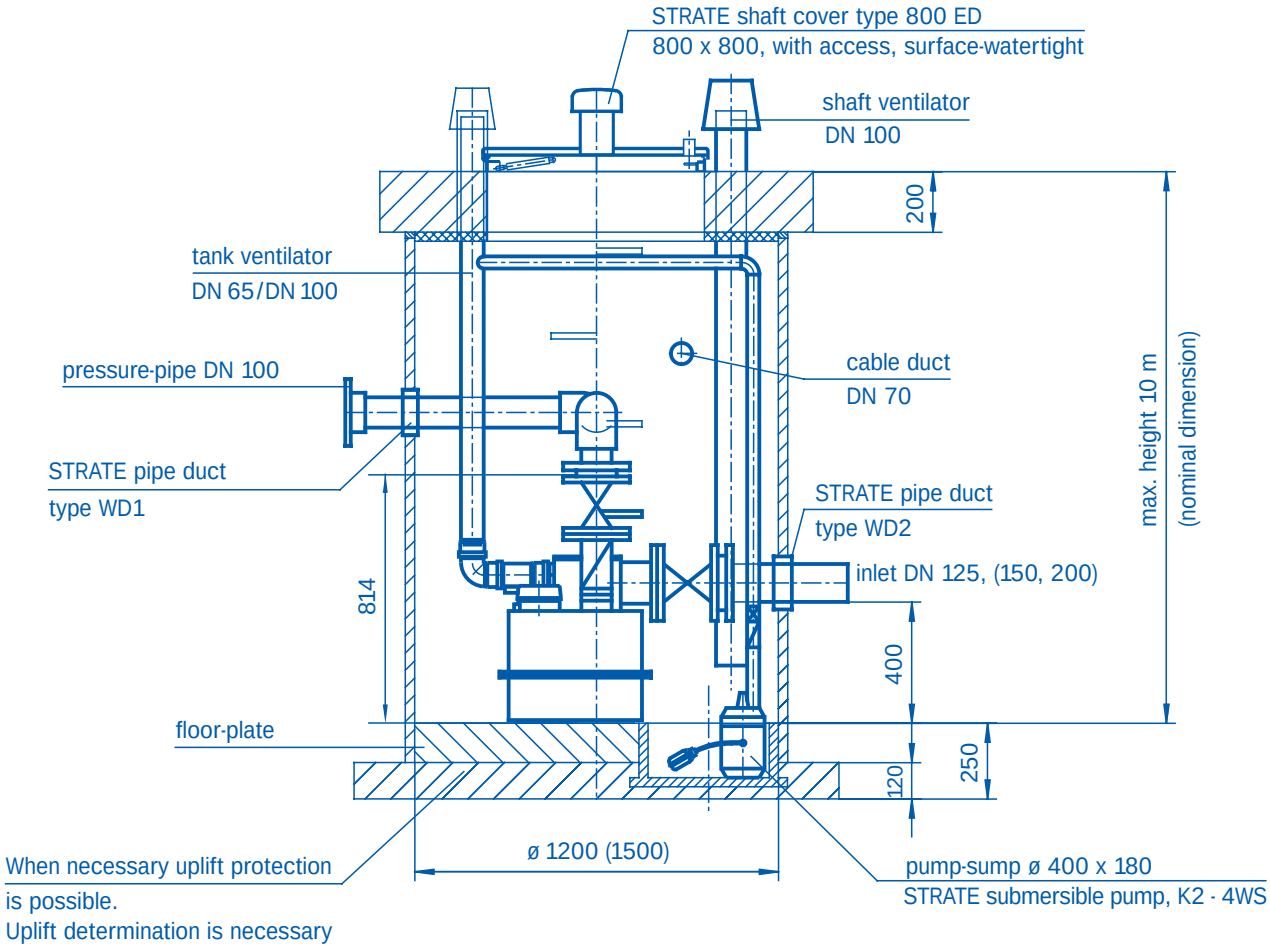

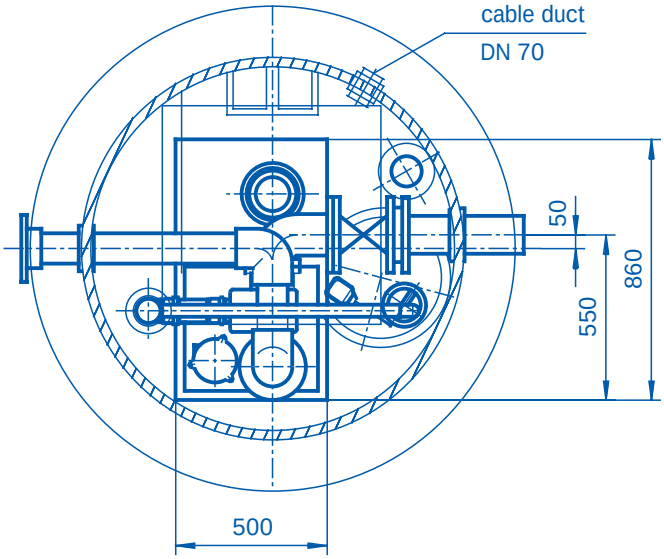

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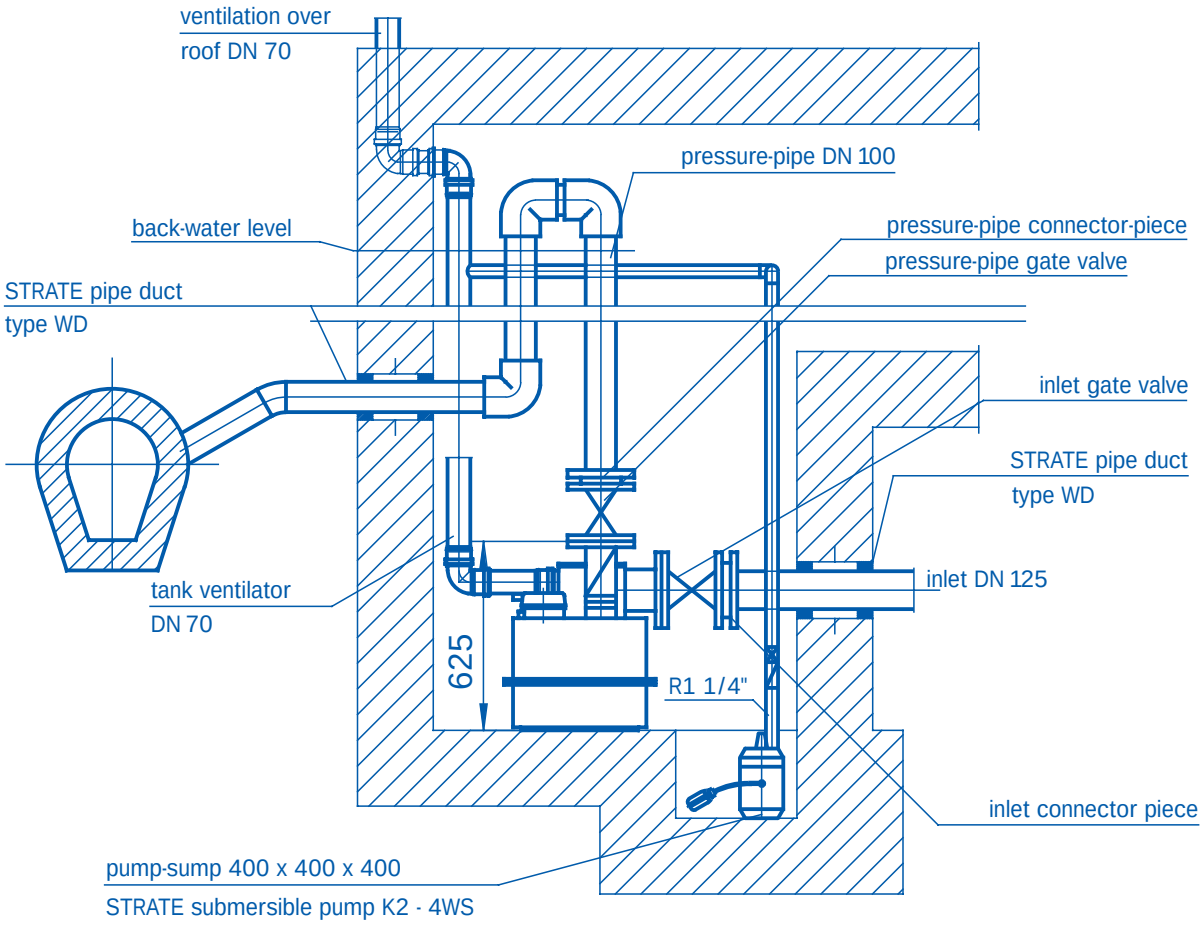

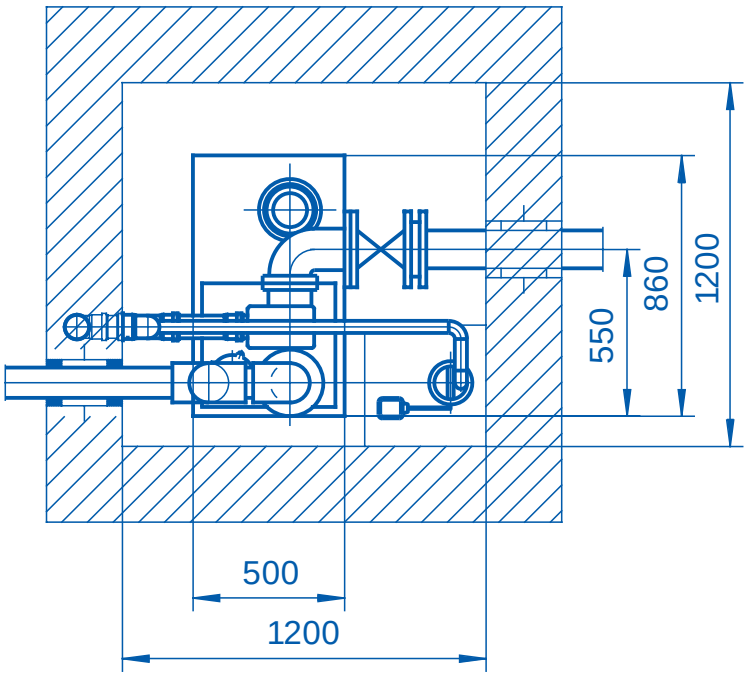

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Scale: 1 : 25	**Installation proposal inside the building**

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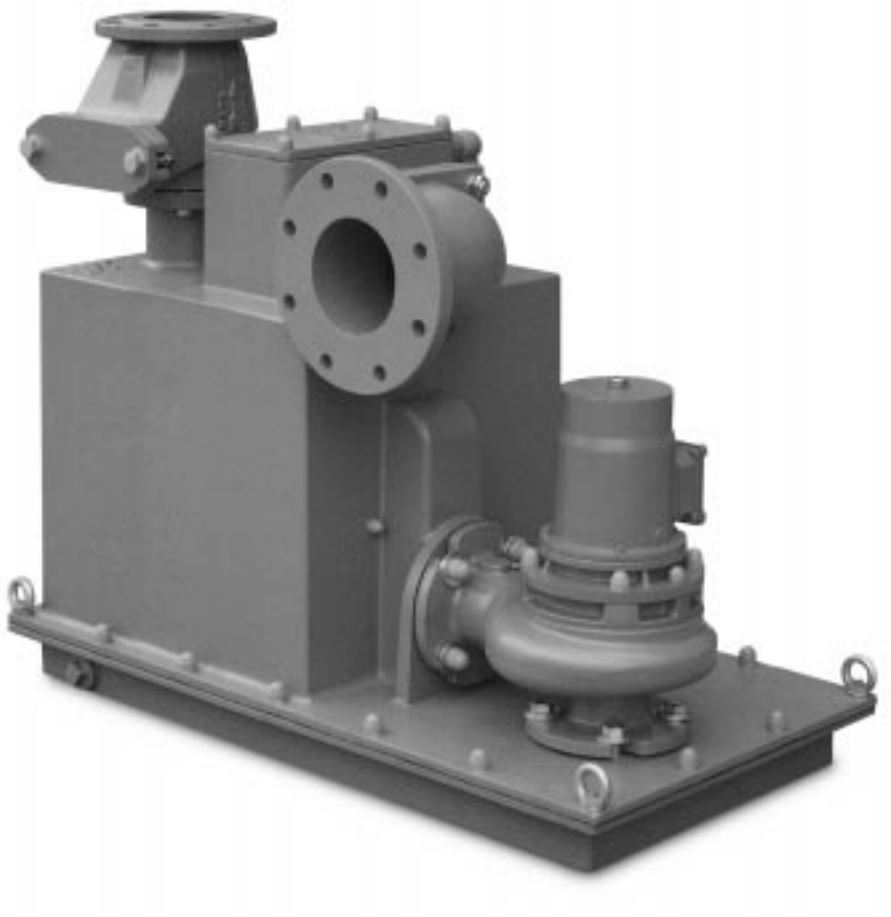
AWALIFT 0/1

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 0/1 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a three-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- the stable metal construction allows an almost silent operation
- once installed the gas- and odour-tight STRATE AWALIFT 0/1 prevents problems in the living area
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head



Pictures inclusive accessories.

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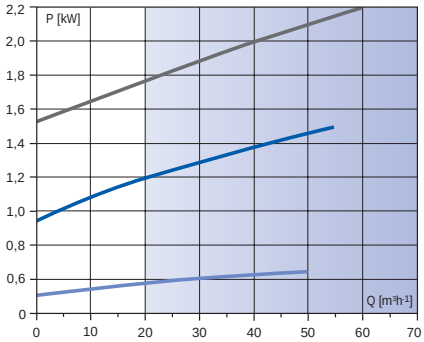
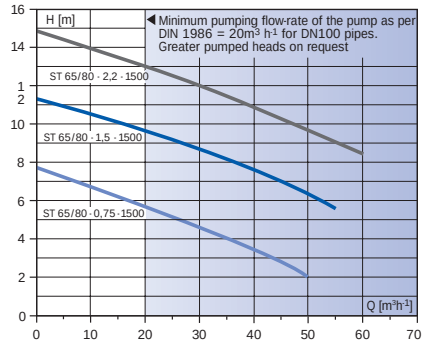
AWALIFT 0/1

Plant capacity:	3 m^3h^{-1} sewage with suspended solids
Inlet height:	pipe bottom 550 mm
Tank dimensions:	L = 950 mm, W = 500 mm, H = 525 mm
Tank contents:	112 L
Weight:	ca. 190 Kg
Space requirement:	1,20 m x 1,20 m or Ø 1,50 m
Installation opening:	1,00 m x 0,80 m
Inlet connector:	Flange PN 10 DN 125; optionally flange connector PN 10 DN 150 or DN 200
Pressure-pipe connector:	Flange DN 100 - PN 10
Ventilator:	connection piece for plastic drain-pipe DN 65 or DN 70
Electrical connector:	400 V, 50 Hz
Protection type:	IP 67
Motor output:	0,75 kW-1500 min^{-1} 1,5 kW-1500 min^{-1} 2,2 kW-1500 min^{-1}

Pump curves





Description

The fully automatic, floadable STRATE sewage pumping station AWALIFT 0/1 (PA - 11537) complies to the requirements of DIN 1986. The gas- and water-tight holding tank is in a low-vibration, corrosion-resistant special cast material. The surfaces are given an additional waterproof coating. The non-clogging solid collecting system with 100 mm free through-flow passage allows a trouble-free, low energy con-suming operation. The station leaves the factory ready for operation.

Application

For draining of floors where toilets are below the back-water level (as per DIN 1986) . Generally the top of the street is taken as the back-water level. Also even where this precaution is not necessary the fitting of a sewage pumping station will avoid any possibility of back-water damage. This is also necessary where as a result of long distances the natural fall is not adequate.
The pressure-pipe must be installed with a loop above the back-water level. Any deviations from this requirement will need the approval of the appropriate authorities. Where space in the building is limited the STRATE AWALIFTSCHACHT is an economical and reliable means of accommodating the sewage pumping station.

Delivery

The STRATE sewage pumping station AWALIFT 0/1 consists of:

- Tank with solid collecting-chamber system
- Choice of centrifugal pump ST 65/80
- Non-return valve AWASTOP DN 100 K
- Contact-maker unit with alarm connection
- Switch-gear unit IP 54
- 3m connecting cable

Options

- Inlet connector piece DN 125 (DN 150 or DN 200)
- Inlet gate valve DN125 (DN 150 or DN 200)
- Pressure-pipe connector piece DN 100
- Pressure-pipe gate valve DN 100
- Alarm unit with Ni-Cd battery, mains-independent
- Hand diaphragm pump

Special accessories available on request.

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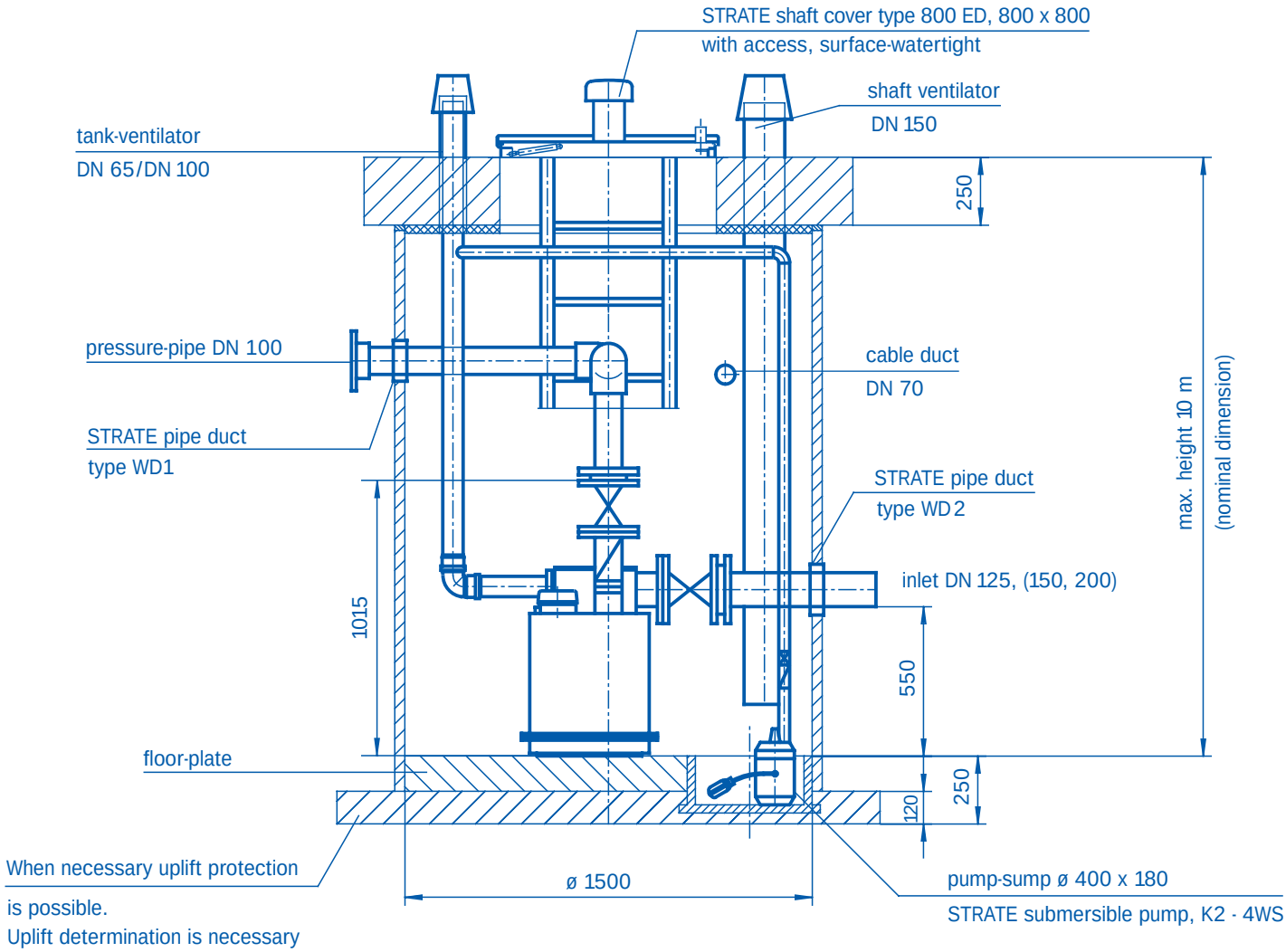

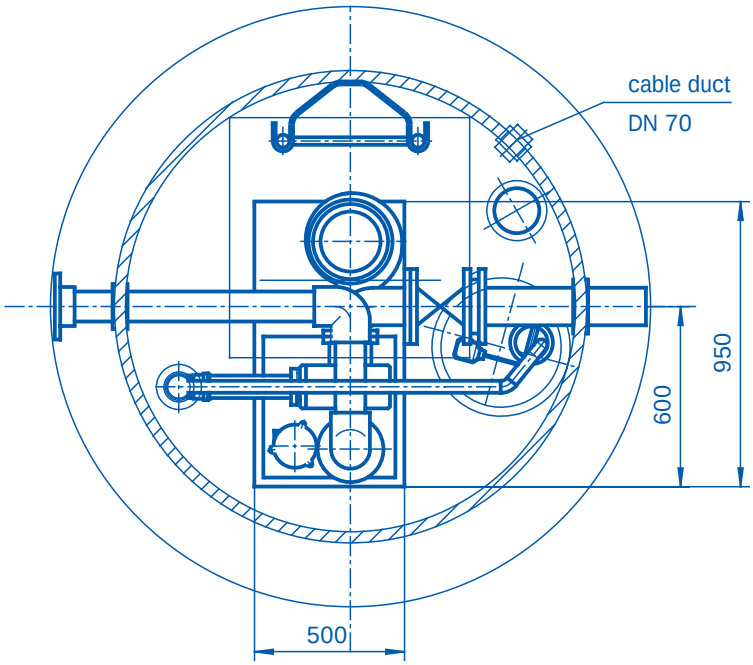

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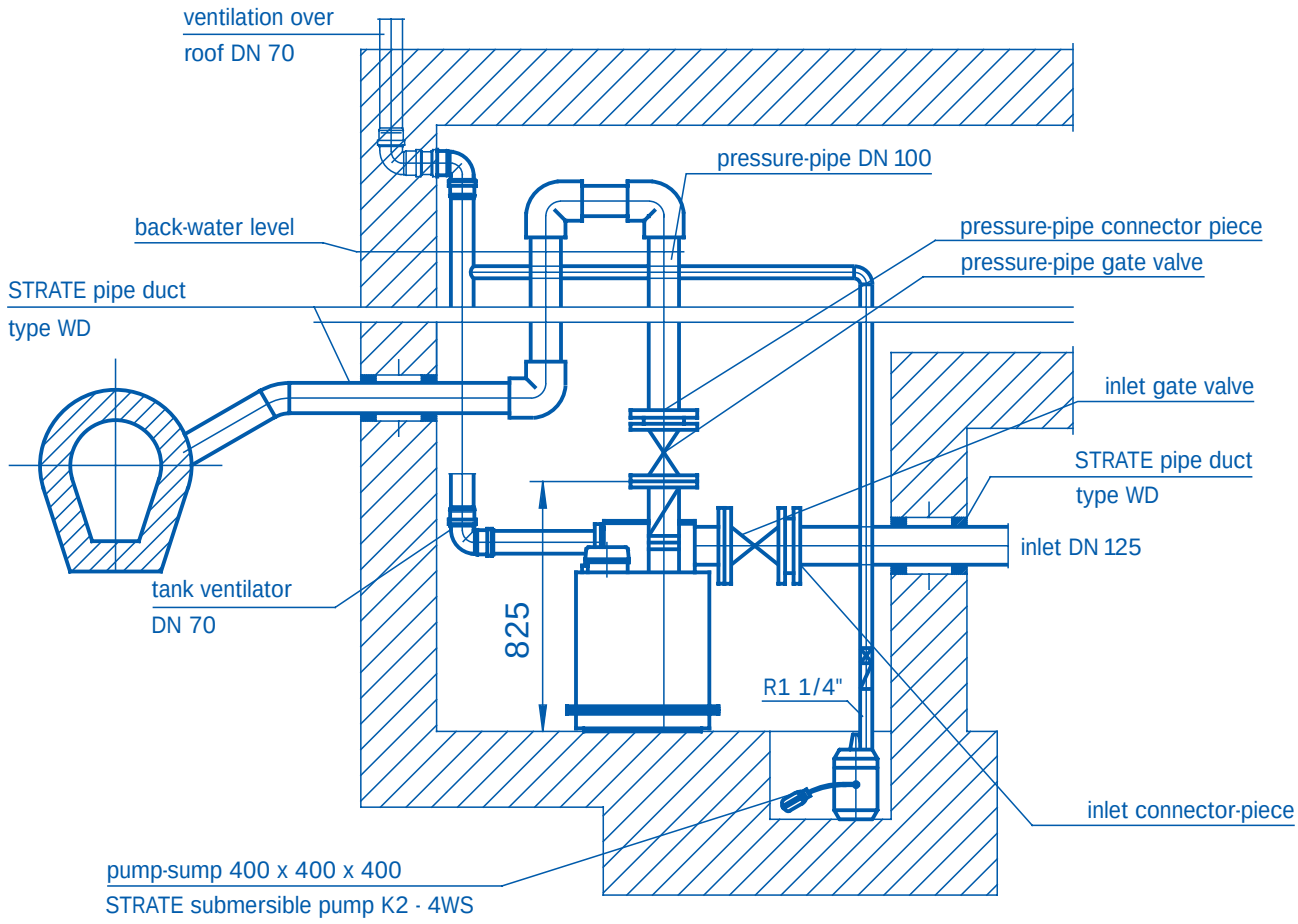

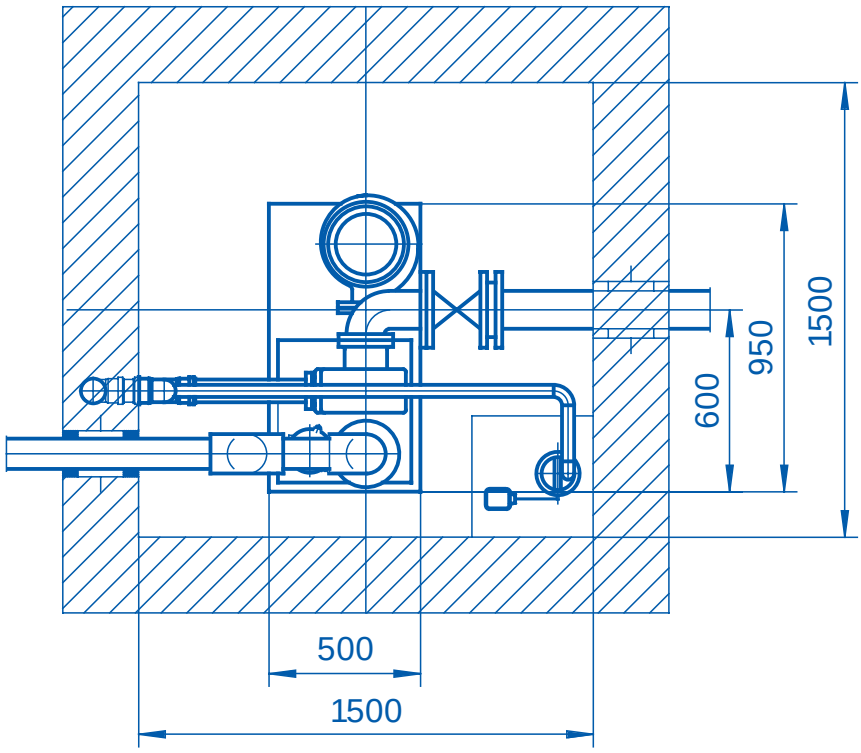

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Scale: 1 : 25	**Installation proposal inside the building**

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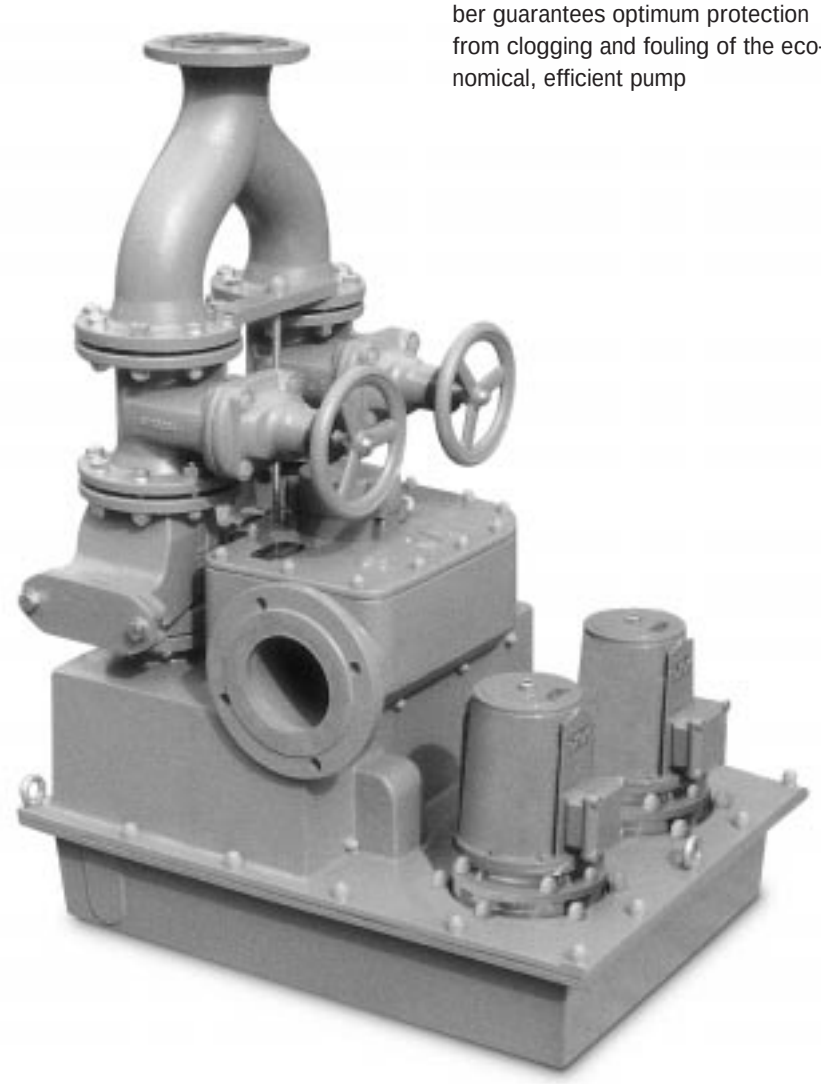
AWALIFT 74/2

The AWALIFT double station with the STRATE-system

The STRATE AWALIFT 74/2 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a three-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- the stable metal construction allows an almost silent operation
- once installed the gas- and odour-tight STRATE AWALIFT 74/2 prevents problems in the living area
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head



Pictures inclusive accessories.

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AWALIFT 74/2

Plant capacity: 4 m^3h^{-1} sewage with suspended solids

Inlet height: pipe bottom 400 mm

Tank dimensions: L = 860 mm, W = 660 mm, H = 380 mm

Tank contents: 107 L

Weight: ca. 175 Kg

Space requirement: 1,50 m x 1,50 m or Ø 1,50 m

Installation opening: 1,00 m x 0,80 m

Inlet connector: Flange PN 10 DN 125; optionally flange connector PN 10 DN 150 or DN 200

Pressure-pipe connector: Flange DN 100 - PN 10

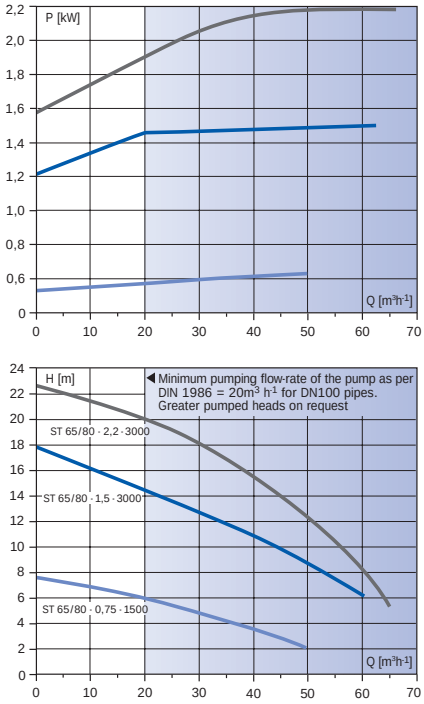
Ventilator: connection piece for plastic drain-pipe DN 65 or DN 70

Electrical connector: 400 V, 50 Hz

Protection type: IP 67

Motor output: 0,75 kW-1500 min^{-1}
1,5 kW-3000 min^{-1}
2,2 kW-3000 min^{-1}

Pump curves



Description

The fully automatic, floadable STRATE sewage pumping station AWALIFT 74/2 (PA - 12486) complies to the requirements of DIN 1986. The holding tank is in a low-vibration, corrosion-resistant special cast material. The surfaces are given an additional waterproof coating. The non-clogging solid collecting system with its two pumps and corresponding solids collecting chambers allows a trouble-free, low energy con-suming operation. The station leaves the factory ready for operation.

Application

STRATE AWALIFT 74/2 is the smallest double sewage pumping station for draining of floors where toilets are below the back-water level (as per DIN 1986), or for things where the natural fall is insufficient for drainage. They are particularly suitable for waste disposal in pubs and public buildings and plants i.e. in those places where the reserve pump must provide a reliable operation. Generally the top of the street is taken as the back-water level. Also even where this precaution is not necessary the fitting of a sewage pumping station will avoid any possibility of back-water damage. The pressure-pipe must be installed with a loop above the back-water level. Any deviations from this requirement will need the approval of the appropriate authorities.
Where space in the building is limited the STRATE AWALIFTSCHACHT is an economical and reliable means of accommodating the sewage pumping station.

Delivery

The STRATE sewage pumping station AWALIFT 74/2 consists of:

- Tank with double solids collecting-chamber system
- Choice of 2 centrifugal pump ST 65/80
- Non-return valve AWASTOP DN 100 K
- Contact-maker unit with alarm connection
- Switch-gear unit IP 54

Options

- Inlet connector piece DN 125 (DN 150 or DN 200)
- Inlet gate valve DN 125 (DN 150 or DN 200)
- Pressure-pipe connector piece DN 100
- Pressure-pipe gate valve DN 100
- Alarm unit with Ni-Cd battery, mains-independent
- Hand diaphragm pump

Special accessories available on request.

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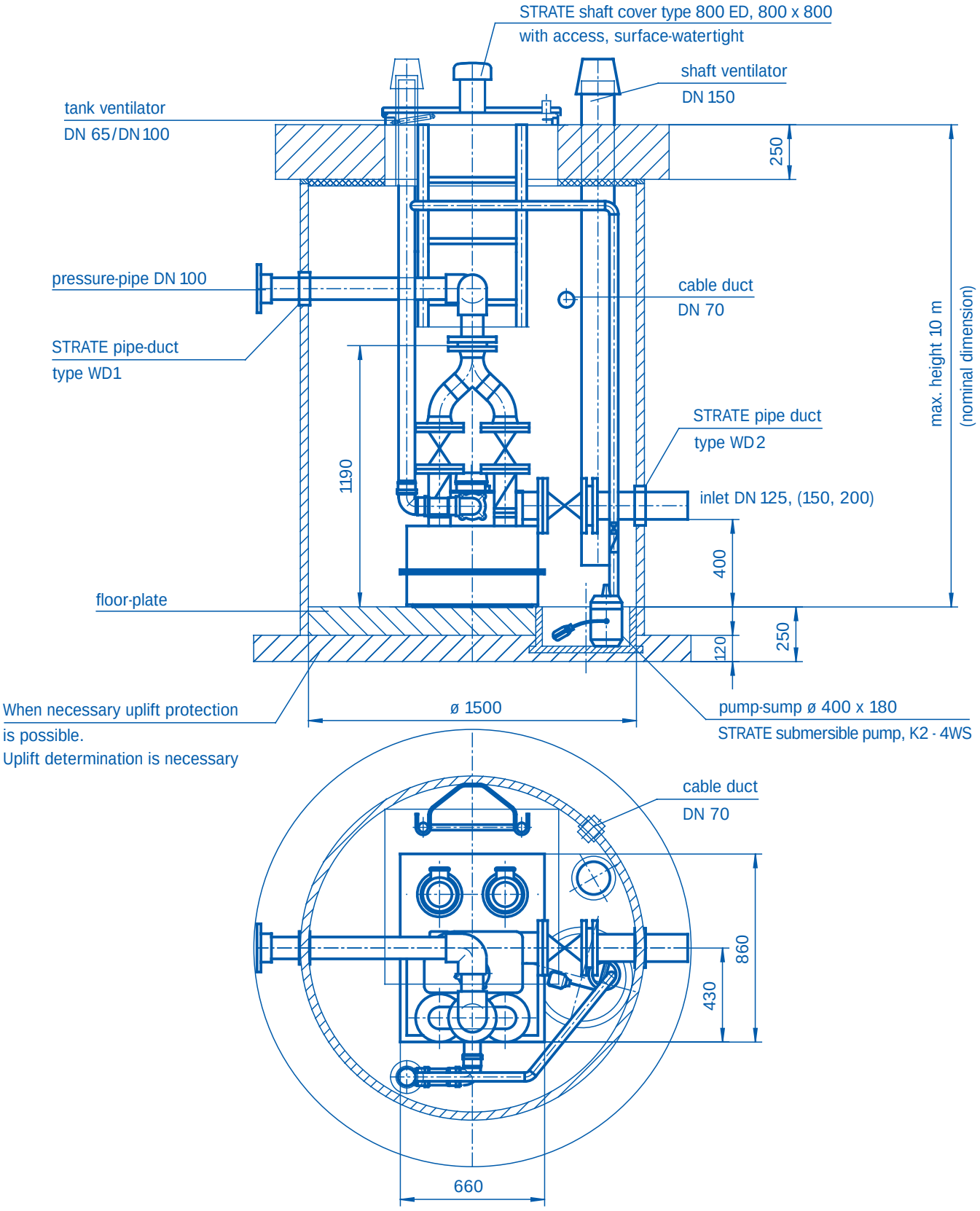

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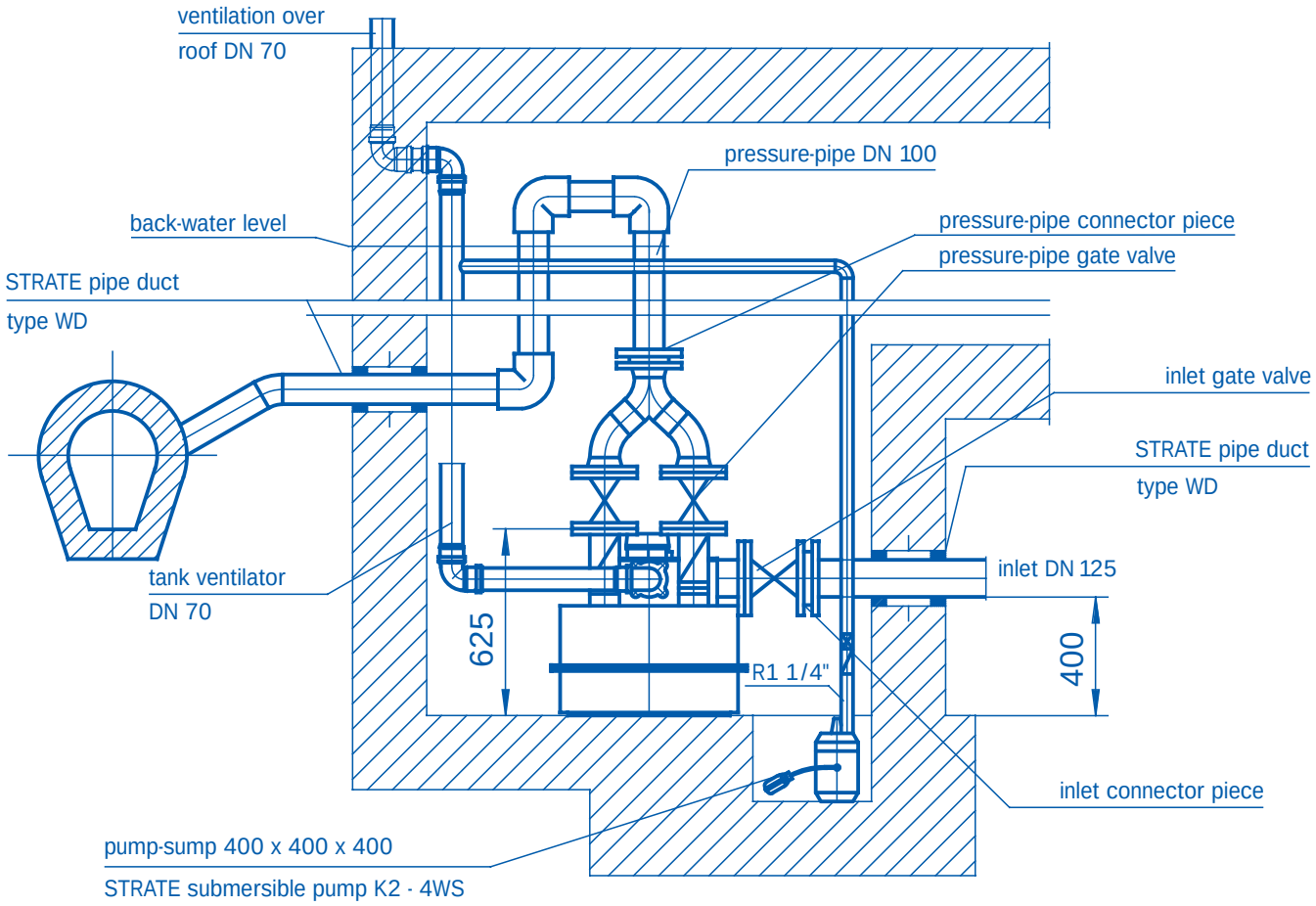

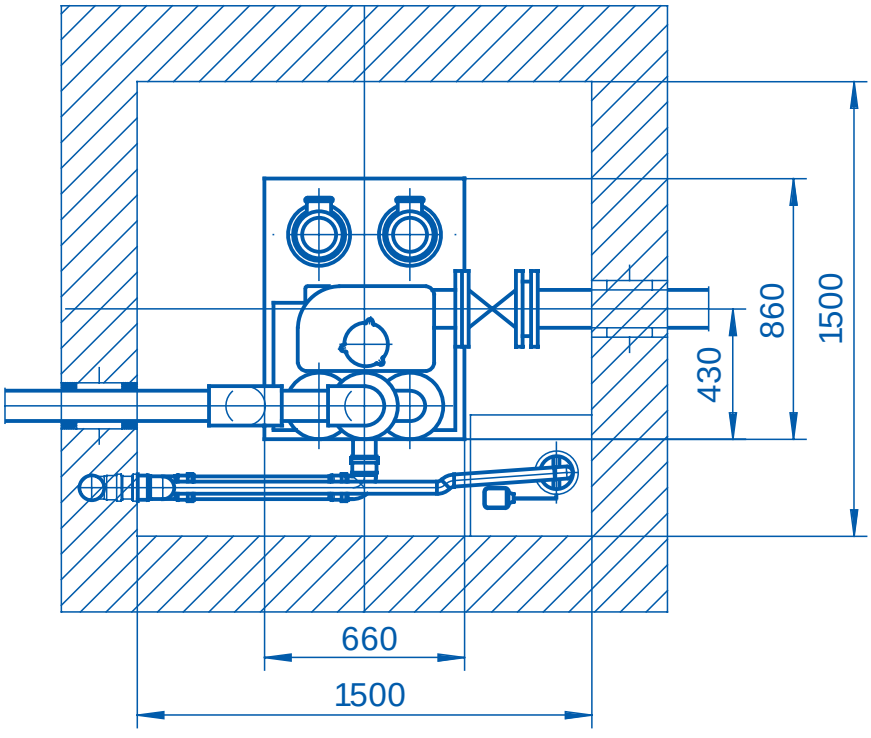

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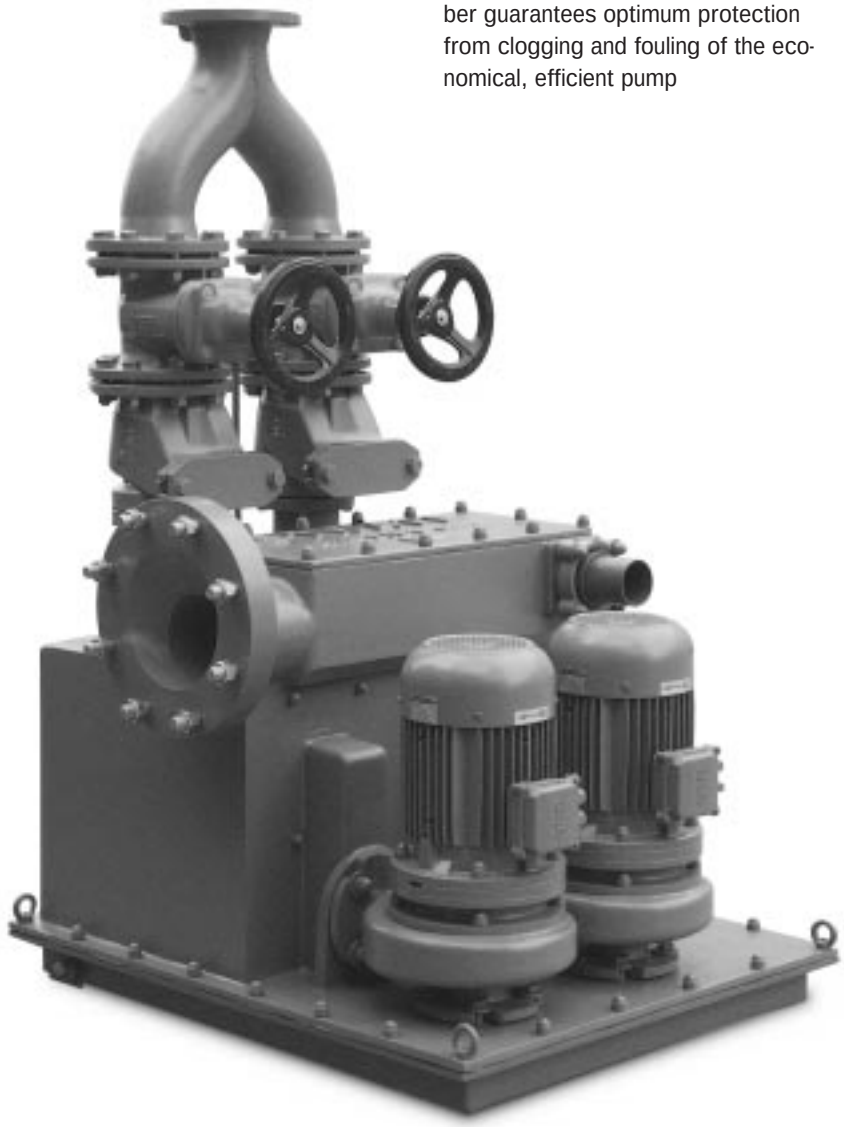
AWALIFT 0/2

The AWALIFT double station with the STRATE-system

The STRATE AWALIFT 0/2 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a three-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- the stable metal construction allows an almost silent operation
- once installed the gas- and odour-tight STRATE AWALIFT 0/2 prevents problems in the living area
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head



Pictures inclusive accessories.

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AWALIFT 0/2

Plant capacity: 6 m^3h^{-1} sewage with suspended solids

Inlet height: pipe bottom 550 mm

Tank dimensions: L = 1015 mm, W = 820 mm, H = 535 mm

Tank contents: 205 L

Weight: ca. 320 Kg

Space requirement: 1,50 m x 1,50 m or Ø 1,80 m

Installation opening: 1,00 m x 1,00 m

Inlet connector: Sleeve for plastic pipe DN 125 or flange PN 10 DN 125; optionally flange connector PN 10 DN 150 or DN 200

Pressure-pipe connector: Flange DN 100 - PN 10

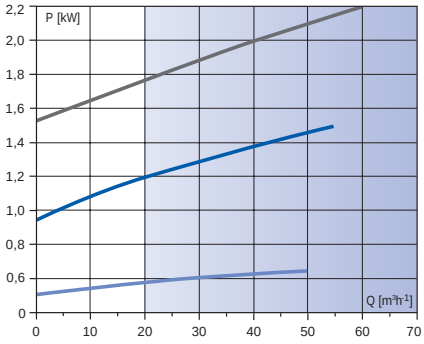
Ventilator: connection piece for plastic drain-pipe DN 65 or DN 70

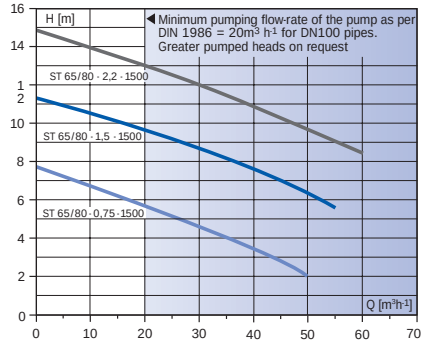
Electrical connector: 400 V, 50 Hz

Protection type: IP 67

Motor output: 0,75 kW-1500 min^{-1}
1,5 kW-1500 min^{-1}
2,2 kW-1500 min^{-1}

Pump curves





Description

The fully automatic, floadable STRATE sewage pumping station AWALIFT 0/2 (PA - 11537) complies with the requirements of DIN 1986. The gas- and water-tight holding tank is in a low-vibration, corrosion-resistant special cast material. The surfaces are given an additional waterproof coating. The non-clogging STRATE-system with its two pumps and the corresponding solids collecting chambers allows a trouble-free, low energy consuming operation. The station leaves the factory ready for operation.

Application

For draining of large buildings, industrial units or single streets and also where one must reckon with a continual sewage flow which lies beneath the back-water level and which cannot be drained away by a natural fall. Generally the top of the street is taken as the back-water level. Also even where this precaution is not necessary the fitting of a sewage pumping station will avoid any possibility of back-water damage. The pressure-pipe must be installed with a loop above the back-water level. Any deviations from this requirement will need the approval of the appropriate authorities. Where space in the building is limited or for installation in the open the STRATE AWALIFTSCHACHT is an economical and reliable means of accommodating the sewage pumping station.

Delivery

The STRATE sewage pumping station AWALIFT 0/2 consists of:

- Tank with double solids collecting-chamber system
- Choice of 2 centrifugal pumps ST 65/80
- 2 Non-return valves AWASTOP DN 100 K
- Contact-maker unit with alarm connection
- Switch-gear unit IP 54
- Split pipe DN 100

Options

- Inlet connector piece DN 125 (DN 150 or DN 200)
- Inlet gate valve DN 125 (DN 150 or DN 200)
- Pressure-pipe connector piece DN 100
- Pressure-pipe gate valve DN 100
- Alarm unit with Ni-Cd battery, mains-independent
- Hand diaphragm pump

Special accessories available on request.

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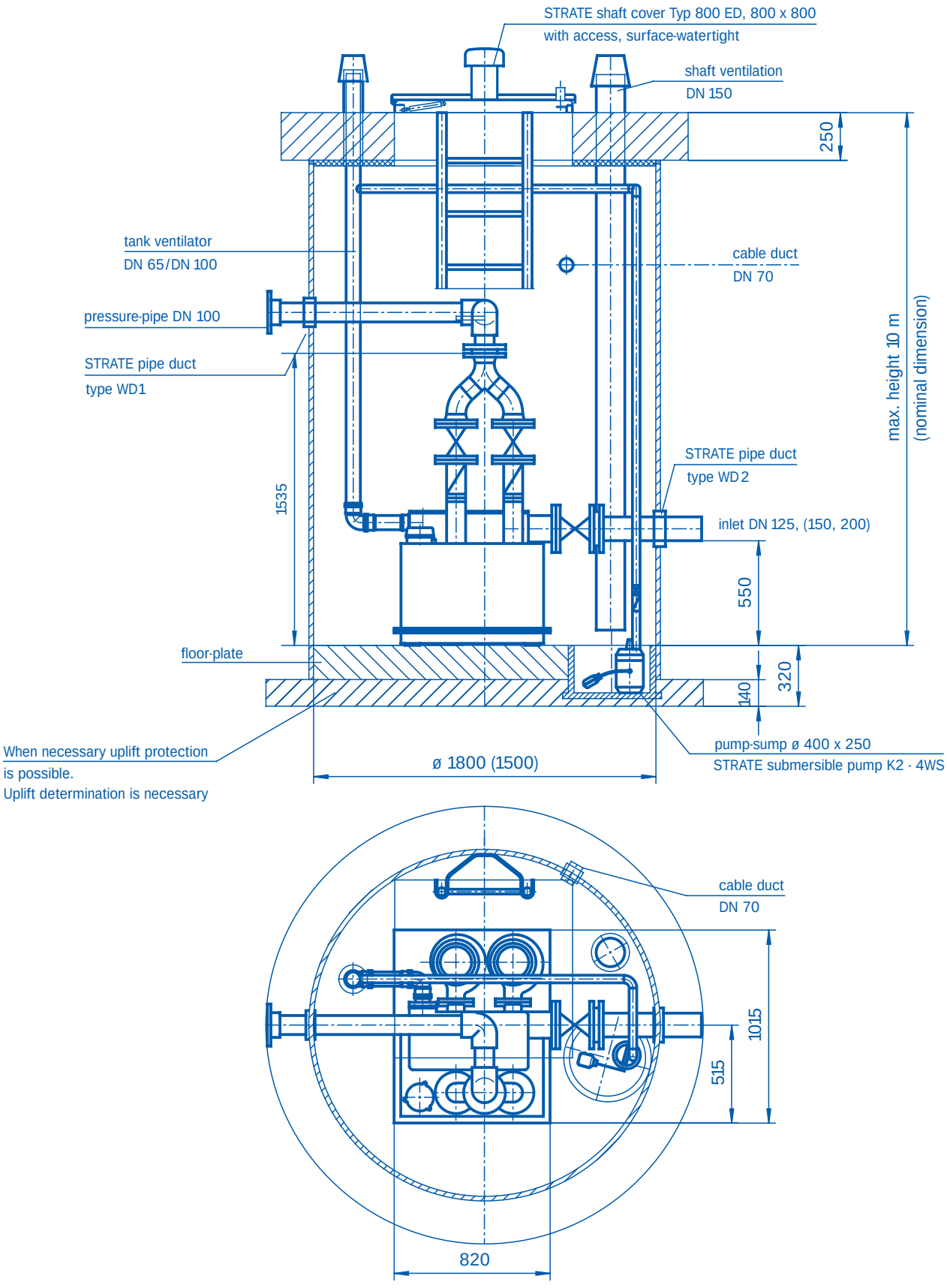

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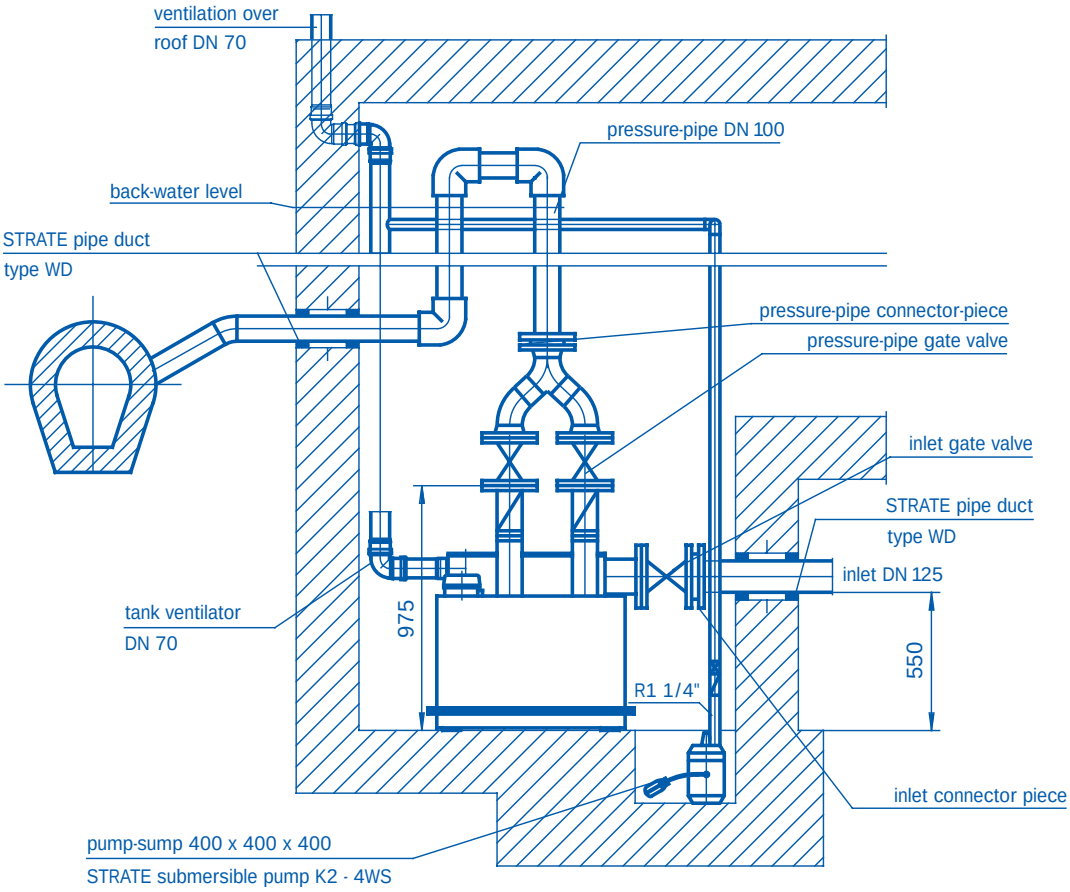

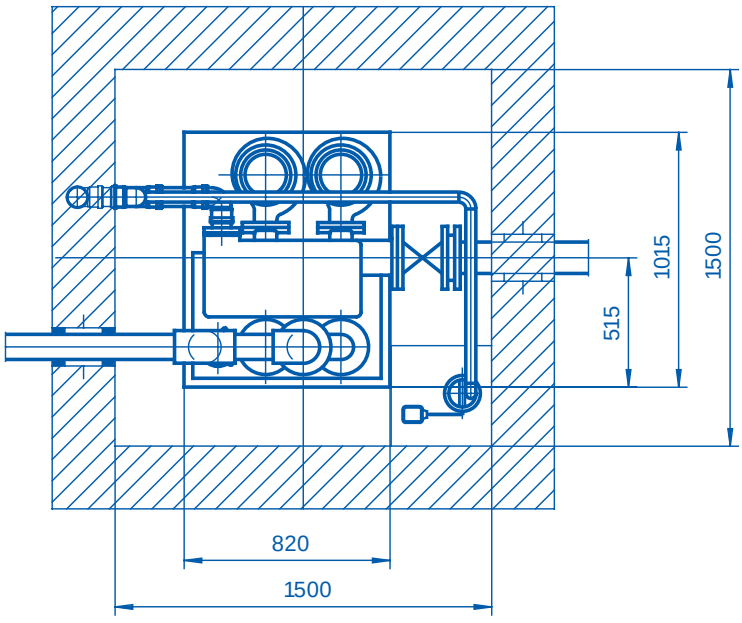

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Scale: ⁄	**Installation proposal inside the building**

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AWALIFT 1/2

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 1/2 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a three-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- the stable metal construction allows an almost silent operation
- once installed the gas- and odour-tight STRATE AWALIFT 1/2 prevents problems in the making area
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head

Pictures inclusive accessories.

STRATE

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AWALIFT 1/2

Plant capacity: 15 m^3h^{-1} sewage with suspended solids

Inlet height: pipe bottom 750 mm with DN 150, 700 mm with DN 200

Tank dimensions: L = 1400 mm, W = 800 mm, H = 1000 mm

Tank contents: 430 L

Weight: ca. 520 Kg

Space requirement: 2,00 m x 2,00 m or Ø 2,00 m

Installation opening: 1,50 m x 1,00 m

Inlet connector: Flange DN 150 PN 10 or DN 200 PN 10

Pressure-pipe connector: Flange DN 100 - PN 10

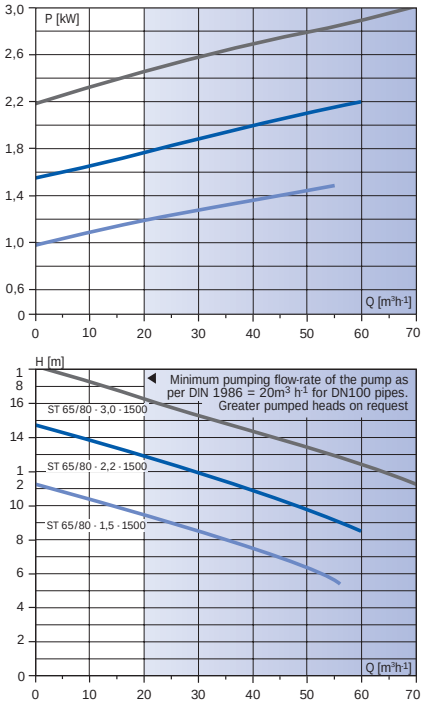
Ventilator: connection piece for plastic drain-pipe DN 65 or DN 70

Electrical connector: 400 V, 50 Hz

Protection type: IP 67

Motor output: 0,75 kW-1500 min^{-1}
1,5 kW-1500 min^{-1}
2,2 kW-1500 min^{-1}

Pump curves



Description

The fully automatic, floadable STRATE sewage pumping station AWALIFT 1/2 (PA - 11686) complies with the requirements of DIN 1986. The gas- and water-tight holding tank is in a low-vibration, corrosion-resistant special cast material. The surfaces are given an additional waterproof coating. The non-clogging STRATE-system with its two pumps and the corresponding solids collecting chambers allows a trouble-free, low energy consuming operation. The station leaves the factory ready for operation.

Application

For draining of large buildings, industrial units or small districts and also where one must reckon with a continual sewage flow which lies beneath the back-water level and which cannot be drained away by a natural fall. Generally the top of the street is taken as the back-water level. Also even where this precaution is not necessary the fitting of a sewage pumping station will avoid any possibility of back-water damage. The pressure-pipe must be installed with a loop above the back-water level. Any deviations from this requirement will need the approval of the appropriate authorities. Where space in the building is limited or for installation in the open the STRATE AWALIFTSCHACHT is an economical and reliable means of accommodating the sewage pumping station.

Delivery

The STRATE sewage pumping station AWALIFT 1/2 consists of:

- Tank with double solids collecting-chamber system
- Choice of 2 centrifugal pumps ST 65/80
- 2 Non-return valves AWASTOP DN 100 K
- Contact-maker unit with alarm connection
- Switch-gear unit IP 54
- Split pipe DN 100

Options

- Inlet connector piece DN 150 or DN 200
- Inlet gate valve DN 150 or DN 200
- Pressure-pipe connector piece DN 100
- Pressure-pipe gate valve DN 100
- Alarm unit with Ni-Cd battery, mains-independent
- Hand diaphragm pump

Special accessories available on request.

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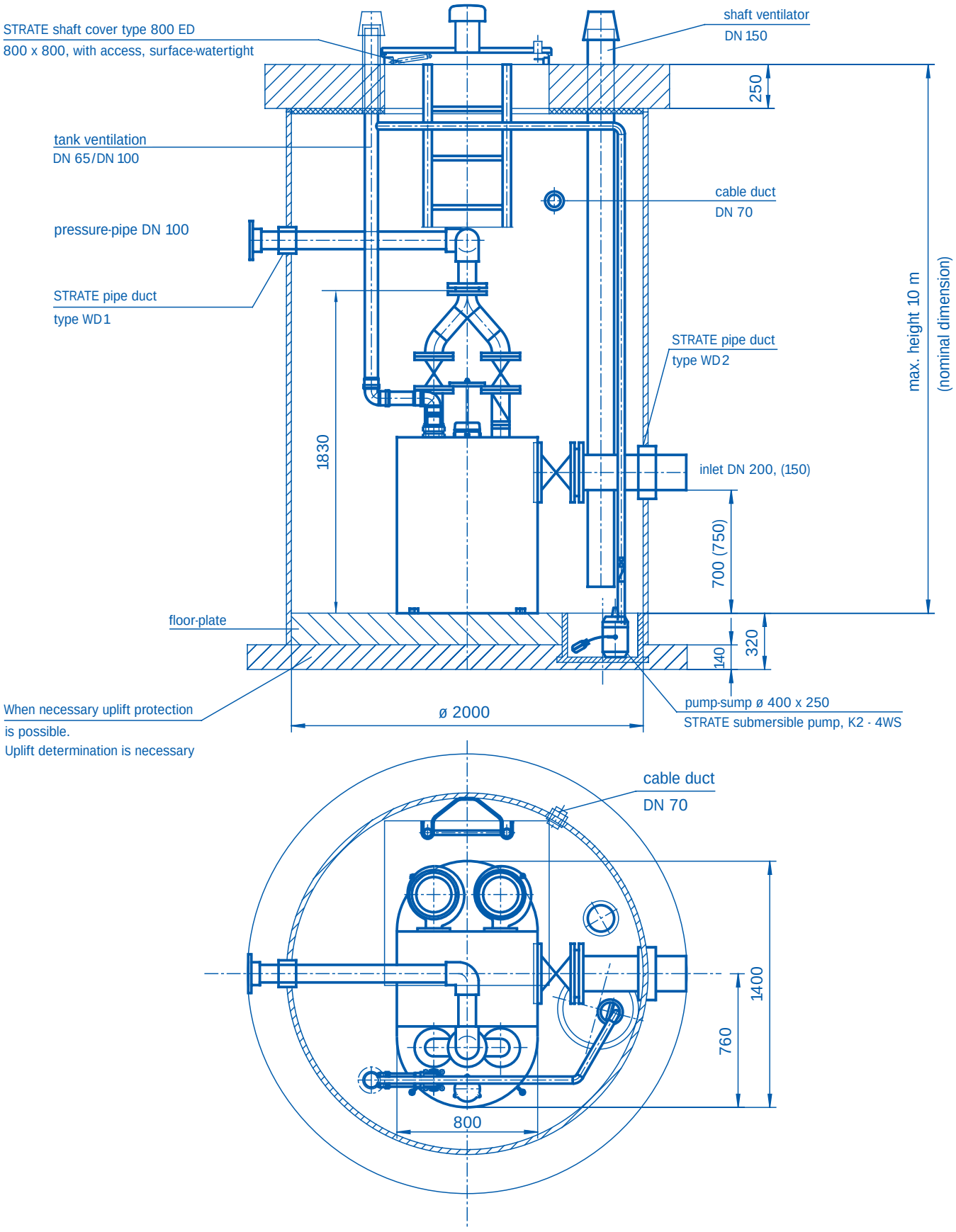

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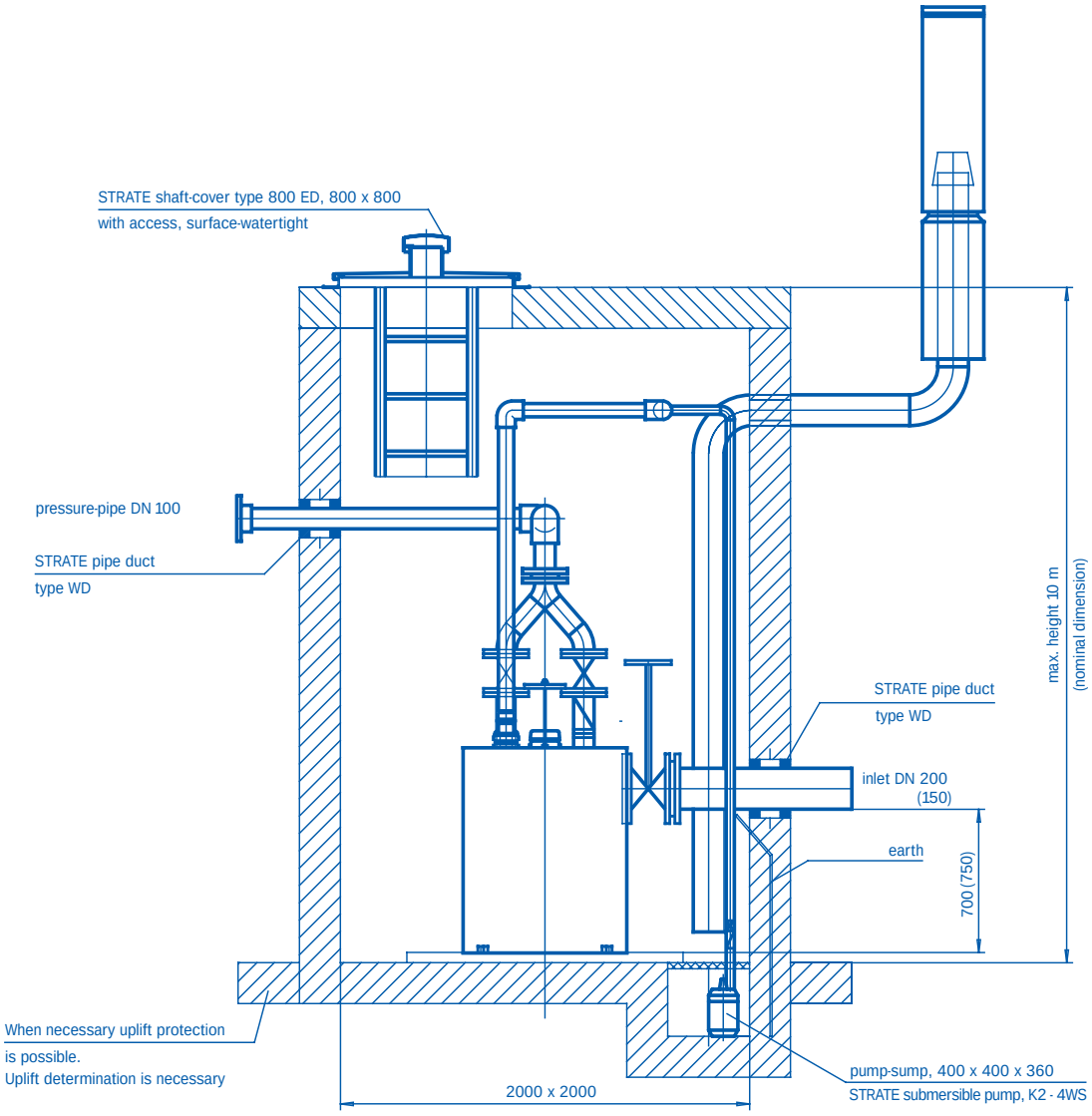

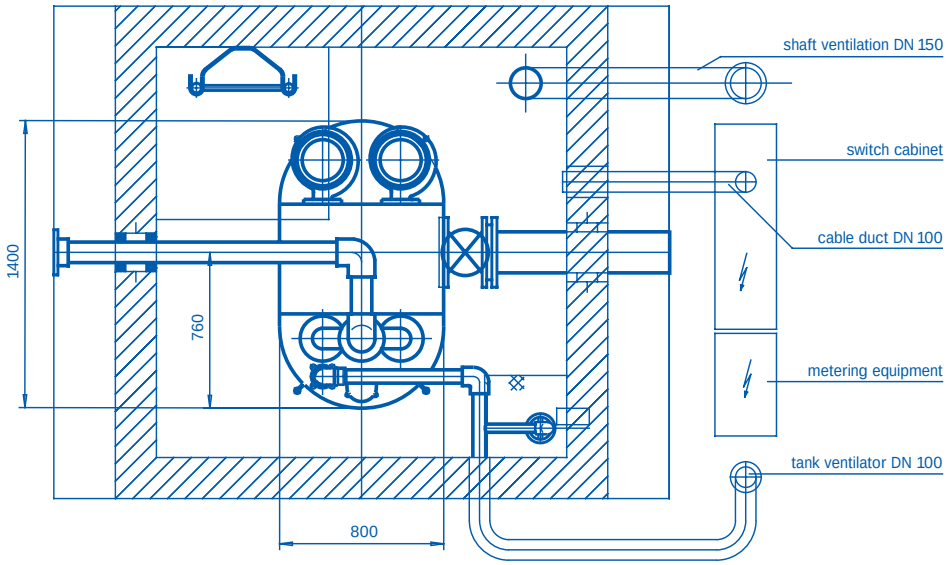

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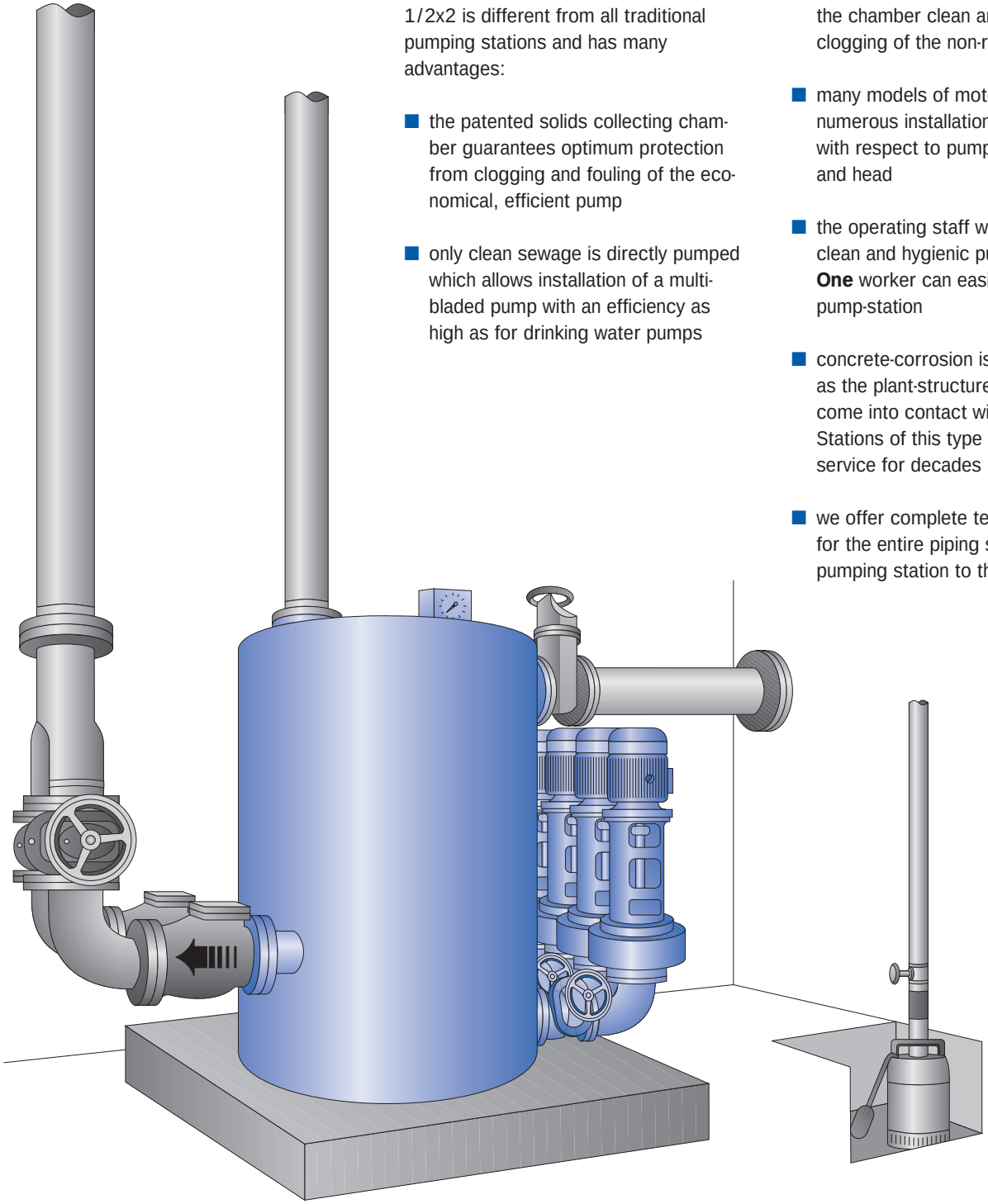
STRATE

AWALIFT 1/2x2

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 1/2x2 is for installation in circumstances where a limited sewage flow is to be pumped to a great head. The STRATE AWALIFT 1/2x2 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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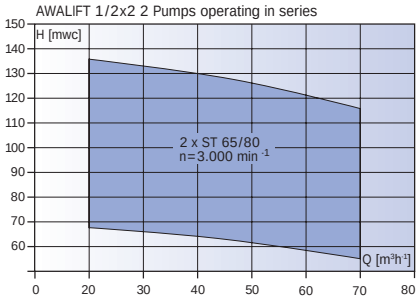
AWALIFT 1/2x2

Plant capacity:	15 m^3h^{-1} raw sewage, 460 P.E.
Free through-flow:	100 mm
Pumped head:	up to 150 m wc
Inlet height:	1000 mm
Tank dimensions:	Ø 1000 mm x 1250 mm
Tank contents:	580 L
Weight:	ca. 650 Kg
Space requirement:	2,50 m x 3,00 m
Installation opening:	1,20 m x 1,40 m
Inlet connector:	DN 200
Pressure-pipe connector:	DN 100
Ventilator:	DN 65
Electrical connection:	As per requirements

Pump curves



Other characteristics on request.
The optional pumps are the ST 65/80. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 1/2x2 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 100 mm with a high efficiency and a pumped head of up to 150 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials, and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges. Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 460 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system

Delivery

The STRATE sewage pumping station AWALIFT 1/2x2 consists of:

- Tank with double solids collecting-chamber system
- 2 x 2 centrifugal pumps ST 65/80
- Non-return valves and gate valve
- Pipework up to 0,5 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection (Power generating companies)

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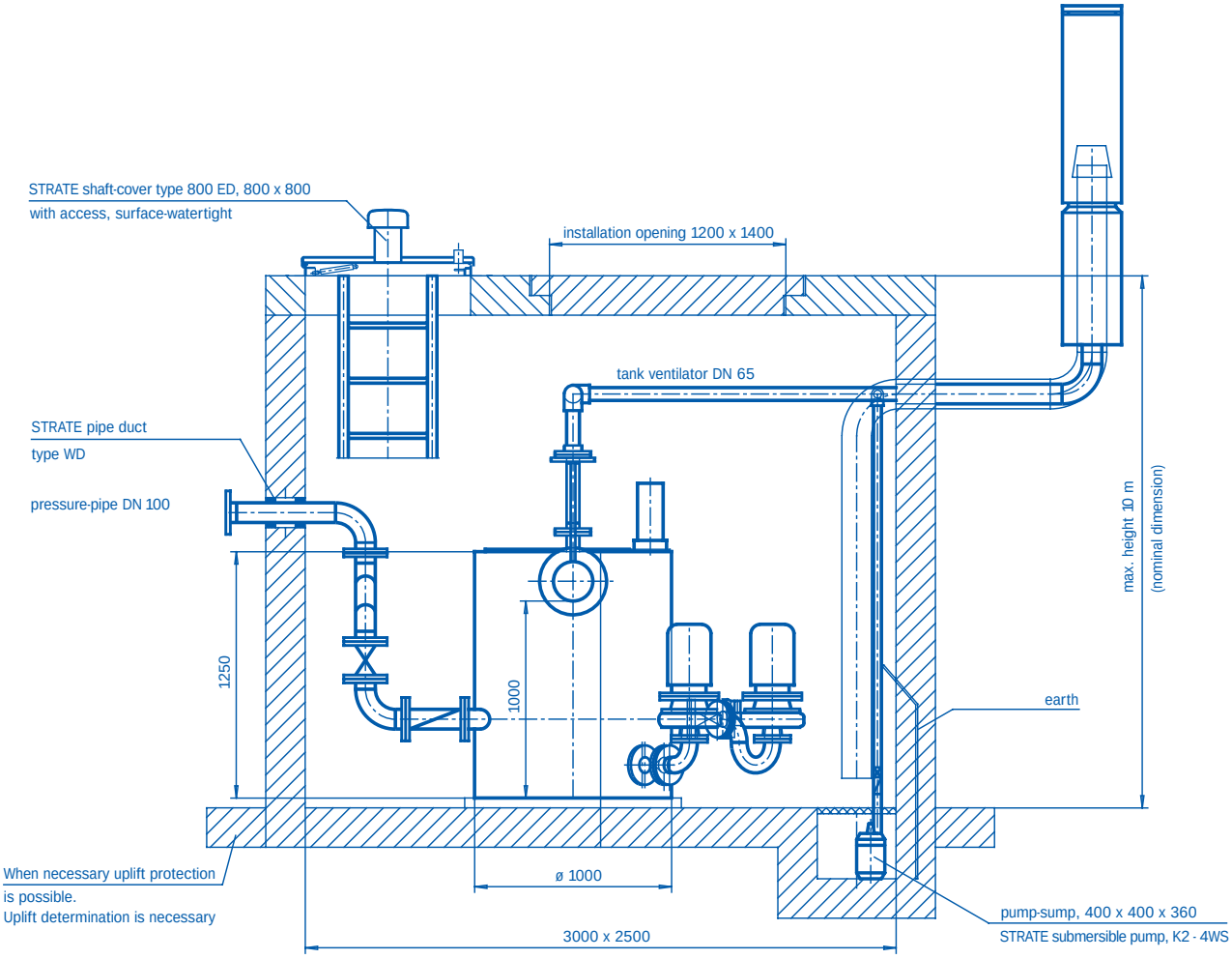

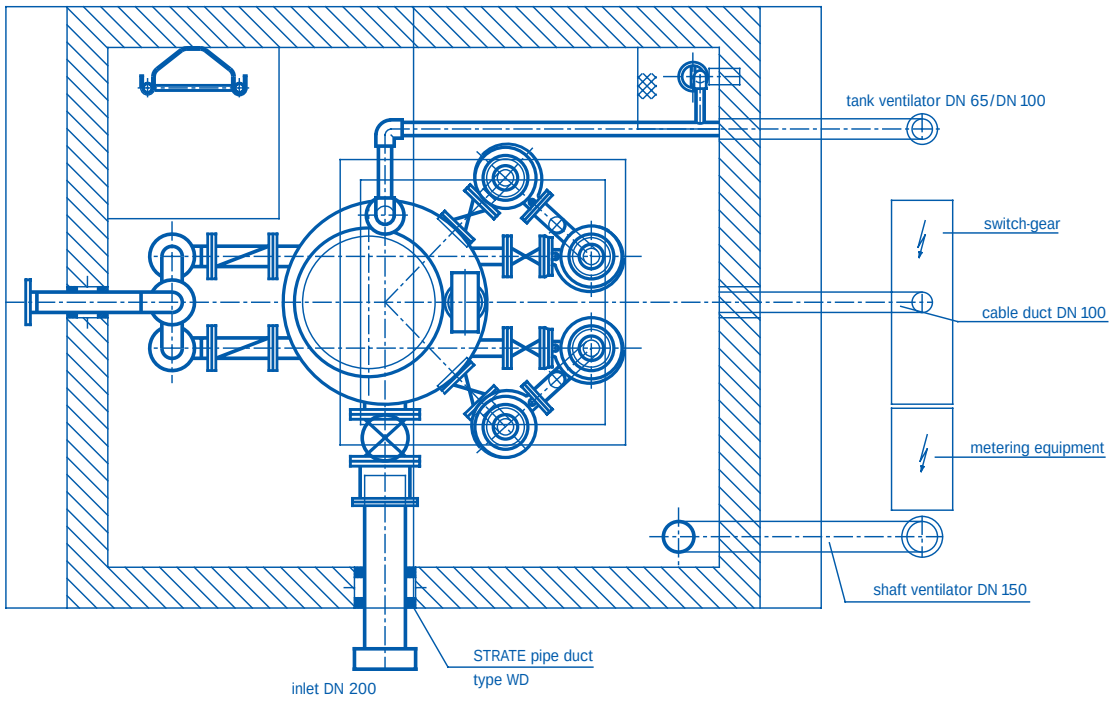

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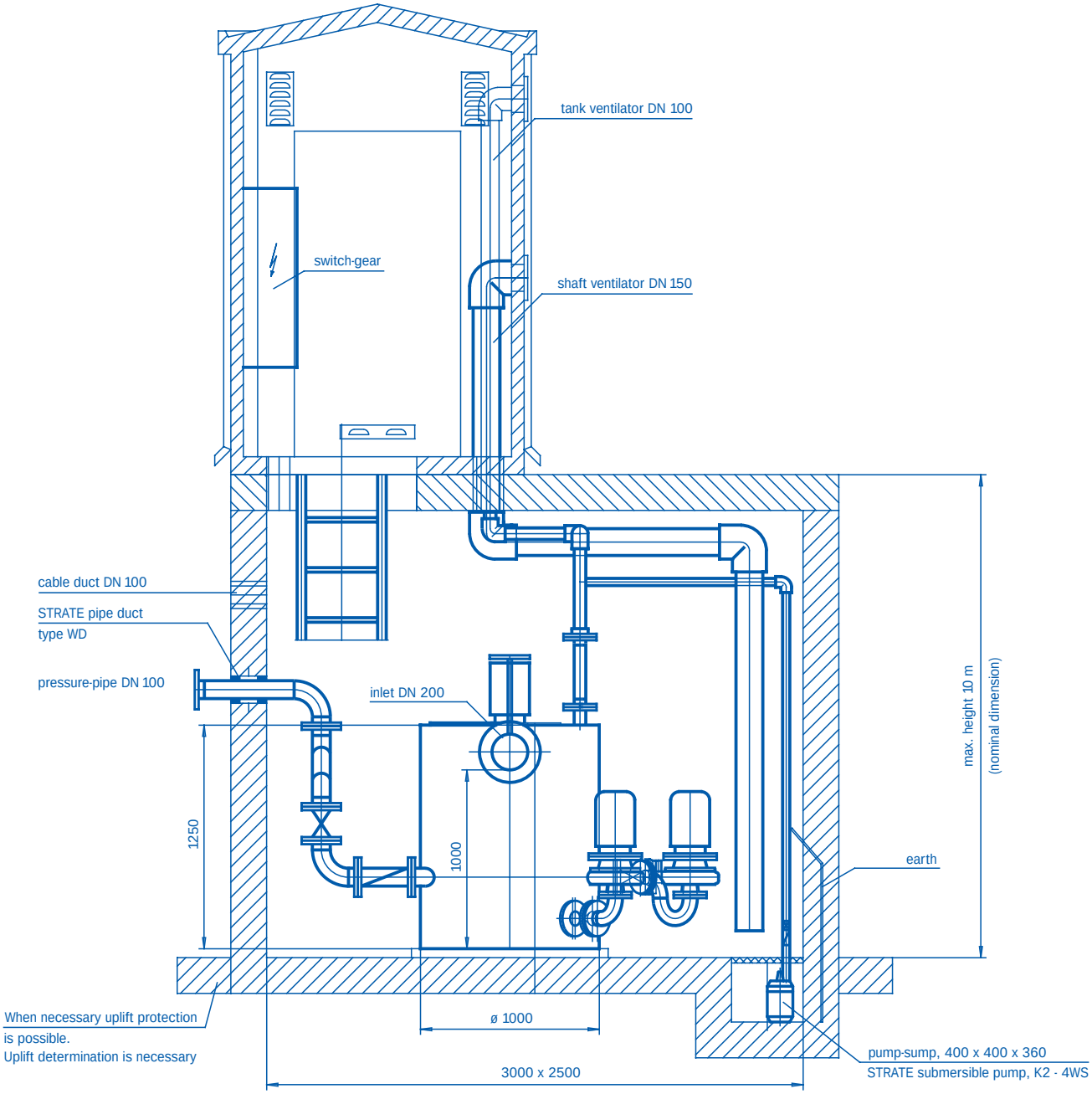

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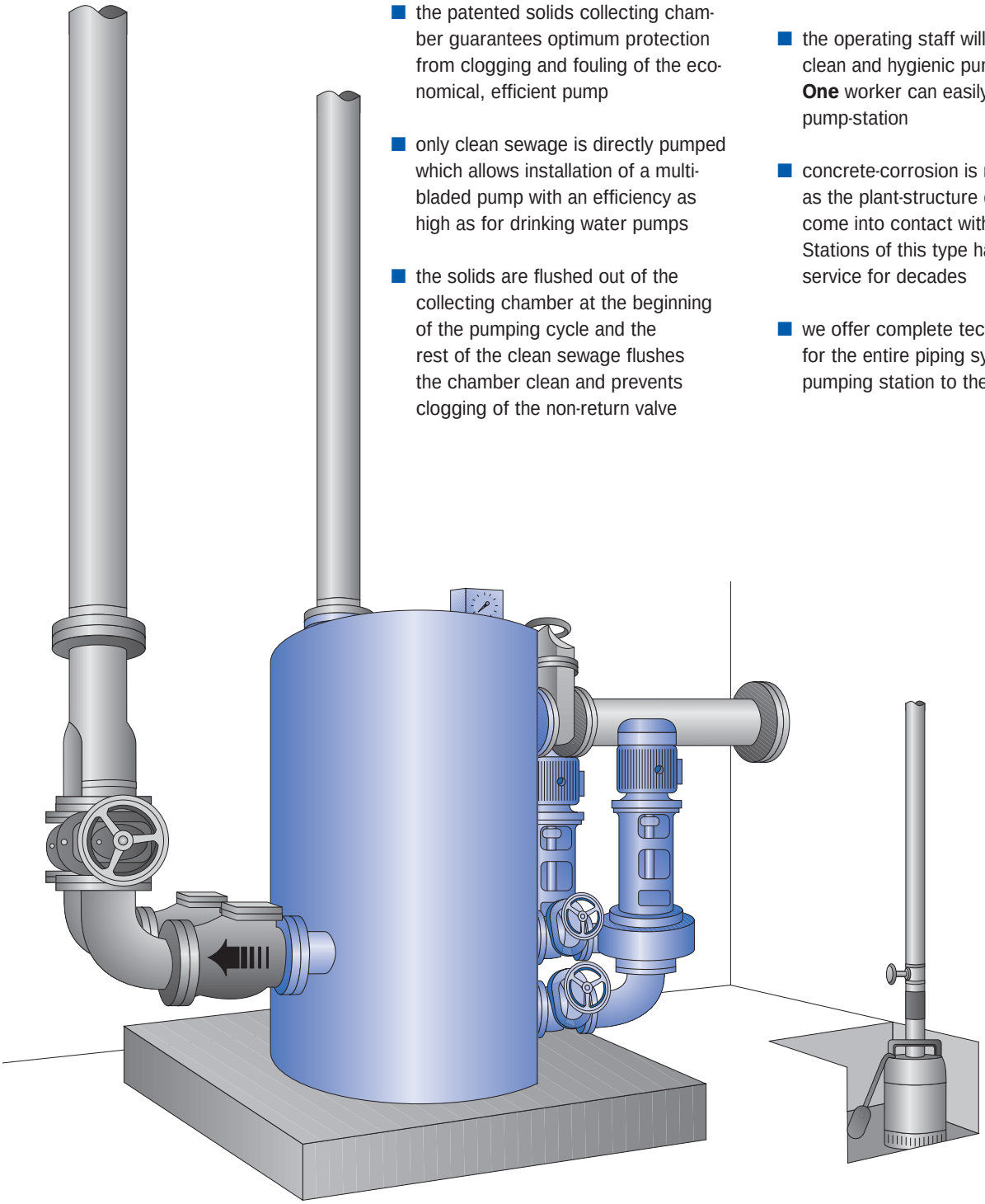
STRATE

AWALIFT 2/2 flat

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 2/2 flat is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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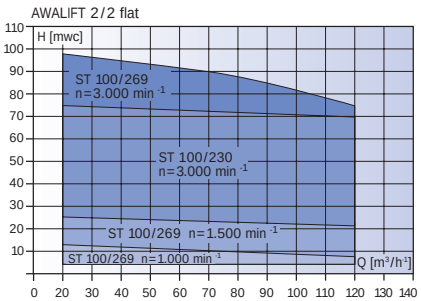
AWALIFT 2/2 flat

Plant capacity:	36 m^3h^{-1} raw sewage, 1700 P.E.
Free through-flow:	100 mm to 125 mm
Pumped head:	up to 96 mwc
Inlet height:	1200 mm
Tank dimensions:	Ø 1250 mm x 1500 mm
Tank contents:	0,85 m^3
Weight:	800 Kg
Space requirement:	2,50 m x 2,50 m
Installation opening:	1,50 m x 1,10 m
Inlet connector:	DN 200 - DN 250
Pressure-pipe connector:	DN 100 - DN 150
Ventilator:	DN 100
Electrical connection:	As per requirements

Pump curves



Other characteristics on request. The optional pumps are the ST 100/230 and ST 100/269. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 2/2 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 125 mm with a high efficiency and a pumped-head of up to 96 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges. Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 1700 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

The STRATE sewage pumping station AWALIFT 2/2 flat consists of:

- Tank with double solids collecting-chamber system
- 2 x 2 centrifugal pumps ST 100
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

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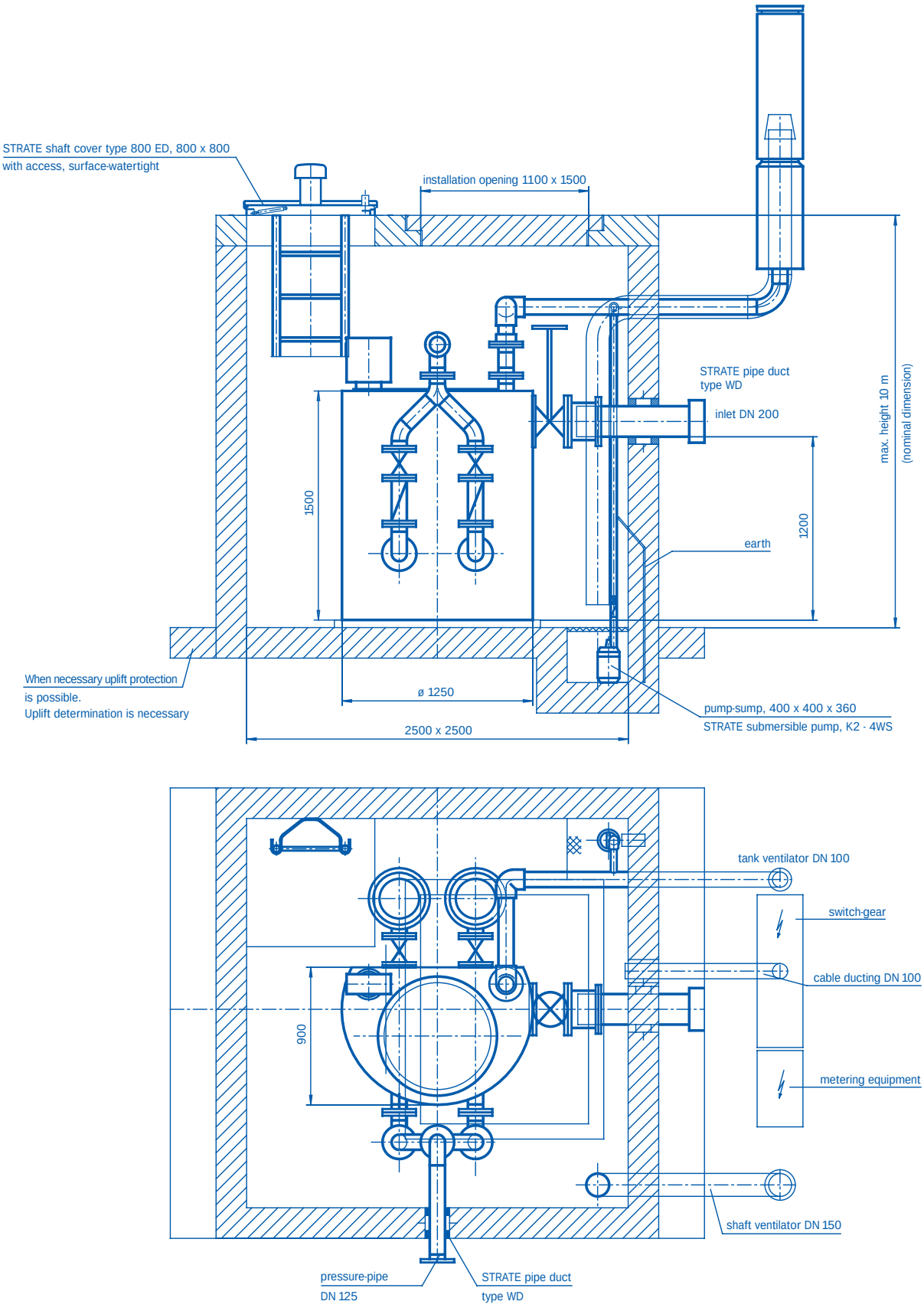

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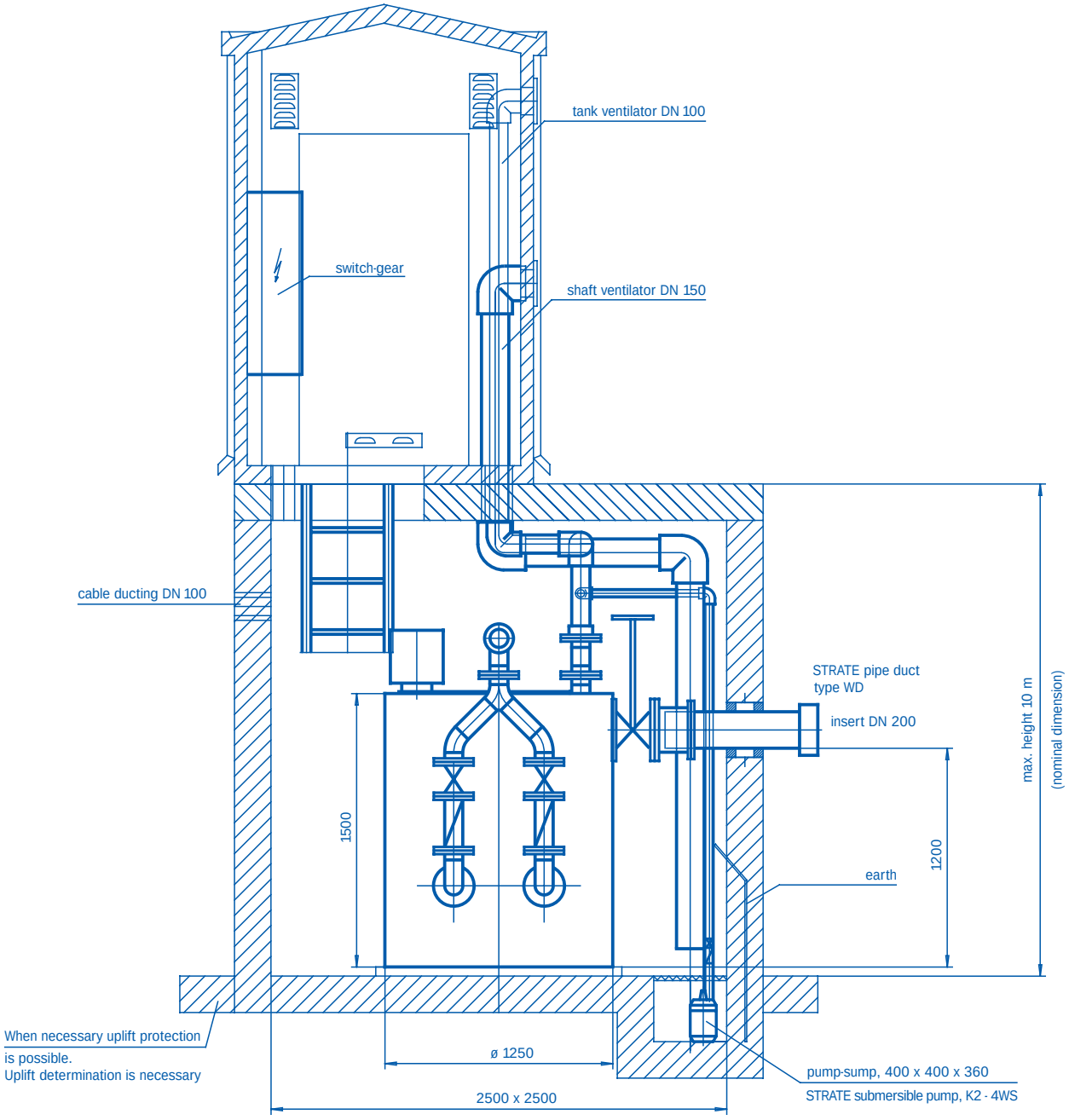

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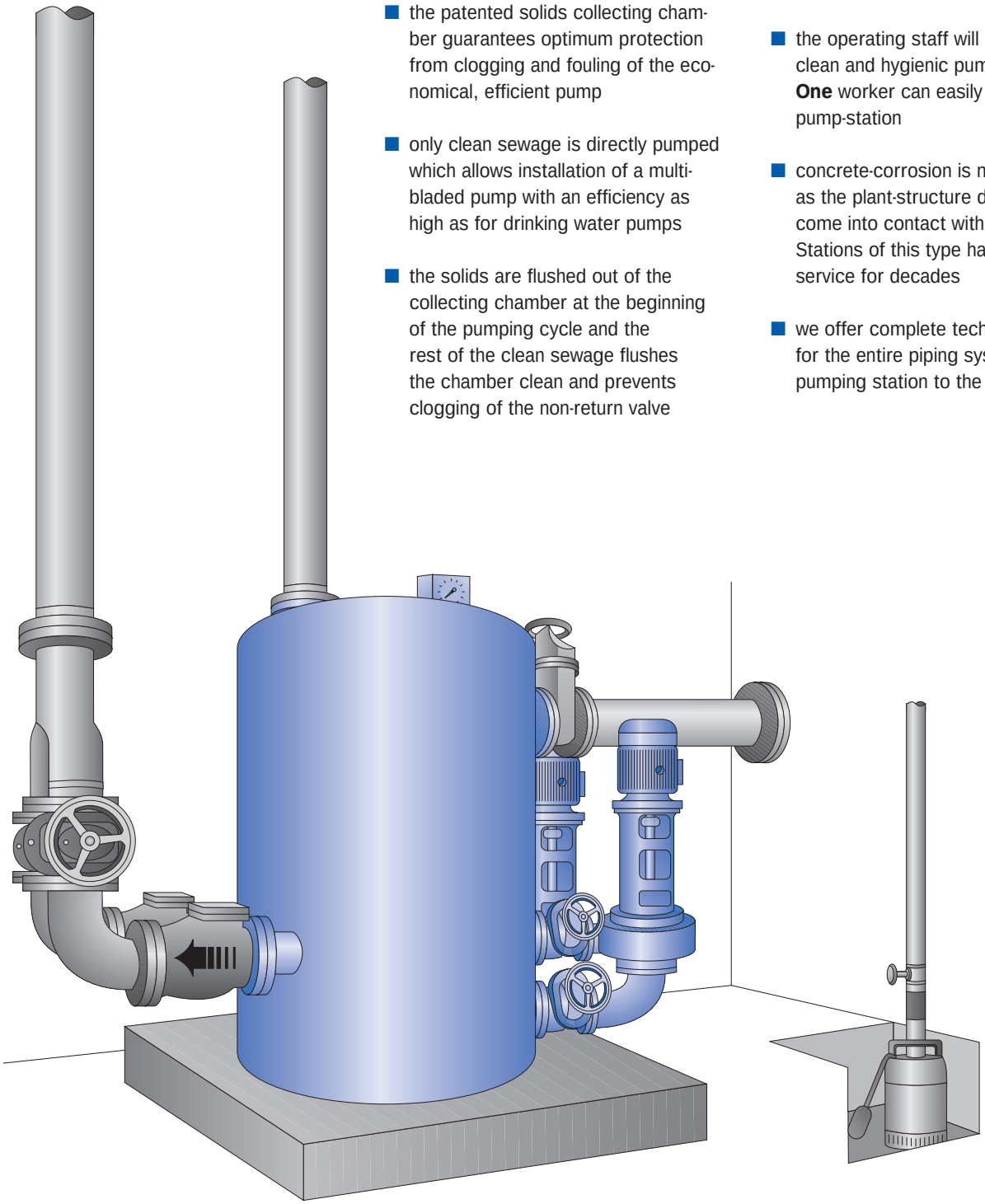
STRATE

AWALIFT 2/2 round

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 2/2 round is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



STRATE

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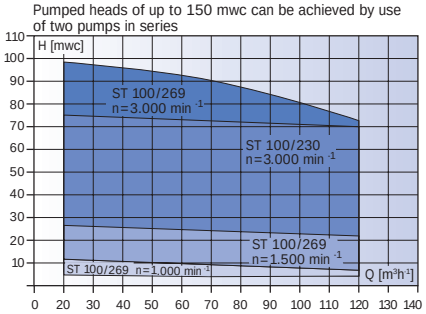
AWALIFT 2/2 round

Plant capacity:	60 m^3h^{-1} raw sewage, 2800 P.E.
Free through-flow:	100 mm to 125 mm
Pumped head:	up to 150 mwc
Inlet height:	1200 mm
Tank dimensions:	Ø 1250 mm x 1500 mm
Tank contents:	1,1 m^3
Weight:	ca. 800 Kg
Space requirement:	3,50 m x 2,50 m
Installation opening:	1,50 m x 1,50 m
Inlet connector:	DN 200 - DN 250
Pressure-pipe connector:	DN 100 - DN 150
Ventilator:	DN 100
Electrical connection:	As per requirements

Pump curves



Other characteristics on request. The optional pumps are the ST 100/230 and ST 100/269.
The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 2/2 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 125 mm with a high efficiency and a pumped-head of up to 150 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges. Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 2800 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

The STRATE sewage pumping station AWALIFT 2/2 round consists of:

- Tank with double solids collecting-chamber system
- 2 centrifugal pumps ST 100
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

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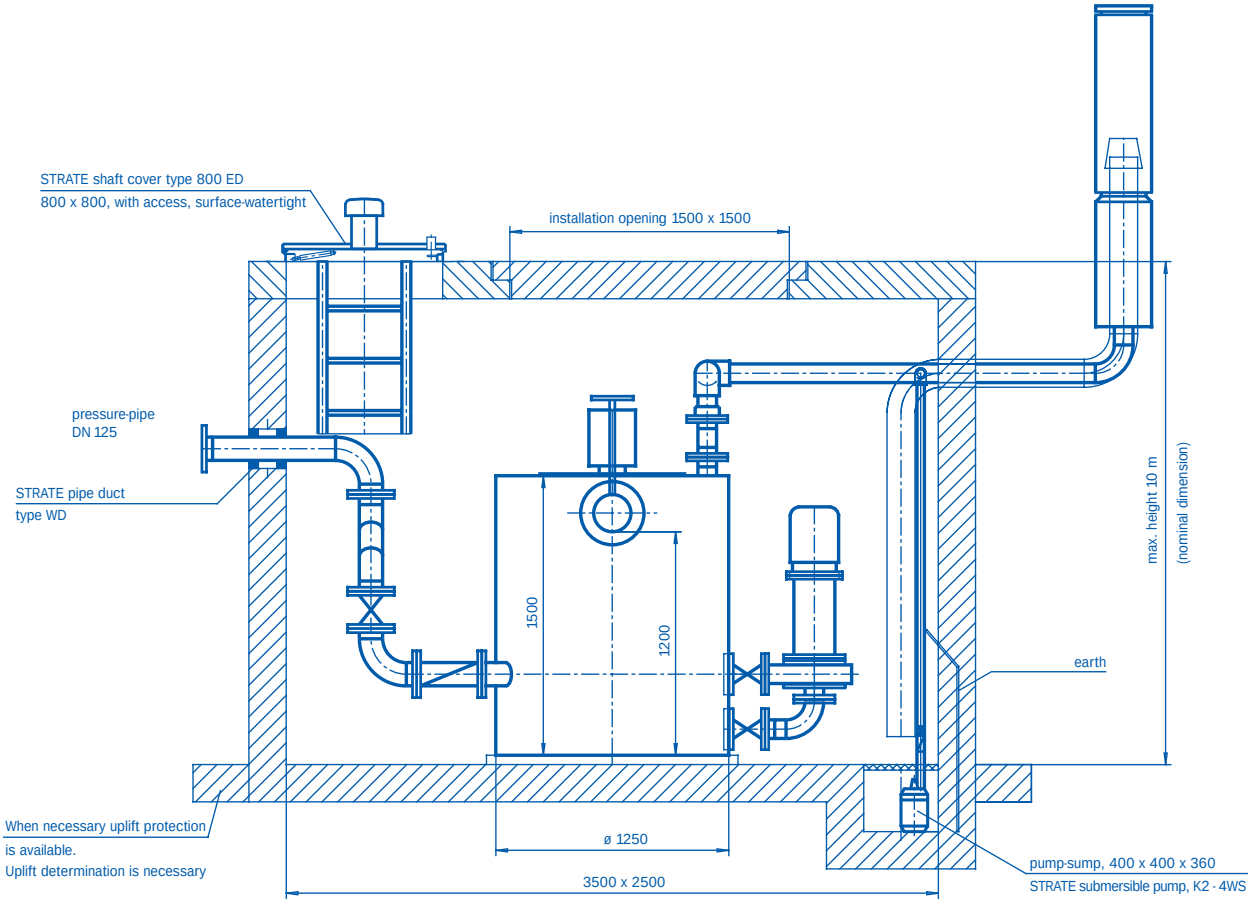

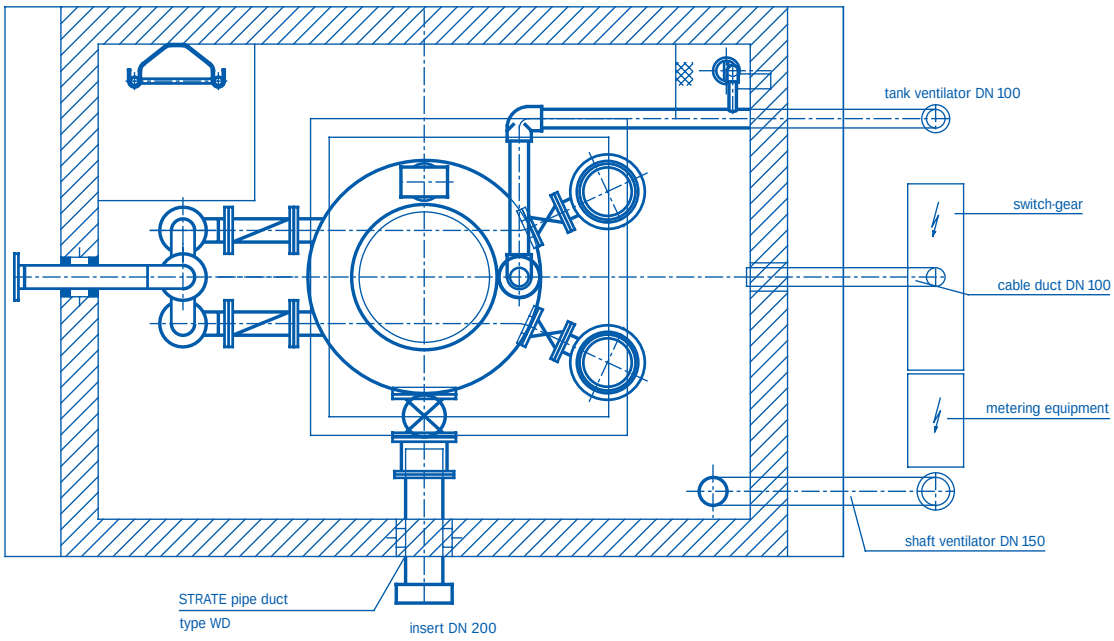

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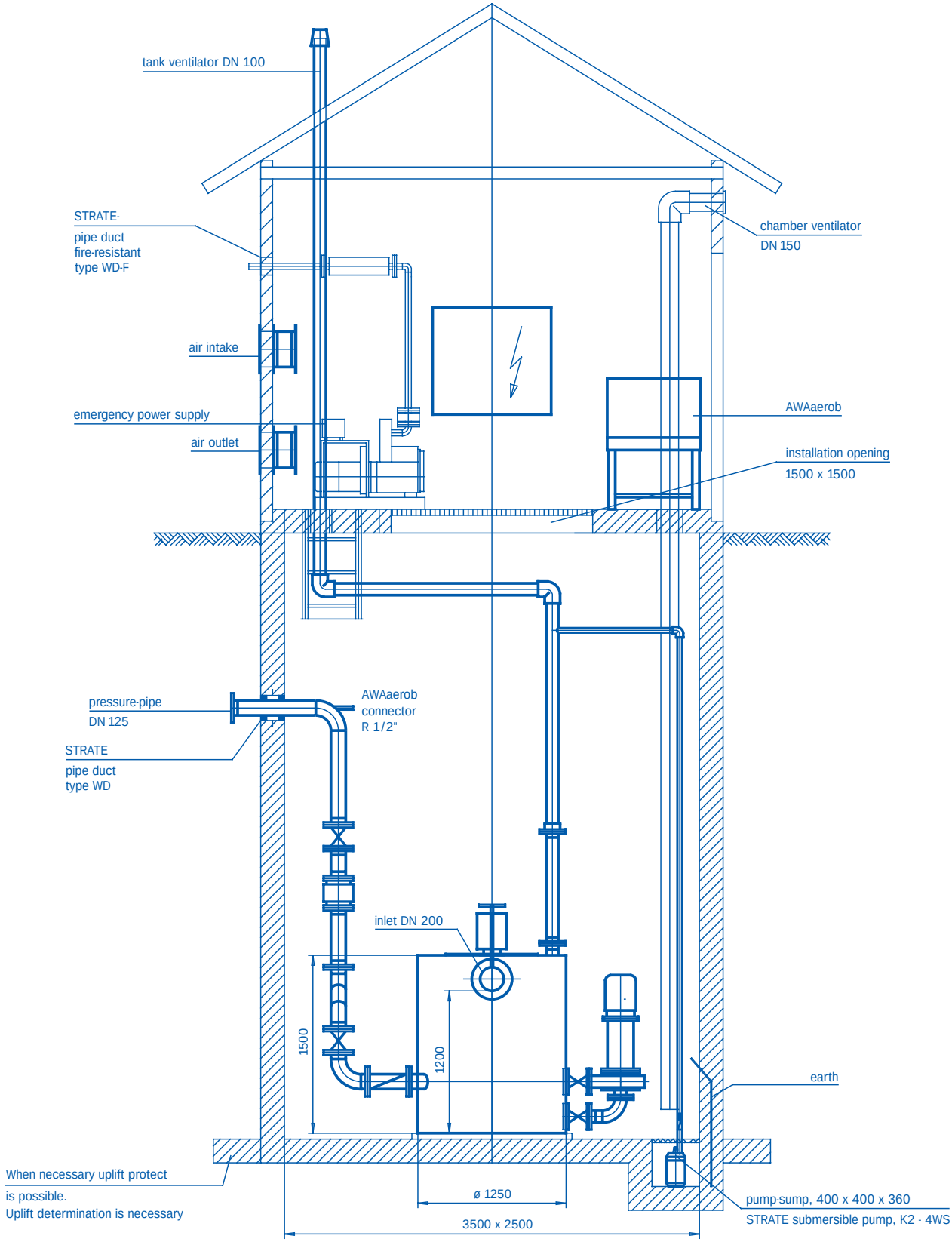

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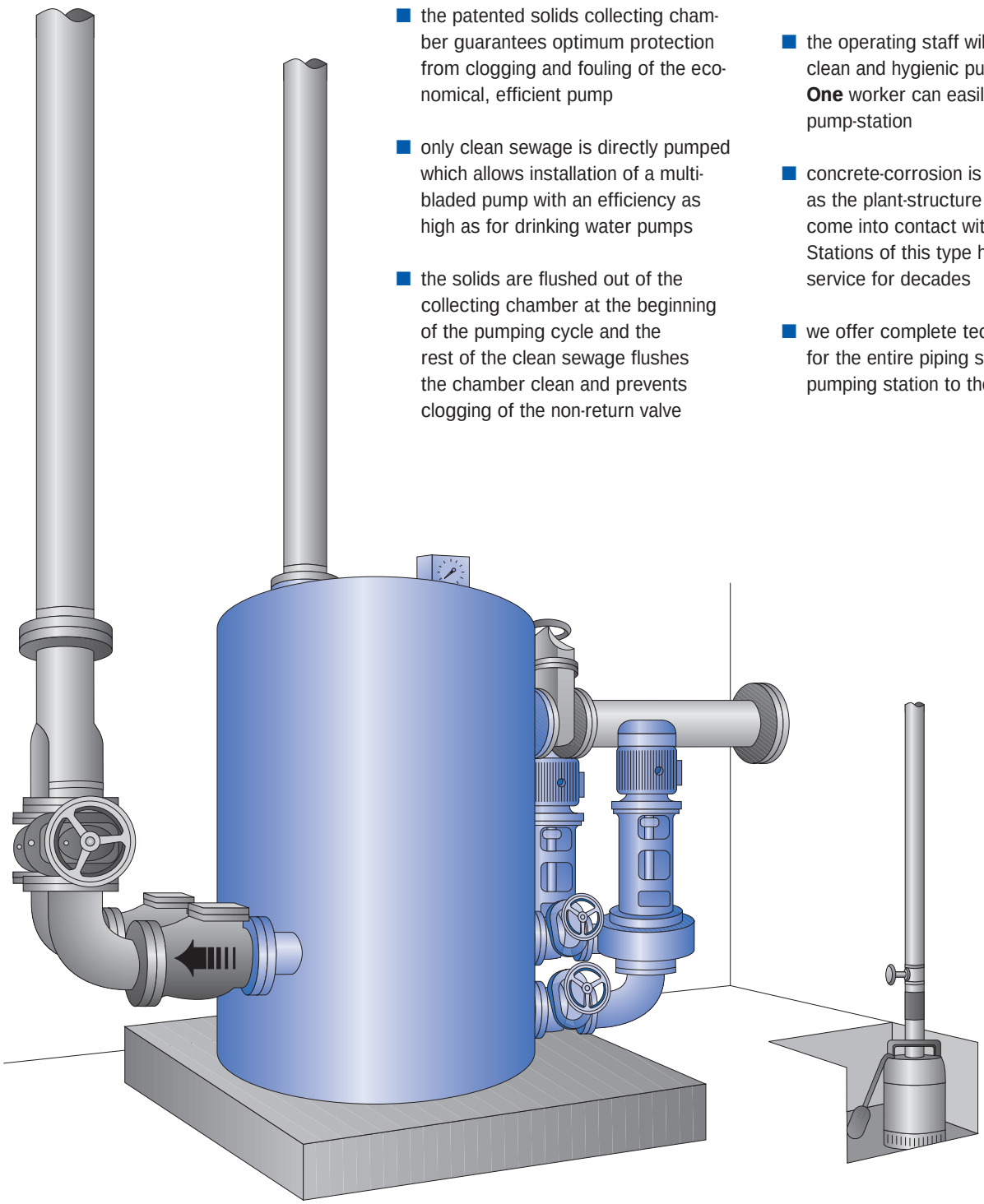
STRATE

AWALIFT 3/2

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 3/2 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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AWALIFT 3/2

Plant capacity:	80 m^3h^{-1} raw sewage, 3700 P.E.
Free through-flow:	100 to 125 mm
Pumped head:	up to 150 mwc
Inlet height:	1600 mm
Tank dimensions:	Ø 1400 mm x 2000 mm
Tank contents:	2 m^3
Weight:	ca. 1000 Kg
Space requirement:	3,70 m x 3,00 m
Installation opening:	1,70 m x 1,70 m
Inlet connector:	DN 200 - DN 300
Pressure-pipe connector:	DN 125 - DN 150
Ventilator:	DN 100
Electrical connection:	As per requirements

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 3/2 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 125 mm with a high efficiency and a pumped-head of up to 150 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 3700 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

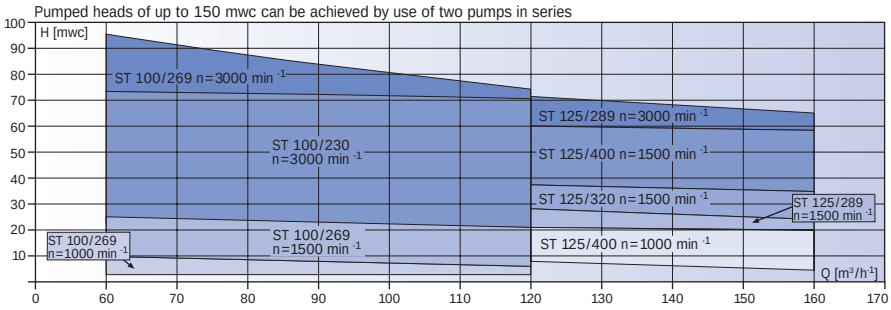
The STRATE sewage pumping station AWALIFT 3/2 consists of:

- Tank with double solids collecting-chamber system
- 2 centrifugal pumps ST 100 or ST 125
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

Pump curves



Other characteristics on request.
The optional pumps are the ST 100 and ST 125. The pump rotors are fitted to suit the individual operating conditions.
Individual pump curves are, thus, dependent upon individual project specifications.

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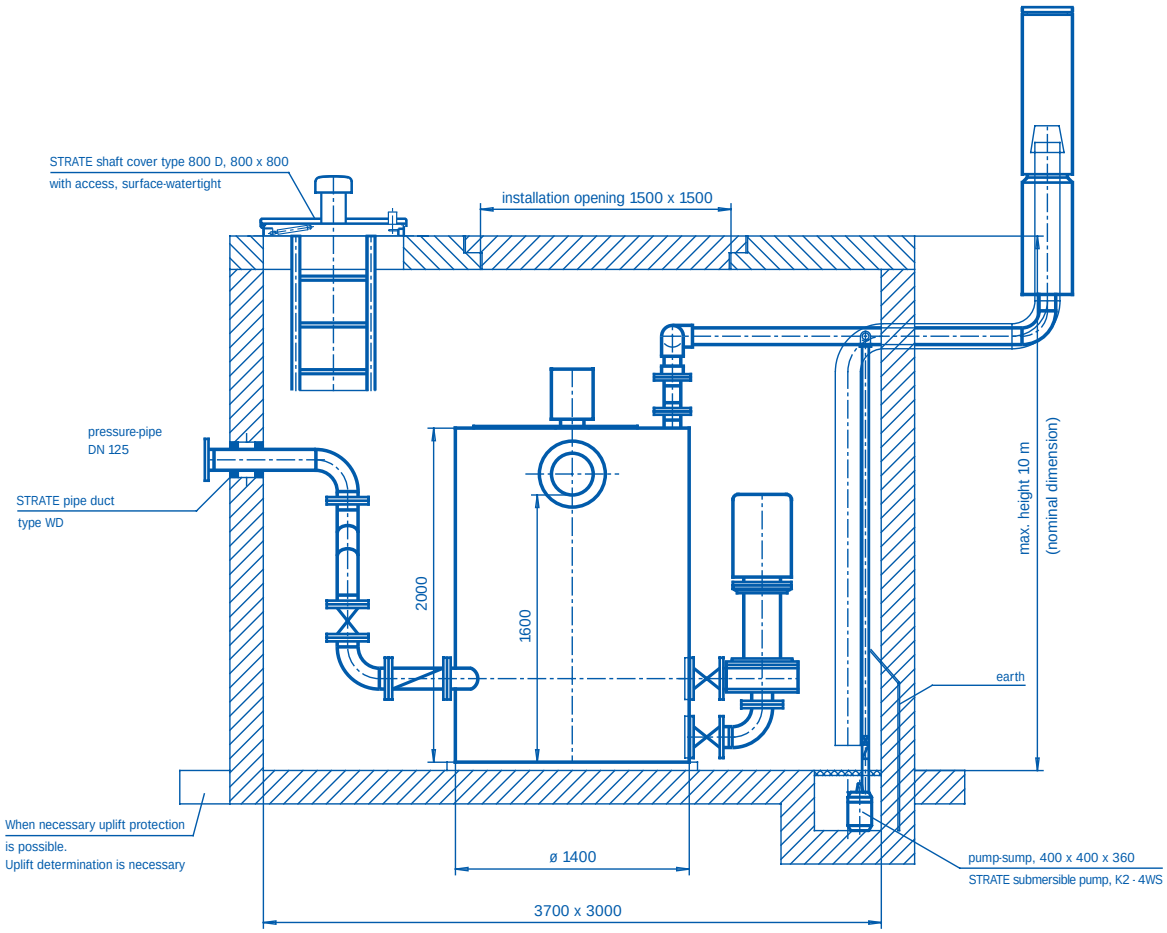

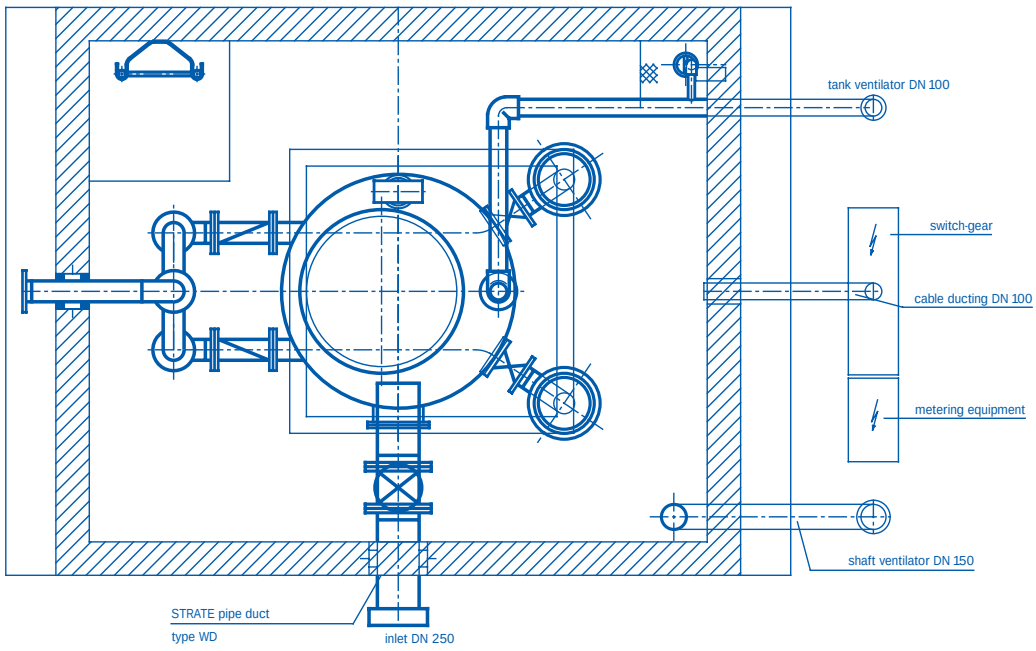

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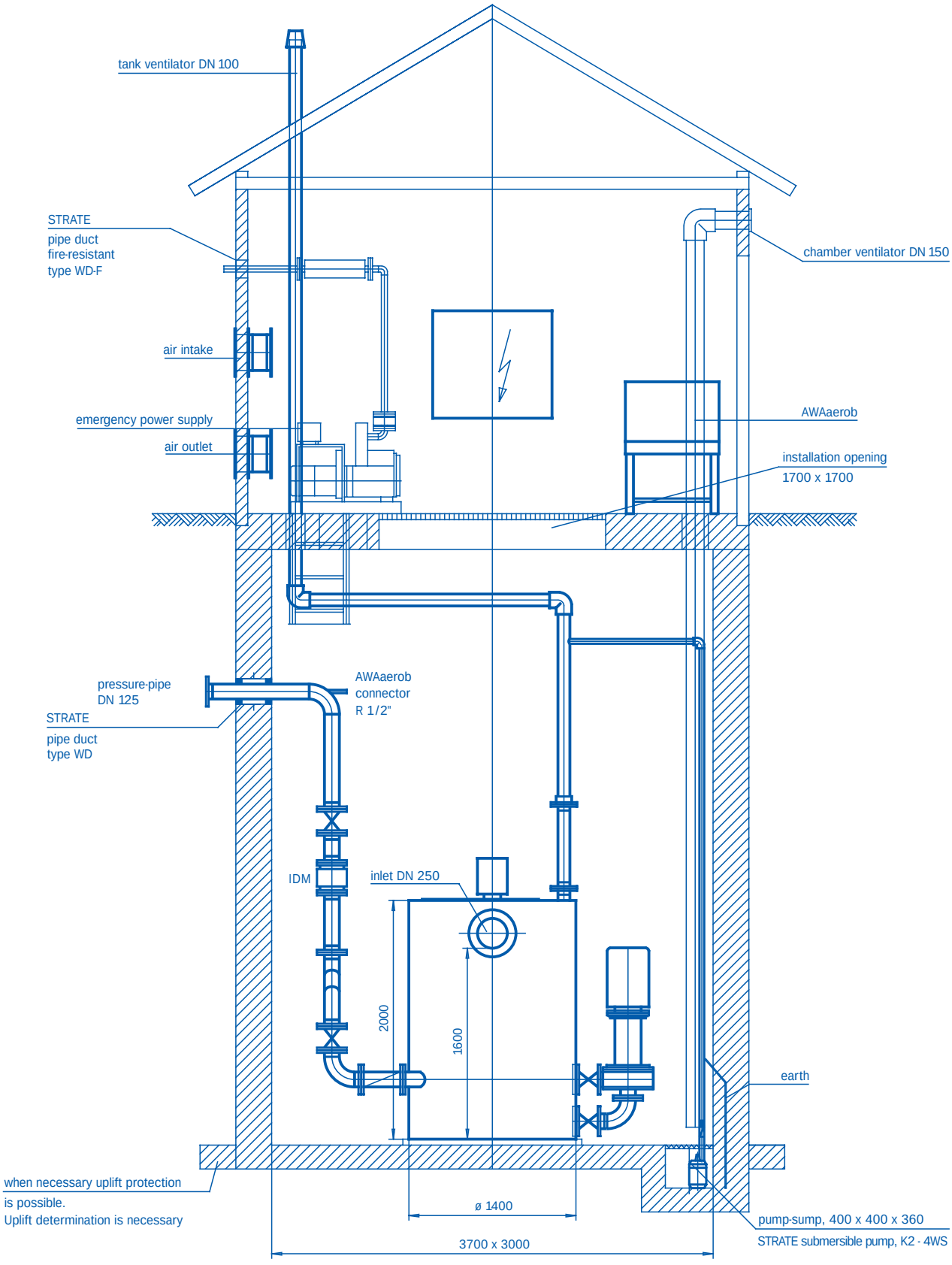

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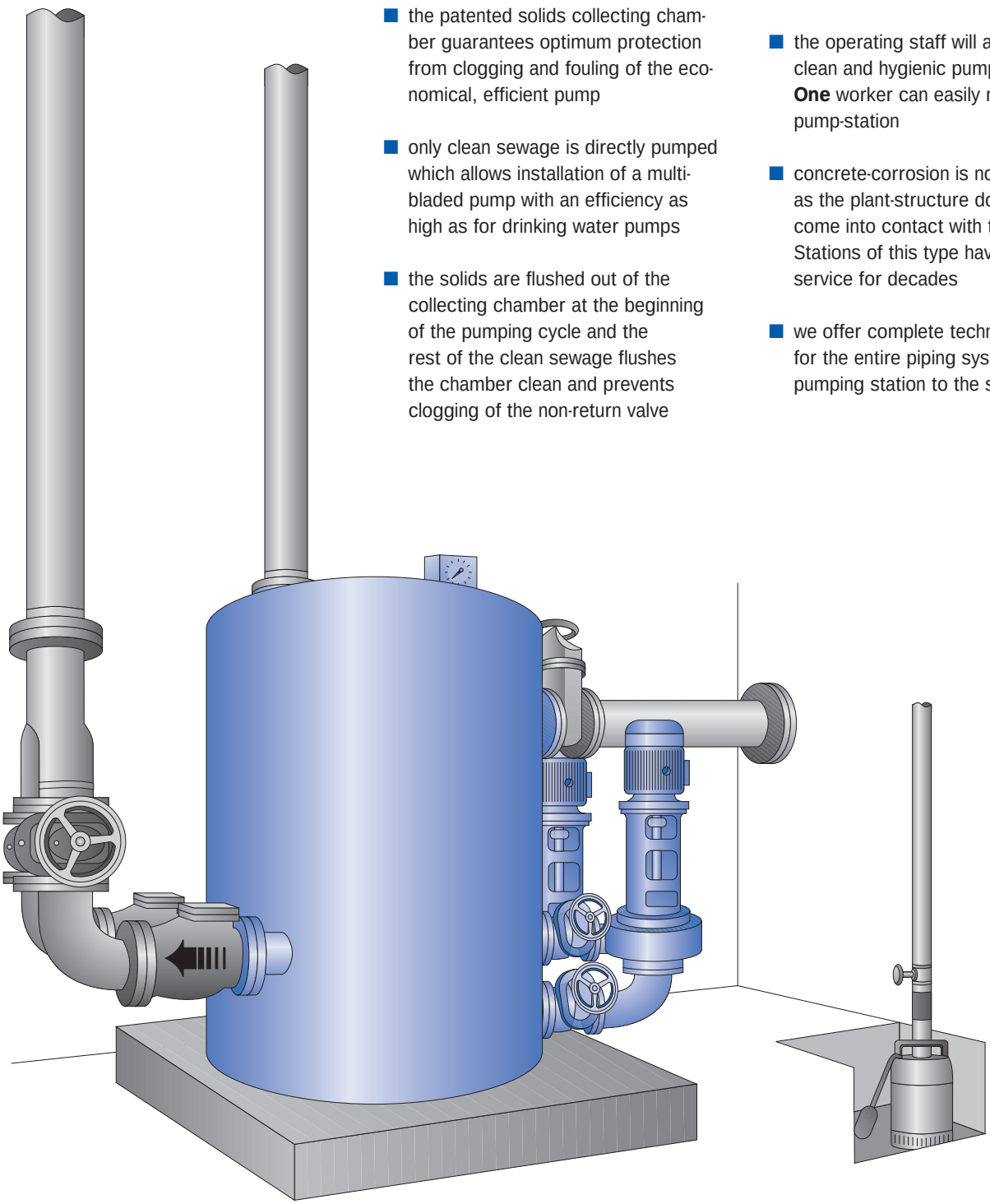
STRATE

AWALIFT 4/2

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 4/2 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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AWALIFT 4/2

Plant capacity:	120 m^3h^{-1} raw sewage, 5600 P.E.
Free through-flow:	150 mm
Pumped head:	up to 150 mwc
Inlet height:	1600 mm
Tank dimensions:	Ø 1800 mm x 2000 mm
Tank contents:	3,5 m^3
Weight:	ca. 1500 Kg
Space requirement:	4,50 m x 3,50 m
Installation opening:	2,00 m x 2,00 m
Inlet connector:	DN 200 - DN 300
Pressure-pipe connector:	DN 125 - DN 200
Ventilator:	DN 100
Electrical connection:	As per requirements

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 4/2 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 150 mm with a high efficiency and a pumped-head of up to 150 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 3700 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

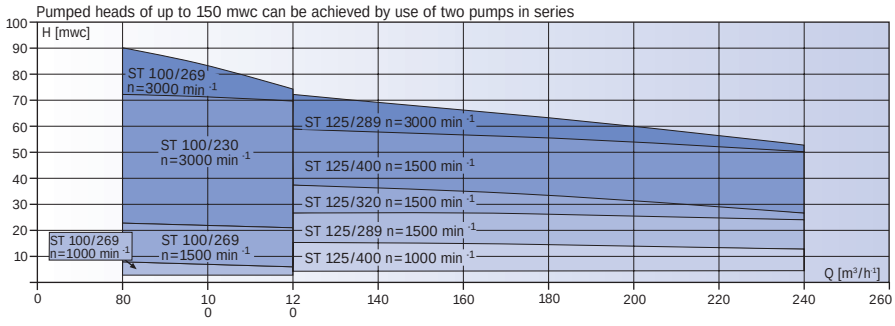
The STRATE sewage pumping station AWALIFT 4/2 consists of:

- Tank with double solids collecting-chamber system
- 2 centrifugal pumps ST 100, ST 125 or ST 200
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

Pump curves



Other characteristics on request. The optional pumps are the ST 100 and ST 125. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

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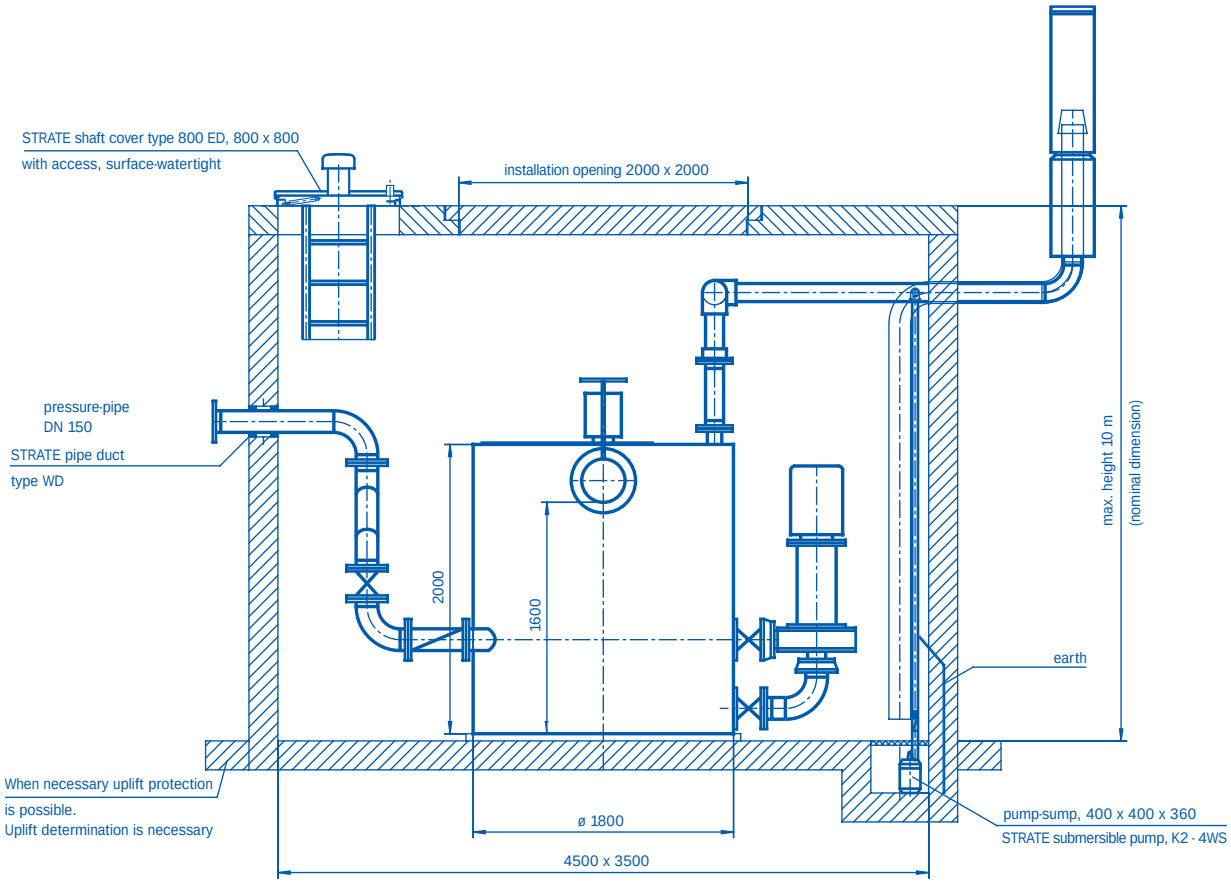

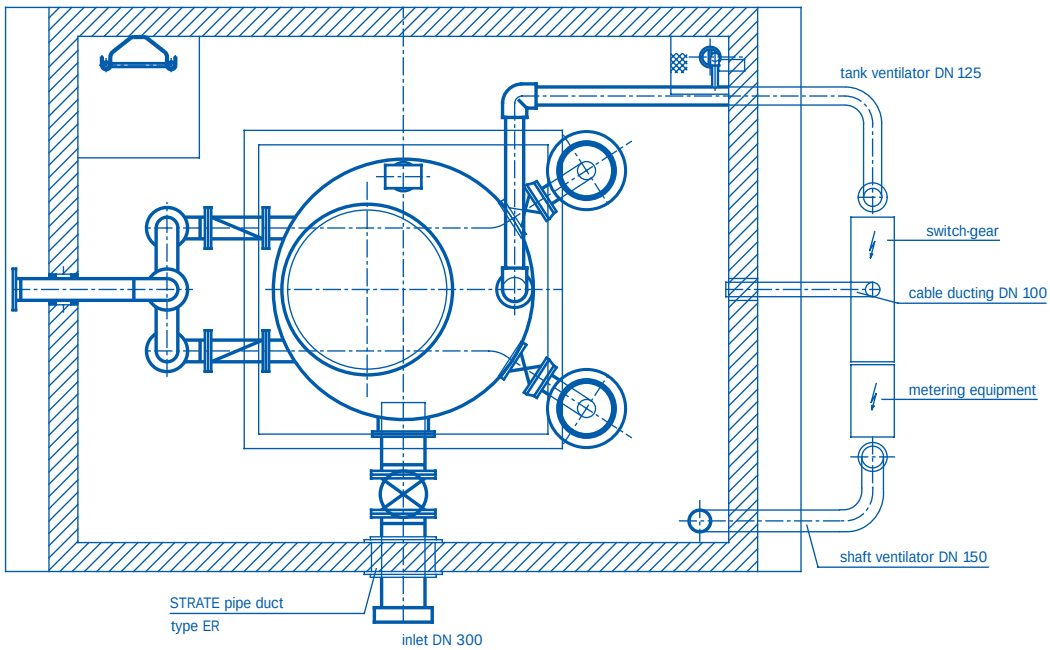

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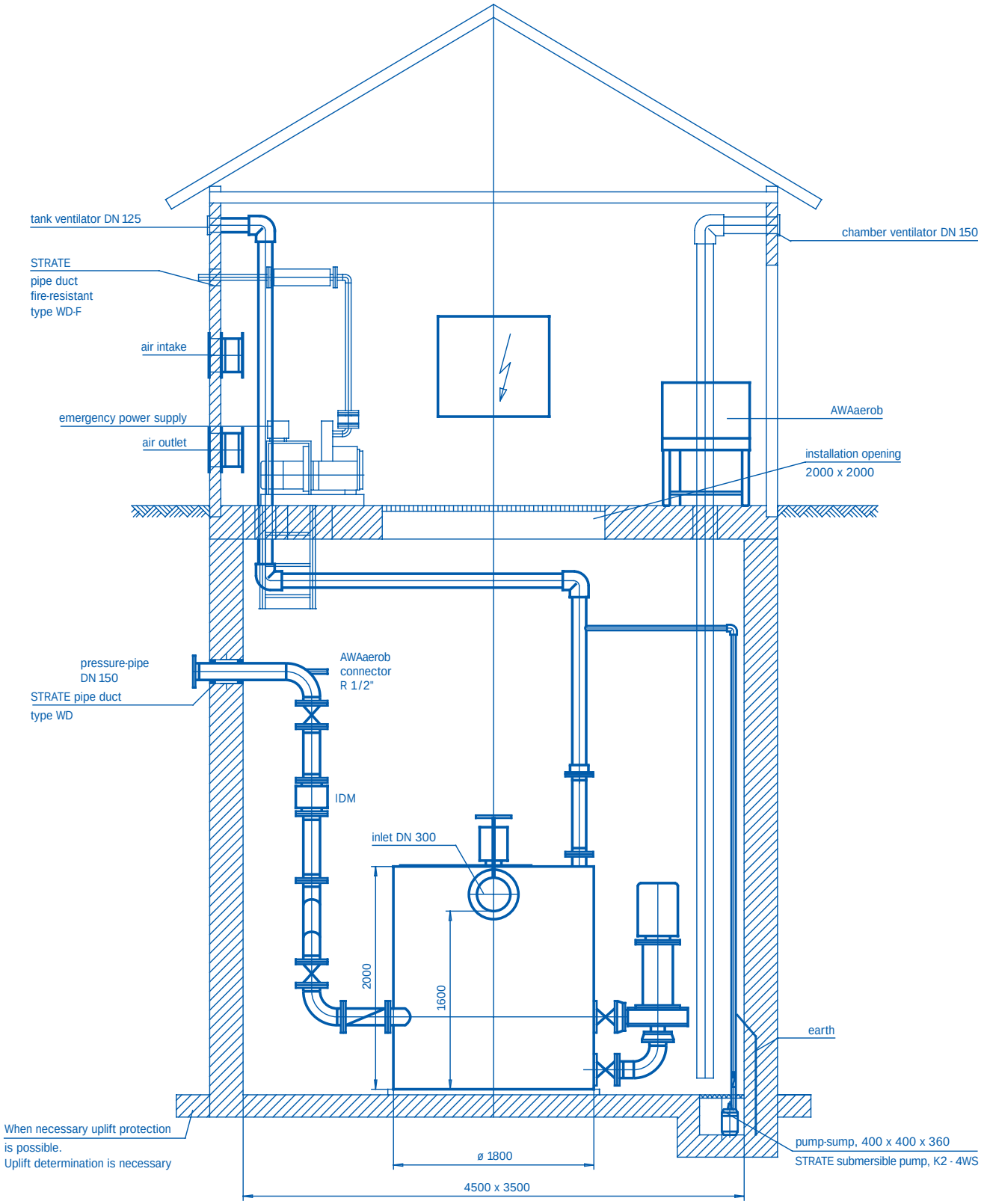

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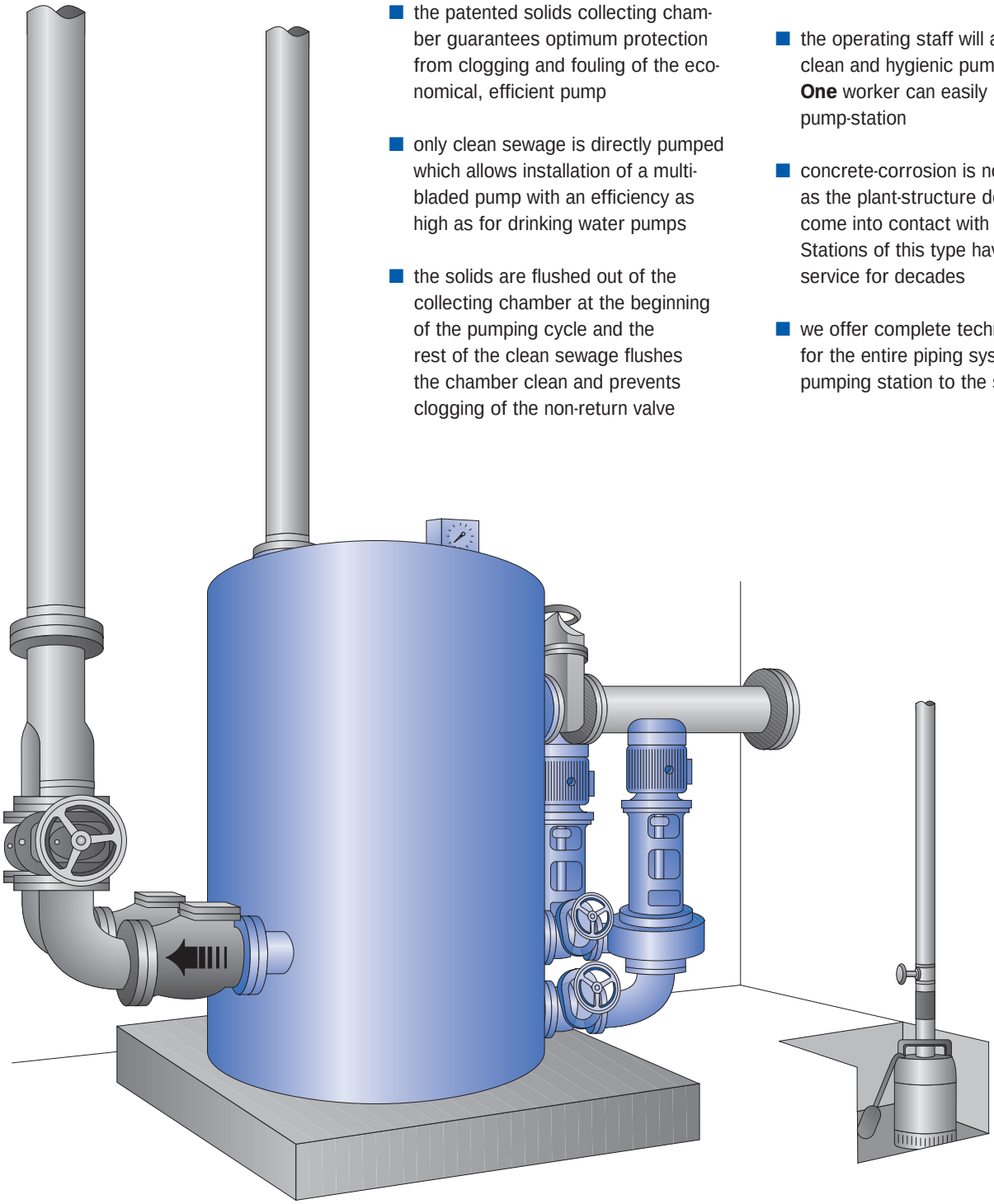
STRATE

AWALIFT 5/2

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 5/2 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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AWALIFT 5/2

Plant capacity:	150 m^3h^{-1} raw sewage, 7000 P.E.
Free through-flow:	150 mm
Pumped head:	up to 140 mwc
Inlet height:	1900 mm
Tank dimensions:	Ø 1800 mm x 2500 mm
Tank contents:	4,2 m^3
Weight:	ca. 1700 Kg
Space requirement:	4,50 m x 3,50 m
Installation opening:	2,00 m x 2,00 m
Inlet connector:	DN 200 - DN 400
Pressure-pipe connector:	DN 150 - DN 250
Ventilator:	DN 125
Electrical connection:	As per requirements

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 5/2 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 150 mm with a high efficiency and a pumped-head of up to 140 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 7000 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system

Delivery

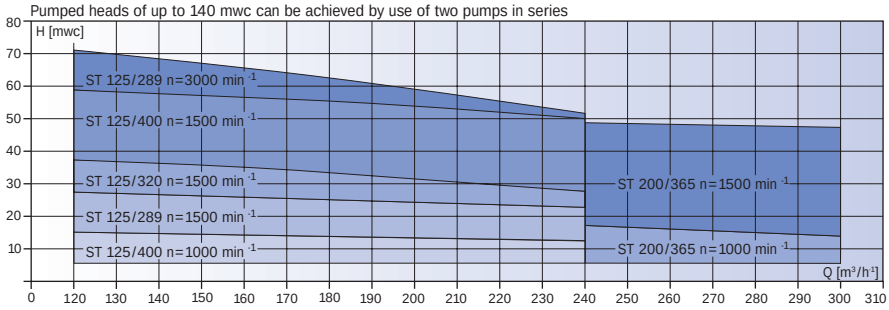
The STRATE sewage pumping station AWALIFT 5/2 consists of:

- Tank with double solids collecting-chamber system
- 2 centrifugal pumps ST 125 or ST 200
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

Pump curves



Other characteristics on request. The optional pumps are the ST 125 and ST 200. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

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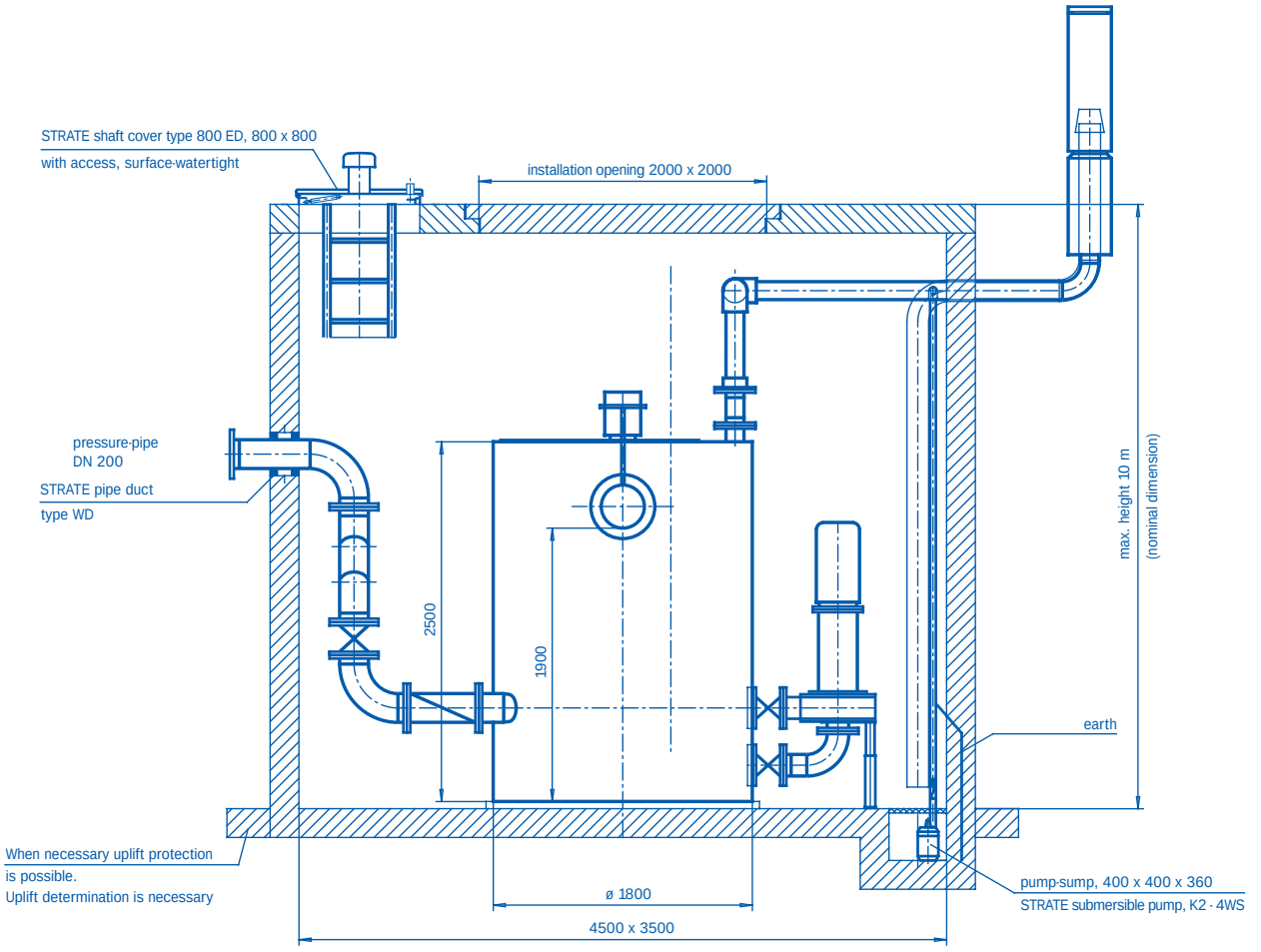

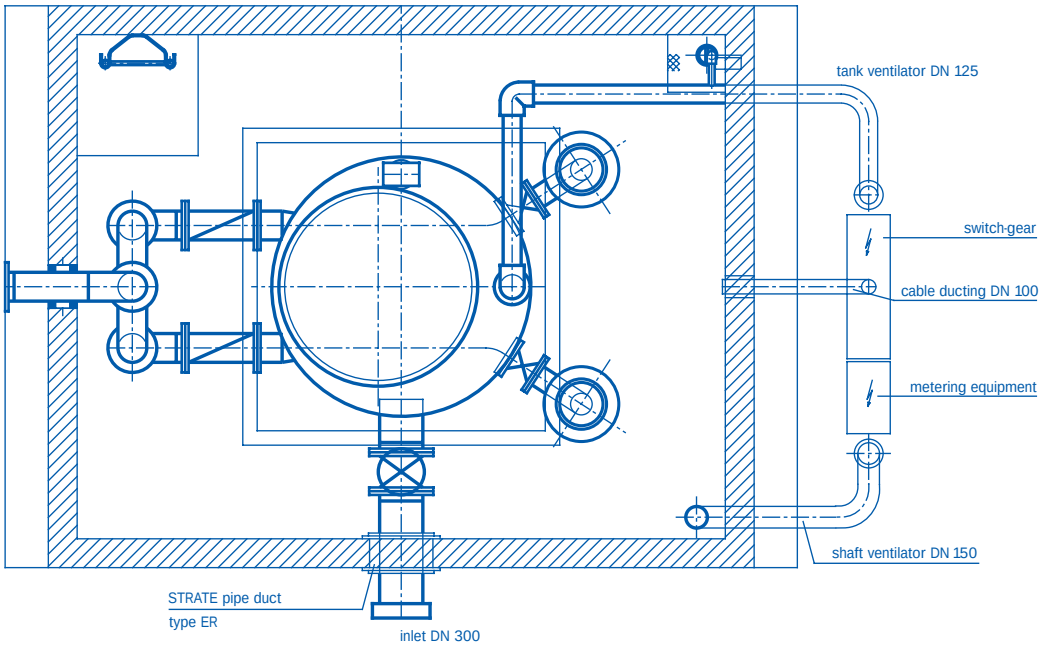

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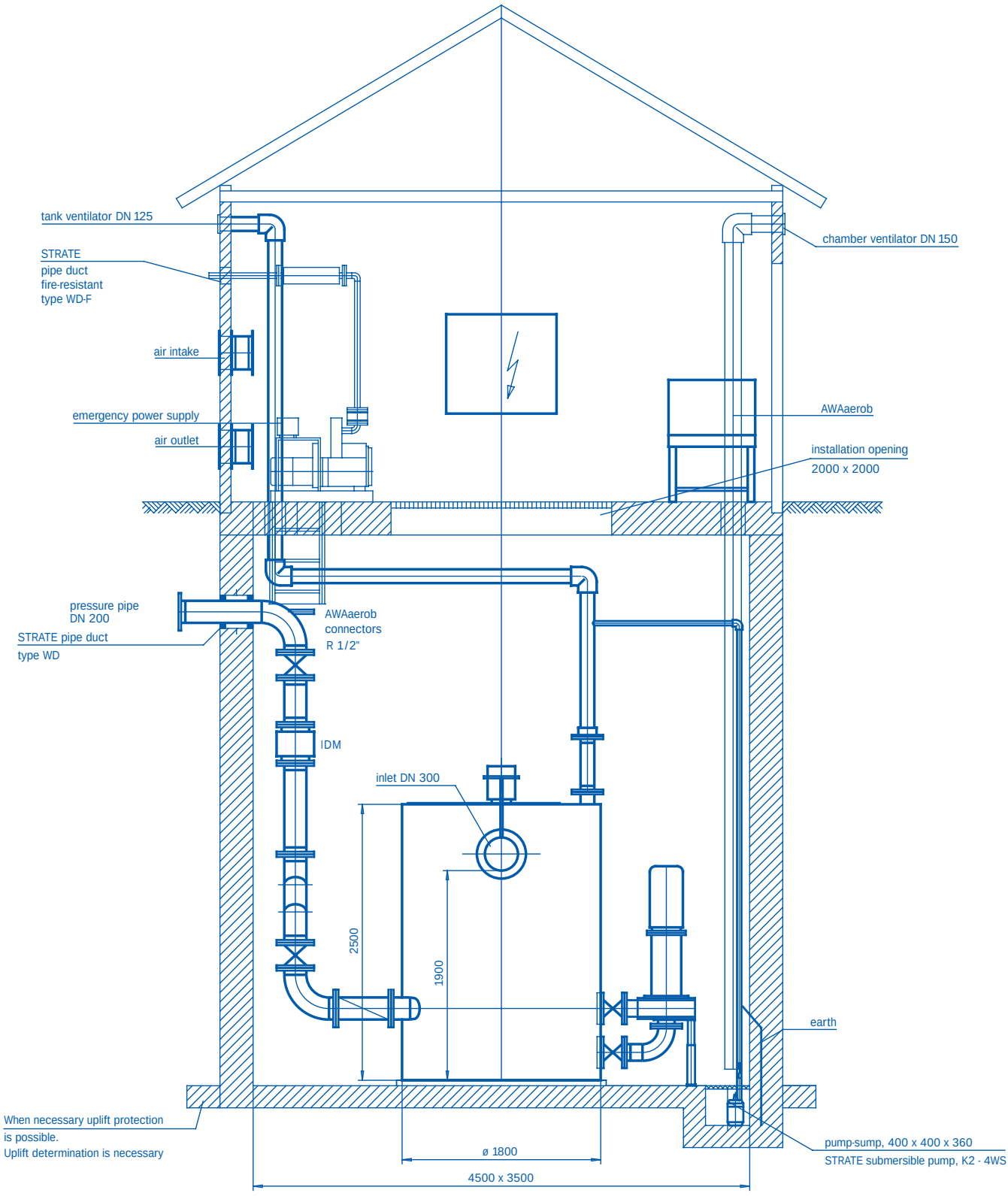

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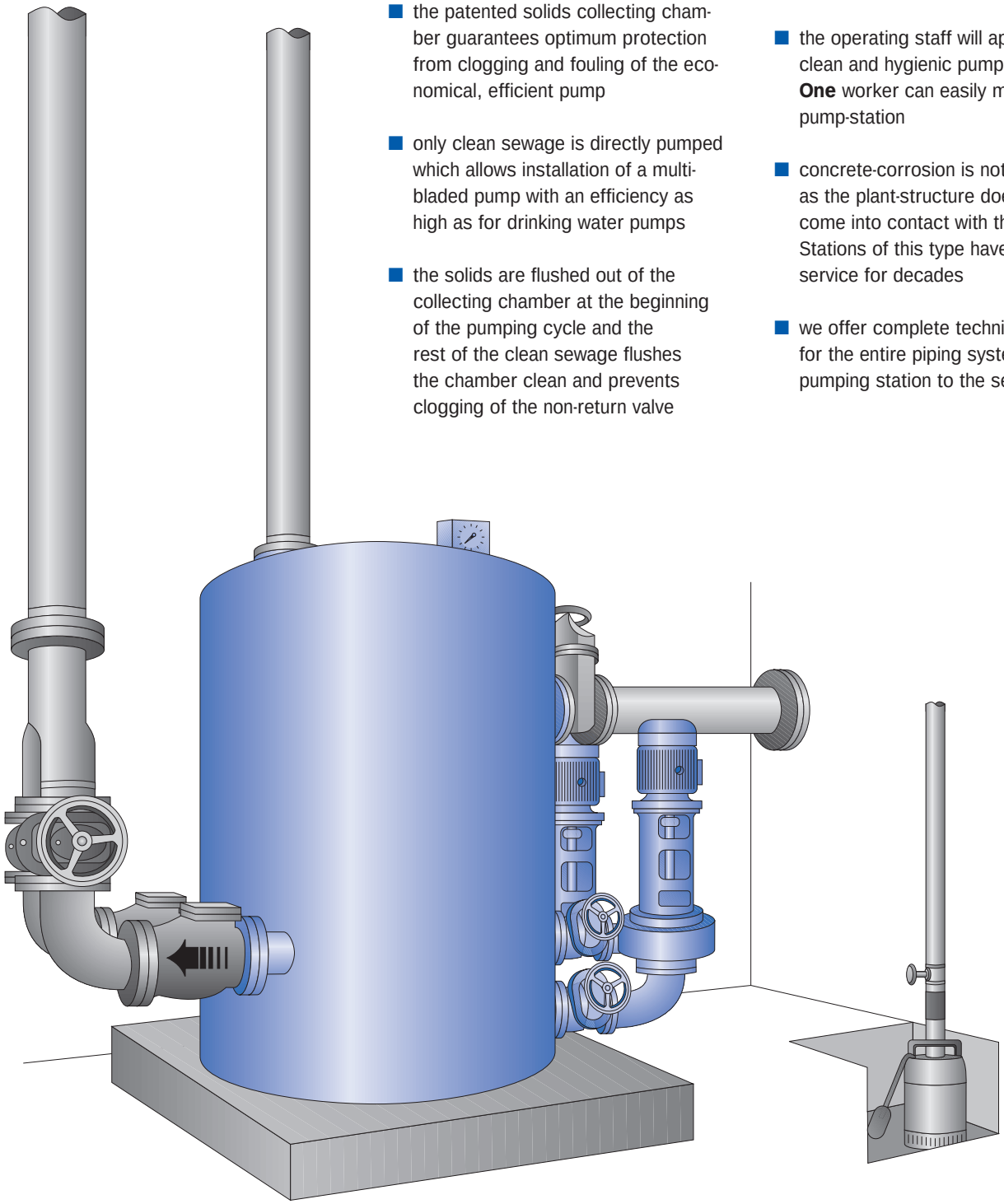
STRATE

AWALIFT 6/2

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 6/2 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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AWALIFT 6/2

Plant capacity:	200 m^3h^{-1} raw sewage, 9300 P.E.
Free through-flow:	200 mm
Pumped head:	up to 130 mwc
Inlet height:	1900 mm
Tank dimensions:	Ø 2000 mm x 2500 mm
Tank contents:	5,3 m^3
Weight:	ca. 2000 Kg
Space requirement:	4,70 m x 3,70 m
Installation opening:	2,20 m x 2,20 m
Inlet connector:	DN 300 - DN 400
Pressure-pipe connector:	DN 200 - DN 300
Ventilator:	DN 150
Electrical connection:	As per requirements

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 6/2 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 200 mm with a high efficiency and a pumped-head of up to 130 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 9300 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

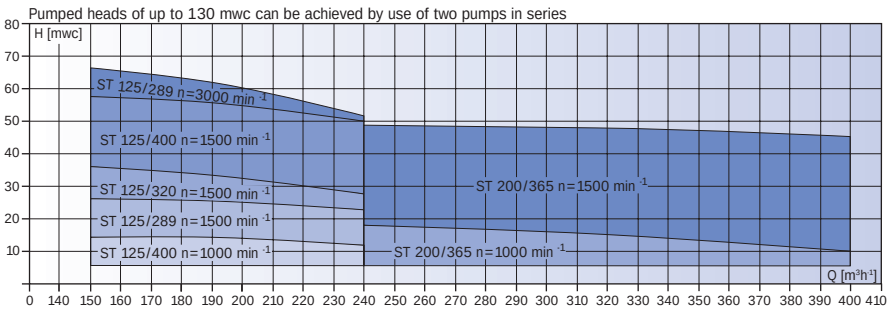
The STRATE sewage pumping station AWALIFT 6/2 consists of:

- Tank with double solids collecting-chamber system
- 2 centrifugal pumps ST 125 or ST 200
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

Pump curves



Other characteristics on request. The optional pumps are the ST 125 and ST 200. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

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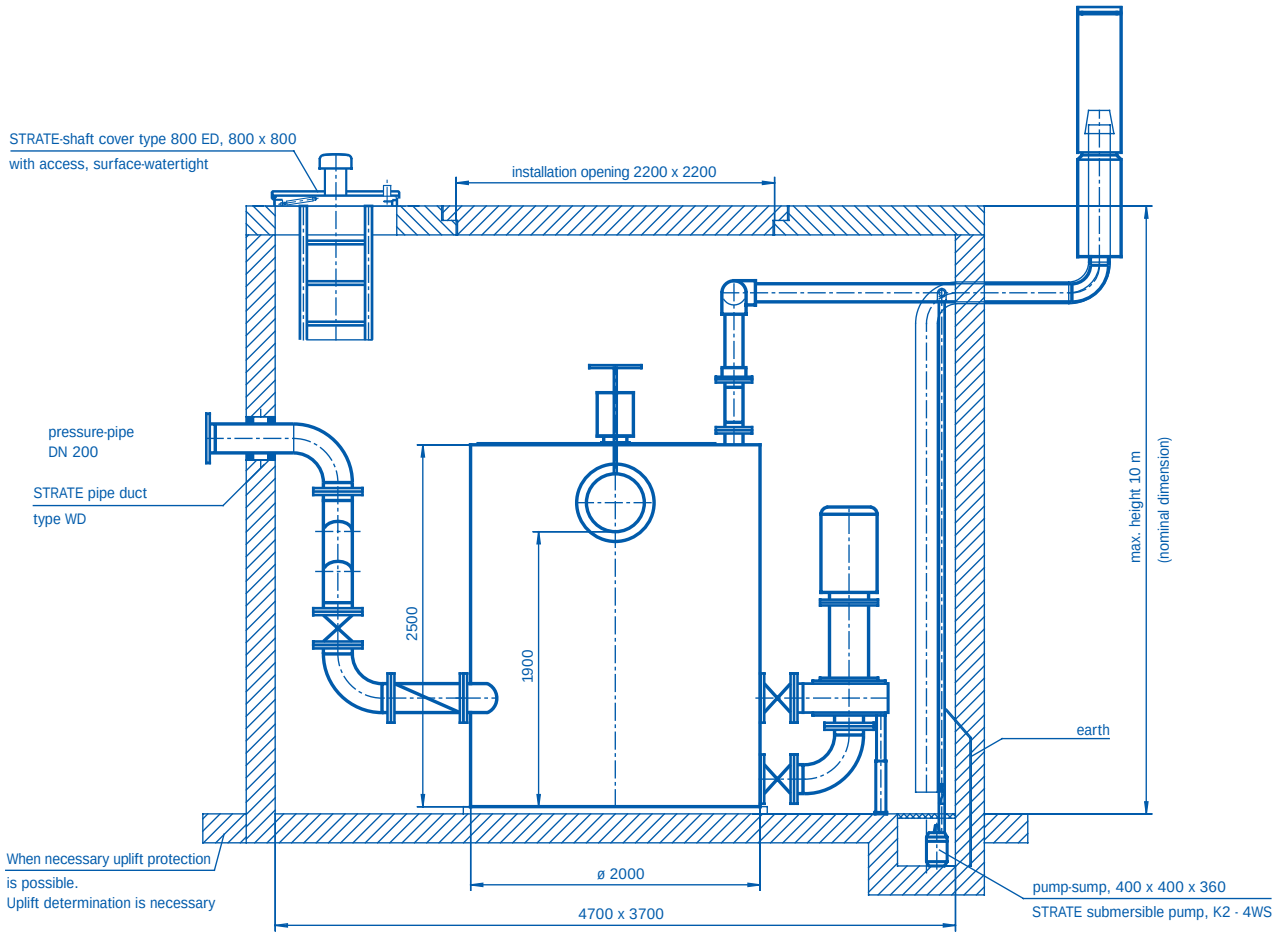

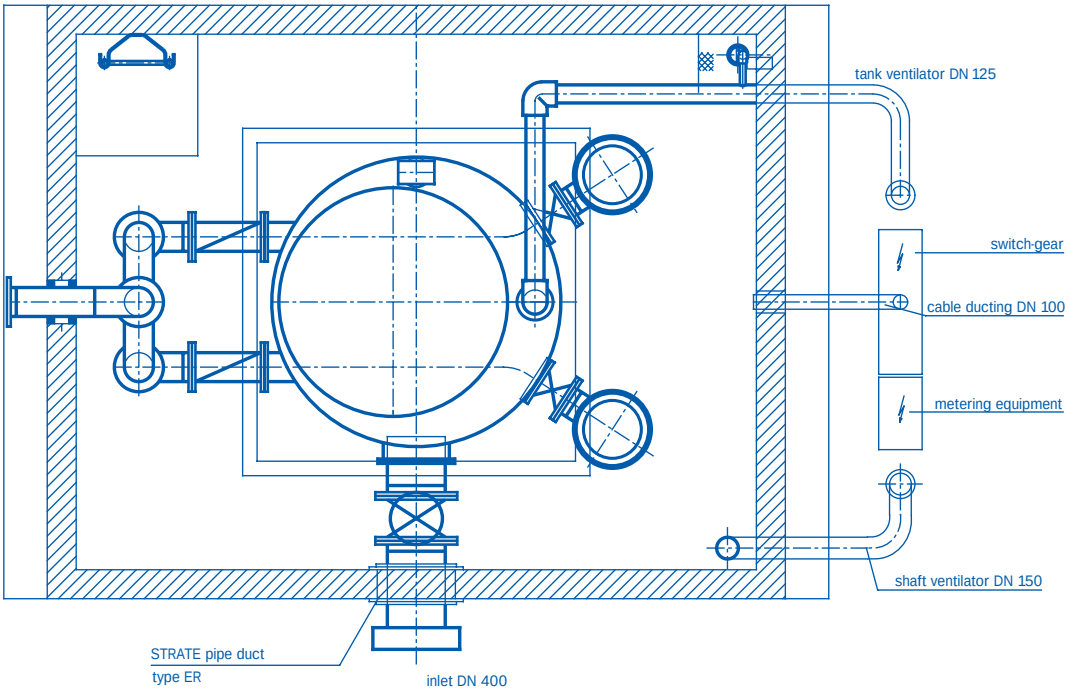

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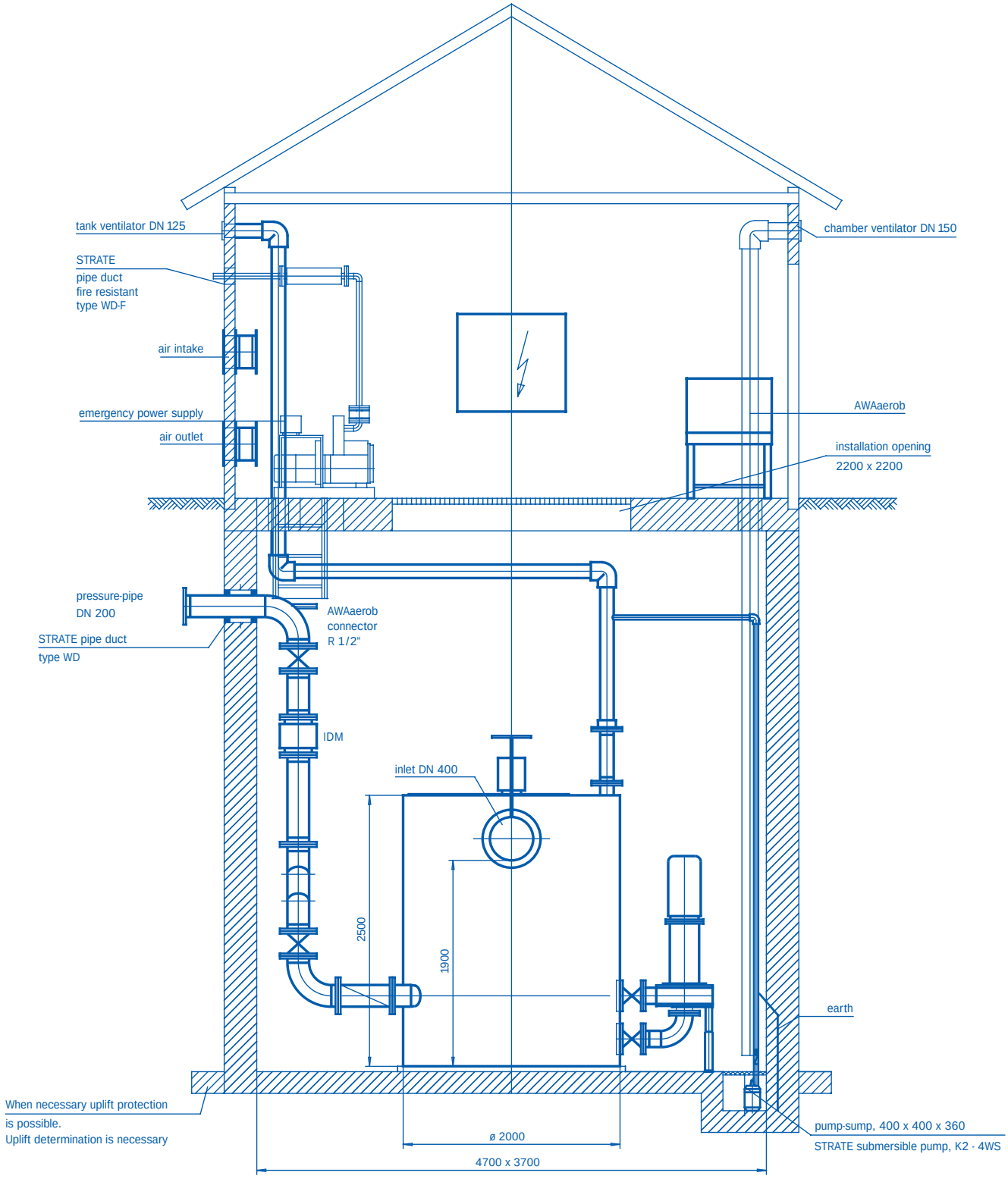

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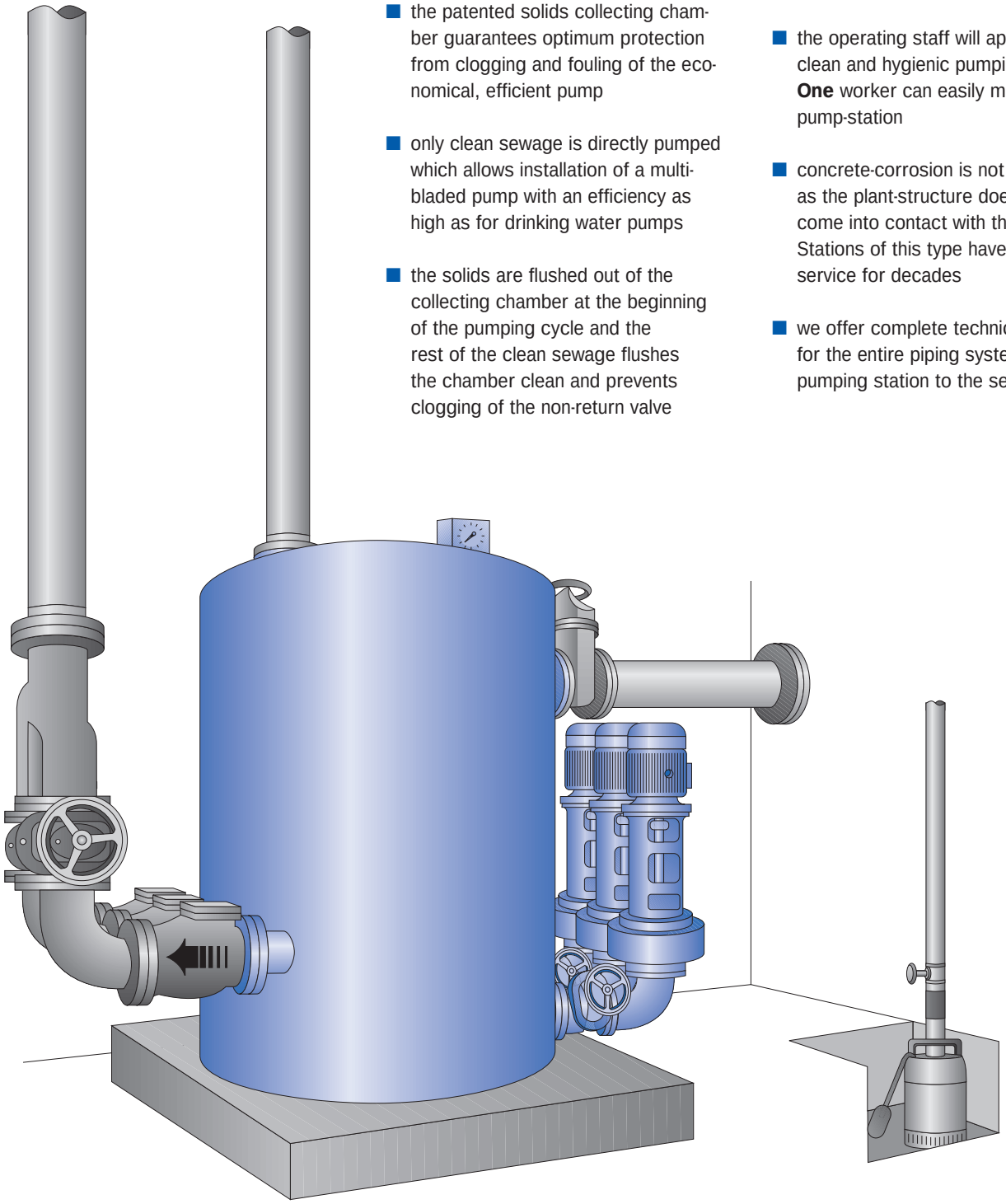
AWALIFT 6/3

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 6/3 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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AWALIFT 6/3

Plant capacity:	250 m^3h^{-1} raw sewage, 11600 P.E.
Free through-flow:	150 mm
Pumped head:	up to 65 mwc
Inlet height:	1900 mm
Tank dimensions:	Ø 2000 mm x 2500 mm
Tank contents:	5 m^3
Weight:	ca. 2300 Kg
Space requirement:	5,00 m x 3,70 m
Installation opening:	2,20 m x 2,20 m
Inlet connector:	DN 300 - DN 400
Pressure-pipe connector:	DN 200 - DN 300
Ventilator:	DN 150
Electrical connection:	As per requirements

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 6/3 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 200 mm with a high efficiency and a pumped-head of up to 65 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 11600 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system

Delivery

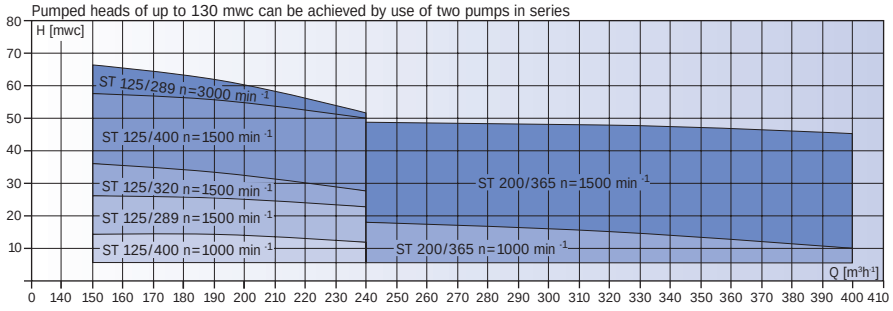
The STRATE sewage pumping station AWALIFT 6/3 consists of:

- Tank with triple solids collecting-chamber system
- 3 centrifugal pumps ST 125 or ST 200
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

Pump curves



Other characteristics on request. The optional pumps are the ST 125 and ST 200. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

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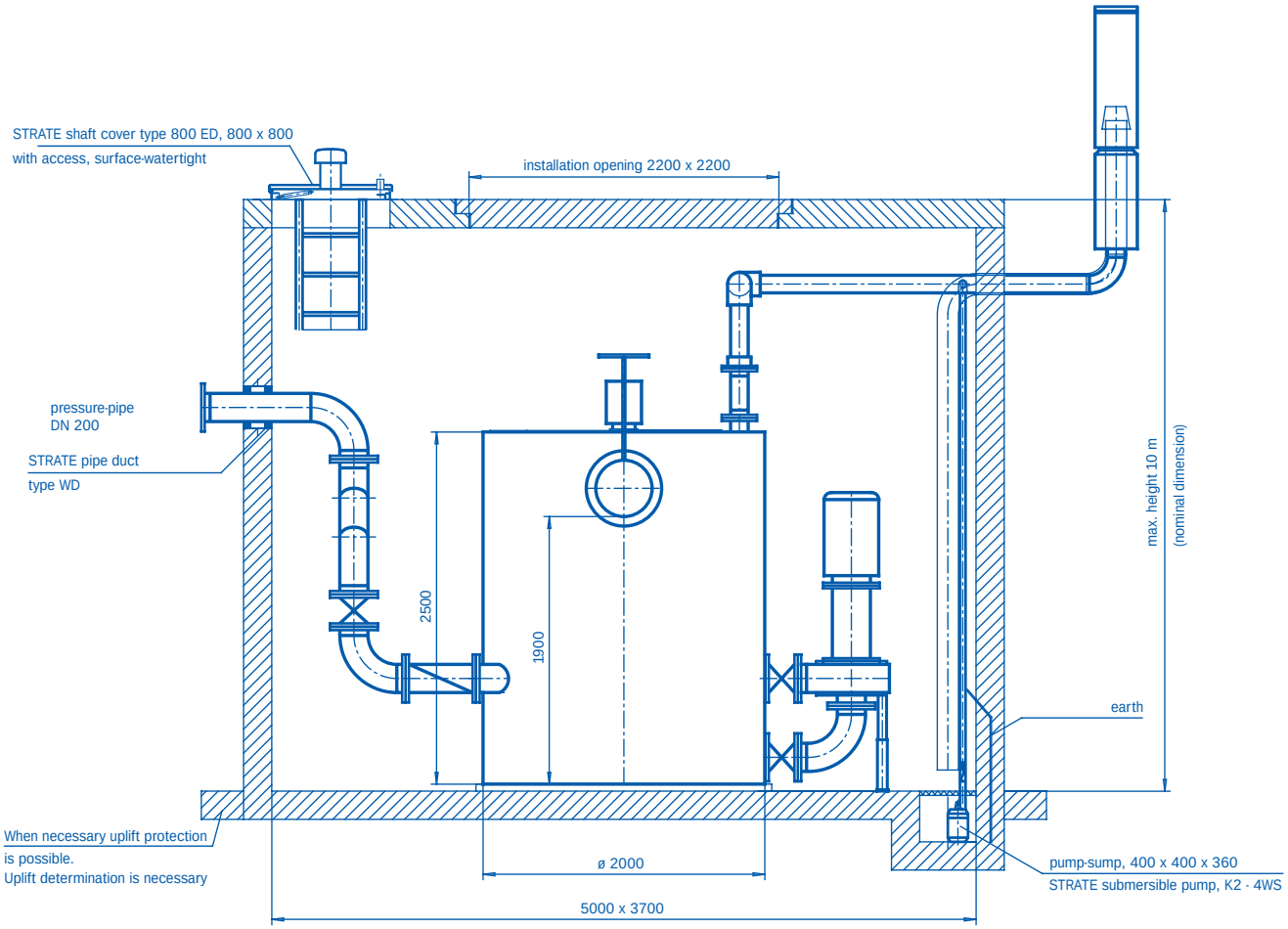

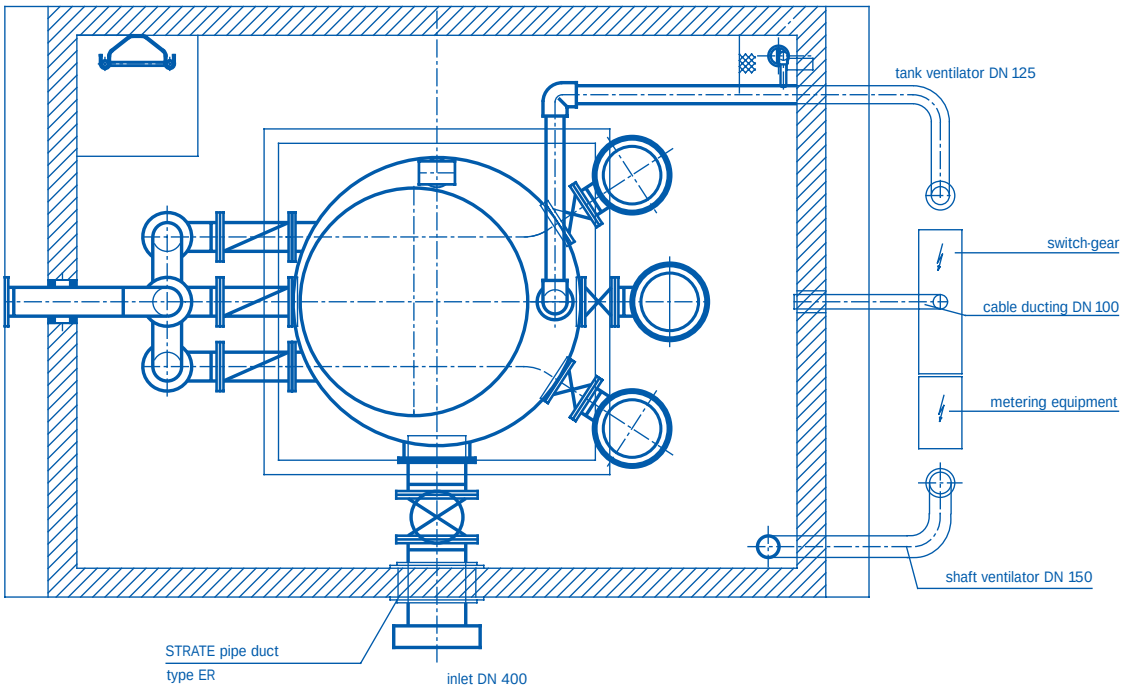

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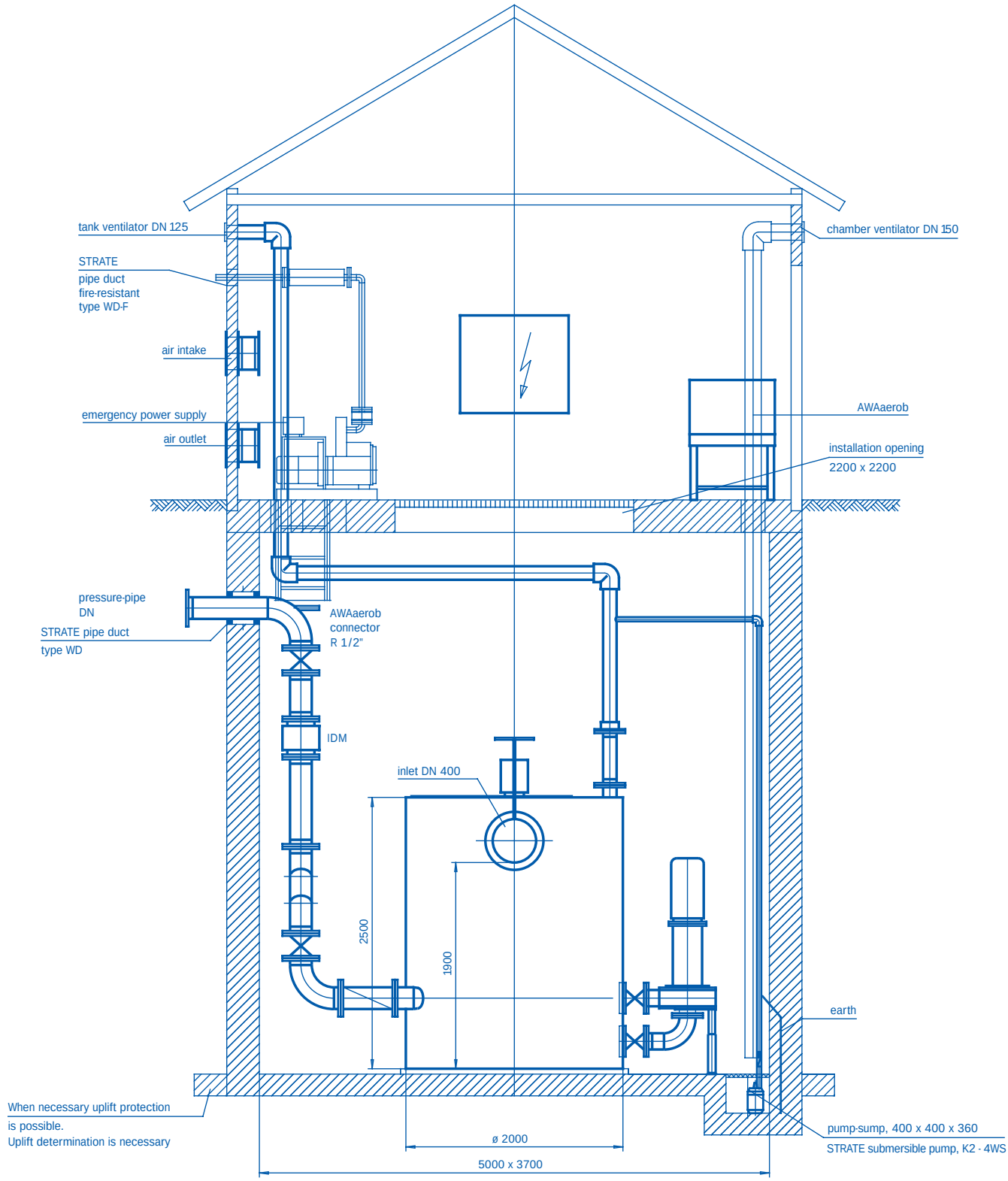

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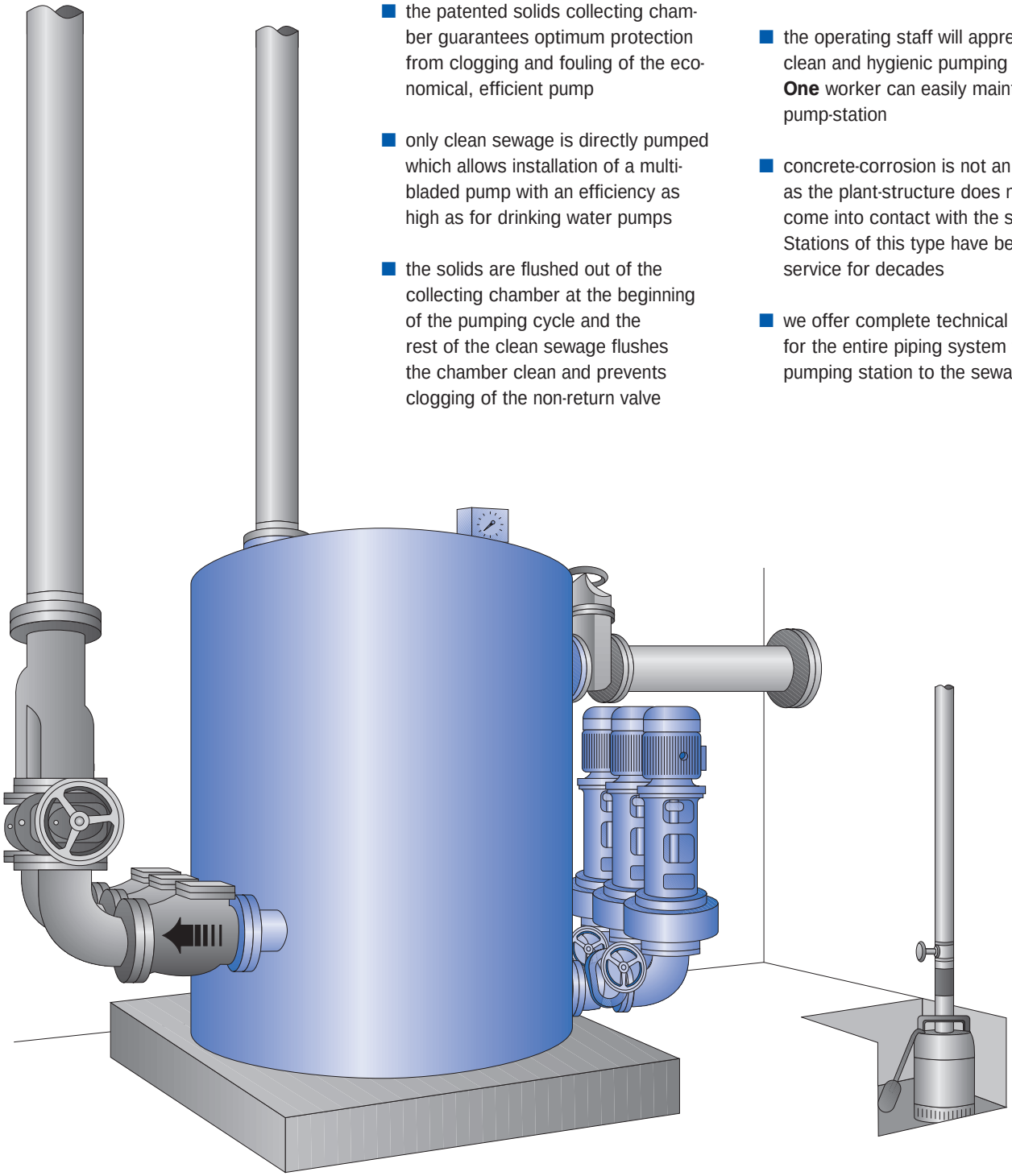
STRATE

AWALIFT 7/3

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 7/3 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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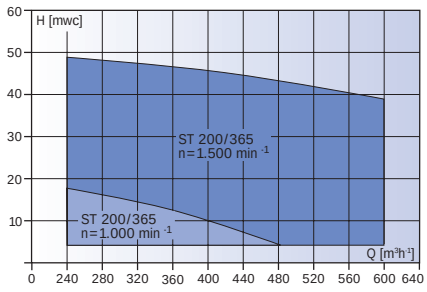
AWALIFT 7/3

Plant capacity:	350 m^3h^{-1} raw sewage, 16300 P.E.
Free through-flow:	200 mm
Pumped head:	up to 48 mwc
Inlet height:	1900 mm
Tank dimensions:	Ø 2500 mm x 2500 mm
Tank contents:	8 m^3
Weight:	ca. 3500 Kg
Space requirement:	5,50 m x 4,00 m
Installation opening:	2,80 m x 2,80 m
Inlet connector:	DN 300 - DN 500
Pressure-pipe connector:	DN 250 - DN 350
Ventilator:	DN 150/200
Electrical connection:	As per requirements

Pump curves



Other characteristics on request. Installed pumps ST 200/365. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 7/3 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 200 mm with a high efficiency and a pumped-head of up to 48 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 16300 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

The STRATE sewage pumping station AWALIFT 7/3 consists of:

- Tank with triple solids collecting-chamber system
- 3 centrifugal pumps ST 200/365
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

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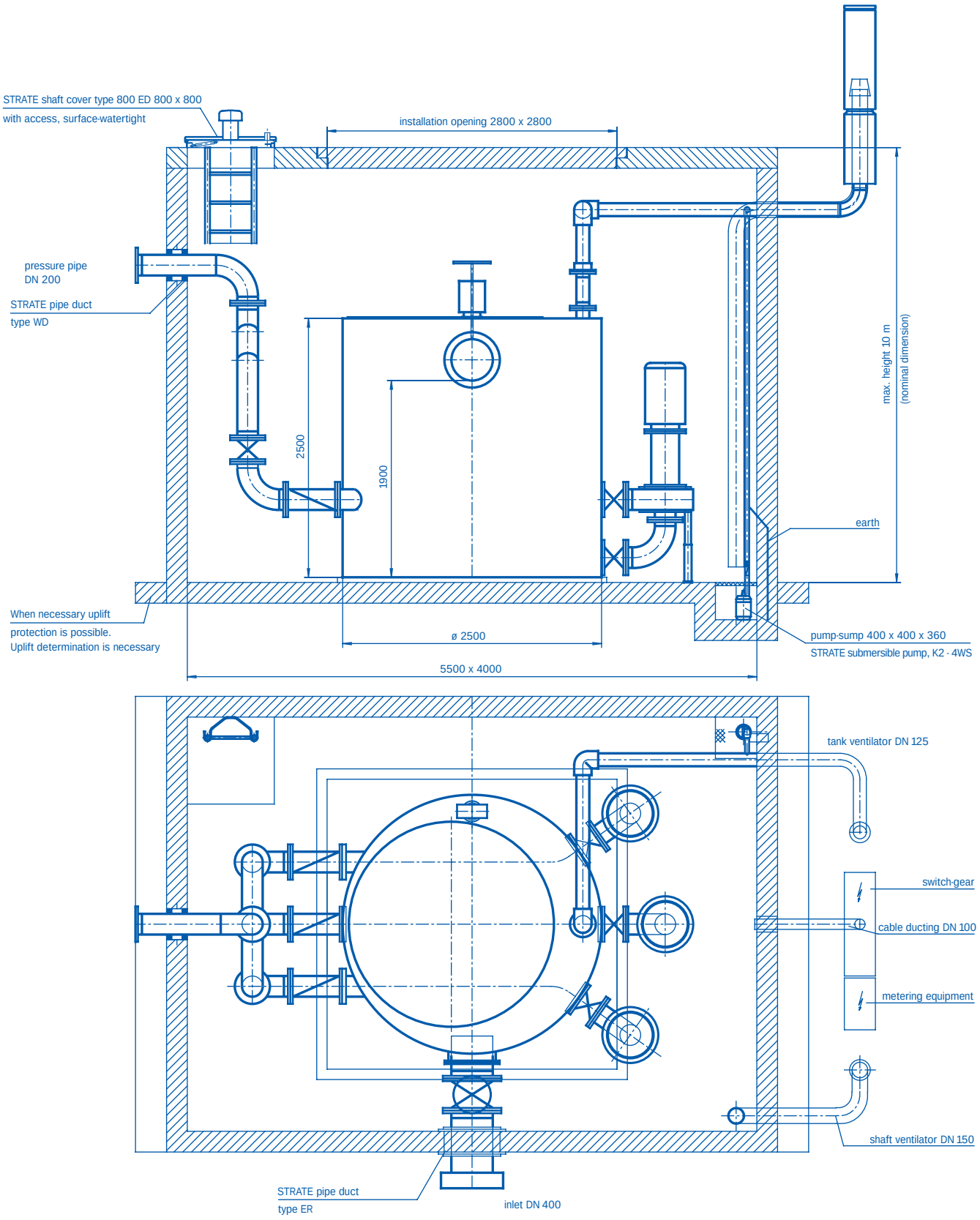

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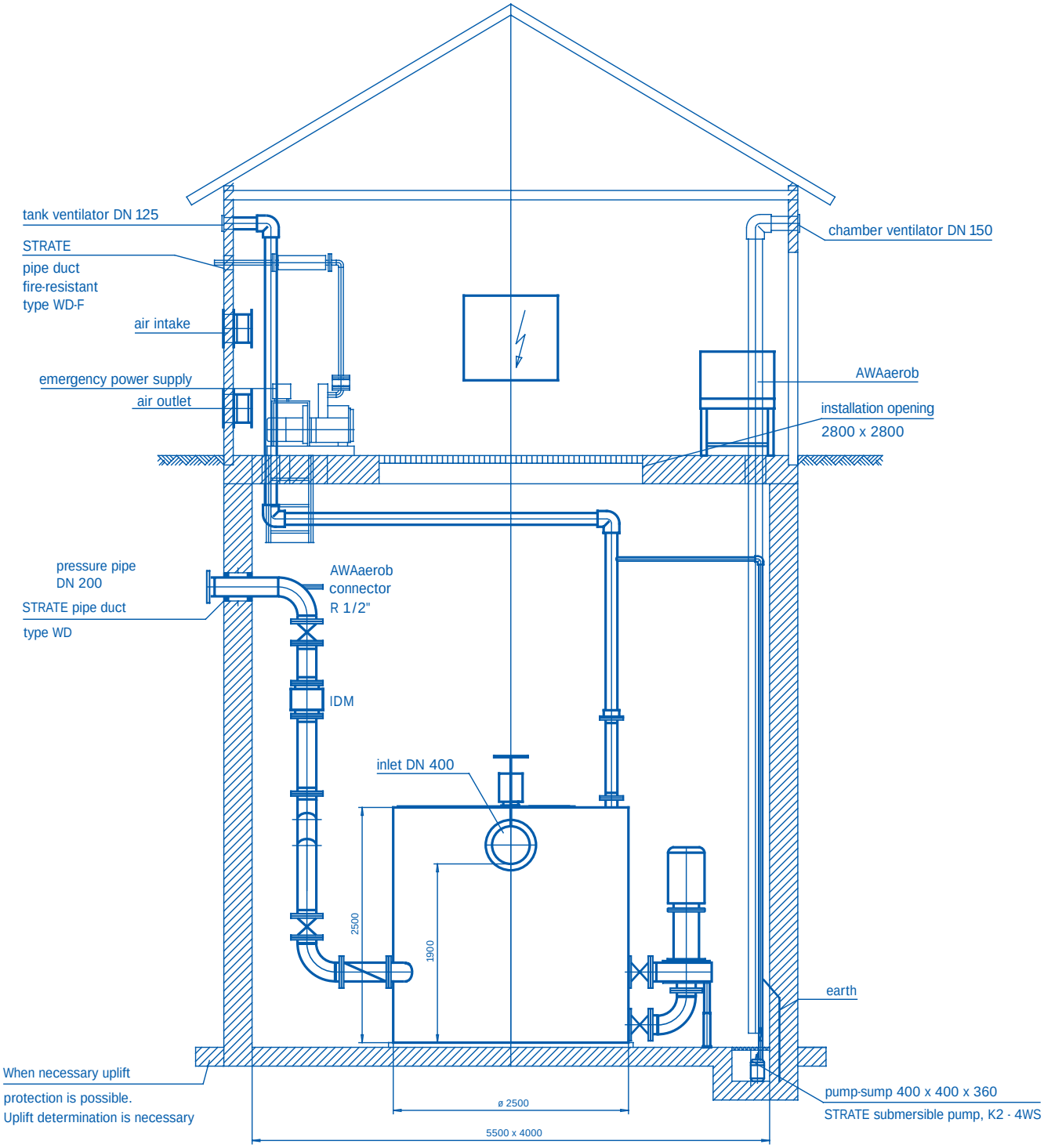

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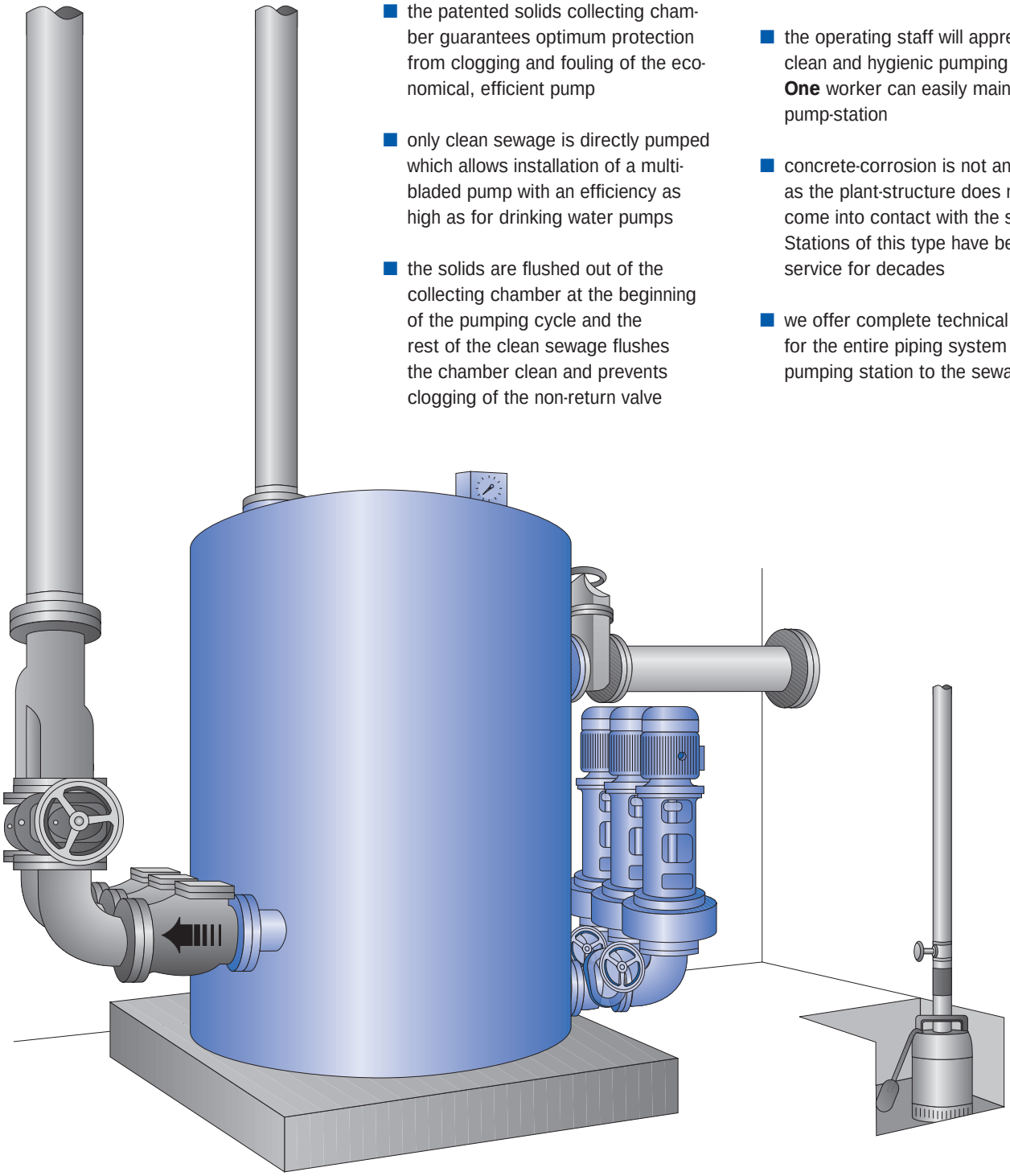
STRATE

AWALIFT 8/3

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 8/3 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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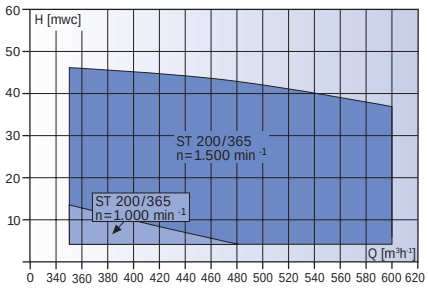
AWALIFT 8/3

Plant capacity:	400 m^3h^{-1} raw sewage, 18600 P.E.
Free through-flow:	200 mm
Pumped head:	up to 47 mwc
Inlet height:	2300 mm
Tank dimensions:	Ø 2500 mm x 3000 mm
Tank contents:	10 m^3
Weight:	ca. 3800 Kg
Space requirement:	5,50 m x 4,00 m
Installation opening:	2,80 m x 2,80 m
Inlet connector:	DN 300 - DN 500
Pressure-pipe connector:	DN 250 - DN 400
Ventilator:	DN 200
Electrical connection:	As per requirements

Pump curves



Other characteristics on request. Installed pumps ST 200/365. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 8/3 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 200 mm with a high efficiency and a pumped-head of up to 48 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 18600 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

The STRATE sewage pumping station AWALIFT 8/3 consists of:

- Tank with triple solids collecting-chamber system
- 3 centrifugal pumps ST 200/365
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

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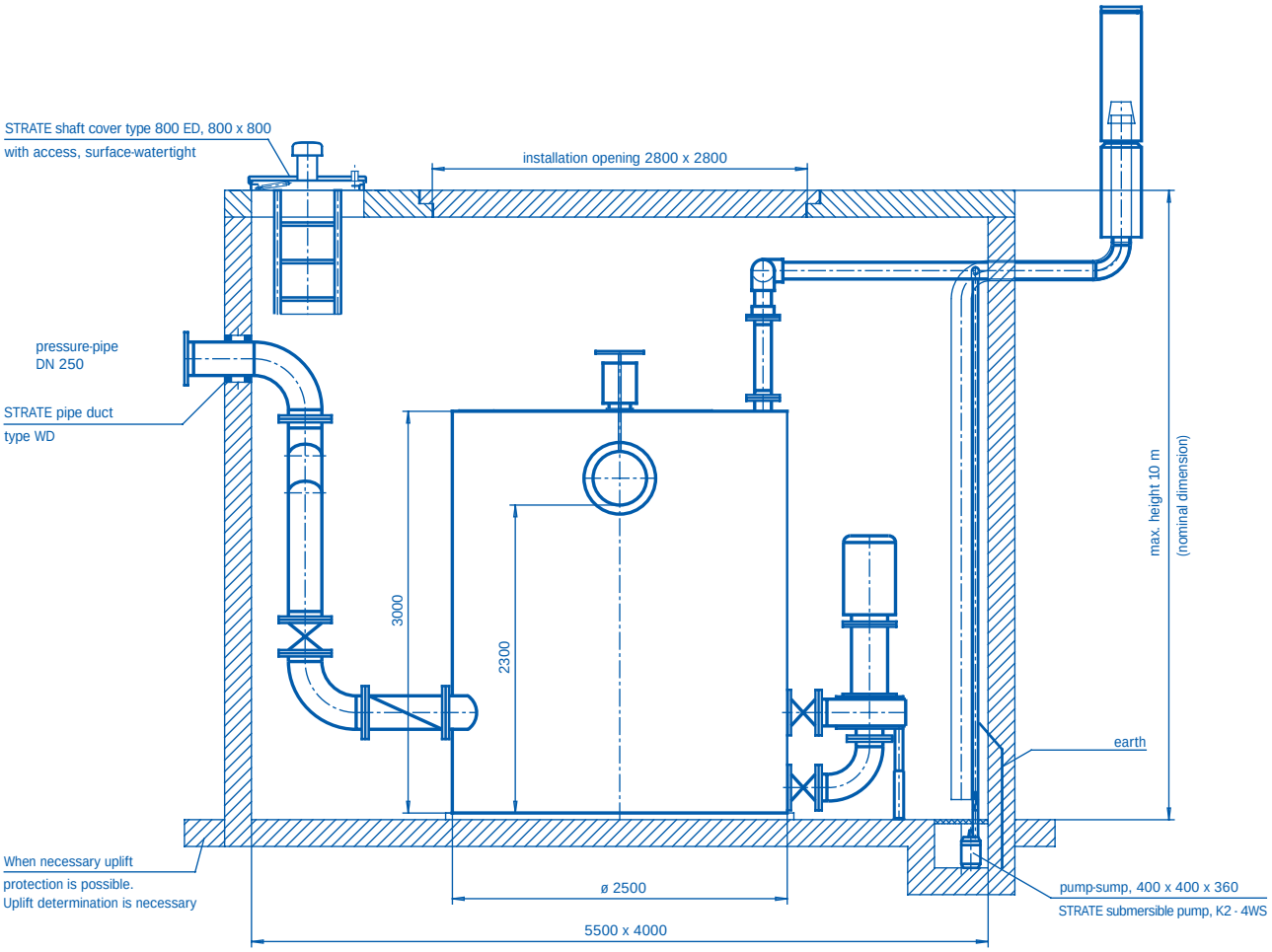

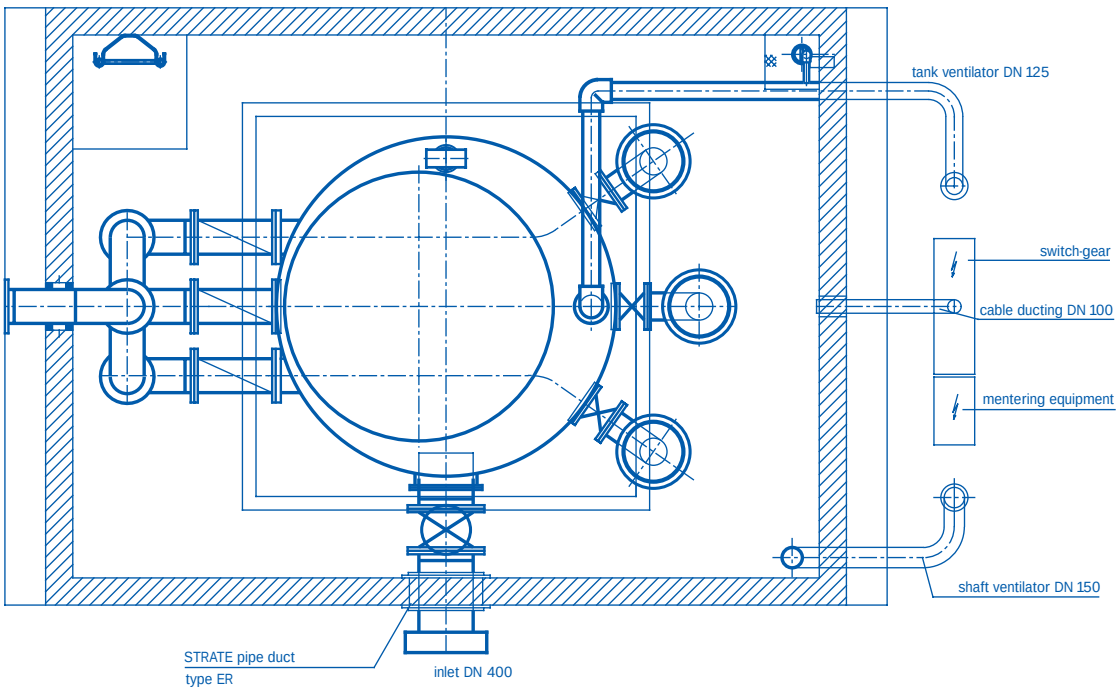

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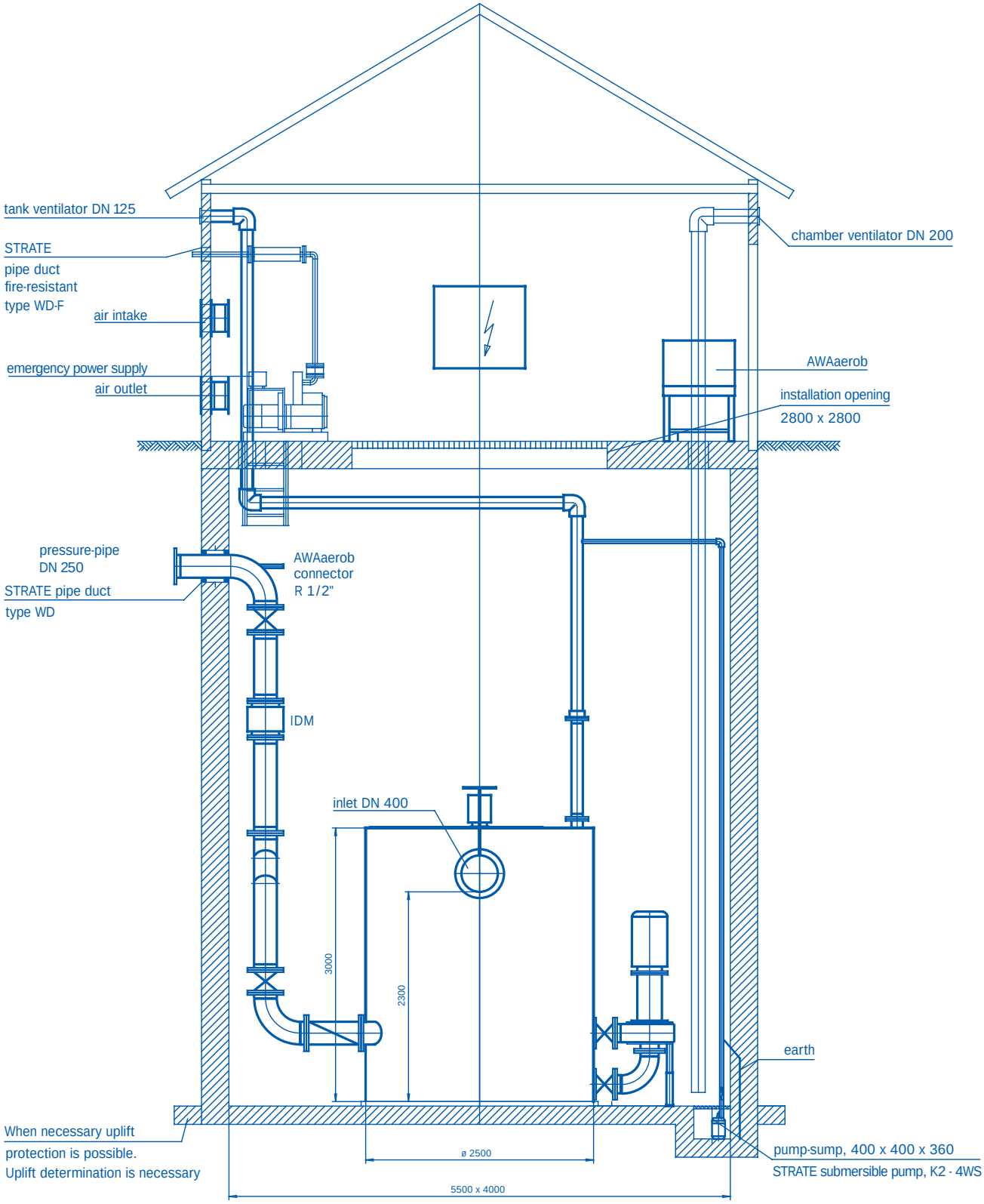

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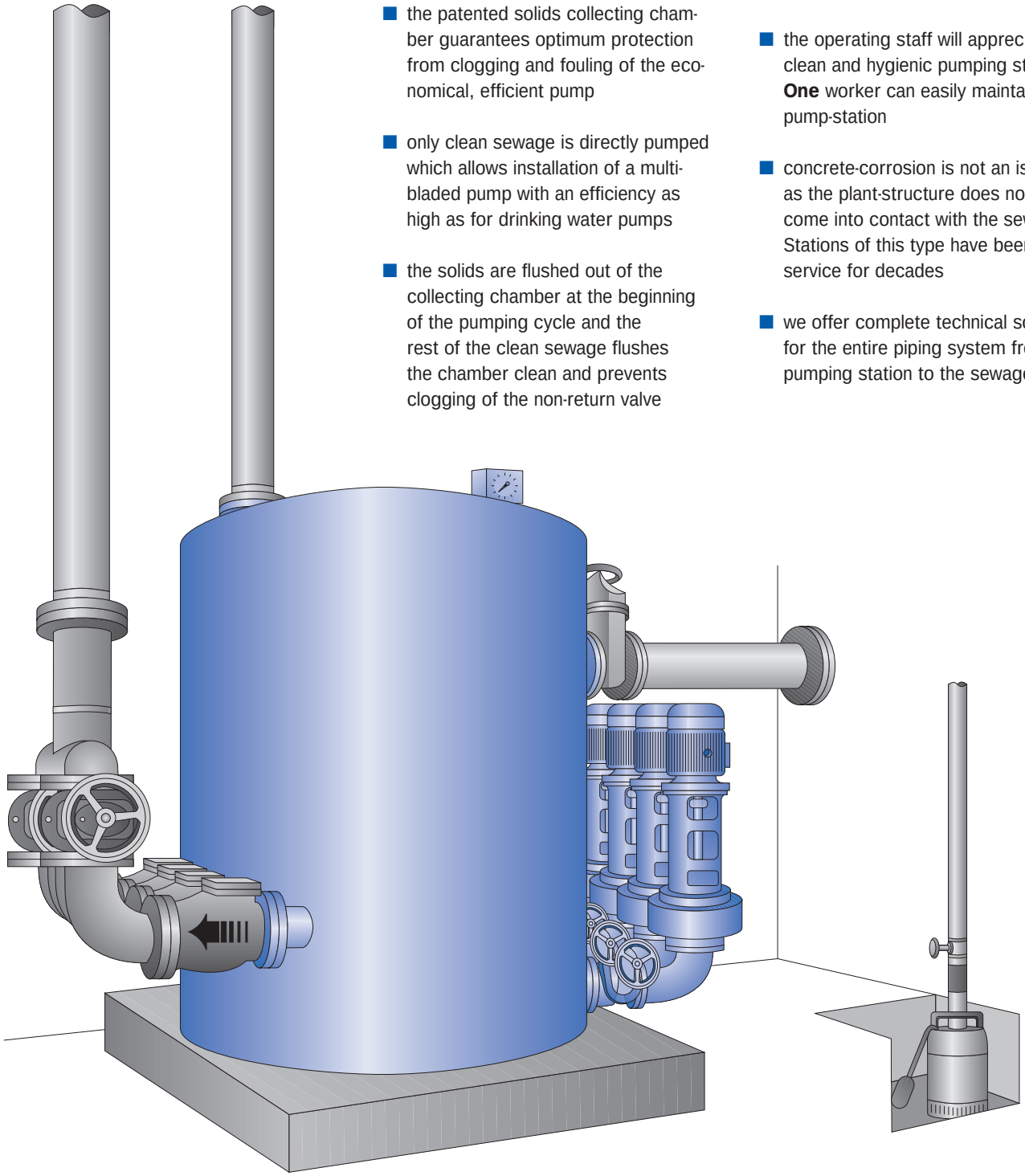
STRATE

AWALIFT 9/4

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 9/4 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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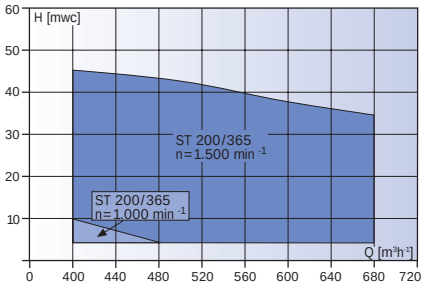
AWALIFT 9/4

Plant capacity:	600 m^3h^{-1} raw sewage, 29000 P.E.
Free through-flow:	200 mm
Pumped head:	up to 45 mwc
Inlet height:	2300 mm
Tank dimensions:	Ø 2800 mm x 3000 mm
Tank contents:	12 m^3
Weight:	ca. 4500 Kg
Space requirement:	6,00 m x 4,60 m
Installation opening:	3,20 m x 3,20 m
Inlet connector:	DN 400 - DN 500
Pressure-pipe connector:	DN 300 - DN 450
Ventilator:	DN 200
Electrical connection:	As per requirements

Pump curves



Other characteristics on request. Installed pumps ST 200/365. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications.

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage station AWALIFT 9/4 with the patented solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 200 mm with a high efficiency and a pumped-head of up to 45 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 29000 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

The STRATE sewage pumping station AWALIFT 9/4 consists of:

- Tank with four solids collecting-chamber system
- 4 centrifugal pumps ST 200/365
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

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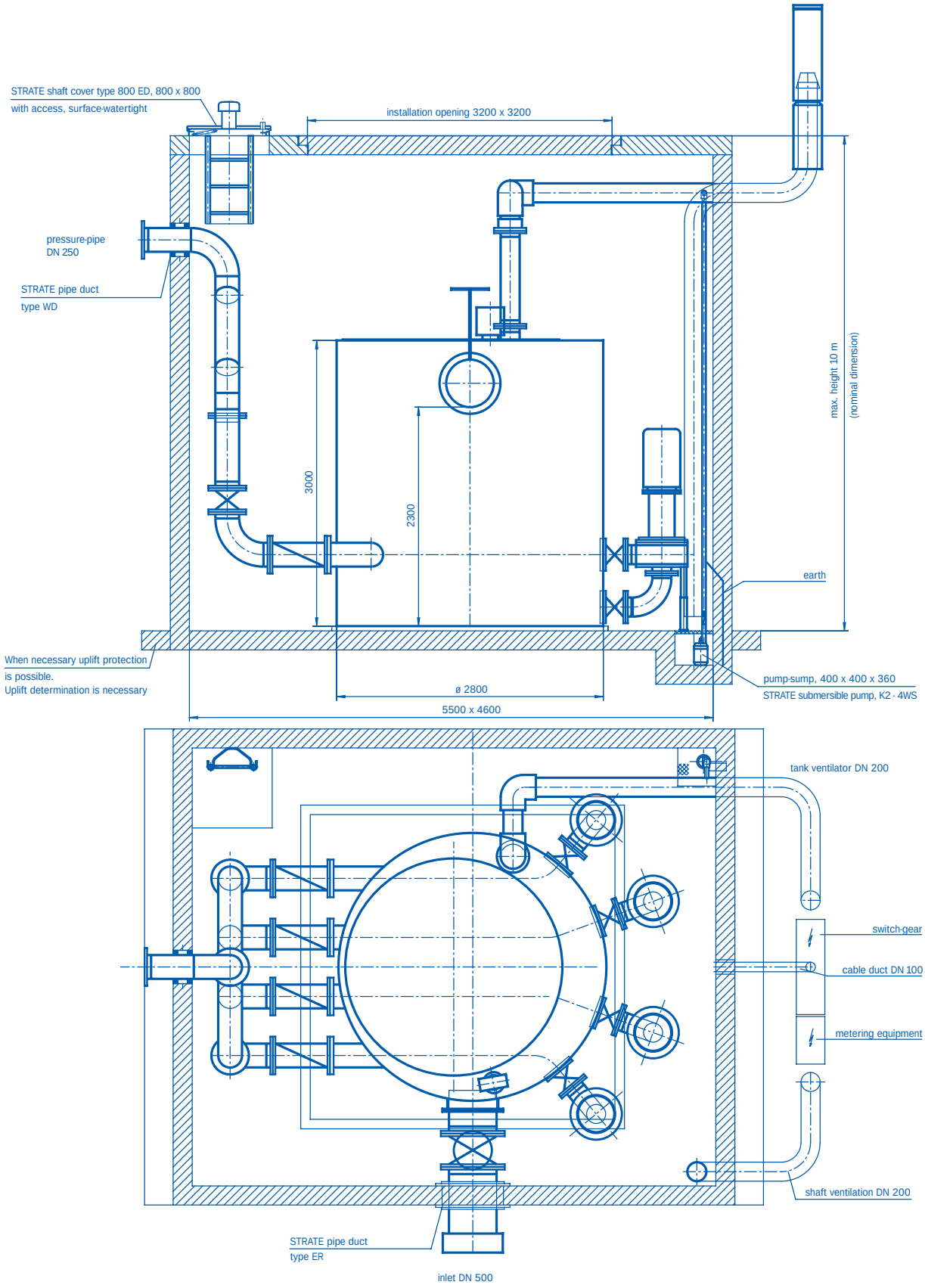

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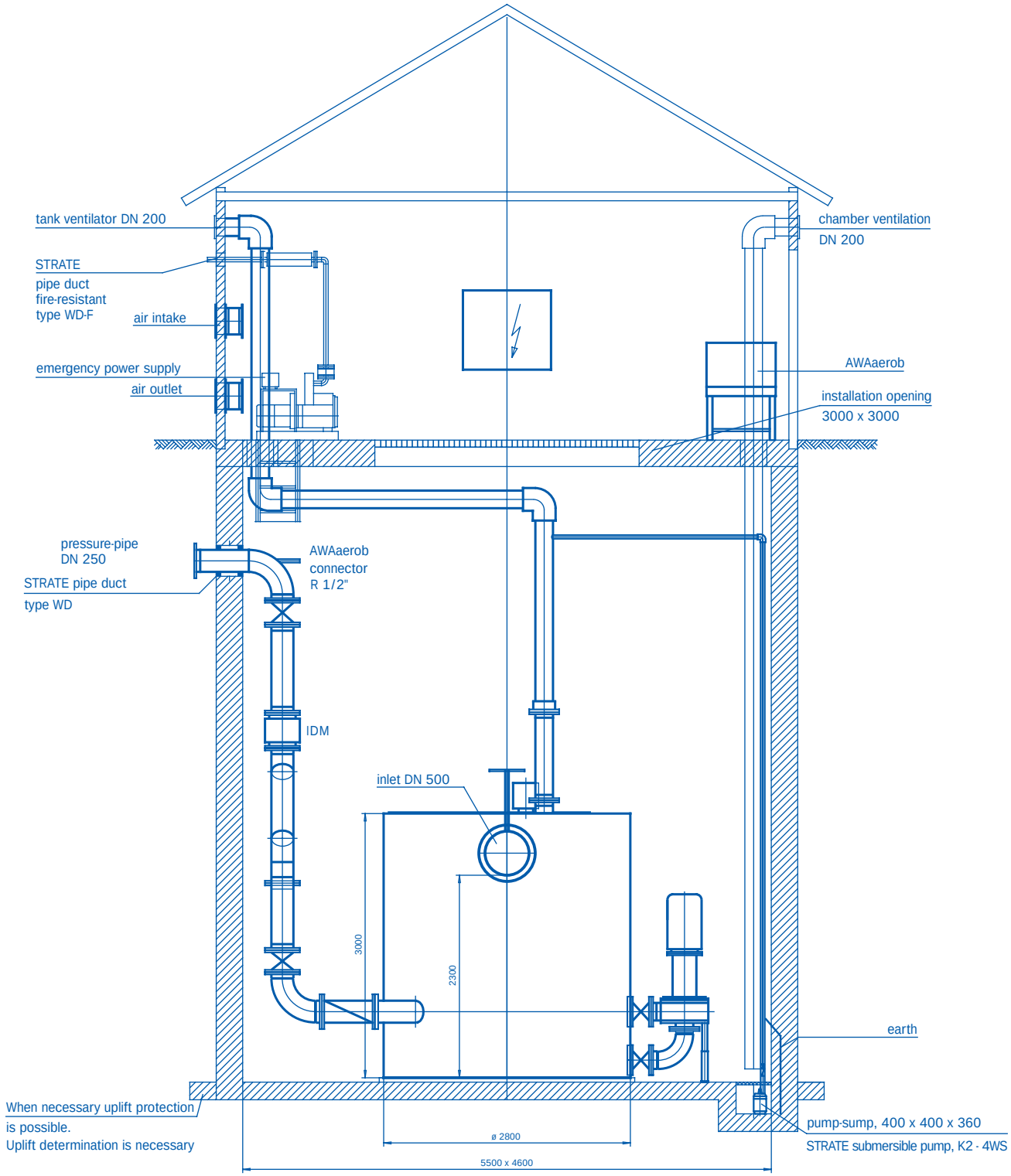

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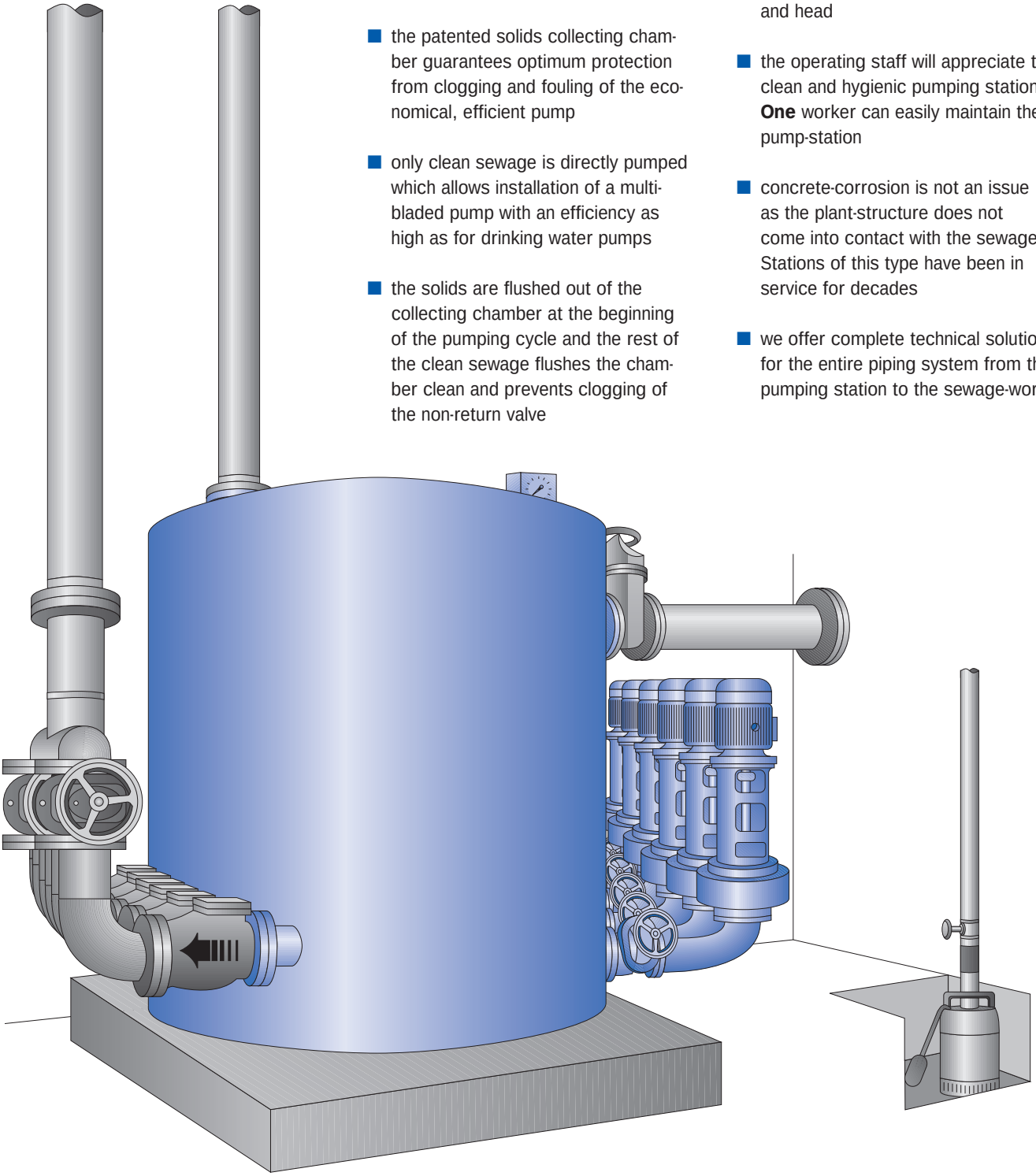
STRATE

AWALIFT 10/6

The sewage pumping station with the STRATE-system

The STRATE AWALIFT 10/6 is different from all traditional pumping stations and has many advantages:

- the patented solids collecting chamber guarantees optimum protection from clogging and fouling of the economical, efficient pump
- only clean sewage is directly pumped which allows installation of a multi-bladed pump with an efficiency as high as for drinking water pumps
- the solids are flushed out of the collecting chamber at the beginning of the pumping cycle and the rest of the clean sewage flushes the chamber clean and prevents clogging of the non-return valve
- many models of motor provide numerous installation possibilities with respect to pumping capacity and head
- the operating staff will appreciate the clean and hygienic pumping station. **One** worker can easily maintain the pump-station
- concrete-corrosion is not an issue as the plant-structure does not come into contact with the sewage. Stations of this type have been in service for decades
- we offer complete technical solutions for the entire piping system from the pumping station to the sewage-works



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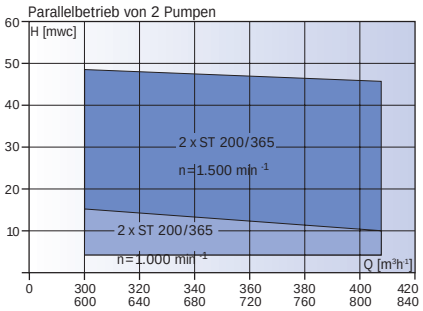
AWALIFT 10/6

Plant capacity:	800 m^3h^{-1} raw sewage, 37000 P.E.
Free through-flow:	200 mm
Pumped head:	up to 47 mwc
Inlet height:	2300 mm
Tank dimensions:	Ø 3800 mm x 3000 mm
Tank contents:	15 m^3
Weight:	6300 Kg
Space requirement:	7,50 m x 6,50 m
Installation opening:	4,20 m x 4,20 m
Inlet connector:	DN 500 - DN 600
Pressure-pipe connector:	DN 350 - DN 500
Ventilator:	DN 200
Electrical connection:	As per requirements

Pump curves



Other characteristics on request. Installed pumps ST 200/365. The pump rotors are fitted to suit the individual operating conditions. Individual pump curves are, thus, dependent upon individual project specifications

Materials

Tank:	St 37-2
Pump:	GG 25
Coating:	Primed with Permatex, thick coating in green
Corrosion protection:	EGD/TPE-coating

Other materials available on request.

Description

The fully automatic STRATE sewage pumping station AWALIFT 10/6 with the solids collecting system and multi-bladed centrifugal pump pumps raw sewage with a free through-flow diameter of up to 200 mm with a high efficiency and a pumped-head of up to 47 mwc.

Due to the relatively small volume of water retained in the gas- and water-tight collecting chamber, the sewage is always fresh when pumped into the pressure-pipe system.

The STRATE non-return valves with their 100% free-through-flow do not clog as the solids are flushed into the pressure-pipe system at the beginning of the pumping cycle. A layer of scum cannot form as the solids collecting chamber also retains floating matter and fatty materials and other small floating matter is sucked off the surface of the residual water by the automatically-delayed switching off of the pump.

The automatically delayed switching draws air into the system which allows the non-return valves to close gently without any water-hammer before the pump is finally switched off. This reduces the chance of pressure-surges.

Coarse materials reach the sewage-works without being crushed or macerated and are, thus, easily separated from the effluent.

The pumping station is always easily accessible as the structure is not in contact with the effluent. Under these clean and hygienic conditions the station can easily be maintained and inspected by one person.

Our specially developed coloured coating is equivalent to an EKB-coating.

Application

For draining of small districts with up to 37000 inhabitants which cannot be drained by natural fall, or as an intermediate pumping station in pressurised drainage system.

Delivery

The STRATE sewage pumping station AWALIFT 10/6 consists of:

- Tank with six solids collecting-chamber system
- 6 centrifugal pumps ST 200/365
- Non-return valves and gate valve
- Pipework up to 1 m outside the installation
- Switch-gear
- Installation

Options

- Cellar drainage pump
- Fault-indication system, monitoring system, remote operation system
- Inductive flow-meter
- Emergency power system
- STRATE ventilation system AWAaerob for the pressure-pipe system
- STRATE AWALIFTSCHACHT pre-fabricated shaft
- STRATE AWASTATION pre-fabricated building
- Ventilation valves
- EVU-building connection

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AWALIFT

Mechanical accessories for AWALIFT sewage pumping stations

Pressure-pipe connector piece / inlet connector piece for plastic / cast or AZ pipes

Hand diaphragm pumps

Pressure-pipe gate valve / Inlet gate valve

Option-Code	Option-article
1	Inlet connector-piece DN 100
2	Inlet connector-piece DN 125
3	Inlet connector-piece DN 150
4	Inlet gate valve DN 100
5	Inlet gate valve DN 125
6	Inlet gate valve DN 150
7	Gate valve connector-piece DN 100
8	Gate valve connector-piece DN 125
9	Pressure-pipe gate valve DN 100
10	Pressure-pipe connector-piece DN 100
16	Hand diaphragm-pump R 1 1/2" for wall-mounting, AWALIFT with connection-hole and blanking pieces
17	Hand diaphragm-pump R 1 1/2" mounted on AWALIFT
18	Three-way tap R 1 1/2" with key for option 18
19	Non-return valve R 1 1/2"
20	Stop-cock R 1 1/2"

Options available in special designs

STRATE

1 Sewage Pumping Stations

2 Submersible Pumps - not available

3 Control Panels/Remote Control Systems

4 not available

5 Container

6 Complete Buildings

7 Pipe and Wall Ducting - no more available

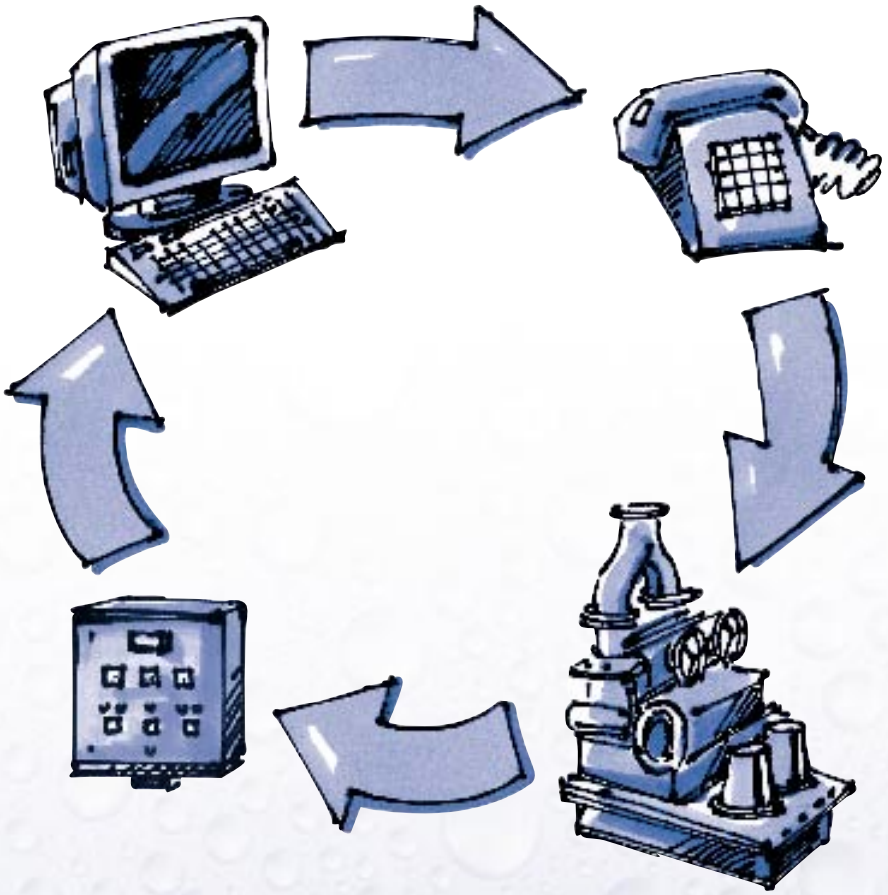
8 Non-return-valves

9 De-aeration Pressure and Relief Valves

10 Start-up relief valve

3 Control Panels / Remote Control Systems

Switch-gear for AWALIFT
Control systems for Submersible Pumps
Level monitoring systems
Alarm warning systems
Elt-Optional extras
AWAcontrol



AWAcontrol

The ABF system from STRATE

Installing large sewage networks with a central works demands effective monitoring and control of the pump-works. The ABF system for STRATE is the solution (ABF = Alarm (alarm), Betriebsdaten (operating data), Fernwirktechnik (remote control)). By installing STRATE AWAcontrol the operating and maintenance costs of monitoring the plants is reduced.

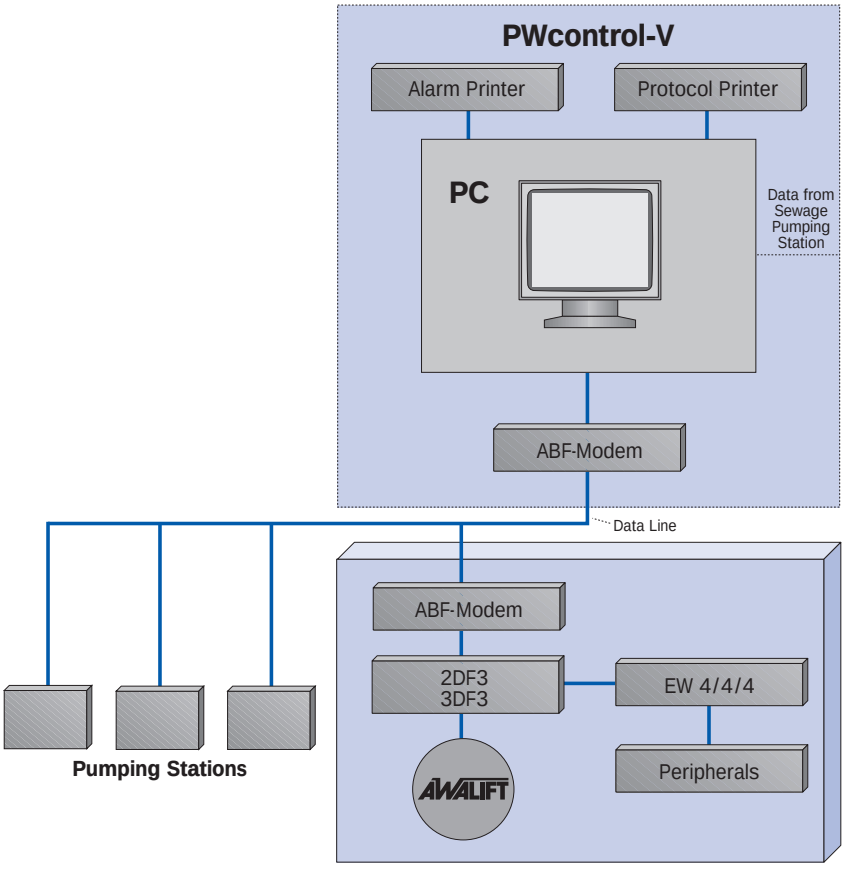
This is achieved by:

- Transmission of alarm warnings and operating data
- Display and visualisation of process data in the works
- Data-storage – to ATV-recommendation H 260
- Change of parameter data in individual control units

Description

STRATE AWAcontrol has three components

- **Control:**
  Control with the STRATE control units 2DF3 and 3DF3
- **Transmission:**
  Data transmission by various methods using modern techniques
- **Monitoring:**
  Monitoring and operation of pumping plants and sewage works to ATV-recommendation H 260



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AWAcontrol

Control

The heart of the STRATE AWAcontrol on the pumping side is the function-unit 2DF3/3DF3. They are the central components of the STRATE switch-gear for the control of pumping-stations of the STRATE AWALIFT type. The 2DF3/3DF3 is a compact control and operating unit, operable at several levels and displays the operating status in a 4-line display. It is remotely operable through two serial-ports. It has an event recorder which records and displays the last ten events. With the 2DF3/3DF3 all relevant parameters for the operation of the plant can be set and monitored centrally. An integral bar display continuously displays the level in the collecting chamber. The inputs and outputs of the 2DF3/3DF3 can be extended with the extension module EW 4/4/4.

Transmission

STRATE AWAcontrol can be operated with various means of transmission:

- **Dialled connection:**
  communication via the telecom network by use of a modem. Data is only transmitted when necessary (i.e. when a fault occurs or a command is sent)
- **Fixed line:**
  communication by modem on a leased telecom line
- **Bus connection:**
  communication by modem on a private network (various configurations are possible). With this option data can be transmitted continuously.

- Other connections available on request.

Monitoring

Monitoring is performed, according to requirements, either by the **PW Control** or **PW Control- V** programs:

PWcontrol is designed for monitoring up to 10 pump units. It stores the incoming fault reports until erased by the user. Operating conditions can b read from the pump-works and the pump-works switched using the unit.

PWcontrol-V is designed as a monitoring for a large sewage works and networks. The V stands for visualisation i.e. all values and operating conditions can be displayed graphically. For general monitoring the sewage network can be schematically represented. On this representation the instantaneous conditions of the individual pump-units can be represented, with a computer mouse

any particular unit can be picked out.... Then, in addition to he operating conditions, the operating data can be represented. From this screen the process data can be altered or printed out. A data storage programme can be installed which conforms to the ATV recommendation H260. This data can be stored electronically and/or printed out.

When required the system can measure all the data from a sewage works, calculate values and display them. It can, as in the case of pup-works enter the process and alter the parameters.

Naturally all this data can also be stored and archived.

Other plants and functions can be connected.

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Control system

The controller can be operated and set at various levels by maintenance-personnel, plant-manager and/or STRATE service. The serial port can be used for connection of a modem for data-transfer with STRATE protocol to the sewage plant and/or to STRATE and for connection of a computer in the pump-unit (e.g. STRATE service). With this arrangement, in addition to on-site operation, there is the possibility of programming switching points, dates, times etc using remote control.

For sewage plants many other applications are possible by extending and altering the programming of the controllers.

Function

As in the standard double switch-gear the pumps operate in sequence. Should one pump fail then it will be skipped in the programme. The .DF3 shows all conceivable operating conditions of a sewage pumping station on a 4-line display and much optional equipment too. Clearly the unused connections are available for use in the plant. The event-logger records, amongst other things, the 10 last events for display. As well as setting pump run-times the following are possible,: single pump with variable run-times, parallel operation, variable pause-times for pump-switching (throttled operation) and adjustable delayed-operation to avoid valve-hammer. A bar display gives information on the level in the collecting chamber of the AWALIFT plant. With the STRATE level-monitoring system e.g. type HWAS a continuous display of level and fine-tuning of the pump operation is possible.

Technical data

Base unit .DF3

CPU: Microprocessor of the 8031/51 family, > 11MHz clock-time with calendar function and watchdog

Ports: 2 RS232 ports, 1 system bus port for extension module (max. 8), 1 system bus port for operating and display unit, connector for external back-up battery (12V DC).

Front panel: Back-lit alphanumeric LCD display with 4 lines of up to 20 characters, 8 buttons with tactile feedback, 20 element LED display for analogue values

I/O: 22 digital inputs, 2 analogue inputs 0-20 mA, 1 analogue output (repeat of analogue input 2), 17 digital outputs, 230 V 1 A

Program-ming: EPROM loaded pumping software

Power-require-ments: 230 V AC (±10%)/ 50 Hz (±2%)

Operating temp.: 0 bis +55°C

Humidity: ≤90%, non-condensing at +20°C ≤50%, non-condensing at +40°C

Pumping software: Settable with the display and compatible with the digital and analogue STRATE level-monitoring systems

Optional accessories: Extension model 444, intelligent module with analogue and 4 digital inputs as well as 4 digital outputs for the extension of the STRATE functions unit. A maximum of 8 units can be connected. Modem unit with 19" plug-in modem unit for telephone or fixed-line use with built-in battery for operating the modem and control-unit for the STRATE remote control system AWACONTROL in case of power loss.

Specifications subject to alteration

Integration of other controllers

In order to accommodate not just future installations but to cover all events controllers from other well known producers (e.g. ABB, Siemens) are compatible with STRATE switch-gear with or without remote control special functions and displays. The display unit VT100 is available to make this possible.

February 1999

Control cabinets

Control cabinet

STRATE switch-gear can be delivered in an insulating (ISO) housing with clear cover or in a plastic cabinet, or in a steel cabinet for wall or stand mounting or simply on a mounting plate.

Standard double switch-gear without display with controller 2DF2 in a plastic (ISO) case.

Double switch-gear with 2DF3 controller in steel wall cabinet

Control display

For effective control and monitoring of processes the switch-gear and displays are an important element, so, for STRATE switch-gear, in addition to the main-switch and a volt-meter (switch-able) every significant plant has a Hand - ø - Automatic switch ammeter, operating-hours meter and with an integral .DF3 the appropriate operation- and fault-warning lights fitted in a prominent spot. The display can be completed with additional warning lights which allow monitoring of the relevant processes. On request a modem controller with an LCD display can be fitted to provide the user with more information on the current processes and to simplify their use.

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Level monitoring systems

The effective level-determination

HWWS

HWAS

For efficient control of STRATE sewage pumping stations precise level determination is necessary. For this application various suitable level-monitoring systems are available.

Type MB

For single units and double units up to AWALIFT 1/..

MB
Contact-maker for the switching point of pumps on/off, pause and parallel operation. Mechanical links and switch are mounted in a plastic housing which can be installed outside the collecting tank.

MBAS
Pressure transmitter for analogue level determination conceived in particular for operation with the .DF3 function unit. Power supply 24 V DC. Zero potential measuring signal 4.....20 mA. Pressure range 0.1-1 mwc, safe at several times over-pressure.

MBASBN
For particularly important pumping stations, we have produced contact-makers that are made of two entirely different independent systems in order to guarantee a particularly high plant reliability. An analogue system for control via SPS and a contact-make-unit of a mechanical nature to provide emergency control in the case of failure of one of the components. This system consists of the contact-maker MB and the analogue pressure-transmitter MBAS.

Type HW

For pumping stations with two or more up to AWALIFT 2/...

HWS
Closed, pneumatic switching-system, sewage-resistant pressure-bellows connected via a protective tube to the end-membrane. The micro-switches for the 4 switching points are easily accessible in a steel housing mounted on the collecting chamber.

HWWS
Like HWS but with a built-in continuous level display.

HWAS
Pressure transmitter for analogue level determination designed in particular for operation with the .DF3 function unit. Power supply 24 V DC. Zero potential measuring signal 4.....20 mA. Pressure range 1.5-3 m WS, safe at several times over-pressure.

HWASBN
For particularly important pumping plants, we have produced contact-makers that are made of two entirely different independent systems in order to guarantee a particularly high plant reliability. An analogue system for control via SPS and a contact-make-unit of a mechanical nature to provide emergency control in the case of failure of one of the components. This system consists of the contact-maker HWS and the analogue pressure-transmitter HWAS.

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Alarm warning systems

For reliable fault-monitoring

Alarms can be on the pump-unit, either visually or acoustically, or by means of remote transmission by a telephone or fixed line they can be displayed in a central unit.

Ni-Cd alarm unit

This acoustic alarm-unit is designed for indoor use. Equipped with a mains-independent 9 V battery, test button and built-in battery charger. The housing has a 230 V Schuko mains-plug. The apparatus should be fitted to a fixed socket.

Ni-Cd alarm-unit 2.5l

(For submersible pumps)

This alarm is identical to the Ni-Cd unit but has an additional alarm for high water-level with a contact-maker on a float-switch with 2.5m of connecting cable.

Alarm-unit AG220/12

Mains-independent alarm-unit with 1.8 Ah 12 V battery and integral charger. Cancel button for alarm. For alarm warning an additional external unit must be fitted e.g. AM 12. In addition there is a contact for remote transmission. Connection to 230 V, 50 Hz by mains-plug on a mains-cable.

Alarm warning-unit AM12

Sound and visual warning with a yellow flashlight. Weatherproof plastic housing with side-mounted 12V Dc power-supply.

Telephoning equipment

A telephone connection with dialling apparatus is a suitable option for provision of immediate fault warning transmission to maintenance personnel . The fault warning can be simply transmitted with various lines and messages or as collective warnings to several numbers. Telephone-dialling units operate with a built-in battery and, thus, can transmit alarms even in the case of power loss.

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Flow-meters and display equipment

Inductive flow metering (IFM)

IFM's are installed for measuring the pumped sewage flow. Usual measured values are the instantaneous flow and the cumulative total flow. The IFM consists of a measuring probe and a data-converter. The data-converter can be fitted to the unit or delivered as a separate unit. The separate design can have the data-converter fitted to the wall in the pump- or switch-room or integrated in the switch-cabinet. The measuring device ids built into the pressure-pipe.

To keep inaccuracies to a minimum it is advisable to install calming sections of 3.5 x DN before and 2 x DN after the measuring device. It is necessary to guarantee the pipe remains full. The flow-signal can be used for determination of a particular pumped amount per hour or per day by processing in the controller. For the display on the measuring units or for remote transmission of the flow-data the current output 4...20mA is used for the instantaneous flow-rate and the pulsed output as a zero-potential contact for the total flow amount.

Displays

Display instruments for the flow output (Instantaneous flow)

Moving-coil meter

This is a reading instrument for the instantaneous through-flow. The following data must be provided on ordering:

1. Current value 0...20 mA or 4...20 mA
2. Maximum measured value (for scale divisions) e.g. 200 m^3/h^{-1}

Line plotter

This is an instrument for drawing the instantaneous flow-rate on a paper-roll. The paper is graduated, so, with the help of the printed scale a plot of flow vs time can be obtained.

Measuring instruments for the pulsed output

Counter

This is an 8-position electronic pulse counter with LCD-display and a reset button, operable at will, which zeroes the display. It is also possible to install two counters and just activate one of the reset buttons. The first counter then shows the total amount and the second counter the difference between the reset points.

Numerical printer

This is a printer which gives the total amount and a difference amount. The time-period for the difference is settable and can be e.g. one day or one month.

Measurement with the STRATE controller .DF3 and SPS with display

The controllers 2DF3, 3DF3, 2 x 2DF3 and the in-house programmed-controller from other suppliers (e.g. ABB, AEG, Siemens) which have a display accept the following inputs and can display them, if necessary with assistance from remote-control equipment:

- Instantaneous flow – the measurement range is freely settable just as for the flow-output (0/4...20 mA)
- Total amount – the total sewage pumped
- Daily amount – the amount pumped from 00:00 to 23:59 on the previous day.

February 1999

Switch-gear

Controls for AWALIFT

Every machine has an optimally matched and reliable switch-gear to reduce wear-and-tear and keep them operating efficiently. STRATE switch-gear is produced to the latest designs and legal requirements from the highest quality components. They are designed to be the optimum match for STRATE machines and plants with years of experience and can always be extended to meet customer's needs. In particular, STRATE controllers .DF2 and .DF3 avoid extra loading of the plant with their special control algorithms and special modules are also available. Units from other manufacturers can be integrated into our control units.

Single switch-unit

The standard switch-gear has applications in all pumping stations with one pump. The unit can be automatically operated or stopped. They have thermal motor-protection

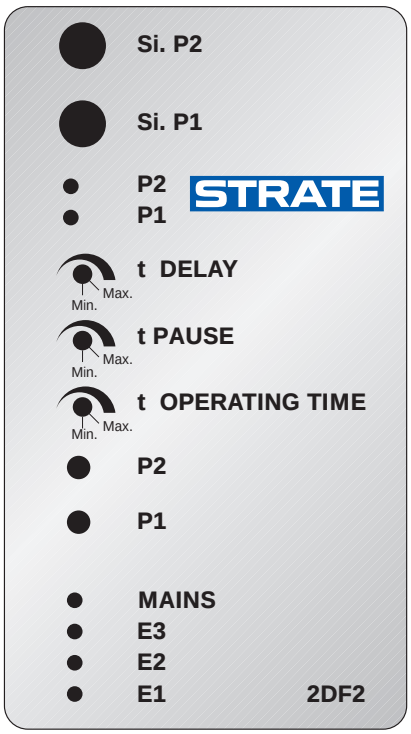
Standard double switch-gear

Use

Pumping stations with two pumps need switch-gear which is able to cope with the particular process demands and to cope with the operating conditions.
For the particular requirements of the STRATE AWALIFT pumping stations our controller 2DF2 has been developed which is also applicable for the control of submersible pumps.

Function

The controller controls the automatic switching of the pumps. For water-level dependent control a level monitoring system type MB is necessary as an optional extra. When one pump malfunctions the other pump automatically switches in. In cases where the in-flow is particularly high the pumps are operated in parallel. Running, pause and delayed operating times are settable in 16 steps to suit the operating conditions.



Technical data

Base unit 2DF2

CPU:	CMOS Microprocessor with RISC CPU watchdog
Operating display:	**LED's** for operating conditions, the three **switch levels** in collecting chambers, operation of each pump, adjusting switches for run-time, pause-time and delay-time and **buttons** for direction control of each pump.
I/O:	4 Digital inputs, 2 pup outputs, 1 fault output (relay output 230 V/2 A)
Power-requirement:	230 V AC (±10%) / 50 Hz (±2%)
Operating temp.:	-15°C to +55°C
Humidity:	≤90% at 20°C
max. altitude:	3000 m above sea level

(Specifications subject to alteration)

Double switch-gear with LCD display

(Event logger and remote operation)

Use

Through planning and installation of bigger sewage networks with a central sewage works, monitoring and control of the pump units has become all the more important. To meet these demands we have developed the new switch-gear generation, .DF3, for you. The function unit .DF3 is the central component of the STRATE switch-gear for control and monitoring of an AWALIFT sewage pumping station. The freely programmable function unit can be installed for various pump arrangements e.g.

- 2DF3 for double pump unit with 2 pumps
- 2 x 2DF3 for double pump with occasional 2 pumps in series
- 3DF3 for pump units with 3 pumps

4 Containers

AWALIFTSCHACHT
for AWALIFT and Submersible Pumps
Shafts

4.01.E **AWALIFTSCHACHT,** the pre-fabricated shaft

4.02.E **AWALIFTSCHACHT,**
the pre-fabricated shaft system

4.03.1.E **AWALIFTSCHACHT**

4.03.2.E **Emptying shaft with injection for AWAaerob**

AWALIFTSCHACHT

The pre-fabricated shaft from STRATE

Unloading of the shaft with a crane

Description

The prefabricated STRATE AWALIFT-SCHACHTcombines in its construction the advantages of fibre-reinforced cement or glassreinforced plastic, precise construction, low-weight, high specific strength, corrosion-resistance, absolute waterresistance and long-life with the simple economical moulding of these materials and the stiffness of reinforced concrete. The shaft-pipe consists of fibre-reinforced cement for diameters up to 1500 mm and GRP for diameters above 1800 mm. The pipe-ducts are flexible and watertight. The shaft-floor forms a ready-prepared reinforced concrete uplift-preventer* as well as the shaft floor which is sealed to the shaft-pipe with a water-tight connection. We guarantee its water-tightness. It is possible to do away with a pump-sump. The top-plate is also made of reinforced concrete with a surface water-tight cover.
DIN tested steel rungs provide a safe access to the shaft. The shafts meet all the demands of the ATV sewage requirements. The pre-fabricated STRATE AWALIFTSCHACHT conforms in its production and delivery to all the technical requirements in planning, production and operation. As they are completely water-tight they are particularly suited for special applications (e.g. purification equipment, ventilation equipment etc).

*Prepared for site-installation of uplift-prevention as shafts are not inherently secure.
Uplift determination is necessary.

Applications

The STRATE AWALIFTSCHACHT, whether in private or communal use, finds application when the installation of sewage-pumping works is not possible in planned or existing buildings. It is suitable for the installation of all STRATE AWALIFT pumping stations and the installation of STRATE submersible pumps. Ventilation valves can be housed in an AWALIFTSCHACHT in an ideal, maintenance-friendly, reliable unit. Pipe and cable ducts are installed at the factory according to specification. Electrical switch-gear can be accommodated in an external cupboard or an adjacent building.

The AWALIFT/AWALIFTSCHACHT or the AWALIFTSCHACHT/STRATE submersible pump combination considerably reduce installation time on-site.

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AWALIFTSCHACHT

Delivery

The pre-fabricated AWALIFTSCHACHT consists of:

- Pre-formed concrete uplift-preventer
- Reinforced-concrete floor-plate
- Fibre-reinforced concrete or glass-reinforced plastic shaft
- Steel rungs with raised edges
- Pipe-ducts for inlet and outlet pipes and ventilation pipes
- Reinforced concrete top-plate
- Shaft-cover of your choice: accessible, lockable, galvanised-stainless-steel, accessible per requirements class A - D
- Uplift determination (at extra cost)

Site requirements

- Excavation of the trench
- Installation of the shaft by crane or excavator
- Positioning and sealing of the top-plate
- Connection of the various pipes to the shaft
- Installation of the uplift preventer
- Back-filling

Accessories

- Polyester external cabinet IP 55 (complete)
- Reinforced concrete floor-plate with pre-formed pump-sump
- Concrete spacing ring
- Special finishes
- Plant installation
- AWASTATION pre-fabricated building
- Ladder, safety equipment, entry aids

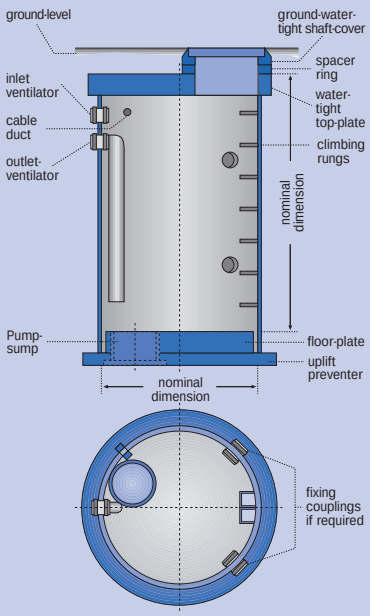
Technical data

AWALIFTSCHACHT	1000	1200	1500	1800	2000	2400
Material	FZ	FZ	FZ	GFK	GFK	GFK
Top-plate Ø mm	1230	1430	1800	2140	2300	2830
Top-plate thickness mm	200	200	250	250	250	250
Top-plate without cover kg	436	655	1343	1953	2421	3520
Load capacity of cover kN	max. 600	max. 600	max. 600	max. 600	max. 600	max. 600
Inner Ø mm	1000	1200	1500	1800	2000	2400
Wall thickness mm	27	31	37	24	28	32
Shaft weight kg	197	269	427	260	320	460
Total height m	max. 10	max. 10	max. 10	max. 10	max. 10	max. 10
Uplift preventer Ø mm	1300	1600	2000	2300	2500	3000
Total floor thickness mm	250	250	250	320	320	320
Floor without Sump kg	654	971	1517	2599	3132	4510
Floor with Sump kg	—	914	1460	2520	3053	4431
Suitable for AWALIFT	100	74/1	74/2	0/2	1/2	2/2*

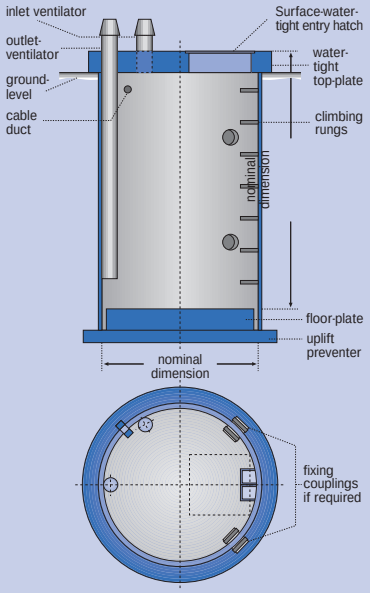
*with flattened tank

Application examples

AWALIFTSCHACHT – beneath groundwith pump sump



AWALIFTSCHACHT – above ground without pump sump



February 1999

AWA LIFTSCHACHT

The pre-fabricated shaft system from STRATE

- The solution to your construction problems
- Considerably reduced construction times
- Smaller trench hence less back-filling
- Reduced expenditure on halting flow and on installation
- Reduced making good of roads require meuts

Description

The STRATE AWALIFTSCHACHT system pre-fabricated shaft is manufactured from water-tight reinforced concrete B 45 as per DIN 1045 of load bearing class SLW 12. The wall thickness can range from 200-300 mm depending upon specifications.

The STRATE AWALIFTSCHACHT system consists of a bowl-shaped bottom section, one or more mid-sections dependent on shaft depth and a top-section with integral cover for installation openings and access opening and possible mounting of a STRATE AWASTATION pre-fabricated structure. In the bottom section there is a pump sump for the fitting of a submersible pump and a plinth for mounting the pumping gear. The individual shaft components have a keyed joint to prevent movement and are sealed water-tight on installation with a TOK-Band (fealing tape based on tar), fixing mortar and a two-component seal UDM-2. The specified pipe-ducts are fixed gas- and water-tight.

On installation the STRATE AWALIFTSCHACHT is finished off by fitting with stairs or a ladder and access aids, the necessary safety equipment and the shaft-cover.

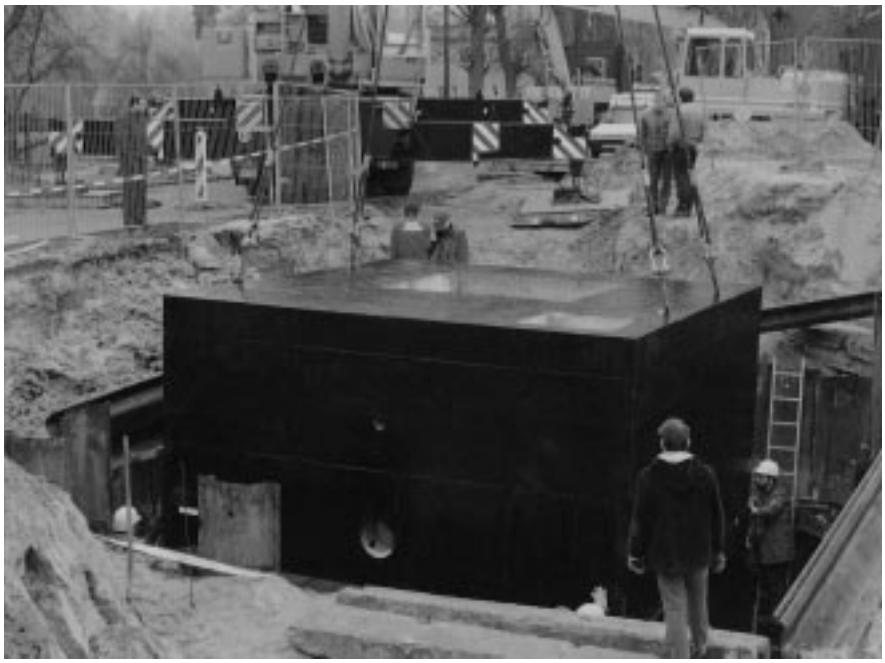
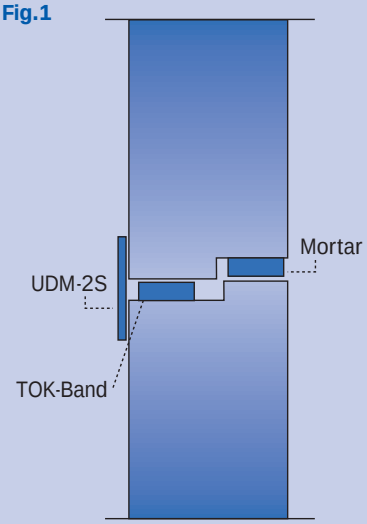


Fig.1



Applications

STRATE system shafts are applicable in many supply and sewage fields of any scale to meet DIN requirements. The STRATE AWALIFTSCHACHT is not only suitable for the installation of all STRATE AWALIFT sewage pumping plants in gas- and water-tight designs, but also for submersible pumps, ventilation equip-ment, flushing gear and measuring equipment. Combination of these installations with the STRATE AWALIFTSCHACHT considerably reduces installation times on-site.

For the site-engineers the costs are the main consideration and for the installation engineers the smooth and quick installation is the main consideration.

The STRATE AWALIFTSCHACHT can be fully operational once installation and back-filling are complete.

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AWALIFTSCHACHT

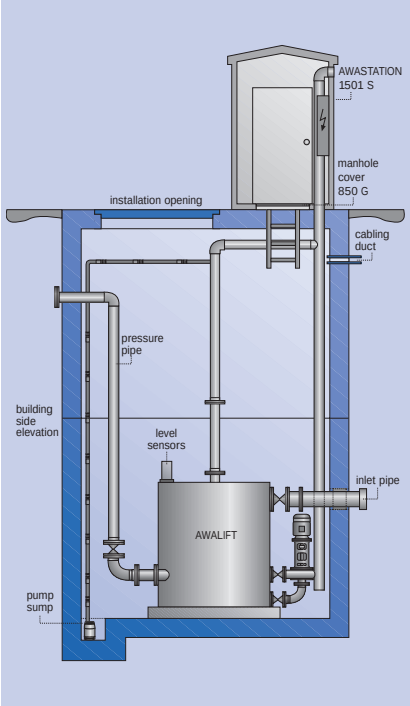
Delivery

On delivery the system shaft SL W12 consists of:

- Bottom section (walls and floor prepared joint-free)
- Mid-sections
- Top-section like a lid with an installation opening and access opening
- Ladder and entry-aids
- Insulated shaft-cover
- Shaft-ventilation
- Wall-ducts
- Roof-ducts
- Earthing
- Tested structure
- Uplift determination, uplift preventer, where necessary – dependent on ground-water and at extra-cost
- Free delivery to site, mounting the AWALIFTSCHACHT in pre-prepared trench including crane-positioning with provisos of a dry trench, load-bearing surface, free access for HGV's, turning circle 25 m, wheel load 60 kN, operating area 15 x 9 m, and a max. extension for the crane of 10 m.

Accessories

- Pre-fabricated compact structure AWASTATION 1500S
- Variants of STRATE AWASTATION
- External switch cabinet IP 55
- Special access arrangements - spiral or string-boarded staircase
- Electrical installation
- Special finishes, tiling
- Plant installation in shaft
- Load carrying capacity SLW 30 or SLW 60
- Uplift-prevention
- Outer covering in case of aggressive ground-water



Site requirements

- Excavation of trench
- Connection of the various pipe-systems
- Electrical supply
- Back-filling
- Water-flow stopping
- Access for HGVs

Specifications required for proposed AWALIFTSCHACHT

- Internal dimensions L x W x H
- Position and size of openings e.g. cover opening
- Load bearing capacity SLW 12/30/60
- Floor style as per DIN 18196
- Maximum height of ground-water level
- Is the ground-water corrosive to concrete?
- Weight of shaft buildings and loading vehicles during installation (STRATE AWASTATION, installation vehicle, installation loads, fixtures)
- Fittings (Rungs, ladder, stairs, shaft-cover)
- Installation location
- Inner finish (Tiles, paint, etc)

Technical data

Type	2000 x 2000	2500 x 2500	3000 x 3000	3500 x 2500	3700 x 3000
Inner dimension [mm]	2000 x 2000	2500 x 2500	3000 x 3000	3500 x 2500	3700 x 3000
total height [m]	10	10	10	10	10
installation opening [m]	removable top-plate	removable top-plate	1,70 x 1,30	1,50 x 1,50	1,70 x 1,70
will accommodate up to AWALIFT	1/2	2/2 with flattened tank	3/2 with flattened tank	2/2	3/2

Type	4500 x 3500	4700 x 3700	5000x3700	5500 x 4000	5500 x 5000
Inner dimension [mm]	4500 x 3500	4700 x 3700	5000 x 3700	5500 x 4000	5500 x 5000
total height [m]	10	10	10	10	10
installation opening [m]	2,00 x 2,00	2,20 x 2,20	2,20 x 2,00	2,80 x 2,80	2,80 x 2,80
will accommodate up to AWALIFT	4/2 + 5/2	6/2	6/3	7/3 - 8/3	9/4*

intermediate sizes also possible!

*with non-return valves arranged vertically

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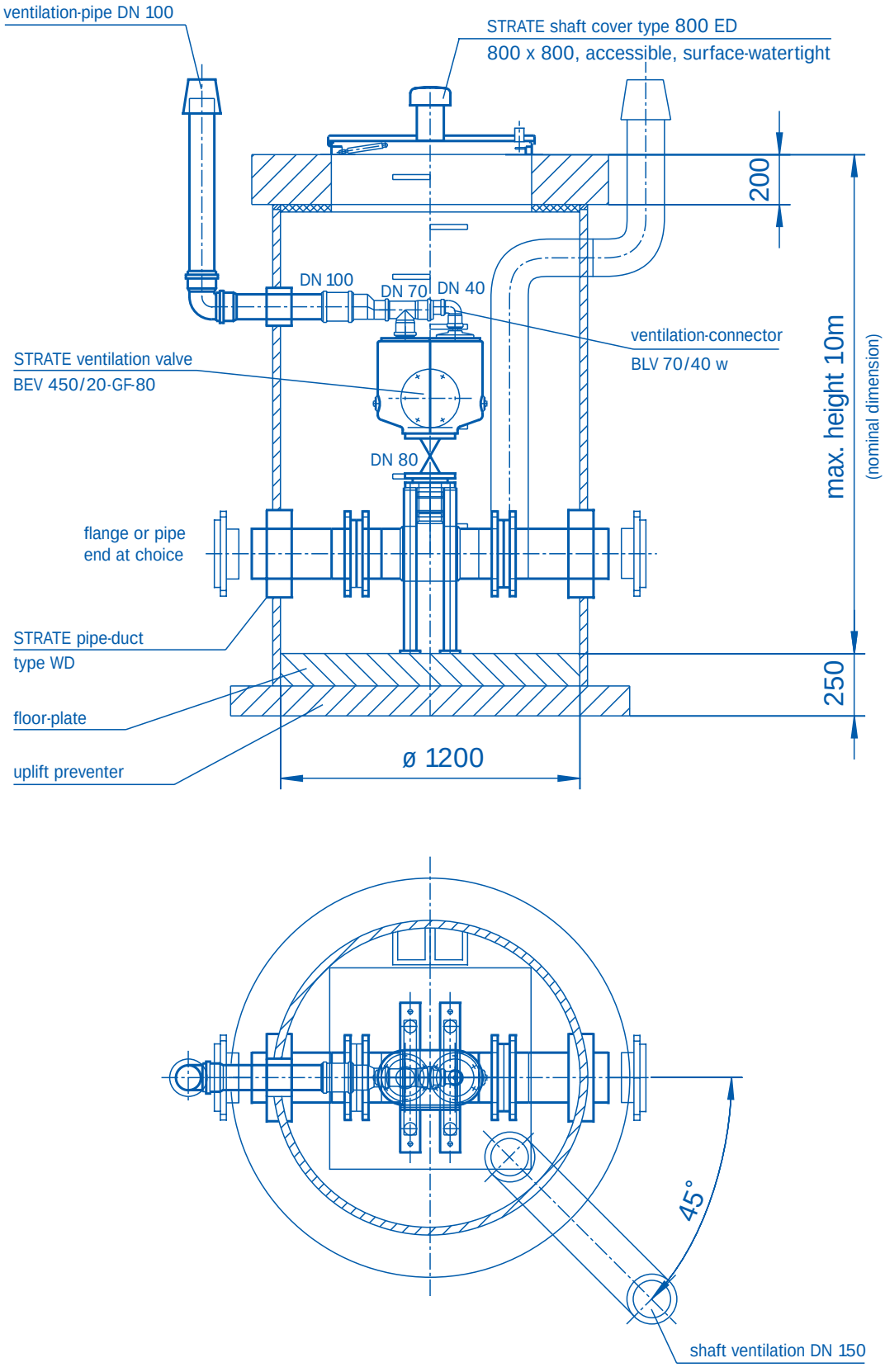

Copyright as per DIN 34	**Ventilation valve BEV in AWALIFTSCHACHT ready for connection**
Scale: ⁄	

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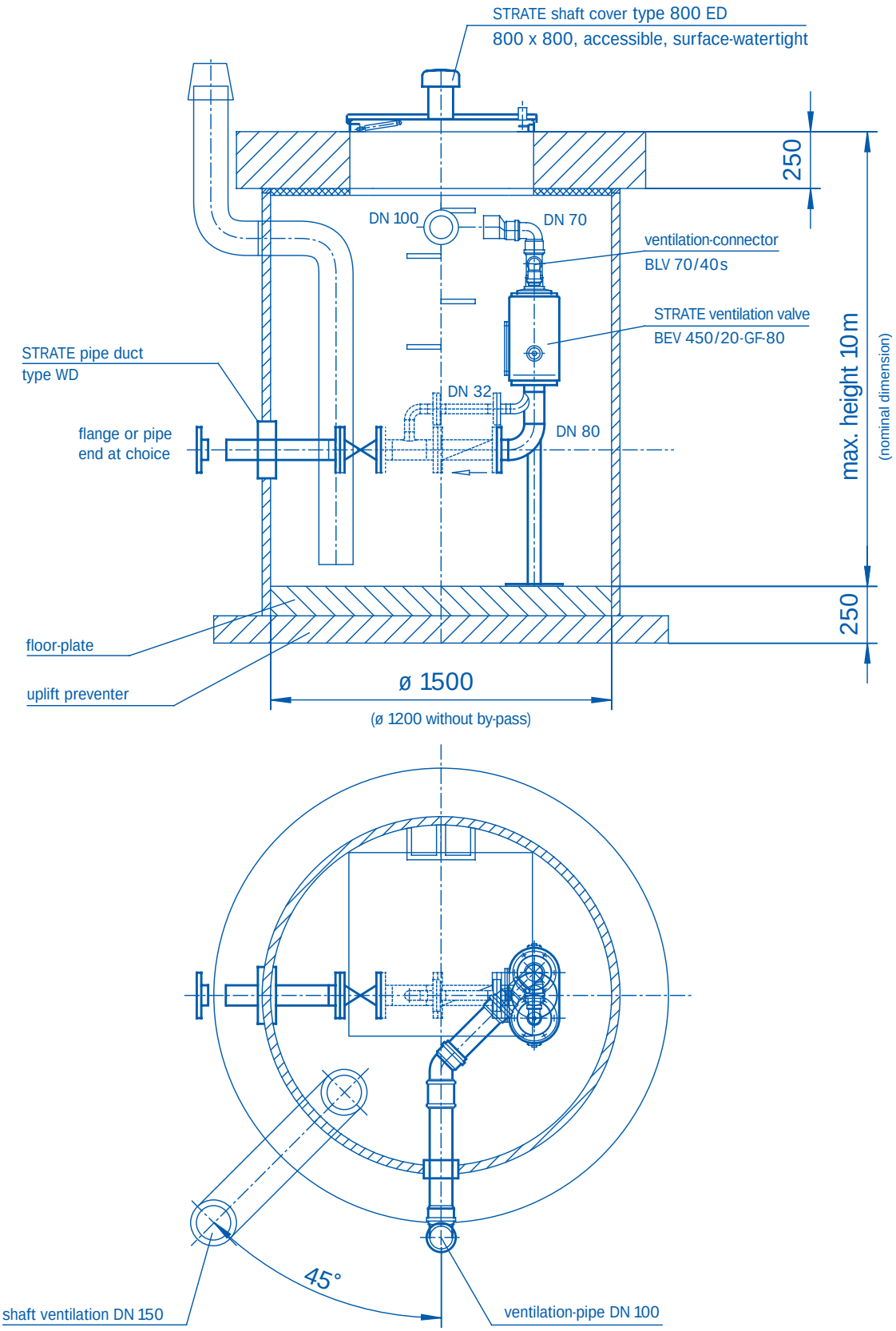
Specifications subject to alteration · February 1999



Copyright as per DIN 34	**Ventilation valve BEV in AWALIFTSCHACHT ready for connection optionally with bypass system for pressure surge damping**
Scale: ⁄	

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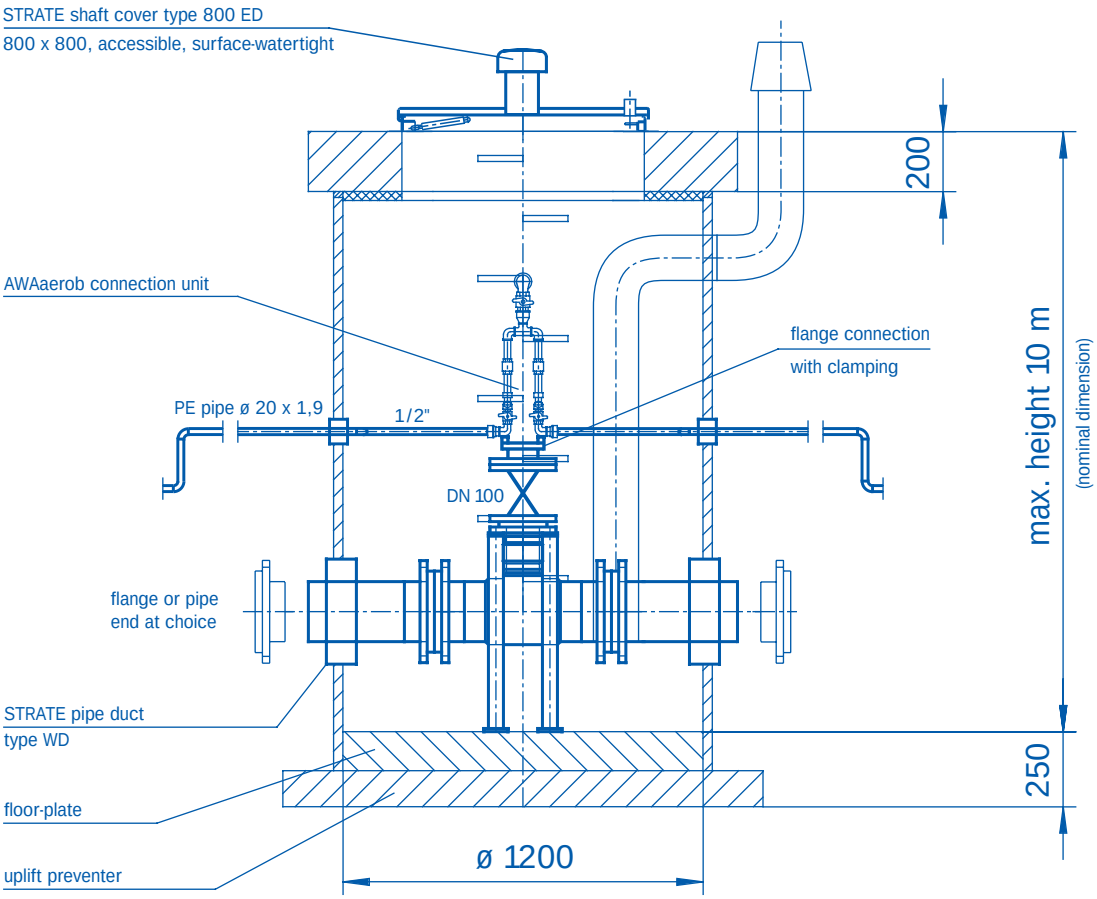

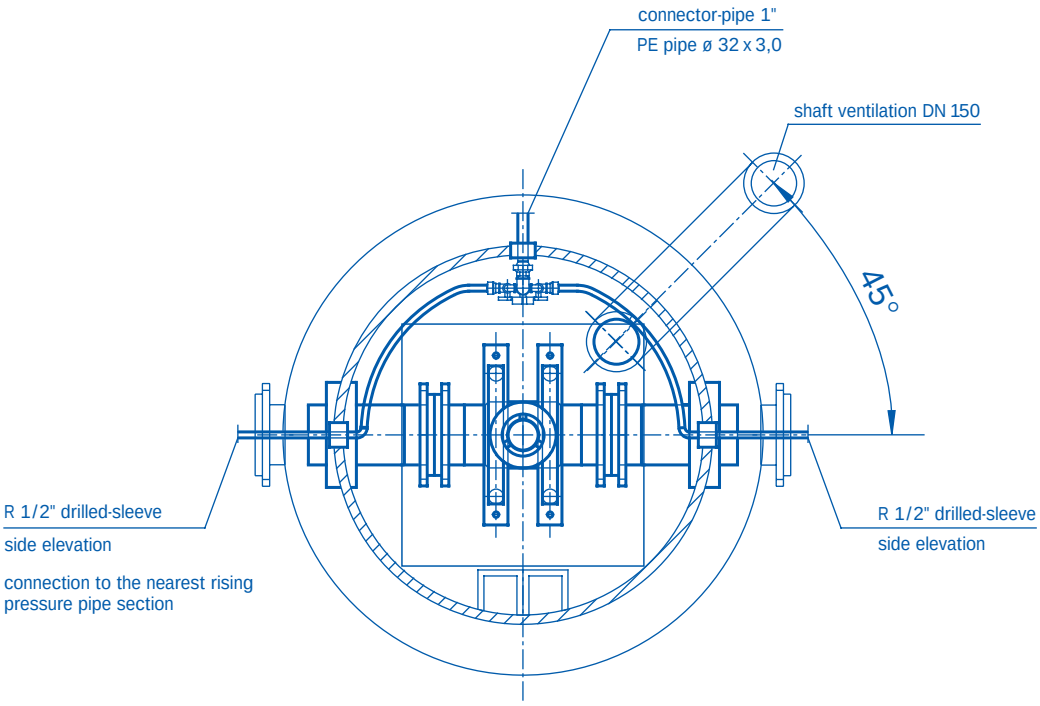

Copyright as per DIN 34	**Emptying shaft with injection for AWAaerob ready for connection**
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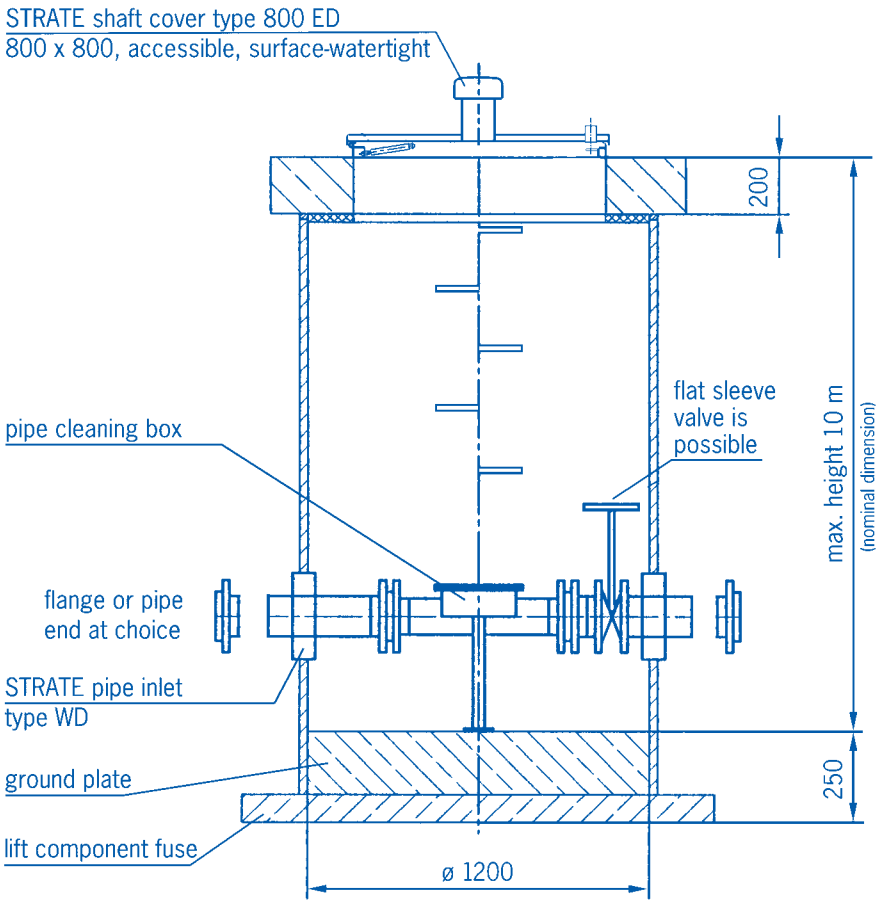

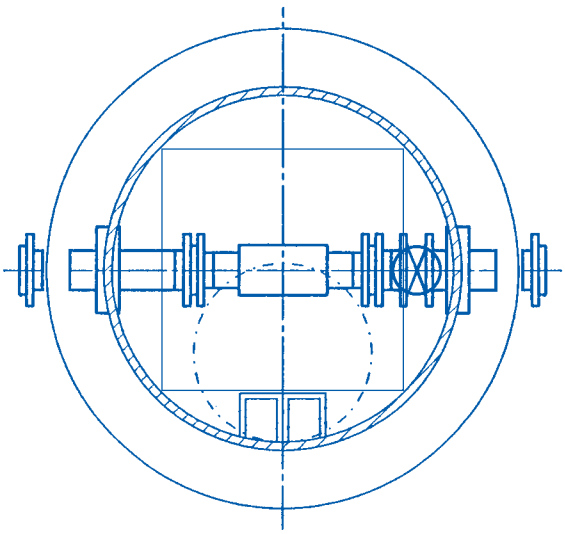

Copyright as per DIN 34	**Pipe cleaning shaft**
Scale: ⁄	**Planning suggestion**

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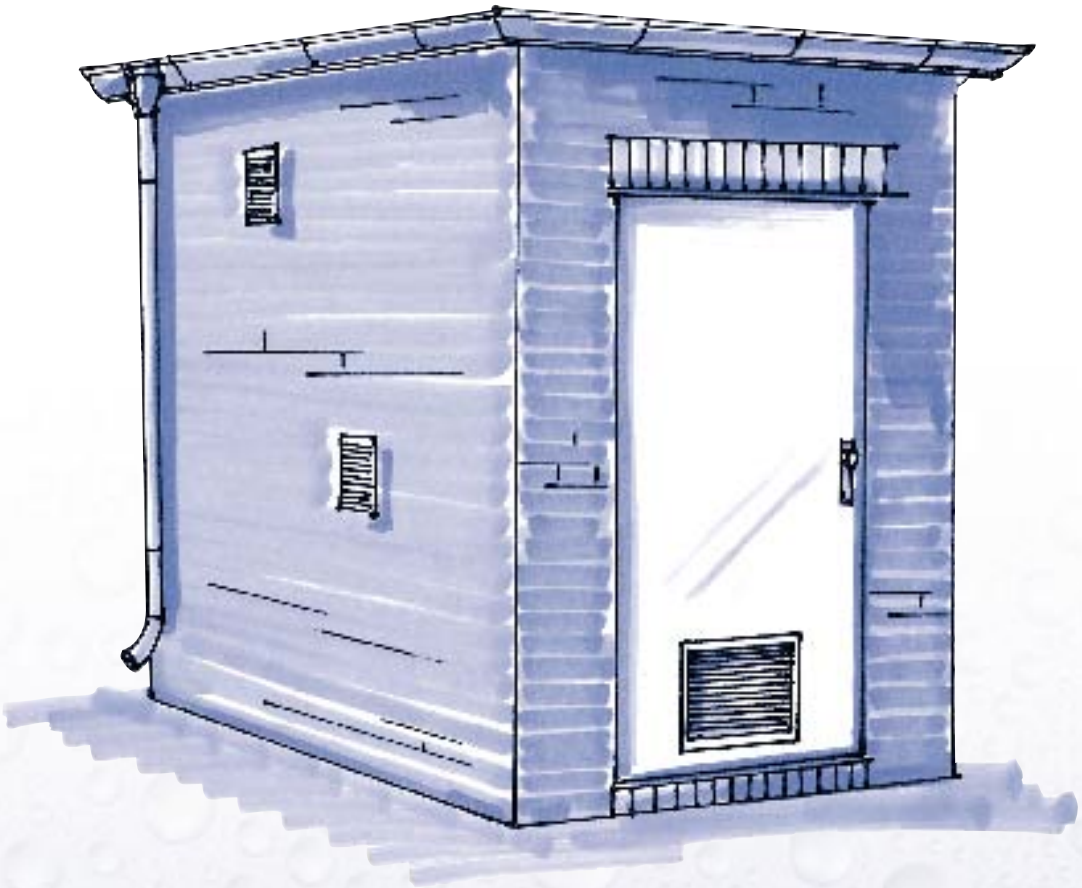
6 Complete Buildings

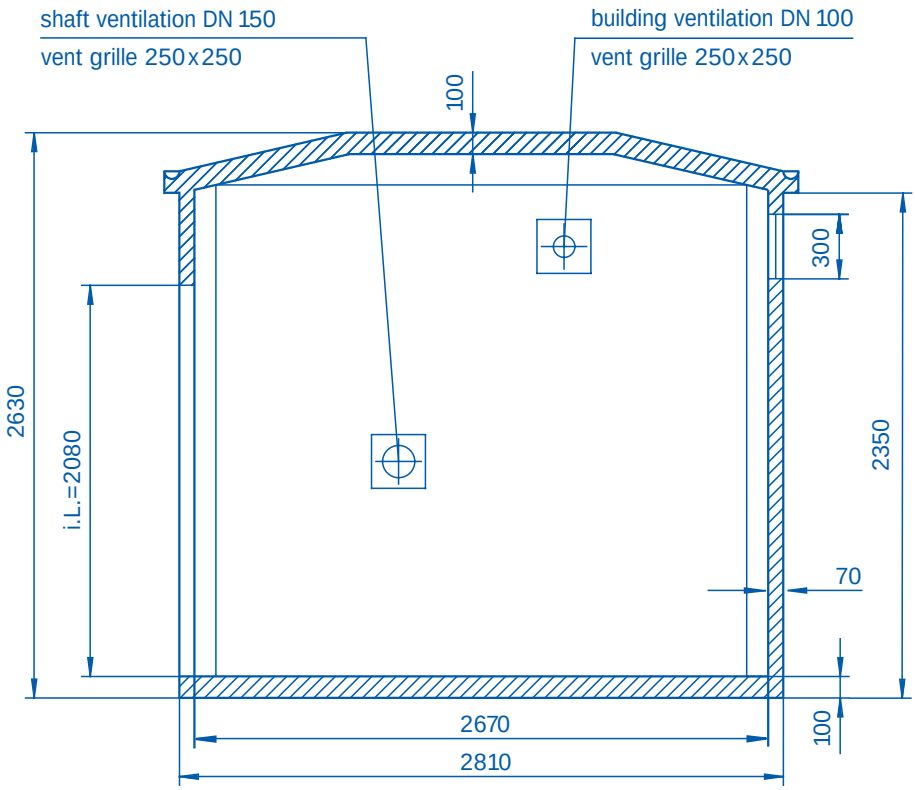
AWASTATION

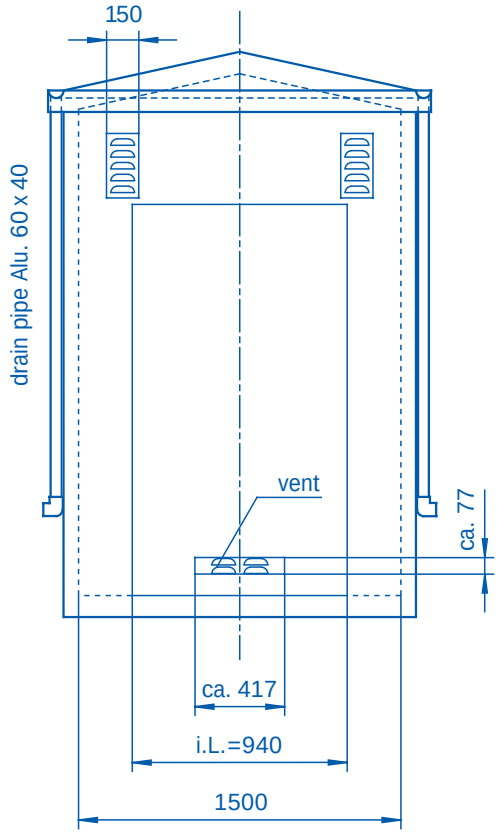
6.01.E AWASTATION 1500 S

6.01.1.E AWASTATION 1500 S

6.02.E AWASTATION







Copyright as per DIN 34	**AWASTATION 1500 S**
Scale: ⁄	

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Specifications subject to alteration · February 1999

AWASTATION 1500 S

The small plant building from STRATE

Brick facing

Description

- Road-transportable, unitary pre-formed concrete structure
- Re-siting possible
- Inner walls: plain concrete
- Outer walls: rendered finish
- Extended concrete-sheet roof (slope < 12°) in waterproof concrete
- Moulded concrete guttering
- Roof channel and two down-pipes 60 x 40 mm (AL)
- Concrete floor, smooth-finished

Applications

STRATE AWASTATION pre-fabricated buildings for installation on STRATE AWALIFTSCHACHT or on a foundation block next to the shaft for accommodation of electrical equipment, STRATE AWAaerob aeration equipment etc..

- Building extension
- Dry access to the shaft possible
- Tool storage

Moulded wood facing

Rendered finish

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AWASTATION 1500 S

Technical Data

Outer dimensions:	(L x W x H)	2810 x 1640 x 2630 mm
Inner dimensions:	(L x W x H)	2670 x 1500 x 2350 mm
Weight:		ca. 6t
Wall thickness:	roof:	100 mm
	walls:	70 mm
	Floor-bed:	100 mm
Concrete type:		B 45, DIN 1045

Delivery

- Road transportable concrete pre-fabricated structure
- Delivered in 4 packs
- Extended concrete roof
- Concrete floor-bed with openings for shaft-cover, cable-ducts etc.
- Steel door (galvanised, double-skinned, single-opening) W x H = 930 x 1820 mm, insulated.
- Inclined concrete guttering, roof channel, two down-pipes (AL) opening over the floor
- Rendering on the external walls of the STRATE AWASTATION in the colour of your choice
- Inner coating in a washable coloured finish
- Architrave and door finish to match the building finish or to your specification
- 2 Plastic grilles 250 x 250 mm to cover the shaft and building ventilator in the side-wall
- 2 Ventilators, secure, with insect screen (in the narrow wall opposite the door)
- Tumbler, half-cylinder lock, round knob to exterior, handle to interior
- Delivery to the open-site

Options

- General electrical equipment (plug sockets, lights)
- Door step in form of concrete block with integral galvanised foot-scraper L x W x H = 1000 x 1100 x 120 mm
- Fitting of a wash-basin
- Roof drainage with gutters of your choice
- Brick facing on external walls, joints 8 - 10 mm in colour of your choice, fire-resistant organically bonded surface-coating
- Moulded wood facing in impregnated pine with tongue and groove jointing mounted on the existing structure
- Insulation consisting of 20 mm thick Styropor insulating blocks. **Note:** Insulation is only possible with additional roof-drainage

Building works

- Earth- and brick-works, unloading and mounting on the STRATE AWALIFTSCHACHT or an a foundation block
- The foundation block to have the following dimensions: L x W x H = 600 x 500 x 750 mm (we can deliver this on request)

Down-pipes and ventilation grille in aluminium

Shaped rain channel in roof

Door with gas damper

February 1999

1 Sewage Pumping Stations

2 Submersible Pumps - not available

3 Control Panels/Remote Control Systems

4 not available

5 Container

6 Complete Buildings

7 Pipe and Wall Ducting - no more available

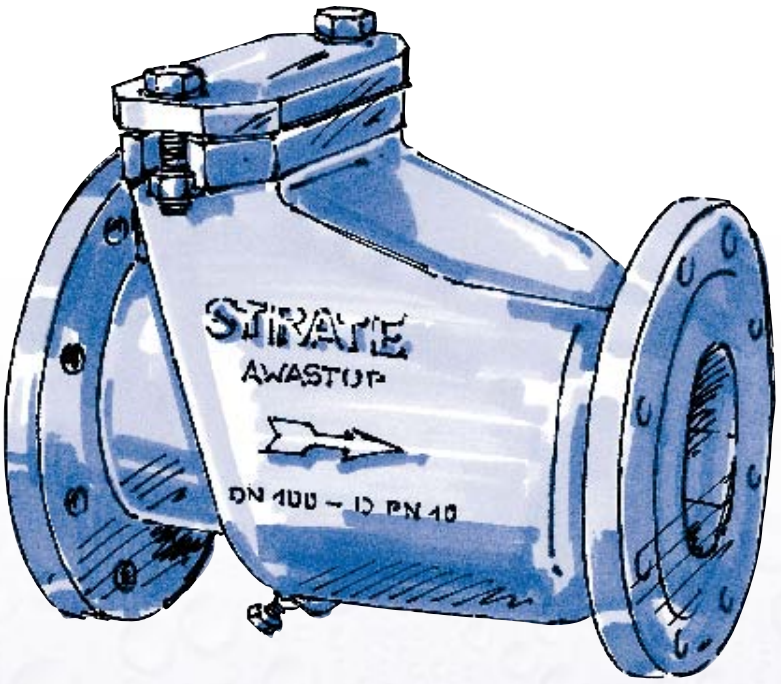
8 Non-return-valves

9 De-aeration Pressure and Relief Valves

10 Start-up relief valve

8 Non-return-valves

AWASTOP
RSK
Frog-valves



AWASTOP

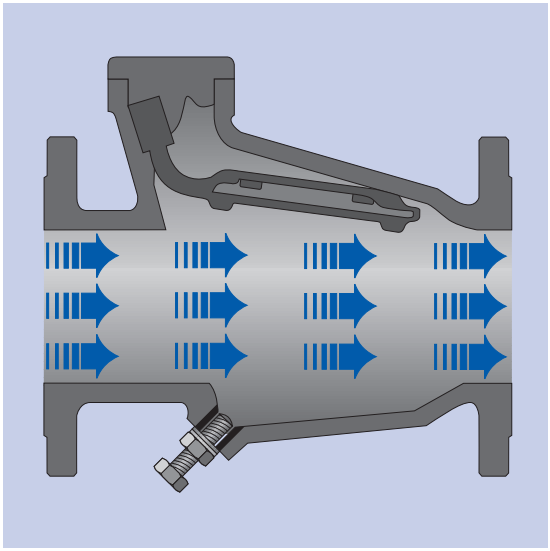
The new generation of non-return valves

As well as the proven advantages of the STRATE system i.e.

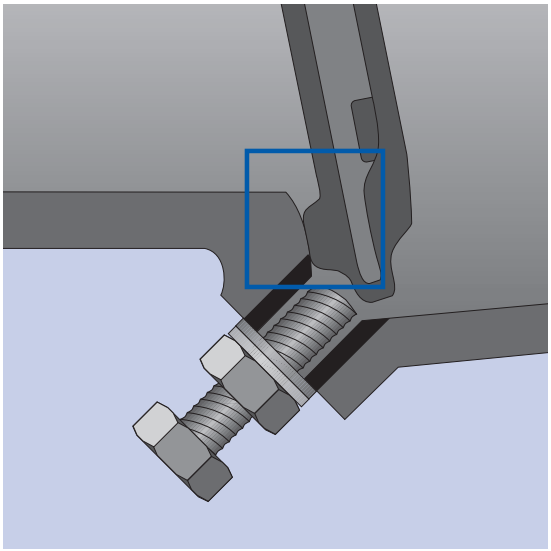
- 100% Free passage
- Low flow resistance
- Quiet operation
- Minimum clogging tendency with associated low maintenance

STRATE-AWASTOP has the following special advantages

- Inclined valve seat for reduced closing noise as the closing distance is shorter
- A broad valve seat which prevents valve failure even at elevated pressure
- And a valve mounting system which allows easy replacement of the sealing element



STRATE AWASTOP with valve lifter. 100% free passage with open valve



Sealing lips provide optimal sealing

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AWASTOP

Technical Data

DN	PN	Fitted length mm	Weight with and without AV* kg
50	10	200	11
65	10	240	15
80	10	260	17
100	10	300	24
125	10	350	37
150	10	400	49
200	10	500	88
250	10	600	131
300	10	700	191

Installed length as per DIN 3202
*Valve lifter

Flange joint measurement and bore as per DIN 2501
Operating temperature from –35°C to +120°C
Shore hardness of sealing element 55°Sh.

Material

Housing, cover:	Grey cast iron GG 25
Sealing element:	Butyl B 100 with integral vulcanised closing plate
Cover seal:	Butyl B 100
Coating:	Inside and outside TPE coating
Lifting device:	Steel C 45

Description

In the STRATE AWASTOP non-return valve there are no unnecessary details. Screws are simply needed for fixing the inspection cover.

The heart of the STRATE AWASTOP is the sealing element with its vulcanised closing plate. The sealing element is fixed securely into the inspection cover. As the movable part is not tapered, twisting is avoided. An additional sealing lip ensures good sealing even when counter pressures are low. The butyl type B 100 rubber with a Shore hardness of 55° Sh is suitable for operating temperatures up to +120°C. Other rubber types are available on request e.g. Perbunan, Viton, Silicon etc for operating temperatures from –35°C to 250°C.

A particular advantage is the inclined valve seat. This shortens the closing-time considerably and reduces the noise on closing.

All STRATE AWASTOP non-return valves, due to the construction of the housing, the sealing element and the mounting have 100% unhindered free through-flow. In practice this means low flow resistance and quiet operation. STRATE AWASTOP non-return valves are non-clogging and so maintenance-free.

Application

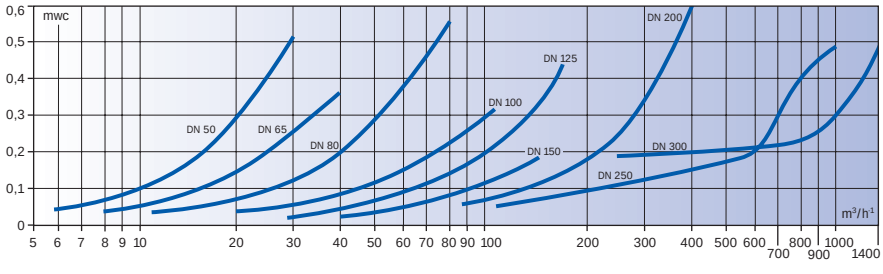
Due to its 100% free through-flow design AWASTOP is suitable in any application where solids and clogging materials are encountered e.g. in effluents.

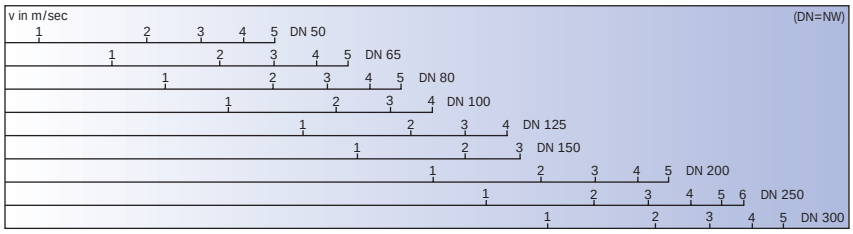
The low flow-resistance of AWASTOP valves also makes them suitable for use with fresh water and other liquid media-particularly where high pressure losses make more powerful pumps necessary.

Under normal operating conditions problems caused by water hammer or similar noises are avoided.
Should special problems occur due to the layout of the system such as pressure surges in the pipe system and fittings we refer you to our special fittings range e.g.:

- STRATE spring-loaded non-return valves
- STRATE aeration and air-bleed valves

Flow resistances (Water, Effluent)





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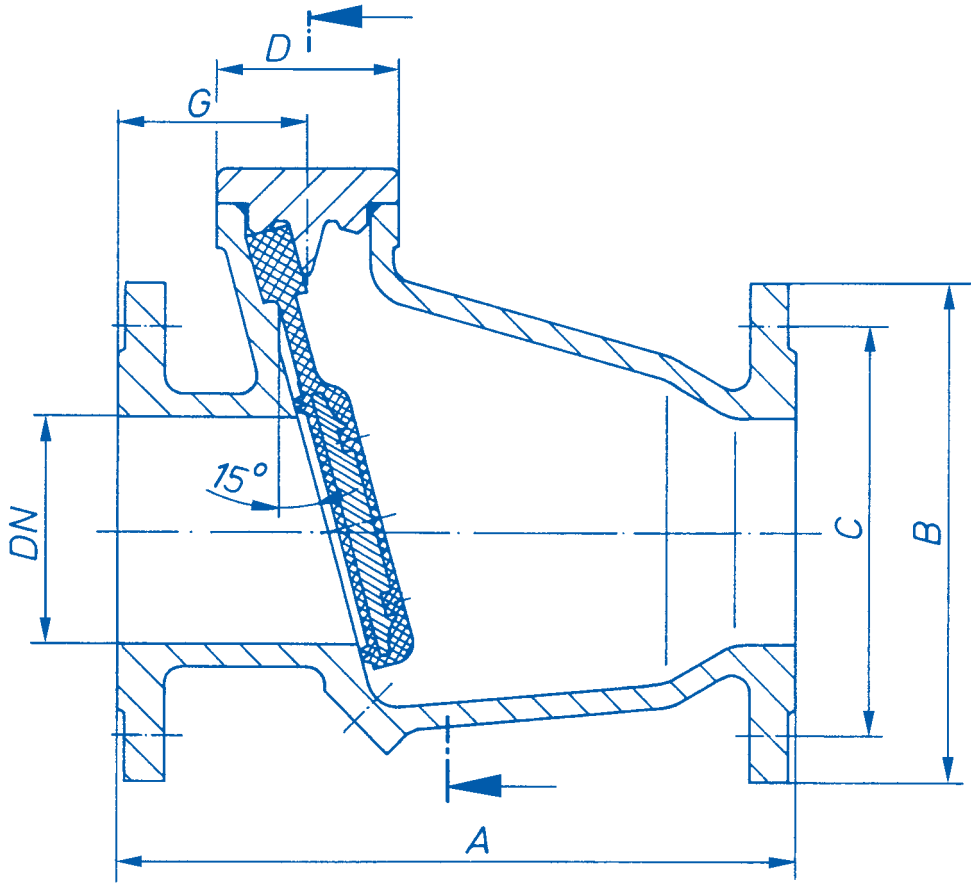

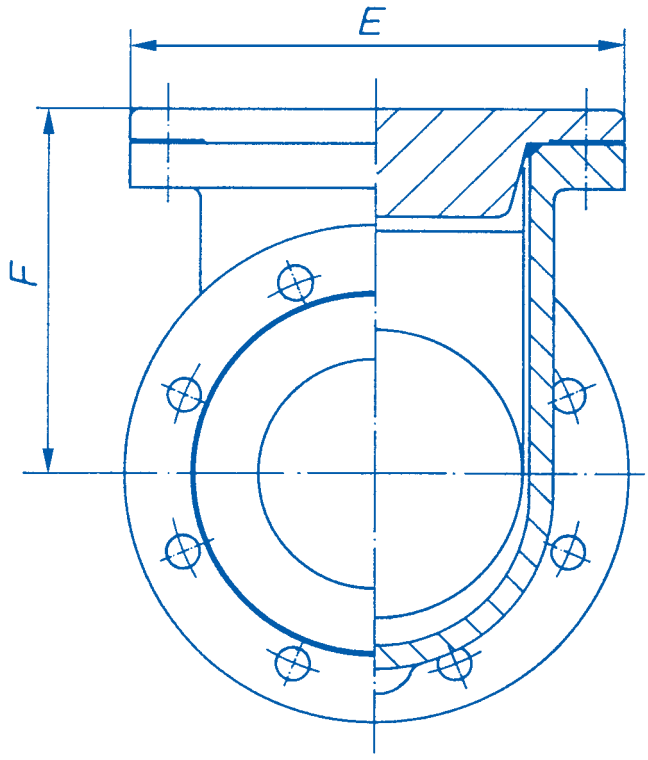

			Dimensions in mm					Weight
DN	A	B	C	D	E	F	G	kg
50	200	165	125	65	142	120	65,0	10,0
65	240	185	145	75	156	130	76,0	14,0
80	260	200	160	80	175	140	82,0	17,5
100	300	220	180	80	216	160	83,0	24,0
125	350	250	210	85	248	180	85,5	37,5
150	400	285	240	85	276	192	91,5	49,0
200	500	340	295	100	360	223	103,5	88,0
250	600	395	350	250	430	280	158,0	134,0
300	700	445	400	270	486	315	172,0	206,0

Scale: ⁄

AWASTOP

STRATE non-return valve without flap-lifter

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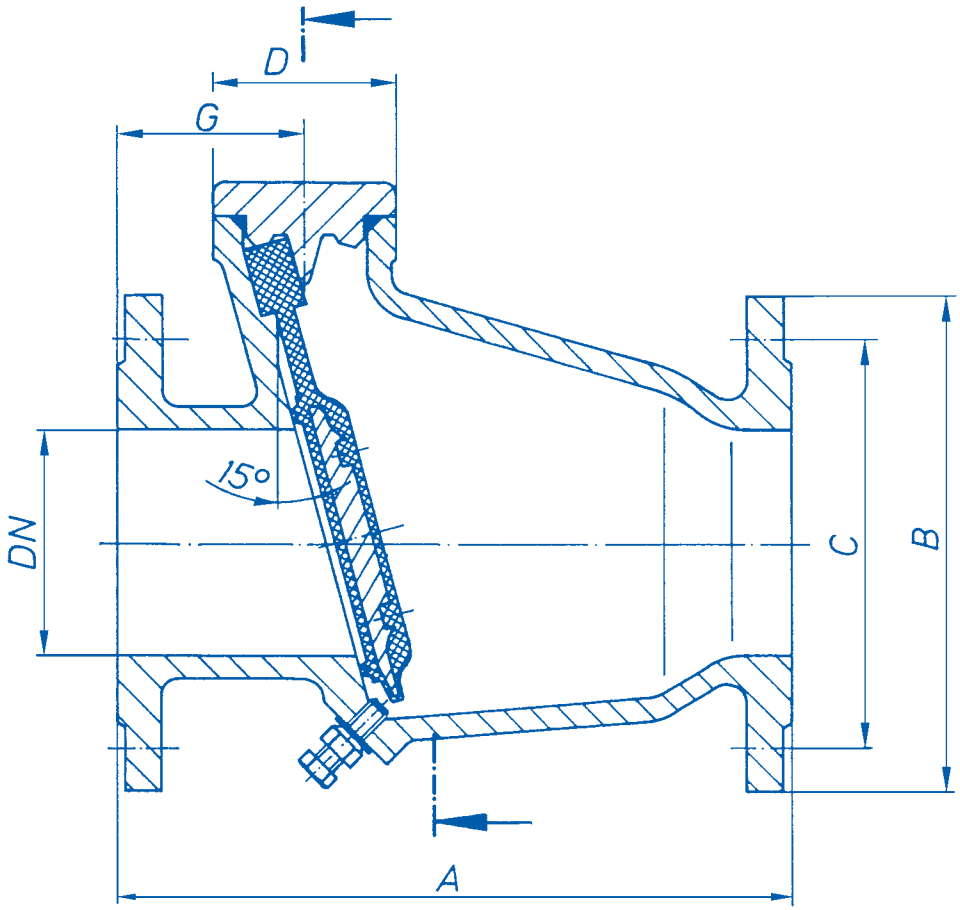

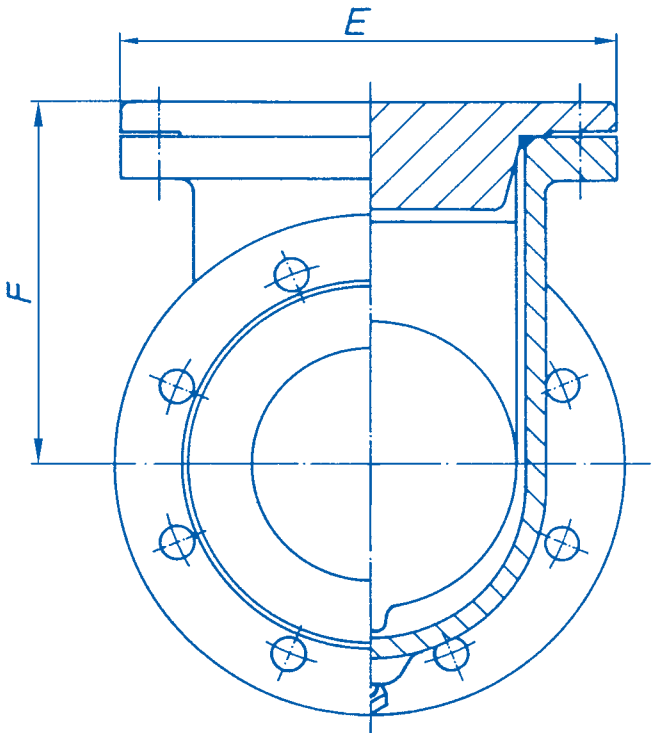

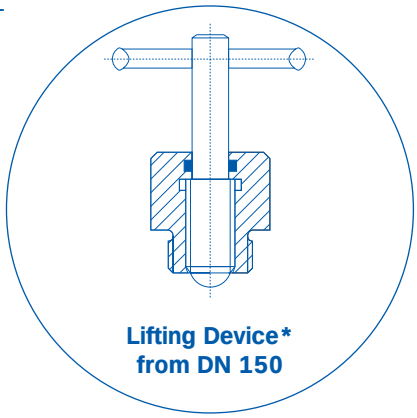

Lifting Device*
from DN 150

	Dimensions in mm							Weight
DN	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**kg**
50	200	165	125	65	142	120	65,0	10,0
65	240	185	145	75	156	130	76,0	14,0
80	260	200	160	80	175	140	82,0	17,5
100	300	220	180	80	216	160	83,0	24,0
125	350	250	210	85	248	180	85,5	37,5
150*	400	285	240	85	276	192	91,5	49,0
200*	500	340	295	100	360	223	103,5	88,0
250*	600	395	350	250	430	280	158,0	134,5
300*	700	445	400	270	486	315	172,0	206,5

Scale: ⁄

AWASTOP
STRATE non-return valve with flap-lifter

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Non-return valves – RSK –

Technically perfect with the STRATE system

Due to the special construction of the housing, sealing element and its mounting STRATE RSK non-return valves have:

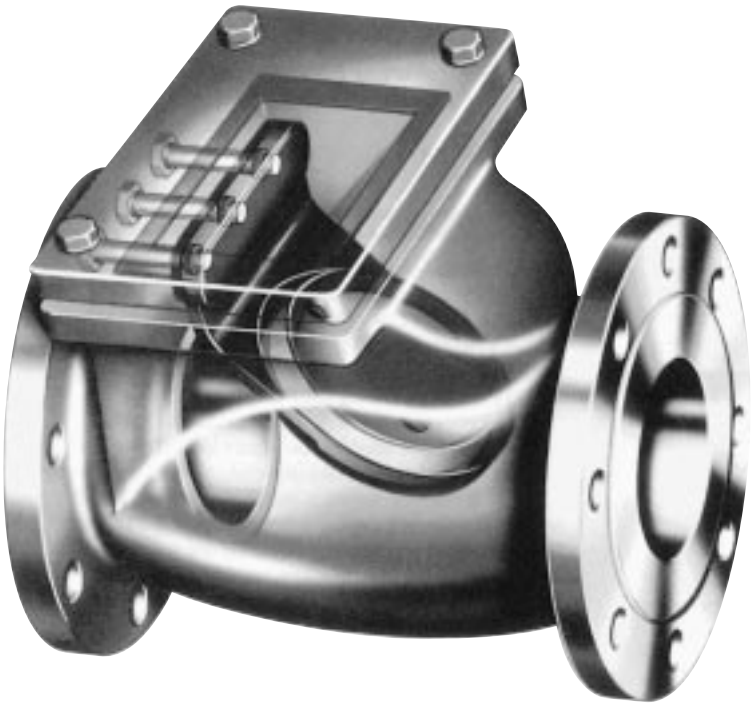
- 100% free through-flow
- low flow resistance
- low noise, non-blocking hence low-maintenance.

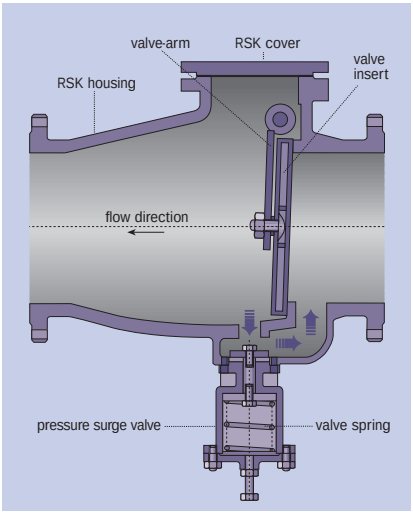
They are suitable for

- water, sewage, air and gases
- equipped with additional components such as spring-loading (external) and pressure-surge damping-valves they will reduce pressure-surge and water hammer.

Description

STRATE RSK non-return valves with the special construction of the sealing element and its mounting have a free through-flow. This gives low flow resistance and a quiet operation. A precisely machined valve-seat guarantees perfect sealing even with very low pressures. Naturally STRATE RSK valves are available with a lifting device for draining. Valves of DN 200 and above are alternatively available with a by-pass fitted with a shut-off valve for more convenient operation. Valves of nominal width 80 – 200 can be equipped with external spring-loading and from nominal width 100 they can be equipped with a pressure surge damping valve.





STRATE RSK with pressure damping valve

Technology for Sewage Germany
Im Kirchenfelde 9 · D-31157 Sarstedt
Phone +49 50 66 9 88-0 · Fax-225

Non-return valves – RSK –

Technical data and Materials

- Dimensions and weights see attached specification sheet
- Fitted lengths as per DIN 3202
- DN 32 (1 1/4" and 1 1/2") Operating pressure = 6 bar max. (PN 6). Housing in GG 25 without flange, with internal thread 1 1/4" and 1 1/2". Finished in TPE coating.
- DN 50 to DN 350 Operating pressure 10 bar max. (PN 10). Housing in GG 25. Flange as per DIN 2532, PN 10. Finished in TPE coating.
- DN 400 to DN 1000 operating pressure 6 bar max. (PN 6). Housing in RSt 37.2 (welded). Valve-seat in chrome-nickel steel. Flange as per DIN 2632 PN 10. Finished in EGD coating.
- Sealing element for all RSK types in Chlorbutyl rubber B 100. All FT designs in Perbunan with a Shore hardness of 55° Sh and vulcanised steel parts as per standard design. Temperature range –35°C to +120°C.
- Special sealing elements e.g. Viton, Silicon or Perbunan available on request and at extra cost.
- Special coatings e.g. Plastic coating, rubberised coating, chemical nickel-plating or special finishes available on request and at extra cost.
- Special designs e.g. other housing materials, other pressure grades and similar available on request and at extra cost.

Application

Due to its 100% fee through-flow STRATE non-return valves are suitable for all applications where solids and clogging materials are found in fluids such as e.g. in effluents. The low flow resistance of the STRATE RSK also makes it suitable for fresh-water and other fluid applications, particularly where high pressure losses are to be avoided. With the optional extras available STRATE RSK valves can be used to reduce pressure surges and water hammer. Fitting of the STRATE RSK is possible in all the usual positions, but for solid containing sewage horizontal fitting is recommended.

Options

STRATE Spring-loading

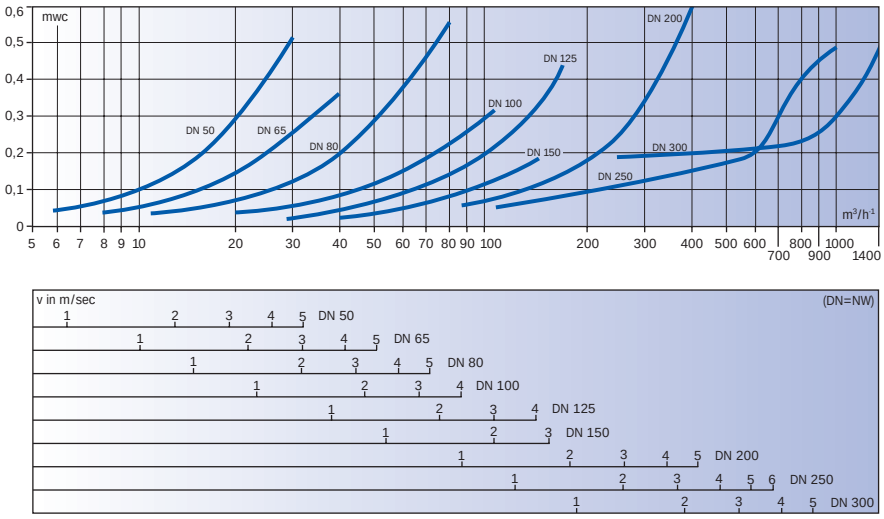
This option completely eliminates water hammer and reduces pressure surge considerably. The valve can be externally adjusted during operation and can be set so as to suit the operating conditions.

The spring loaded device, mounted externally on the RSK valve housing reacts directly and immediately to any change in pressure or flow-rate in the pipe system and without any bearing friction. A visible indicator allows external checking of the valve position.

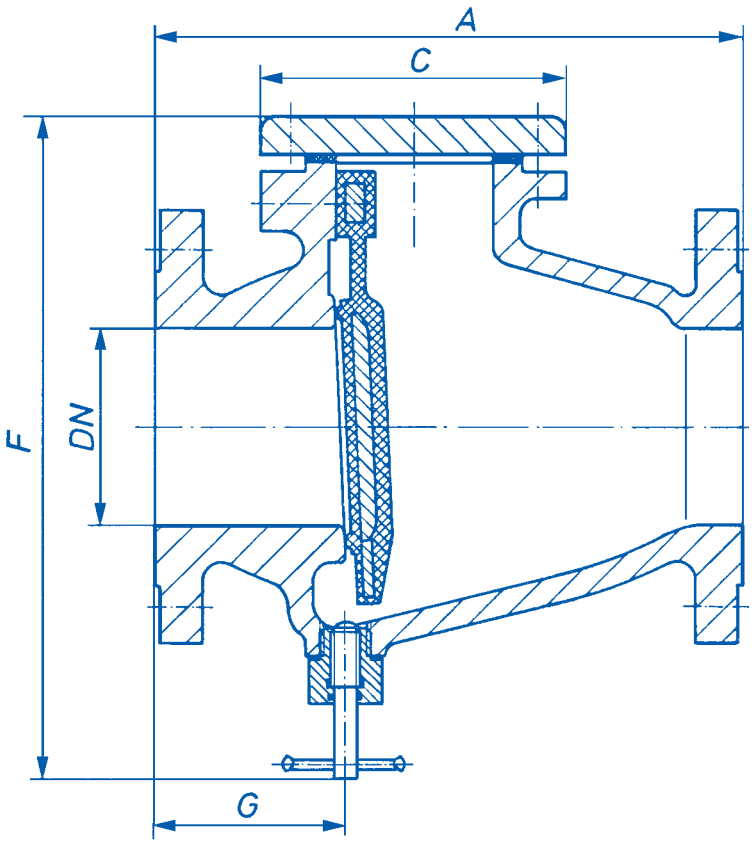
STRATE pressure surge damping-valve

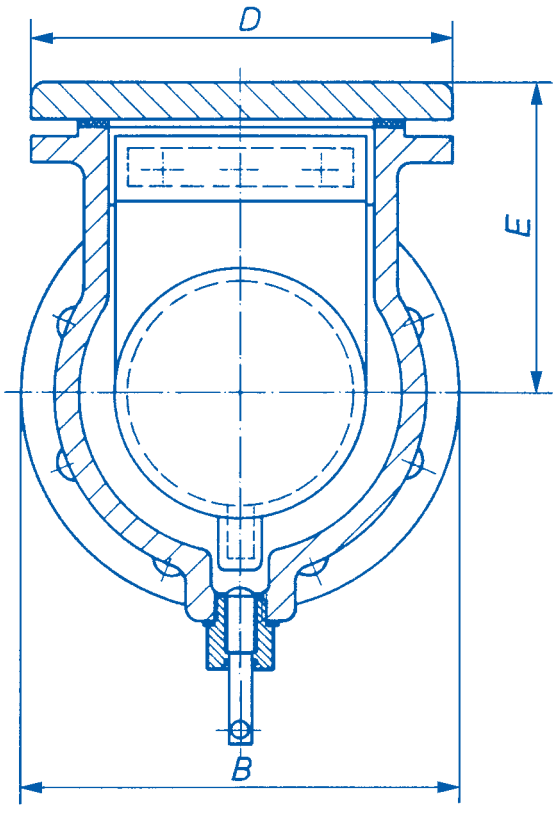
Pressure surges in the region of the non-return valve are simply and reliably avoided so that the harmful effects no longer need to be a concern.

Flow resistances (Water, Effluent)



February 1999





DN	A	B	C	D	E	F	G
50	200	165	135	135	130	265	59
65							
80	260	200	135	155	140	300	76
100	300	220	155	215	160	340	96
125	350	250	160	230	180	380	103
150	400	285	175	265	210	410	106

Scale: ⁄

RSK-A

STRATE non-return valve with valve-lifter

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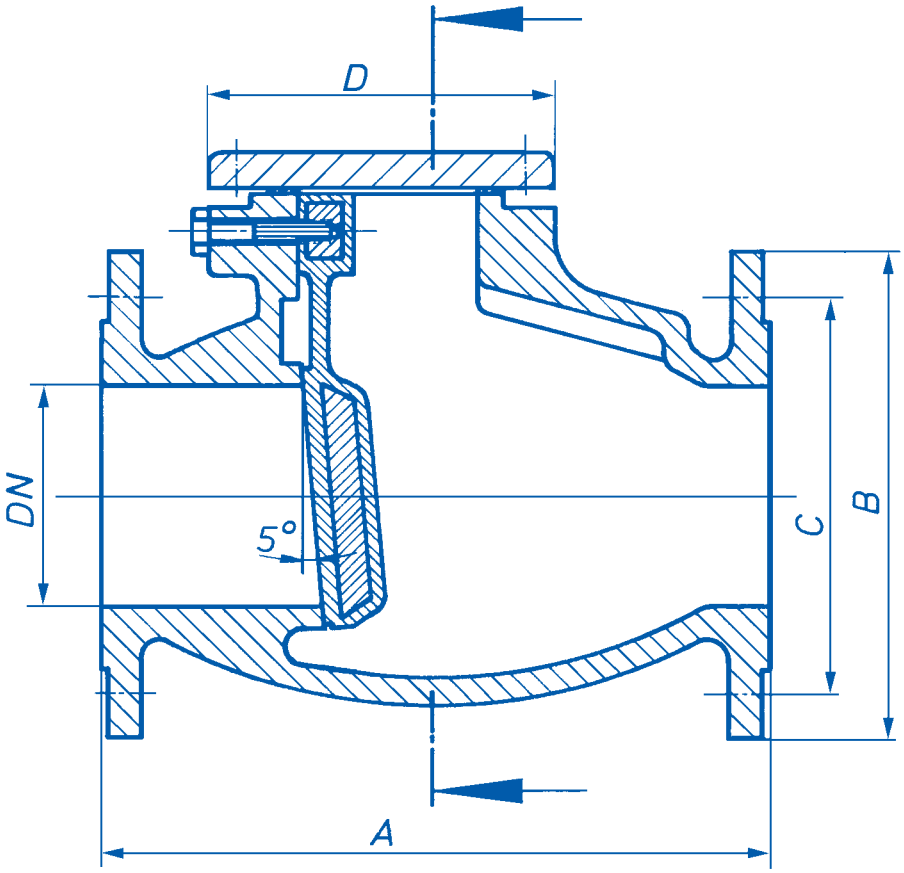

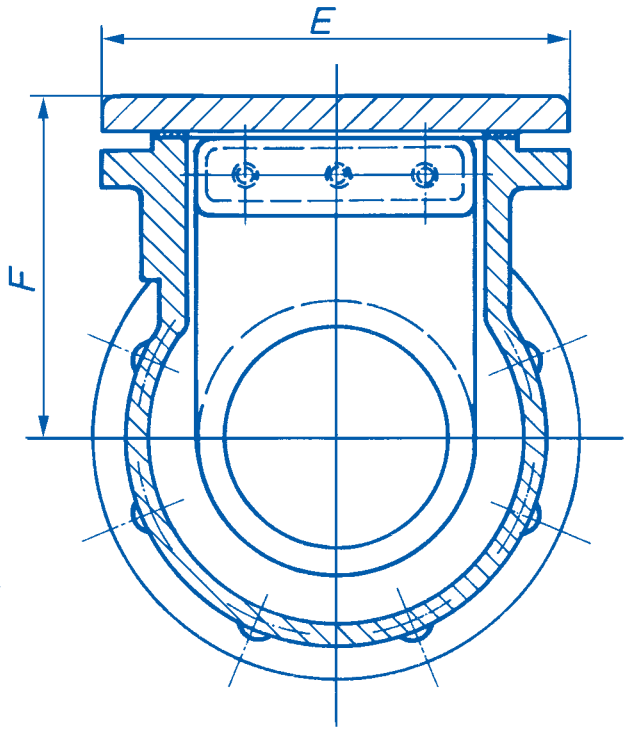

	Weight	Dimensions in mm					
DN	kg	A	B	C	D	E	F
50	14	200	165	125	130	135	130
65	18	240	185	145	130	140	135
80	23	260	200	160	140	155	150
100	32	300	220	180	160	220	160
125	41	350	250	210	170	230	180
150	56	400	285	240	175	270	210
200	118	500	340	295	225	340	260
250	176	600	395	350	260	400	270
300	256	700	445	400	290	465	330
350	313	800	505	460	320	530	350

Scale: ⁄

RSK (DN 50 - DN 350)
STRATE non-return valve without valve-lifter

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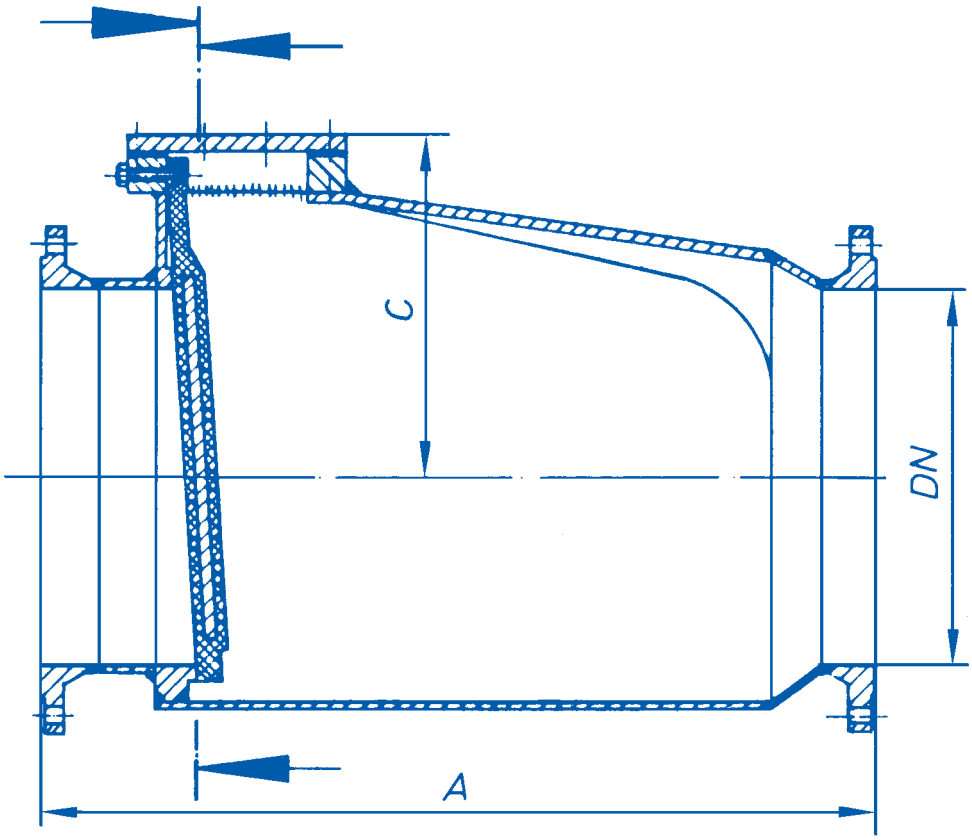

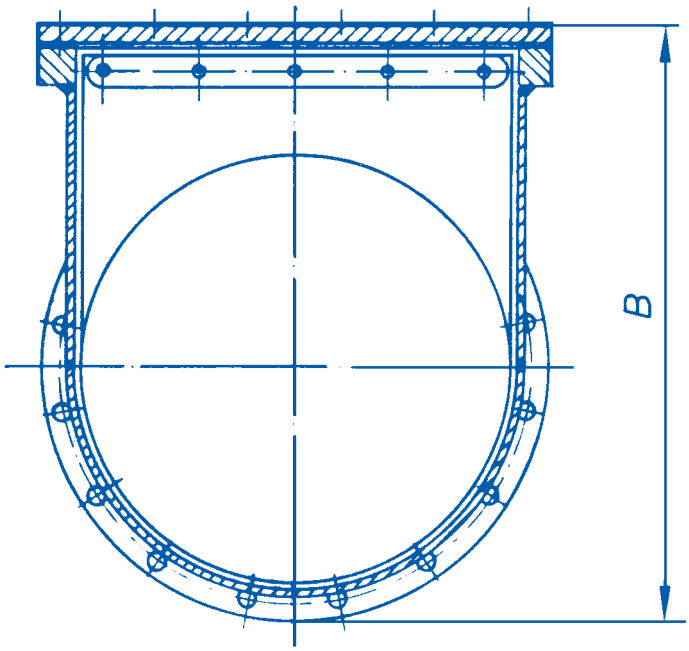

Dimensions in mm				Weight
DN	A	B	C	kg
400	900	683	400	275
500	1100	805	470	380
600	1300	920	530	495
700	1500	1033	585	705
800	1700	1148	630	990
900	1900	1237	675	-
1000	2100	1352	775	-

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Scale: ⁄	

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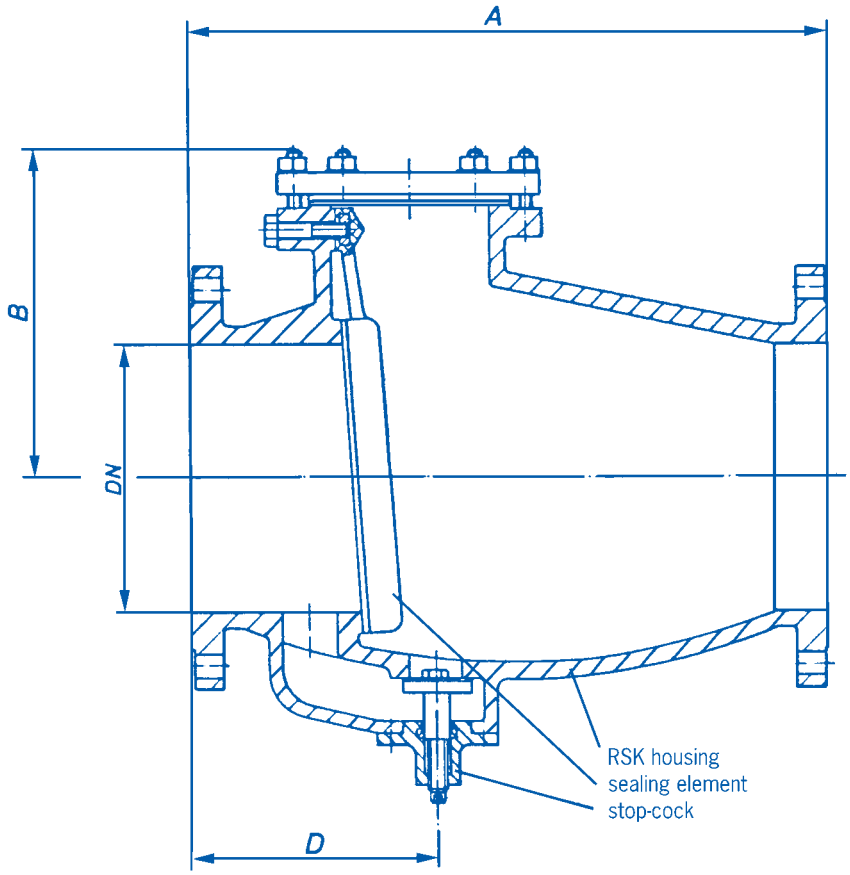

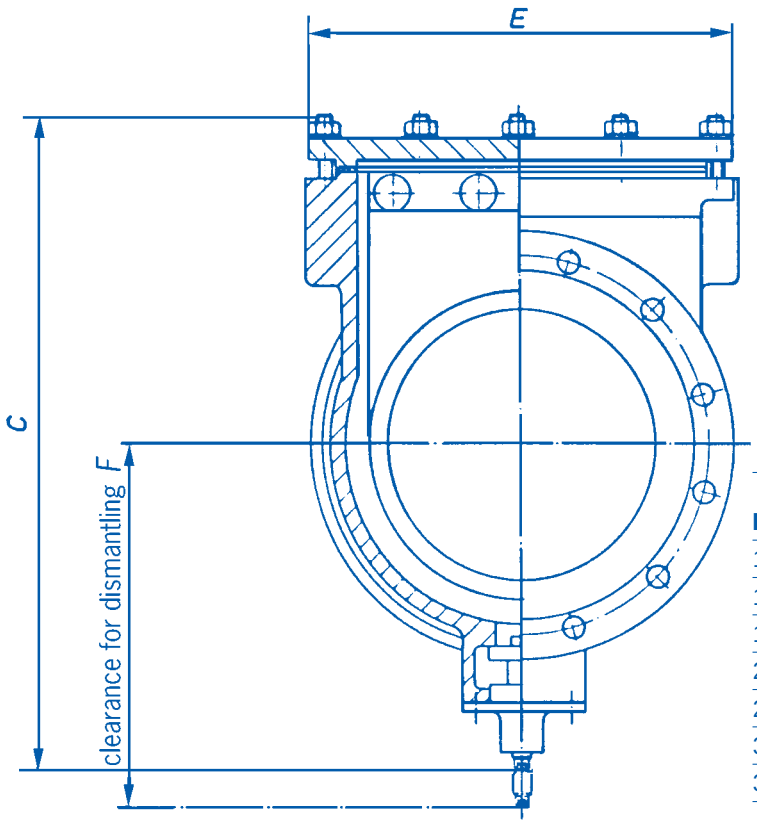

	Dimensions in mm						Weight
DN	A	B	C	D	E	F	kg
100	300	158	345	130	215	250	33
125	350	190	395	144	225	280	42
150	400	210	440	148	265	300	57
200	500	245	510	195	340	335	120
250	600	280	580	230	400	380	178
300	700	320	670	270	465	430	260
350	800	360	745	270	520	480	317

Scale: ⁄

RSK-U (DN 100 - DN 350)
STRATE non-return valve with by-pass

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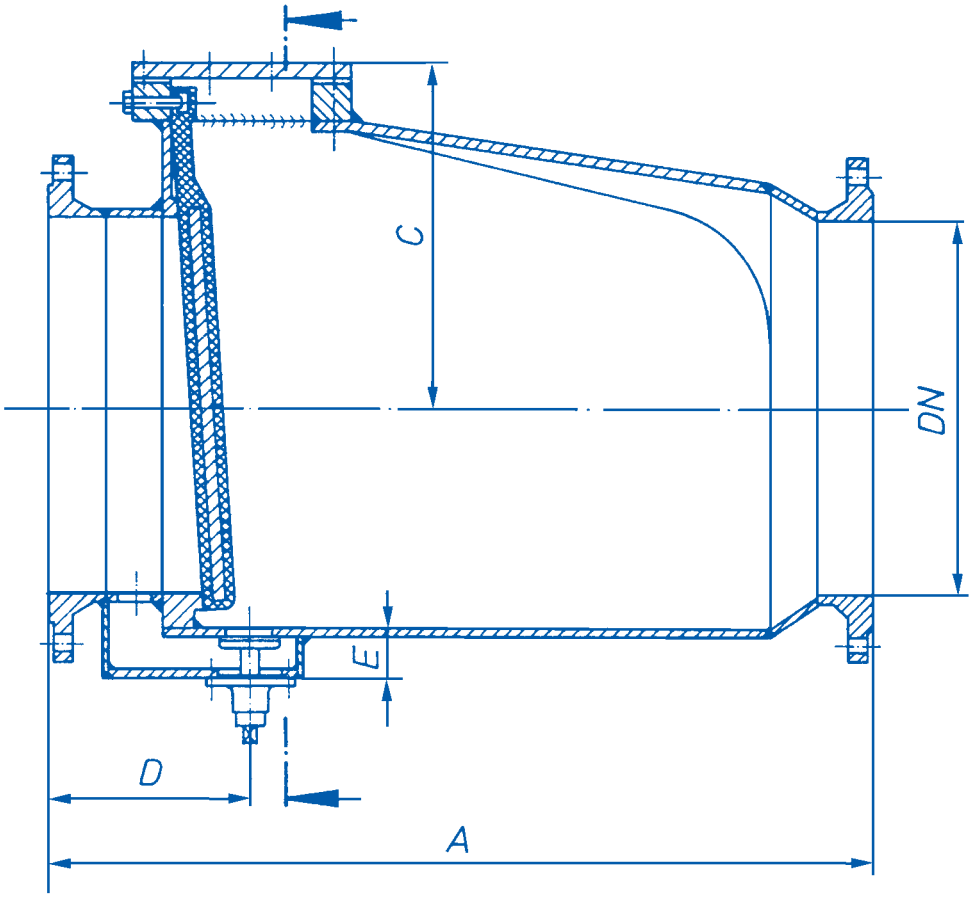

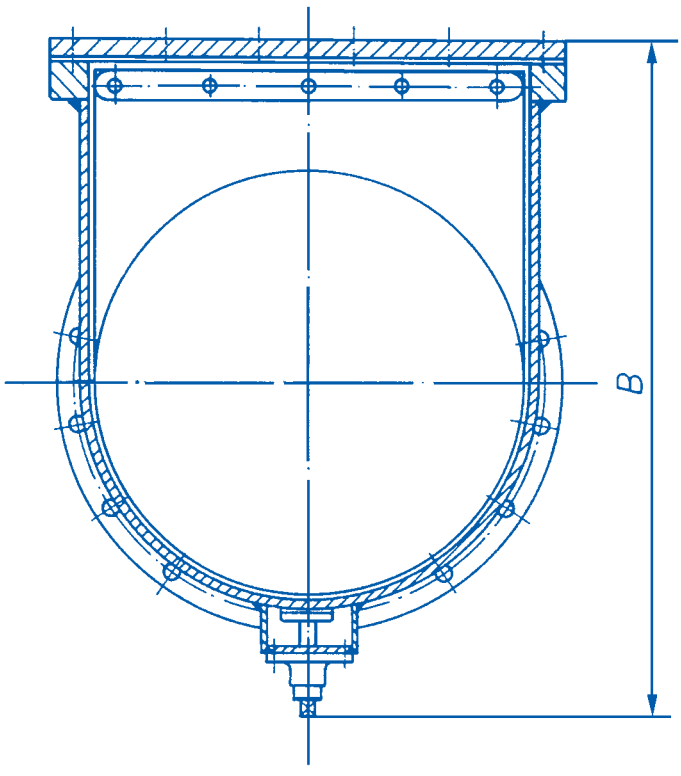

	Dimensions in mm					Weight
DN	A	B	C	D	E	kg
400	900	788	400	270	50	300
500	1100	916	470	270	50	390
600	1300	1023	530	275	50	505
700	1500	1130	585	268	50	715
800	1700	1227	630	265	50	1000
900	1900	1333	675	255	50	-
1000	2100	1720	775	255	50	-

Scale: ⁄

RSK-U (DN 400 - DN 1000)
STRATE non-return valve with by-pass

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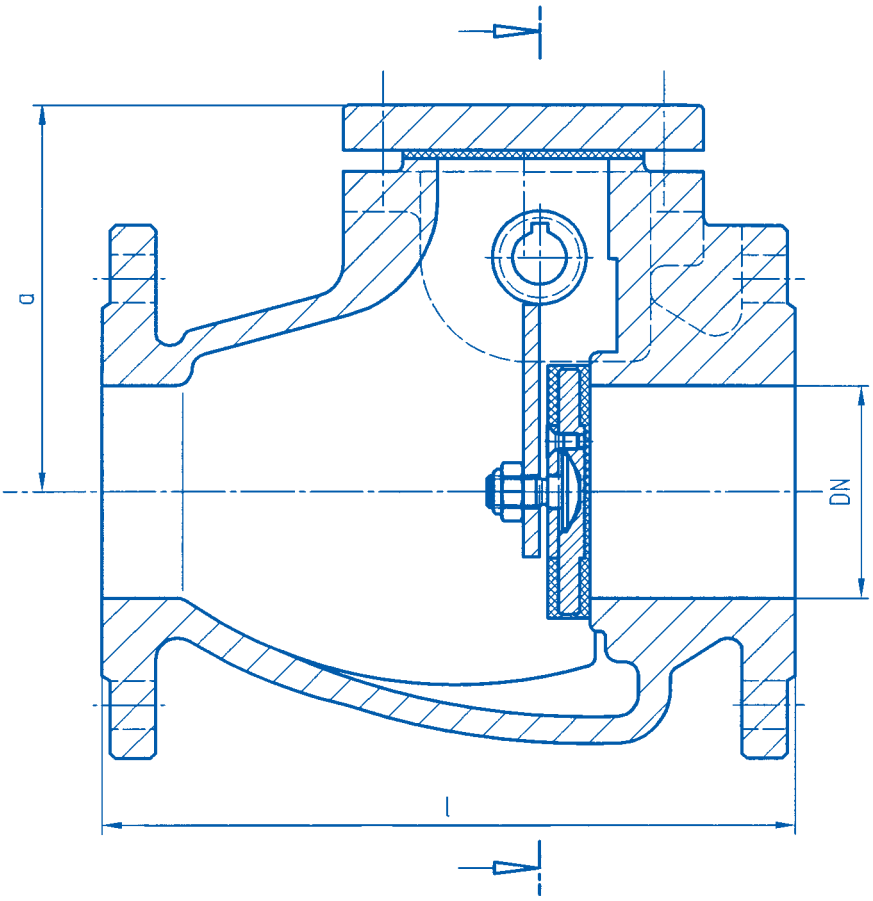

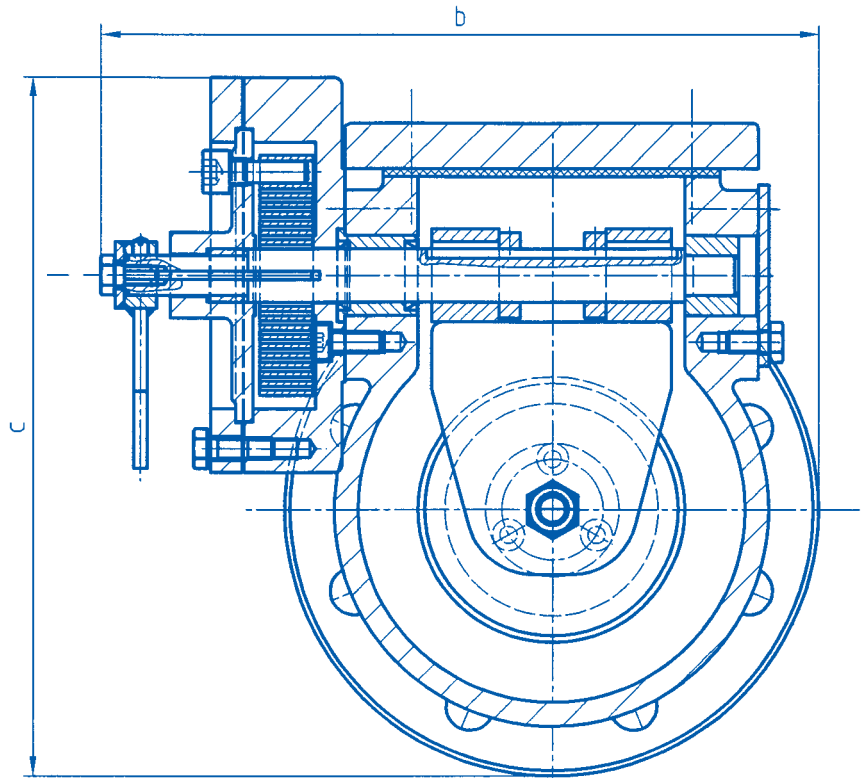

Standard design: spring housing mounted on right when viewed in direction of flow. (Available mounted on left on request)

DN	a	b	c	l	kg
80	150	260	270	260	30,00
100	165	325	280	300	40,00
125	185	340	320	350	53,00
150	215	380	355	400	66,00
200	270	460	430	500	128,00

Scale: ⁄

RSK-FT (DN 80 - DN 200)
STRATE non-return valve with spring-loading

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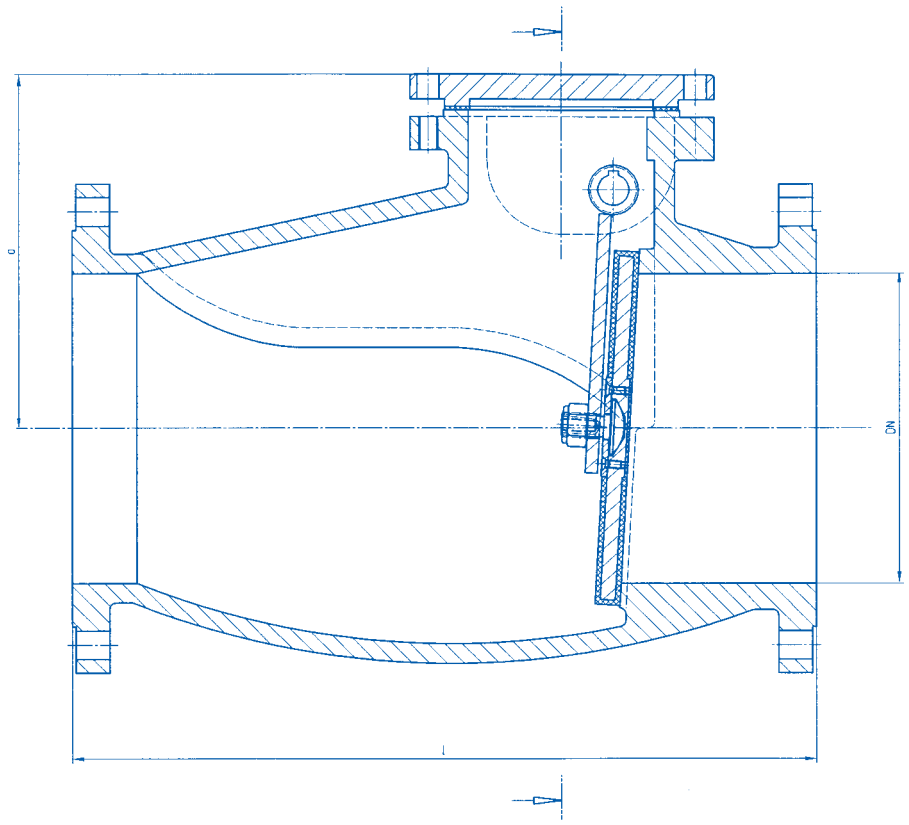

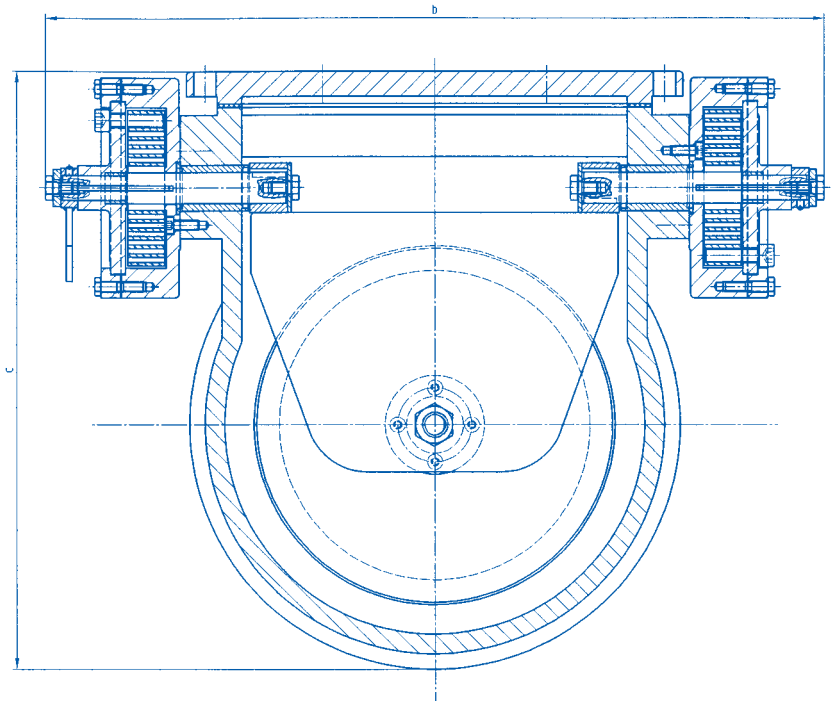

DN	a	b	c	l	kg
250	290	630	490	600	180,00
300	335	715	560	700	273,00
350	370	770	625	800	344,00

Scale: ⁄

RSK-FT (DN 250 - DN 350)
STRATE non-return valve with spring-loading

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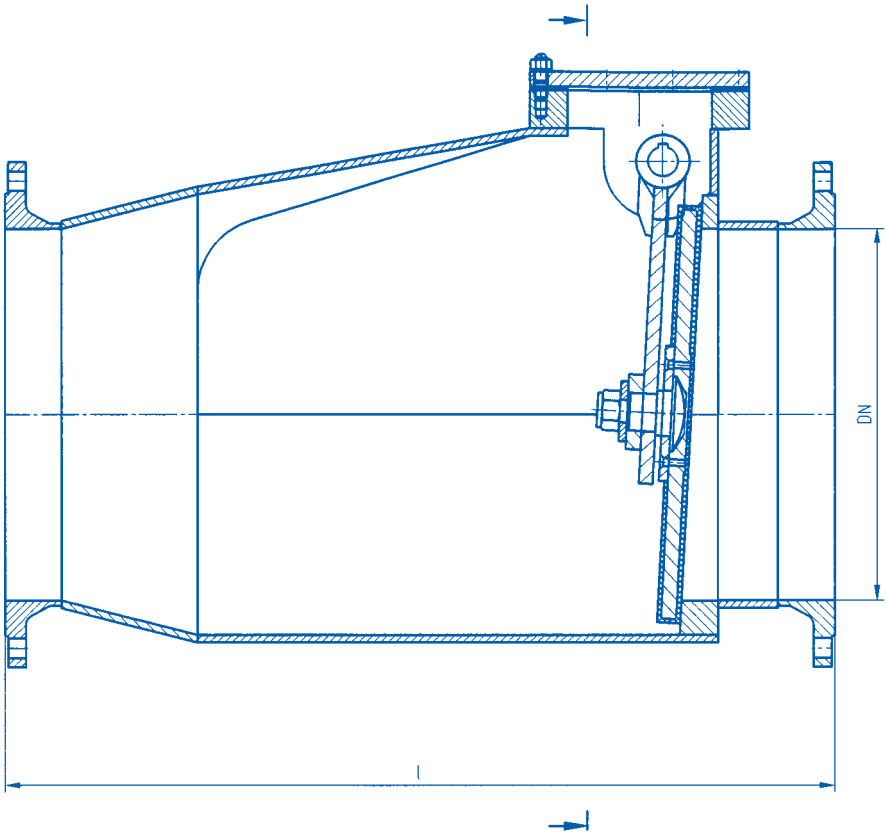

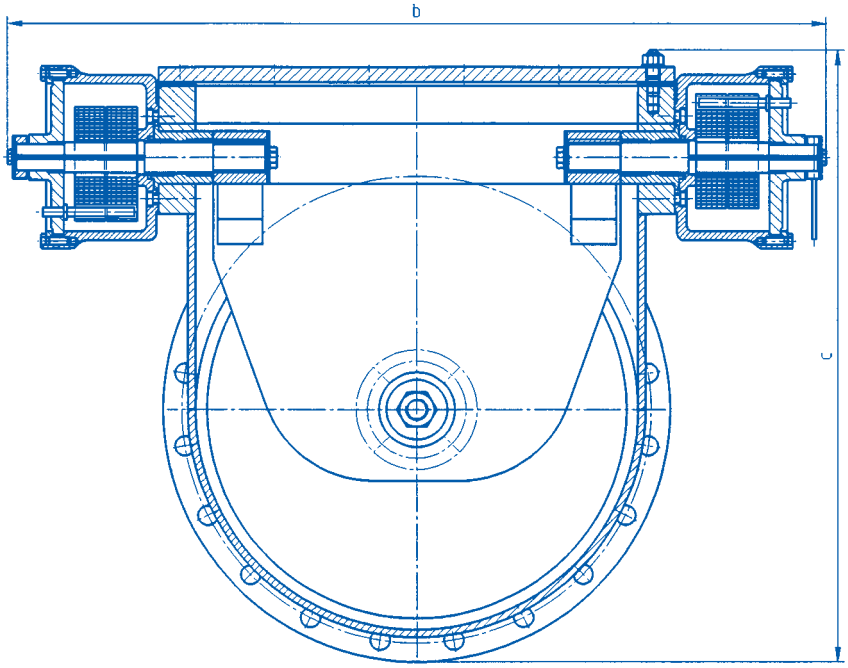

Manufactured in welded steel

DN	a	b	c	l
400	400	960	685	900
500	480	1085	815	1100
600	530	1195	920	1300
700	585	1370	1035	1500
800	630	1470	1140	1700

Copyright as per DIN 34	**RSK-FT (DN 400 - DN 800)** **STRATE non-return valve with spring-loading**
Scale: ⁄	

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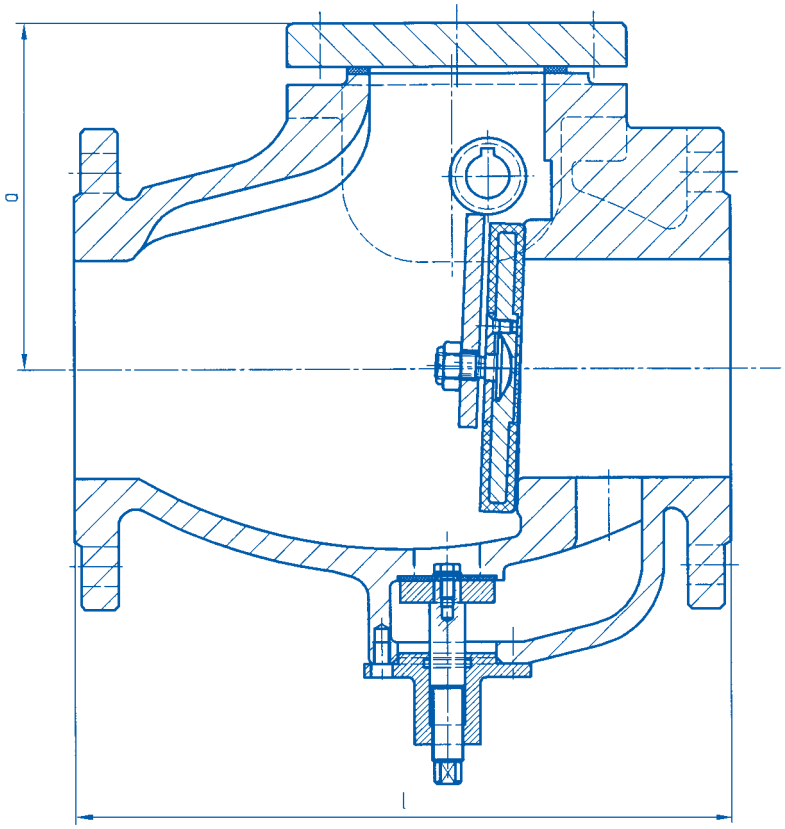

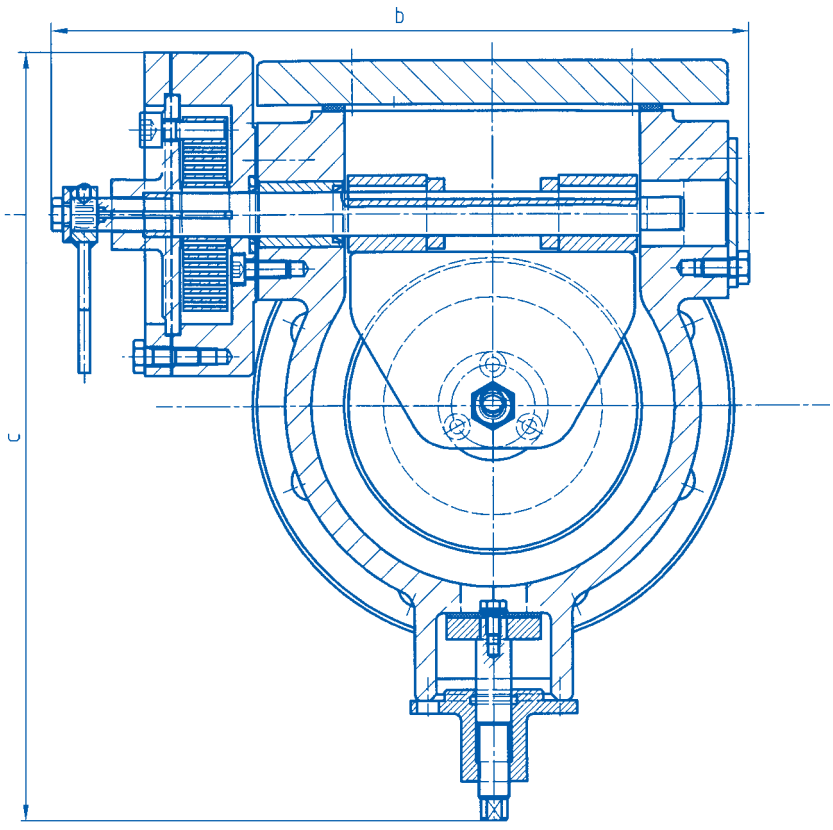

Standard design: spring housing mounted on right when viewed in direction of flow. (Available mounted on left on request)

DN	a	b	c	l	kg
100	165	325	355	300	42,60
125	185	340	400	350	55,60
150	215	380	460	400	68,60
200	270	460	540	500	131,00

Scale: ⁄

RSK-FTU (DN 100 - DN 200)
STRATE non-return valve with spring-loading and by-pass with stop-cock

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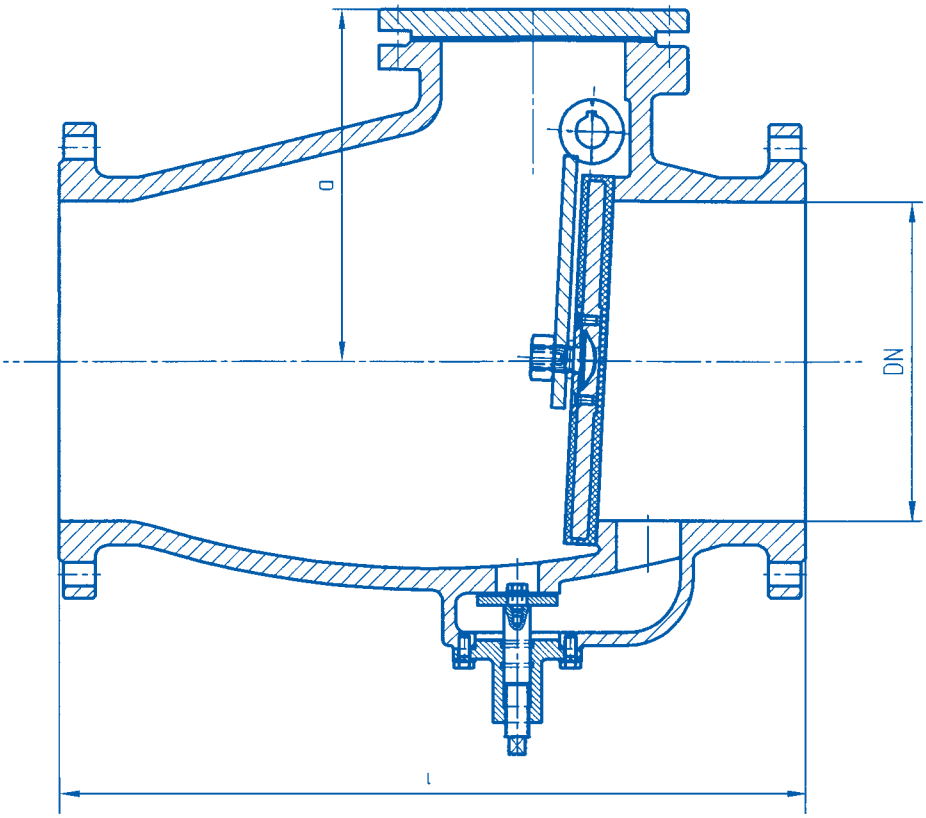

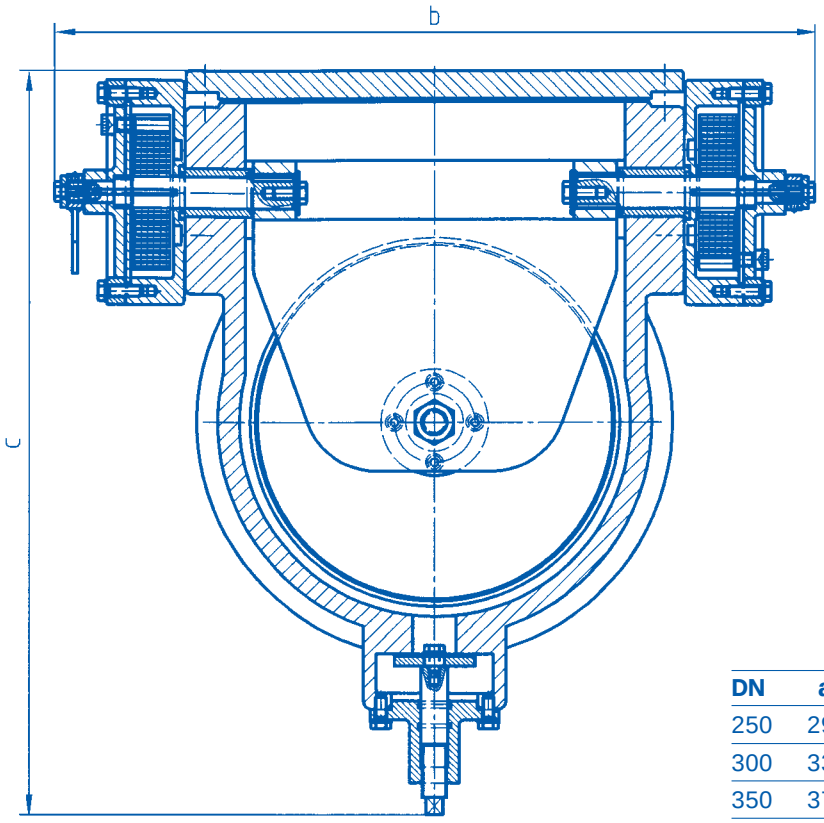

DN	a	b	c	l	kg
250	290	630	630	600	185,40
300	335	715	700	700	280,40
350	370	770	770	800	352,40

Scale: ⁄

RSK-FTU (DN 250 - DN 350)
STRATE non-return valve with spring-loading and by-pass with stop-cock

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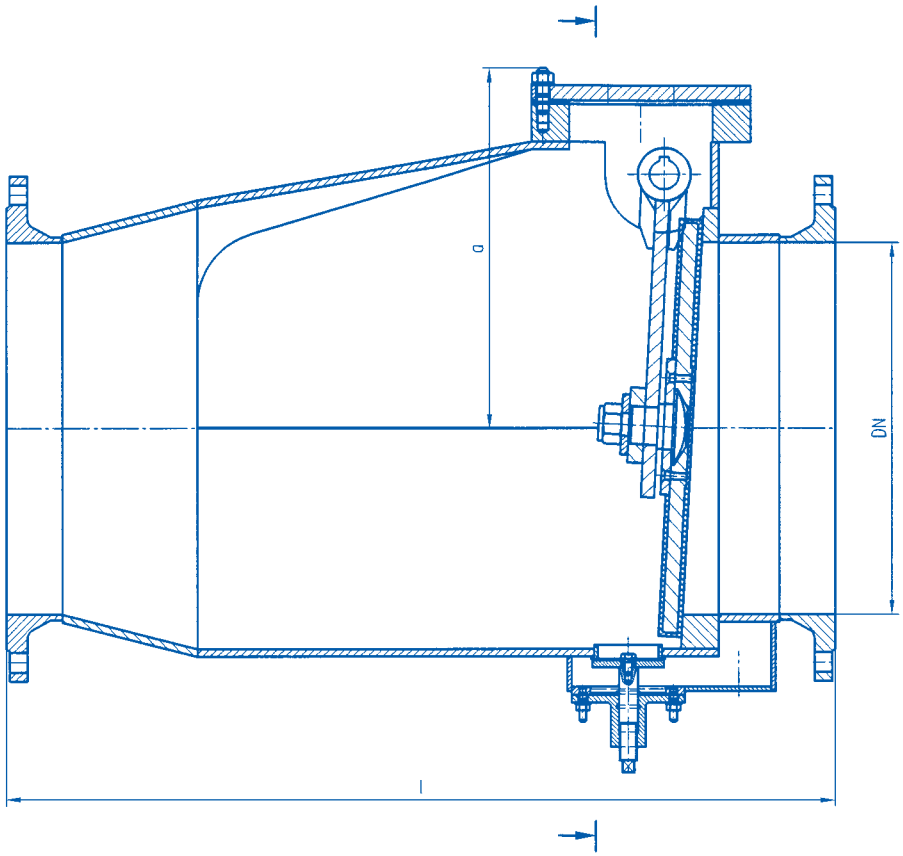

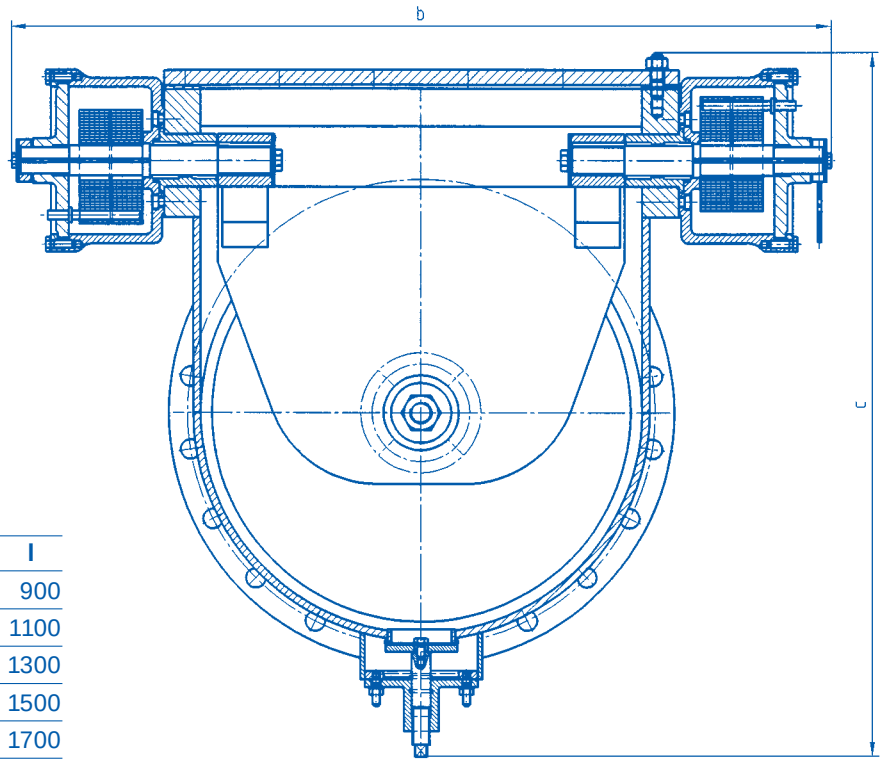

Manufactured in welded steel

DN	a	b	c	l
400	400	960	810	900
500	480	1085	950	1100
600	530	1195	1050	1300
700	585	1370	1160	1500
800	630	1470	1250	1700

Scale: ⁄

RSK-FTU (DN 400 - DN 800)
STRATE non-return valve with spring-loading and by-pass with stop-cock

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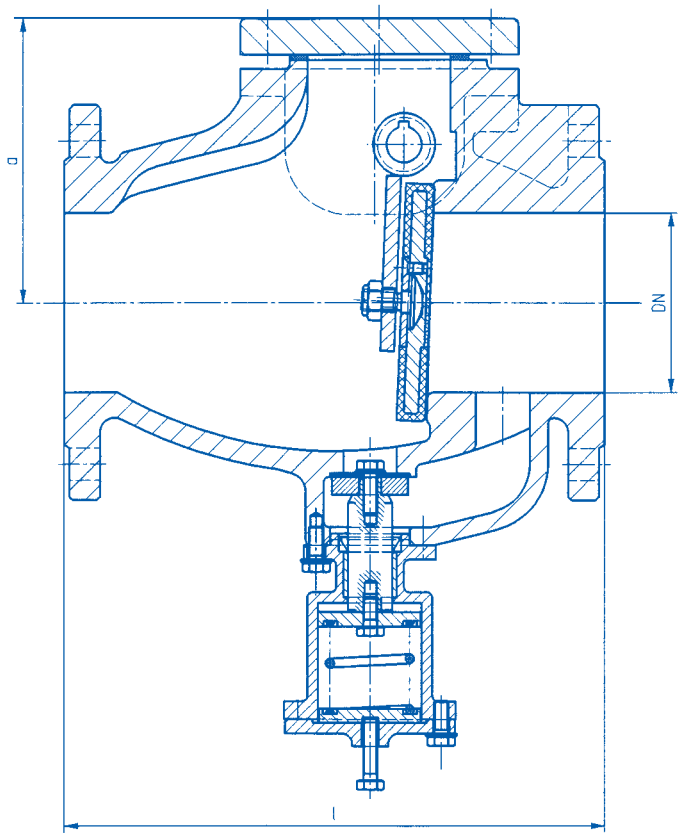

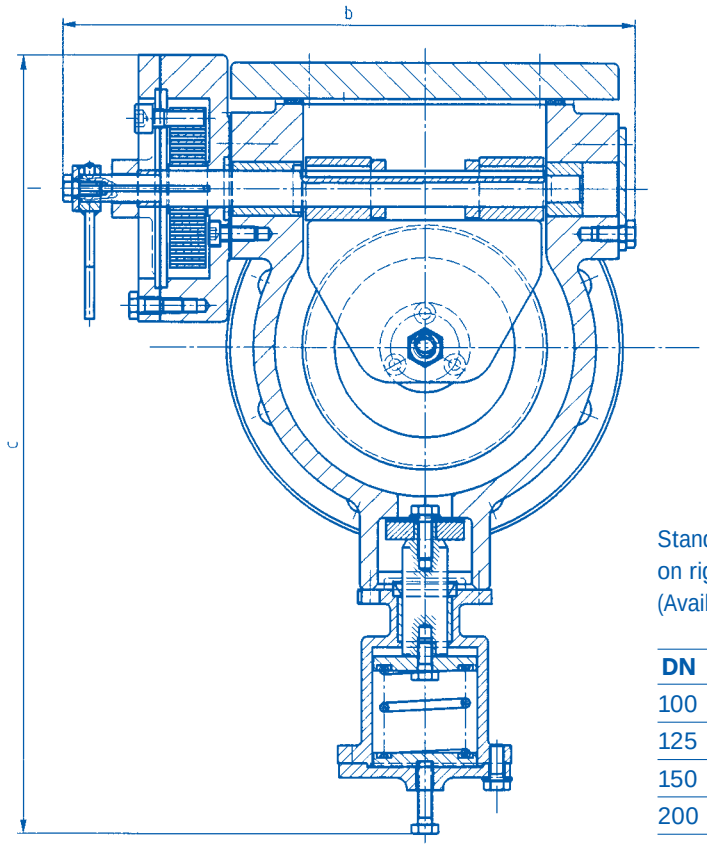

Standard design: spring housing mounted on right when viewed in direction of flow. (Available mounted on left on request)

DN	a	b	c	l	kg
100	165	325	435	300	44,40
125	185	340	475	350	57,40
150	215	380	540	400	70,40
200	270	460	615	500	132,70

Scale: ⁄

RSK-FTUD (DN 100 - DN 200)

STRATE non-return valve with spring-loading and by-pass with pressure-surge damping valve

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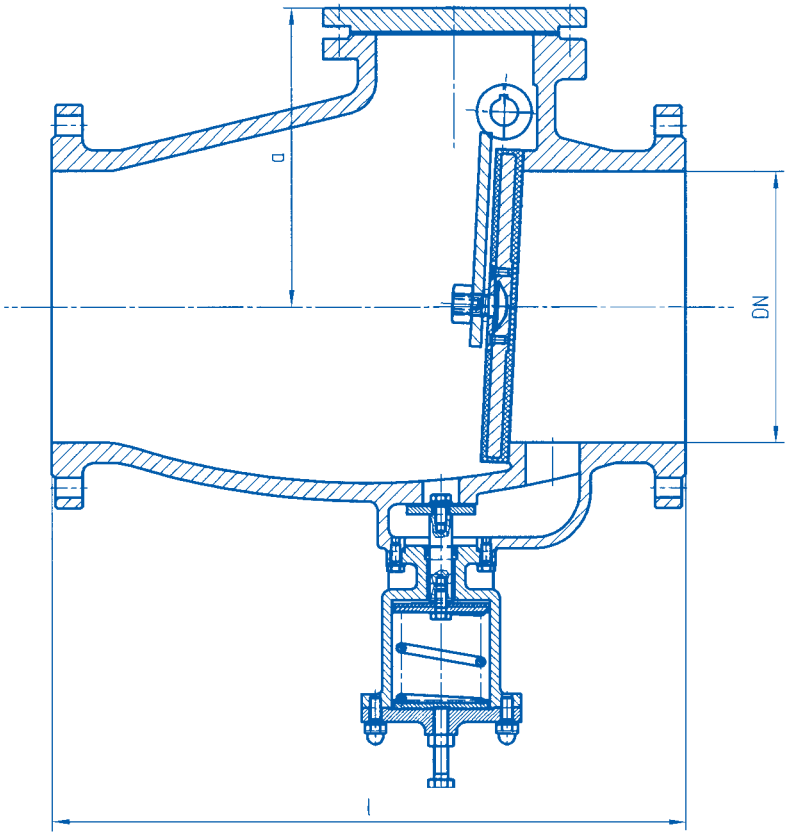

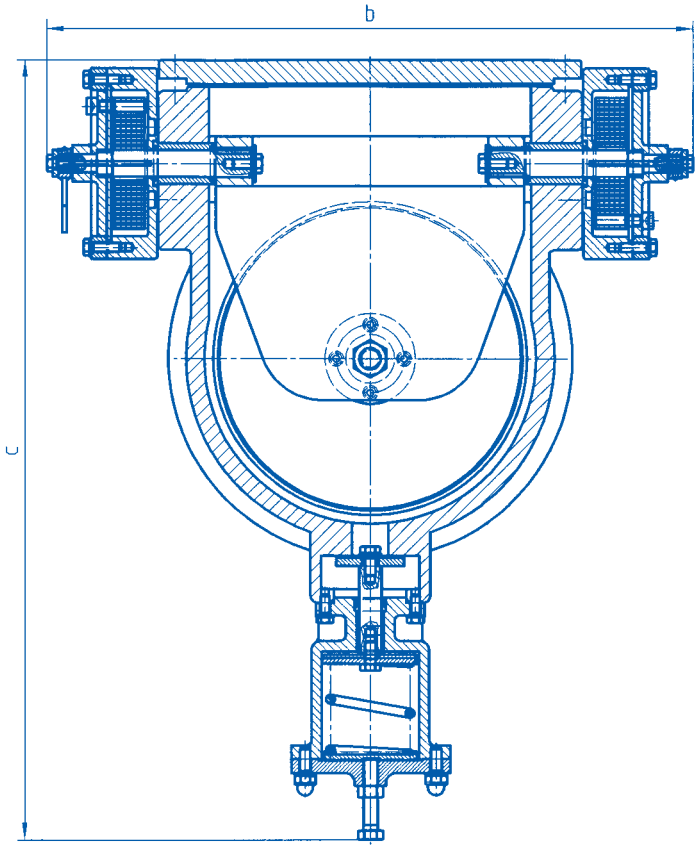

DN	a	b	c	l	kg
250	290	630	795	600	196,40
300	335	715	865	700	291,40
350	370	770	930	800	363,40

Scale: ⁄

RSK-FTUD (DN 250 - DN 350)

STRATE non-return valve with spring-loading and by-pass with pressure-surge damping valve

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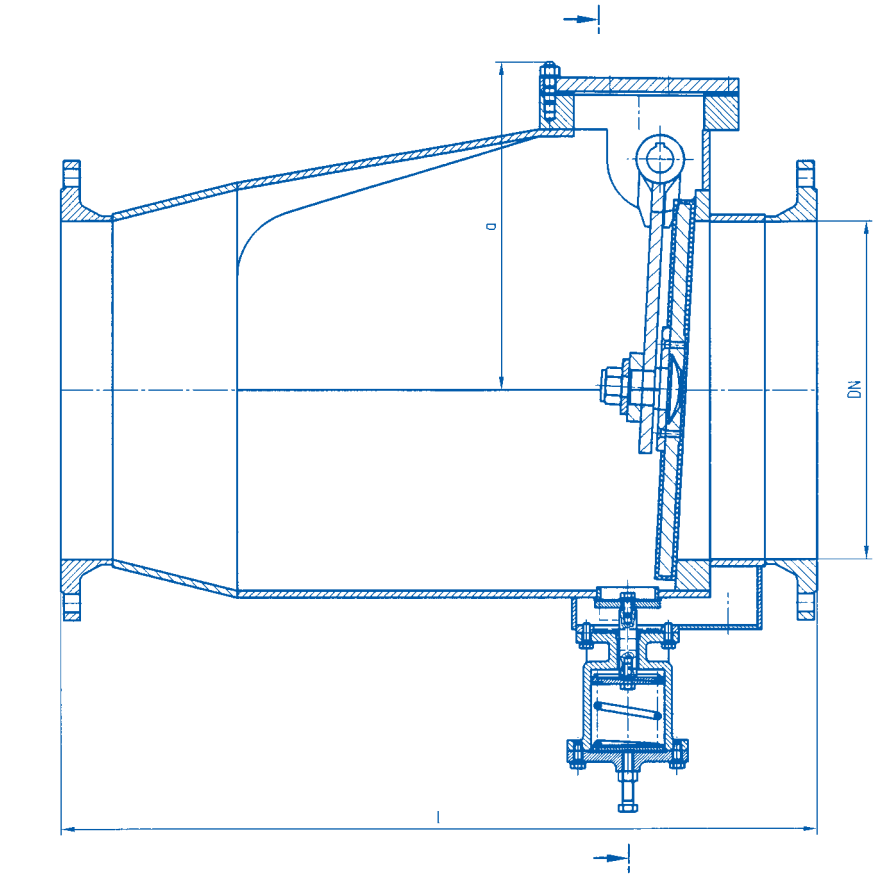

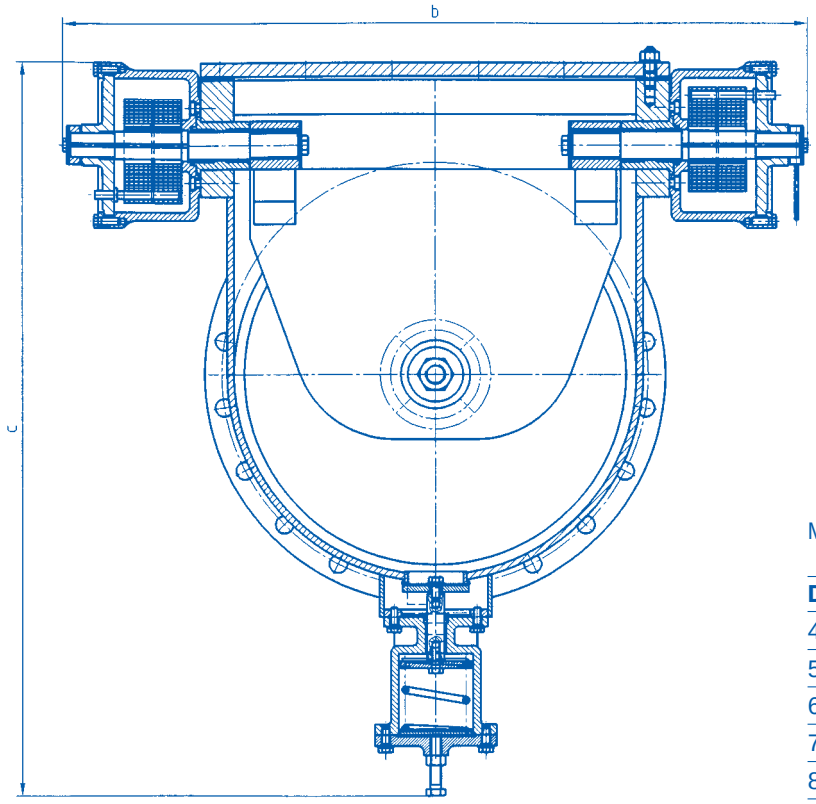

Manufactured in welded steel

DN	a	b	c	l
400	400	960	960	900
500	480	1085	1100	1100
600	530	1195	1200	1300
700	585	1370	1300	1500
800	630	1470	1400	1700

Scale: ⁄

RSK-FTUD (DN 400 - DN 800)

STRATE non-return valve with spring-loading and by-pass with pressure-surge damping valve

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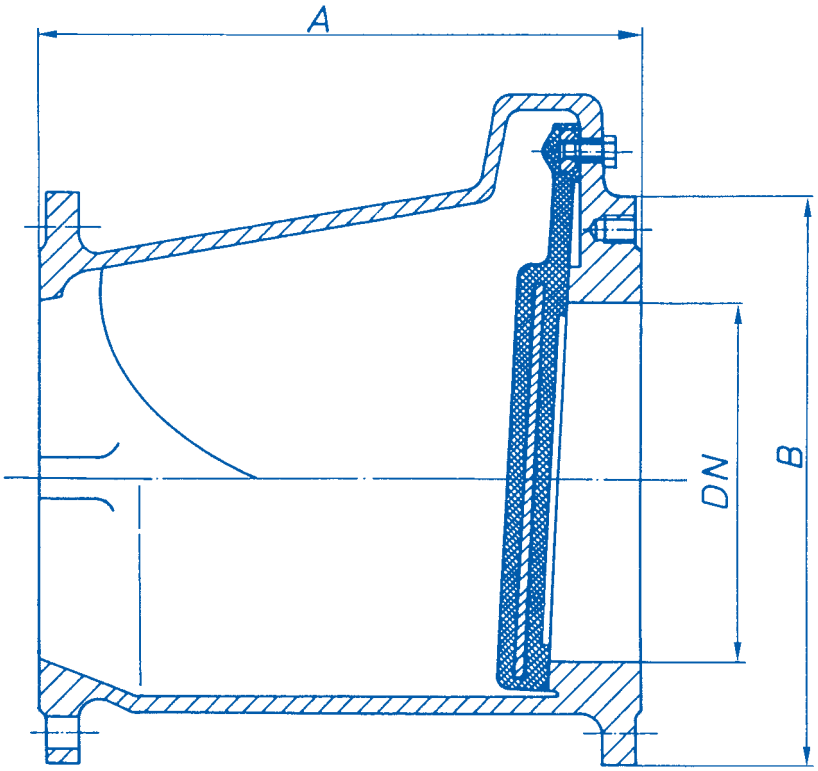
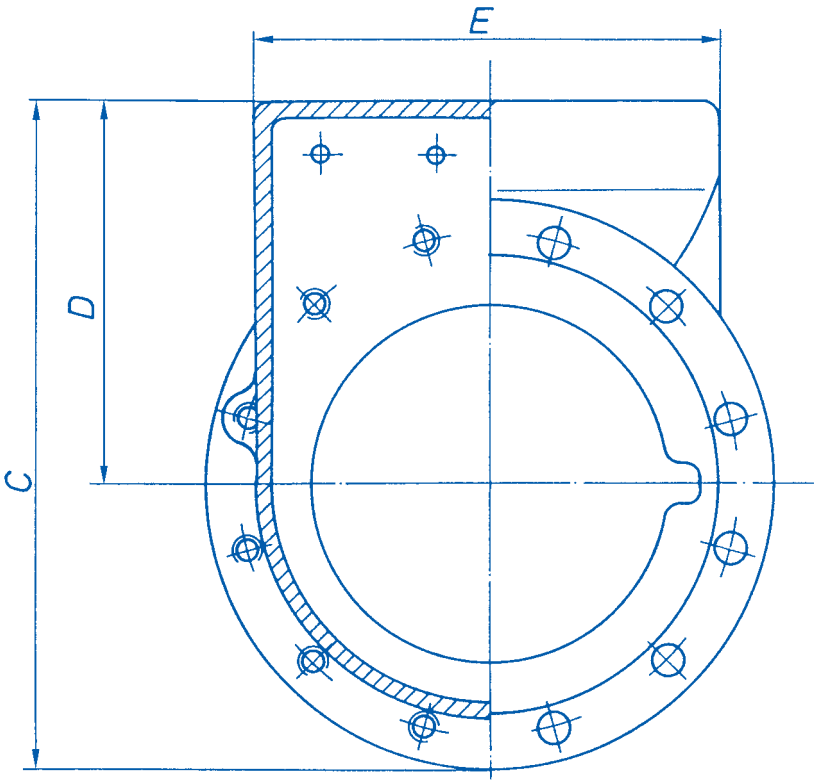
STRATE





Sealing valve in rubber with steel insert
Cast housing in GG 25

	Weight	Dimensions in mm				
DN	kg	A	B	C	D	E
65	10	155	185	216,0	123	111
80	14	185	200	236,0	136	124
100	19	200	220	262,0	152	150
125	24	230	250	293,0	168	176
150	33	265	285	340,5	198	206
200	53	365	340	405,0	235	265
250	80	420	395	465,5	268	325

Scale: ⁄

STRATE non-return valve
Short form (KB)

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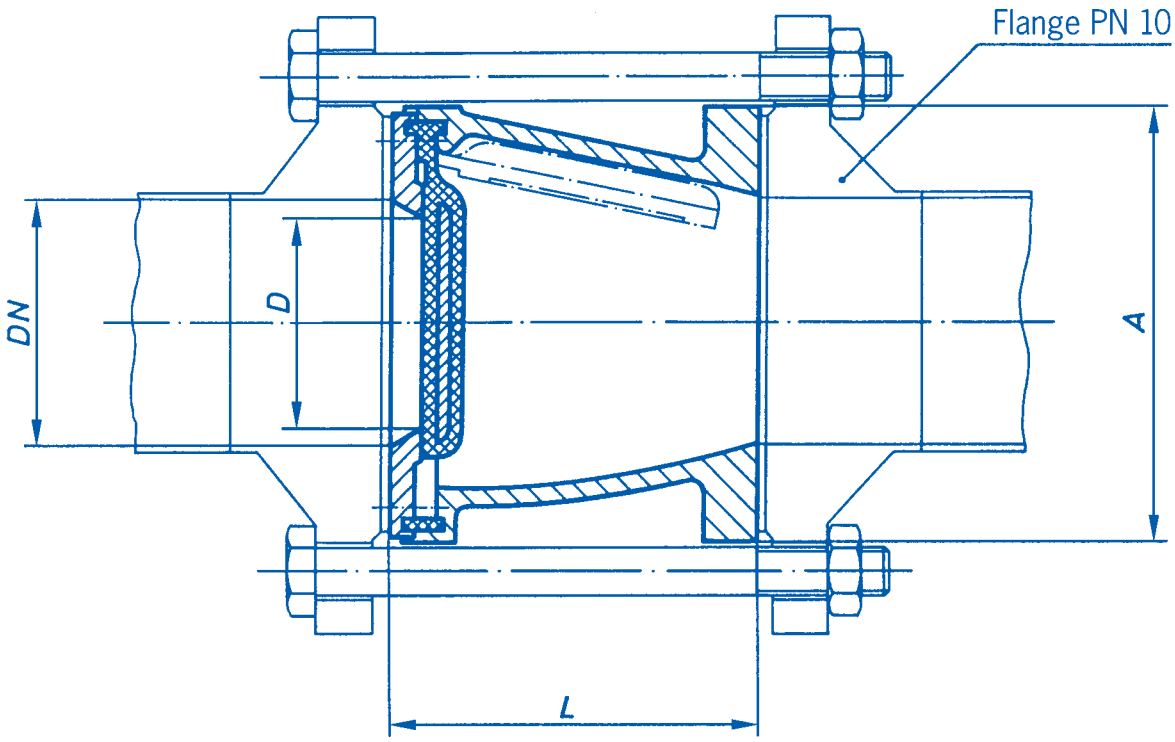
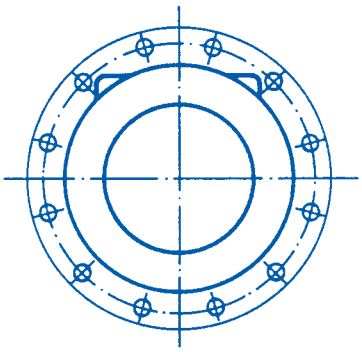
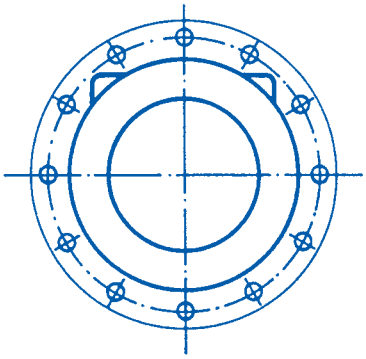


Flange arrangement



DN 50 - 200



DN 250

DN	D	L	A	Free through-flow passage as % of DN
50	45	80	105	81
65	55	100	124	72
80	70	120	140	77
100	88	140	160	77
125	110	180	193	77
150	130	200	215	75
200	160	230	272	64
250	195	280	324	61

	STRATE non-return valve Sandwich form (SB)
Scale: ⁄	

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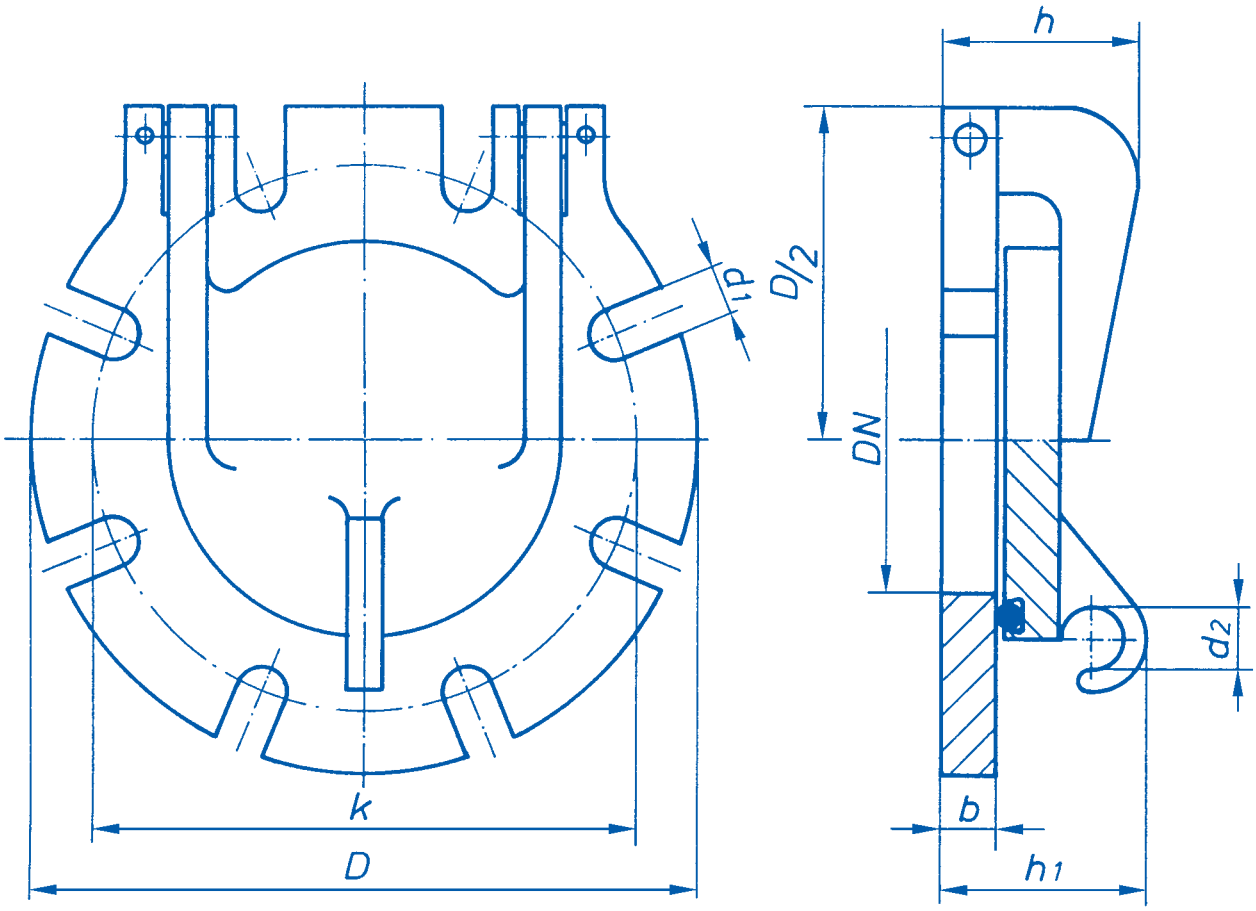

DN	D	b	k	h	h1	d2	No. of screws	d1	Weight kg
80	200	18	160	65	65	20	8	18	5,5
100	220	18	180	65	65	20	8	18	7,5
125	250	18	210	65	65	20	8	18	10,0
150	285	18	240	65	65	20	8	22	14,0
200	340	20	295	70	65	20	8	22	20,0
250	395	20	350	70	65	20	12	22	28,0
300	445	20	400	70	65	20	12	22	37,0
350	505	22	460	80	75	25	16	22	48,0
400	565	22	515	80	75	25	16	26	65,0
500	670	22	620	80	75	25	20	26	92,0
600	780	22	725	80	75	25	20	30	124,0
700	895	25	840	90	80	25	24	30	164,0
800	1015	25	950	90	80	25	24	33	209,0
900	1115	30	1050	110	90	30	28	33	255,0
1000	1230	30	1160	110	90	30	28	36	308,0

Scale: ⁄

FK-K
STRATE frog-valve (Short form)

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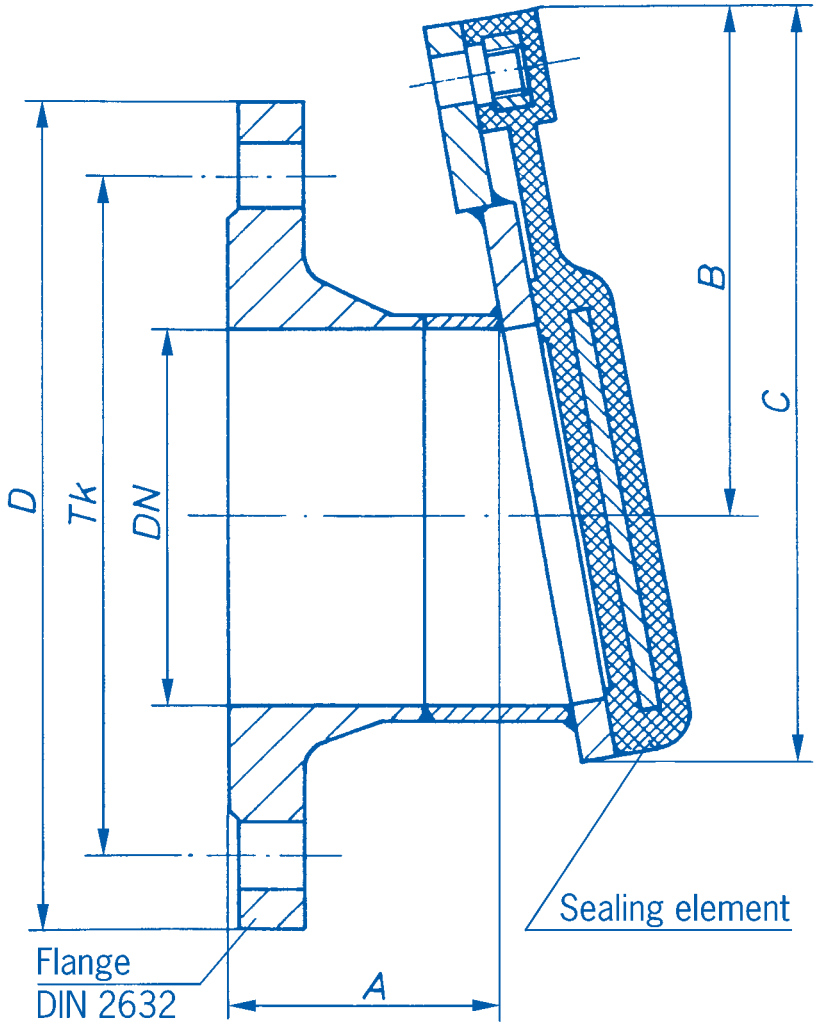

	Dimensions in mm					Weight
DN	A	B	C	D	Tk	kg
100	72	138	205	220	180	18,0
125	75	158	240	250	210	21,0
150	75	190	280	285	240	24,0
200	82	223	350	340	295	33,0
250	90	255	405	395	350	40,0
300	98	295	475	445	400	49,0
350	102	320	520	505	460	53,0
400	105	350	588	565	515	73,0
500	109	420	700	670	620	86,0

Scale: ⁄

FK-F

STRATE frog-valve with flange connection

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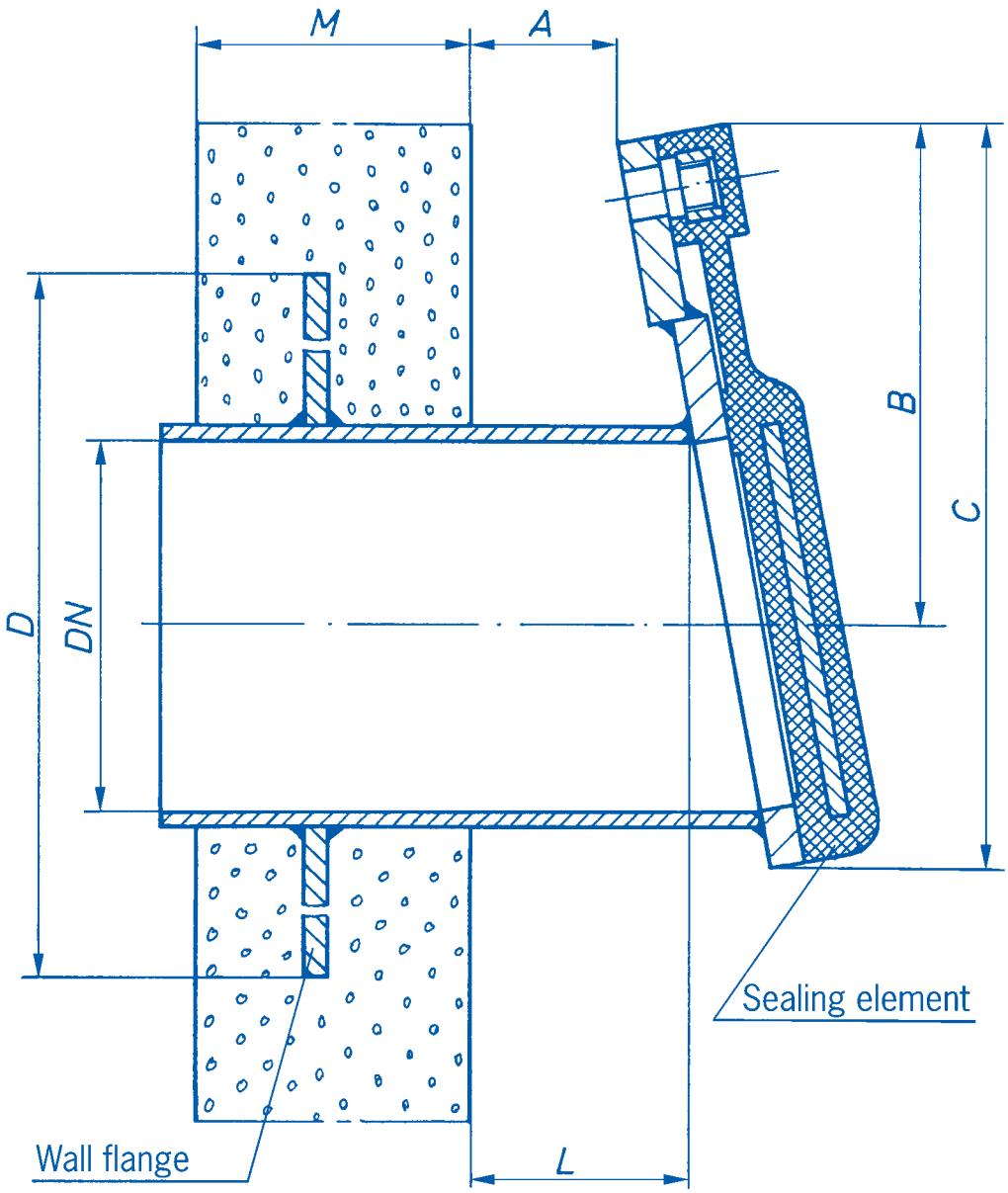

M = Wall thickness

	Dimensions in mm					Weight
DN	A	B	C	D	L	kg
100	40	138	205	310	60	18,0
125	40	158	240	335	60	21,0
150	40	190	280	360	65	24,0
200	40	223	350	420	65	33,0
250	40	255	405	470	65	40,0
300	40	295	475	525	70	49,0
350	40	320	520	570	70	53,0
400	40	350	588	620	70	73,0
500	40	420	700	720	70	86,0

	FK-E
Scale: ⁄	**STRATE frog-valve with wall flange**

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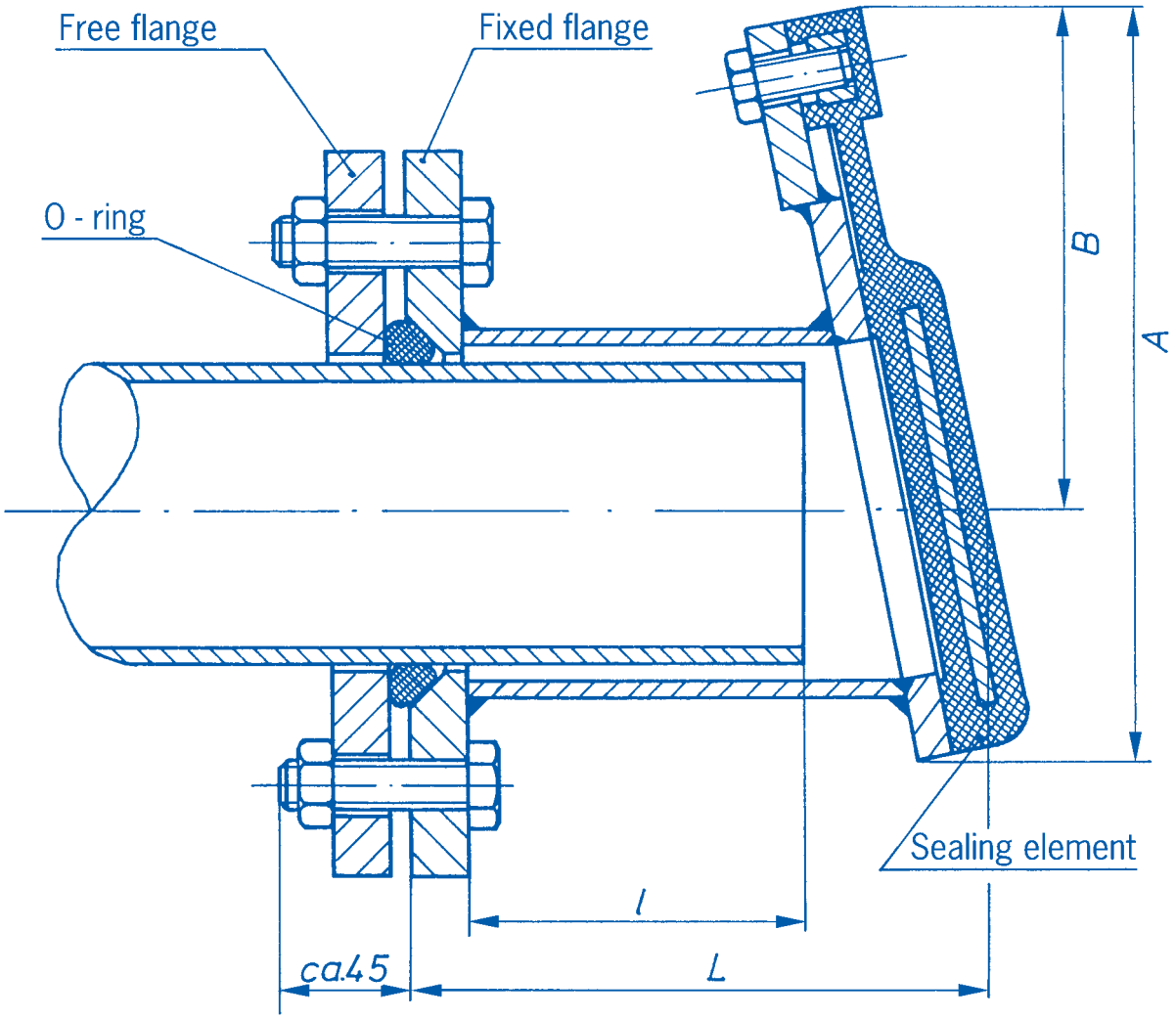

L = Installed length
l = Working length

DN	100	125	150	200	250	300	350	400	500
l	165	160	160	160	155	155	150	150	150
L	250	250	250	250	260	270	270	270	270
A	205	240	280	350	405	475	520	588	700
B	138	158	190	223	255	295	320	350	420

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Scale: ⁄	**STRATE frog-valve with equalising piece**

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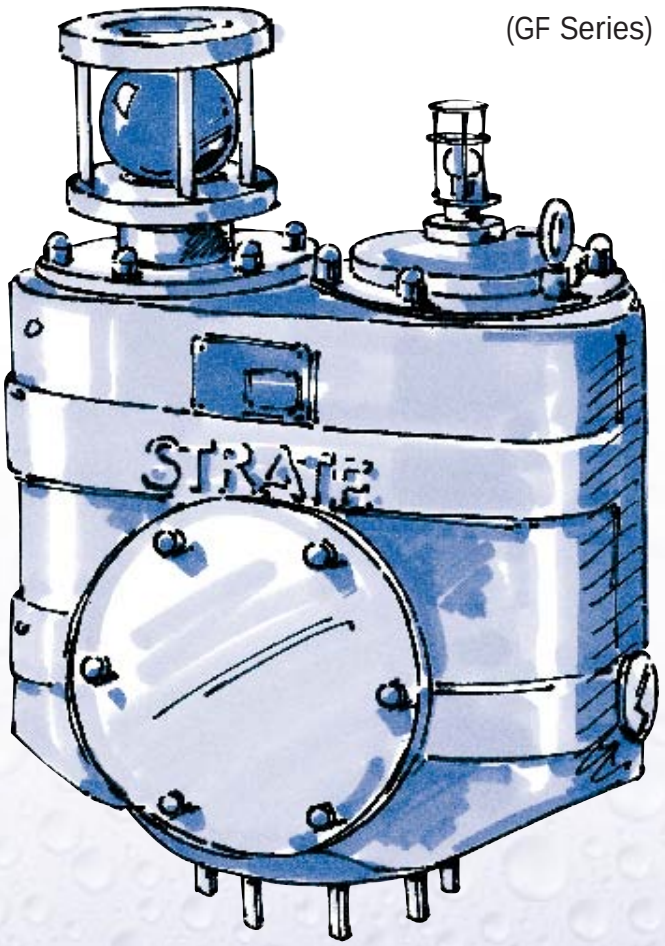
9 De-aeration Pressure and Relief Valves

Aeration and air-bleed valves -BEV- and Optional extras



Aeration and air-bleed valve Type BEV-GF

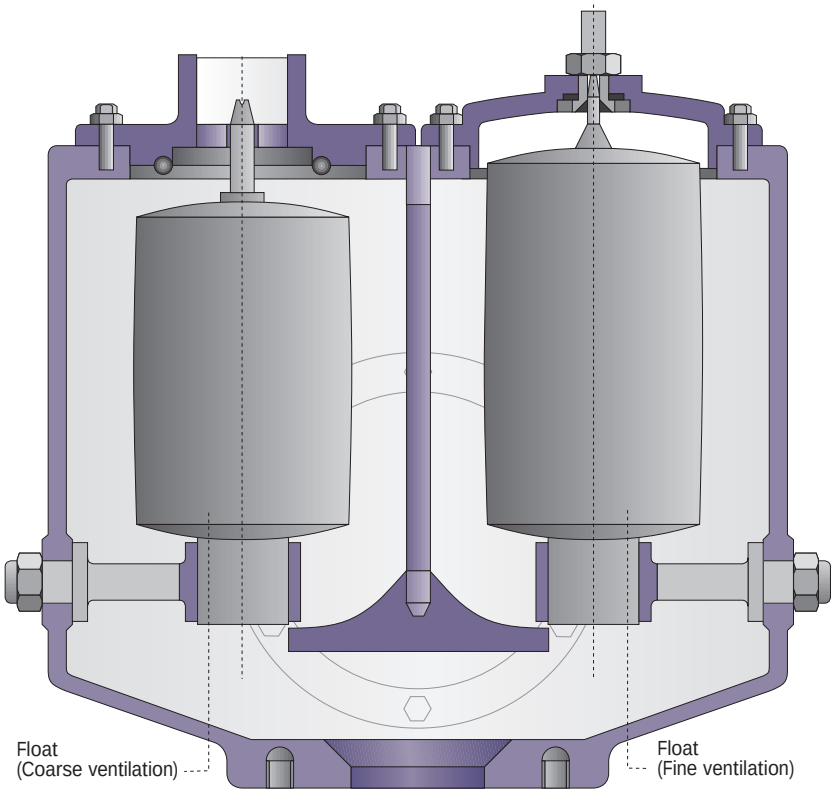
Two-stage valve – New series
DBP No. 4341803 / EP 0661 483

NEW

In order to achieve optimal deaeration of the pressurised pipe system with STRATE aeration valves **the valves are designed to operate at the system operating pressure**. The valve size and, hence, type is determined not by the nominal size of the pressure pipe system but by the maximum flow-rate in the system.

The design of the first stage is determined by the maximum output of the pump during the filling of the pipe system. This means the first stage of the valve must be able to remove as much air as the water entering the system in the maximum possible case during start-up. Should the pumping rate exceed the valve's ability to remove air the first stage of the valve will close prematurely due to the high flow-rate of air through the valve. The first bleed stage is, therefore, a coarse ventilation stage which allows rapid filling of the system, that is to say, a rapid reduction in the included air on starting the pump. The process is reversed when the pump is switched off to allow a rapid aeration of the pipe system.

The second stage has the function of bleeding air and gas that collects in the high point of the system during pump operation under system pressure. To achieve this the float weight and the bleed-jet cross-section must match the operating pressure in the valve. If adjusted for to low a pressure the valve will not allow the escape of air during pressurised operation, but only when the pump is switched off and the pressure is reduced. If adjusted for to high a pressure the valve operates only with reduced amounts of bleed air which can lead to problems in operation. Satisfactory operation can no longer be guaranteed under these circumstances. Adjustment of the valve to match operating conditions only concerns the internal components of the valve as the housing and flange connection to the system are matched to the pressure rating of the system only. For STRATE BEV valve housings there are the following pressure ratings.



1. Series valves according to rule with max. 6 bar operating pressure at installation point. Standard housing in GGG 40. Housing pressure tested to max. 10 bar. Flange connection to PN 10.

2. Special valves with devaiting dimensions with max. 10 bar operating pressure at installation point. Special housing in RSt 37.2 of welded construction. Housing pressure tested to max. 16 bar. Flange connection to PN 10.

3. Special valves with devaiting dimensions with max. 16 bar operating pressure at installation point. Special housing in RSt 37.2 of welded construction. Housing pressure tested to max. 25 bar. Flange connection to PN 16.

As the majority of pressure pipe systems seldom reach a head of 60 mwc the standard valve with a rating of 6 bars sufficient under most circumstances.

In long pipe systems the pressure at the point of installation is reduced the further installation is from the pump. In order to guarantee suitable functioning of the valve it is necessary to supply us with all the information about the pipe system and the pump station.

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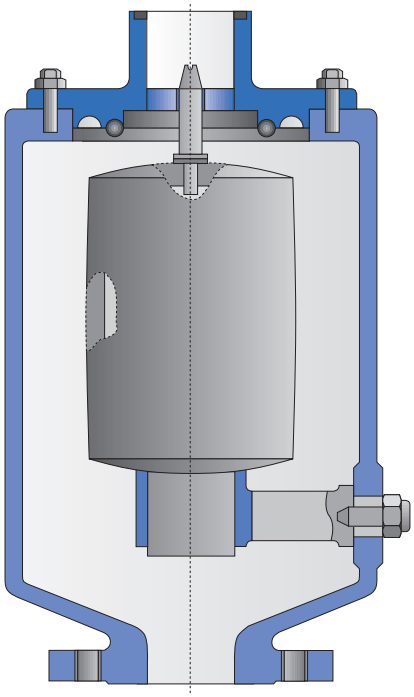
Aeration and air-bleed valves BEV-G AND BEV-F
Single stage valves DBP No. 431803

STRATE BEV-G (Coarse ventilation)

The STRATE BEV-G is a single-stage valve which functions as per the first stage (coarse ventilation) described overleaf. For the installation of the valve the same conditions apply as described overleaf for the first stage of the to stage valve. Adjustment to match the operating pressure is not necessary for the first ventilation stage as the coarse ventilation stage remains closed when under pressure.

Special applications for this valve are:

1. Aeration of individual falling sections of pipe.
2. Quick air-bleeding of high points where fine ventilation is not appropriate (e.g. short pump run times)
3. Vacuum protection in long falling or rising sections.

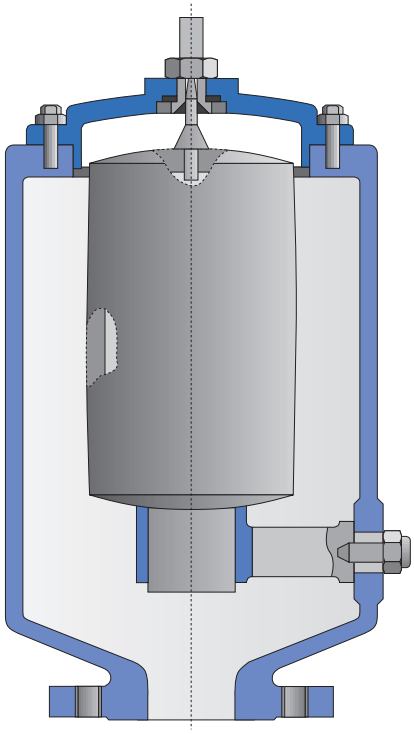


STRATE BEV-F (Fine ventilation)

The STRATE BEV-F is a single-stage valve which functions as per the second stage (fine ventilation) described overleaf. For installation of this valve the same conditions apply as described overleaf for the second stage of the two-stage valve.

Special applications for this valve are:

1. High points which due to the high head of the system remain under hydrostatic pressure even when the pump isn't operating and for which a coarse valve would not therefore be appropriate.
2. High points of systems where the flow-rate is limited. (Flow-rate may not exceed the maximum bleed-rate)



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BEV Dimensions (GF Series)

Valve type	Ventilation flow * m³/h⁻¹		Flange	Dimensions in mm							Weight
BEV…	1.St.	** 2.St.	DN/PN	L	B	H1	H2	A	Ø 1	Ø 2	kg
20-F-50 [3]	–	20	50/10	240	220	445	445	–	–	50	27
40-2F-80 [2]	–	2x20	80/10	460	260	460	460	200	–	50	60
450-G-50	450	–	50/10	240	220	415	–	–	70	–	27
1000-G-100 [1]	1000	–	100/10	315	275	430	–	–	100	–	60
2000-G-150 [1]	2000	–	150/10	430	410	535	–	–	125	–	70
450/20-GF-80	450	20	80/10	460	260	460	530	200	70	40	65
1000/20-GF-100	1000	20	100/10	615	370	560	680	260	100	100	130
2000/40-GF-150 [1]	2000	40	150/10	720	410	665	780	300	125	100	130

* The pump flow-rate should not exceed the bleed flow-rate of the first stage.

** The bleed flow-rate at 2 bar over operating pressure at installation point.

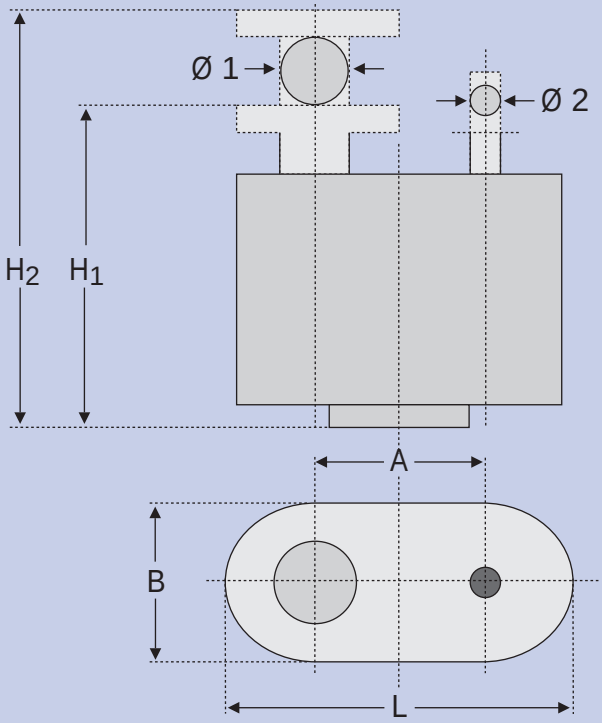
For higher operating pressures (up to 16 bar) as well as for larger flow-rates we invite your enquiries.
Special sizes on request.

[1] = Housing ST 37 welded
[2] = Corresponds to former BEV 125-2S
[3] = Corresponds to former BEV 125-S

Key to performance details from the type designation:

e.g. BEV 450 / 20 G F – 80

- 80 – Flange connection DN 80 PN 10/16
- F – Fine ventilation (float)
- G – Coarse ventilation (float)
- 20 – Fine ventilation rate 20 m³/h⁻¹
- 450 – Coarse ventilation rate 450 m³/h⁻¹
- BEV – Valve abbreviation



Materials:

Housing:	GGG 40
Float:	Plastic NCPE
Nozzle and valve face:	Stainless steel 1.4571
Screws:	Steel zinc couted
Corrosion proofing:	EGD coating
Colour tone:	Green DB 601

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BEV – Optional extras

Ventilation coupler BLV	for valve type
1 x BLV 50/50 … [1]	BEV-40-2F-80
1 x BLV 70/40 … [1]	BEV-450/20-GF-80
1 x BLV 100/50 … [1]	BEV-1000/20-GF-100
1 x BLV 125/100 … [1]	BEV-2000/40-GF-150

Ventilation connector LA	for valve type
1 x LA-50 … [1]	BEV-20-F-50
1 x LA-70 … [2]	BEV-450-G-50
1 x LA-100 … [2]	BEV-1000-G-100
1 x LA-125 … [2]	BEV-2000-G-150

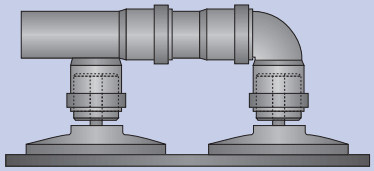
[1] … = vertical and horizontal exhaust
[2] … = horizontal exhaust

Air ingress protector BSP	for valve type
1 x BSP 26	BEV-20-F-50
2 x BSP 26	BEV-40-2F-80
1 x BSP 26/100	BEV-450/20-GF-80
1 x BSP 26/120	BEV-1000/20-GF-100
1 x BSP 26M/140	BEV-2000/40-GF-150

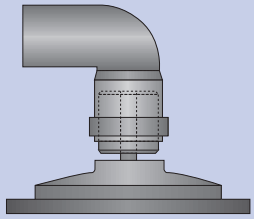
Enclosed air ingress protector BSP-G[3]	for valve type
1 x BSP 26-G	BEV-20-F-50
2 x BSP 26-G	BEV-40-2F-80
1 x BSP 26/100-G	BEV-450/20-GF-80
1 x BSP 26/120-G	BEV-1000/20-GF-100
1 x BSP 26M/140-G	BEV-2000/40-GF-150

[3] = Factory-fitted only

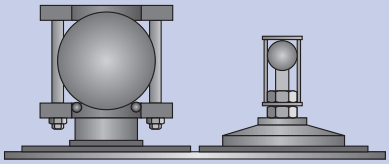
Ventilation coupler BLV



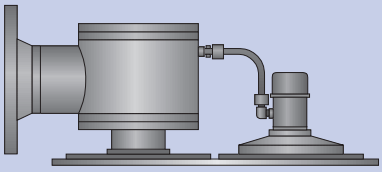
Ventilation connector LA



Air ingress protector BSP



Enclosed air ingress protector BSP-G



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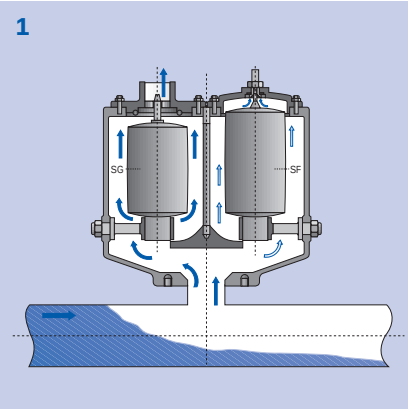
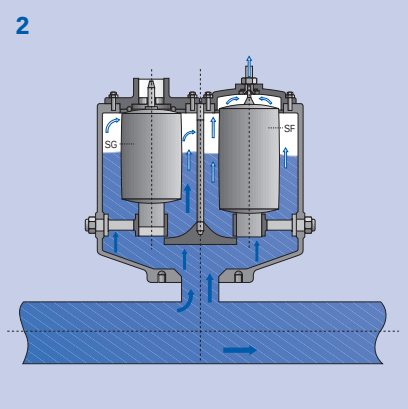
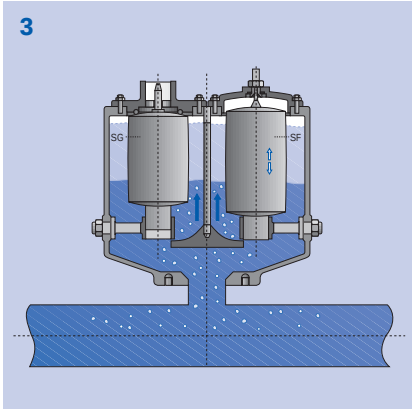
Operating scheme BEV valve GF series



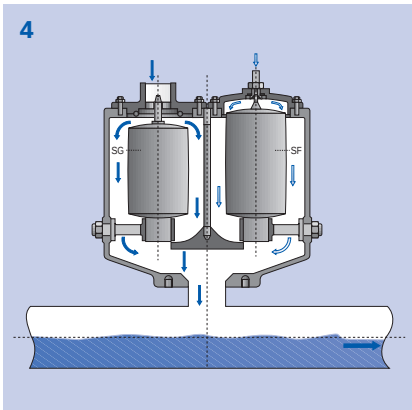
1. When pumping starts the pumped medium flows up the pipe. The air from the pipe system escapes through he open valves until the following pumped medium forces the float of the coarse valve against its seat and closes the first stage of the valve.



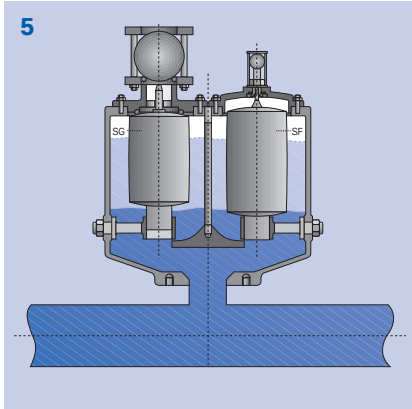
2. The air still present in the valve escapes more slowly through the second stage of the valve until the pumped medium forces the second stage float to close the valve.



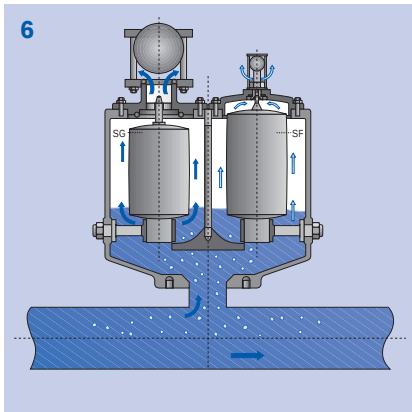
3. The air cushion above the floats prevents disturbance of the valve seats by the pumped medium. Gases compressed by the pumping process collect in the valve housing and by displacing the pumped medium allow the opening of the second stage valve. The gases escape due to the over pressure of the system until the incoming pumped medium forces the valve to close again. This process is repeated as gas or air collects in the valve housing. The first stage valve remains closed throughout this process.



4. After pumping both stages open to allow ventilation. The pipe system is aerated.



5. Should the valve be equipped with an air ingress preventer the device prevents the flow of air into the pipe system. A vacuum forms in the valve housing and in the pipe system and this retains the fluid in the pipe system. No air can be drawn in and the system remains static until the pumping begins again.



6. Eventually all remaining air and any gas formed in the system finds its way to the valve housing and when pumping begins again they are expelled through the valve.

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Aeration and air-bleed valves BEV

Maintenance

Why maintenance?

The STRATE BEV is indeed produced especially for effluent, however, the occasional very polluted nature of effluent requires regular checking of the valve. This is necessary for the timely recognition and avoidance of eventual problems due to fouling of the valve.

Maintenance intervals

Due to its construction and the use of appropriate materials we can guarantee high serviceability of STRATE BEV valves. A high-grade EGD coating gives a very smooth fouling-resistant layer to the housing. The float are made from a plastic (NCPE 8093) which reduces deposits as far as possible. Nevertheless we recommend regular servicing, just as is necessary for all equipment in the effluent industry. The precise maintenance intervals will be determined by the fouling of the valves once installed. The first inspection should take place shortly after installation (about four weeks) to determine a predicted for the next inspection.

Important maintenance work

See fitting and maintenance instructions for the individual BEV types.

In order to offer ventilation valves with the best possible suitability to the proposed installation the following data and information is necessary.

1. Flow rate of the pump(s)
2. Max. pump head
3. Vertical cross section of the pipe system with figures for nominal width and indication of flow direction.
4. Type of fluid medium with temperature data (e.g. effluent, rainwater, mixed-water, sludge and solids content, aggressive media containing chemicals etc)
5. Information about possible pressurised aeration or pressurised air flushing with the position of air injection and the rate of injection.

We are happy to produce proposals in collaboration with your planning department.

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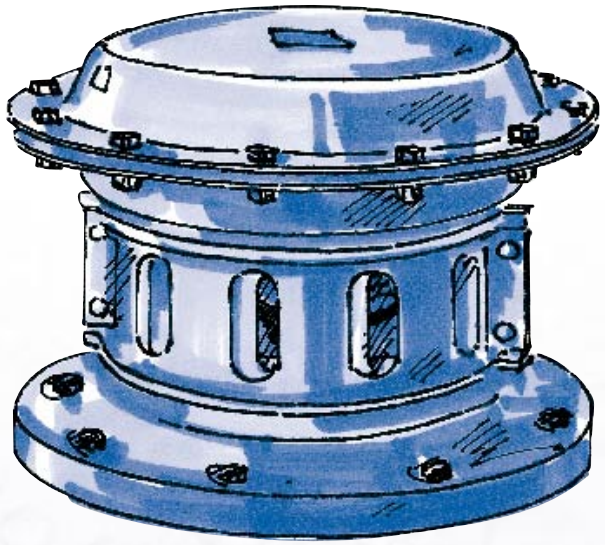
10 Start-up relief valve

10.01.E Relief valve – EVA –



Relief valve – EVA –

DBP 2750199

A medium-controlled valve to put off load during the starting of rotary piston fans and single-stage screw-type compressors for unit output levels of up to 160 m^3/min^{-1}.

The STRATE relief valve EVA is a medium-controlled, automatic, and maintenance-free and hence economical device to put off load during start-ups.

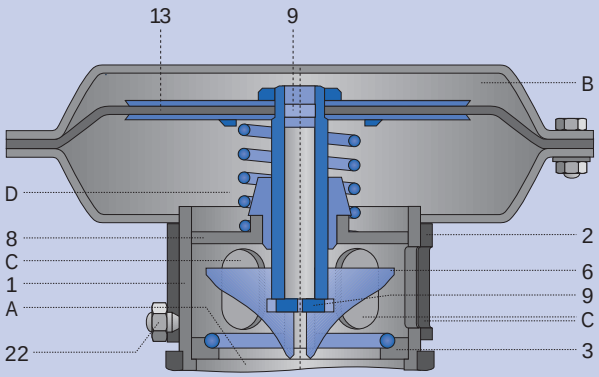
General characteristics

The start-up rotary piston fans and single-stage screw-type compressors with drive motors of 3 kWs and more follows a YΔ circuit. Backpressure must be avoided at all costs during start-up, i.e. during this phase the volume flow must be blown off. Up to now, sophisticated externally controlled fittings were used for this purpose.

Function

If the fan aggregate is shut off, the valve is open. Once the fan unit is switched on, the generated air first is discharged through the blow-off slots (C) of the valve housing (1).
By turning the adjustment ring (2) the cross-sections of the blow-off slots can be altered. A dynamic pressure develops inside the valve chamber (A). The blow-off opening is adjusted until the dynamic pressure is equal to 1/3 of the operating pressure.
The dynamic pressure generates a load in the area above the diaphragm (B) pressing down the diaphragm (13) and closing the valve (3 and 6).
The time required to fill the area above the diaphragm (B), and thus the valve's reaction time, depends on the throttling action of the nozzle (9) and the dynamic pressure head.
After setting the adjustment ring (2) to the correct dynamic pressure level, it is locked with the help of the adjusting screw (22).
With this setting, the relief valve will operate automatically and maintenance-free also with all other aggregate settings.

Functional characteristics of the STRATE relief valve



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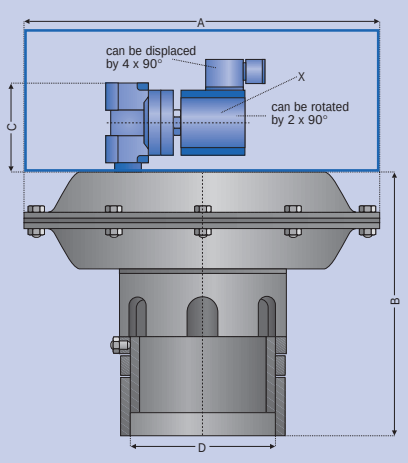
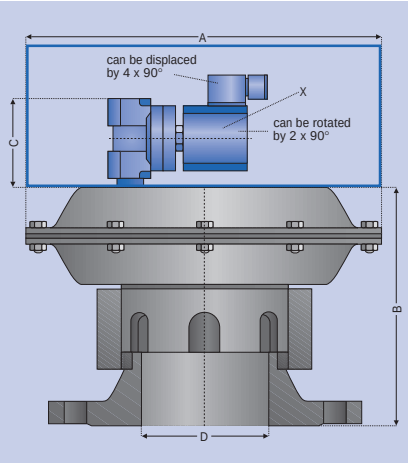
Relief valve –EVA–

Type 10/type 30



Type 60/type 150



— Auxiliary equipment

X = solenoid valve for pole-changing drive motors and load switching under no-load conditions in single-stage screw-type compressors. Solenoid valve, de-energized when closed, IP 65 type protection (German Industrial Standard DIN 40050) 220 V/50 Hz.

Designations: Type 10 2/2-1/4"
Type 30 and 60 2/2-1/2"
Type 150 2/2-3/4"

Dimensions and technical data

Type	10/S 10/E	10/D 10/DE	30/S 30/E	30/D 30/DE
Max. output m³/min.	10	10	30	30
Max. dynamic pressure mbar	200	1500	200	1500
Max. operating pressure mbar	1000	5000	1000	5000
Max. operating temperature °C	130	250	130	250
Thread connection D	R 2 1/2"	R 2 1/2"	R 4"	R 4"
Greatest diameter A mm	155	150	280	280
Max. overall height B mm	155	130	205	180
Solenoid valve C mm	70	70	70	70

Type	60/S 60/E	60/D 60/DE	150/S 150/E	150/D 150/DE
Max. output m³/min.	60	60	160	160
Max. dynamic pressure mbar	200	1500	200	1500
Max. operating pressure mbar	1000	5000	1000	5000
Max. operating temperature °C	130	250	130	250
Thread connection D	DN 150	DN 150	DN 200	DN 200
Greatest diameter A mm	280	280	390	390
Max. overall height B mm	210	210	300	300
Solenoid valve C mm	70	70	95	95

/S = Standard design
/D = for single-stage screw-type compressor
/E = with built-on solenoid valve
/DE = with built-on solenoid valve for single-stage screw-type compressors

Installation

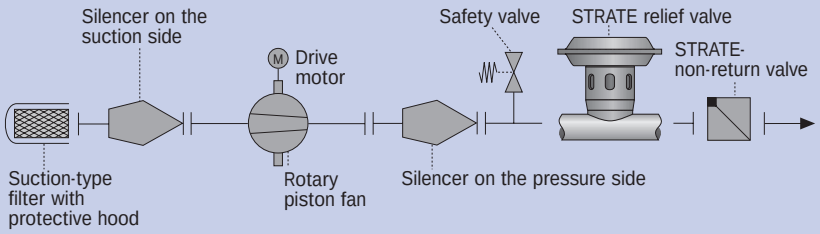
The STRATE relief valve is installed in the compact fan aggregate between the silencer on the pressure side and the return valve (see connection diagram).

Description

STRATE relief valve type:
for putting off-load during the start-up of:
output: m³/min
operating pressure: mbar
operating temperature: °C
coating: primary coat
connection:
auxiliary equipment:

Special designs upon request.

Connection diagram for STRATE relief valve EVA



February 1999

Terms of business (sale)

Contract

All orders are placed under these terms of business which exclude any other terms of business that you, the buyer, seek to impose even though they may be submitted in a later document and/or purport to exclude our terms of business.
No contract comes into existence until we have accepted your order in writing.
Quotations are open for acceptance for 30 days provided not previously withdrawn.
"Incoterms" means the international rules for the interpretation of trade terms of the International Chamber of Commerce as in force at the date the Contract is made.
Unless the context otherwise requires, any term which is defined by the provisions of Incoterms shall have the same meaning in these terms of business. If there is any conflict between the provisions of Incoterms and these terms of business, the latter shall prevail.
Our sales representatives are not authorised to vary these terms, nor to make any representations on our behalf.
No amendment to these terms of business may be made unless expressly accepted by us in writing.
Nothing in these terms of business shall affect the statutory rights of a buyer who deals as consumer.

Orders and Specifications

We reserve the right to make any changes to specifications which:
are required so that goods will conform with any applicable safety or other statutory requirements; or do not materially affect the quality or performance of the goods.
Cancellation is not permitted except where expressly agreed in writing by one of our directors. If we agree to cancel you shall indemnify us in full against all loss (including loss of profit), costs (including the cost of all labour and materials used), damages, charges and expenses incurred by us as a result of cancellation.

Price

The price will be our quoted price.
Unless otherwise stated all prices are EX WORKS our premises are exclusive of VAT and packaging.
We reserve the right, by giving you notice, at any time prior to delivery to adjust the price of the goods to take account of any increase in our costs owing to factors beyond our control.

Payment

Unless agreed otherwise, payment is due within 30 days of the date of the invoice.
Time for payment is of the essence. We reserve the right to charge interest at the rate of 4% above Lloyds Bank Plc's base rate for the time being in force on overdue amounts.
Provided no previous account is overdue, you will be entitled to a prompt payment discount of 2% of the price of the goods for payment within 14 days of the date of invoice.
We reserve the right at any time at our discretion to demand payment on account before continuing with or delivering an order. In particular we may exercise this right if there is a delay in delivery caused by you.
You do not have the right to set-off counterclaimes against the price of the goods.

Delivery

Unless agreed otherwise, delivery will be made EX WORKS our premises.
Time of delivery is not of the essence. Any date mentioned is given only as a guide and we are not liable for any loss whatsoever arising from our failure to deliver on the stated date.
Goods may be delivered in advance of any scheduled delivery date after giving you reasonable notice.
If you fail to take delivery of the goods or fail to give adequate delivery instructions at the time stated for delivery then, without prejudice to any other right or remedy we may have, we may store the goods until actual delivery and charge you for storage.

Intellectual Property

The specifications, designs and drawings relating to the goods (including the copyright, design right or other intellectual property in them) shall be between the parties belong to us. All such specifications, designs and drawings shall not be disclosed to any third party without our written consent.

Risk

The goods are at your risk as soon as they are delivered.

Title

Ownership of the goods does not pass to you until: payment due under all your contracts with us is made in full.
Until ownership of the goods passes to you: you hold the goods as fiduciary agent and bailee for us; the goods must be stored and marked in such a way as to be clearly identifiable as belonging to us; and you shall keep a record of the numbers of all serial numbered goods; the goods must be kept in good repair and insured for an amount equal to the contract price.
You shall be entitled to sub-sell the goods in the ordinary course of your business but shall account to us for the proceeds of sale whether tangible or intangible, including insurance proceeds: you shall keep all proceeds of any sub-sale separate from any moneys or property belonging to you or any third party for example all such moneys must be paid into a separate bank account.
We may at any time revoke our permission to sell and use the goods by giving you written notice if any amount due to us under any contract with you is overdue by more than 7 days or if we have bona fide doubts about your solvency.
Your right to sell and use the goods automatically ceases if: you make any voluntary arrangement with your creditors or become subject to an administration order, or (being an individual or firm) become bankrupt or (being a company) go into liquidation; a receiver or administrative receiver is appointed over any of your property; you cease, or threaten to cease, to carry on business; or we reasonably apprehend that any of the events mentioned above is about to occur and we notify you accordingly.
If your right to use the goods is terminated under the above provisions, you must place any of the goods under your control and unsold at our disposal and allow us to remove them from your premises.

Insolvency

If you make any voluntary arrangement with your creditors, become subject to an administration order, have a receiver or administrative receiver appointed over any of your property, go into liquidation or cease to carry on business, then we shall be entitled to cancel the contract or suspend further deliveries under the contract without any liability to you, and if the goods have been delivered but not paid for the price shall become immediately due and payable notwithstanding any previous agreement or arrangement to the contrary.

STRATE

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Installation

We agree to install the goods at the flat rate price agreed provided the site has been properly prepared for installation.
If the site has not been prepared for installation, we reserve the right to charge for any costs arising as a result which includes but is not limited to the costs of extra journeys and standby periods for engineers.
You shall provide all lifting gear required for installation of the goods and you shall also provide the earth or masonry work required for installation of the goods.
Unless otherwise agreed, an acceptance inspection shall be carried out in the presence of our engineers immediately on completion of installation.

Warranties

We have title to the goods and the right to sell them.
All specifications, drawings and particulars of weights, dimensions and performance which we provide are approximate only unless otherwise stated.
If on delivery, the goods are found to be in a condition or form that but for this condition would have entitled you to terminate the contract or claim damages, we reserve the right to repair or replace the goods.
We shall repair or at our option replace goods found to be defective because of faulty design, manufacture, materials, workmanship or their failure to correspond with specification during the period of 12 months from delivery.
If repair of a defect requires attendance of a service engineer at your premises, we will arrange such attendance as soon as reasonably practicable. We reserve the right to charge for the service engineer's costs including his travel costs.
This warranty does not extend to defects caused by improper or abnormal use, improper maintenance, unauthorised repair or modification of the goods or faulty design and manufacture resulting from our use of your specifications.
To claim the benefit of this warranty you must inform us of a relevant defect within 7 working days of discovering it and return the goods to us at your expense. The goods will be at your risk in respect of accidental loss while in transit to us.
In return for the benefit of these warranties, you agree that all warranties, conditions or other terms implied by statute or common law are excluded to the fullest extent permitted by law.
Each of the subclauses in this clause is to be treated as separate and independent.

Liability

We are not liable for any consequential or indirect loss suffered by you, whether it arises from breach of duty in contract, tort or in any other way including negligence. Non exhaustive illustrations of consequential or indirect loss would be loss of profits; loss of future business or orders; loss of reputation or good will; damage to property; damages, costs or expenses payable by you to your customers or subcontractors or other third parties.
In respect of direct loss, our total liability for any one claim or for the total of all claims arising from any one at or default (whether arising from our negligence or otherwise) shall not exceed the contract price.
If the goods are to be manufactured or modified to you specification: you shall indemnify us against all loss, damages, costs and expenses incurred by us in respect of a claim brought by any third party for loss, injury or damage (including but not limited to a claim for infringement of intellectual property rights) resulting from our use of your specification; we shall not be responsible if the goods do not meet applicable British and/or international standards unless we specifically warrant that the goods are manufactured to comply with a particular standard.
Nothing is this clause is deemed to exclude or restrict our liability to you for death or personal injury resulting from our negligence.

Import Licences and Other Formalities

You shall promptly obtain all necessary import licenses, clearances and other consents necessary for the purchase of the goods.
We shall promptly upon request supply all documents reasonably required by you for this purpose.

Waiver

No Waiver by us of any breach of any provision of this agreement by you shall be considered as a waiver of any subsequent breach of the same or any other provision.

Force Majeure

We are not liable for any failure to deliver the goods arising from circumstances outside our control, which include Act of God, war, riot, sabotage, explosion, abnormal weather conditions, fire, flood, strikes, lockouts, government action or regulations (UK or otherwise), delay by suppliers, accidents and shortage of materials, labour or manufacturing facilities.
If the circumstances preventing delivery continue for 3 months, either party may cancel the contract immediately by notice to the other.
If the contract is cancelled in this way we are not liable to compensate you for any loss or damage caused by the failure to deliver.

Notices

Any notice given by either party to the other shall be in writing addressed to that other party at its registered office or principal place of business.

Applicable Law

English law applies to this contract and any dispute arising in connection with it is subject to the non-exclusive jurisdiction of the English courts.