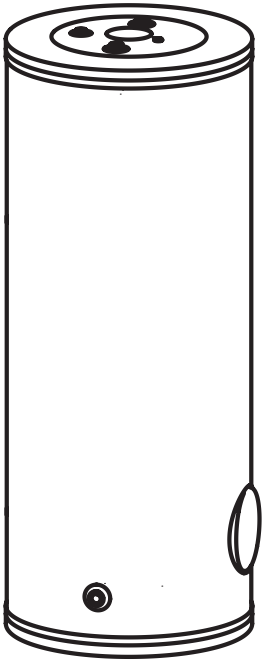
KOSPEL®

*Domestic Hot Water Cylinder*



**SP180**

***Assembly and operating manual***

## *Safety instructions*

1. Read and strictly follow this installation and operating instructions to ensure a long life and reliable cylinder operation.
2. The manufacturer of this cylinder will not be liable for any damages due to the failure to follow the installation and operation instructions.
3. The cylinder must not be installed in rooms where the temperature may drop below 0°C.
4. The cylinder's installation and the initial start-up, as well as all electrical and hydraulic work must be performed by a qualified professional installer.
5. The cylinder is designed for standing vertical installation- screw on feet or wall-hung installation (after purchasing an appropriate hanger from KOSPEL company), either horizontally or vertically.
6. Mounting of the device in a wall-hung position should be done on the wall with sufficient carrying capacity. Full tank's weight: 250 kg.
7. The device must be installed in such a place and in such a way in order not to flood the room in case of the emergency water leak.
8. Connections to water supply system and central heating system must be made in accordance with the diagram in this installation instruction. Failure to follow the installation instruction invalidate the warranty and may cause cylinder's damage.
9. Connections to water supply system must be made in accordance with the legally binding standards.
10. The cylinder is a pressure appliance designed for connection to the water supply system where the water pressure doesn't exceed 0,6 MPa. If the water pressure exceeds 0,6 MPa, the pressure reducing valve before cylinder must be fitted.
11. A small leak from the safety valve through the outlet pipe may occur- it is a normal operating state of the appliance. The outlet of the pipe has to remain open. Do not clog it, as clogged outlet may cause a breakdown of the cylinder.
12. Do not use the cylinder if you suspect that the safety valve may be faulty.
13. The tank is equipped with a magnesium anode - an additional protection against corrosion. The anode is an operating part, therefore, it is exposed to wear. **The condition of the magnesium anode should be controlled every 12 months. The anode must be replaced once every 18 months.**
14. Rated temperature of water in the cylinder should not exceed 80°C.

The cylinder is suitable for fitting an immersion heater with thermostat e.g. GRW 1.4, GRW 2.0. The immersion heater must be fitted in lieu of cork 1½".
A maximum length of immersion heater: 400mm.

## *Connection to the water system*

Connection to the water system must be performed according to binding norms of hydraulic installation. The cylinder is a pressure appliance designed for connection to the water supply system where the water pressure doesn't exceed 0,6 MPa. If the water pressure exceeds 0,6 MPa, the pressure reducing valve before cylinder must be fitted. Please follow the water connection instructions below:

- install the T-connection with 6 bar safety valve (e.g. ZB-4) and the drain valve to the fitting of the cold water inlet [ZW]. It's forbidden to install a cut-off valve (or any flow reducer) between the tank and the safety valve and on its outlet. The safety valve must be installed in such a place as to quickly let you notice the outgoing water,
- install the cylinder equipped with the safety valve to the water system,
- attached pipe (PEX-AL-PEX) must be properly screwed into one of the two sockets 3/4″ acc. to the diagram 'SP180 mounting options'

Sockets 3/4″ which are located in the upper part of the unit are intended for cold water inlet and hot water outlet.

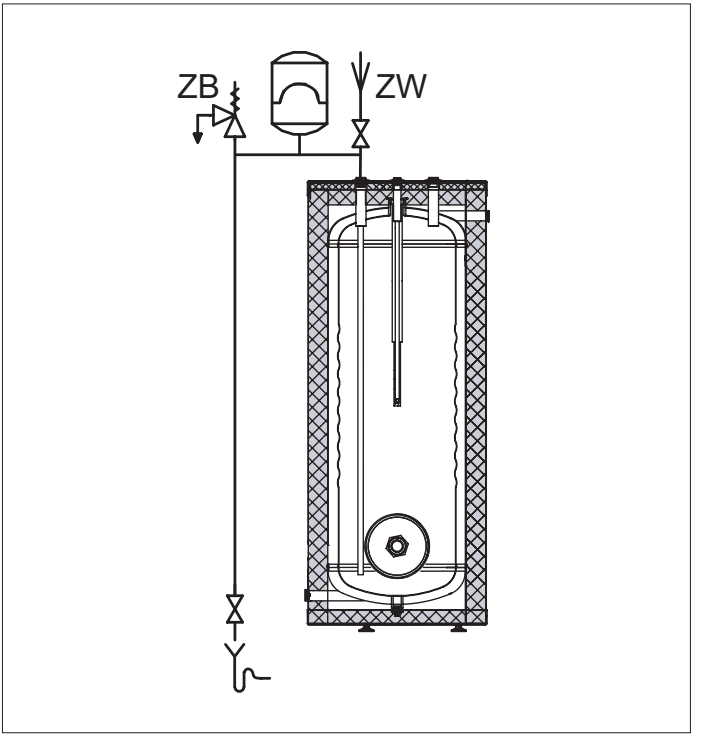
Each cylinder is equipped with fitting for domestic hot water circulation connection- 1/2″.

When mounted in the vertical position PEX-AL-PEX pipe can be screwed in any of the 3/4″ sockets, however, ZW (cold water) should be led to the bottom part of the storage tank, whereas CW (hot water) should be delivered from upper parts of the storage.

When mounted in the horizontal position PEX-AL-PEX pipe must be screwed in the bottom socket and ZW (cold water) inlet should be attached to it.

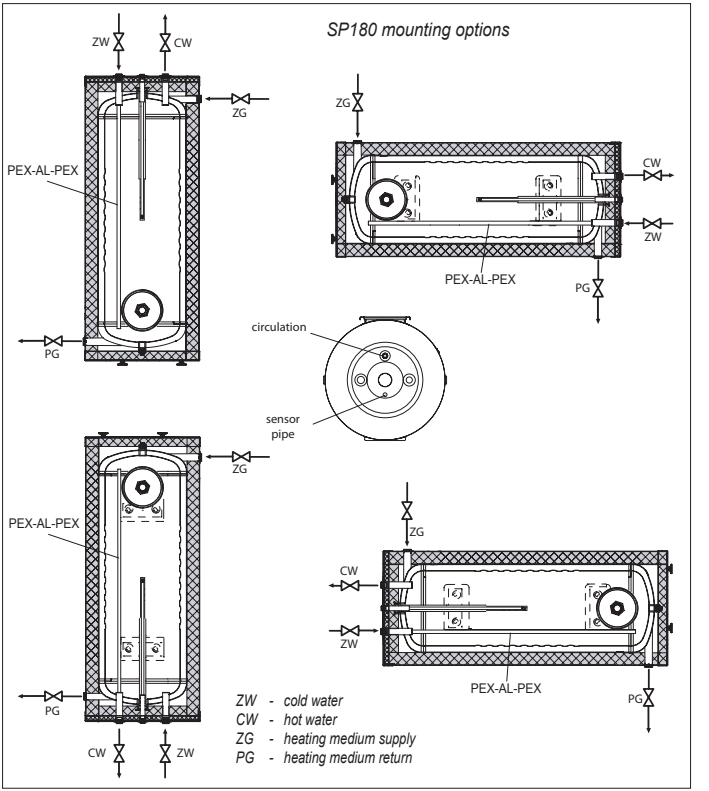
## *Cylinder emptying*

When mounted in vertical positions (connections up) in order to allow gravity draining- draining pipe should be led towards the bottom of the storage tank.

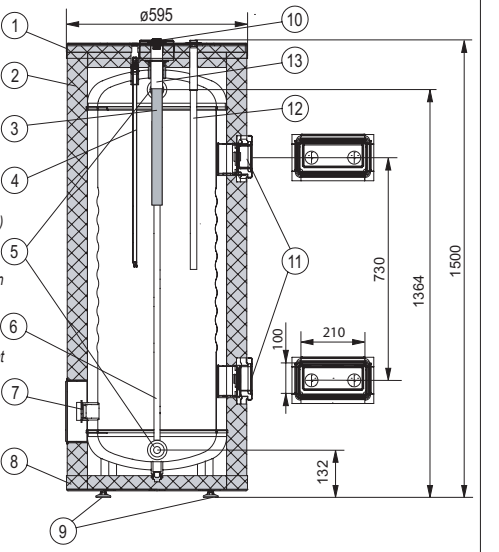


## Connection to the central heating system

Cylinder must be fitted to the central heating system by pipe unions 1″. A cut-off valves must be installed before the pipe unions. A flow rate of heating water must be high enough to maximise cylinder's efficiency (see technical data table). It concerns the forced circulation installation (with a central heating water pump).



*SP180 construction*




*[1] - upper lid*
*[2] - thermal insulation*
*[3] - magnesium anode*
*[4] - sensor pipe*
*[5] - connections (central heating)*
*[6] - cold water (PEX-AL-PEX pipe)*
*[7] - immersion heater connection*
*[8] - lower lid*
*[9] - feet*
*[10] - anode's blank*
*[11] - hangers- additional equipment*
*[12] - circulation*
*[13] - hot water*

## *Start-up*

Before the start-up make sure that the installation procedures have been carried out in accordance with the regulations included in this manual.
Cylinder must be filled with water:

- turn on the valve on cold water supply pipe,
- turn on the hot water outlet valve (water outflow without the air bubbles indicates that the tank is full),
- turn off the outlet valves,
- turn on the heating medium valves ,
- vent heating circuit- if need be.

Check for water and heating medium leaks. Check out the safety valve performance in accordance with valve manufacturer's instruction.

## Operation

Follow the guidelines below for safety and trouble-free cylinder operation:

- Check out the safety valve performance once every 14 days. Do not use the cylinder if the water does not come out (it indicates that the valve is broken).
- Clean inside of the cylinder periodically. The frequency of cleaning depends on the degree of water hardness. The cleaning should be done by a qualified person.
- The wear condition of the anode must be inspected annually.
- The anode must be replaced once every 18 months.
  - anode rod replacement [3]: take off anode's blank [10], take out an insulation ring, turn off the cut-off valve on cold water supply pipe, turn on the hot water valve (mixer tap), turn the drain valve on, drain as much water as you need to easily unscrew the anode rod (avoiding room flooding). Remove the cork and unscrew the anode rod.
- Heat up the water above 70°C periodically for hygiene reasons.
- Failures or malfunctions notify to the seller.
- Insulate the outlet pipe and heating coil connection pipes to minimise the heat loss (recommended).

Above activities are beyond of the scope of warranty service (should be done by the user).

## Technical data

| **Domestic Hot Water Cylinder** | | | **SP180** |
|---|---|---|---|
| Storage capacity | | l | 183 |
| Rated pressure | storage | MPa | 0,6 |
| | jacket | | 0,3 |
| Rated temperature | | °C | 80 |
| Capacity | storage | $dm^3$ | 140 |
| | jacket | | 43 |
| Heat transfer surface area | | $m^2$ | 1,6 |
| Cylinder's power 80/10/45°C* | | kW | 48 |
| Cylinder's efficiency | | l/h | 1200 |
| Weight | | kg | 75 |
| Magnesium anode M8 ø33 | | mm | 450 |

* heating water temp./ supply water temp./ domestic water temperature; flow rate of heating water through the coil - 2,5$m^3$/h.

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