

Tender specification:

The adjustable straight pattern valve serves to achieve a hydronic balance in cold water circulation systems with direct continuous cooling or a monovalent cold storage cylinder for chilled potable water generation. With insulation shell avoiding condensation. When combined with corresponding accessories, the valve can also be used for flush-mounted or front-wall installation.

Application:

Domestic water installations: PN 10 up to 25°C
Control range: 6°C up to 18°C
Factory setting: 8°C ± 1°C
Residual volume flow: $k_v = 0.050$
Installation position: any, but easily accessible
Max. pressure difference: 1 bar

Item number:

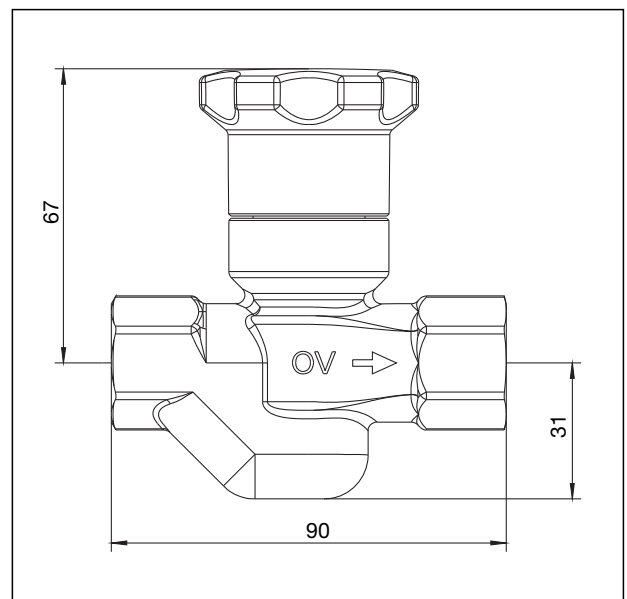
Both ports female thread according to EN 10226-1
DN 15 420 59 04

General information:

Potable water is the most important product for our nutrition and is used in private and public sectors every day. It is therefore very important that potable water is free from bacteria and micro-organisms. Two micro-organisms are of major significance for the potable water supply: *Pseudomonas aeruginosa* and *legionella pneumophila*, which deposit and multiply in bio films on surfaces that transport water. The general literature refers to the nutrients in fresh water, stagnation periods within the pipework, the existence of bacterial bio films and the water temperature as the most important factors that lead to an increase of these micro-organisms. While an increase of legionella within a temperature range of 25°C to 47°C was detected by different research institutes, an even larger temperature range between approx. 9°C and 42°C was detected, which increases pseudomonas micro-organisms. Excess temperatures may emerge in any potable water installation in which cold water pipes are laid alongside heating or hot potable water pipes (circulation pipes). If, for instance, the pipes have not been insulated at all or incorrectly or the insulation is damaged, a potable water contamination can be taken for granted. Normally, this does not involve a danger to healthy people but a contamination can be noxious for ill or injured people and lead to serious problems in high risk locations such as hospitals, retirement homes or public showers and draw off points. Furthermore, the fresh water supplied by the water authority during the late summer months may exceed a temperature of 16°C at the transmission station by a warm-up of the water in the water reservoirs. The problem of contamination cannot even be solved by permanent flushing. If the water supplied by the water authority is not free from germs, the problem can only be solved by a regular time-consuming thermal disinfection by increasing the temperature to more than 60°, flushing and regular disinfection.

If all cleaning attempts fail and all measurements lead to positive results, there is no other way but to reconstruct the potable water pipework. Expensive fine filters have to be installed in front of the circulation system in the meantime.

If a fine filter (automatic backflush filter if necessary) is installed in front of the point of entry into the cold water circulation system, the filtered potable water in conjunction with the low temperature avoids a development of micro-organisms and a safe water supply even in high risk locations like hospitals and retirement homes is assured.



Dimensions

Description, function:

The balancing valves “Aquastrom K” are straight pattern valves without dead zone for use in cold water circulation systems. Hydronic balance in a potable water installation which is cooled down by a chiller via a heat exchanger or by a heat pump is guaranteed by the cold water valve insert. If the factory preset of 8°C is exceeded, the valve opens and the cold water circulation in the corresponding section of the riser is increased until the set temperature is reached again. If the set temperature is undercut, the volume flow returns to a residual volume flow of $k_v = 0.05$. The restored hydronic balance guarantees a supply of the subsequent risers.

The valve also serves the isolation of the riser for maintenance or repair. When used in conjunction with the accessories of the “Aquastrom UP” range, the balancing valves “Aquastrom K” can also be used for flush-mounted and front-wall installation or as lockshield model.

Setting of the nominal temperature value:

The regulating insert is accessible after having pulled off the handwheel.



The nominal temperature value, at which the valve opens, can be set at the inner stem with a flat screwdriver. When leaving the factory, the valve is set to 8°C. The temperature is adjusted by setting the flattened side of the stem ② to the new nominal temperature value.

The calibrating range must not be exceeded!

Calibration can be checked as follows:

- Turn the nominal temperature value to 18°C (①)
- The calibrating range is correct if the inner setting stem and the outer splined stem are at the same level.
- If the two stems are not at the same level at a setting of 18°C, the inner stem has to be turned by 360°.
- Now set the required nominal temperature range (at least 6°C!) by turning the inner stem clockwise.

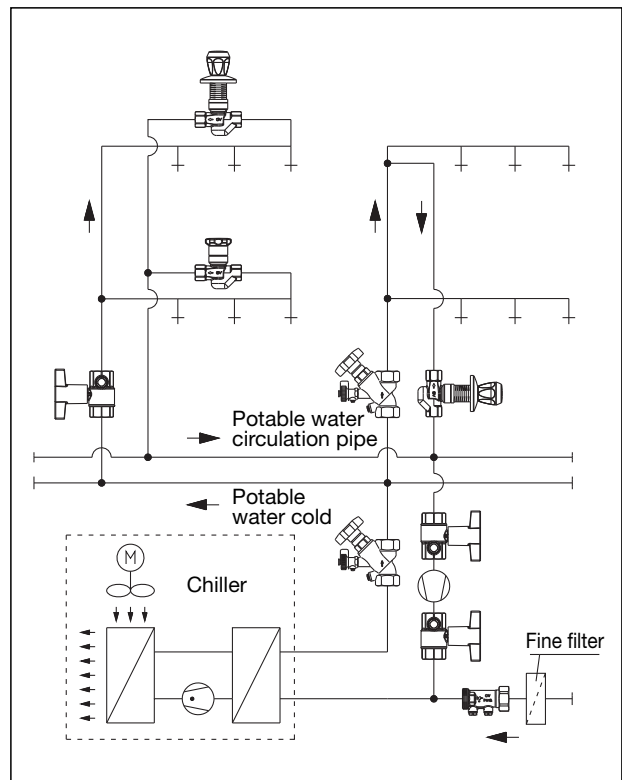
Notes:

Install valve in the flow direction (arrow on the valve body to be observed!) and bond insulation shells (supplied with the valve) with silicone.

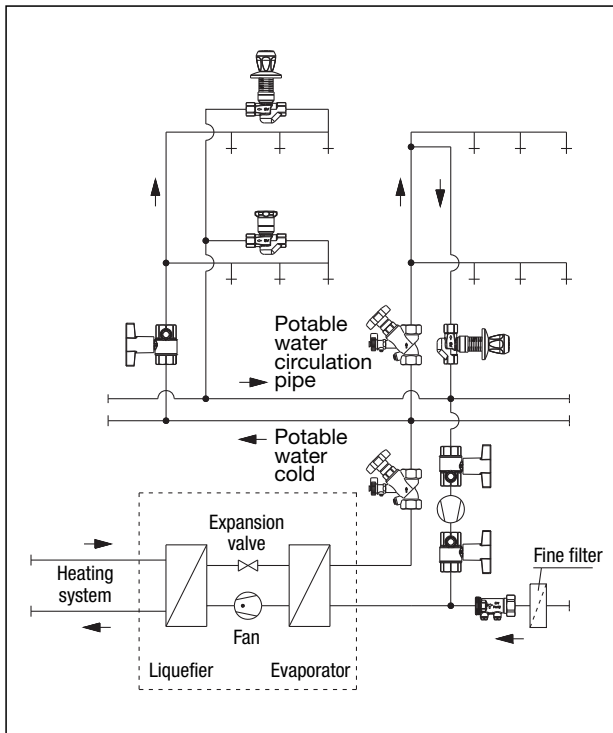
To guarantee a perfect regulating function, isolated valves must be opened completely when putting the system into operation again!

The pipework must be laid so that airlocks are avoided. Due to the low flow velocity, bacterial zones may develop especially in the circulation return pipes. The pipework has to be flushed thoroughly before initial operation.

In order to avoid damage to the pipework and valves or malfunctions caused by calcification, especially in hot water systems, the fitting of water treatment equipment is recommended if the potable water is strongly calcified. The national guidelines must be observed!



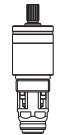
System illustration with chiller



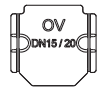
System illustration with heat pump

Accessories:

Replacement valve insert
 Cold water module
 adjustable 6°C-18°C
 Factory setting 8°C
 Item no. 420 59 90



Replacement insulation shells
 Item no. 422 90 50



Accessories for flush-mounted installation:

Flush-mounting pipe with toothed spindle
 and protection/operating cap
 Item no. 422 90 15



Handwheel set, chrome-plated
 Item no. 422 90 01



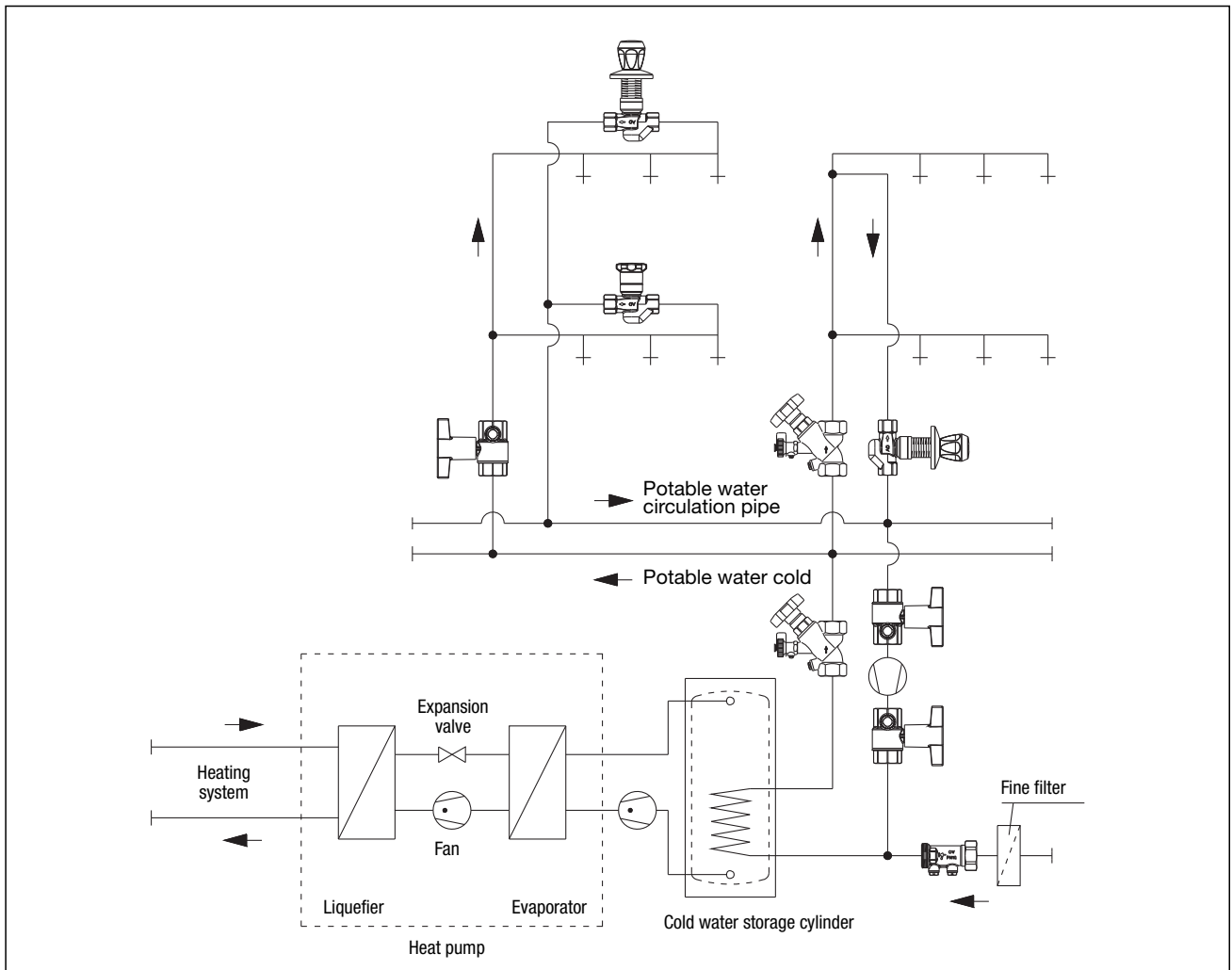
Lockshield bonnet set, chrome-plated
 Item no. 422 90 10



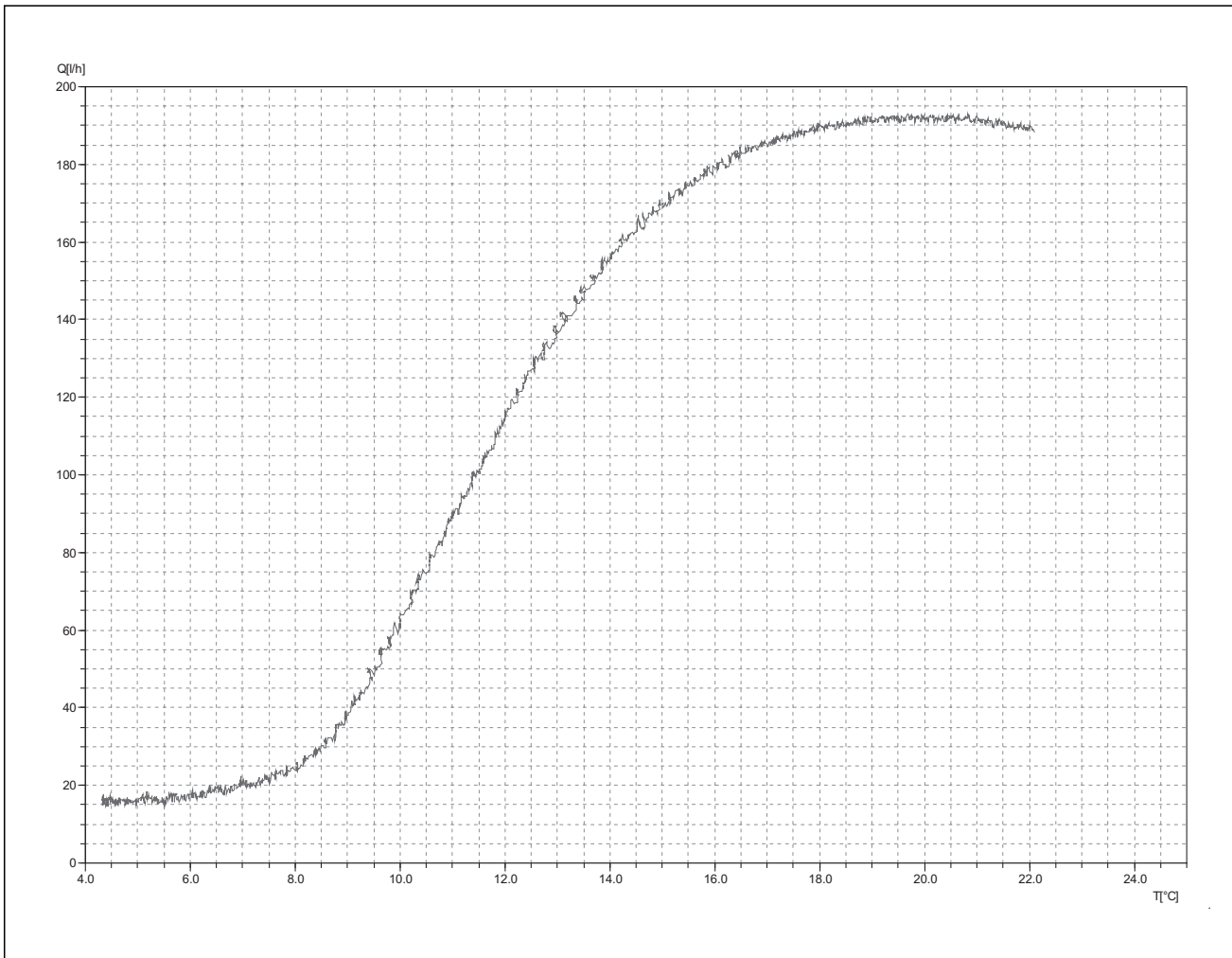
Mounting adapter
 Item no. 422 90 30



Mounting set for
 front-wall installation
 Item no. 422 90 20



System illustration heat pump with cold storage cylinder



Control characteristics “Aquastrom K” (measured at $\Delta p = 100$ mbar)