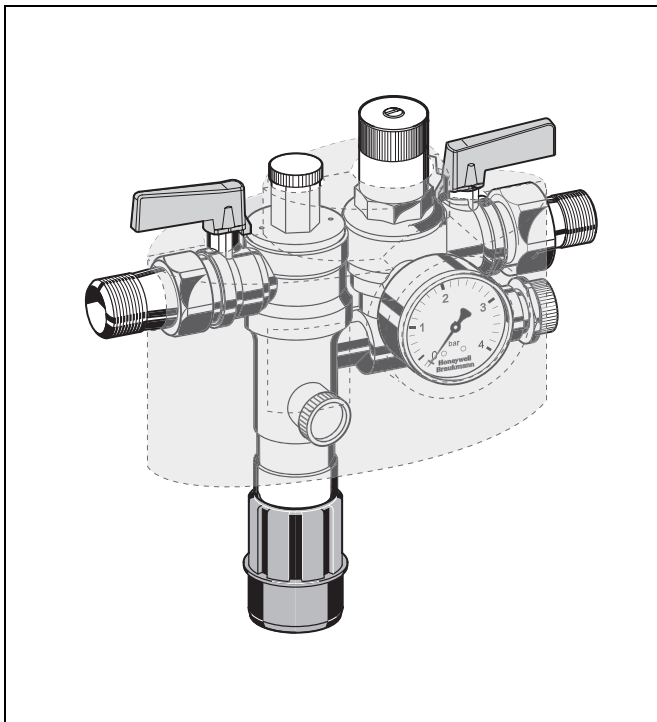


NK300

Refilling combination

Product specification sheet



Construction

The refilling combination consists of:

- Shut off valve, up- and downstream
- Complete backflow preventer with discharge connection, valve cartridge (incl. integrated check valve and discharge valve, upstream), integrated strainer upstream (mesh size approx. 0.6 mm), check valve downstream and three test points
- Complete pressure reducing valve with valve insert (incl. diaphragm and valve seat), spring bonnet (incl. adjustment screw), adjustment spring and pressure gauge

Materials

- Dezincification-resistant brass housing
- Discharge connection, valve cartridge, valve insert and spring bonnet in high-grade synthetic material
- Fibre-reinforced NBR diaphragm
- Seals in NBR and EPDM
- Spring steel adjustment spring
- Stainless steel fine filter mesh

Application

The refilling combination serves filling and refilling of closed heating systems according to DIN EN 12828:2003.

It can be connected in accordance with EN1717:2000 permanently with the drinking water supply.

The refilling combination combines a CA type backflow preventer, pressure reducing valve and two ball valves in one appliance.

The unit consists of all needed devices for refilling a heating installation according to conforming standards are contained.

Special Features

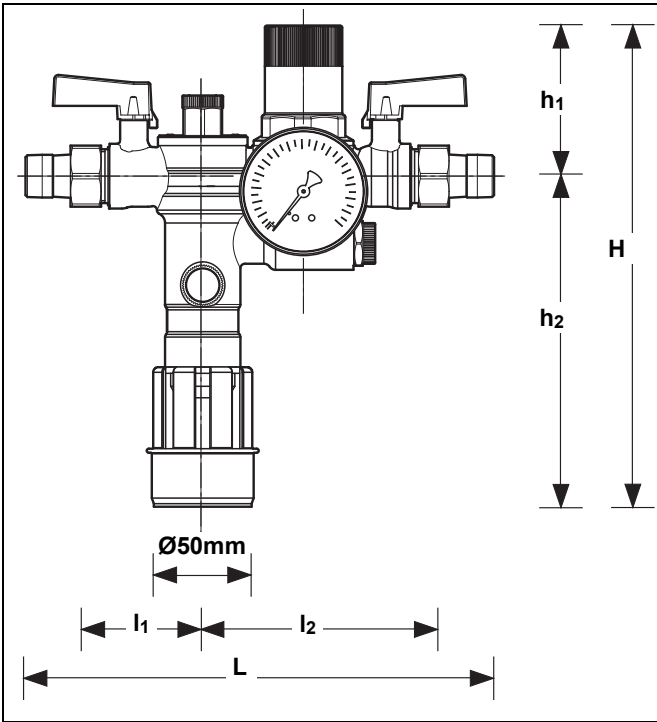
- All components DIN/DVGW-certified
- Permanent connection with the drinking water supply in accordance with EN1717 by hose line or piping is possible
- Optimal protection of the drinking water supply system
- Backflow preventer approved for noise level protection, class 2
- Pressure reducing valve approved for noise level protection, class 1
- Triple security - two check valves and a discharge valve separate the backflow preventer into three pressure zones
- Pressure reducing valve with inlet pressure balancing - inlet pressure fluctuation does not influence the outlet pressure
- Outlet pressure adjustable and directly visible on the pressure gauge
- Low maintenance effort - cartridge insert and valve insert are completely replaceable
- Meets KTW recommendations for potable water

Range of Application

Medium	Water
Inlet pressure	min. 2.0 bar max. 10.0 bar
Outlet pressure	1.5-4 bar adjustable, preset to 1.5 bar
Liquid category	4 (toxic, highly toxic, tumourigenic, radioactive materials)
Backflow Preventer BA	

Technical Data

Installation position	horizontal pipework with discharge connection directed downwards
Operating temperature	max. 65 °C
Connection ball valve	G 1/4"
Backflow preventer	
Connection size	50 mm
Discharge	
Connection size	1/2" external threads



Connection size	R	1/2"
Weight	kg	1.4
Dimensions	mm	
	H	236
	h1	74
	h2	162
	L	232
	l1	59
	l2	114

Method of Operation

The refilling combination combines backflow preventer, pressure reducing valve and ball valves in one appliance.

The backflow preventer is a safety device in accordance with EN 1717 to protect the quality of potable water against back pressure, back flow and back syphonage of non-potable water from plants and connected equipment..

The backflow preventer is separated in three chambers (inlet, middle and outlet chamber).

If no water is drawn from the downstream system, the backflow preventer is in normal position. The up- and downstream check valves and the discharge valve are closed.

If water is drawn from the downstream system, the backflow preventer is in flow position. The check valves up- and downstream are opened and the discharge valve is closed.

The backflow preventer changes to shut-off position (back pressure) if the differential pressure between middle- and inlet chamber falls under 0.14 bar. The check valves are closed and the discharge valve is opened.

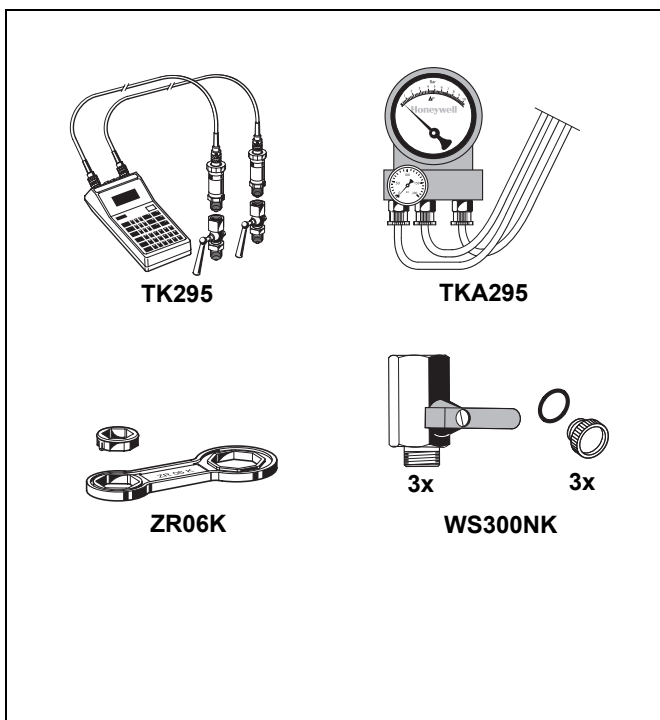
The pressure reducing valve reduces the inlet pressure to the desired set-pressure on the outlet side.

The pressure reducing valve works according to the force comparison principle. The force of a diaphragm operates against the spring force of the regulating valve. If the outlet pressure and therefore diaphragm force fall because water is drawn, then the greater force of the spring causes the valve to open. The outlet pressure then increases until the forces between the diaphragm and the spring are equal again.

The inlet pressure has no influence on the regulation of the pressure reducing valve. Inlet pressure fluctuation does not influence the outlet pressure, thus providing inlet pressure balancing.

Options

NK300-1/2A = Standard version with threaded connection R1/2"



Accessories

TK295 Test kit

Electronic pressure measuring device with digital indicator, battery-operated. With case and accessories, ideal for inspection and maintenance of backflow preventer type BA.

TKA295 Test kit

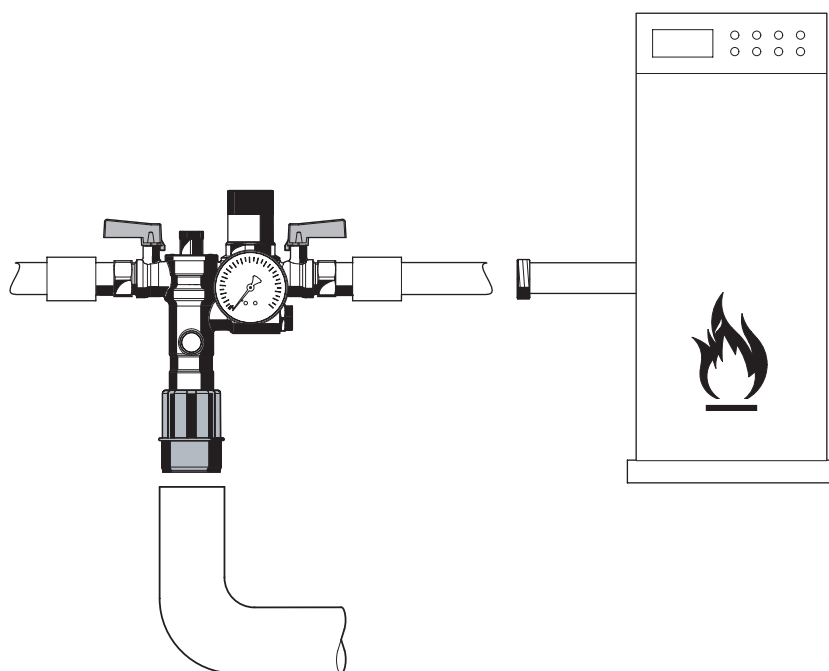
Analogue pressure measuring device with differential pressure display. With case and accessories, ideal for inspection and maintenance of backflow preventer type BA.

ZR06K Double ring spanner

For removal of spring hood and filter bowl

WS300NK Maintenance set

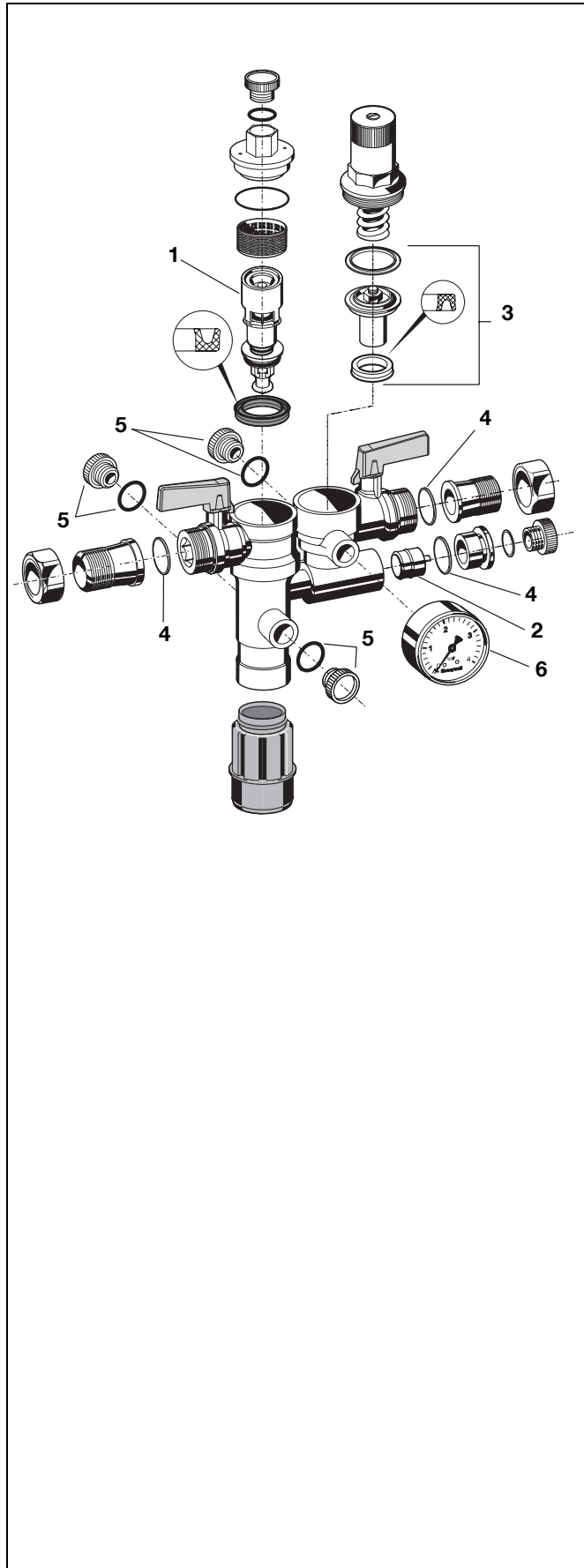
Maintenance set for refilling combination NK300 for use with TK295 resp. TKA295

Installation Example**Installation Guidelines**

- Install in horizontal pipework with discharge connection directed downwards
- The installation may not take place in areas or ducts where poisonous gases or vapours may be present or where flooding can occur
- The installation location must be ventilated well
- The installation location should be protected against frost and be easily accessible
 - o Simplified maintenance and cleaning
 - o Pressure gauge at the pressure reducing valve can be read off easily
- Provide a straight section of pipework of at least five times the nominal valve diameter after the pressure reducing valve (in accordance with DIN 1988, Part 5)
- The refilling combination has an integrated strainer - no separate strainer necessary
 - o Refilling combination is protected against malfunction and corrosion damage resulting from ingress of foreign bodies, e.g. welding beads, sealing materials, metal cuttings and rust

Typical Applications

The refilling combination serves filling and refilling of closed heating systems to DIN EN 12828:2003. The included backflow preventer BA protects the potable water supply against back flow of heating water of liquid category 4 (with inhibitors) into service pipe.



Spare Parts

Refilling combination NK300 (from 2006 onwards)

No.	Description	Dimension	Part No.
1	Cartridge insert complete	1/2"	0903733
2	Check valve	1/2"	2166200
3	Valve insert complete (without sieve)	1/2"	D06FA-1/2
4	Sealing ring set (10 piece)	1/2"	0901443
5	Blanking plug with O-ring (5 pcs.)		S06K-1/4
6	Pressure gauge	0 - 4 bar	M07M-A4

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