



Braukmann NK300SE-VE

Refilling combination with heatwater treatment unit and demineralisation cartridge

APPLICATION

The demineralisation unit of the Resideo NK300SE-VE facilitates the demineralisation of heating water according to VDI-guideline 2035, sheet 1 and 2. Lime scale and thereby caused damages and malfunction in hot water heating system (EN 12828) are avoided efficiently.

The refilling combination fitted on the inlet and based on a BA-type backflow preventer protects the drinking water supply against back flow of heating water according to EN 1717.

SPECIAL FEATURES

- Integrated electronic smart monitoring system simplifies the determination of cartridge exchange
- Easy installation, programming and exchange of cartridge without tools
- Permanent connection with the drinking water supply in accordance with EN 1717 by hose line or piping is possible
- Optimal protection of the drinking water supply system
- 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



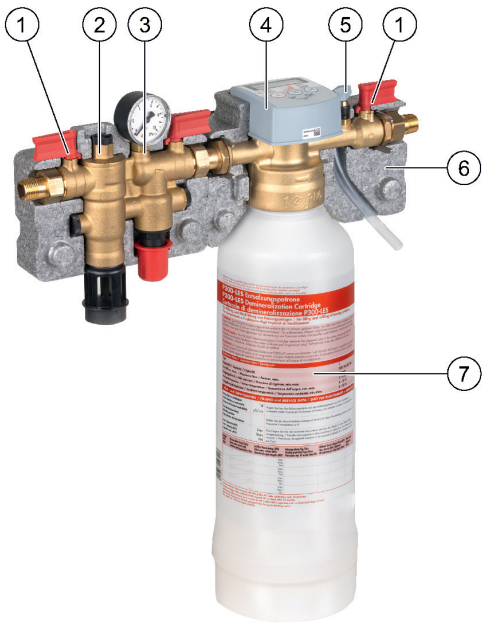
TECHNICAL DATA

| Media | |
|---|---|
| Medium: | Water |
| Freshwater hardness range*: | 0°dH-26°dH 0°fH-46,4 °fH 0 mmol/l - 4,64 mmol/l |
| Connections/Sizes | |
| Connection size discharge: | HT40 |
| Connection size: | 1/2" external thread |
| Connection ball valve backflow preventer: | G 1/4" |
| Pressure values | |
| Max. inlet pressure: | 10 bar |
| Outlet pressure: | 1.5 - 4 bar |
| Preset outlet pressure: | 1.5 bar |
| Operating temperatures | |
| Max. operating temperature medium: | 30 °C |

| Specifications | |
|--|--|
| Liquid category backflow preventer BA: | 4 (toxic, highly toxic, tumourigenic, radioactive materials) |
| Installation position: | horizontal pipework with discharge connection directed downwards |
| | Suitable for heating systems with the following materials: aluminium, aluminium alloys, steel, copper, copper alloys and plastics. |
| | Treated water has modified corrosive chemical parameters. Conditioning by means of inhibitors is to be provided for separately. |

* In order to estimate the capacity of the cartridge for fresh water hardness > 26°dH/46,4 °fH/4.64 mmol/l a manual calculation method has to be used. (see Installation Manual of the P300 cartridges incl. in the packaging of the cartridges)

CONSTRUCTION

| Overview | Components | Materials |
|--|--|---------------------------------|
|  | 1 Integrated isolation valve, inlet and outlet side | Dezincification-resistant brass |
| | 2 Backflow preventer type BA with discharge valve, cartridge insert, integrated dirt trap on the inlet side, backflow preventer outlet side and three measuring points with sealing plugs | |
| | 3 Pressure reducing valve with pressure gauge | |
| | 4 Integrated electronic smart monitoring system | |
| | 5 Bleed valve | |
| | 6 Insulation shells | EPP |
| | 7 Demineralisation cartridge | Polypropylene |
| Not depicted components: | | |
| Adjustment spring | Spring steel | |
| Seals | NBR, EPDM | |
| Diaphragm | Fibre-reinforced EPDM | |
| Discharge valve, cartridge insert, valve insert, mechanical components of the refilling unit and spring bonnet | High-quality plastic | |
| Hardness test-kit to determine water hardness | | |
| Fine filter mesh | Stainless steel | |

METHOD OF OPERATION

In the first instance the water passes through the refilling combination which protects the system against back flow of heating water. It combines backflow preventer, pressure reducing valve and ball valves in one appliance.

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.

Inlet pressure fluctuation does not influence the outlet pressure, because the pressure reducing valves operate by means of a force equalising system (inlet pressure balancing).

The heatwater treatment unit (VE300S) installed directly below the refilling combination (NK300S) uses the ionic exchange principle to demineralise water and extracts all minerals from the water. Thereby the electric conductivity of the filling water is reduced.

TRANSPORTATION AND STORAGE

Keep parts in their original packaging and unpack them shortly before use.

The following parameters apply during transportation and storage:

| Parameter | Value |
|---------------------------------|--------------------------|
| Environment: | clean, dry and dust free |
| Min. ambient temperature: | +5 °C |
| Max. ambient temperature: | +40 °C |
| Min. ambient relative humidity: | 25 % * |
| Max. ambient relative humidity: | 75 % * |

*non condensing

INSTALLATION GUIDELINES

Setup requirements

- Installation in the inlet to the heating system, fasten the refilling combination (NK300SE-VE) to the wall
- Install in horizontal pipework with discharge connection respectively cartridge connection directed downwards
- Install at height of at least 610 mm from the ground to ensure that cartridges can be replaced
- Downstream of the refilling combination (NK300SE-VE), provide settling section of at least 500 mm before integration in the heating circuit
- 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 environment should be protected against frost and ventilated well
- The installation location has to be easily accessible
 - Simplified maintenance and cleaning
 - Pressure gauge at the pressure reducing valve can be read off easily
- According to EN 1717 in direction of flow, first install the heatwater treatment unit (VE300S) and directly after it, the refill combination (NK300SE-VE)
- The national installation regulations must be observed during the assembly
- Requires regular maintenance in accordance with EN 806-5
- In order to avoid flooding, it is recommended to arrange a permanent, professionally dimensioned wastewater connection

Installation Example

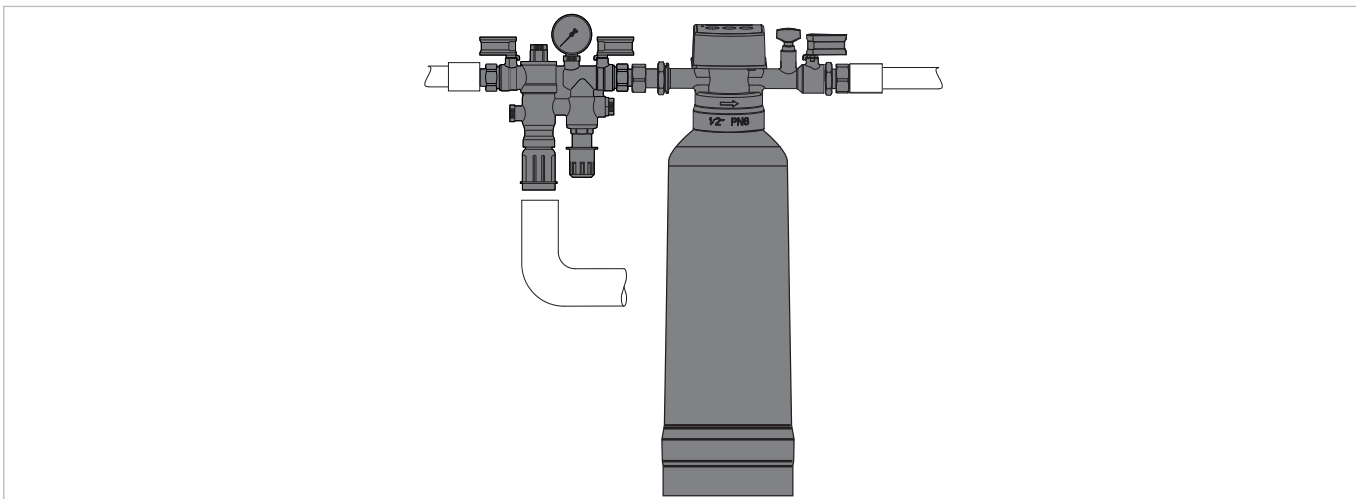


Fig. 1 Standard installation example for the refilling combination

TECHNICAL CHARACTERISTICS

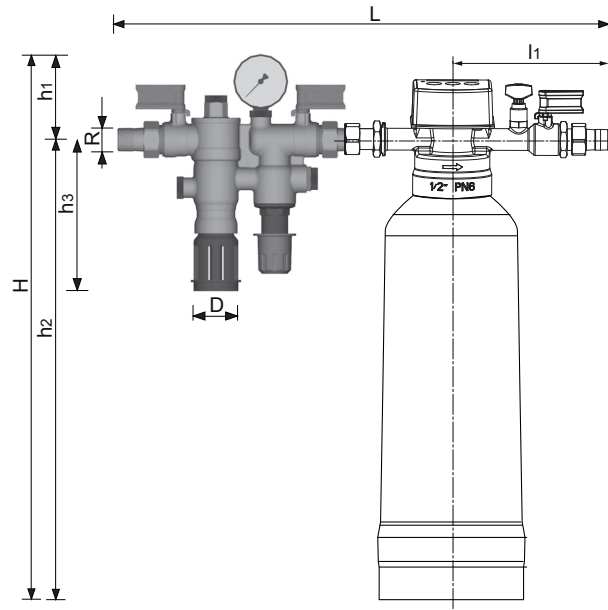
kvs-Values

| | |
|---|-------------|
| Connection sizes: | 1/2" |
| k _{VS} -value (m ³ /h): | 0.30 |

* Compulsory testing in sizes R 1/2"

DIMENSIONS

Overview



| Parameter | | Values |
|------------------|----------------|--------|
| Connection size: | R | 1/2" |
| Dimensions: | H | 536.9 |
| | h ₁ | 76 |
| | h ₂ | 460.9 |
| | h ₃ | 136 |
| | L | 450 |
| | l ₁ | 158.1 |
| | D | 40 |
| Weight: | kg | 6 |

Note: All dimensions in mm unless stated otherwise.

ORDERING INFORMATION

The following tables contain all the information you need to make an order of an item of your choice. When ordering, please always state the type, the ordering or the part number.



Options

The valve is available in the following sizes: 1/2".

- standard
- not available

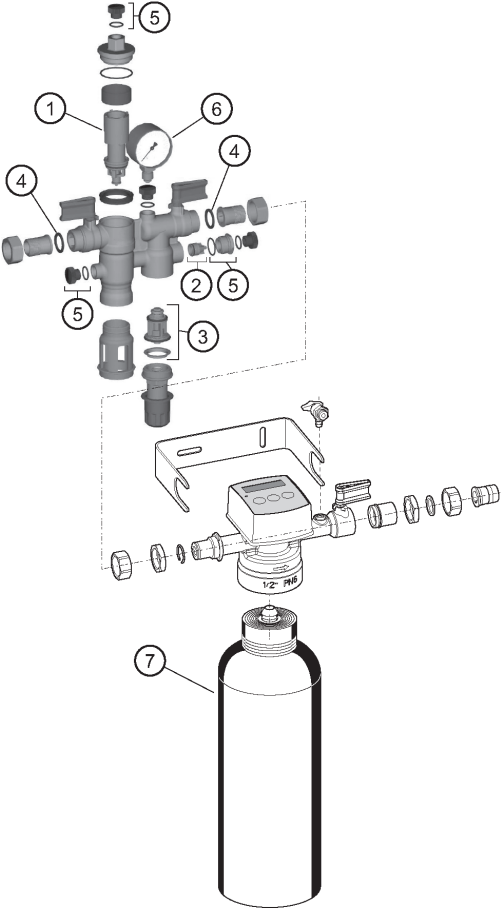
| | | NK300SE-VE-1/2A |
|------------------|---|-----------------|
| Connection type: | Standard version with threaded connection R ¹ / ₂ " and 200 μ m filter in the refilling combination | • |

Accessories

| | Description | Dimension | Part No. |
|---|---|-----------|----------|
|  | 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. | | |
| | | | TKA295 |
|  | WS300NK Maintenance Set Maintenance set for refilling combination NK300 for use with TKA295 | | |
| | | | WS300NK |

Spare Parts

Refilling combination NK300SE-VE, from 2016 onwards

| Overview | Description | Dimension | Part No. |
|--|--------------------------------------|-----------|------------|
|  | 1 Cartridge insert complete | | |
| | | 1/2" | 0903733 |
| | 2 Check valve | | |
| | | 1/2" | 0904138 |
| | 3 Valve insert complete | | |
| | | 1/2" | D04FMA-1/2 |
| | 4 Union seal washer (10 pcs.) | | |
| | 1/2" | 0901443 | |
| 5 Blanking plug with O-ring R1/4" (5 pcs.) | | | |
| | 1/2" - 2" | S06K-1/4 | |
| 6 Pressure gauge | | | |
| | 0 - 10 bar | M39K-A10 | |
| 7 Replacement softening cartridge | | | |
| | Size: 3.5 l | P300-LES | |



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