WATERCryst®
Wassertechnik

BIOCAT KS 7.5D
BIOCAT KS 10D
BIOCAT KS 15D
BIOCAT KS 20D
BIOCAT KS 25D

BIOCAT KS 7.5D

BIOCAT KS 25D

Assembly instructions

EN

Rev.: 11013895-2

Generally speaking, a specialist must carry out the installation in accordance with WATERCryst's documentation and the additional documentation provided by the manufacturer and in compliance with the locally applicable regulations.

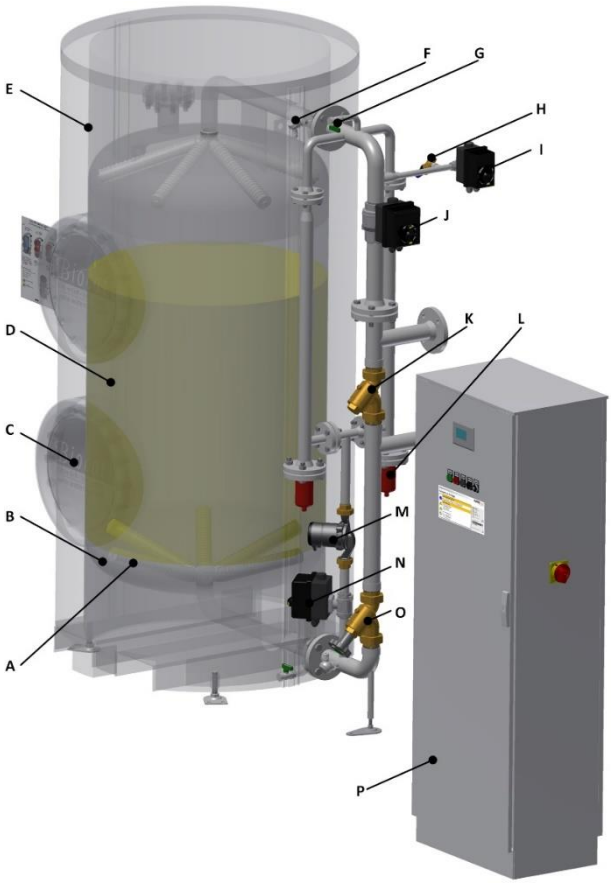
It is essential to observe the following before installation!

- DIN 1988-200 point 12.2:
  The system may only be installed in frost-free rooms where the ambient temperature does not exceed 25°C!
- System pressure of 8 bar must not be exceeded!
- Stable, preferably horizontal base
  →Observe operating weight! (see technical data)
- Observe maintenance and wall clearances
  → Observe installation dimensions
  The accessibility of the system for maintenance and service work must be ensured. In particular, the accessibility of the system must be ensured to the extent that it is possible to dismantle the system and the attachments at any time.
- Have a specialist install a properly earthed mains plug in the installation area.
- Properly secure the installation area!
- Observe the operating instructions!

Danger of scalding!
Hot water escapes into the drain funnel during backwashing.

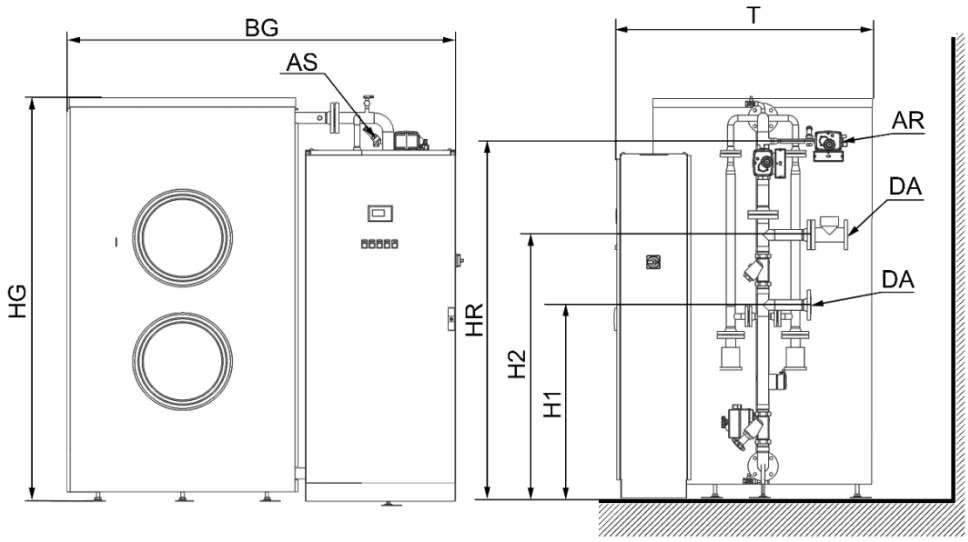
1 Scope of delivery and unit construction

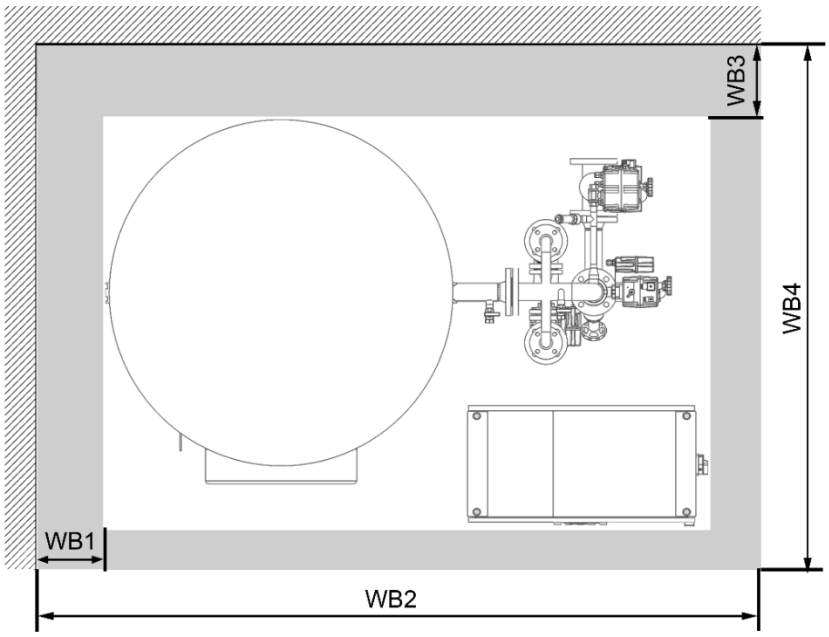
The units are delivered ready for assembly on a pallet. An overhead crane is advantageous for lifting.



Pos.	Component	Description
A	Filter stars top and bottom	Filter stars made of food-safe plastic
B	Filter gravel	Quartz gravel to stabilise the filter arms
C	Stainless steel tank	Stainless steel tank PN10 including piping and maintenance flange
D	Catalyst granulate	Fine-grained polymer catalyst granulate
E	Thermal insulation	EPP thermal insulation, thickness 90mm
F	PT100	Temperature sensor 50°C - 200°C
G	Drain cock	Boiler filling and draining tap
H	Safety valve	Safety valve 10bar
I	Ball valve DN15 with actuator	2-way ball valve for backwashing
J	Ball valve DN50 with actuator	2-way ball valve for switching between water treatment, bypass during thermal disinfection and backwashing
K	Check valve with overflow	Backflow preventer according to EN 1717 with integrated overflow valve
L	Heating element	Heating element with overtemperature protection for heating up the tank during thermal disinfection
M	Pump	HALM charging pump for circulation of the tank contents during thermal disinfection
N	Ball valve DN25 with actuator	2-way ball valve for circulation during thermal disinfection
O	Non-return valve KRV can be shut off	Stopcock with integrated backflow preventer according to EN 1717
P	Control	Control and monitoring unit

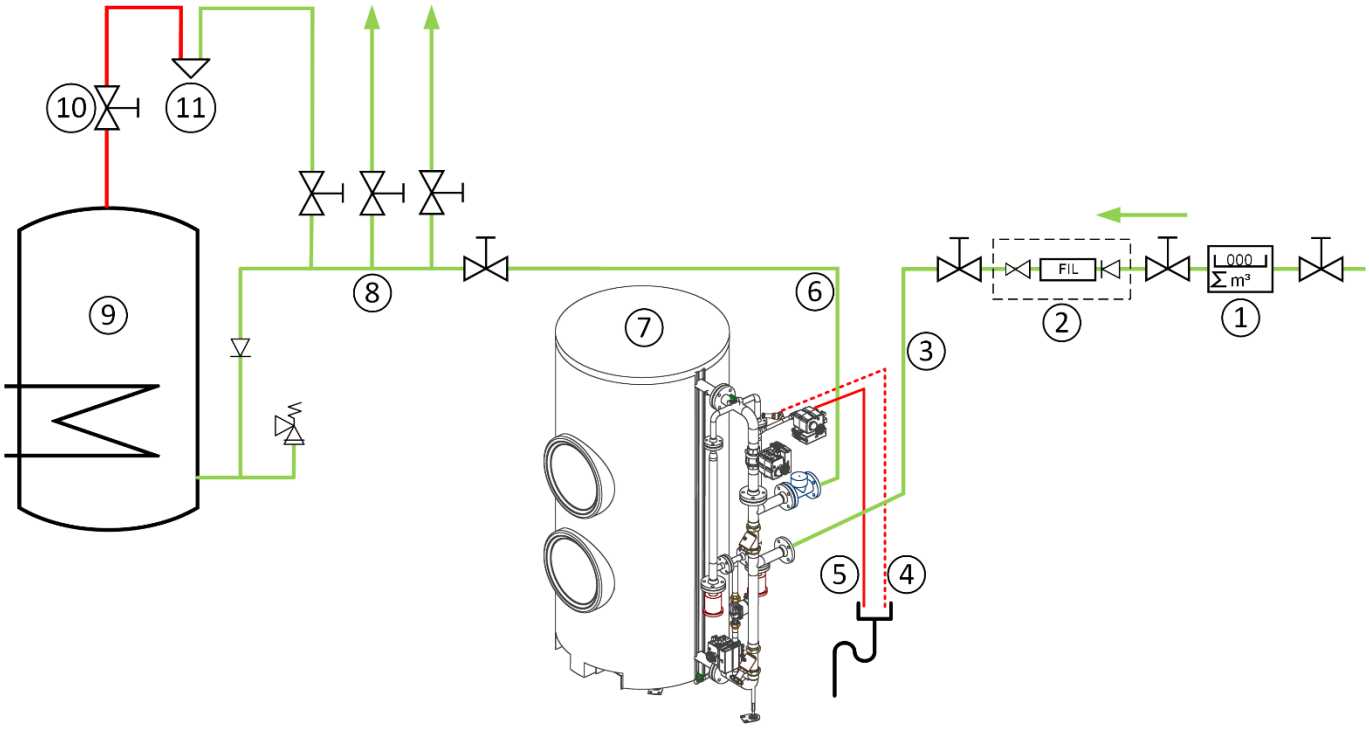
2 Installation dimension & Installation schematic



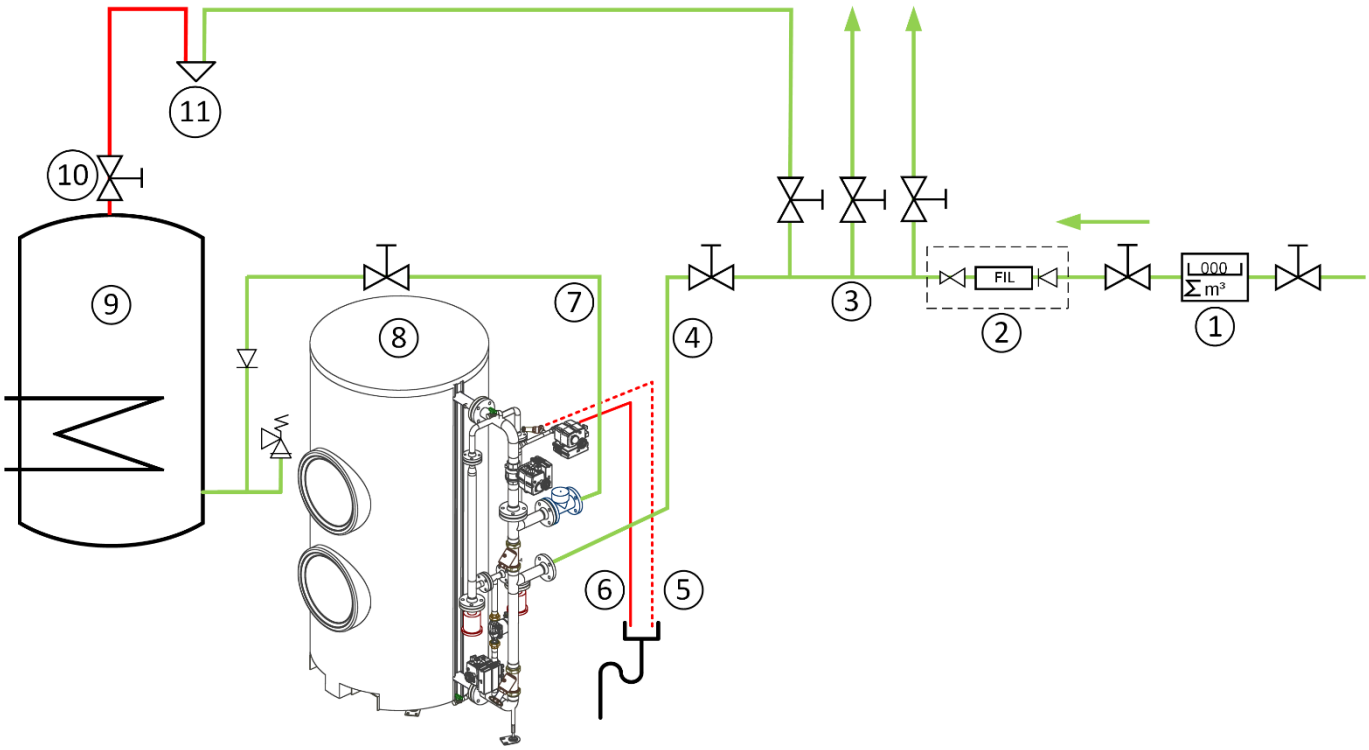


Dimensions		Unit	KS 7.5D/10D	KS 15D	KS 20D/25D
HG	Total height	[mm]	2.270		2.500
BG	Total width	[mm]	1.870	2.030	2.750
HR	Height backwash line	[mm]	2.016		1.860
H2	Height drain line	[mm]	1.490		1.305
H1	Height supply line	[mm]	1.100		947
T	Depth	[mm]	1.260	1.350	1.600
AS	Connection blow-off line		DN15 (1/2‘‘)		DN32 (1 1/4‘‘)
AR	Connection backwash line				DN25 (1‘‘)
DA	Diameter of inlet and outlet pipe		DN50		DN65
WB1	Maintenance area 1	[mm]	min. 400		
WB2	Maintenance area 2	[mm]	min. 2.670	min. 2.830	min. 3.200
WB3	Maintenance area 3	[mm]	min. 200		
WB4	Maintenance area 4	[mm]	min. 2.460	min. 2.550	min. 2.845

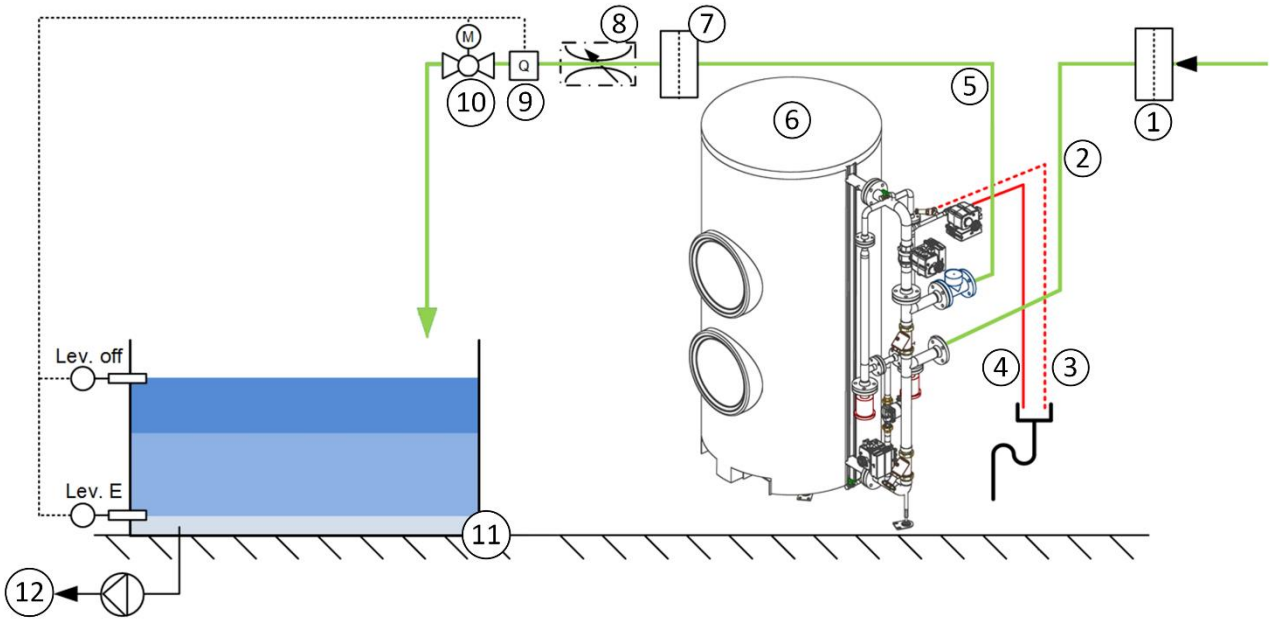
3 Installation diagrams



(1) Water meter; (2) Domestic water station; (3) BIOCAT supply pipe; (4) Blow-off pipe; (5) Backwash pipe; (6) BIOCAT discharge pipe; (7) BIOCAT limescale protection system; (8) Cold water manifold with cold water risers; (9) Hot water tank; (10) Hot water manifold with hot water riser; (11) Wall-mounted mixer tap



(1) Water meter; (2) Domestic water station; (3) Cold water manifold with cold water risers; (4) BIOCAT supply line; (5) Blow-off line; (6) Backwash line; (7) BIOCAT discharge pipe; (8) BIOCAT limescale protection system; (9) Hot water storage tank; (10) Hot water distributor with hot water riser pipe; (11) Wall-mounted mixer tap



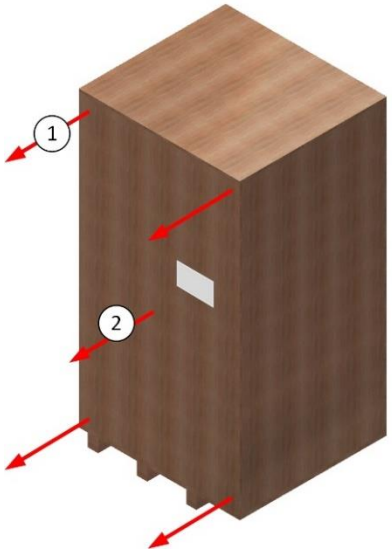
(1) Pre-filter; (2) BICOAT supply line; (3) Blow-off line; (4) Backwash line; (5) BIOCAT discharge line; (6) BIOCAT limescale protection system; (7) Fine filter; (8) Flow limiter; (9) Flow measurement; (10) Shut-off unit; (11) Drinking water holding tank; (12) Consumer

The components and fittings 1, 7, 8, 9 and 10 are **not** included in the scope of delivery and MUST be provided by the customer during installation!

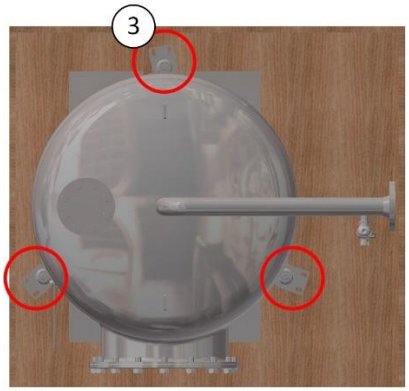
Adjusting the flow restrictor (8)

BIOCAT KS 7.5D	Max. 7.500 l/h
BIOCAT KS 10D	Max. 10.000 l/h
BIOCAT KS 15D	Max. 15.000 l/h
BIOCAT KS 20D	Max. 20.000 l/h
BIOCAT KS 25D	Max. 25.000 l/h

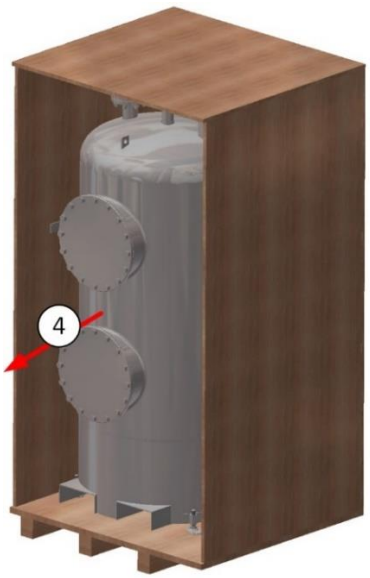
4 Sanitary connection



1. Remove the marked screws from the transport box.
2. Remove the front wall of the transport box.

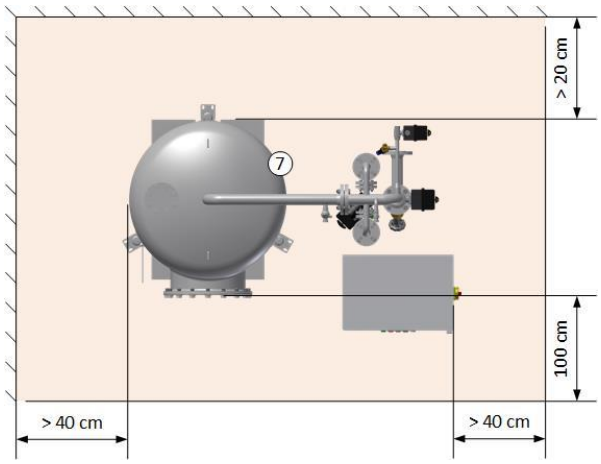


3. Remove both tensioning straps and the fastening screws of the levelling feet!

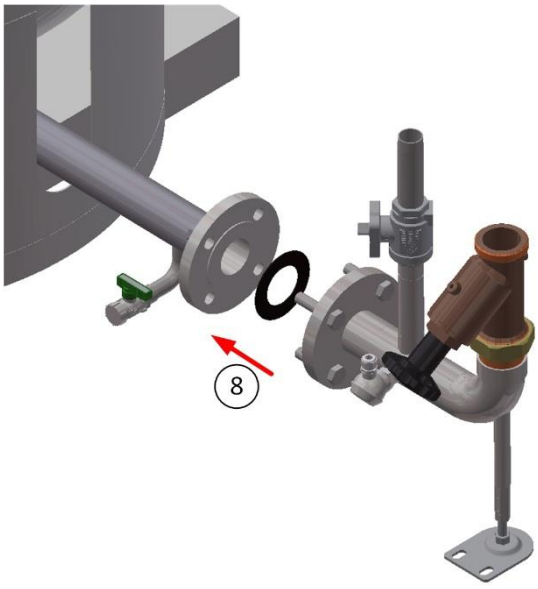


4. Lift the container out of the transport box.

5. Loosen the control cabinet from the pallet (loosen the screw connections).
6. Lift the control cabinet from the pallet and place it next to the unit.

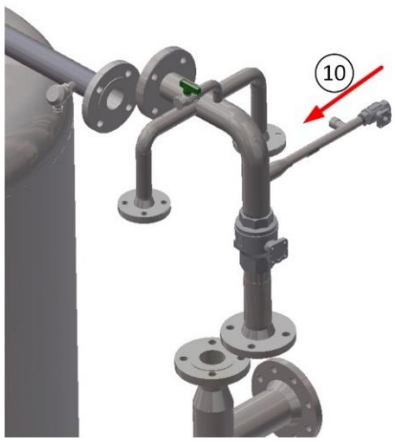


7. Observe maintenance intervals!

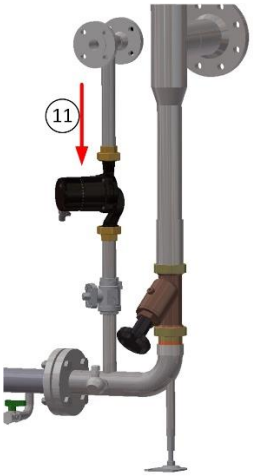


8. Mount the piping (see picture) on the tank. **Use the M16 screws incl. gaskets provided for this purpose!**

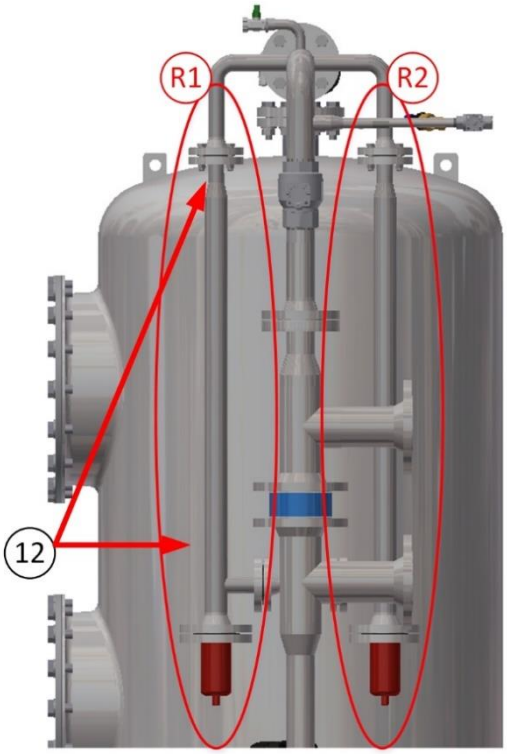
9. Screw the pipework (see picture) onto the attached pipework with the union nut.
   Use the seal provided (enclosed in poly zip bag) for this purpose!



10. Mount the remaining piping to the tank.
    Use the M16 screws incl. gaskets provided for this purpose!



11. Mount the pump piping.
    Use the seal provided for this purpose (attached to the ball valve in the poly zip bag)!

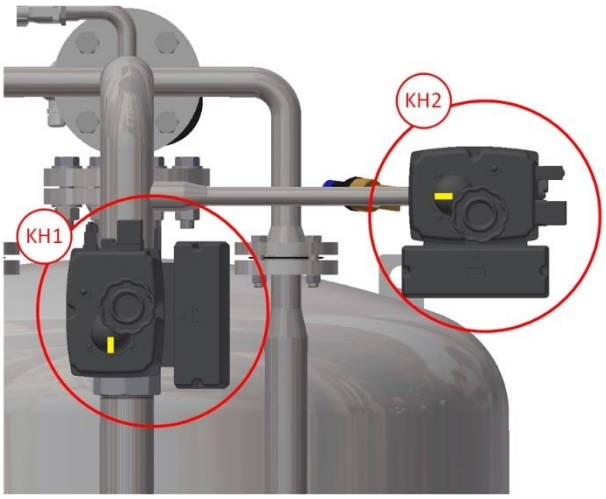


12. Mount the heating elements R1 and R2.
    Use the M12 screws and seals provided for this purpose!

13. Mount the ball valve actuators and the FailSafe.
    Use the enclosed fixing material for this purpose!

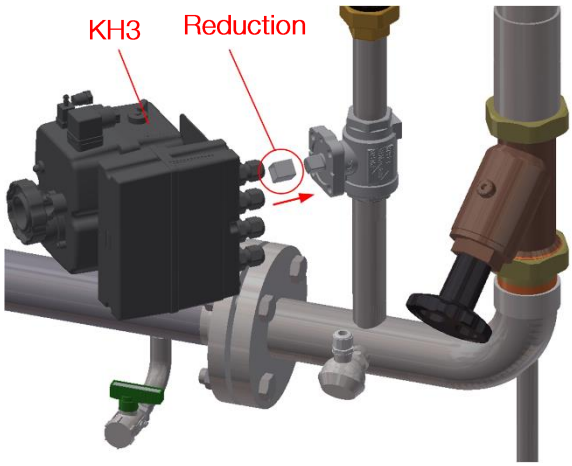
ATTENTION:
Before assembly, it MUST be checked that the position of the ball valve and actuator match!

Both must be open!



14. Alignment KH1:
    Plug **UP**
    FailSafe **RIGHT**

    Alignment KH2:
    Connector **RIGHT**
    FailSafe **DOWN**

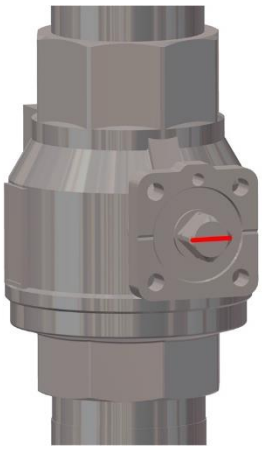


15. The reducer MUST be plugged onto the shaft of the ball valve. The KH3 is mounted in the connection to the ball valve!

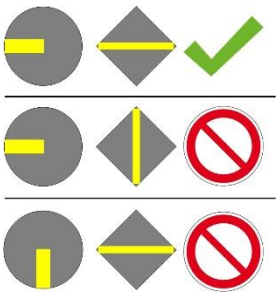
    The reducer is pre-fitted and sealed in the KH3!

    Alignment KH3:
    Connector UP
    FailSafe RIGHT

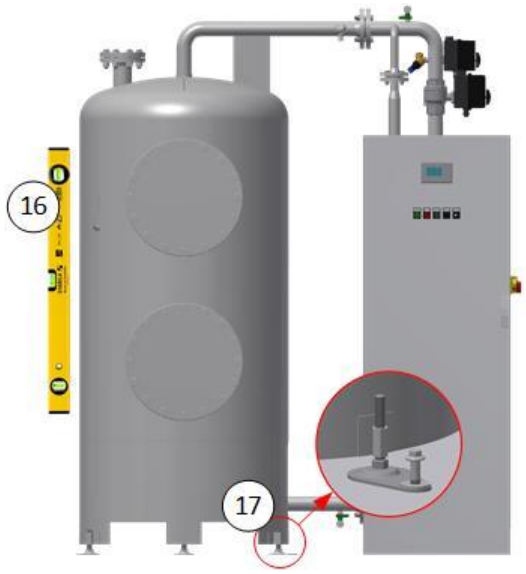
Position KH1, KH2, KH3



Ball valve position



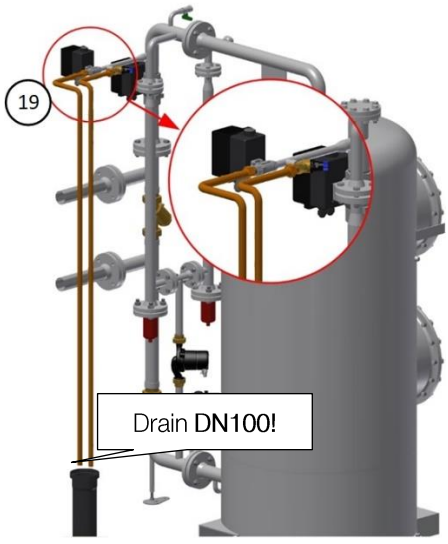
Position ball valve & actuator



16. Align the unit horizontally!
17. Attach the unit to the floor!

18. Mount the connection flanges on the tank!

    Connection flanges can be ordered from WATERCryst!

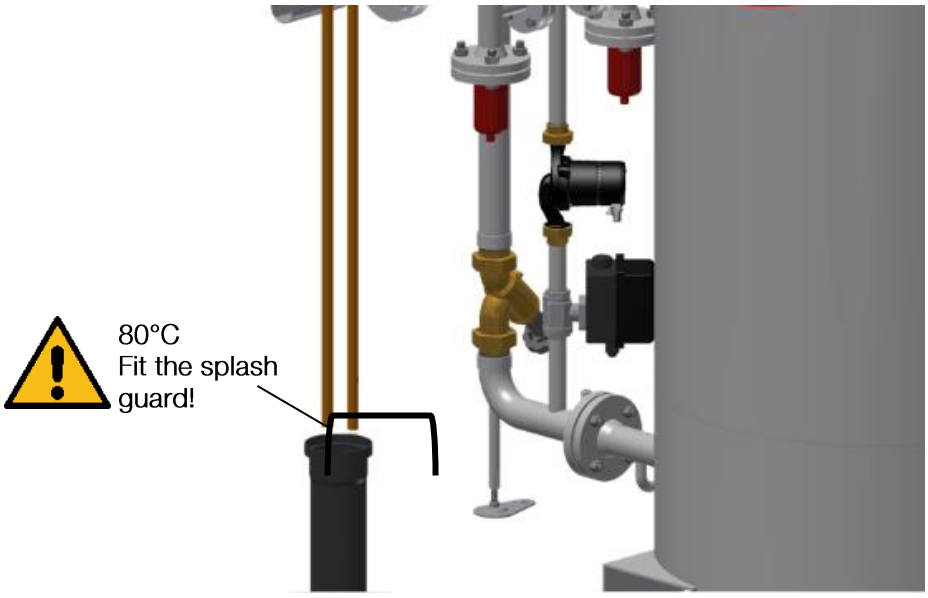


19. Install temperature-resistant flushing line **(min. 80°C)**

    The drain **MUST** be DN100.

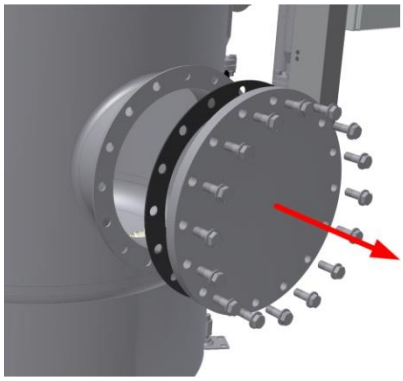
Backwash quantities:

	BIOCAT KS 7.5D - 10D	BIOCAT KS 15D	BIOCAT KS 20D - 25D
Dimension backwash connection	DN15 (1/2“ IG)	DN 15 (1/2“ IG)	DN25 (1“ IG)
Dimension safety valve	DN15 (1/2“ IG)		DN32 (5/4“ IG)
Volume flow backwash at 5 bar	74 l/min	90 l/min	160 l/min

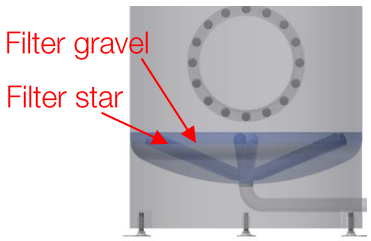


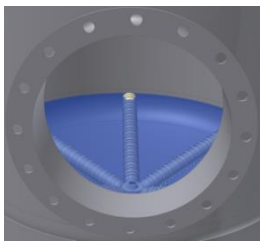
5 Filling the BIOCAT limescale protection system

The BIOCAT limescale protection system is filled carried out **exclusively by WATERCryst customer service!**



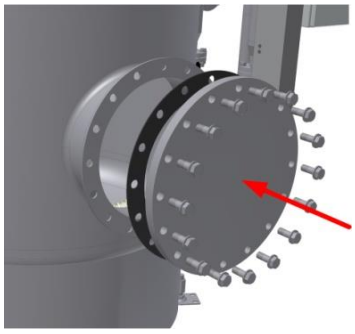
1. Loosen the screws from the lower flange cover.
2. Remove the flange cover and the flat gasket.





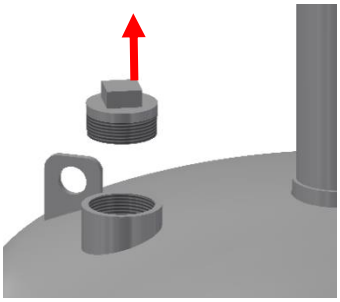
3. Check the upper and lower filter stars in the tank.
4. Fill filter gravel into the container (filter gravel must cover the filter star!).

The filter gravel must be evenly distributed to achieve a good water flow distribution!

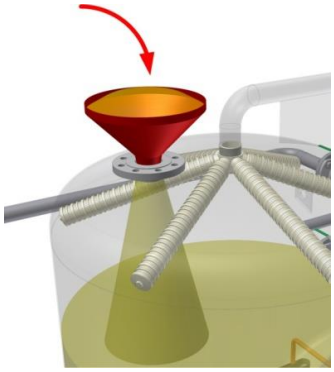


5. Clean the flat gasket and fit it together with the flange cover.
6. Tighten the screws crosswise.

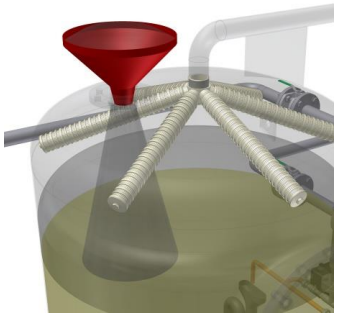
Ensure that the seal is correctly seated.



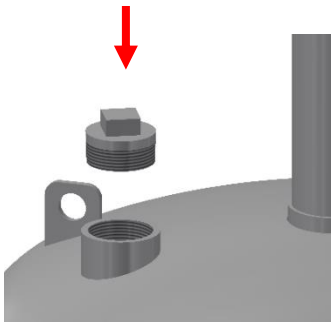
7. Loosen the blind plug.
8. Remove the blind plug.



9. Fill in catalyst granulate (yellowish plastic granulate) via a funnel of appropriate size.



10. Fill in filter granulate (white, coarse plastic granulate) via a funnel of appropriate size.

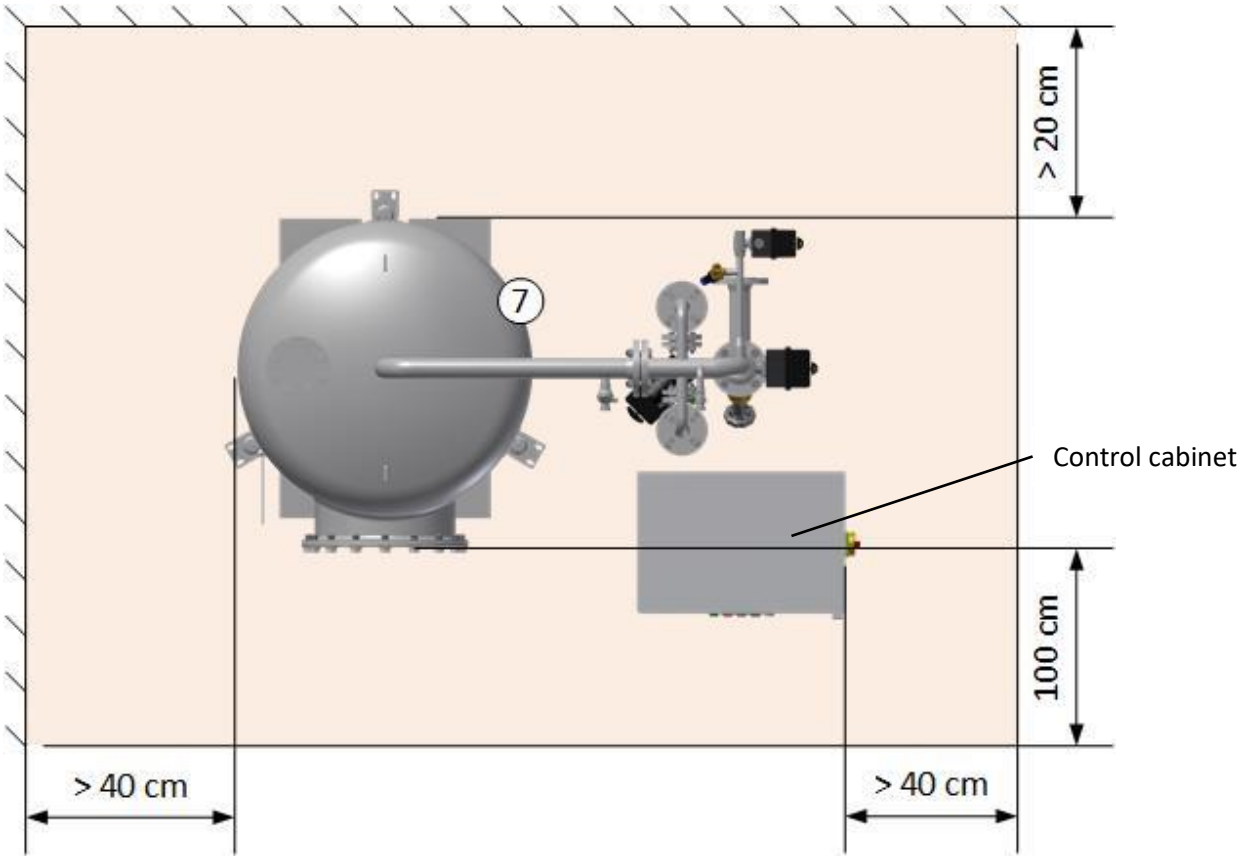


11. Mount the blind plug

12. Fix the thermal insulation!

6 Electrical connection

The control cabinet must be installed to the right of the BIOCAT limescale protection system in front of the pipework in accordance with the maintenance distances.



The electrical connection of the following components:

- Heaters
- pumps
- Valve drives, including failsafe packs
- temperature sensors
- water meters

is carried out according to the circuit diagram enclosed in the control cabinet.

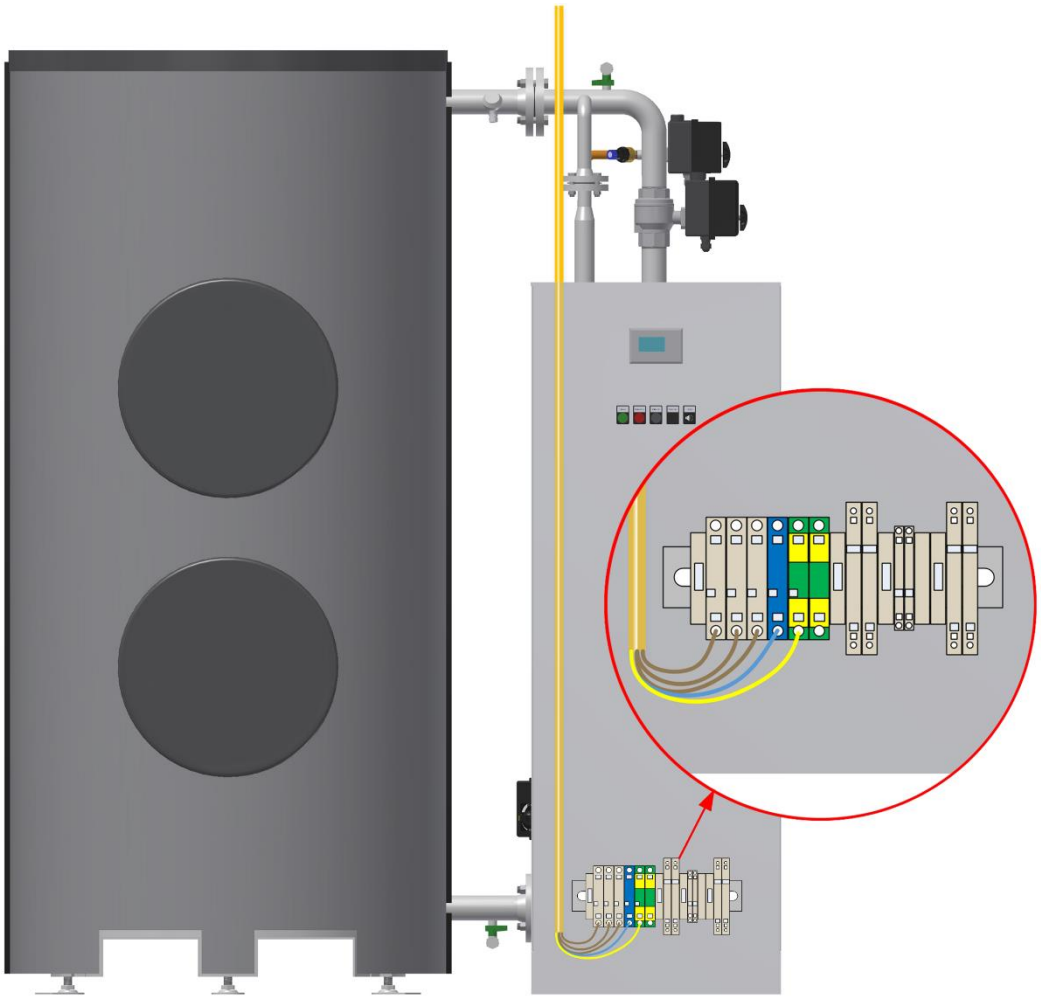
6.1 Mains connection

	Unit	KS 7.5D	KS 10D	KS 15D	KS 20D	KS 25D
Power consumption max.	[kW]	18,5		24,5	48,5	
Fuse protection min*	[A]	32		40	80	
Fuse protection max*	[A]	50		50	100	
Supply voltage	[V]	400V, 50Hz				
Connection cable		5polig: 3L, N, E				
Cable cross-section max.	[mm²]	16			35	

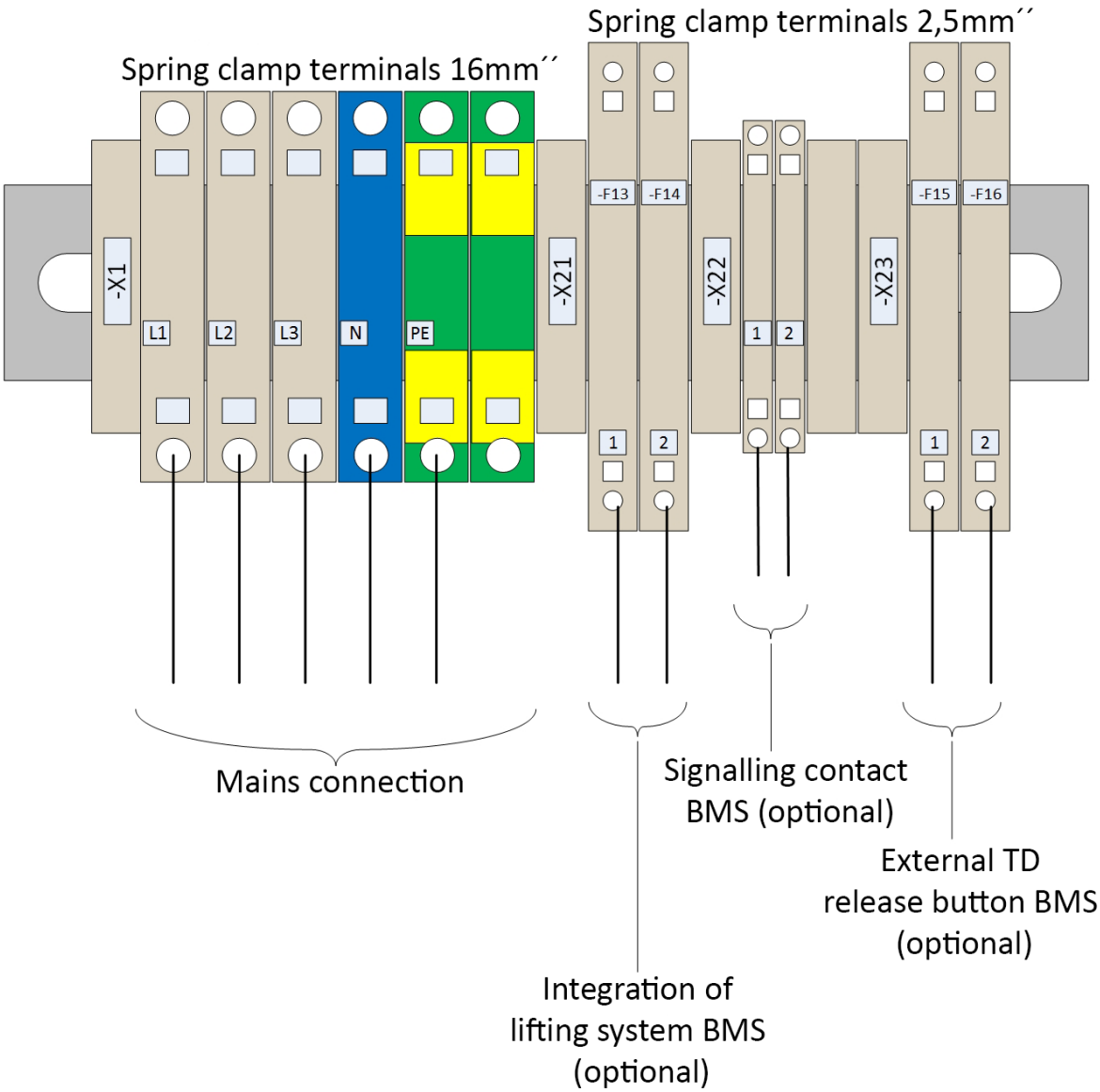
*** The fuse protection must be provided on the building side! The short-circuit resistance is 10kA!**

The connection cable is not included in the scope of delivery and MUST be laid by a specialist installer!
Connection in the control box on the terminals: –X1: L1, L2, L3, N, PE
Laying the supply line: via the base in the control box.
The control box must NOT be drilled into for this purpose!

Example of supply line (yellow) coming from the ceiling:



6.2 Connection terminals control



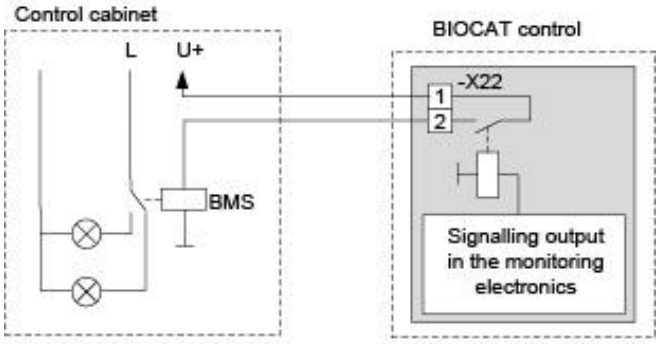
6.3 Connection GLT = Building Management System (optional)

Potential-free contact integrated into the limescale protection system: max. 24V DC / 1A

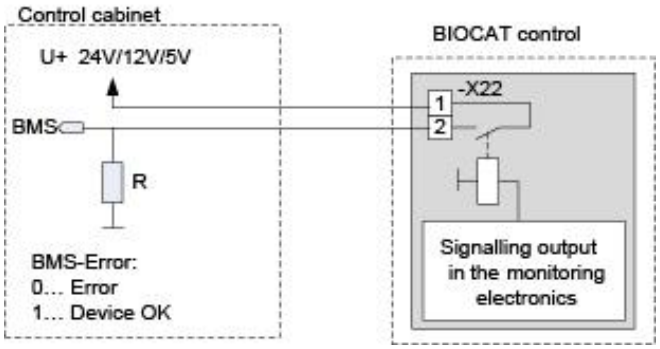
Connection in the control box on the terminals: –X22: 1 + 2

The contact is closed when the BIOCAT limescale protection system is in trouble-free operation.
In the event of a malfunction or power failure of the BIOCAT limescale protection system, the contact is open.

Example circuit 1: with external signal lamp



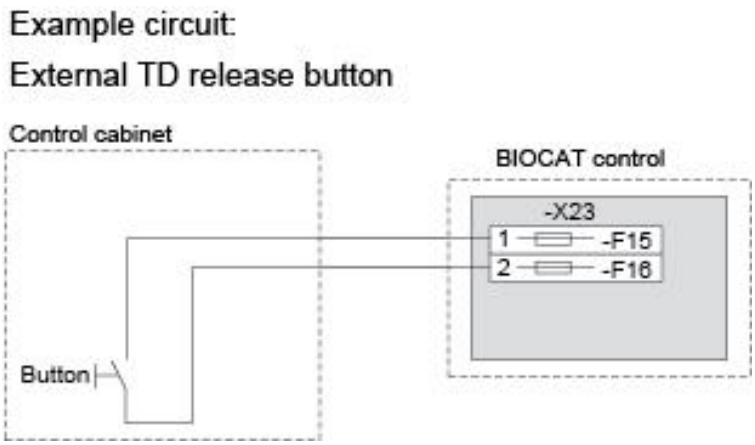
Example circuit 2:
Integration in BMS (digital input)



6.4 Connection of external TD release button (optional)

Connection in the control box on the terminals: –X23: 1 + 2

The TD is triggered by means of a push-button which is connected to the contacts -X23:1 and -X23:2 The TD is triggered by means of a push-button.



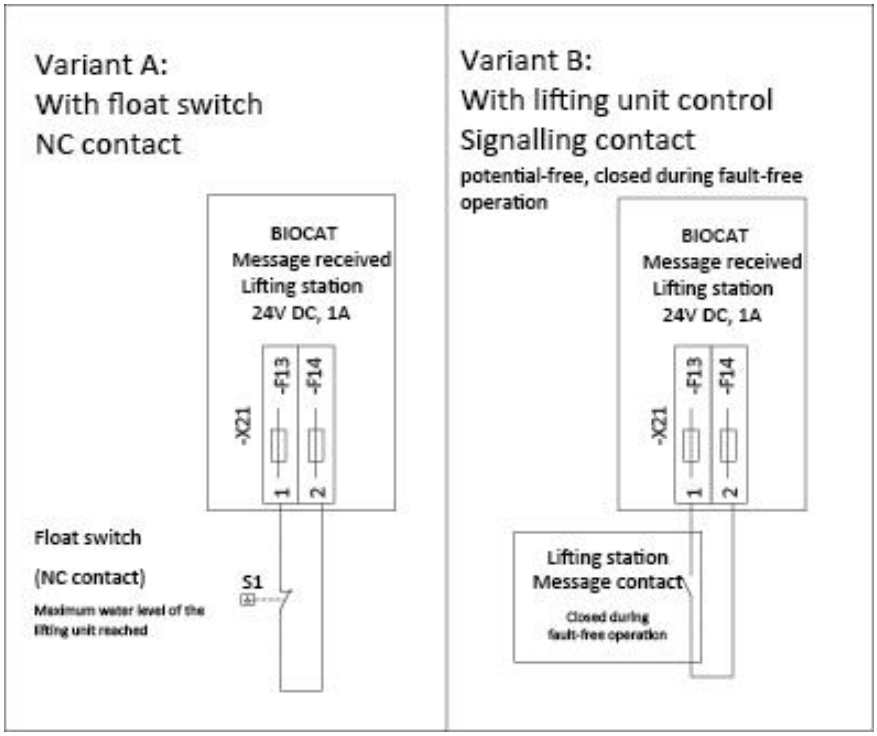
DO NOT use a switch; this can lead to malfunctions!
Only use push buttons for this application!

6.5 Integration of a lifting unit (optional)

If a lifting unit is connected downstream at the backwash outlet, we recommend integrating it into the BIOCAT limescale protection system.
This interrupts backwashing in the event of a failure (defect/power failure) of the lifting unit.

Connection in the control box on the terminals: -X21: 1 + 2

Example of a float switch (NC contact) connected to the contacts -X21:1 and -X21:2.



Service
When requesting service, please be sure to quote the **BIOCAT serial number** from the type plate and the **error code from the device display!**

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