



Braukmann NK300SE-SO

Refilling combination with heatwater treatment unit and softening cartridge

APPLICATION

The softening unit of the Resideo NK300SE-SO facilitates the softening of heating water according to VDI-guideline 2035/I. 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



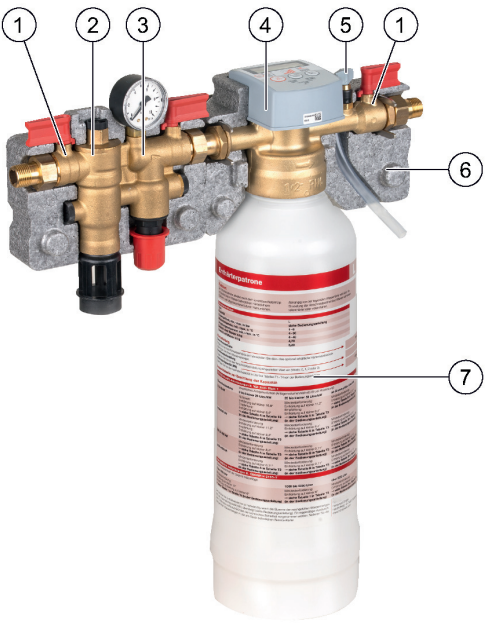
TECHNICAL DATA

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: 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	3.5 l cartridge with ionic exchange resin	Polypropylene
Not depicted components:			
	Seals	NBR, EPDM	
	Fine filter mesh	Stainless steel	
	Discharge valve, cartridge insert, valve insert, mechanical components of the refilling unit and spring bonnet	High-quality plastic	
	Adjustment spring	Spring steel	
	Hardness test-kit to determine water hardness	-	
	Diaphragm	Fibre-reinforced EPDM	

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 soften water, replacing alkaline earths such as calcium and magnesium with sodium ions.

The heater water treatment unit completely softens (<0.11 °dH) the water.

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:	95 % *

*non condensing

INSTALLATION GUIDELINES

Setup requirements

- Installation in the inlet to the heating system, fasten the refilling combination (NK300SE-SO) 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-SO), 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-SO)
- 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

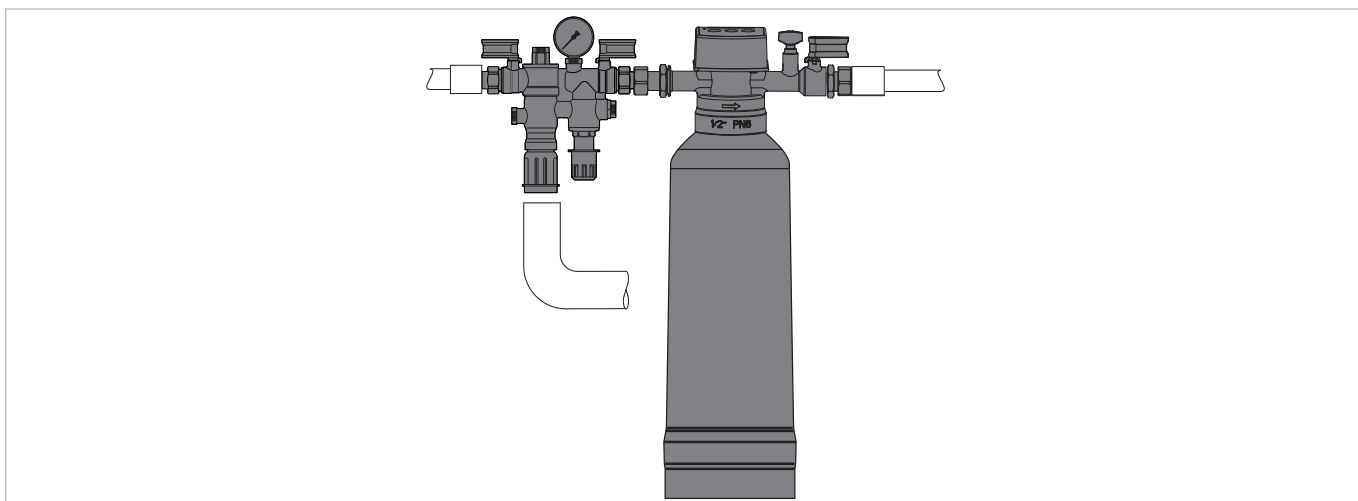


Fig. 1 Standard installation example for the refilling combination

TECHNICAL CHARACTERISTICS

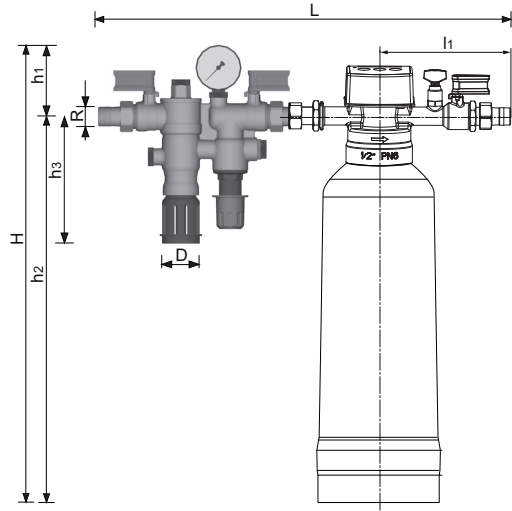
kvs-Values

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

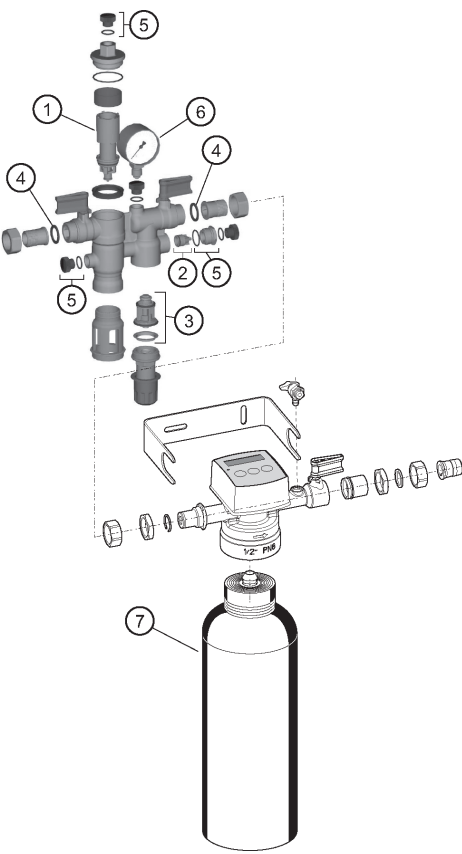
		NK300SE-SO-1/2A	NK300SE-SO-1/2AZ
Version:	Standard version with threaded connection R ¹ / ₂ " and 200 μ m filter in the refilling combination	•	–
	Version with threaded connection R ¹ / ₂ " and 25 μ m filter in the refilling combination	–	•

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-SO, 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: 0.75 l Size: 3.5 l	P300-S P300-L



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