

# Drinking Water Systems



## Hygiene in the drinking water installations

The hygiene requirements for drinking water supply systems have been increasing for many years. Compliance with drinking water quality specifications is tested by organisations such as ÖVGW and DVGW. These conduct product tests and certification procedures. Technical standards refer to materials, installation, temperatures, pressures and water quantities.

All materials that come into contact with drinking water must bring about no adverse change to the foodsafe quality, appearance, odour or flavour of the drinking water. With HERZ pipe fittings, the fundamental difference lies in the fact that all parts in contact with the drinking water are produced from dezincification resistant copper alloys and all sealing substances consist of physiologically harmless material - listed in KTW (plastics in drinking water, guideline from the Federal Environment Agency).



4125

HERZ STRÖMAX W, AW, WD and AWD (W 1.331 and W 1.332), approved by the ÖVGW and registered, are suitable for systems with drinking water according to ÖNORM EN1213, volumetric flow class VB, fitting group I.

Depending on the design, these inclined fittings are optionally available with drilled

openings for drainage valves and sealing plugs, or in non-drilled form.

HERZ STRÖMAX W and AW are equipped with top sections, rising spindles and packing sealing. STRÖMAX WD and AWD have top sections with a double O-ring seal and a non-rising spindle. The nominal sizes available range between DN10 and DN80 with female threads, or DN15 to DN50 with external flat sealing thread or with cone for the HERZ PIPEFIX pipe system and press fittings, although also with HERZ compression sets and HERZ plastic pipe connection.

HERZ shut-off valves in straight-seat format and rising spindle are designed with grease chamber top sections and double O-ring. All variants comply with the volumetric flow class VA, according to ÖNORM EN1213.

The hand wheels are ergonomically designed and bear information regarding the maximum permissible operating temperatures, as well as the water throughput capacity, in accordance with standards. The fittings are naturally equipped with dead space-free top sections. The connection options vary for all pipe materials from inner or outer thread right to a solder connection.



4215

Maximum operating pressure 10 bar, maximum operating temperature 80°C, whereby an occasional temperature increase up to 95°C is permissible. For maintenance purposes, all HERZ pipe fittings are available with the top section separate. It is necessary to note the design shape and model generation here.

HERZ pressure reducing valves 2682 are optimally suited for regulating the pressure ratios with the domestic connections. The pressure reducer is a self-acting membrane controller, which precisely regulates the mains pressure or pump pressure from domestic waterworks



2682

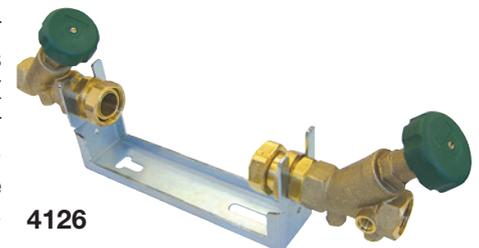
to the desired and set domestic water pressure. The desired operating pressure is set via the hand wheel and can be read off at the manometer.

The adjustment range for the outlet pressure can be selected between 1 and 6 bar. The maximum supply pressure is limited to 16 bar. It is recommended that a dirt trap be used upstream of the control device.

The HERZ water meter set 4126 consists of a galvanised steel support, on which the shut-off valve per EN 1213 is mounted upstream of the meter and the backflow preventer with shut-off valve per EN 1717 is mounted downstream of the meter, in both cases with variable adjustment. This guarantees tension-free installation, between the two fittings, of any conventional water meter in accordance with ÖNORM B 2535. The meter installation is radial and flat sealing, and it is fitted using the threaded connections supplied. The water meter set can be mounted in the appropriate position, vertically or horizontally, using the elongated holes intended for this purpose. Due to the material selected, a safe electrical bridging of the water meter is established. Sealing of the inlet-side union nut is guaranteed.

Systems for domestic drinking water installations must comply with the operating conditions for cold and hot water. All parts of the installation must comply with the relevant product standards and regulations (ÖVGW).

A backflow of potentially contaminated water into the drinking water must be prevented in all instances. This is possible with safety valves, such as backflow preventers. During planning and dimensioning, the shortest possible line routes should be selected. Various versions of the HERZ backflow preventer are suitable for drinking water and can be used as required. The HERZ backflow preventer 2623 offers particular protection to the drinking water system.



4126

Sampling valves 0277 according to ÖNORM B5019, ISO 19458, DIN 38402, DVG worksheet W 551 and VDI 6023. For correct sample extraction from cold and hot drinking water, for testing compliance with the limit values per the drinking water ordinance and checking the water quality according to DVGW worksheet W 551. Prior to taking the sample, it is possible to disinfect all parts of the sampling tube through flame sterilisation, in order that no corruption of the sample occurs. Sampling valves are available in two designs and two dimensions.



0277

slowly and steadily moved - without pressure surges - in the *closed* direction, and with a decreasing temperature it is opened against the thermostatic element by an opening spring. With thermal disinfection, the second thermostatic element overrides the first, so that the complete flow is once again available at the fitting. With the fitting it is necessary to consider a leakage rate of approx. 0.65 l / min with approx. 10 kPa differential pressure, depending on the design.



4011

### Temperatures, pressures:

Standard EN 1213 „Shut-off valves from copper alloys for drinking water systems in buildings“

(tests and requirements) regulates the:

- Requirements applicable to the materials and the design of shut-off valves
- Requirements applicable to the mechanical, hydraulic and acoustic behaviour
- Test methods
- Requirements applicable to the labelling

for shut-off valves from copper alloys, from DN 10 to DN 100, up to PN 10 and a service temperature of 65°C. Temperature increases up to 95°C are permitted, for a maximum period of 1 hour. This does not apply to control valves or service valves.

Thermostatic circulation controller, DN 15 - DN 20, PN 10, max. 90°C.

Operating conditions per DIN 1988; pressure pstat: 0.2 Mpa -0.5 Mpa.

### Sizing:

During system sizing and operation it is necessary to observe the generally applicable and standardised flow velocities, although no less than < 1 m/s in all instances.



2623

This backflow preventer complies with EN1717 and prevents a back-pressing, back-flowing and back-sucking of contaminated water into the supply line. Via the standardised test openings it is possible to determine the current position and clean the fitting.

HERZ dead space-free ball valves for drinking water: With conventional ball valves, an enclosed space exists around the ball - dead space that fills with water upon actuation. If the ball valve is not actuated for an extended period of time, germs can build up in this standing water.

HERZ ball valves have a specially drilled hole, so that this water flows back and contamination cannot arise. These ball valves are therefore also suitable for sampling, and in all places where the intermixing of old products must be avoided. They are also used in areas ranging from the food industry to the pharmaceutical and cosmetics sectors.



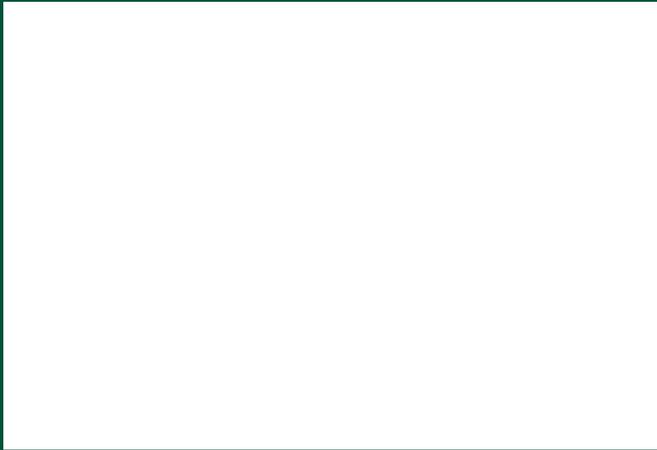
2100

With central hot water heating, hot water is heated with storage tank systems. A circulation system is required with larger systems, in order that hot

water is available to the consumer at all times. The circulation system must be equipped with automatic balancing valves, also known as circulation temperature controller, for the purpose of reducing energy usage and enhancing efficiency.

The HERZ circulation temperature controller is a thermostatic throttle valve for drinking water systems with circulation pump, in the form of a proportional controller without auxiliary energy. The medium temperature of the circulation line is controlled and automatically supplied for the distribution of the hot water with multiple lines (if available). The circulating quantity of water is limited to the quantity required, in order to keep the temperature constant and circulation losses are minimised.

The fitting is also to be used for legionella-flushing of the system. The circulating quantity of water is increased again during flushing to the designed water quantity. As the temperature of the thermostatic element increases, the cone is



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