SAFETY- AND REGULATION VALVES



Application technology

July 2018

SYR®

Efficient building services

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Expertise from a single source.
SYR – Efficient building services.

The SYR Hans Sasserath GmbH & Co. KG stands for worldwide innovative and high quality system solutions for drinking water and heating water management. For 75 years the family-owned company produces from Korschenbroich, Germany valves and systems for drinking water installations, heating protection and heating water treatment. Experience and know –how flows into the continuous developed SYR products. So SYR sets new milestones in the installation technology. Innovation, safety and responsibility - these are the SYR values, after which the company develops and markets its products.

Around the valuable resource water SYR will meet this responsibility with a complete program for domestic water installation: A thoughtful and balanced range of reliable safety and optimum comfort.

Water, warmth, well-being and energy saving: In the heating protection and heating water treatment segment SYR provides product solutions for the economical, trouble free and long lasting operation of modern heating systems.

So the SYR Hans Sasserath GmbH & Co. KG today offers a complete range of safer, more environmentally friendly, economical and modern hygienic products. Holistic competence and many advantages for the SYR partners.






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Water technology / Water treatment

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Water goes wireless



SYR CONNECT



The cross-linked water management with SYR Connect is controllable by smartphones with the SYR app or via PC. Different projects can be managed individually, Valves can be controlled specifically and consumables can be controlled - easily online!

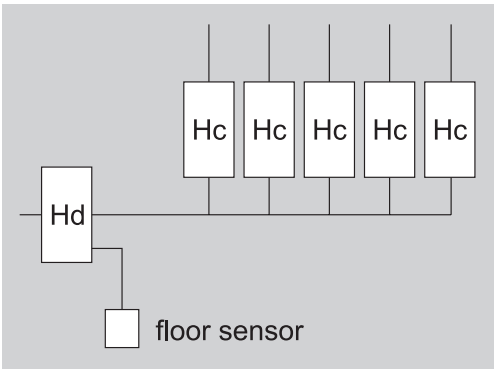
Protection against water damages with the Safe-T

The Safe-T is the intelligent solution for the protection against pipe water damages. The electronic system permanently supervises the complete domestic installation according to adjustable parameters. In case of absence, the user can activate a vacation-supervision mode. The motor-actuated ball valve automatically isolates the installation in case of deviation from the set parameters.



Safe-T LS Modul

The Safe-T is very versatile. In conjunction with a cap it can be installed as stand-alone or be combined with a Drufi +, IT 3000/4000, or IT with a LEX system or KS 3000.
It's selectable wether the Safe-T shall supervise the installation with full or restricted supervision.



Installationexample Safe-T
Full supervision

Soft water with the IT 3000

The water softening systems IT 3000 / IT 4000 / Lex 1500 regulates the water hardness to an ideal value (for instance 8° dh), which makes the water noticeably soft and fulfils all requirements of healthy drinking water. The system offers the desired efficiency and comfort of a modern household.



IT 4000

Function

The ion exchange method allows to replace the hardness causing calcium and magnesium ions with sodium ions. The water flows through a porous ion exchange resin bed, which is composed of synthetic resin beads allowing the replacement of hardness causing calcium ions with sodium ions. The water becomes „soft".
An integral blending valve „blends" the water softened up to 0° dh with raw water to reach the desired value. After softening a large quantity of water, the resin becomes coated with magnesium and calcium. Depending on the water harness, the ion exchange resin is exhausted sooner or later and needs regeneration. Regeneration means removing the hardness components from the ion exchange resin. To recharge the softener with sodium ions, the resin bed is backflushed with a salt brine solution. During a backflush the brine solution replaces the calcium and magnesium ions on the resin bed with sodium ions from the salt solution. The hardness components are directed to the sewer. The brine solution never gets in contact with potable water.
To prevent microbiological growth, the water softening system undergoes automatic disinfection on a regular basis.

Protection of pipes by dosing pumps

Water is not just water. The quality of water can have different effects in connection with various pipe materials. When dosing SYR mineral solutions are supplied into the drinking water. The mineral solutions prevent corrosion and scale formation, raise the pH of the water, or be used after a water softener for water hardness stabilization in copper or galvanized pipes and mixed installations. The SYR dosing pumps meet the requirements of DIN 19635.



SYR-DOS 1400

Safe-T LS-module 2421

Leakage detection module



Field of application

The SYR Safe-T Connect 2421 offers a leakage detection system according to VP 638 that permanently supervises the installation as soon as it is activated. The Safe-T LS module can be mounted on any flange of the SYR flange system up to DN 32. Any valve suited for the flange can be fitted onto the module. The Safe-T can also be used as stand-alone version and can be connected to the internet.

Design

The Safe-T's monitoring electronic system is able to detect leakage. When the pre-programmed values are exceeded, the Safe-T isolates the whole installation. It also offers a special vacation function ensuring an intensified supervision. All important function data can be individually set with the management and diagnosis system.

Materials

The body is made of a high-quality low-lead brass alloy. The rubber parts are made of ageing-resistant elastomer. Non-rusting steel is used for all other functional parts. All materials used are state-of-the-art. All synthetic parts getting into contact with water are approved by the German Public Health Office (KTW).

Installation

To install the Safe-T, use a flange DN 20 - DN 32 from the extensive Drufi flange program. Mount it either centrally downstream of the water metering device or locally to protect a single line. The Safe-T can be used separately or in combination, for instance with a Drufi or the IT 3000.

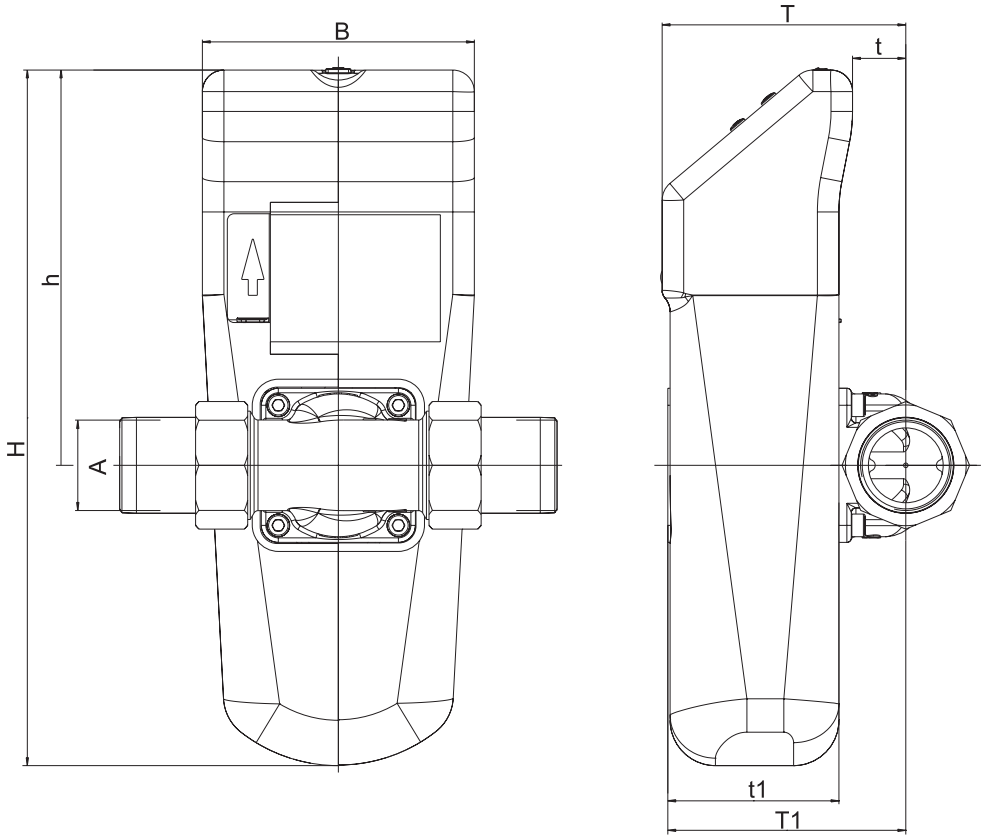
Thoroughly flush the pipe prior to installation. Install the required Drufi connection flange under consideration of the direction of flow either in vertical or horizontal pipes. Do not apply stresses. All electric connections are pre-installed in factory.

Technical specifications

Operating temperature:	max. 30°C
Ambient temperature:	10 - 60 °C
Nominal pressure:	16 bar
Mounting position:	Main axis: vertical
Medium:	Potable water
Type of protection:	IP 21
Batteries:	4 x LR06
Voltage, power pack:	9V DC
Load, external potential free contact:	IN 2: minimum 12V / 20 mA Out: maximum 24V / 2A
Flow rate:	DN 20: 2.0 m^3/h at 0,2 bar Δp DN 25: 2,3 m^3/h at 0,2 bar Δp DN 32: 2,5 m^3/h at 0,2 bar Δp DN 20: 3,5 m^3/h at 0,5 bar Δp DN 25: 3,8 m^3/h at 0,5 bar Δp DN 32: 4,0 m^3/h at 0,5 bar Δp DN 20: 5,2 m^3/h at 1,0 bar Δp DN 25: 5,7 m^3/h at 1,0 bar Δp DN 32: 6,0 m^3/h at 1,0 bar Δp
Serial number:	2421.00.000

Maintenance

The Safe-T's design requires no maintenance for correct operation.



Nominal size		DN 20 - DN 32
	A	R ¾" - 1 ¼"
Dimensions	T (mm)	108
	t (mm)	24
	T1 (mm)	105
	t1 (mm)	76
	H (mm)	307
	H (mm)	174
	B (mm)	120

Components / Order numbers

① Insulation

② Emergency key

③ Controller

④ Body

Accessories

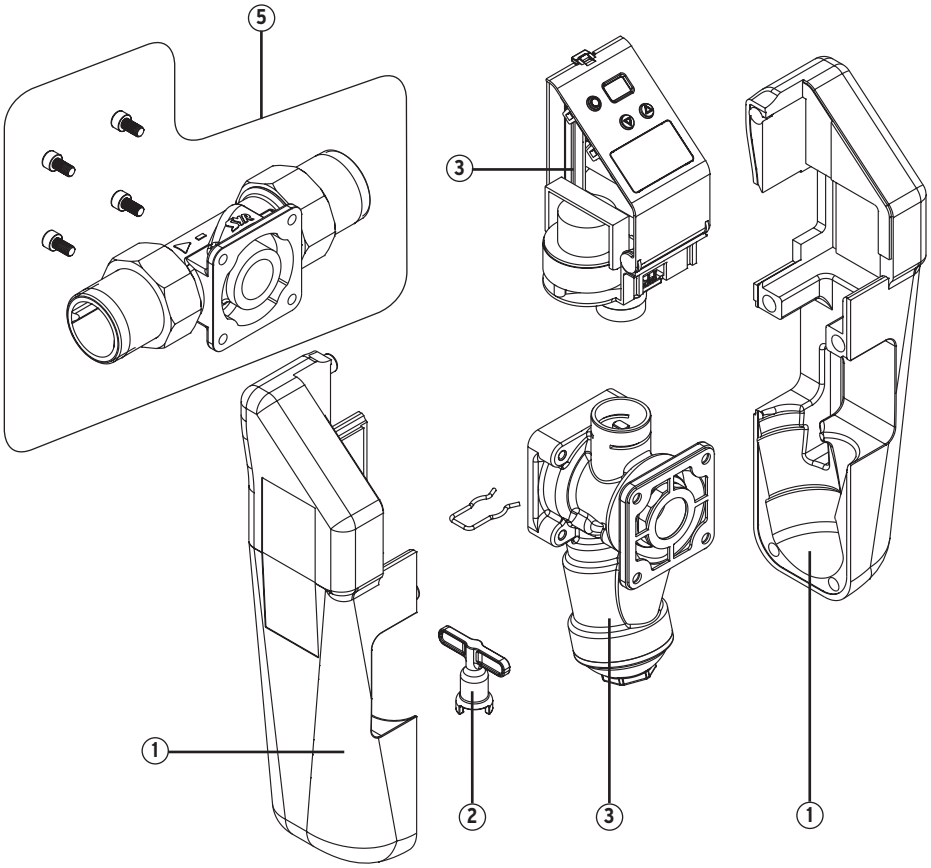
⑤

Drufi universal flange

DN 20	2315.20.005
DN 25	2315.25.005
DN 32	2315.32.005

Blanking cap (no pict.)
2320.00.901

Power supply adapter (no pict.)
1100.00.900



Safe-T Connect 2421

Leakage detection module



Field of application

The SYR Safe-T Connect 2421 offers a leakage detection system according to VP 638 that permanently supervises the installation as soon as it is activated. The Safe-T LS module can be mounted on any flange of the SYR flange system up to DN 32. Any valve suited for the flange can be fitted onto the module. The Safe-T can also be used as stand-alone version and can be connected to the internet.

Design

The Safe-T's monitoring electronic system is able to detect leakage. When the preprogrammed values are exceeded, the Safe-T isolates the whole installation. It also offers a special vacation function ensuring an intensified supervision. All important function data can be individually set with the management and diagnosis system.

Materials

The body is made of a high-quality low-lead brass alloy. The rubber parts are made of ageing-resistant elastomer. Non-rusting steel is used for all other functional parts. All materials used are state-of-the-art. All synthetic parts getting into contact with water are approved by the German Public Health Office (KTW).

Installation

To install the Safe-T, use a flange DN 20 - DN 32 from the extensive Drufi flange program. Mount it either centrally downstream of the water metering device or locally to protect a single line. The Safe-T can be used separately or in combination, for instance with a Drufi or the IT 3000, IT 4000 or LEX 1500.

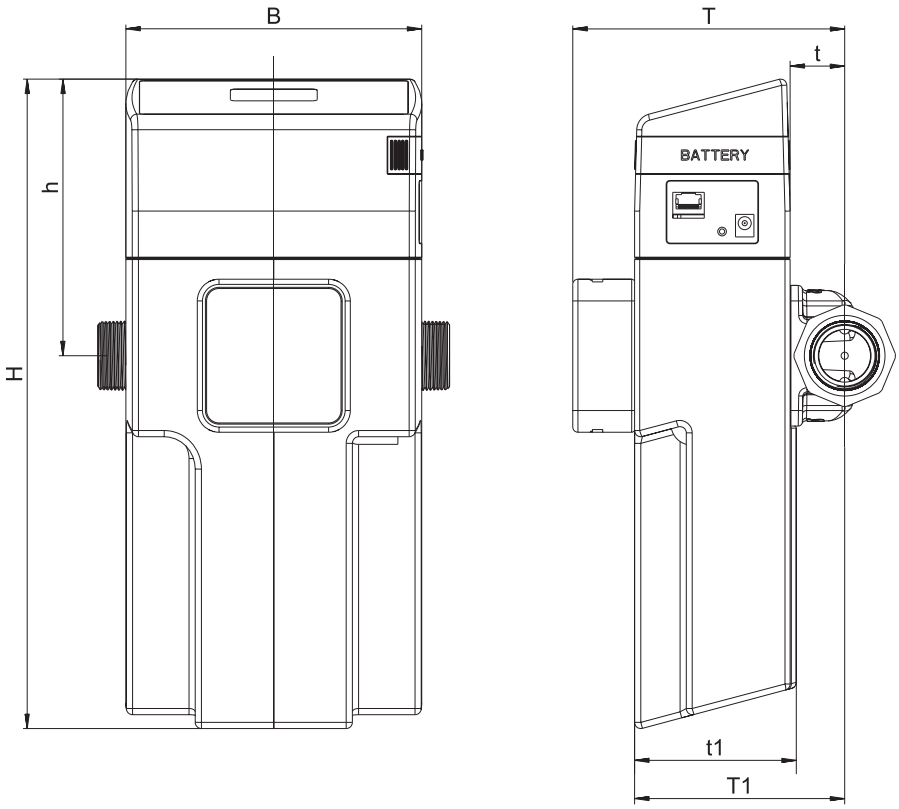
Thoroughly flush the pipe prior to installation. Install the required Drufi connection flange under consideration of the direction of flow either in vertical or horizontal pipes. Do not apply stresses. All electric connections are pre-installed in factory.

Technical specifications

Operating temperature:	max. 30 °C
Ambient temperature:	10 - 60 °C
Nominal pressure:	16 bar
Mounting position:	main axis vertical
Medium:	Potable water
Type of protection:	IP 21
Batteries:	4 x LR06
Voltage, power pack:	9V DC
Load, external potential free contact:	IN 2: minimum 12V / 20 mA Out: maximum 24V / 2A
Start-up threshold:	5 Liter/h
Flow rate:	DN 20: 2.0 m^3/h at 0,2 bar Δp DN 25: 2,3 m^3/h at 0,2 bar Δp DN 32: 2,5 m^3/h at 0,2 bar Δp DN 20: 3,5 m^3/h at 0,5 bar Δp DN 25: 3,8 m^3/h at 0,5 bar Δp DN 32: 4,0 m^3/h at 0,5 bar Δp DN 20: 5,2 m^3/h at 1,0 bar Δp DN 25: 5,7 m^3/h at 1,0 bar Δp DN 32: 6,0 m^3/h at 1,0 bar Δp
Werks-Nr.:	2421.00.010

Maintenance

The Safe-T's design requires no maintenance for correct operation.



Nominal size		DN 20 - DN 32
Dimension	T (mm)	131,5
	t (mm)	26,5
	T1 (mm)	101,5
	t1 (mm)	78
	H (mm)	314
	h (mm)	133,5
	B (mm)	143

Components / Order numbers

① Insulation

② Emergency key

③ Controller

④ Body

⑤ **Blanking cap**
2320.00.901

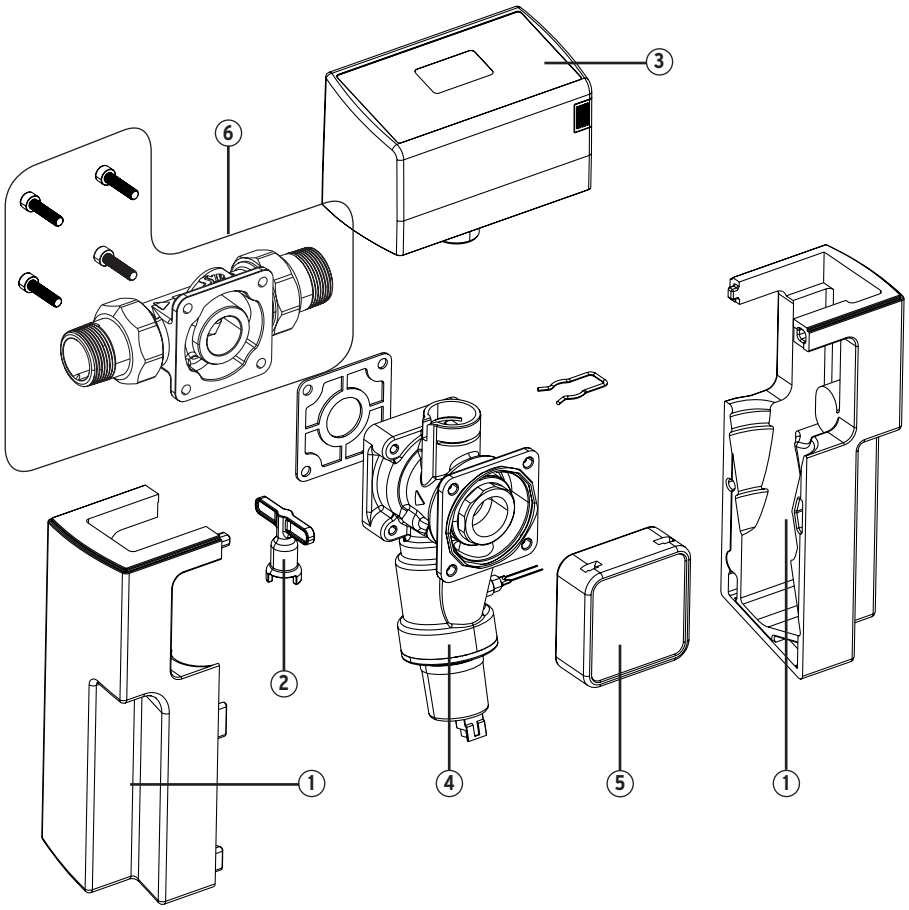
Accessories

⑥ **Drufi universal flange**
DN 20 2315.20.005
DN 25 2315.25.005
DN 32 2315.32.005

Power supply adapter (no pict.)
1100.00.900

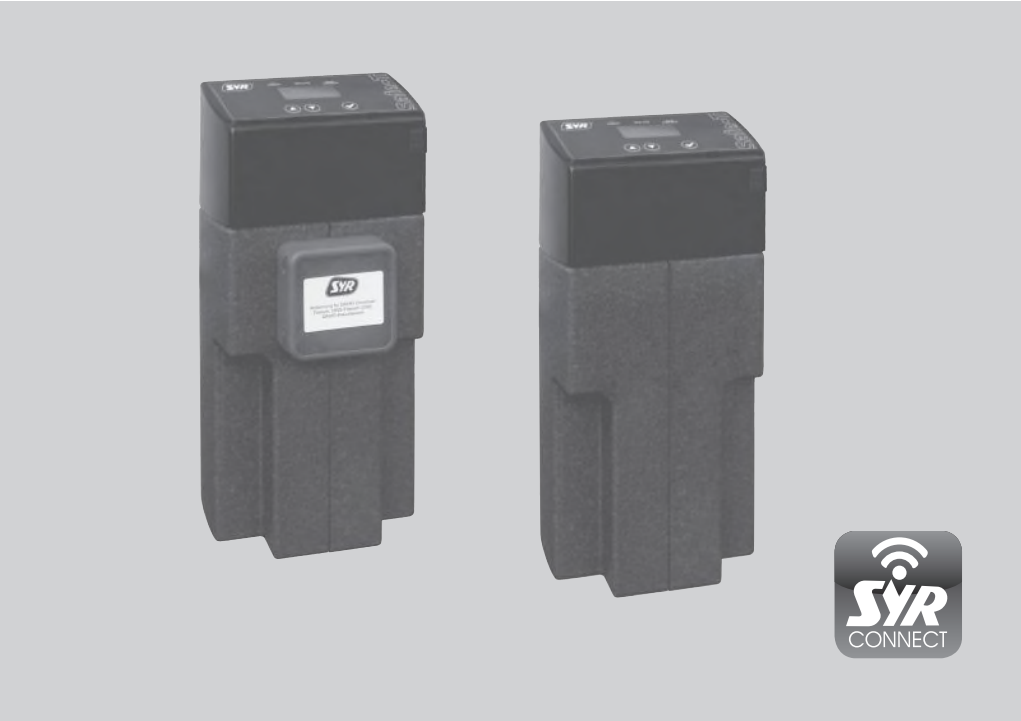
Floor sensor
2421.00.021

Humidity sensor
2421.00.022



ISI Home 2421

Leakage detector for single-family homes



Field of application

The ISI (**I**nternet-based **S**warm **I**ntelligence) Home System is designed to monitor various preset consumption values in a potable water installation and offer protection against leakage. The Safe-T Connect Master monitors the central installation and the slave module protects separate installation segments (e.g. a garden). Both devices communicate with each other via Internet where their specifications can be read and programmed.

Design

The monitoring electronics of the Safe-T Connect Master and Slave are able to identify leaks. When exceeding the pre-set values, the whole installation will be shut off. Both devices have a so-called Away Level offering intensified monitoring when nobody is at home. All important functional data can be set by means of the management and diagnosis system. Other slave devices can be added individually to extend the ISI Home System.

Materials

The body is made of a high-quality low-lead brass-alloy. The rubber parts are made of ageingresistant elastomeric material. All remaining functional parts are made from stainless steel. All materials used are state-of-the-art. The synthetic and elastomeric parts in contact with water meet the requirements of Germany's Federal Environment Agency (KTW Directives).

Installation

Use a DN 20 - DN 32 flange from our large Drufi - flange program when mounting the ISI Home device. Fit it in the pipe either directly behind the water meter to ensure overall protection or in a specific pipe to protect a single tube. The Safe-T Master can be used as single device, but also in combination for instance with a Drufi.

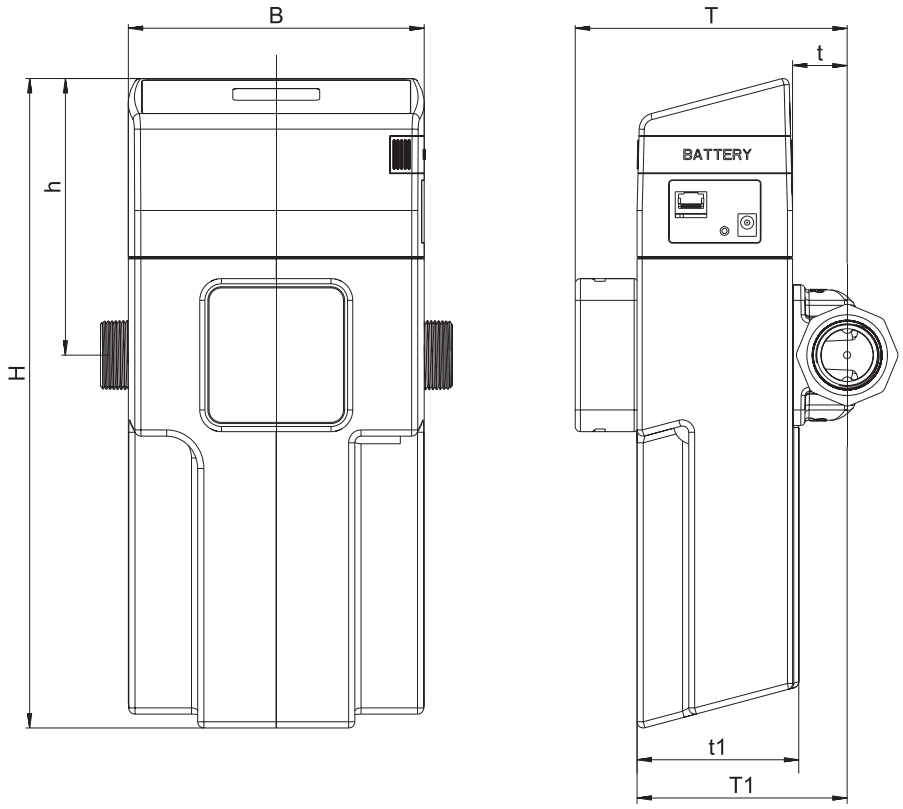
Thoroughly flush the pipe prior to installation. Mount the required Drufi connection flange in vertical or horizontal pipes under consideration of the direction of flow. Do not apply stresses. All electric connections are factory-mounted.

Technical specifications

Operating temperature:	max. 30 °C
Ambient temperature:	10 - 60 °C
Nominal pressure:	16 bar
Mounting position:	main axis in vertical position
Fluid:	potable water
Protection class:	IP 21
Batteries:	4 x LR06
Voltage power supply unit:	9V DC
Load external potential-free contact:	IN 2: minimum 12V / 20 mA Out: maximum 24V / 2A
Starting threshold:	5 Liter/h
Flow rate:	DN 20: 2.0 m^3/h at 0,2 bar Δp DN 25: 2,3 m^3/h at 0,2 bar Δp DN 32: 2,5 m^3/h at 0,2 bar Δp DN 20: 3,5 m^3/h at 0,5 bar Δp DN 25: 3,8 m^3/h at 0,5 bar Δp DN 32: 4,0 m^3/h at 0,5 bar Δp DN 20: 5,2 m^3/h at 1,0 bar Δp DN 25: 5,7 m^3/h at 1,0 bar Δp DN 32: 6,0 m^3/h at 1,0 bar Δp
Serial number:	2421...

Maintenance

The ISI Home valves require no maintenance.



Nominal size		DN 20 - DN 32
Dimensions	T (mm)	131,5
	t (mm)	26,5
	T1 (mm)	101,5
	t1 (mm)	78
	H (mm)	314
	h (mm)	133,5
	B (mm)	143

Components / Order numbers

① Insulation

② Emergency-off key

③ Control unit

④ Body

⑤
Sealing cap
2320.00.901

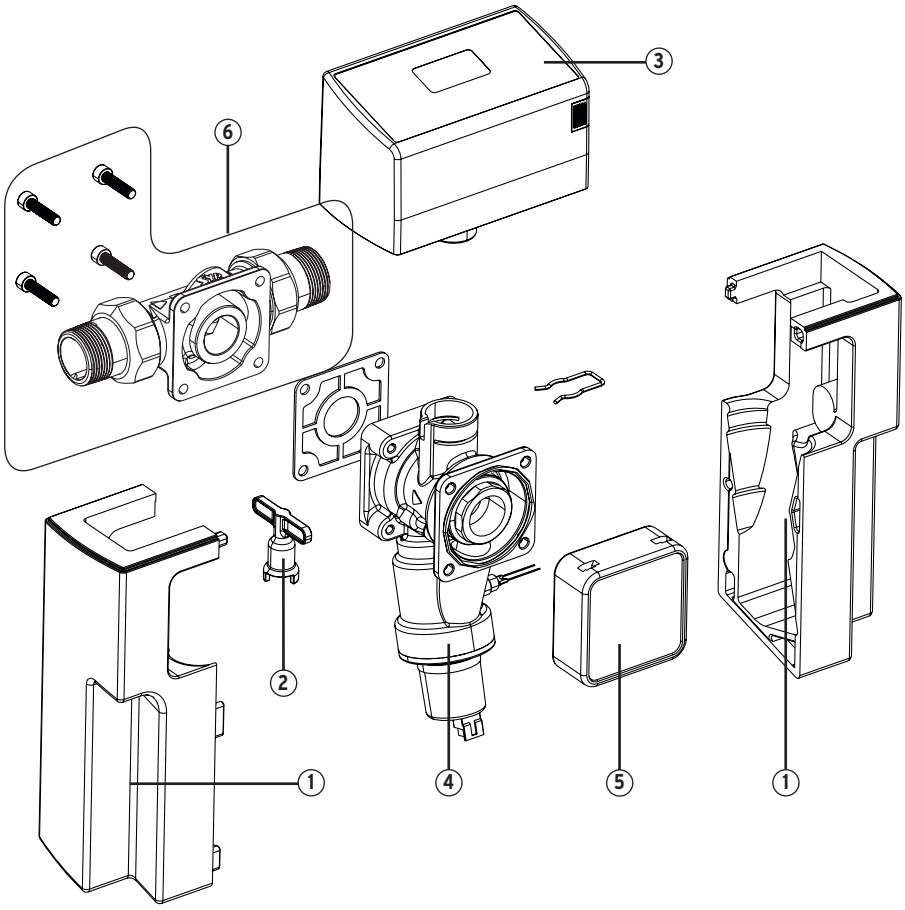
Accessories

⑥
Drufi universal flange
DN 20 2315.20.005
DN 25 2315.25.005
DN 32 2315.32.005

Power supply unit (no pict.)
1100.00.900

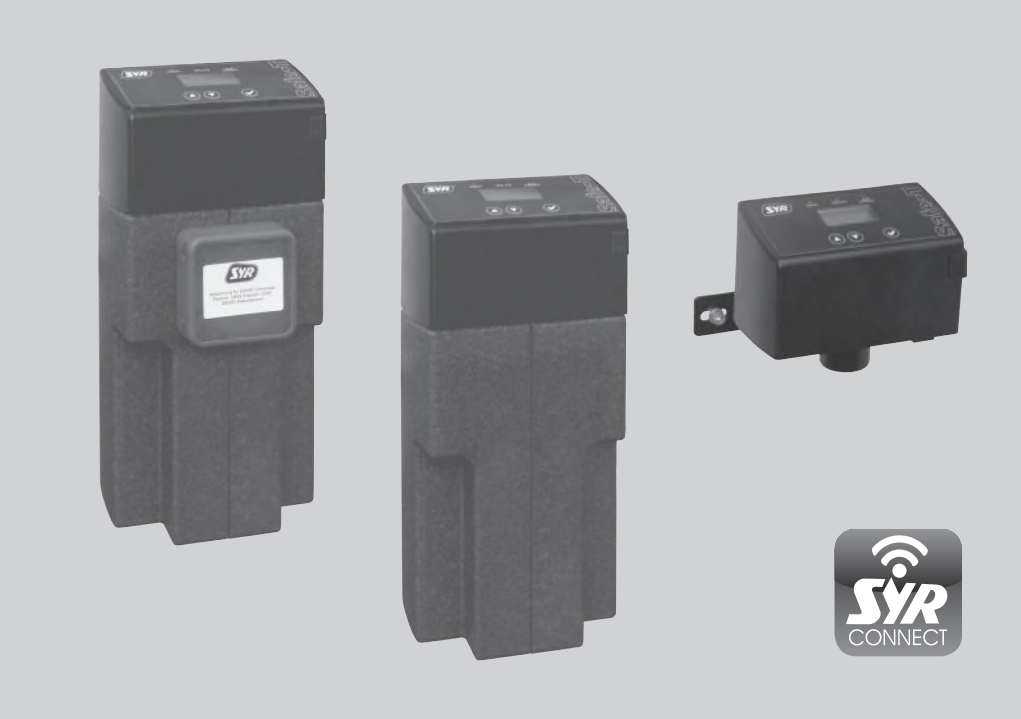
Floor sensor
2421.00.021

Humidity sensor
2421.00.022



ISI Objekt 2421

Leakage detector for large buildings



Field of application

The ISI (**I**nternet-based **S**warm **I**ntelligence) Home System is designed to monitor various preset consumption values in a potable water installation - for instance in a single-family house - and offer protection against leakage. Each housing unit is monitored by an individually preset slave module. The Safe-T Connect Master supervises the central installation and coordinates the various consumptions. When a module records that the maximum parameters have been exceeded, this module will shut off the corresponding segment, whereas the others will continue to work. All devices communicate with each other via Internet where their specifications can be read and programmed.

Design

The monitoring electronics of the Safe-T Connect Master and its slave modules are able to identify leaks. When exceeding the pre-set values, the whole installation will be shut off. All devices have a socalled Away Level offering intensified monitoring when nobody is at home. All important functional data can be set by means of the management and diagnosis system. As an option, other devices (slave or hygiene modules) can be added individually to extend the ISI Object system.

Materials

The body is made of a high-quality low-lead brass-alloy. The rubber parts are made of ageingresistant elastomeric material. All remaining functional parts are made from stainless steel. All materials used are state-of-the-art. The synthetic and elastomeric parts in contact with water meet the requirements of Germany's Federal Environment Agency (KTW Directives).

Installation

Use a DN 20 - DN 32 flange from our large flange program when mounting the ISI Object device. Fit the Safe-T Connect Master as centrally as possible behind the water meter in the pipe. Mount the slave modules to protect specific tubes.

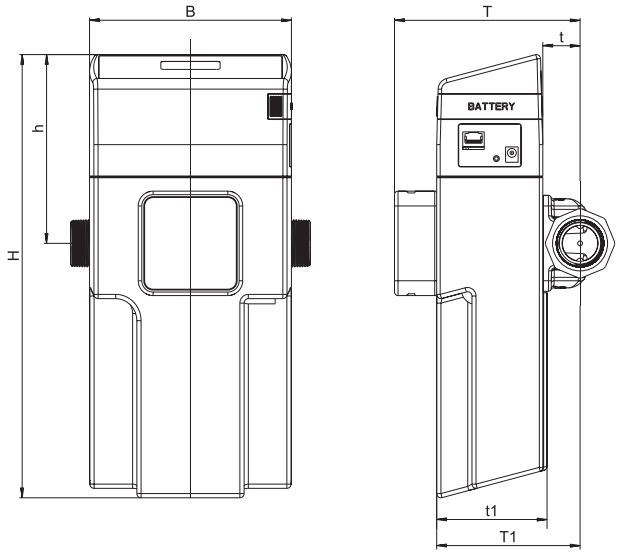
Thoroughly flush the pipe prior to installation. Mount the required connection flange in vertical or horizontal pipes under consideration of the direction of flow.
Do not apply stresses. All electric connections are factory-mounted.

Technical specifications

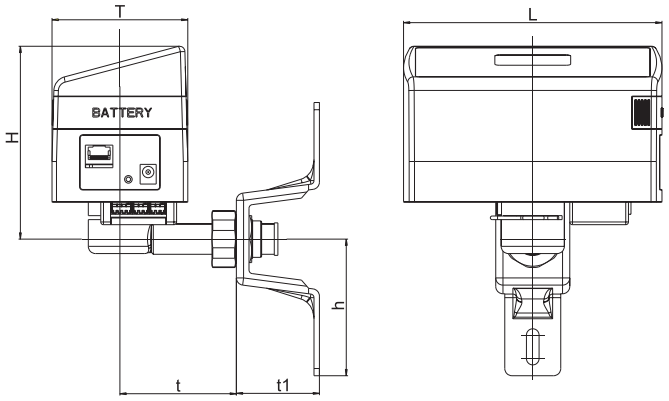
Operating temperature:	max. 30 °C
Ambient temperature:	10 - 60 °C
Nominal pressure:	16 bar
Mounting position:	main axis in vertical position
Fluid:	potable water
Protection class:	IP 21
Batteries:	4 x LR06
Voltage power supply unit:	9V DC
Load external potential-free contact:	IN 2: minimum 12V / 20 mA Out: maximum 24V / 2A
Starting threshold:	5 Liter/h
Flow rate:	DN 20: 2.0 m^3/h at 0,2 bar Δp DN 25: 2,3 m^3/h at 0,2 bar Δp DN 32: 2,5 m^3/h at 0,2 bar Δp DN 20: 3,5 m^3/h at 0,5 bar Δp DN 25: 3,8 m^3/h at 0,5 bar Δp DN 32: 4,0 m^3/h at 0,5 bar Δp DN 20: 5,2 m^3/h at 1,0 bar Δp DN 25: 5,7 m^3/h at 1,0 bar Δp DN 32: 6,0 m^3/h at 1,0 bar Δp
Serial number:	2421...

Maintenance

The ISI Object valves require no maintenance.



Safe-T Connect
Master and Slave



Safe-T Connect
communication module

Nominal size		DN 20 - DN 32
Dimensions Safe-T Connect Master / Slave	T (mm)	131,5
	t (mm)	26,5
	T1 (mm)	101,5
	t1 (mm)	78
	H (mm)	314
	h (mm)	133,5
	B (mm)	143
Dimensions Safe-T Connect Communication module	L (mm)	143
	H (mm)	107
	h (mm)	76
	T (mm)	75
	t (mm)	40 - 70
	t1 (mm)	46

Components / Order numbers

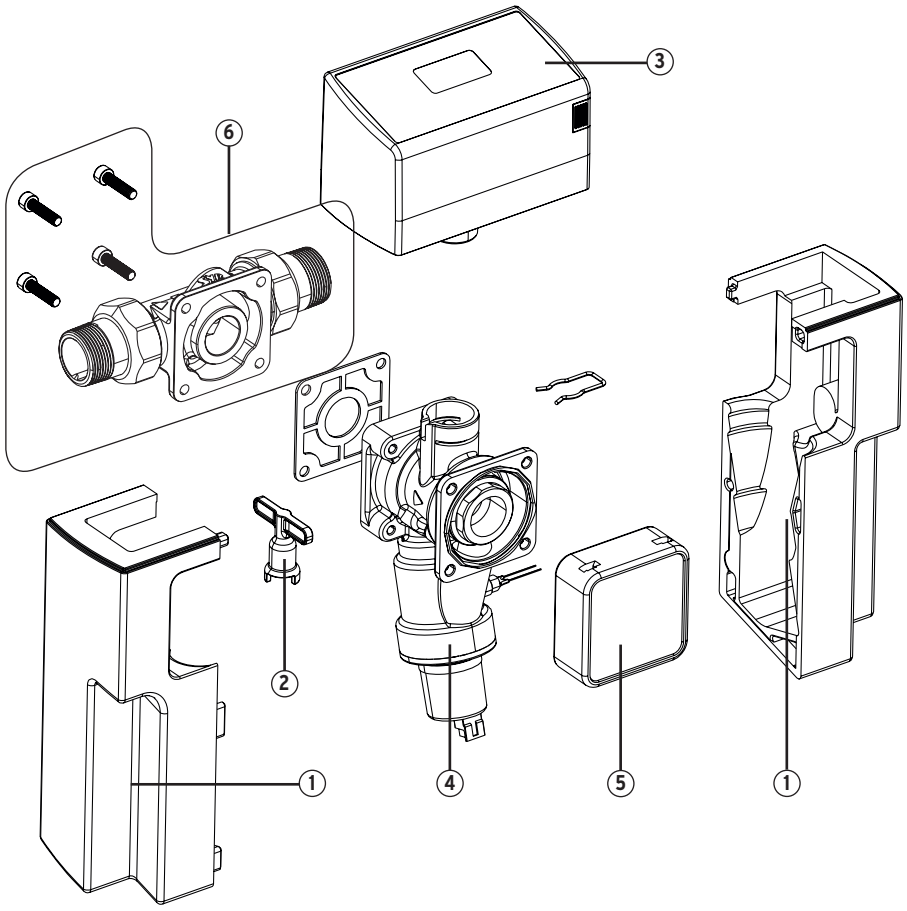
① Insulation

② Emergency-off key

③ Control unit

④ Body

⑤ Sealing cap
2320.00.901



Accessories

⑥ Connection flange
DN 20 2421.20.005
DN 25 2421.25.005
DN 32 2421.32.005

Max-connection flange
for 2- and 3-way manifolds
DN 32 2421.32.015
DN 40 2421.40.005
DN 50 2421.50.005

2-way manifold
2421.00.018

3-way manifold
2421.00.019

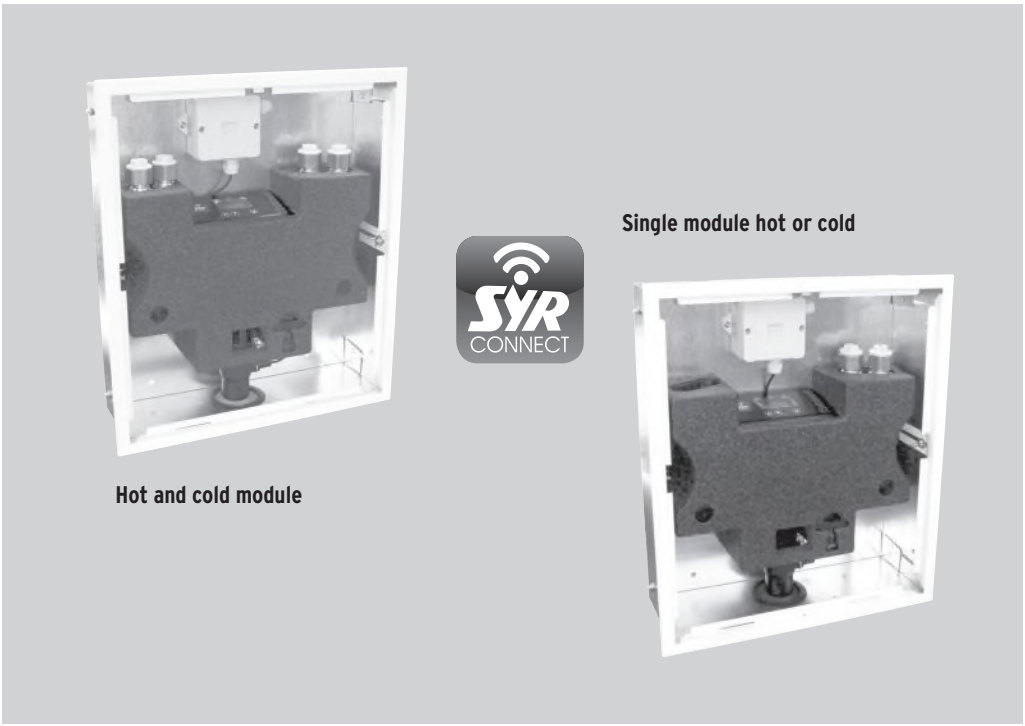
Flow sensor
2421.00.021

Humidity sensor
2421.00.022

Power supply unit (no pict.)
1100.00.900

Hygiene module HM Connect 2621

Hygiene control in large buildings



Field of application

The hygiene module HM Connect is designed as a flushing station preserving the potable water hygiene in large buildings. The HM Connect is used in potable water installations for example in schools, hospitals, hotels, municipal buildings as well as industrial and commercial sites. The hygiene module HM Connect monitors the water temperature and the draw-off cycles of potable water.

Design

The hygiene module's electronic monitoring system is able to identify water stagnation. When the programmed values are exceeded, the total installation will be flushed with fresh water. The options „hot and cold" and „single hot or cold" allow for individual adjustment to various systems. The hygiene modules can be controlled and managed by means of the SYR Connect system via the Internet or a smart phone.

Hygiene module HM Connect

Materials

The body is made of a high-quality low-lead brass alloy. The rubber parts are made of ageing resistant elastomeric material. All other functional parts are made from stainless steel. All materials used are state-of-the-art. The synthetic and elastomeric parts in contact with water comply with the Directives of Germany's Federal Environment Agency (KTW).

Installation

Install the hygiene modules in a pre-wall system, in light weight construction wall frames or on the wall and then connect them to the piping system.

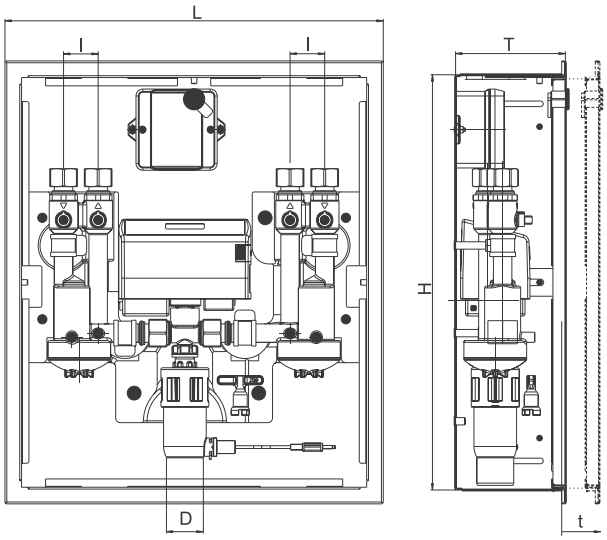
Thoroughly flush the pipe prior to installation. All electric connections are factory-mounted. The LAN access has to be provided separately.

Technical specifications

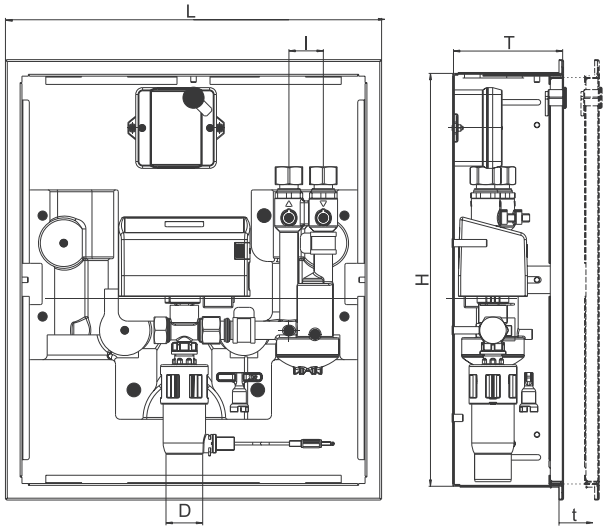
Service temperature:	max. 30 °C (cold water) max. 80 °C (hot water)
Service pressure:	min. 2 bar; max. 10 bar
Fluid:	potable water
Flow rate:	3,8 m^3/h at 1,0 bar Δp
Serial number:	2621...

Maintenance

Apart from changing batteries every 2 years, the hygiene modules require no maintenance.



Single Module hot and cold

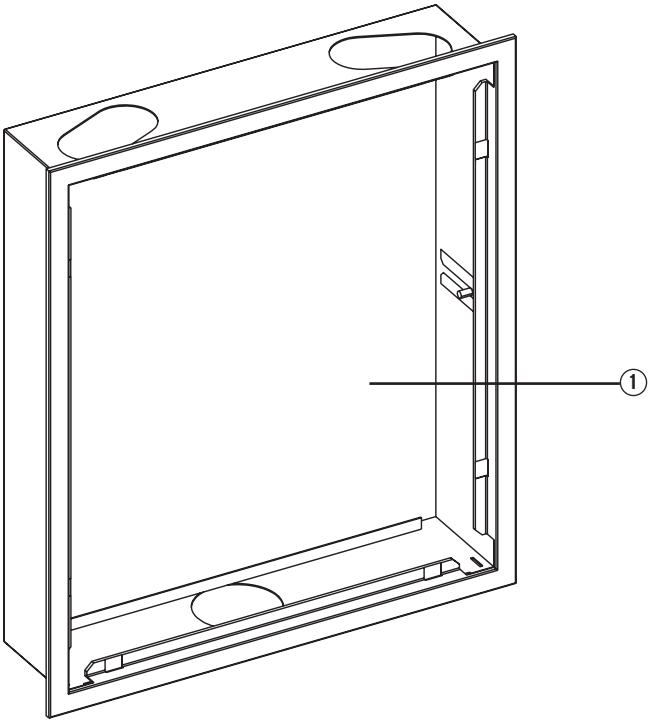


Single module hot or cold

Dimensions	L (mm)	380
	l (mm)	37,5
	T (mm)	120
	H (mm)	450
	D (mm)	40
	t (mm)	43

Components / Order numbers

① **Tile frame**
2621.00.900



Water softening system IT 4000

Ion exchange water softener



Field of application

The SYR water softener IT 4000 is designed to protect water pipes and water heaters against scaling that reduces the water flow and leads to a high energy consumption. The device preserves valves and appliances from damage, which prevents cost-intensive repair works. With partially softened water, the consumption of laundry detergents and household cleaners is much lower than with non softened water. There are no restrictions on use according to DIN 1988 part 2, section 8.3.2. The water softener capacity is designed to allow for the partial softening of the overall amount of water used in one-family and apartment houses as well as of partial water quantities used for hot water, swimming pools, washing machines and dishwashers.

Design

The IT 4000's ion exchange resin is located in two separate containers. The regeneration of the exchange resin is divided into two consecutive cycles. During the regeneration process, both containers alternately provide for soft water. As a result, the consumer gets softened water any time even during the regeneration cycle.
The IT 4000 is equipped with a touch-display, which allows to easily recall any kind of information. The regeneration conforming with DIN EN 14743 and DIN 19636-100 meets the requirements of an economical use of salt. The water softener is disinfected on a regular basis to prevent any contamination.
The regeneration is carried out automatically by means of wear-free ceramic discs. The regeneration process lasting maximally 36 minutes for both containers allows to draw off softened water any time due to the alternately operating resin containers.

Materials

The functional parts are made of high-quality synthetic material. The body and the internal synthetic parts are made of shock-resistant thermoplast and the rubber parts of ageing resistant elastomers. All other functional parts are made of a low-lead, dezincification resistant gunmetal alloy and stainless steel. All materials used are state-of-the-art. All synthetic parts in contact with water meet the requirements of the German Public Health Office (KTW).

Installation

Use DN 20 - DN 32 flanges from the extensive Drufi flange program to mount the IT 4000. Install the water softener close to and downstream of the water metering device. To prevent malfunctions, mount a drinking water filter (system Drufi) upstream of the water softener to offer efficient protection.

The IT 4000's optimal (most efficient) service pressure is 3-5 bar. In the event of higher pressures, we recommend the installation of a pressure reducing valve. The water to be softened shall be clear, free from solid impurities as well as iron- and manganese-free (values within the TVO limits).

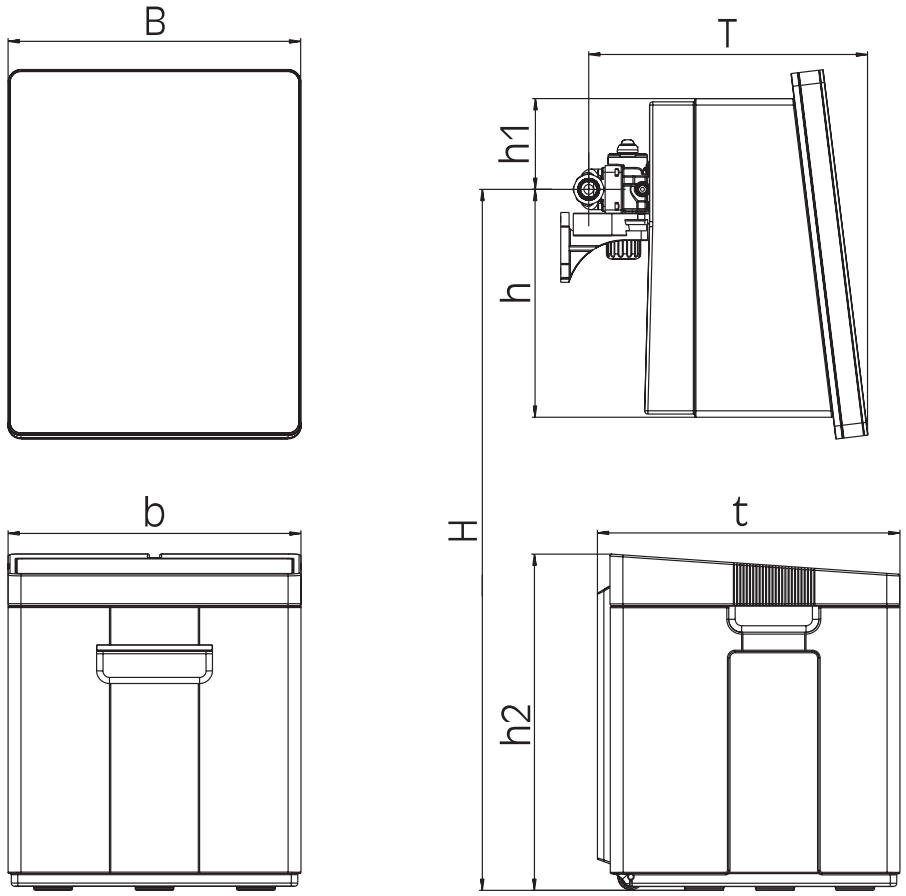
Thoroughly flush the pipe prior to installation. Mount the required drufi connection flanges in vertical or horizontal pipes without applying stresses. All electrical connections are pre-mounted in factory. A (floor) drain is required for the safety overflow. A waste water connection is necessary to drain the flushed water. Do not lengthen the factory pre-mounted hoses.

Technical specifications

Inlet pressure:	10 bar
Service pressure:	min. 3 bar, max. 7 bar
Flow pressure at nominal flow rate downstream of the installation:	min. 2 bar
Service temperature:	max. 30°C
Fluids:	potable water
Mounting position:	main axis, vertical
Nominal flow rate:	1,7 m^3/h
Pressure loss at nominal flow rate:	0.9 bar
Power supply:	230 V / 50 Hz / 15 W
Nominal capacity:	0.9 mol
Capacity per kg of salt	5 mol
Salt stock:	40 kg
Serial number:	4000.00.000

Maintenance

As the water softener works automatically, the only thing to do is to refill salt on a regular basis, at the latest when the message „ Refill salt" is displayed. The device has to be serviced at least once per year, in case of collective installations, every six months. A maintenance contract between user and installer provides for safe and durable functionality.



Nominal size		DN 20 - 32
Dimensions	T (mm)	433
	t (mm)	470
	B (mm)	455
	b (mm)	455
	H (mm)	980
	h (mm)	354
	h1 (mm)	141
	h2 (mm)	522

Components / Order numbers

① **Control unit**
4000.00.900

② **Board**
4000.00.901

③ **Salt container**
4000.00.903

④ **Blending motor**
4000.00.904

⑤ **Operation tablet**
4000.00.905

⑥ **Bypass valve**
1700.00.000

⑦ **Removable shelf**
4000.00.906

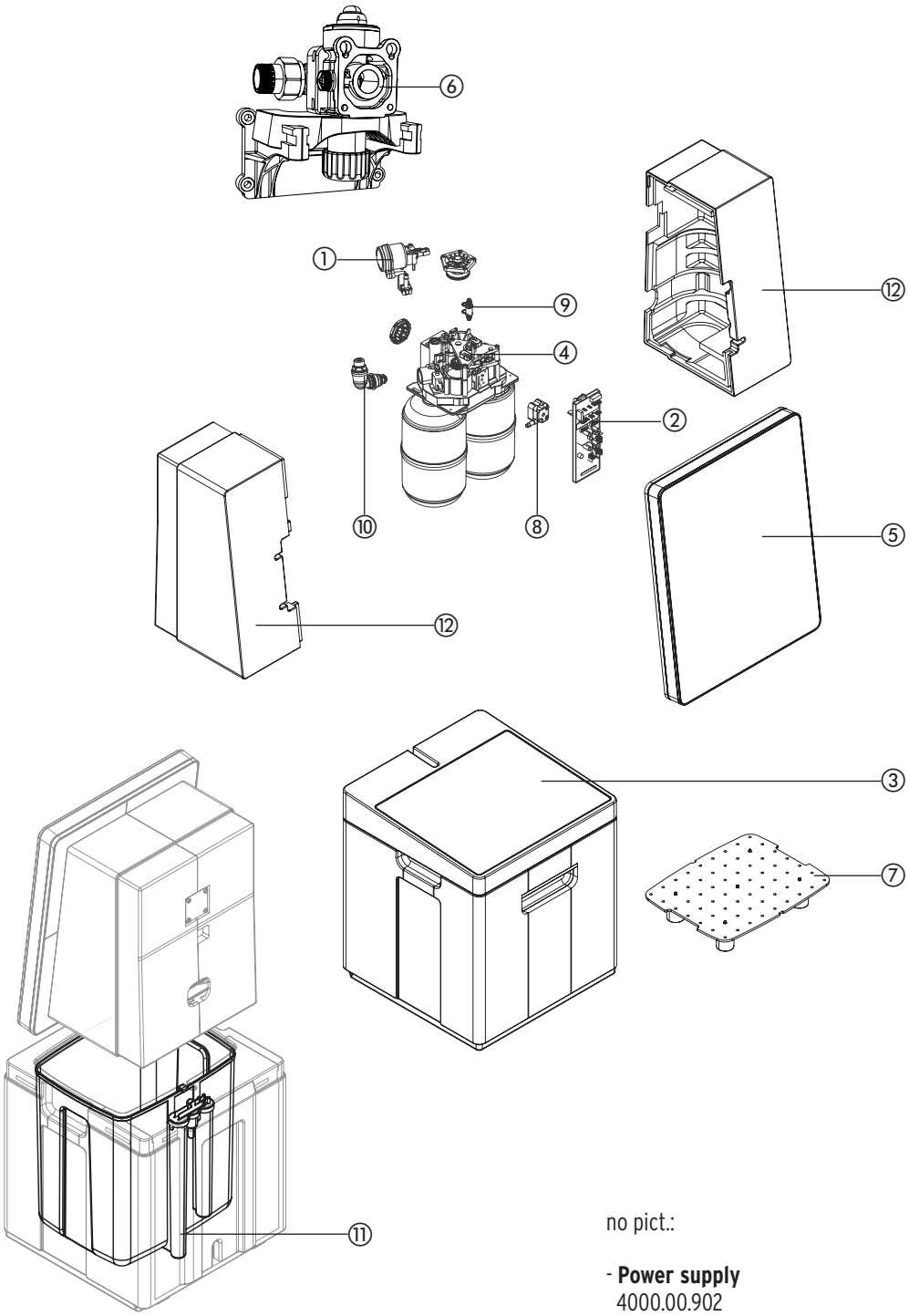
⑧ **Injector**
3000.00.906

⑨ **Draw device**
3000.00.908

⑩ **Pressure reducing cartridge**
3000.00.917

⑪ **Intake strainer**
3000.00.912

⑫ **Cover**



Combi flange
2315.00.071

Double connection flange (parallel flange)
2315.32.030 (DN 32)
2315.40.030 (DN 40)
2315.50.030 (DN 50)

no pict.:

- **Power supply**
  4000.00.902
- **Regenerating salt (25kg)**
  3000.00.911
- **Titration test**
  3000.00.913
- **Maintenance kit**
  3000.00.920

Water Softener IT 3000

Ion exchange water softener



Field of application

The SYR Water Softener type IT 3000 protects water pipes and water heaters against lime deposits, which impede the water flow and lead to an excessive energy consumption. By protecting the devices and valves, it prevents expensive repair works. With partially softened water, the consumption of washing powder and detergents is by far lower than with non softened water. Under consideration of the calculated flow rate capacity, the IT 3000 ensures that partially softened water is available any time at any draw-off point.

Design

The IT 3000 is a system with two alternately running resin containers: the ion exchange resin is located in two separate containers. The ion exchange resin is regenerated in two consecutive cycles. During the regeneration, the two containers soften the water alternately, so that softened water is provided any time.
A low quantity of salt is used for the regeneration process. The softener has to be disinfected on a regular basis in order to prevent microbiological growth. The regeneration is carried out automatically by means of wear-resistant ceramic disks. The regeneration period lasts only 18 minutes for each container. Water can be drawn-off any time due to the alternately operating resin containers.

Materials

The functional parts are made of high-quality synthetic material. The housing and the internal synthetic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All remaining functional parts are made of a low-lead, dezincification resistant gunmetal alloy or stainless steel. All used materials are in accordance with the laws of engineering. All synthetic parts getting into contact with water comply with the recommendations of the German Health Office (KTW).

Installation

Use a flange DN 20 - DN 32 from the extensive Drufi flange programme to install the IT 3000. Install the softening system behind the water meter. To efficiently prevent malfunctions, protect the softener by installing a potable water filter upstream (Drufi System).
The optimal service pressure for the IT 3000 lies between 3 and 5 bar, which allows the most efficient operation of the device. We recommend to install a pressure reducing valve in case of higher pressures. The water to be softened has to be clear, free of solid impurities as well as iron and manganese-free.

Thoroughly flush the pipe prior to installation. Mount the required Drufi connecting flanges in horizontal or vertical pipes without applying stresses. All electric connections are pre-installed in factory.

A drain (floor) is required for the safety overflow. A waste water drain connection is also required for the flush water. Do not extend the premounted hoses!

Technical specifications

Service pressure:	min. 3 bar, max. 7 bar
Service temperature:	max 30 °C
Mounting position:	main axis, vertical
Medium:	potable water
Flow rate:	1,7 m^3/h
Pressure loss at nominal flow rate:	0,45 bar
Dynamic pressure downstream of the system:	min. 2 bar
Power supply:	230 V / 50 Hz / 15 W
Power consumption:	15 W
Nominal capacity:	0.9 mol
Capacity per kg of salt	5 mol
Salt stock:	40 kg
DVGW-N°:	NW-9151BQ0032
Serial number:	3000.00.000

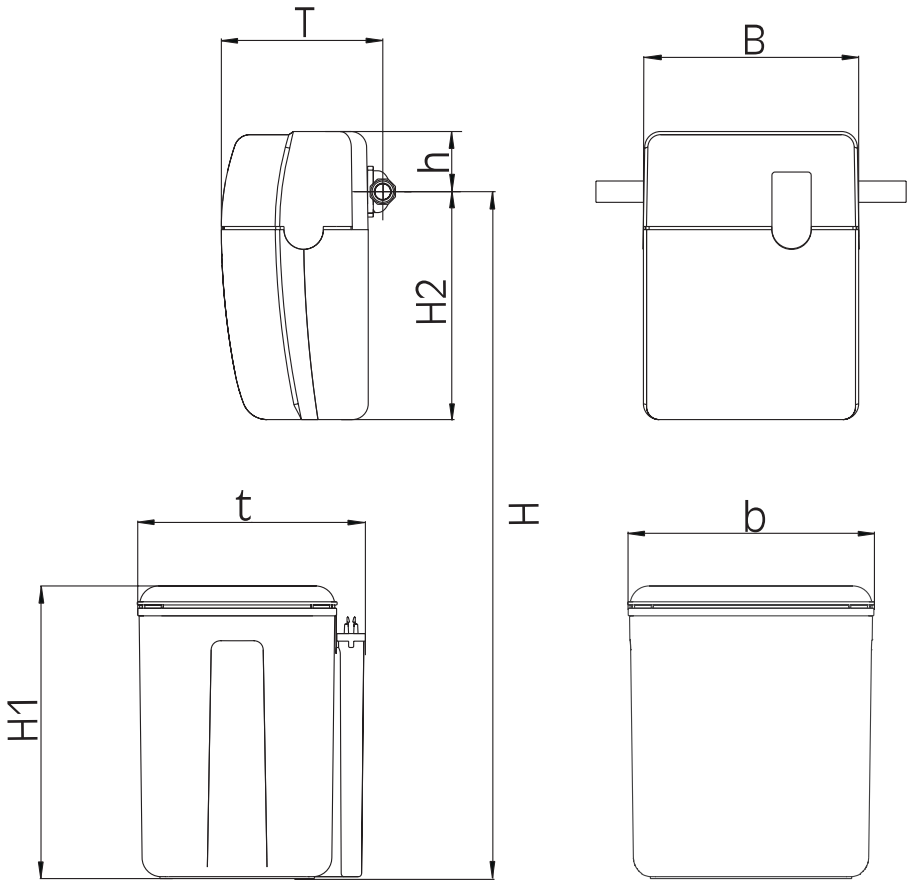
Maintenance

As the water softener works automatically, maintenance only consists of refilling salt on a regular basis, at the latest when the indicator „Salt re-filling required“ becomes visible in the salt container.

Maintenance works should be carried out at least every year and for joint systems every 6 months. A maintenance contract between user and installer provides durable and safe functionality.

Ion exchanger

Salt container



Connection flange not included in delivery

Length of hose for the connection to the salt container: 1.3m

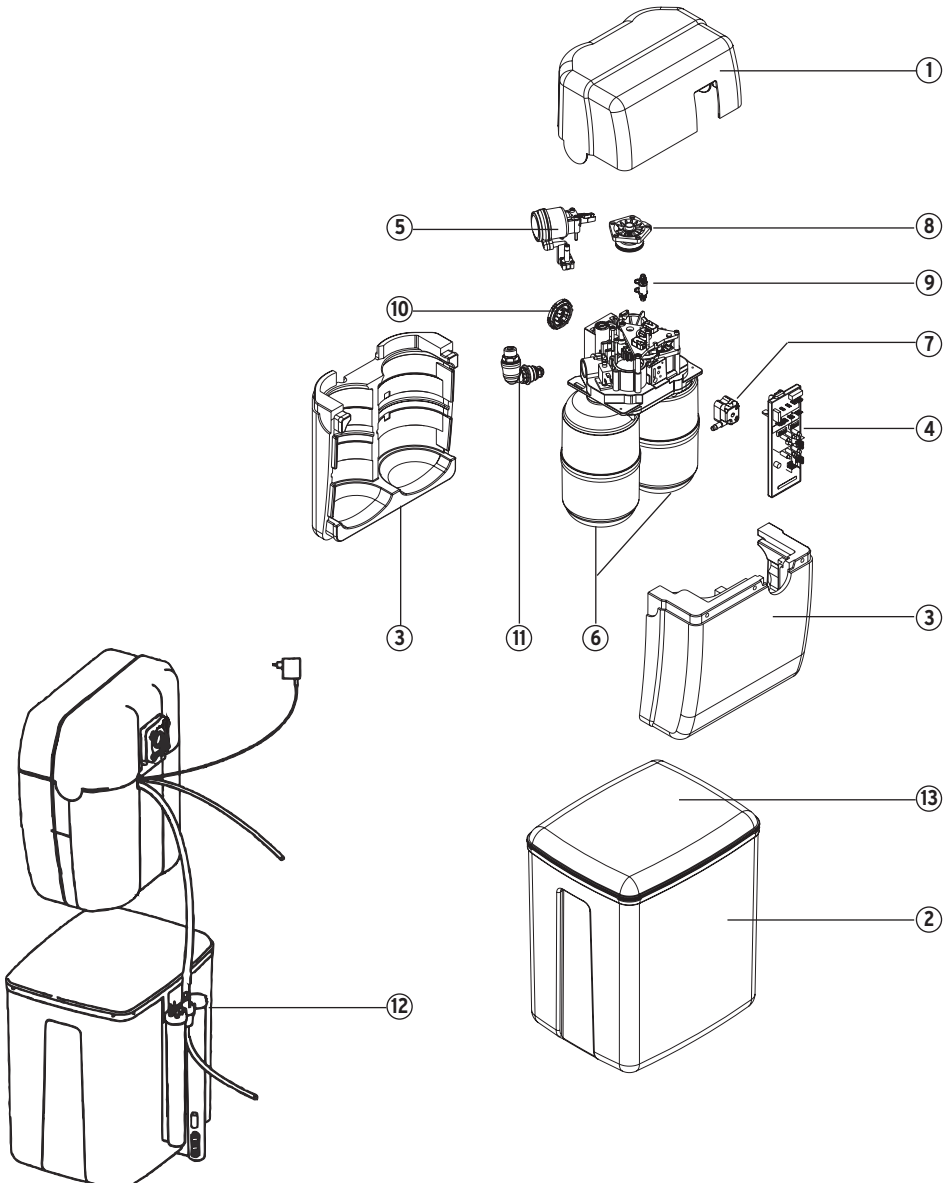
Nominal size		DN 25
Dimensions	T (mm)	255
	t (mm)	390
	B (mm)	340
	b (mm)	390
	H (mm)	1100
	h (mm)	95
	H1 (mm)	465
	H2 (mm)	360

Accessory:

Y-distribution flange: 2315.00.071
Double connection flange: 2315.00.070

Components / Order numbers

① **Cover**
3000.00.900
② **Salt container**
3000.00.901
③ **Insulation**
3000.00.902
④ **Control board**
3000.00.903
⑤ **Mechanism**
3000.00.904
⑥ **Resin tanks**
3000.00.905
⑦ **Injector**
3000.00.906
⑧ **Regeneration cartridge**
3000.00.907
⑨ **Suction indicator**
3000.00.908
⑩ **Bypass Valve**
3000.00.909
⑪ **Pressure reducer cartridge**
3000.00.917
⑫ **Suction strainer**
3000.00.912
⑬ **Cover Salt container**
3000.00.914



Optional
Salt for regeneration (25 kg)
3000.00.911

Optional
Indicator Kit for water hardness
3000.00.913

Optional
Bypass-Valve for maintenance
3000.00.916

Optional
Power adapter 24C AC from 08/12
3000.00.927

Optional
Y-Distribution flange
2315.00.071

Double connecting flange
2315.32.030 (DN 32)
2315.40.030 (DN 40)
2315.50.030 (DN 50)

Water Softener LEX plus 10 Connect

Ion exchange water softener



Field of application

SYR's Water Softener LEX plus 10 Connect is designed to protect water pipes and water heaters against lime deposits, which will slow down the water flow and increase the energy consumption. This effective protection preserves appliances and valves from damage, thus preventing cost-intensive repair works. The consumption of laundry detergents and household cleaners is considerably lower with partially softened water than with non-softened water. DIN 1988, part 200 defines no restrictions on use in the field of application. The water softener's capacity allows for the softening of the overall amount of water used in a single-family house.

Design

The LEX plus 10 Connect is a single-column system based on the ion exchange process. The device is equipped with a touchpad control that makes it easy to enter and access all information. When connected to the Internet, the LEX plus 10 Connect can also be controlled with the SYR-App via Internet.
The water softener undergoes automatic disinfection at regular intervals to prevent microbial growth.

Materials

The functional parts are made of high-quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All other functional parts are made from a low-lead, dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art. The synthetic and elastomeric parts in contact with water meet all requirements of the German Federal Environment Agency (KTW Directive).

Installation

Use a DN 20 - DN 32 flange from the large Drufi flange program to mount the LEX Plus 10 Connect. The delivery includes a bypass and blending valve. Install the water softener close to and downstream of the water metering system. Mount a potable water filter (System Drufi) upstream of the water softener to prevent malfunctions and offer efficient protection. Install a pressure reducing valve upstream when the pressure is ≥ 5 bar. The water to be softened has to be clear, free from solid impurities and iron- and manganese-free (values as set in the Drinking Water Ordinance).

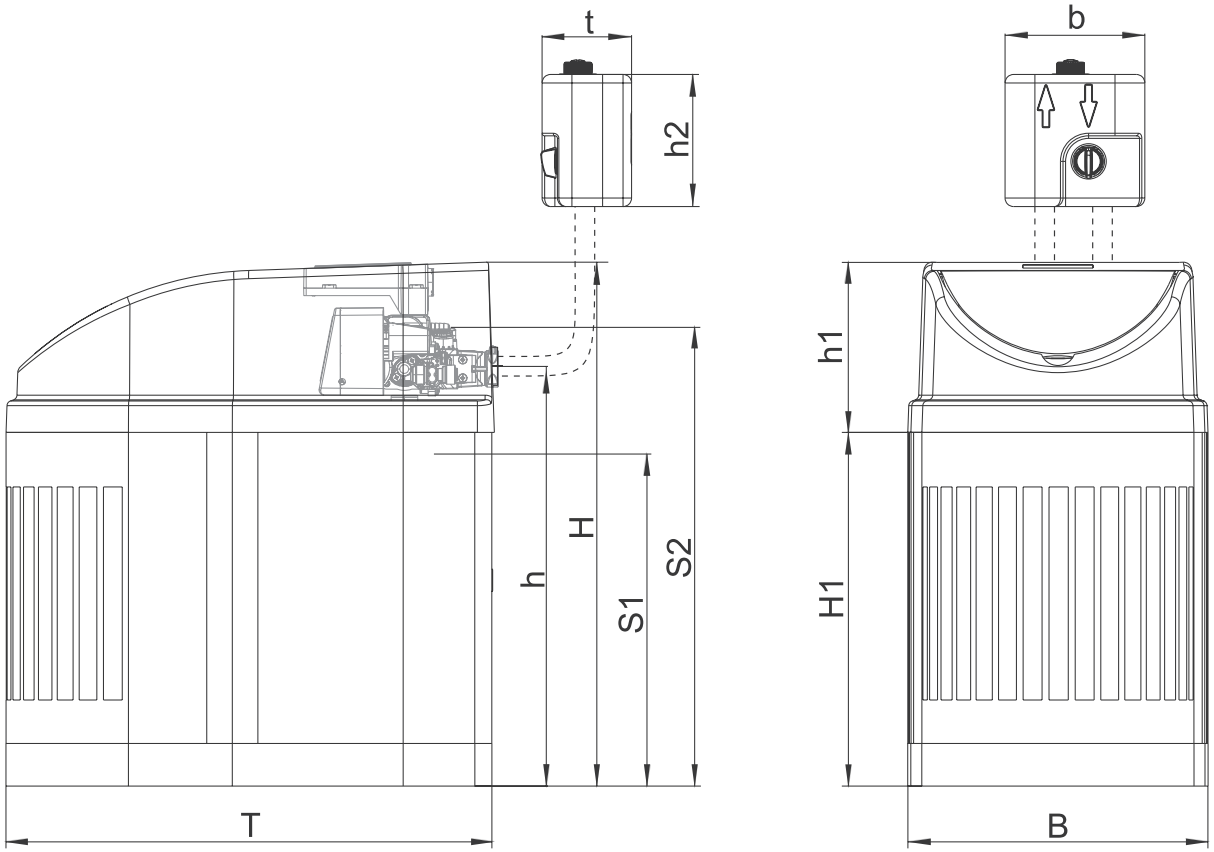
Thoroughly flush the pipe prior to installation. Mount the required Drufi connection flange in a horizontal or vertical pipe without applying stresses. Make sure that a (floor) drain for the safety overflow and a waste water connection to drain the flushed water are provided. Do not extend the factory mounted hoses.

Technical specifications

Service pressure:	min. 2 bar, max. 8 bar
Nominal pressure:	max. 10 bar
Service temperature:	max. 30 °C
Mounting position:	main axis in vertical position
Fluid:	potable water
Flow rate:	2.1 m³/h at 1.0 bar Δp
Storage salt tank:	25 kg
Resin quantity:	7,5 liters
Nominal capacity:	22 m³ x °dH
Salt consumption per regeneration:	about 0.95 kg
Power supply:	230 V / 50 Hz / 6 W
Device connection:	12 V DC
Serial number:	1500.01.010

Maintenance

As the water softener works automatically, the only thing to do is to refill salt on a regular basis. According to EN 806, part 5, the device has to be serviced at least once a year and in case of collective installations twice a year. A maintenance contract between the user and a qualified installer provides for safe and durable functionality.



Connection flange not included in delivery!

Nominal size		LEX plus 10 Connect
Dimensions	t (mm)	105
	b (mm)	164
	H (mm)	615
	h (mm)	492
	H1 (mm)	415
	h1 (mm)	200
	h2 (mm)	155
	T (mm)	570
	B (mm)	352
	Safety overflow (S1) (mm)	390
	Overflow for flushed water (S2) (mm)	541

Components / Order numbers

① **Control unit**
1500.01.906
② **Cover of cabinet**
1500.01.907
③ **Bypass and blending valve**
1500.01.916
④ **Control head**
1500.01.901
⑤ **Filling level unit**
1500.01.905
⑥ **Cabinet**
1500.01.908
⑦ **Resin bottle**
1500.01.904

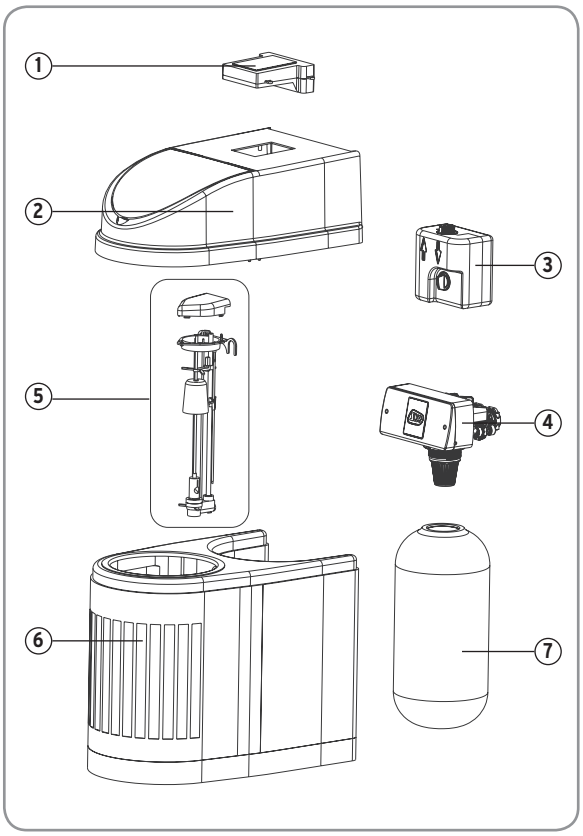
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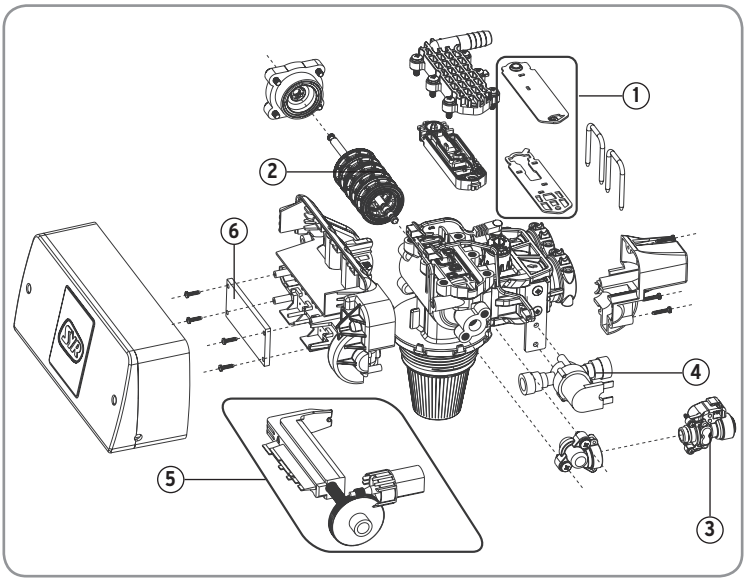
Cable harness standpipe
1500.01.911

Cable harness control head
1500.01.912

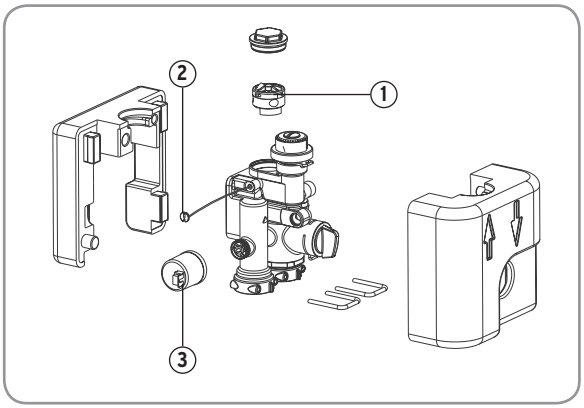
Cable harness blending
1500.01.913

Power pack control unit
1500.01.915





① **Seal kit**
1500.01.921
② **Piston**
1500.01.902
③ **Chlorinator**
1500.01.920
④ **Solenoid valve**
1500.01.922
⑤ **Drive unit**
1500.01.903
⑥ **Board control head**
1500.01.914



① **Turbine**
1500.01.919
② **Reed-contact**
1500.01.918
③ **Pressure sensor**
1500.01.917

Water Softener LEX plus 10 S Connect

Ion exchange water softener



Field of application

SYR's Water Softener LEX plus 10 S Connect is designed to protect water pipes and water heaters against lime deposits, which will slow down the water flow and increase the energy consumption. This effective protection preserves appliances and valves from damage, thus preventing cost-intensive repair works. The consumption of laundry detergents and household cleaners is considerably lower with partially softened water than with non-softened water. DIN 1988, part 200 defines no restrictions on use in the field of application. The water softener's capacity allows for the softening of the overall amount of water used in a single-family house.

Design

The LEX plus 10 S Connect is a single-column system based on the ion exchange process. The device is equipped with a touchpad control that makes it easy to enter and access all information. When connected to the Internet, the LEX plus 10 S Connect can also be controlled with the SYR-App via Internet.
The water softener undergoes automatic disinfection at regular intervals to prevent microbial growth.

Materials

The functional parts are made of high-quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All other functional parts are made from a low-lead, dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art. The synthetic and elastomeric parts in contact with water meet all requirements of the German Federal Environment Agency (KTW Directive).

Installation

Use a DN 20 - DN 32 flange from the large Drufi flange program to mount the LEX Plus 10 Connect. The delivery includes a bypass and blending valve. Install the water softener close to and downstream of the water metering system. Mount a potable water filter (System Drufi) upstream of the water softener to prevent malfunctions and offer efficient protection. Install a pressure reducing valve upstream when the pressure is ≥ 5 bar. The water to be softened has to be clear, free from solid impurities and iron- and manganese-free (values as set in the Drinking Water Ordinance).

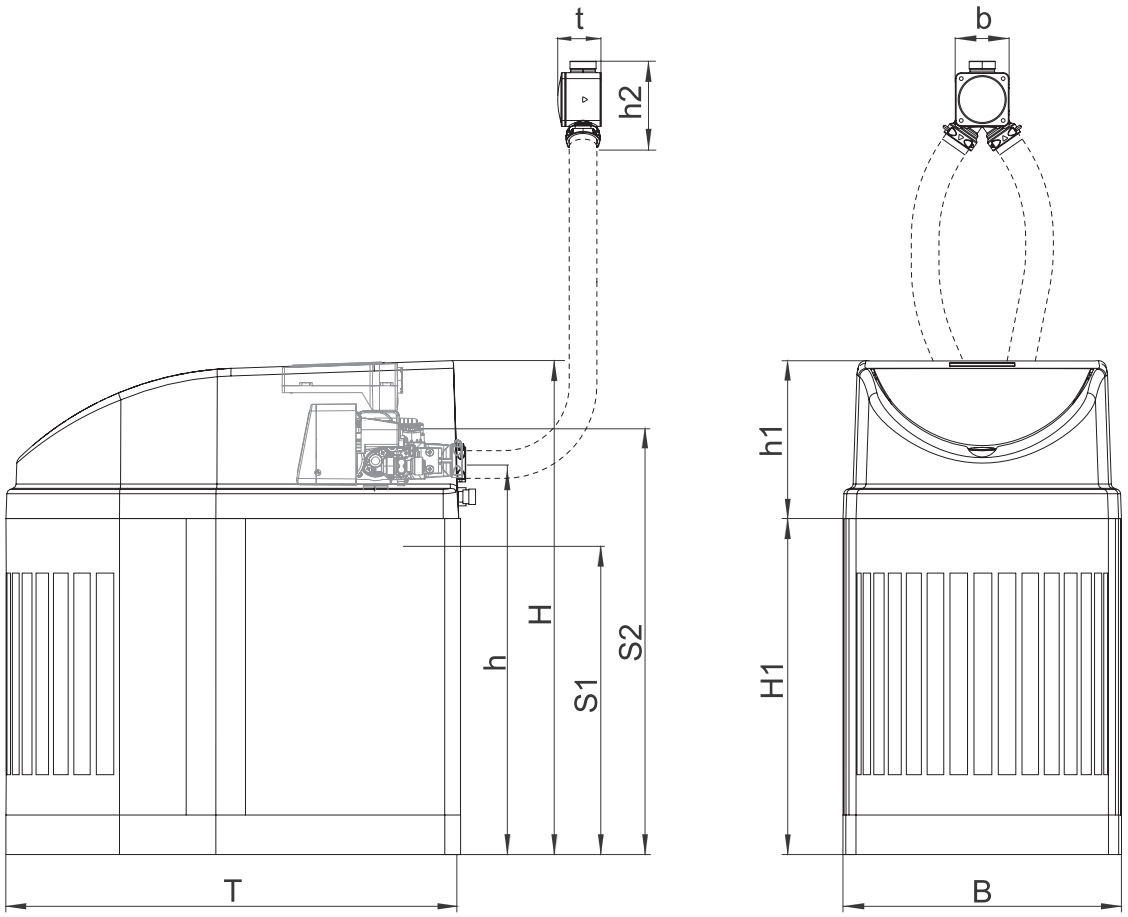
Thoroughly flush the pipe prior to installation. Mount the required Drufi connection flange in a horizontal or vertical pipe without applying stresses. Make sure that a (floor) drain for the safety overflow and a waste water connection to drain the flushed water are provided. Do not extend the factory mounted hoses.

Technical specifications

Service pressure:	min. 2 bar, max. 8 bar
Nominal pressure:	max. 10 bar
Service temperature:	max. 30 °C
Mounting position:	main axis in vertical position
Fluid:	potable water
Flow rate according to DIN EN 14743:	1.5 m³/h
Flow rate according to DIN 19636 from 20° dH to 8 ° dH:	2.3 m³/h
Storage salt tank:	25 kg
Resin quantity:	7,5 liters
Nominal capacity:	22 m³ x °dH
Salt consumption per regeneration:	about 0.95 kg
Power supply:	230 V / 50 Hz / 6 W
Device connection:	12 V DC
Serial number:	1500.01.011

Maintenance

As the water softener works automatically, the only thing to do is to refill salt on a regular basis. According to EN 806, part 5, the device has to be serviced at least once a year and in case of collective installations twice a year. A maintenance contract between the user and a qualified installer provides for safe and durable functionality.



Connection flange not included in delivery!

Nominal size		LEX plus 10 S Connect
Dimensions	t (mm)	64
	b (mm)	68
	H (mm)	615
	h (mm)	492
	H1 (mm)	415
	h1 (mm)	200
	h2 (mm)	118
	T (mm)	570
	B (mm)	352
	Safety overflow (S1) (mm)	390
	Overflow for flushed water (S2) (mm)	541

Components / Order numbers

① **Control unit**
1500.01.906
② **Cover of cabinet**
1500.01.907
③ **Blending valve**
1500.01.941
④ **Control head**
1500.01.901
⑤ **Filling level unit**
1500.01.936
⑥ **Cabinet**
1500.01.908
⑦ **Resin bottle**
1500.01.934

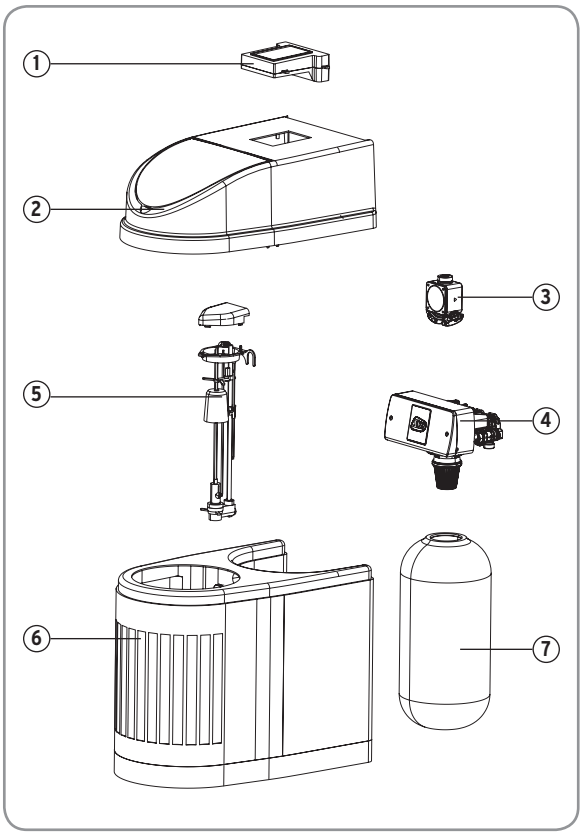
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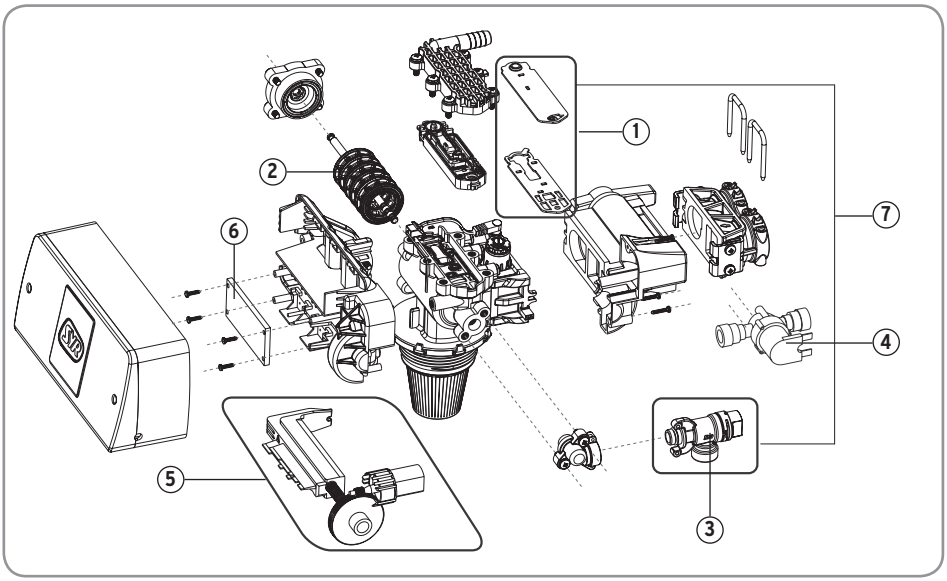
Cable harness standpipe
1500.01.911

Cable harness control head
1500.01.912

Cable harness blending
1500.01.913

Power pack control unit
1500.01.915

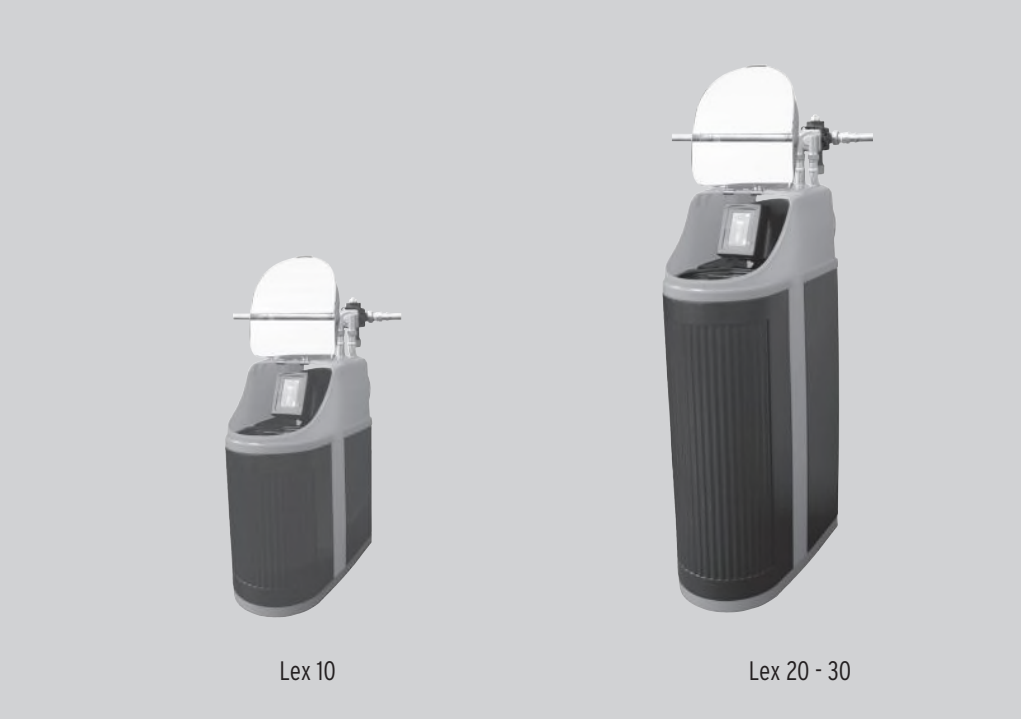




① **Seal kit**
1500.01.921
② **Piston**
1500.01.902
③ **Chlorinator**
1500.01.920
④ **Solenoid valve**
1500.01.922
⑤ **Drive unit**
1500.01.903
⑥ **Board control head**
1500.01.914
⑦ **Maintenance kit**
1500.01.939

Water Softener LEX 1500

Ion exchange water softener



Lex 10 Lex 20 - 30

Field of application

SYR's Water Softener LEX 1500 is designed to protect water pipes and water heaters against lime deposits, which will slow down the water flow and increase the energy consumption. This effective protection preserves appliances and valves from damage, thus preventing cost-intensive repair works. The consumption of laundry detergents and household cleaners is considerably lower with partially softened water than with non softened water. DIN 1988, part 200 defines no restrictions on use in the field of application. The water softener's capacity allows for partial softening of the overall amount of water used in single-family houses or apartment houses as well as of partial water quantities used for hot water, swimming pools, washing machines and dishwashers.

Design

The LEX 1500 is a single-column system based on the ion exchange process. The device is equipped with the Limex control that makes it easy to enter and access all information. The water softener undergoes automatic disinfection at regular intervals to prevent microbial growth.

Materials

The functional parts are made of high-quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All other functional parts are made from a low-lead, dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art. The synthetic and elastomeric parts in contact with water meet all requirements of the German Federal Environment Agency (KTW Directive).

Installation

Use a DN 20 - DN 32 flange from the large Drufi flange program to mount the LEX 1500. The delivery includes a connection group. Install the water softener close to and downstream of the water metering system. Mount a potable water filter (System Drufi) upstream of the water softener to prevent malfunctions and offer efficient protection. Install a pressure reducing valve upstream when the pressure is ≥ 5 bar. The water to be softened has to be clear, free from solid impurities and iron- and manganese-free (values as set in the Drinking Water Ordinance).

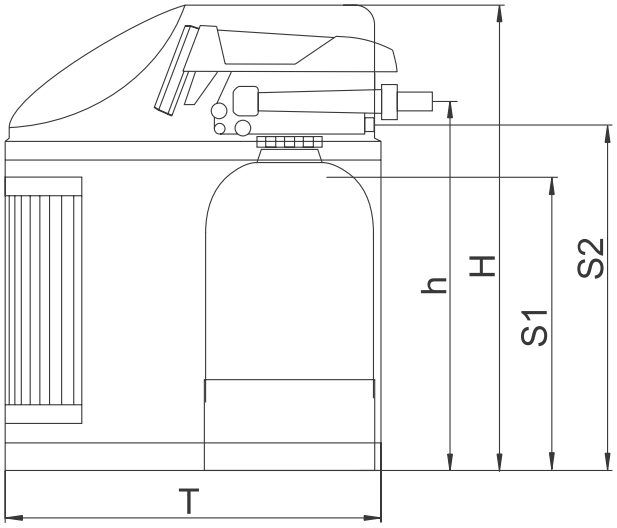
Thoroughly flush the pipe prior to installation. Mount the required Drufi connection flange in a horizontal or vertical pipe without applying stresses. Make sure that a (floor) drain for the safety overflow and a waste water connection to drain the flushed water are provided. Do not extend the factory mounted hoses.

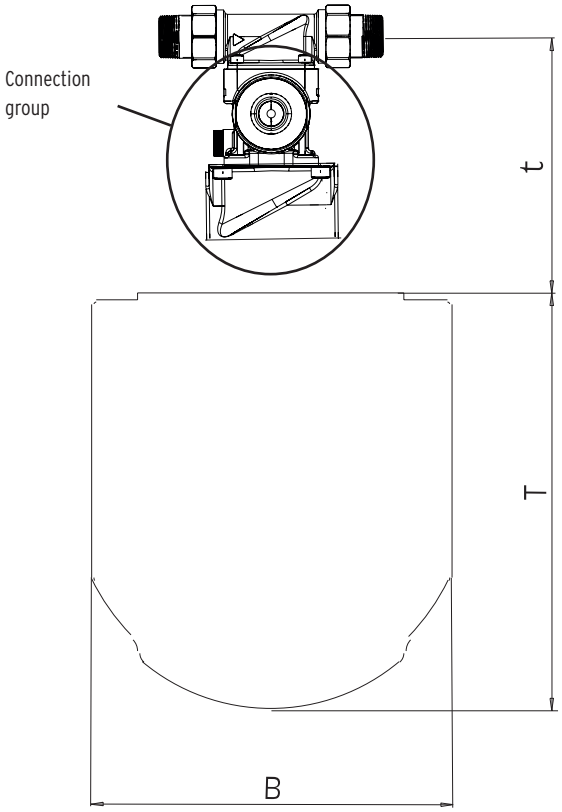
Technical specifications

Service pressure:	min. 2 bar, max. 8 bar
Nominal pressure:	max. 10 bar
Operating temperature:	max. 30 °C
Mounting position:	main axis in vertical position
Fluid:	potable water
Flow rate LEX 10 / 20 / 30:	2.1 / 2.5 / 2.8 m^3/h at 1.0 bar Δp
Storage salt tank LEX 10 / 20 / 30:	25 kg / 70 kg / 70 kg
Resin quantity LEX 10 / 20 / 30:	10 / 20 / 30 liters
Volume exchanger resin LEX 10 / 20 / 30:	20/ 40 / 60 m^3 x °dH
Salt consumption per regeneration LEX 10 / 20 / 30:	about 0.8 kg / 1.6 kg / 2.4 kg
Power consumption / power supply:	6 W / 12V / 50 Hz
Serial number:	1500 ...

Maintenance

As the water softener works automatically, the only thing to do is to refill salt on a regular basis. According to EN 806, part 5, the device has to be serviced at least once a year and in case of collective installations twice a year. A maintenance contract between the user and a qualified installer provides for safe and durable functionality.





Connection flange not included in delivery!

Nominal size		LEX 10	LEX 20 / 30
Dimensions	H (mm)	680	1130
	h (mm)	510	970
	t (mm)	min. 300	min. 300
	T (mm)	600	600
	B (mm)	350	350
	S1 overflow	390	835
	S2 flushed water	475	930

Components / Order numbers

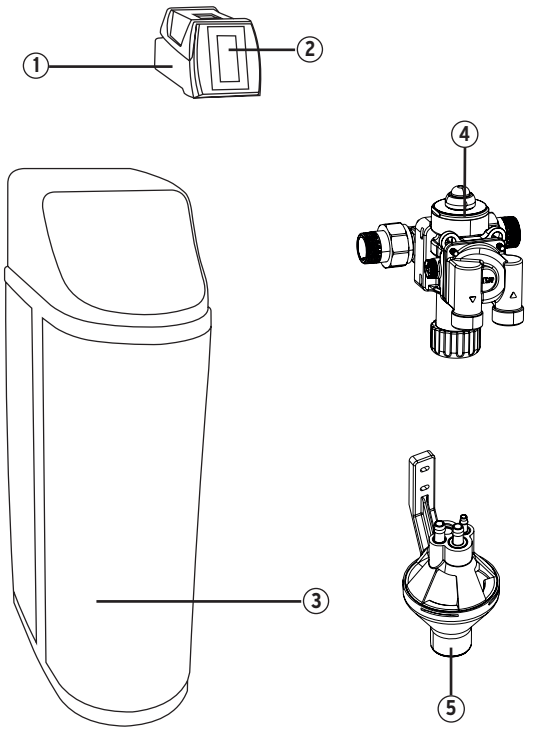
① **Control head**
LEX 10 1500.00.903
LEX 20 1500.00.920
LEX 30 1500.00.921

② **IQ-control**
LEX 10 1500.00.906
LEX 20 1500.00.907
LEX 30 1500.00.908

③ **Cabinet, with cover**
LEX 10 1500.00.924
LEX 20/30 1500.00.925

④ **Bypass valve**
1700.00.001

⑤ **Tundish**
0214.00.908



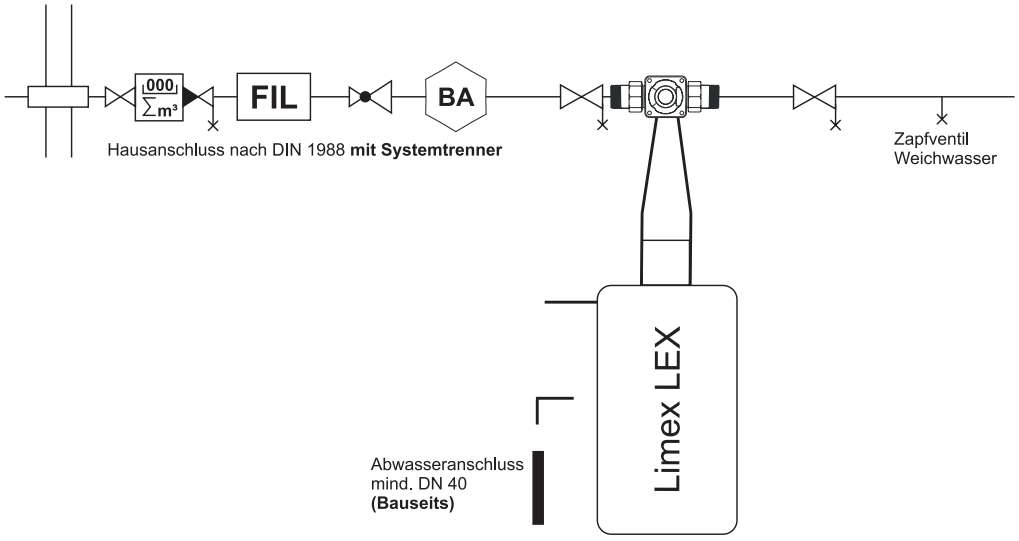
no fig.

Salt tank
LEX 10 1500.00.913
LEX 20/30 1500.00.901

Seal kit
1500.00.904

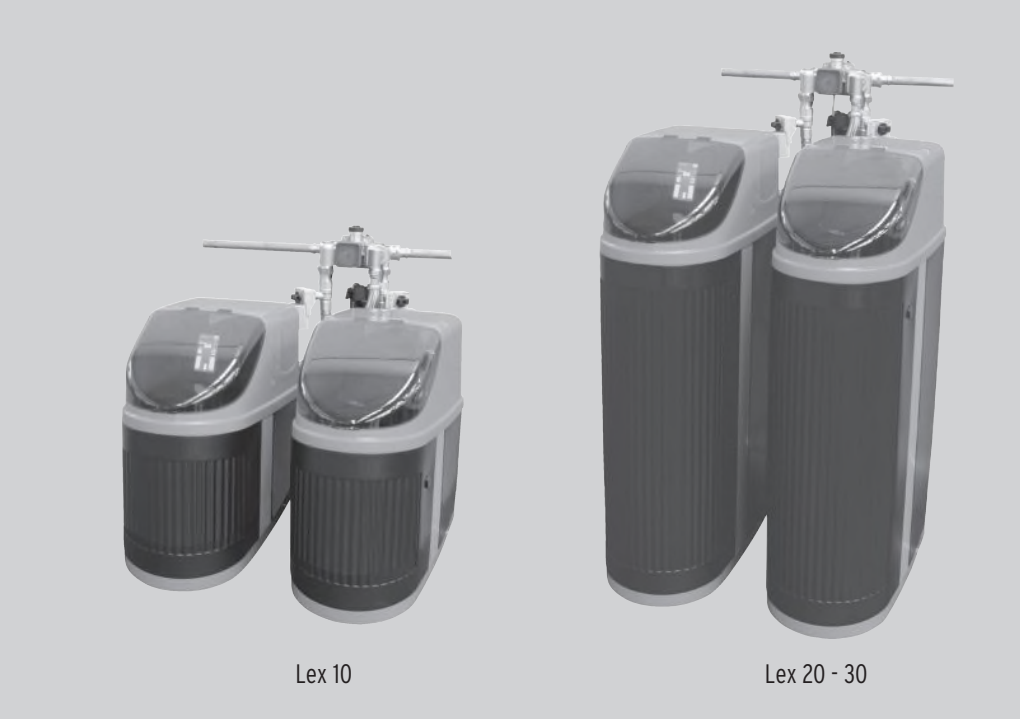
Hoses
1500.00.905

Installation diagram



Duplex Water Softener LEX 1500

Ion exchange water softener



Lex 10 Lex 20 - 30

Field of application

SYR's LEX 1500 Duplex Water Softener is designed to protect water pipes and water heaters against lime deposits, which will slow down the water flow and increase the energy consumption. This effective protection preserves appliances and valves from damage, thus preventing cost-intensive repair works. The consumption of laundry detergents and household cleaners is considerably lower with partially softened water than with non-softened water. DIN 1988, part 200 defines no restrictions on use in the field of application. The water softener's capacity allows for partial softening of the overall amount of water used in single-family houses or apartment houses as well as of partial water quantities used for hot water, swimming pools, washing machines and dishwashers.

Design

The LEX 1500 Duplex Water Softener is a parallel ion exchange system that provides a doubled flow rate. It is equipped with the Limex control that makes it easy to enter and access all information. The water softener undergoes automatic disinfection at regular intervals to prevent microbial growth.

Materials

The functional parts are made of high-quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All other functional parts are made from a low-lead, dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art. The synthetic and elastomeric parts in contact with water meet all requirements of the German Federal Environment Agency (KTW Directive).

Installation

Use a Max flange DN 32 - DN 50 to install the LEX 1500 Duplex Water Softener. The delivery includes a connection group. Install the water softener close to and downstream of the water metering system. Mount a potable water filter (System Drufi) upstream of the water softener to prevent malfunctions and offer efficient protection. Install a pressure reducing valve upstream when the pressure is ≥ 5 bar. The water to be softened has to be clear, free from solid impurities and iron- and manganese-free (values as set in the Drinking Water Ordinance).

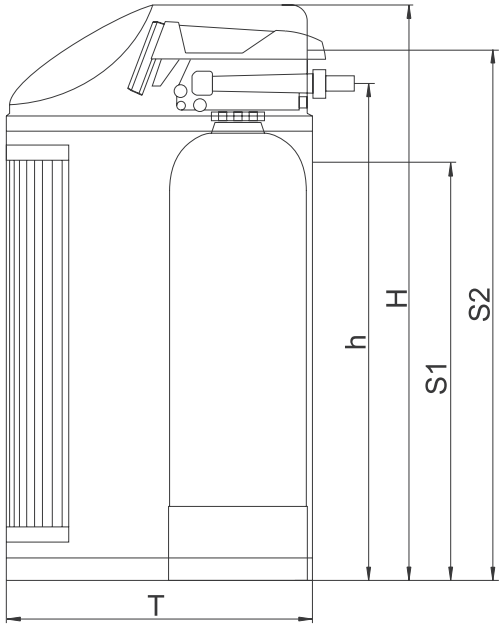
Thoroughly flush the pipe prior to installation. Mount the required double flange in a horizontal pipe without applying stresses. Make sure that a (floor) drain for the safety overflow and a waste water connection to drain the flushed water are provided. Do not extend the factory mounted hoses.

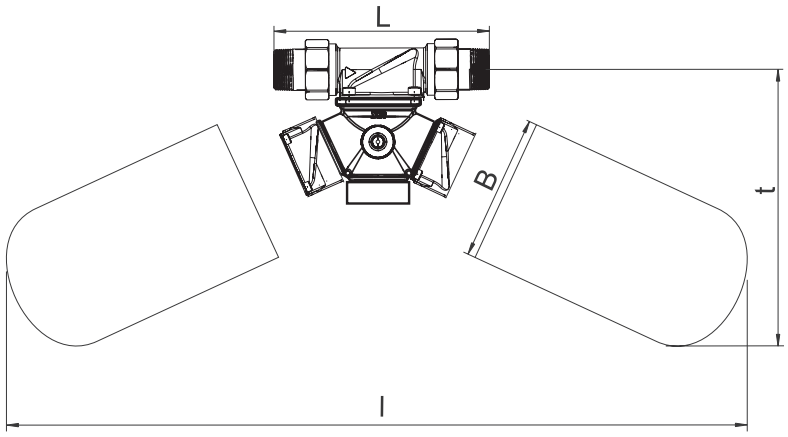
Technical specifications

Service pressure:	min. 2 bar, max. 8 bar
Nominal pressure:	max. 10 bar
Service temperature:	min. 2 °C, max. 30 °C
Mounting position:	main axis in vertical position
Fluid:	potable water
Flow rate LEX 10 / 20 / 30:	4.2 / 5.0 / 5.6 m³/h at 1.0 bar Δp
Storage salt tank LEX 10 / 20 / 30:	2 x 25 kg / 2 x 70 kg / 2 x 70 kg
Resin quantity LEX 10 / 20 / 30:	2 x 10 / 2 x 20 / 2 x 30 liters
Capacity exchanger resin LEX 10 / 20 / 30:	40 / 80 / 120 m³ x °dH
Salt consumption per regeneration LEX 10 / 20 / 30:	about 0.8 kg / 1.6 kg / 2.4 kg
Power consumption / Power supply:	6 W / 12V / 50 Hz
Serial number:	2 x 1500 ...

Maintenance

As the water softener LEX 1500 works automatically, the only thing to do is to refill salt on a regular basis. According to EN 806, part 5, the device has to be serviced at least once a year and in case of collective installations twice a year. A maintenance contract between the user and a qualified installer provides for safe and durable functionality.





Nominal size		LEX 10			LEX 20 / 30		
Dimensions	H (mm)		680			1130	
	h (mm)		510			970	
	t (mm)		min. 300			min. 300	
	T (mm)		600			600	
	L (mm)	DN 32: 570	DN 40: 570	DN 50: 610	DN 32: 570	DN 40: 570	DN 50: 610
	l (mm)		480			480	
	B (mm)		350			350	
	S1 overflow		390			835	
	S2 flushed water		475			930	

Components / Order numbers

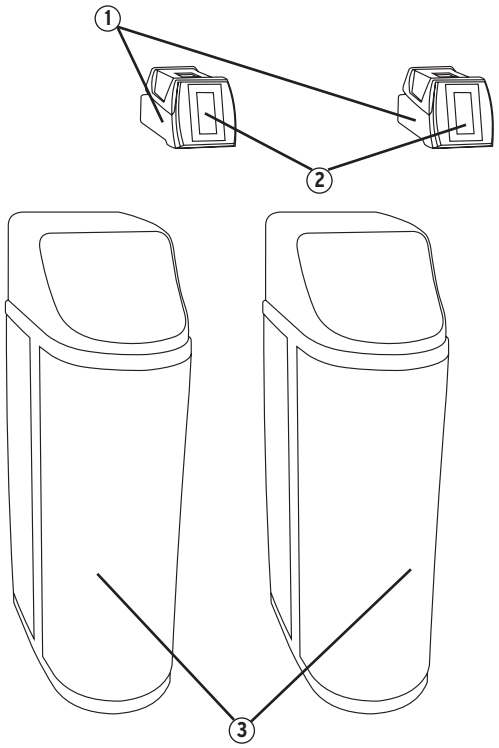
① **Control head**
LEX 10 1500.00.903
LEX 20 1500.00.920
LEX 30 1500.00.921

② **IQ control**
LEX 10 1500.00.906
LEX 20 1500.00.907
LEX 30 1500.00.908

③ **Cabinet, with cover**
LEX 10 1500.00.924
LEX 20/30 1500.00.925

④ **Bypass valve**
1700.00.002

⑤ **Tundish**
0214.00.908

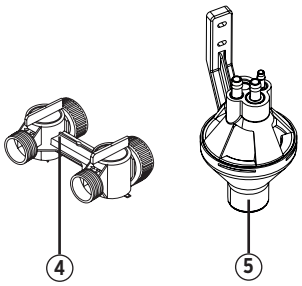


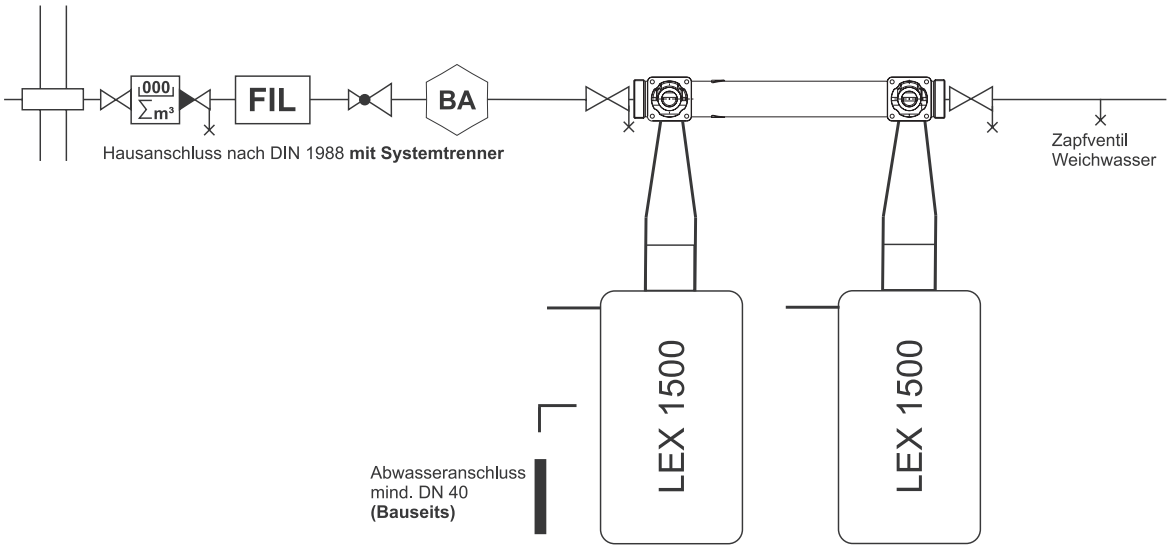
no fig.

Salt tank
LEX 10 1500.00.913
LEX 20/30 1500.00.901

Seal kit
1500.00.904

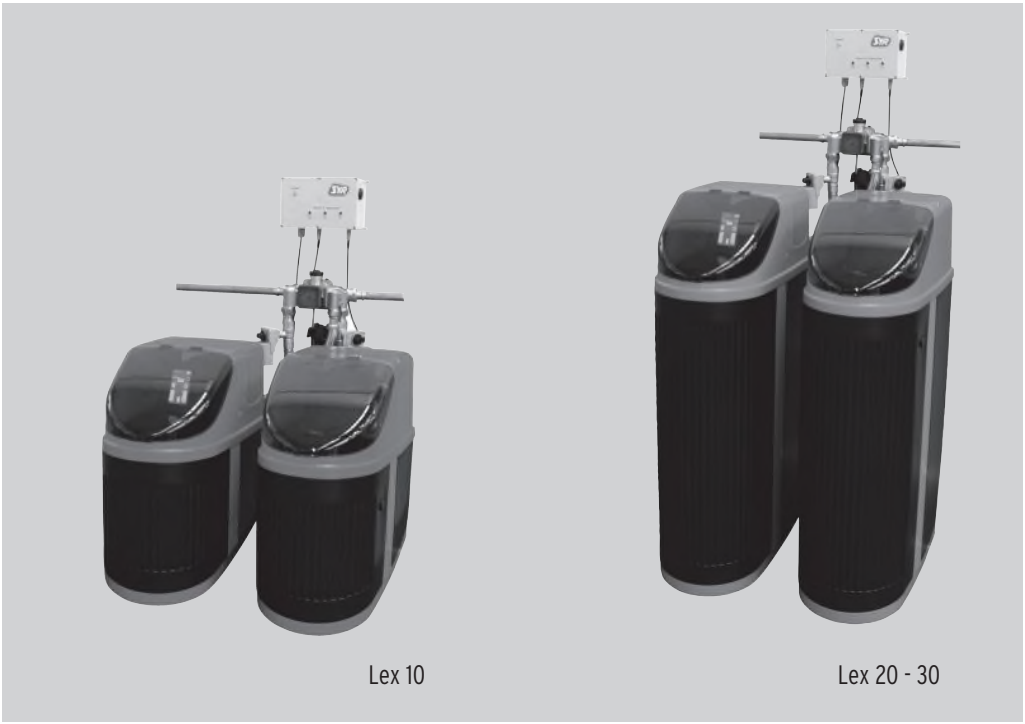
Hoses
1500.00.905





Alternating Water Softener LEX 1500

Ion exchange water softener



Lex 10 Lex 20 - 30

Field of application

SYR's LEX 1500 Twin Alternating Water Softener is designed to protect water pipes and water heaters against lime deposits, which will slow down the water flow and increase the energy consumption. This effective protection preserves appliances and valves from damage, thus preventing cost-intensive repair works. The consumption of laundry detergents and household cleaners is considerably lower with partially softened water than with non-softened water. DIN 1988, part 200 defines no restrictions on use in the field of application. The water softener's capacity allows for partial softening of the overall amount of water used in single-family houses or apartment houses as well as of partial water quantities used for hot water, swimming pools, washing machines and dishwashers.

Design

The LEX 1500 twin alternating water softener is an ion exchange system that ensures uninterrupted supply of soft water 24 hours a day.
It is equipped with the Limex IQ control that makes it easy to enter and access all information. The water softener undergoes automatic disinfection at regular intervals to prevent microbial growth.
The device is equipped with bypass valves, connection hoses and a connection group.

Materials

The functional parts are made of high-quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All other functional parts are made from a low-lead, dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art. The synthetic and elastomeric parts in contact with water meet all requirements of the German Federal Environment Agency (KTW Directive).

Installation

Use a double flange DN 32 - DN 50 to mount the LEX 1500 twin alternating water softener. The delivery includes a connection group. Install the water softener close to and downstream of the water metering system. Mount a potable water filter (System Drufi) upstream of the water softener to prevent malfunctions and offer efficient protection. Install a pressure reducing valve upstream when the pressure is ≥ 5 bar. The water to be softened has to be clear, free from solid impurities and iron- and manganese-free (values as set in the Drinking Water Ordinance).

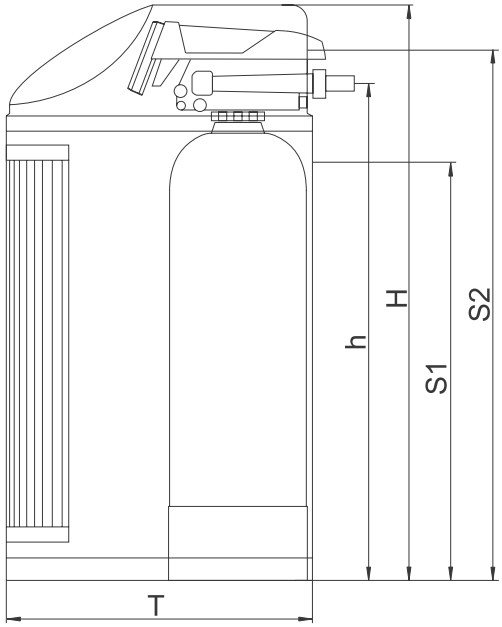
Thoroughly flush the pipe prior to installation. Mount the required double flange in a horizontal pipe. Do not apply stresses. Make sure that a (floor) drain for the safety overflow and a waste water connection to drain the flushed water are provided. Do not extend the factory mounted hoses.

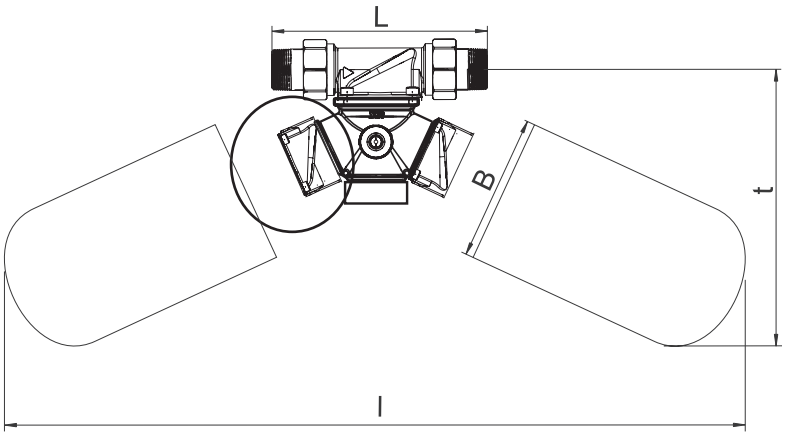
Technical specifications

Service pressure:	min. 2 bar, max. 8 bar
Nominal pressure:	max. 10 bar
Service temperature:	max. 30 °C
Mounting position:	main axis in vertical position
Fluid:	potable water
Flow rate LEX 10 / 20 / 30:	2.1 / 2.5 / 2.8 m^3/h at 1.0 bar Δp
Storage salt tank LEX 10 / 20 / 30:	25 kg / 60 kg / 60 kg
Resin quantity LEX 10 / 20 / 30:	10 / 20 / 30 liters
Capacity exchanger resin LEX 10 / 20 / 30:	2 x 20 / 2 x 40 / 2 x 60 m^3 x °dH
Salt consumption per regeneration LEX 10 / 20 / 30:	about 0.8 kg / 1.6 kg / 2.4 kg
Power consumption / Power supply:	6 W / 12V / 50 Hz
Serial number:	1500 ...

Maintenance

As the LEX 1500 twin alternating water softener works automatically, the only thing to do is to refill salt on a regular basis. According to EN 806, part 5, the device has to be serviced at least once a year and in case of collective installations twice a year. A maintenance contract between the user and a qualified installer provides for safe and durable functionality.





Nominal size		LEX 10			LEX 20 / 30		
Dimensions	H (mm)		680			1130	
	h (mm)		510			970	
	t (mm)		min. 300			min. 300	
	T (mm)		600			600	
	L (mm)	DN 32: 570	DN 40: 570	DN 50: 610	DN 32: 570	DN 40: 570	DN 50: 610
	l (mm)		480			480	
	B (mm)		350			350	
	S1 overflow		390			835	
	S2 flushed water		475			930	

Components / Order numbers

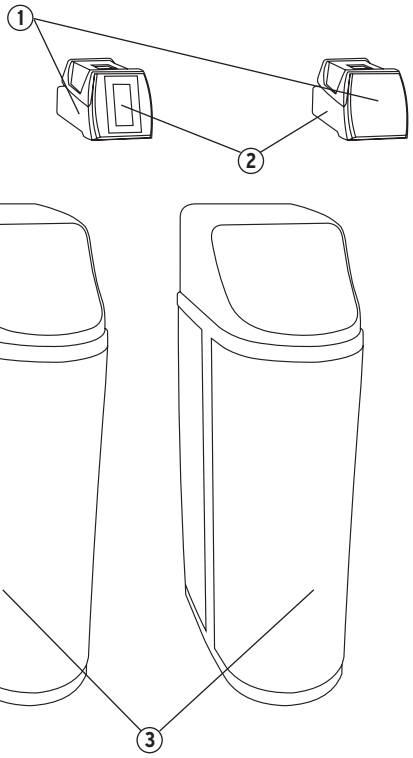
① **Control head**
Lex 10 1500.00.934
Lex 20 1500.00.935
Lex 30 1500.00.936

② IQ control
LEX 10 1500.00.914
LEX 20 1500.00.915
LEX 30 1500.00.916

③ **Cabinet, with cover**
LEX 10 1500.00.924
LEX 20/30 1500.00.925

④ **Bypass valve**
1700.00.002

⑤ **Tundish**
0214.00.908

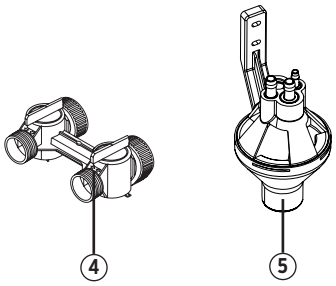


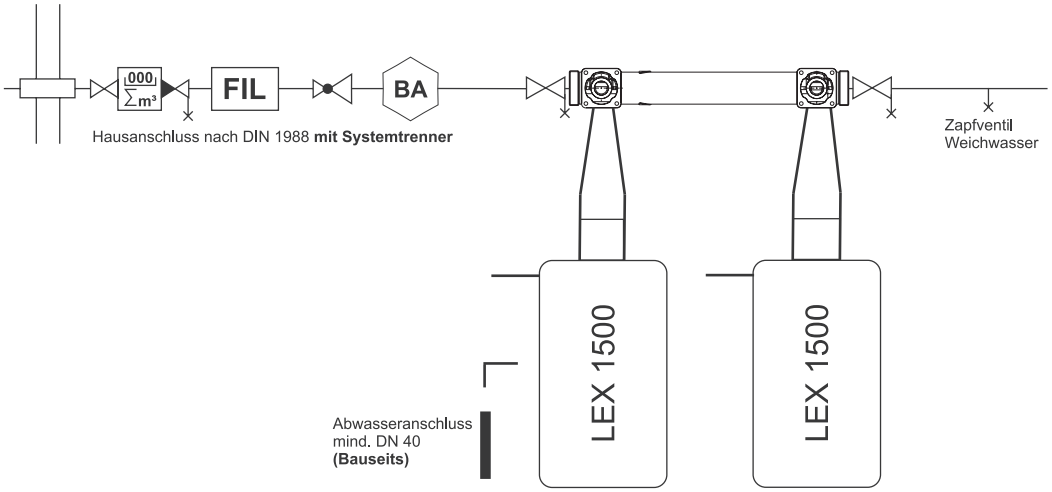
no fig.

Salt tank
LEX 10 1500.00.913
LEX 20/30 1500.00.901

Seal kit
1500.00.904

Hoses
1500.00.905





Triple Water Softener LEX - T

Triple water softener



Field of application

SYR's Triple Water Softener Limex LEX-T is designed to protect water pipes and water heaters against lime deposits, which will slow down the water flow and increase the energy consumption. This effective protection preserves appliances and valves from damage, thus preventing cost-intensive repair works. The consumption of laundry detergents and household cleaners is considerably lower with partially softened water than with non-softened water. DIN 1988, part 200 defines no restrictions on use in the field of application. The water softener's capacity allows for partial softening of the overall amount of water used in single-family houses or apartment houses as well as of partial water quantities used for hot water, swimming pools, washing machines and dishwashers.

Design

The LEX-T is a water softening system based on the proven ion exchange process. When in operation, water flows permanently through two resin tanks. The microprocessor control regulates the quantity-based regeneration intervals for the three tanks. The system automatically triggers a regeneration cycle when the predefined capacity has been reached in one exchange resin tank. This method makes sure that the water volume to be treated is automatically distributed to 3 exchanger resin tanks. This results in a hygienic, economic and efficient functionality.

Materials

The functional parts are made of high-quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All other functional parts are made from a low-lead, dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art. The synthetic parts in contact with water meet all requirements of the German Federal Environment Agency (KTW Directive).

Installation

Use the Drufimax universal flange (DN 32- DN 50) (accessory) to mount the LEX-T. The delivery includes bypass valves with an integrated bypass as well as a three-way connection group. Install the water softener close to and downstream of the water metering system. Mount a potable water filter (System Drufi) upstream of the water softener to prevent malfunctions and offer efficient protection. The water to be softened has to be clear, free from solid impurities and iron- and manganese-free (values as set in the Drinking Water Ordinance).

Thoroughly flush the pipe prior to installation. Mount the required Drufimax universal flange in horizontal or vertical pipes without applying stresses. All electric connections are factory-mounted. Make sure that a (floor) drain for the safety overflow and a waste water connection to drain the flushed water are provided. Set up the salt tank separately.

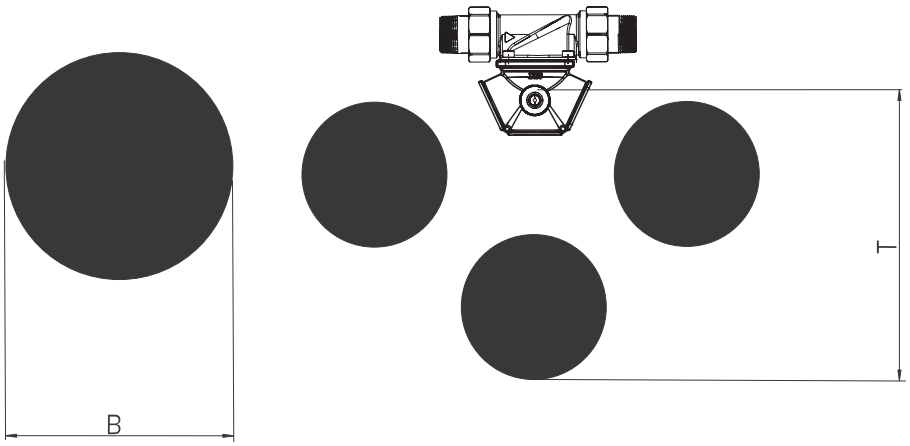
Technical specifications

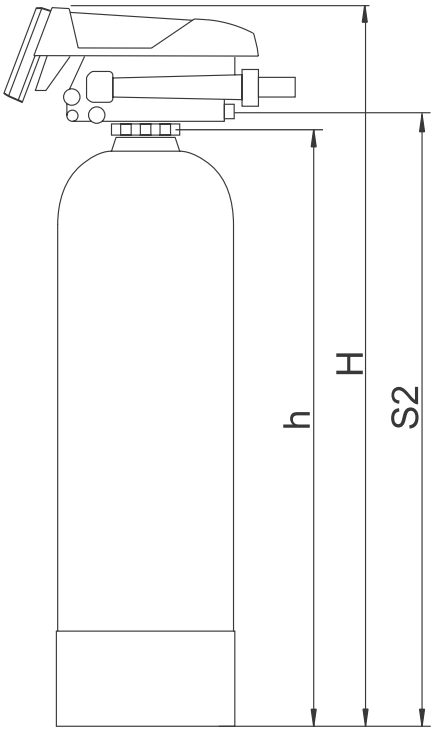
Service pressure:	min. 2 bar, max. 8 bar
Nominal pressure:	max. 10 bar
Service temperature:	max. 30°C
Fluid:	potable water
Flow rate T1 / T2 / T3 / T4:	5.0 / 5.6 / 9.0 / 11.2 m³/h at 1.0 bar Δp
Storage salt tank T1 / T2 / T3 + T4:	110 / 200 / 300 liters
Resin quantity T1 / T2 / T3 / T4:	3 x 20 / 3 x 30 / 3 x 60 / 3 x 90 liters
Capacity T1 / T2 / T3 / T4:	80 / 120 / 240 / 360 m³ / °dH
Salt consumption per regeneration T1 / T2 / T3 / T4:	about 3.2 kg / 4.8 kg / 9.6 kg / 14.4 kg per exchanger resin tank
Power consumption:	4 W
Power supply:	12V / 50 Hz
Serial number:	1500 ...

Maintenance

As the water softener LEX T works automatically, the only thing to do is to refill salt on a regular basis. According to EN 806, part 5, the device has to be serviced at least once a year and in case of collective installations twice a year. A maintenance contract between the user and a qualified installer provides for safe and durable functionality.

Connection flange not included in delivery!





		LEX T1	LEX T2	LEX T3	LEX T4
Dimensions	H (mm)	1070	1070	1150	1570
	h (mm)	900	900	980	1400
	T (mm)	ca. 1000	ca. 1000	ca. 1000	ca. 1000
	B (mm)	460	460	620	620
	S2 Flushed water	965	965	1050	1425

Components /Order numbers

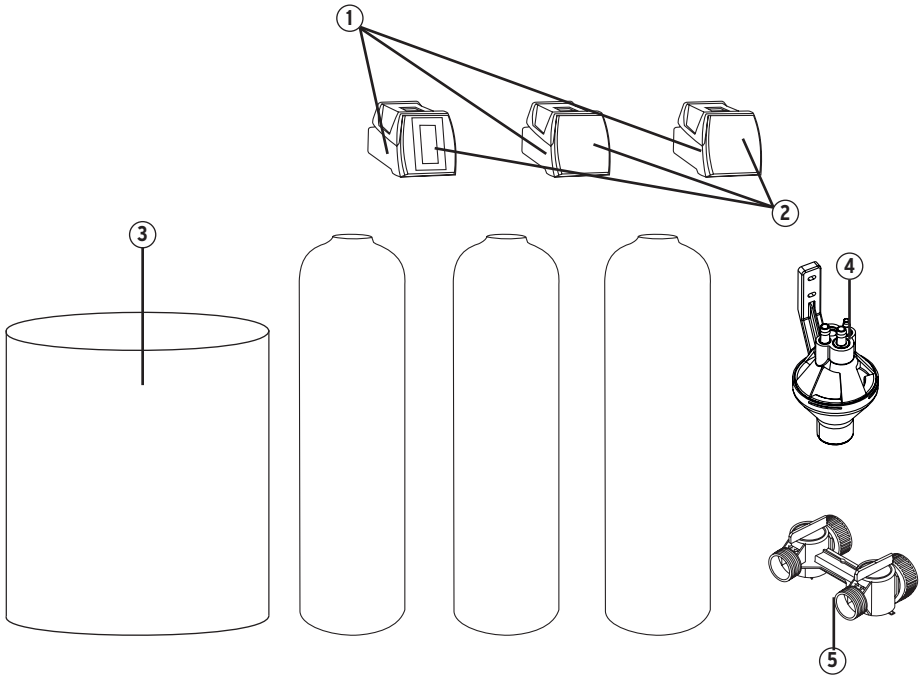
① **Control head**
LEX T1 1500.00.920
LEX T2 1500.00.921
LEX T3 1500.00.937
LEX T4 1500.00.938

② **IQ control**
LEX T1 1500.00.941
LEX T2 1500.00.942
LEX T3 1500.00.943
LEX T4 1500.00.944

③ **Salt tank**
LEX T1 1500.00.931
LEX T2 1500.00.932
LEX T3 + T4
1500.00.933

④ **Tundish**
0214.00.908

⑤ **Bypass valve**
1700.00.002

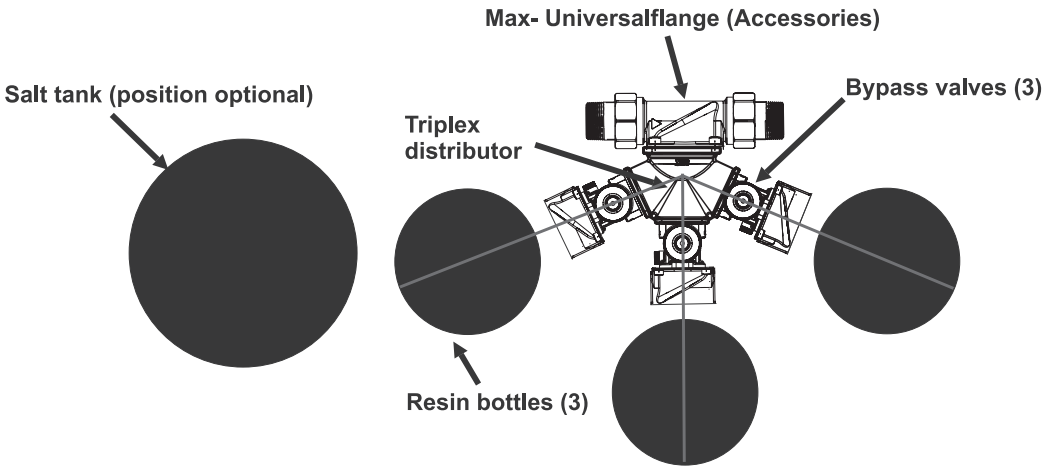


no fig.

Seal kit
1500.00.904

Hoses
1500.00.905

Connecting diagram LEX T



SYR-DOS Dosing Pump 1400

Addition of mineral solutions



Field of application

The dosing pump SYR DOS from SYR is designed to add mineral solutions to potable water. Mineral solutions prevent corrosion and scaling and increase the water's pH value; they are also used for example downstream of water softeners or for stabilizing the water hardness in copper or galvanised pipes as well as in mixed installations. The dosing system fulfils the requirements of the relevant German standard (DIN 19635).

Design

The dosing pump SYR DOS records the water flow with a water meter and determines the required amount of minerals accordingly; the minerals are released from the dosing dispensers and pumped into the pipe through a dosing hose. The range of mineral products includes solutions suitable for various applications (C: for copper pipes downstream of water softeners; SW: for galvanised pipes and aggressive water with a water hardness 8,4 ° dH; W: galvanised pipes for water hardness 8,4 - 14 °dH and mixed installations, respectively downstream of water softeners; H: for stabilizing the water hardness in the hardness ranges 14 °dH or higher.)

Dosig pump 1400

Materials

The functional parts are made of high quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All remaining functional parts are made of a low lead dezincification resistant gunmetal alloy and stainless steel. All materials used are state-of-the-art. All synthetic parts getting into contact with water fulfil the requirements of Germany's Public Health Office (KTW).

Installation

Use a connecting set DN 20 – DN 32 (not included in delivery) to install the SYR DOS dosing pump. Connect the connection valve directly into the pipe. The device cannot be operated without power supply.

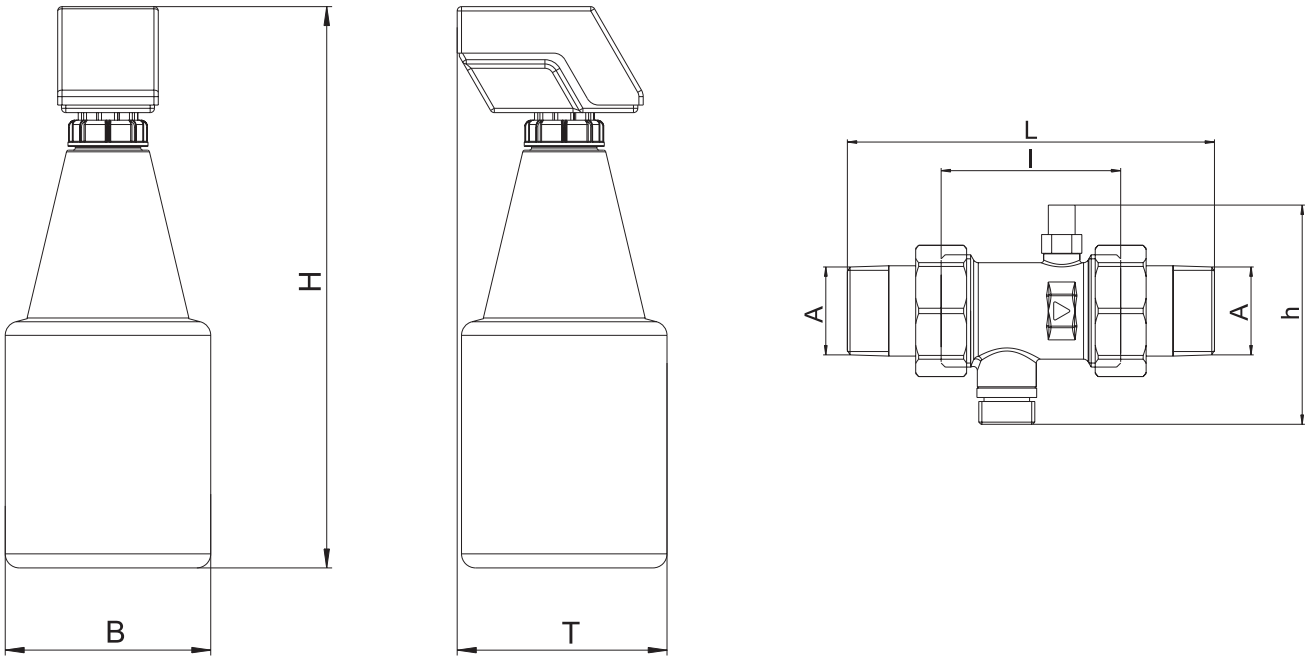
Thoroughly flush the pipe prior to installation. Install the connection valve and the connection set in vertical or horizontal pipes without applying stresses. All electrical connections are pre-mounted in factory.

Technical specifications

Nominal size:	DN 20 - DN 32
Inlet pressure:	10 bar
Operating temperature:	max. 30 °C
Fluid:	potable water
Container size:	6 Liter
Nominal flow rate:	4.0 m^3/h
Pressure loss at nominal flow rate:	0.8 bar
Power supply:	230 V / 50 Hz
Dosing volume per filling:	8 - 80 m+
Serial number:	1400.00.000

Maintenance

As the dosing pump operates automatically, only the empty mineral solution dispensers need to be replaced. The device should be serviced on a regular basis (EN 806 part 5). It is recommended to conclude a service contract with a qualified installer to ensure durable and safe operation.



Nominal size		DN 20	DN 25	DN 32
	A	R ¾“	R 1“	R 1¼“
Dimensions	H (mm)	530	530	530
	B (mm)	190	190	190
	T (mm)	195	195	195
	L (mm)	141	137	161
	l (mm)	67	67	67
	h (mm)	82	82	82

Components / Order numbers

① **Pump housing**

② **Mineral solution**

Mineral solution Type C
6 Litre: 3100.00.900
25 Litre: 3100.00.904

Mineral solution Type SW
6 Litre: 3100.00.901
25 Liter: 3100.00.905

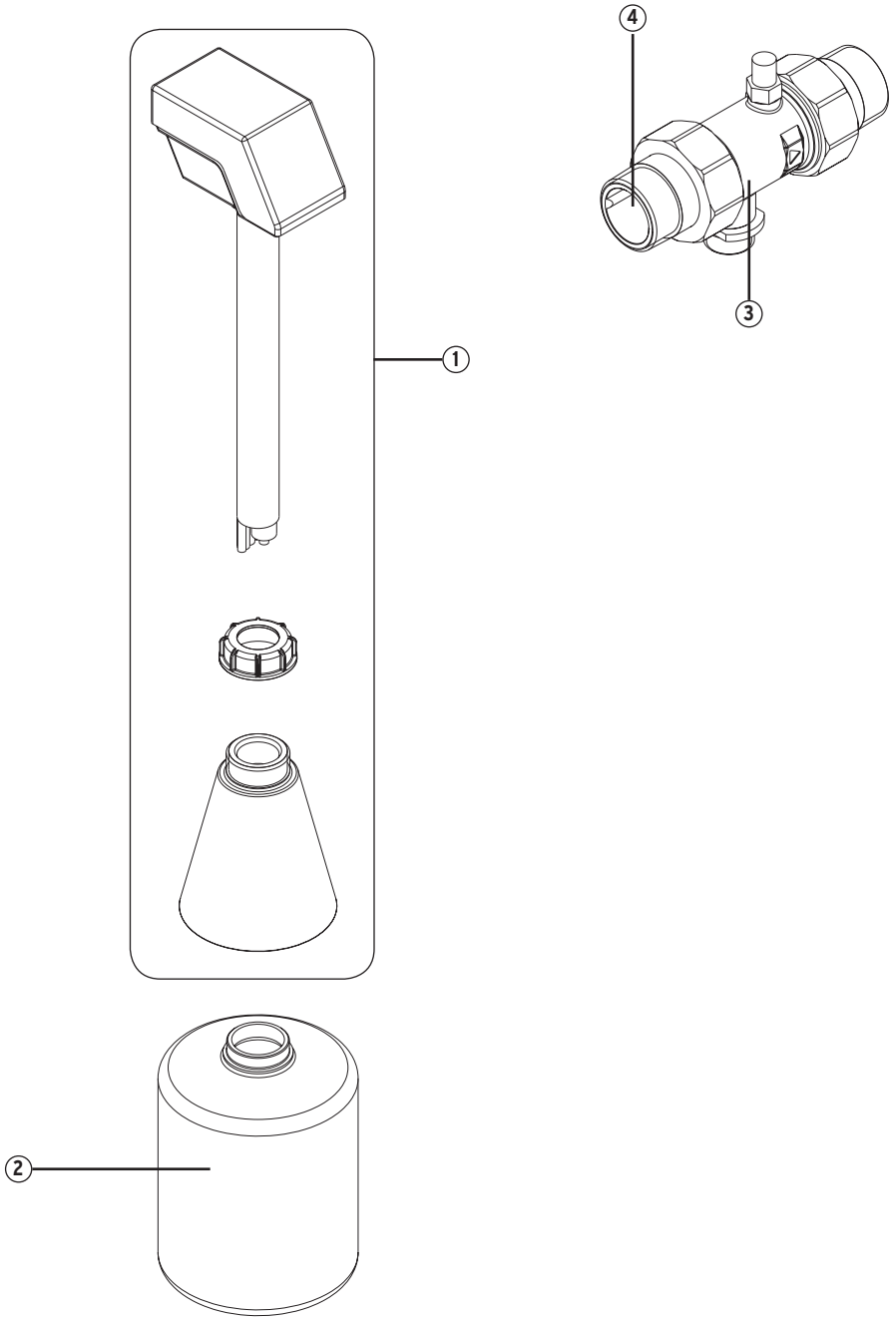
Mineral solution Type W
6 Litre: 3100.00.902
25 Liter: 3100.00.906

Mineral solution Type H
6 Litre: 3100.00.903
25 Liter: 3100.00.907

③ **Connection valve**

④ **Connection-Set**

0814.20.900	DN 20
0812.25.900	DN 25
0816.32.900	DN 32



Dosing Pump 3100 DP 1

Addition of mineral solutions



Field of application

The dosing system DP 1 from SYR is designed to add mineral solutions to potable water. Mineral solutions prevent corrosion and scaling and increase the water's pH value; they are also used for example downstream of water softeners or for stabilizing the water hardness in copper or galvanised pipes as well as in mixed installations. The dosing system fulfils the requirements of the relevant German standard (DIN 19635).

Design

The dosing system DP1 records the water flow with a water meter and determines the required amount of minerals accordingly; the minerals are released from the dosing dispensers and pumped into the pipe through a dosing hose. The range of mineral products includes solutions suitable for various applications (C: for copper pipes downstream of water softeners; SW: for galvanised pipes and aggressive water of hardness range 1; W: galvanised pipes for water hardness ranges 1 + 2 and mixed installations, respectively downstream of water softeners; H: for stabilizing the water hardness in the hardness ranges 3 + 4.)

Dosig pump 3100 - DP 1

Materials

The functional parts are made of high quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All remaining functional parts are made of a low lead dezincification resistant gunmetal alloy and stainless steel. All materials used are state-of-the-art. All synthetic parts getting into contact with water fulfil the requirements of Germany's Public Health Office (KTW).

Installation

Use a DN 20 – DN 32 flange from the extensive Drufi flange programme to install the dosing system DP 1. Connect the dosing system DP 1 along with the water meter as a unit directly to the flange. When the pipes' position is too high or too low, the DP 1 system can be mounted separately from the water metering unit. The device cannot be operated without power supply.

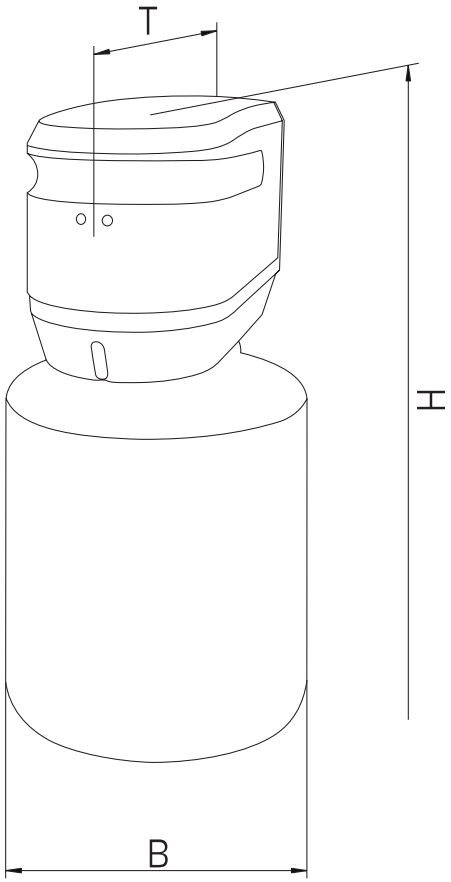
Thoroughly flush the pipe prior to installation. Install the required Drufi connection flanges in vertical or horizontal pipes without applying stresses. All electrical connections are pre-mounted in factory.

Technical specifications

Inlet pressure:	10 bar
Operating pressure:	min. 1.5 bar, max. 10 bar
Operating temperature:	max. 30 °C
Fluid:	potable water
Mounting position:	main axis vertical
Nominal flow rate:	4.0 m^3/h
Pressure loss at nominal flow rate:	0.7 bar
Power supply:	230 V / 50 Hz / 15 W
Dosing volume per filling:	48 - 80 m^3
Serial number:	3100.00.000

Maintenance

As the dosing pump operates automatically, only the empty mineral solution dispensers need to be replaced. The device should be serviced on a regular basis (EN 806 part 5). It is recommended to conclude a service contract with a qualified installer to ensure durable and safe operation.



Nominal size		DN 20 - DN 32
Dimensions	T (mm)	240
	H (mm)	min. 590
	B (mm)	190

Components / Order numbers

① **Cover**

② **Body of the pump**

③ **Dosing dispenser**

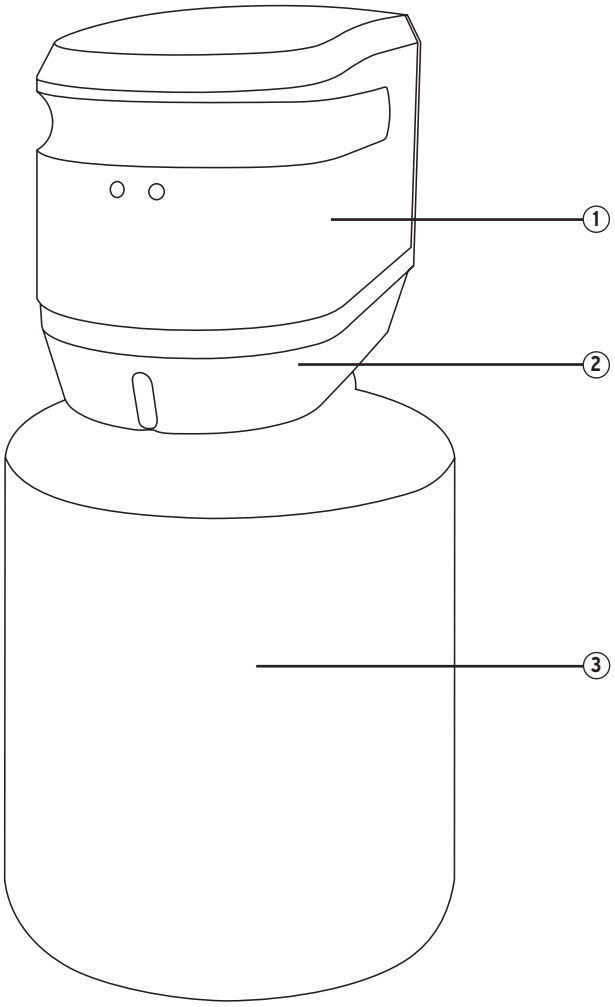
Mineral solutions, 6 Liter

Mineral solution type C
3100.00.900

Mineral solution type SW
3100.00.901

Mineral solution type W
3100.00.902

Mineral solution type H
3100.00.903



Dosing Pump 3100 DP 2

Addition of mineral solutions



Field of application

The dosing system DP 2 from SYR is designed to add mineral solutions to potable water. Mineral solutions prevent corrosion and scaling and increase the water's pH value; they are also used for example downstream of water softeners or for stabilizing the water hardness in copper or galvanised pipes as well as in mixed installations. The dosing system fulfils the requirements of the relevant German standard (DIN 19635).

Design

The dosing system DP 2 records the water flow with a water meter and determines the required amount of minerals accordingly; the minerals are released from the dosing dispensers and pumped into the pipe through a dosing hose. The range of mineral products includes solutions suitable for various applications (C: for copper pipes downstream of water softeners; SW: for galvanised pipes and aggressive water of hardness range 1; W: galvanised pipes for water hardness ranges 1 + 2 and mixed installations, respectively downstream of water softeners; H: for stabilizing the water hardness in the hardness ranges 3 + 4.)

Dosig pump 3100 - DP 2

Materials

The functional parts are made of high quality synthetic material. The body and the internal plastic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomers. All remaining functional parts are made of a low lead dezincification resistant gunmetal alloy and stainless steel. All materials used are state-of-the-art. All synthetic parts getting into contact with water fulfil the requirements of Germany's Public Health Office (KTW).

Installation

Use a DN 20 – DN 32 flange from the extensive Drufi flange programme to install the dosing system DP 2. The water meter unit has to be connected directly to the flange. A too high or too low position of the pipes is no problem. The device cannot be operated without power supply.

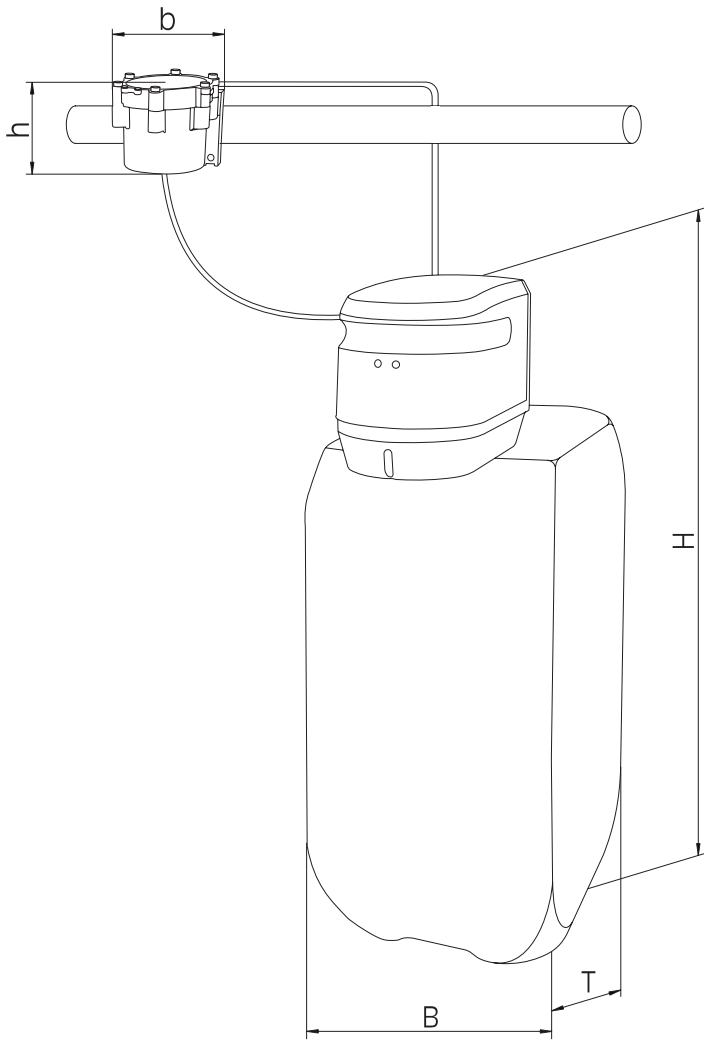
Thoroughly flush the pipe prior to installation. Install the required Drufi connection flanges in vertical or horizontal pipes without applying stresses. All electrical connections are pre-mounted in factory.

Technical specifications

Inlet pressure:	10 bar
Operating pressure:	min. 1.5 bar, max. 10 bar
Operating temperature:	max. 30 °C
Fluid:	potable water
Mounting position:	main axis vertical
Nominal flow rate:	11.0 m^3/h
Pressure loss at nominal flow rate:	0.8 bar
Power supply:	230 V / 50 Hz / 15 W
Dosing volume per filling:	200 - 330 m^3
Serial number:	3100.00.001

Maintenance

As the dosing pump operates automatically, only the empty mineral solution dispensers need to be replaced. The device should be serviced on a regular basis (EN 806 part 5). It is recommended to conclude a service contract with a qualified installer to ensure durable and safe operation.



Nominal size		DN 20 - DN 32
Dimensionos in mm	H (mm)	590
	B (mm)	260
	T (mm)	300
	h (mm)	105
	b (mm)	190

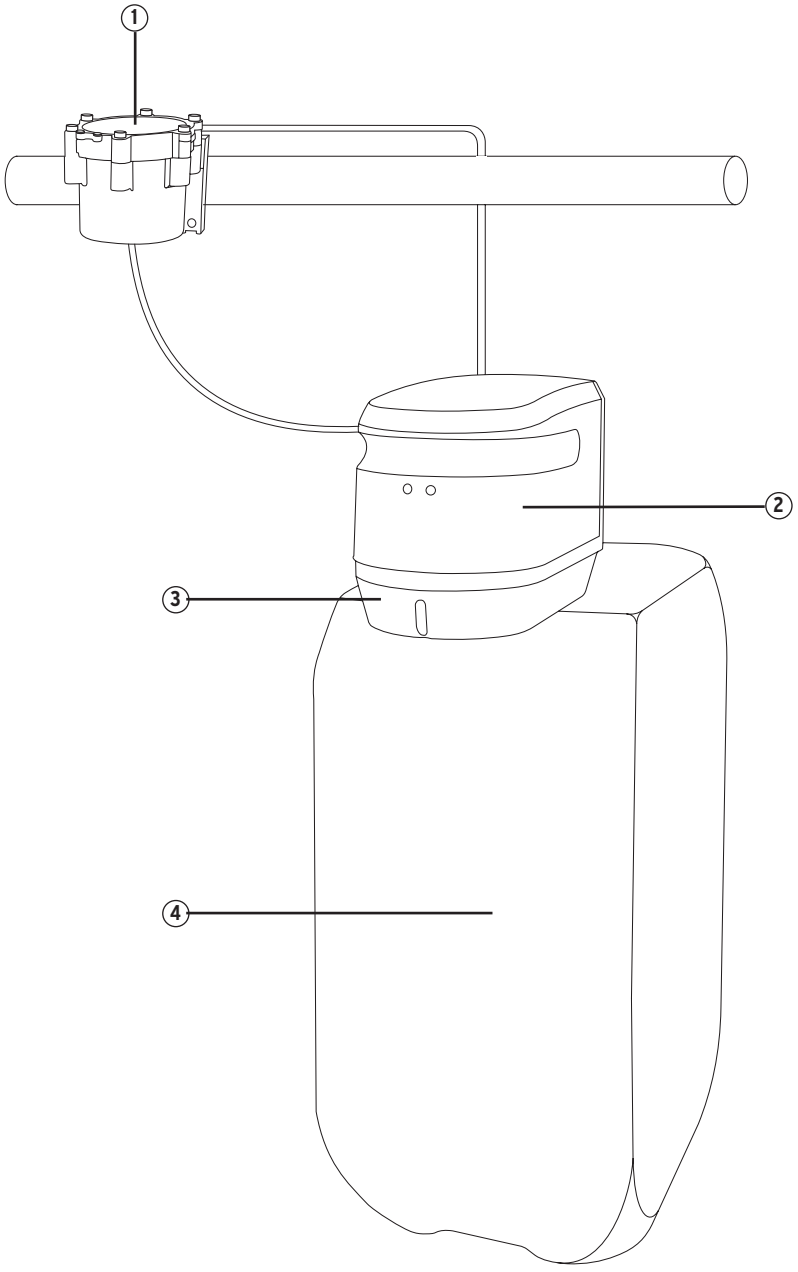
Components / Order numbers

① **Water meter unit**

② **Cover**

③ **Body of the pump**

④ **Dosing dispenser**



Mineral solutions, 25 Liter

Mineral solution type C
3100.00.904

Mineral solution type SW
3100.00.905

Mineral solution type W
3100.00.906

;ineral solution type H
3100.00.907

POU max-Filter 7315

3-in-1 backwash filter for potable water



Field of application

The POUmax filter (**P**oint-**o**f-**U**se) offers protection against impurities, colour alterations, odours and microorganisms as well as possible harmful residues, directly at the draw-off point (for instance under the sink). The POUmax combines a fine mesh filter, an activated carbon filter and an anti-bacteria filter in one single device. The filter is designed for manual backwash, which allows a longer service life.

Design

The POUmax filter includes a tap to draw off water directly, a 3-in-1-cartridge, a wall bracket and all screws and dowels required to mount the filter.

Materials

The functional parts are made of high quality synthetic material. The body and internal synthetic parts are made of shock-resistant thermoplast and the rubber parts of ageing resistant elastomers. Non-rusting steel is used for all remaining functional parts. The materials used are state-of-the-art.

Installation

The POUmax filter is particularly suitable for the assembly under the sink. When the tap is installed for instance on the sink or tabletop, filtered water can be drawn off easily.

Thoroughly flush the pipe prior to installation. Install the POUmax filter by means of the wall bracket below the sink or upstream of a special tap under consideration of the direction of flow. Provide for enough space under the filter for a receptacle collecting the backwashed water. Place the draw-off valve in the 11.5 mm bore in the table top or sink and fix it.

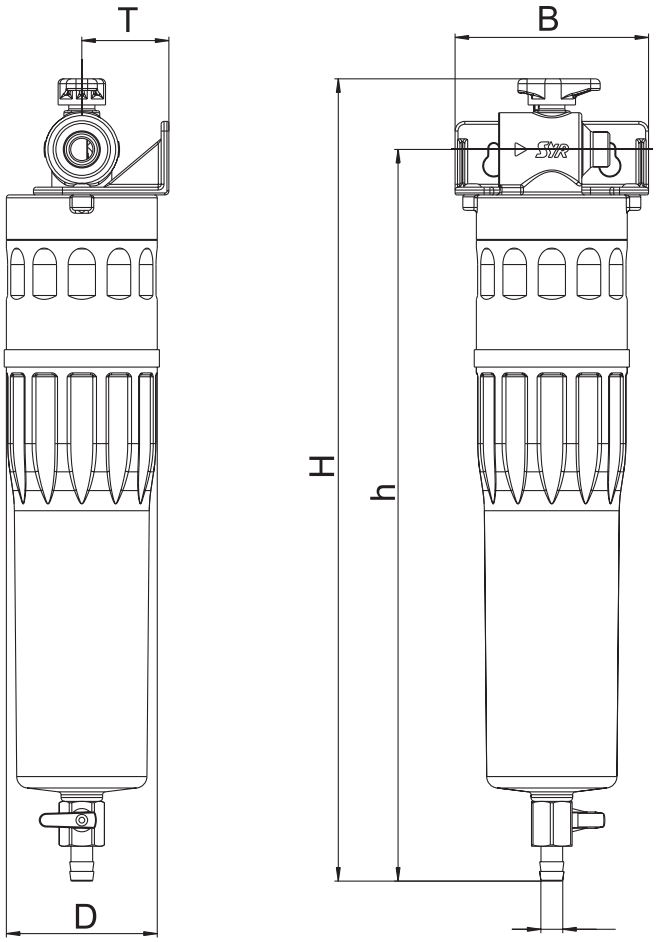
Technical specifications

Inlet pressure:	min. 2 bar, max. 10 bar
Operating temperature:	max. 30°C
Medium:	potable water
Mounting position:	main axis vertical with horizontal connecting flange
Nominal flow rate:	200 litres/h at ΔP 1,0 bar
Capacity:	ca. 7500 litres
Serial number:	7315 ...

Maintenance

The filter is backwashable and can be cleaned any time or according the amount of accumulated impurities by manual operation of the ball valve.

Exchange the cartridge unit when the maximum capacity is reached.



Observe the minimum distance of about 10 cm between the ball valve and the bottom to allow maintenance works!

Nominal size		DN 10
Dimensions in mm	H (mm)	415
	h (mm)	378
	T (mm)	45
	B (mm)	100
	D (mm)	75
	d (mm)	11

Components / Order numbers

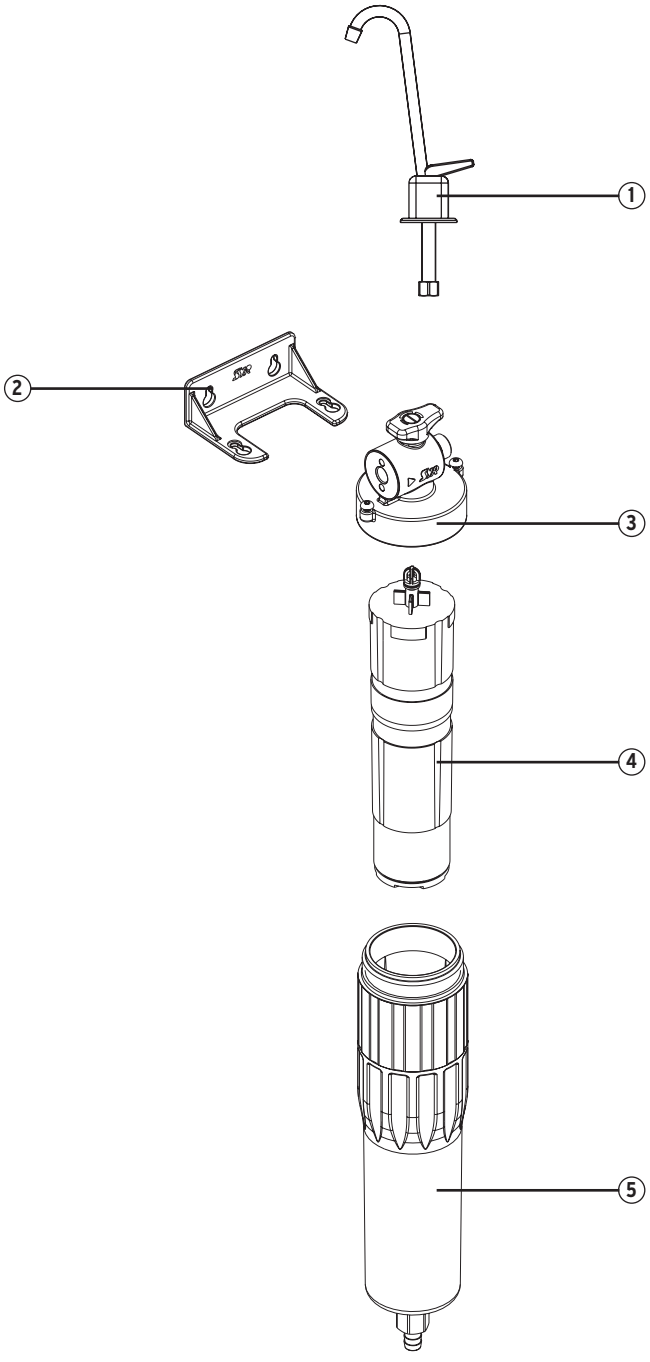
① **Tap**
7315.00.907

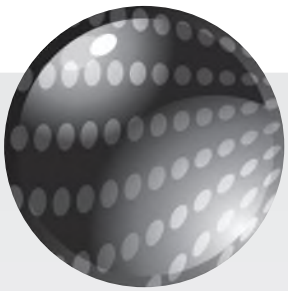
② **Wall bracket**

③ **Valve body**

④ **Cartridge unit**
7315.00.910

⑤ **Filter cap**





Filter technology

Technical Information	**80**
2315 Drufi+ DFR	**83**
2315 Drufi+ FR	**87**
2315 Drufi+ DFF	**91**
2315 Drufi+ FF	**95**
2315 Drufi+ max DFR	**99**
2315 Drufi+ max FR	**103**
2316 RSA	**107**
Flange programme	**111**
6380 Flange filter	**115**
2314 DUO DFR	**119**
2314 DUO FR	**123**
2314 DUO DFR HOT	**127**
2314 DUO FR HOT	**131**
5315 RATIO DFR	**135**
5315 RATIO FR	**139**
5315 RATIO DFR HOT	**143**
5315 RATIO FR HOT	**147**
5315 RATIO VARIO DFR	**151**
5315 RATIO VARIO FR	**155**
1998 JETFI	**159**

It is recommended to equip potable water installations with filters for the protection against corrosion. In case of metallic pipes, it is recommended to install a filter directly behind the water meter in the potable water system (fig. 1). Synthetic pipes should also be protected by a filter.

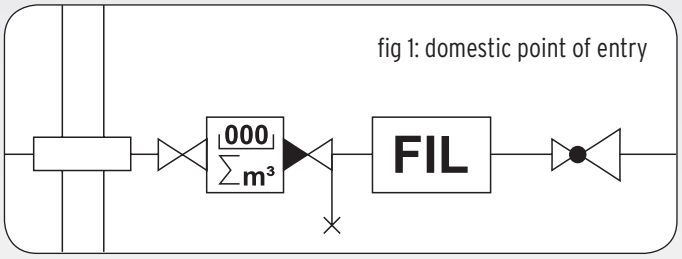


fig 1: domestic point of entry

As no installation is entirely made of synthetics without any metallic components requiring protection, it is generally recommended to install a filter in synthetic material pipes. It is unavoidable that small solid particles like rust particles or grains of sand get into the domestic installation along with the supplied potable water. These particles are corrosion products and encrustations that scaled off from the pipe walls and are brought along with the potable water from the public network on the way to the customer that is often many kilometres long. Such particles can cause corrosion damages like localised corrosion, clog showerheads and aerators or cause valves to malfunction.

These particles may cause the formation of corrosion inducing elements, especially in new domestic installations where the metallic pipe surfaces have no patina yet. These impurities depositing in the pipes prevent fresh oxygenous water from reaching the metal surfaces covered with particles. The locally diverging oxygen content of the potable water causes an electrochemical potential difference or a small local element, which leads to a local dissolution of the pipe material. This results in the dangerous local corrosion. This type of corrosion is dangerous, as the damage often occurs after a few months only.

Filters need to be serviced on a regular basis for hygienic reasons. It is highly recommen-ded that the installer informs the user about the considerable importance of regular maintenance.

Dimensioning

Formel: $P_{Fil} = P_g * \frac{V_s^2}{V_g^2}$

P_{Fil} = Pressure loss of the filter at peak flow rate

$\dot{V}_g$ = Nominal flow rate of the filter in l/s

P_g = Pressure loss of the filter at nominal flow rate (200 mbar)

$\dot{V}_S$ = Peak flow rate l/s

Select the filter size in accordance with the peak flow rate. In general, the connection dimensions of the filters correspond with the determined pipe diameters of the domestic piping system. However, it has to be verified that the calculated peak flow rate . V_S does not exceed the maximum nominal flow rate of the filter. The nominal flow rate that has been calculated with a pressure loss of 200 mbar has to be clearly indicated on the filter by the manufacturer. The formula on the right allows calculating the pressure loss of the filter for each determined peak flow rate V_S.

Experience has shown that the pressure loss of the filter increases between the maintenance intervals and reaches approximately the double value, which should already be considered at the planning stage.

Effectiveness

The effectiveness of a filter as a protection against corrosion can be measured with its capacity to retain corrosion relevant substances. A relevant criterion is therefore the mesh width, not in the sense of an optically measurable mesh width or pore size but in the sense of the results of practical tests determining the percentage of retained sediments in the filter. Two mesh widths were determined in these tests. The lower mesh width corresponds to the grain size of a substance in µm, which is retained by this filter with a percentage by mass of 10 %. The upper mesh width corresponds to the grain size of a substance in µm, which is retained by this filter with a percentage by mass of 90 %.

Cleaning

There are currently two different cleaning methods for the filter inserts that have determined the filter construction.

1. **Automatic cleaning by backwashing – backwashable filters**
2. **Exchange of filter insert – non backwashable filters.**

Independently of the method, during the cleaning process, neither deposited substances nor other impurities are allowed to get into the potable water system. This means for the backwash filter that filtered water can be drawn off even during the backwashing process.



Backwashable filter

DRUFI+ DFR 2315

Potable water flows through the filter insert in reverse direction in order to flush out and drain the particles retained in the filter.

Advantages: the filter backwash is simple and absolutely hygienic. The quick, unproblematic and cost-saving backwash operation can be carried out by the user himself. As an option, backwashing can be triggered automatically, which allows maintenance on a regular basis without intervention by the user. There is no interruption of the potable water supply.

Backwashing should be carried out every six months at the latest.



Non backwashable filter

DRUFI+ DFF 2315

For cleaning the filter insert has to be exchanged; the reuse of manually cleaned filter inserts is not admissible for hygienic reasons.

The disposable filter insert having a considerably bigger surface than the backwash filter can be used up to 6 months (according to water conditions) but should be serviced every 6 months at the latest. The filter inserts are easy to exchange without tools and without hygienic impairment of the potable water.

Drufi+ DFR 2315

Semi-automatic backwash filter with pressure reducing valve



Field of application

SYR Drufi+ DFR is a valve combination specially designed for installation at the domestic point of entry. It includes a semi-automatic backwash filter and a pressure reducing valve in accordance with the European standard EN 1567. The Drufi+ DFR has undergone acoustic testing and is suited for installation in residential buildings. When connected to a drain pipe of nominal size DN 50, the tundish leads the backwash water into the sewage system. The integrated construction form results in a compact unit, so that installation is pos-sible even in confined spaces. Use the Drufi flange programme for installation in the pipe. The flanges can be mounted in ver-tical and horizontal pipework. The integral pressure reducing valve allows individual pressure setting.

Design

The Drufi+ DFR is composed of a mecha-nical semi-automatic backwash filter. It also includes a flange seal, hexagon socket screws for the flange assembly and an as-sembly key for the hexagon socket screws. The pressure reducer insert is factory-set to an outlet pressure of 4 bar, the external adjustment ring allowing individual pressure setting ranging between 1.5 and 6 bar. The Drufi+ DFR is also equipped with an outlet pressure manometer.

2315 Drufi+ DFR

Materials

The filter cap is made of high-quality syn-thetic material. The body and the internal synthetic parts are made of shock-resistant thermoplast, the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a low-lead dezincification resistant gunmetal alloy or stainless steel. The ring seals are made of asbestos-free fibre. All materials are tested and certified by an internationally recognised test institu-te in Germany (DVGW). All synthetic compo-nents getting in contact with water desi-gned for human consumption are approved by the German Public Health Office (KTW).

Installation

It is recommended to install a filter in a drinking water system to protect it against corrosion and many applications require pressure reducing valves. Both valves shall be installed directly behind the water mete-ring system and be easily accessible. In the Drufi+ DFR, the filter is located upstream of the pressure reducing valve in order to protect the latter.

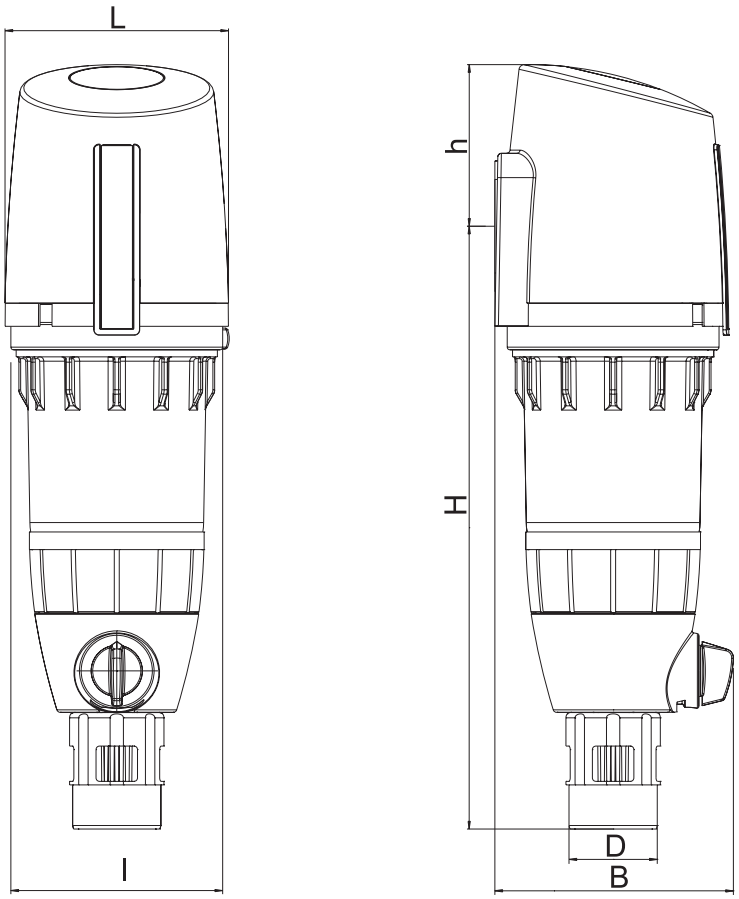
Thoroughly flush the pipework prior to installation. Use filtered water from the first onset of the drinking water installation. Always use a flange to mount the Drufi+ DFR, which allows installation in vertical and horizontal pipes. The main axis of the filter has to be vertical. Install the suitable flange in the pipework without applying stresses. Attach it to the filter body with 4 stainless steel screws; pull them pressure-tight crosswise with the key included in the delivery.

Technical Data

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30 °C
Mounting position:	any, with angle tundish also in horizontal position
Fluid:	potable water
Mesh width:	90 µm
Flow rate capacity:	DN 20: 2,3 m^3/h at 1,1 bar Δp DN 25: 3,6 m^3/h at 1,1 bar Δp DN 32: 5,8 m^3/h at 1,1 bar Δp
Serial number:	2315.00.080

Maintenance

When the flow rate is reduced due to increased pressure loss, but every 6 months at the latest, the filter needs to be serviced by backwashing. The backwash system is semi-automatic. Open and close the ball valve to trigger the automatic backwash operation of the com-plete filter. Even during backwashing, the device continues to supply filtered water into the potable water system. When the filter has been exchanged, set the maintenance indicator by means of the slide to the month of the next backwash operation. Use the adjustment ring to set the pressure reducing valve at static pressure to the desired pressure ranging between 1.5 and 6 bar. The Drufi+ DFR can be retrofitted with an automatic backwash system to become a fully automatic backwash filter.



Nominal size		DN 20 - DN 32
	A	G ¾" - 1 ¼"
Dimensions	H (mm)	341,5
	h (mm)	92
	L (mm)	127
	I (mm)	120
	D (mm)	50
	B (mm)	135

Accessories Automatic backwash system: 2316.00.080

Components / Order numbers

① **Cover**
2315.01.919

② **Clip**
2315.01.910

③ **Pressure gauge**
2315.01.920

④ **Valve body**
2315.01.918

⑤ **Filter insert**
2315.00.930

⑥ **Pressure reducer cartridge**
2315.01.925 (up to 2015)
2315.01.970 (from 2016)

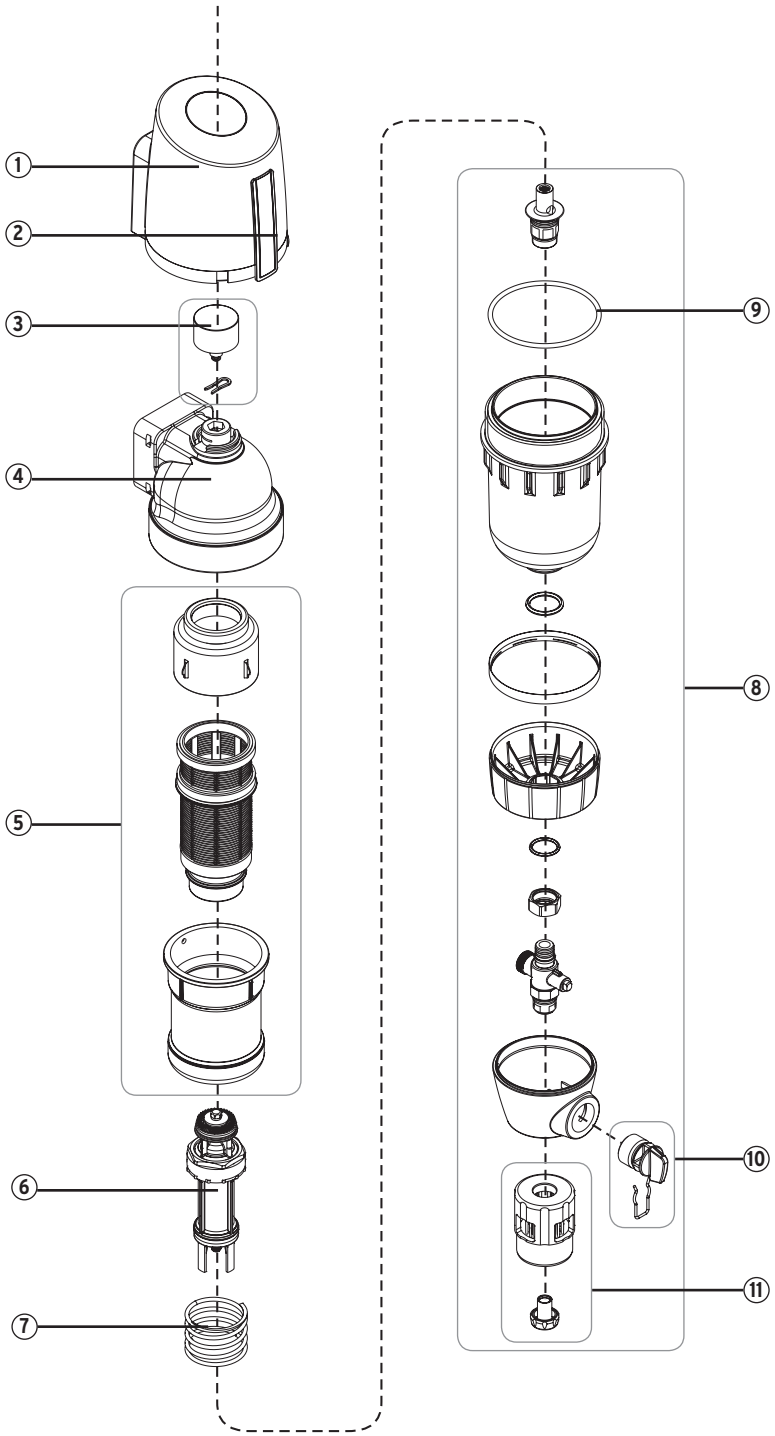
⑦ **Spring**
2315.00.961

⑧ **Filter cap**
2315.01.914 (up to 2015)
2315.01.971 (from 2016)

⑨ **O-Ring filter cap**
2315.01.922

⑩ **Knob**
2315.01.923

⑪ **Tundish**
2315.01.921



Drufi+ FR 2315

Semi-automatic backwash filter



Field of application

SYR Drufi+ FR is a valve combination specially designed for installation at the domestic point of entry with a semi-automatic backwash filter. The Drufi+ FR has undergone acoustic testing and is suited for installation in residential buildings. When connected to a drain pipe of nominal size DN 50, the tundish leads the backwash water into the sewage system.

The integrated construction form results in a compact unit, so that installation is possible even in confined spaces. Use the Drufi flange programme for installation in the pipe. The flanges can be mounted in vertical and horizontal pipework. The integral pressure reducing valve allows individual pressure setting.

Design

The Drufi+ FR is composed of a mechanical semi-automatic backwash filter. It also includes a flange seal, hexagon socket screws for the flange assembly and an assembly key for the hexagon socket screws.

Materials

The filter cap is made of high-quality synthetic material. The body and the internal synthetic parts are made of shock-resistant thermoplast, the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a low-lead dezincification resistant gunmetal alloy or stainless steel. The ring seals are made of asbestos-free fibre. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is recommended to install a filter in a drinking water system to protect it against corrosion and many applications require pressure reducing valves. Both valves shall be installed directly behind the water metering system and be easily accessible. In the Drufi+ FR, the filter is located upstream of the pressure reducing valve in order to protect the latter.

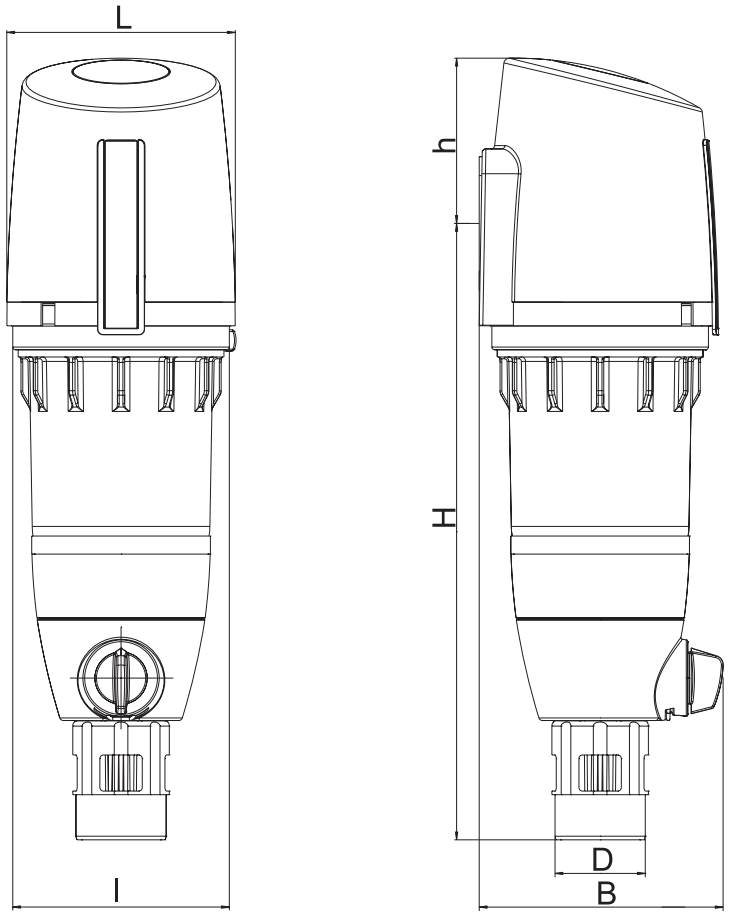
Thoroughly flush the pipework prior to installation. Use filtered water from the first onset of the drinking water installation. Always use a flange to mount the Drufi+ FR, which allows installation in vertical and horizontal pipes. The main axis of the filter has to be vertical. Install the suitable flange in the pipework without applying stresses. Attach it to the filter body with 4 stainless steel screws; pull them pressure-tight crosswise with the key included in the delivery.

Technical Data

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30°C
Mounting position:	any, with angle tundish also in horizontal position
Fluid:	potable water
Mesh width:	90 µm
ABP-No.:	P-IX 6951/I
Flow rate capacity:	DN 20: 3,0 m^3/h at 0.2 bar Δp
	DN 25: 3,8 m^3/h at 0.2 bar Δp
	DN 32: 3,9 m^3/h at 0.2 bar Δp
	DN 20: 4,9 m^3/h at 0.5 bar Δp
	DN 25: 6,1 m^3/h at 0.5 bar Δp
	DN 32: 6,3 m^3/h at 0.5 bar Δp
Serial number:	2315.00.081

Maintenance

When the flow rate is reduced due to increased pressure loss, but every 6 months at the latest, the filter needs to be serviced by backwashing.
The backwash system is semi-automatic. Open and close the ball valve to trigger the automatic backwash operation of the complete filter. Even during backwashing, the device continues to supply filtered water into the potable water system. When the filter has been exchanged, set the maintenance indicator by means of the slide to the month of the next backwash operation. The Drufi+ FR can be retrofitted with an automatic backwash system to become a fully automatic backwash filter.



Nominal size		DN 20 - DN 32
	A	G ¾" - 1 ¼"
Dimensions	H (mm)	341,5
	h (mm)	92
	L (mm)	127
	l (mm)	120
	D (mm)	50
	B (mm)	135

Accessories Automatic backwash system: 2316.00.080

Components / Order numbers

① **Cover**
2315.01.919

② **Clip**
2315.01.910

③ **Valve body**
2315.00.929

④ **Filter insert**
2315.00.930

⑤ **Supporting part**
2315.00.932

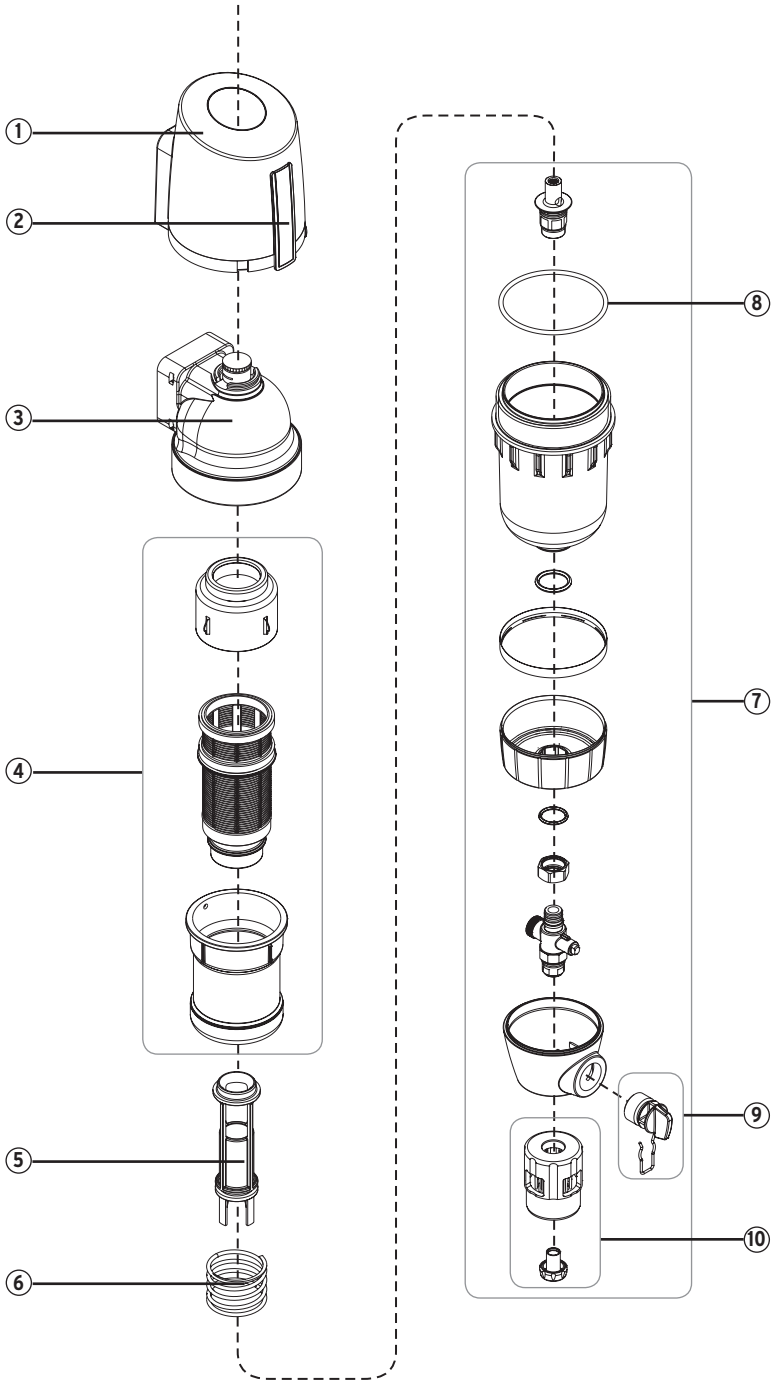
⑥ **Spring**
2315.00.961

⑦ **Filter cap**
2315.01.915

⑧ **O-Ring filter cap**
2315.01.922

⑨ **Knob**
2315.01.923

⑩ **Tundish**
2315.01.921



Drufi+ DFF 2315

Cartridge filter with pressure reducing valve and Memoryclip



Field of application

SYR Drufi+ DFF is a valve combination specially designed for installation at the domestic point of entry. It includes a cartridge filter and a pressure reducing valve in accordance with the European standard EN 1567. The Drufi+ DFF has undergone acoustic testing and is suited for installation in residential buildings.

The integrated construction form results in a compact unit, so that installation is possible even in confined spaces.
Use the Drufi flange programme for installation in the pipe. The flanges can be mounted in vertical and horizontal pipework. The integral pressure reducing valve allows water-saving pressure setting.

Design

The Drufi+ DFF is composed of a cartridge filter with filtering elements made of synthetic material. It also includes a flange seal, hexagon socket screws for the flange assembly, an assembly key for the hexagon socket screws and a filter cap key for the filter maintenance. The pressure reducer insert is factory-set to an outlet pressure of 4 bar, the external adjustment ring allowing individual pressure setting ranging between 1.5 and 6 bar. The Drufi+ DFF is also equipped with an outlet pressure manometer.

Materials

The filter cap is made of high-quality synthetic material. The body and the internal synthetic parts are made of shock-resistant thermoplast, the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a low-lead dezincification resistant gunmetal alloy or stainless steel. The ring seals are made of asbestos-free fibre. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is recommended to install a filter in a drinking water system to protect it against corrosion and many applications require pressure reducing valves. Both valves shall be installed directly behind the water metering system and be easily accessible. In the Drufi+ DFF, the filter is located upstream of the pressure reducing valve in order to protect the latter.

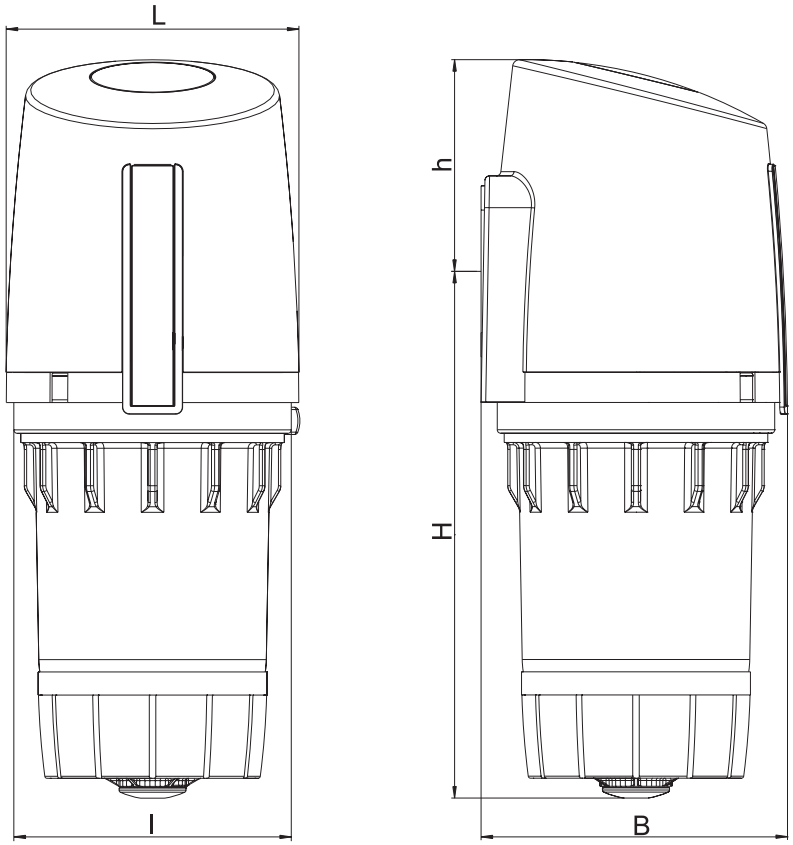
Thoroughly flush the pipework prior to installation. Use filtered water from the first onset of the drinking water installation. Always use a flange to mount the Drufi+ DFF, which allows installation in vertical and horizontal pipes. The main axis of the filter has to be vertical. Install the suitable flange in the pipework without applying stresses. Attach it to the filter body with 4 stainless steel screws; pull them pressure-tight crosswise with the key included in the delivery.

Technical data

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30 °C
Mounting position:	main axis vertical
Fluid:	potable water
Mesh width:	90 µm
ABP-No.:	P-IX 6952/I
Flow rate capacity:	DN 20: 2.3 m^3/h at 1.1 bar Δp
	DN 25: 3.6 m^3/h at 1.1 bar Δp
	DN 32: 5,8 m^3/h at 1.1 bar Δp
Serial number:	2315.00.082

Maintenance

Make a visual inspection every 2 months to check if impurities have accumulated on the filter material. When the flow rate is reduced due to increased pressure loss, but every 6 months at the latest, cartridge maintenance is due and the filter material has to be exchanged. When the filter has been exchanged, set the maintenance indicator by means of the slide to the month of the next maintenance interval.
No special tools are required for the filter exchange. A filter cap key designed to loosen the filter cap is included in the delivery. Use the adjustment ring to set the pressure reducing valve at static pressure to the desired pressure range between 1.5 and 6 bar.



Nominal size		DN 20 - DN 32
	A	G ¾" - 1 ¼"
Dimensions	H (mm)	228
	h (mm)	92
	L (mm)	127
	l (mm)	120
	B (mm)	135

Components / Order numbers

① **Cover**
2315.01.919

② **Clip**
2315.01.910

③ **Pressure gauge**
2315.01.920

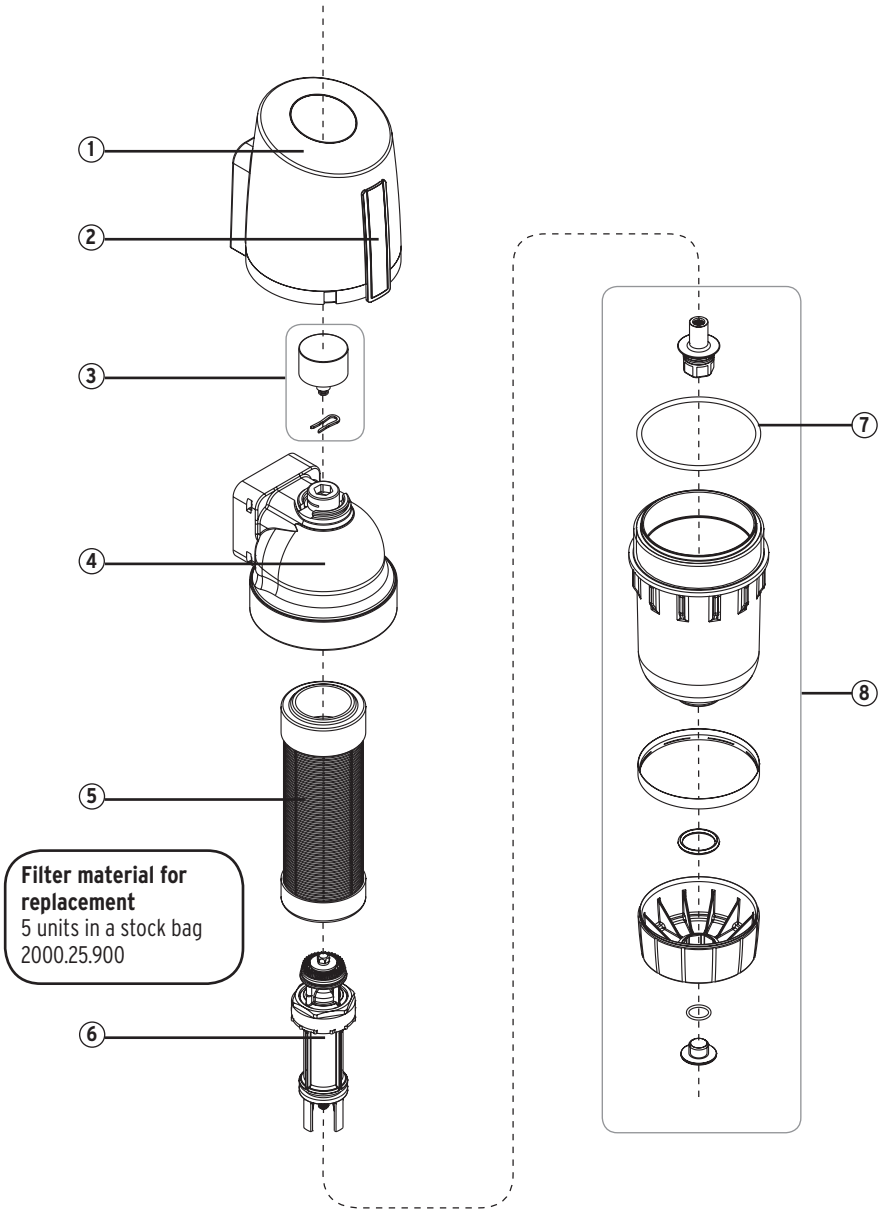
④ **Valve body**
2315.01.918

⑤ **Filter material for replacement (5 pieces)**
2000.25.900

⑥ **Pressure reducer cartridge**
2315.01.925

⑦ **O-Ring filter cap**
2315.01.922

⑦ **Filter cap**
2315.01.916



Drufi+ FF 2315

Cartridge filter



Field of application

SYR Drufi+ FF is a valve combination specially designed for installation at the domestic point of entry with a cartridge filter. The Drufi+ FF has undergone acoustic testing and is suited for installation in residential buildings.
The integrated construction form results in a compact unit, so that installation is possible even in confined spaces.
Use the Drufi flange programme for installation in the pipe. The flanges can be mounted in vertical and horizontal pipework.

Design

The Drufi+ FF is composed of a cartridge filter with filtering elements made of synthetic material. It also includes a flange seal, hexagon socket screws for the flange assembly, an assembly key for the hexagon socket screws and a filter cap key for the filter maintenance.

Materials

The filter cap is made of high-quality synthetic material. The body and the internal synthetic parts are made of shock-resistant thermoplast, the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a low-lead dezincification resistant gunmetal alloy or stainless steel. The ring seals are made of asbestos-free fibre. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is recommended to install a filter in a drinking water system to protect it against corrosion and many applications require pressure reducing valves. Both valves shall be installed directly behind the water metering system and be easily accessible. In the Drufi+ FF, the filter is located upstream of the pressure reducing valve in order to protect the latter.

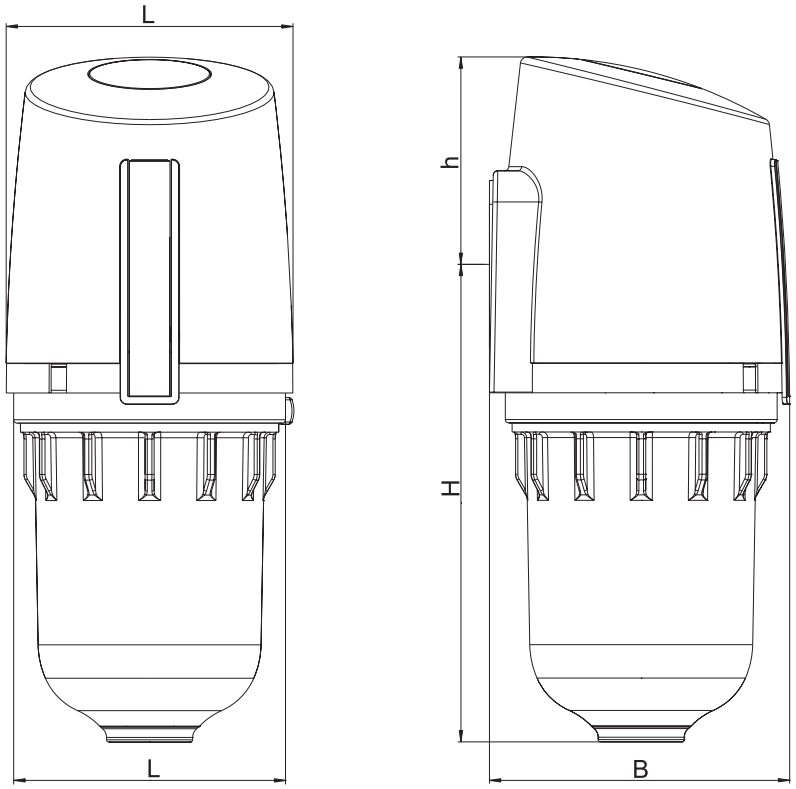
Thoroughly flush the pipework prior to installation. Use filtered water from the first onset of the drinking water installation. Always use a flange to mount the Drufi+ FF, which allows installation in vertical and horizontal pipes. The main axis of the filter has to be vertical. Install the suitable flange in the pipework without applying stresses. Attach it to the filter body with 4 stainless steel screws; pull them pressure-tight crosswise with the key included in the delivery.

Technical Data

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30 °C
Mounting position:	main axis vertical
Fluid:	potable water
Mesh width:	90 µm
ABP-No.:	P-IX 6952/I
Flow rate capacity:	DN 20: 3,0 m^3/h at 0.2 bar Δp
	DN 25: 3,8 m^3/h at 0.2 bar Δp
	DN 32: 3,9 m^3/h at 0.2 bar Δp
	DN 20: 4,9 m^3/h at 0.5 bar Δp
	DN 25: 6,1 m^3/h at 0.5 bar Δp
	DN 32: 6,3 m^3/h at 0.5 bar Δp
Serial number:	2315.00.083

Maintenance

Make a visual inspection every 2 months to check if impurities have accumulated on the filter material. When the flow rate is reduced due to increased pressure loss, but every 6 months at the latest, cartridge maintenance is due and the filter material has to be exchanged. When the filter has been exchanged, set the maintenance indicator by means of the slide to the month of the next maintenance interval.
No special tools are required for the filter exchange. A filter cap key designed to loosen the filter cap is included in the delivery.



Nominal size		DN 20 - DN 32
	A	G ¾" - 1 ¼"
Dimensions	H (mm)	211
	h (mm)	92
	L (mm)	127
	l (mm)	120
	B (mm)	133

Components / Order numbers

① **Cover**
2315.01.919

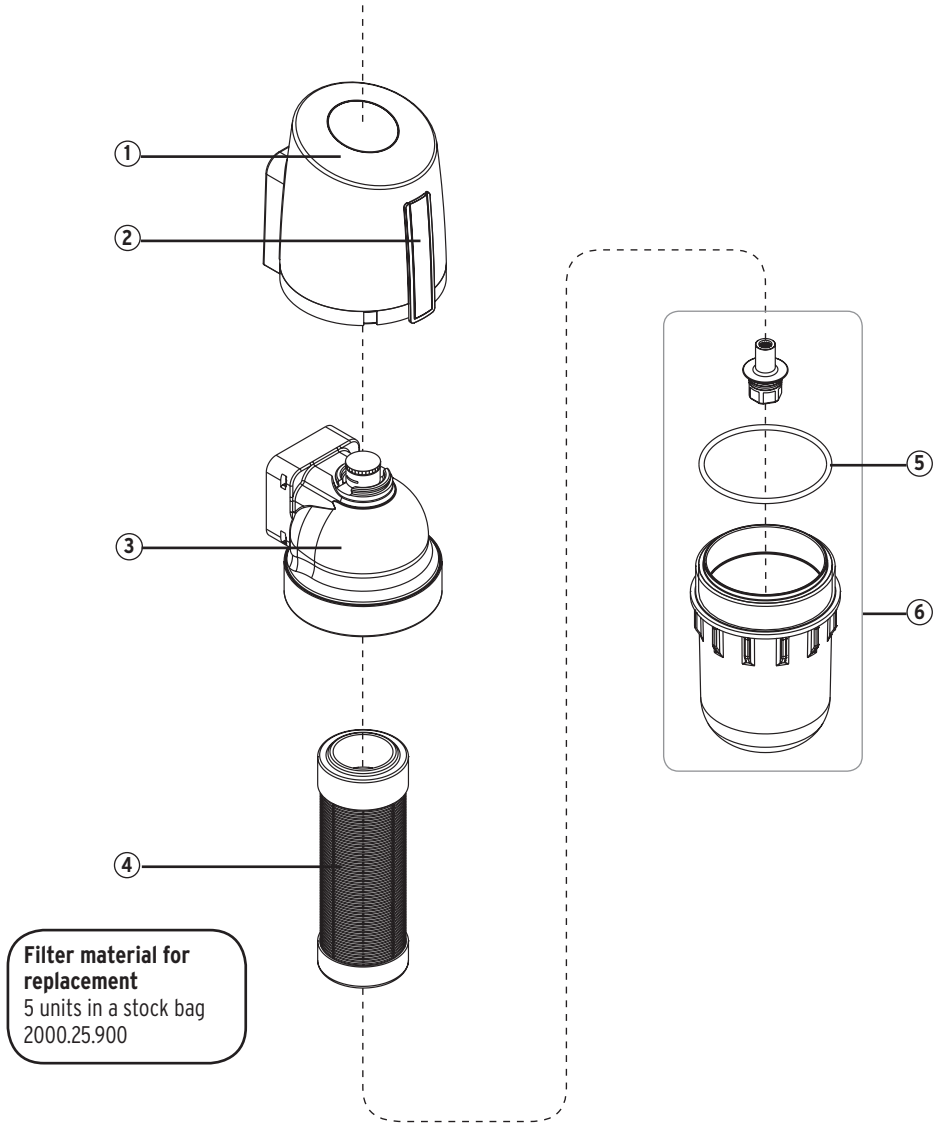
② **Clip**
2315.01.910

③ **Valve body**
2315.00.929

④ **Filter material for replacement (5 pieces)**
2000.25.900

⑤ **O-Ring filter cap**
2315.01.922

⑥ **Filter cap**
2315.01.917



Filter material for replacement
5 units in a stock bag
2000.25.900

Drufi+ max DFR 2315

Semi-automatic backwash filter with pressure reducing valve DN 32 - DN 50



Field of application

SYR Drufi+ max DFR is a valve combination specially designed for installation at the domestic point of entry. It includes a semi-automatic backwash filter and a pressure reducing valve in accordance with the European standard EN 1567. The integrated construction form results in a compact unit, so that installation is possible even in confined spaces. Use the Drufi+ max universal flange (order separately) for installation in the pipe. This flange can be mounted in vertical and horizontal pipework. The ball valve is supplied with a tundish for the connection of a synthetic pipe of DN 50.

Design

The Drufi+ max DFR is composed of a mechanical semi-automatic backwash filter made of stainless steel. It also includes a flange seal, hexagon socket screws for the flange assembly and an assembly key for the hexagon socket screws. The pressure reducing valve is factory-set to 4 bar and the external adjustment knob allows individual pressure setting between 1.5 and 6 bar. Manometers for inlet and outlet pressure are also included in the delivery.

Materials

The filter cap is made of high-quality synthetic material. The body and the internal synthetic parts are made of shock-resistant thermoplast, the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a low-lead dezincification resistant gunmetal alloy or stainless steel. The ring seals are made of asbestos-free fibre. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is recommended to install a filter in a drinking water system for the protection against corrosion and many applications require pressure reducing valves. Both valves shall be installed directly behind the water metering system and be easily accessible. In the Drufi+ max DFR, the filter is installed upstream of the pressure reducing valve in order to protect the latter.

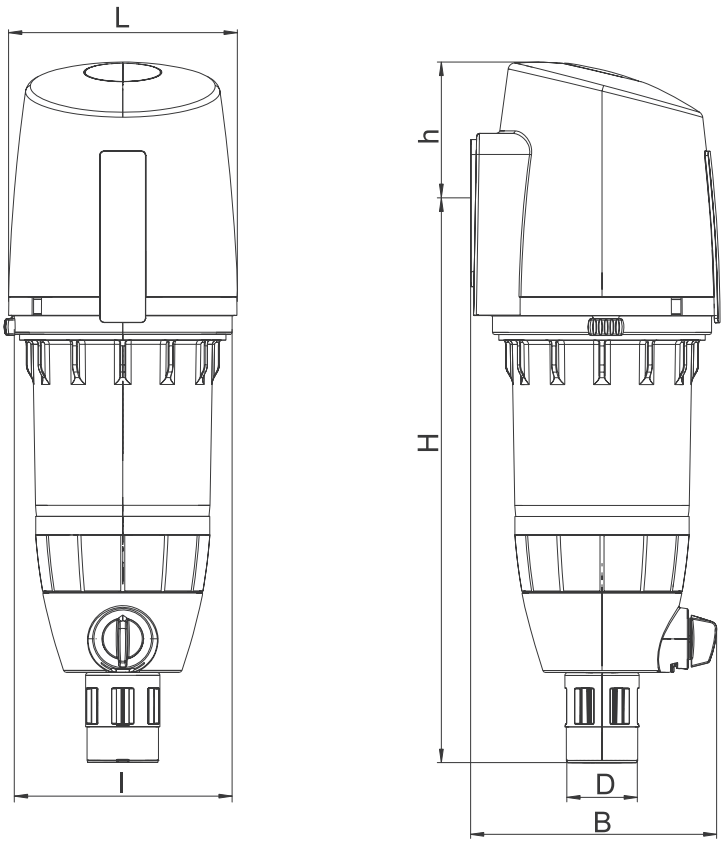
Thoroughly flush the pipework prior to installation. Use filtered water from the first onset of the drinking water installation. Always use a universal flange to mount the Drufi+ max DFR, which allows installation in vertical and horizontal pipes. The main axis of the filter has to be vertical. Install the suitable flange in the pipework without applying stresses. Attach it to the filter body with 4 stainless steel screws; pull them pressure-tight crosswise with the key included in the delivery.

Technical data

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30 °C
Mounting position:	any, with angle tundish also in horizontal position
Fluid:	potable water
Mesh width:	90 µm (lower); 125 µm (upper)
Flow rate:	DN 32: 5.8 m^3/h at 1.1 bar Δp DN 40: 9.1 m^3/h at 1.1 bar Δp DN 50: 14.0 m^3/h at 1.1 bar Δp
Serial number:	2315.00.045

Maintenance

When the flow rate is reduced due to increased pressure loss, but every 6 months at the latest, the filter needs to be serviced by backwashing. The backwash system of the Drufi max DFR is semi-automatic. Open and close the ball valve to trigger the automatic backwash operation of the complete filter. Even during backwashing, the device continues to supply filtered water into the potable water system. The Drufi max DFR can be retrofitted with the automatic backwash system RSA (2316.00.081) to become a fully automatic backwash filter.



Connection flange is not included in the delivery

Nominal size		DN 32 - DN 50
Dimensions in mm	L (mm)	159,6
	l (mm)	153,4
	H (mm)	384,5
	h (mm)	105,7
	D (mm)	50
	B (mm)	172,3

Accessories

Universal flange Drufi max: DN 32: 2315.32.015
DN 40: 2315.40.005
DN 50: 2315.50.005

Automatic backwash system RSA: 2316.00.081

Components / Order numbers

① **Protectting cap**
2315.01.928

② **Manometer**
0-10 bar
2315.01.930

③ **Valve body**
2315.01.931

④ **Filter**
2315.01.932

⑤ **Pressure reducer cartridge**
2315.01.934

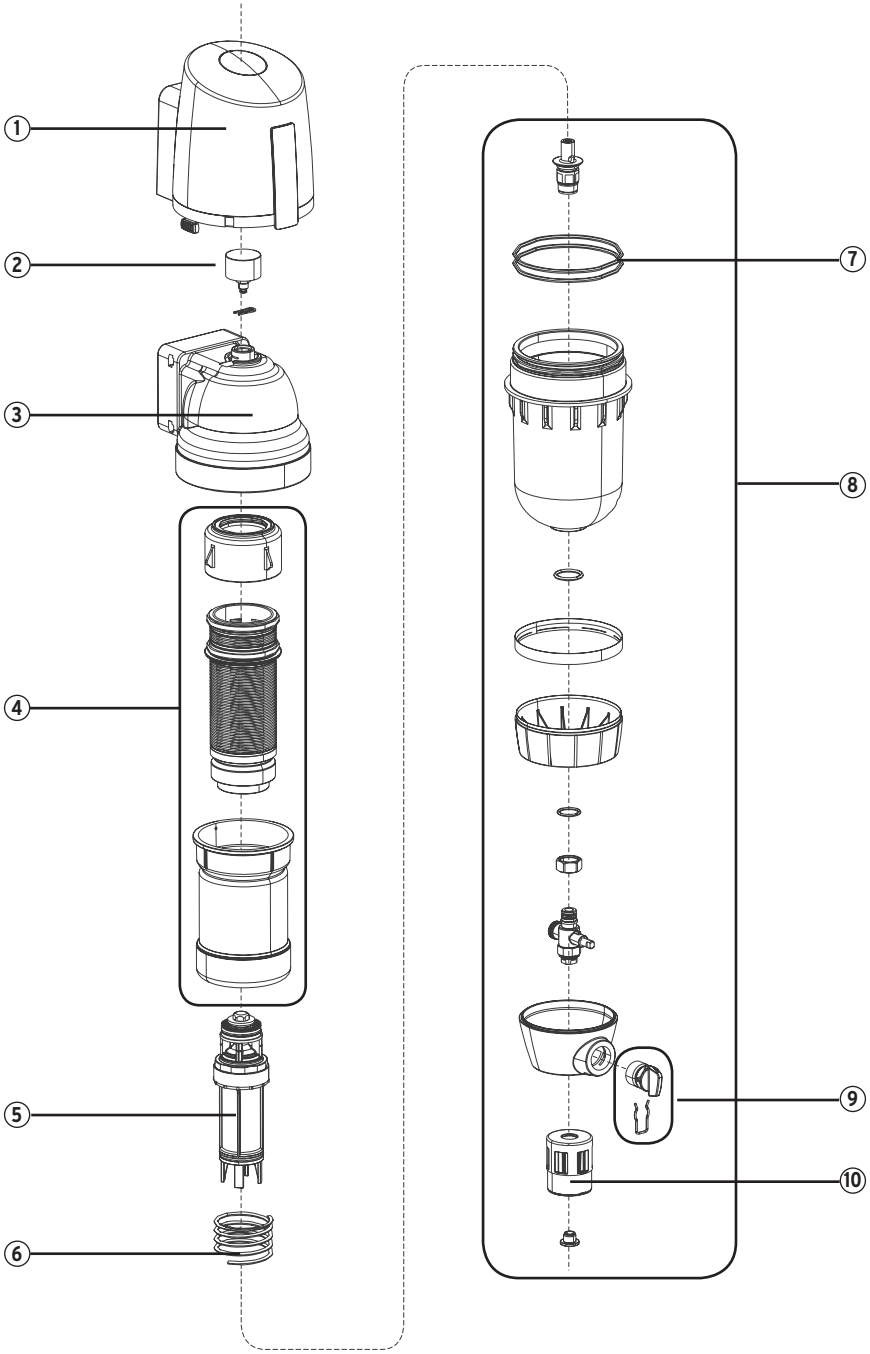
⑥ **Spring**
2315.01.935

⑦ **O-Ring**
2315.01.940

⑧ **Filter cap**
2315.01.936

⑨ **Knob, complete**
2315.01.941

⑩ **Tundish, complete**
2315.01.943



Drufi+ max FR 2315

Semi-automatic backwash filter DN 32 - DN 50



Field of application

SYR Drufi+ max FR is a compact semi-automatic backwash filter specially designed for installation at the domestic point of entry. The construction form results in a compact unit, so that installation is possible even in confined spaces. Use the Drufi+ max universal flange (order separately) for installation in the pipe. This flange can be mounted in vertical and horizontal pipework. The ball valve is supplied with a tundish for the connection of a synthetic pipe of DN 50.

Design

The Drufi+ max FR is composed of a mechanical semi-automatic backwash filter made of stainless steel. It also includes a flange seal, hexagon socket screws for the flange assembly and an assembly key for the hexagon socket screws.

2315 Drufi+ max FR

Materials

The filter cap is made of high-quality synthetic material. The body and the internal synthetic parts are made of shock-resistant thermoplast, the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a low-lead dezincification resistant gunmetal alloy or stainless steel. The ring seals are made of asbestos-free fibre. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is recommended to install a filter in a drinking water system for the protection against corrosion. System components and appliances located downstream should also be protected by a filter. Install the Drufi+ max FR directly behind the water metering system and ensure that it is easily accessible.

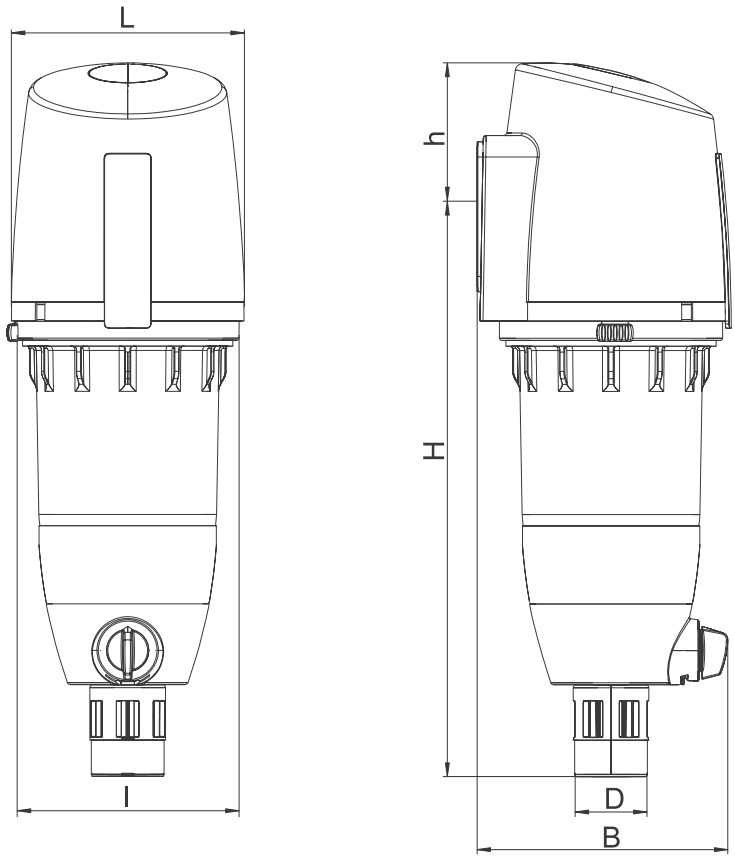
Thoroughly flush the pipework prior to installation. Use filtered water from the first onset of the drinking water installation. Always use a universal flange to mount the Drufi+ max FR, which allows installation in vertical and horizontal pipes. The main axis of the filter has to be vertical. Install the suitable flange in the pipework without applying stresses. Attach it to the filter body with 4 stainless steel screws; pull them pressure-tight crosswise with the key included in the delivery.

Technical data

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30°C
Mounting position:	any, with angle tundish also in horizontal position
Fluid:	potable water
Mesh width:	90 µm (lower); 125 µm (upper)
Flow rate:	DN 32: 8.4 m^3/h at 0.2 bar Δp
	DN 40: 9.0 m^3/h at 0.2 bar Δp
	DN 50: 9.2 m^3/h at 0.2 bar Δp
	DN 32: 13.0 m^3/h at 0.5 bar Δp
	DN 40: 14.5 m^3/h at 0.5 bar Δp
	DN 50: 15.0 m^3/h at 0.5 bar Δp
Serial number:	2315.00.046

Maintenance

When the flow rate is reduced due to increased pressure loss, but every 6 months at the latest, the filter needs to be serviced by backwashing.
The backwash system of the Drufi+ max FR is semi-automatic. Open and close the ball valve to trigger the automatic backwash operation of the complete filter. Even during backwashing, the device continues to supply filtered water into the potable water system. The Drufi+ max FR can be retrofitted with the automatic backwash system RSA (2316.00.081) to become a fully automatic backwash filter.



Connection flange not included in the delivery

Nominal size		DN 32
Dimensions in mm	L (mm)	159,6
	l (mm)	153,4
	H (mm)	384,5
	h (mm)	105,7
	T (mm)	50
	D (mm)	172,3

Accessories

Universal flange Drufi max:	DN 32: 2315.32.015 DN 40: 2315.40.005 DN 50: 2315.50.005
Automatic backwash system RSA:	2316.00.081

Components / Order numbers

① **Protecting cap**
2315.01.928

② **Manometer**
0-10 bar
2315.01.930

③ **Valve body**
2315.01.931

④ **Filter**
2315.01.932

⑤ **Supporting part**
2315.01.933

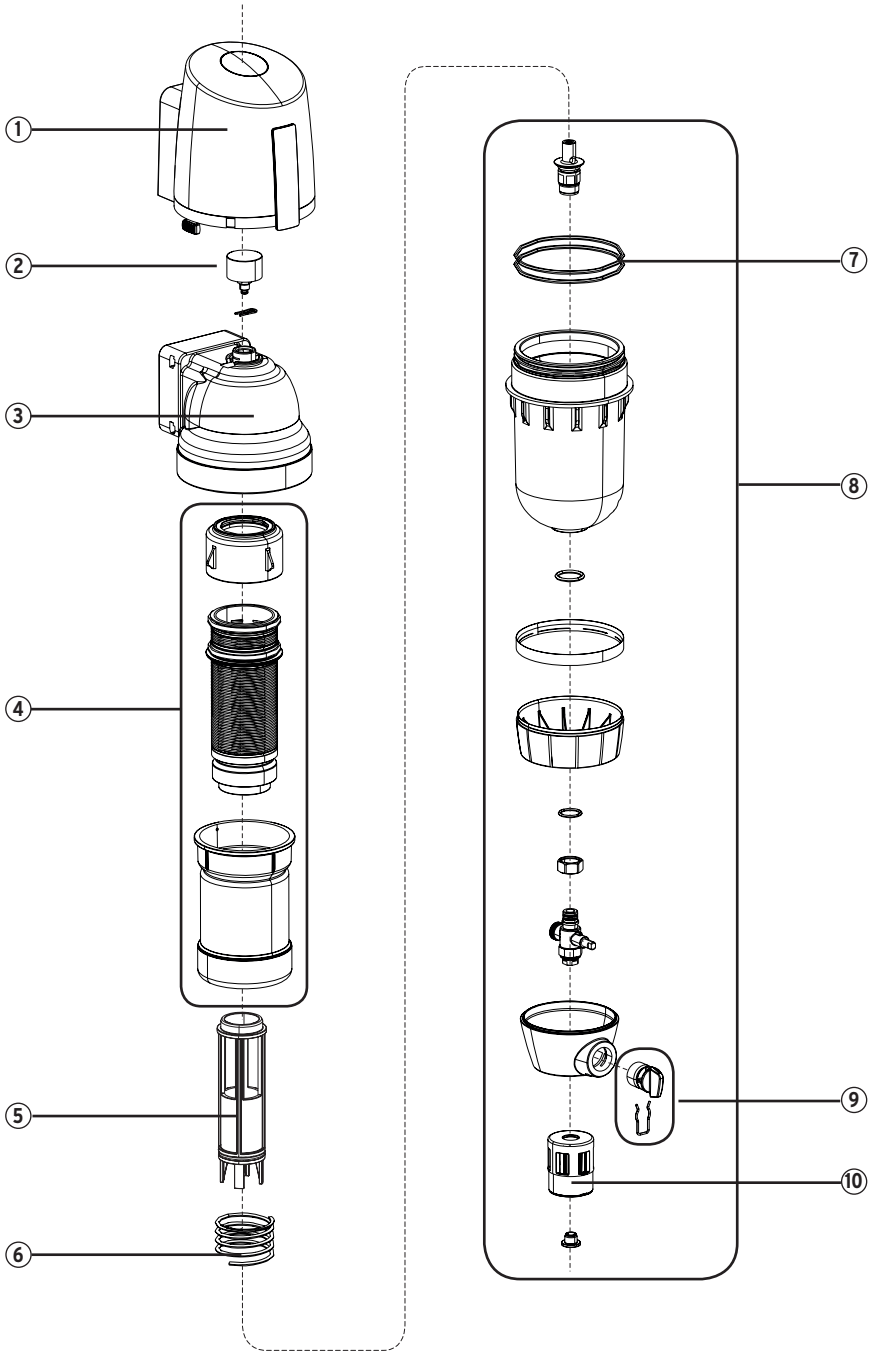
⑥ **Spring**
2315.01.935

⑦ **O-Ring**
2315.01.940

⑧ **Filter cap**
2315.01.937

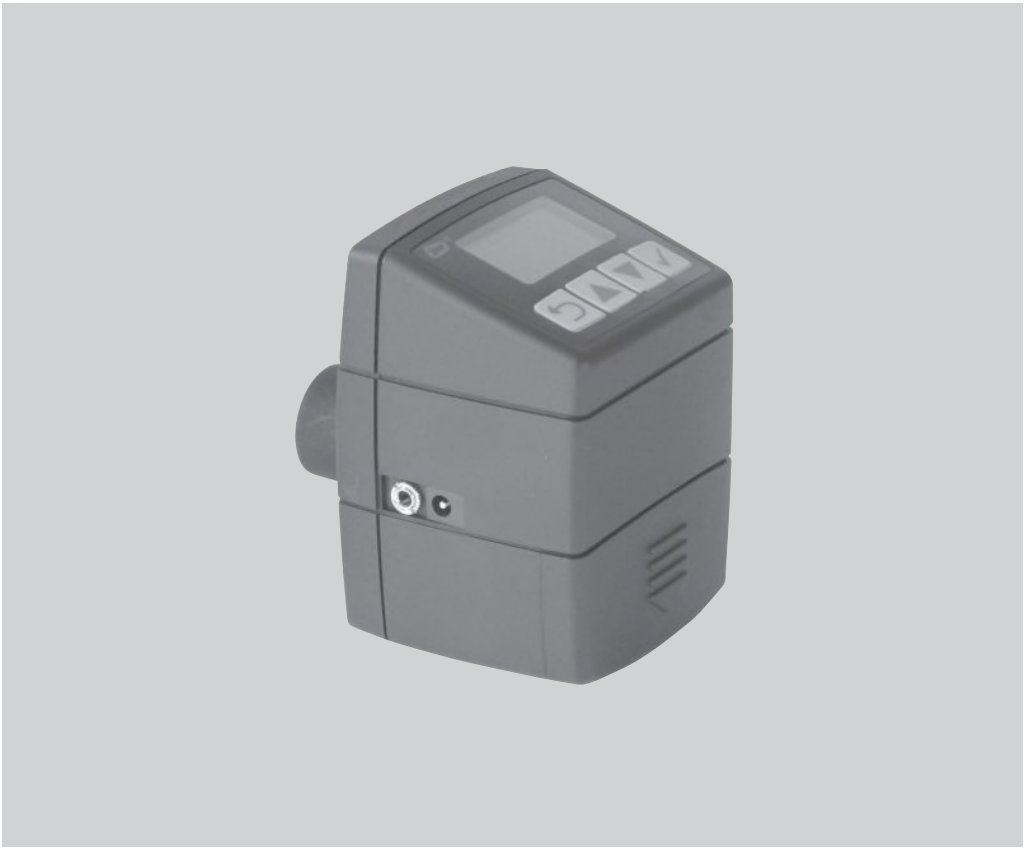
⑨ **Knob, complete**
2315.01.941

⑩ **Tundish, complete**
2315.01.943



RSA 2316

Automatic backwash system for Drufi+, Drufi+ max, Duo and Flangefilter 6380



Field of application

The RSA is a fully automatic electronic backwash system for the backwashable Drufi+-, Drufi+ max-models, domestic water units from 2011, domestic water units max from 2013 and Flangefilter 6380. It is very easy to operate and fulfils the highest safety standards.
The Drufi+ DFR / FR, Drufi+ max DFR / FR, the domestic water units and the Flangefilter 6380 can be easily retrofitted with the RSA, which turns them into fully automatic backwash filters.

Design

The RSA allows individual adjustment of the interval time of the backwash operation in a range between one hour and 52 weeks according to the respective water quality. No tools are required for the assembly. It is exchanged against the backwash knob. The RSA is delivered as battery-powered system off the line. A mains plug (2316.00.905) is available for external power supply about 230V / 50 Hz.

Materials

The body is made of robust ABS synthetic material.

Installation

A drain connection DN 50 is required

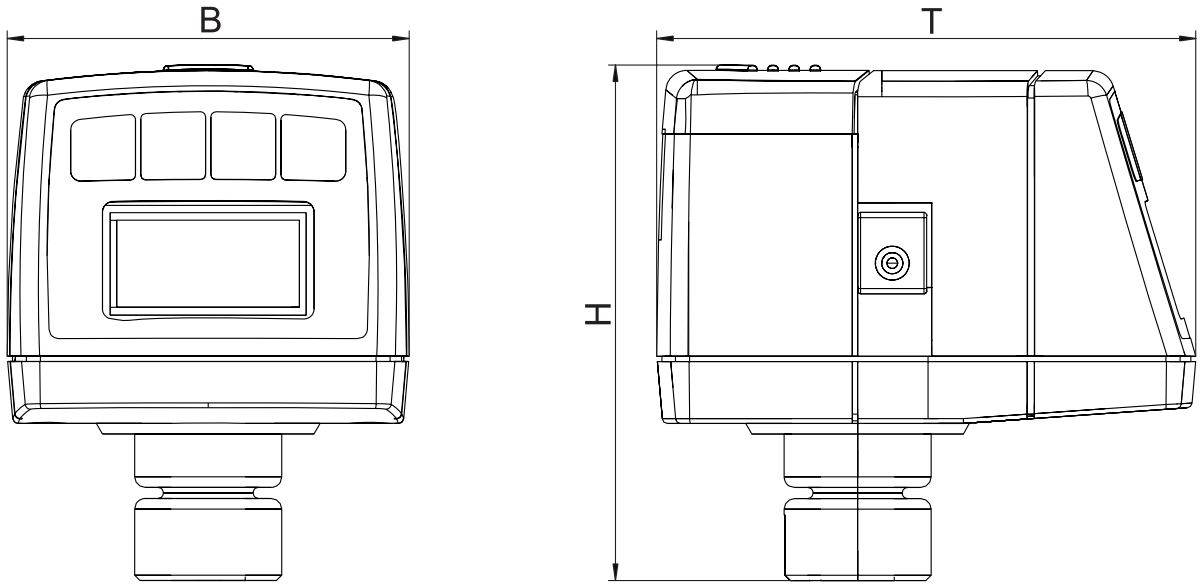
The RSA is mounted instead of the backwash knob

Technical data

Power supply:	230V / 50Hz
Type of protection:	IP 21
Ambient temperature:	10 - 60°C
Batteries:	4 x LR 06-AA
Capacity:	max. 2,5 W
Serial number:	2316.00.081

Maintenance

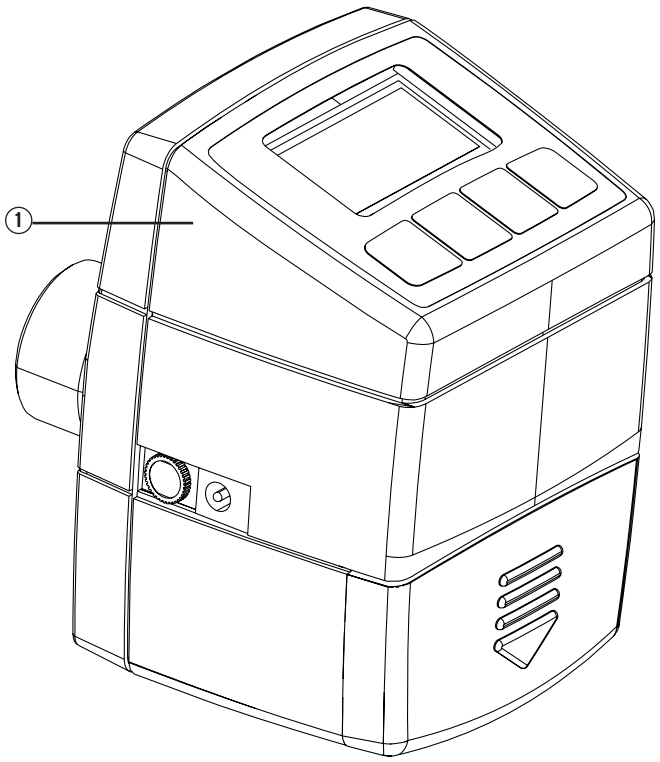
In normal operation the display is in stand-by-mode in order to save energy. Every time a key is pressed, the display is switched on and the basic menu appears: all functions can be controlled and various parameters can be changed. The RSA requires no special maintenance, except from occasional battery replacement.
When the battery capacity is too low, the SYRTronic triggers no backwash operation.



Dimensions	H (mm)	69
	B (mm)	76
	T (mm)	102

Components / Order numbers

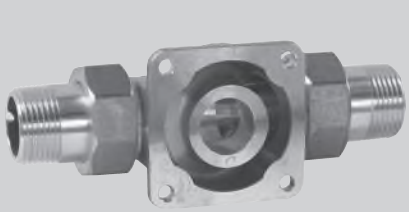
①
Control unit



no picture
Power cable
2316.00.905

Flange programme 2315

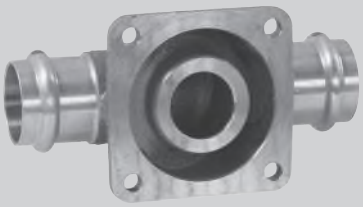
Connection modules for all Drufi and MultiSafe types



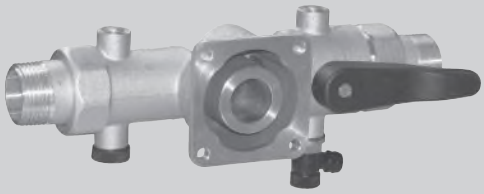
Universal-Flange



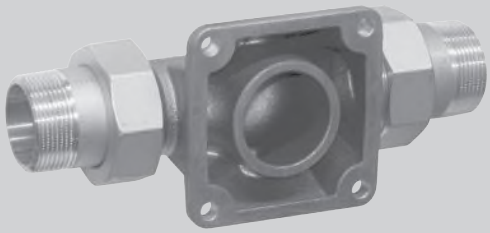
Kombiflansch



Press-Flange



HWS-Flange



Max-Universal-Flange

Field of application

The extensive SYR flange programme is used to mount the Drufi filter series and the various MultiSafe types at the point of entry of domestic water installations. All flanges can be mounted in horizontal and vertical pipes.

Design

The **universal flange** is the classical connection flange; it is available in the sizes DN 20, 25 and 32. The standard universal flange which is equipped with threaded unions on both sides (external threads) is also available with soldered unions on demand. All unions are made with a gasket. The **HWS-flange 2000** turns the Drufi into a complete domestic water unit. It includes a check valve, an isolating valve with a drain device and a test port to verify functionality of the check valve. In addition, it has two connections for inlet and outlet pressure manometers. The **compression flange i**s equipped with compression fittings on both sides. The **max universal flange** consists of low-lead dezincification resistant gunmetal alloy and is laid out for Drufi+ max, Domestic water union max filter and the LEX-T Unit in the sizes DN 32, 40 and 50. The **Combination flange** allows the combination of two valves (for example, Drufi + and IT 3000) on one of the other flanges and is used in confined spaces.

Materials

The universal flange is made of a high-quality, low-lead brass alloy and the universal flange with additional outlets, the HWS-flange, the compression flange and the max universal flange are made of a low-lead, dezincification resistant gunmetal alloy.

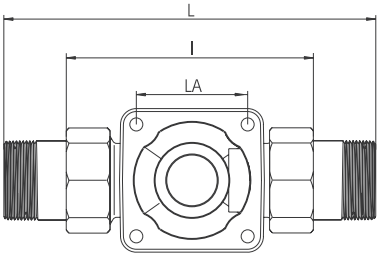
Installation

Install all SYR-connection flanges directly behind the water metering system. Installation is possible in vertical and horizontal pipes, however the HWS-flange 2000 shall only be mounted in vertical pipes with the direction of flow from below upwards.

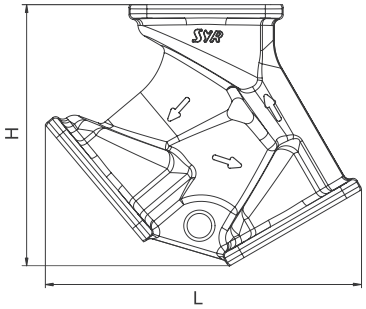
Thoroughly flush the pipe prior to installation. Install the suitable flange under consideration of the mounting position (see arrow on the body). Install the device directly behind the water metering system in potable water installations without applying stresses. Ensure that the main axis of the flange is vertical for the subsequent connection of the valve.

Technical data

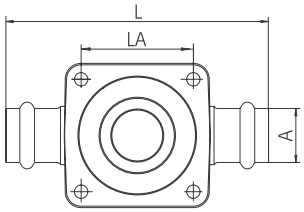
Operating pressure:	max 16 bar
Operating temperature:	max. 30 °C
Mounting position:	any
Fluids:	potable water
Serial numbers:	2315...Type Universal + Compression 2000...Type HWS



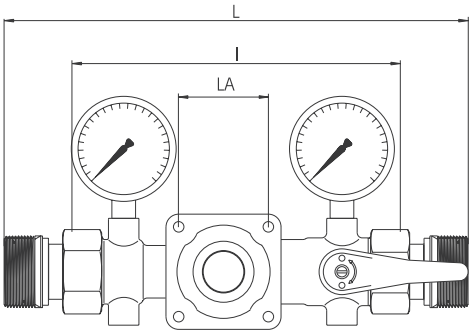
Universal Flange



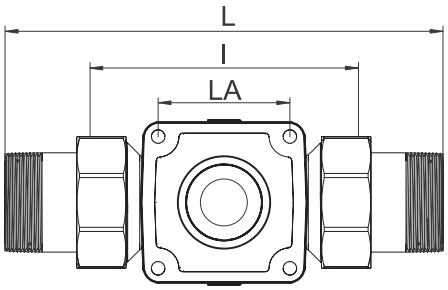
Combination Flange



Compression Flange



HWS Flange 2000 (Manometer: Accessories)



Max Universal Flansch

Nominal size				DN 20	DN 25	DN 32	DN 40	DN 50
		A	-	R ¾"	R 1"	R 1 ¼"	R 1 ½"	R 2"
Dimensions	Universal Flange	l (mm)	-	90	100	105	-	-
		L (mm)	-	158	174	191	-	-
		LA (mm)		53	53	53		
	HWS Flange 2000	l (mm)	-	180	180	180	-	-
		L (mm)	-	254	254	274	-	-
		LA (mm)		53	53	53		
	Press Flange	L (mm)	-	124	128	128	-	-
		LA (mm)		53	53	53		
	Max-Universal Flange	l (mm)	-	-	-	130	150	150
		L (mm)	-	-	-	220	240	265
		LA (mm)		-	-	80	80	80
	Combination flange	L (mm)	141	-	-	-	-	-
		H (mm)	117	-	-	-	-	-

Accessories

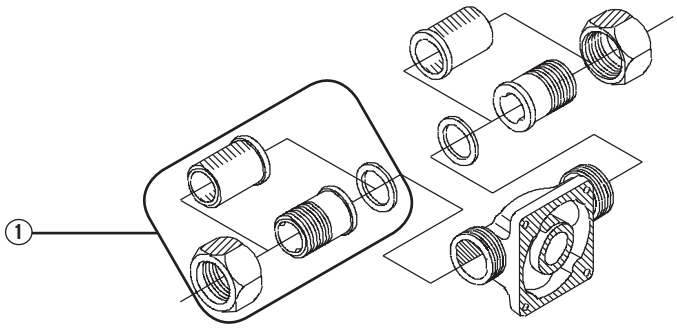
for HWS-Flansch 2000: Manometer 0-10 bar: 2000.00.906
Manometer 0-25 bar: 2000.00.907

for max universal flange: Manometer 0-25 bar: 2000.00.907

Components / Order numbers

① **Unions**
incl. captive nut,
middle piece and seal
DN 20 Gewinde 0812.20.900
DN 25 Gewinde 0812.25.900
DN 32 Gewinde 0812.32.900

Universal Flange

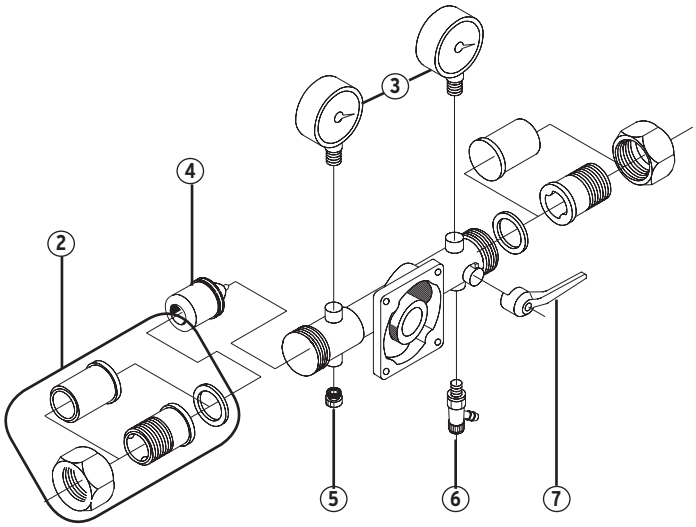


② **Unions**
incl. captive nut,
middle piece and seal
DN 20 Gewinde 0814.20.900
DN 25 Gewinde 0812.25.900
DN 32 Gewinde 0816.32.900

③ **Manometer (Accessories)**
2000.00.906 (10 bar)
2000.00.907 (25 bar)

④ **Check valve**
2000.00.910

HWS- Flange 2000



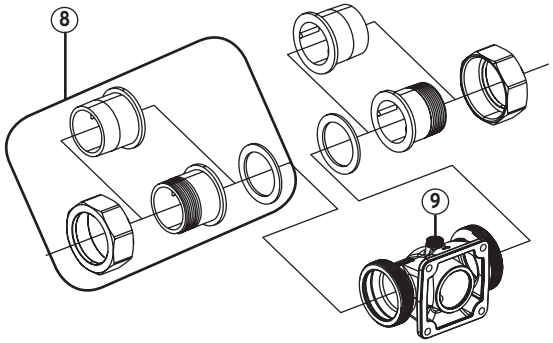
⑤ **Manometer plug**
0828.08.000

⑥ **Drain plug**
2315.00.920

⑦ **Isolating valve**
2000.00.917

⑧ **Unions**
incl. captive nut,
middle piece and seal
DN 32 Gewinde 0812.32.900
DN 40 Gewinde 0812.40.900
DN 50 Gewinde 0812.50.900

Max Universal Flange



⑨ **Manometer plug**
0828.08.000

Flange filter 6380

Backwash filter made of gunmetal with flange connection



Field of application

The flange filter 6380 is a semi-automatic backwash filter complying with the German standard DIN 13443-1, which is intended for industrial and commercial installations. It is predominantly designed for potable water systems and protects downstream valves and machines against dirt. The filter is not suitable for self-supplying installations.

Design

The flange filter consists of a mechanical semi-automatic backwash filter made of stainless steel. Upstream and downstream pressure gauges can be connected to the flange filter. It is equipped with a rotatable maintenance indicator. The filter can be retrofitted with a differential pressure switch (6380.00.901) and an automatic backwash system (2316.00.030).

6380 Flange filter

Materials

The body and the assembly nut are made of a low-lead dezincification-resistant gunmetal alloy. All materials are tested and approved by internationally recognised test institutes in Germany (DVGW and TZW). All synthetic parts getting into contact with water are approved by the German Public Health Office (KTW). Especially the corrosion resistance is guaranteed for all materials used. All rubber parts are made of ageing-resistant elastomer. The diaphragm is reinforced and the highly resistant screw cap is made of glass-fibre reinforced synthetic material.

Installation

The connection size depends on the required flow rate. The device can be mounted either in vertical or horizontal position. The filter has to be installed directly behind the water meter.

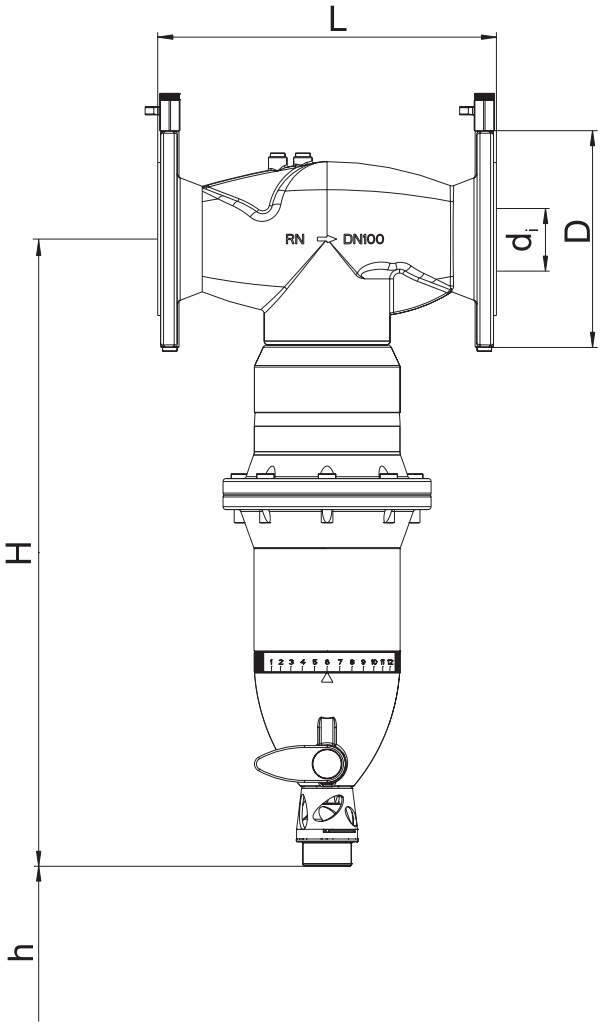
Thoroughly rinse the pipe prior to installation. Mount the flange filter under consideration of the direction of flow (see arrow on the body) without applying stresses. Rotate the filter's lower part until the backwash knob and the ring-shaped maintenance indicator become visible. A minimum distance of 310 mm between the tundish's lower edge and the bottom is required for disassembling the filter cap.

Technical specifications

Service pressure:	min. 2 bar, max. 16 bar
Service temperature:	max. 30 °C
Mounting position:	main axis: vertical
Medium:	potable water
Mesh width:	90 ↔m
Flow rate:	DN 65: 25 m^3/h at 0.2 bar Δp
	DN 80: 27 m^3/h at 0.2 bar Δp
	DN 100: 33 m^3/h at 0.2 bar Δp
	DN 65: 40 m^3/h at 0.5 bar Δp
	DN 80: 46 m^3/h at 0.5 bar Δp
	DN 100: 56 m^3/h at 0.5 bar Δp
Serial number:	6380 ...

Maintenance

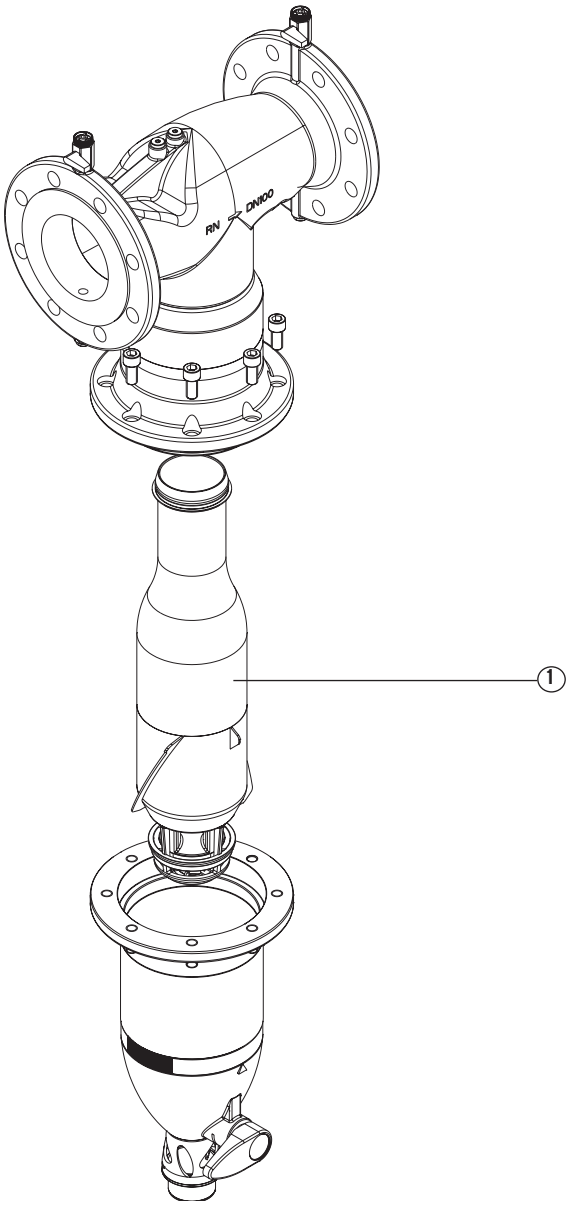
When the flow rate is reduced due to increased pressure loss, but every 2 months at the latest, the filter has to be serviced by backwashing. As a reminder of the next service, set the maintenance indicator below the filter to the required date. This backwash operation can be carried out automatically when retrofitting the device with the automatic backwash system, which is battery-powered and easy to install.



Nominal size		DN 65	DN 80	DN 100
Dimensions in mm	L (mm)	290	310	350
	H (mm)	648	648	648
	h (mm)		at least 310 mm	
	D (mm)	185	200	224
	d_i (mm)	67	80	100

Components / Order numbers

① **Filter element**
6380.00.900



Duo DFR 2314

Semi-Automatic Backwash Filter with pressure reducing valve



Field of application

The Duo DFR is the starter model of the SYR filter programme. It is designed as filtering valve for potable water installations, which is to be mounted with the fully rotatable integrated connection flange. The Duo DFR functions in any mounting position. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The manual backwash filter Duo DFR is available in the connection sizes DN 20 - DN 25. The integral pressure reducing valve protects the installation against overpressure and water hammers. The cascade-shaped filter insert is made of synthetic material.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of synthetic material. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Duo DFR filter should be installed directly behind the water metering device and be readily accessible.

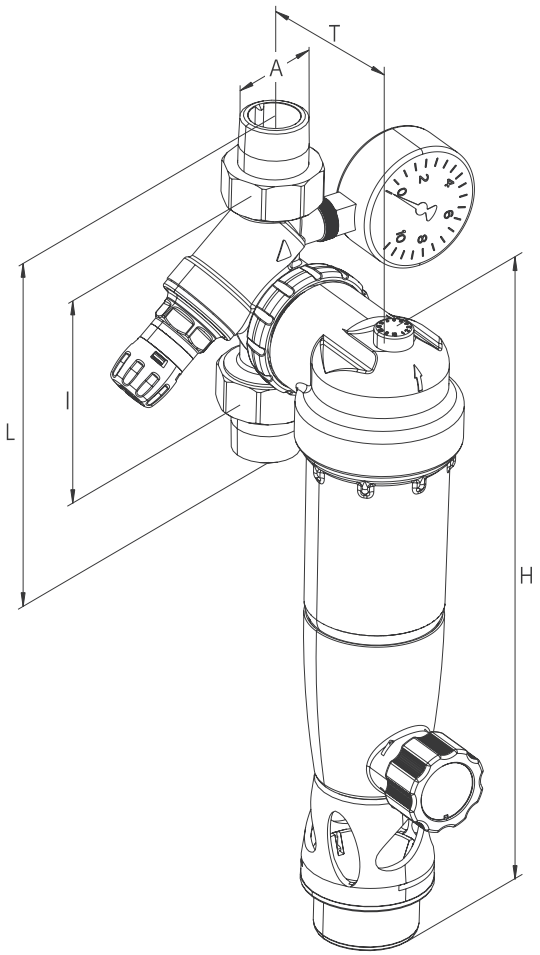
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation.
The main axis of the filter has to be in vertical position. Install the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30 °C
Mounting position:	any, main axis of filter vertical
Fluid:	potable water
Mesh width:	lower: 90 µm, upper: 125 µm
Flow rate:	DN 20: 2.3 m^3/h at 1.1 bar Δp
ABP-No.:	DN 20: P-IX 6738/I
DVGW-Nr.:	NW-9311BR0129
Serial number:	2314 ...

Maintenance

A maintenance indicator positioned on top of the filter indicates when service is due. The filter should be backwashed every two months at the latest. Servicing the Duo DFR requires no special tools. To service the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Nominal size		DN 20	DN 20
	A	R ¾"	R 1"
Dimensions in mm	H (mm)	330	330
	L (mm)	172	180
	I (mm)	110	110
	T (mm)	90	90

Components / Order numbers

Pressure gauge
0-10 bar
2000.00.906

Pressure reducer cartridge
0312.20.928

① **Valve body**
2350.00.901

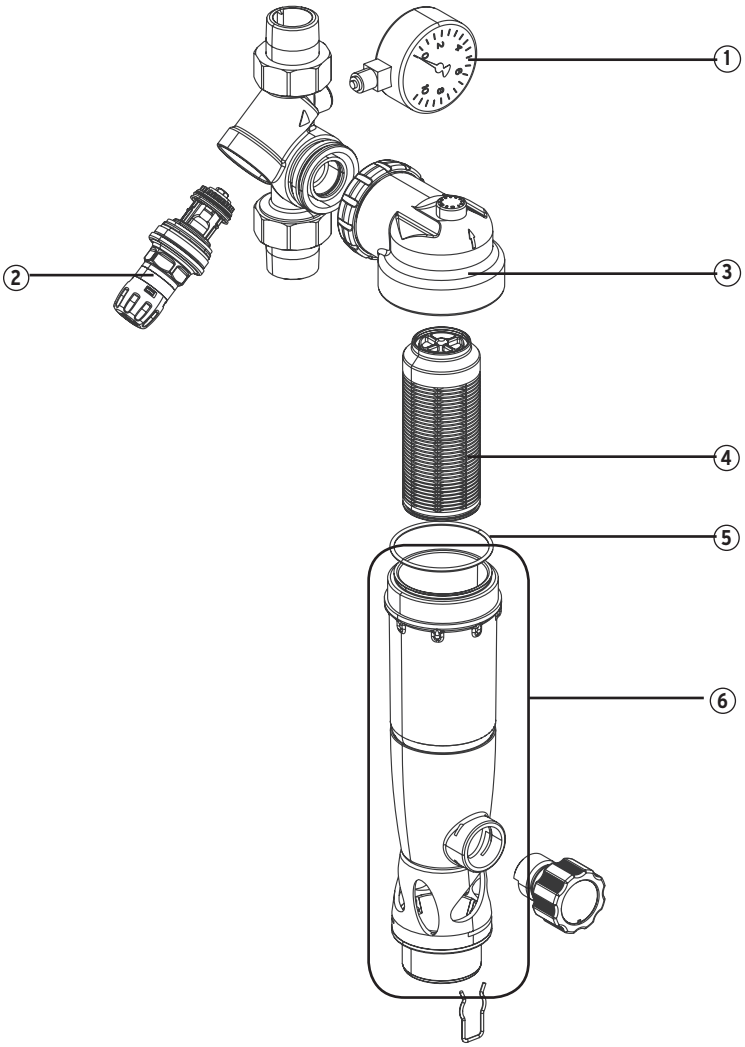
Filter
② 2350.00.903

O-Ring
③ 2350.00.907

Filter cap
④ 2314.00.904

⑤
no pict..

Mounting key
2350.00.906



Duo FR
2314

Semi-Automatic Backwash Filter



Field of application

The Duo FR is the starter model of the SYR filter programme. It is a filtering valve for potable water installations, which is to be mounted with the fully rotatable integrated connection flange. The Duo FR functions in any mounting position. Its very compact construction form also allows to protect single appliances (dish washers, water heaters etc..).

Design

The manual backwash filter Duo FR is available in the connection sizes DN 20 - DN 25. The cascade-shaped filter insert is made of synthetic material.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of synthetic material. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Duo FR filter should be installed directly behind the water metering device and be readily accessible.

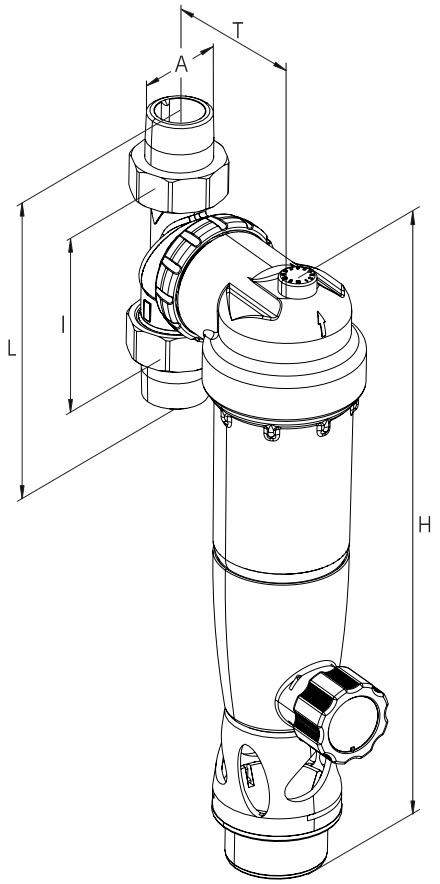
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation.
The main axis of the filter has to be in vertical position. Install the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30°C
Mounting position:	any, main axis of filter vertical
Fluid:	potable water
Mesh width:	lower: 90 µm, upper: 125 µm
Flow rate:	DN 20: 1.3 m^3/h at 0.2 bar Δp
	DN 25: 2.3 m^3/h at 0.2 bar Δp
	DN 20: 2.3 m^3/h at 0.5 bar Δp
	DN 25: 3.6 m^3/h at 0.5 bar Δp
ABP-Nr.:	DN 20 + DN 25: P-IX 6737/I
DVGW-Nr.:	NW-9301BR0130
Serial number:	2314 ...

Maintenance

A maintenance indicator positioned on top of the filter indicates when service is due. The filter should be backwashed every two months at the latest. Servicing the Duo FR requires no special tools. To service the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Nominal size		DN 20	DN 25
	A	G ¾"	G 1"
Dimensions in mm	H (mm)	330	330
	L (mm)	172	180
	I (mm)	110	110
	T (mm)	85	85

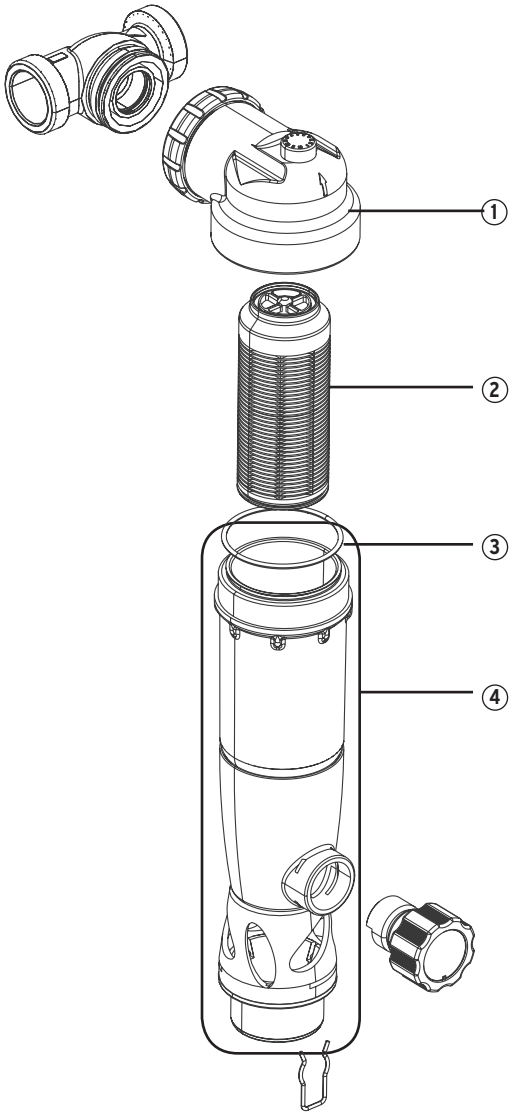
Components / Order numbers

① **Valve body**
2350.00.901

② **Filter**
2350.00.903

③ **O-Ring**
2350.00.907

④ **Filter cap**
2350.00.904



no pict..

Mounting key
2350.00.906

Duo DFR Hot 2314

Manual Backwash Filter with pressure reducing valve



Field of application

The Duo DFR is the starter model of the SYR filter programme. It is designed as filtering valve for potable and hot water installations, which is to be mounted with the fully rotatable integrated connection flange. The Duo DFR functions in any mounting position. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The manual backwash filter Duo DFR is available in the connection sizes DN 20 - DN 25. The integral pressure reducing valve protects the installation against overpressure and water hammers. The cascade-shaped filter insert is made of synthetic material.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of synthetic material. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Duo DFR filter should be installed directly behind the water metering device and be readily accessible.

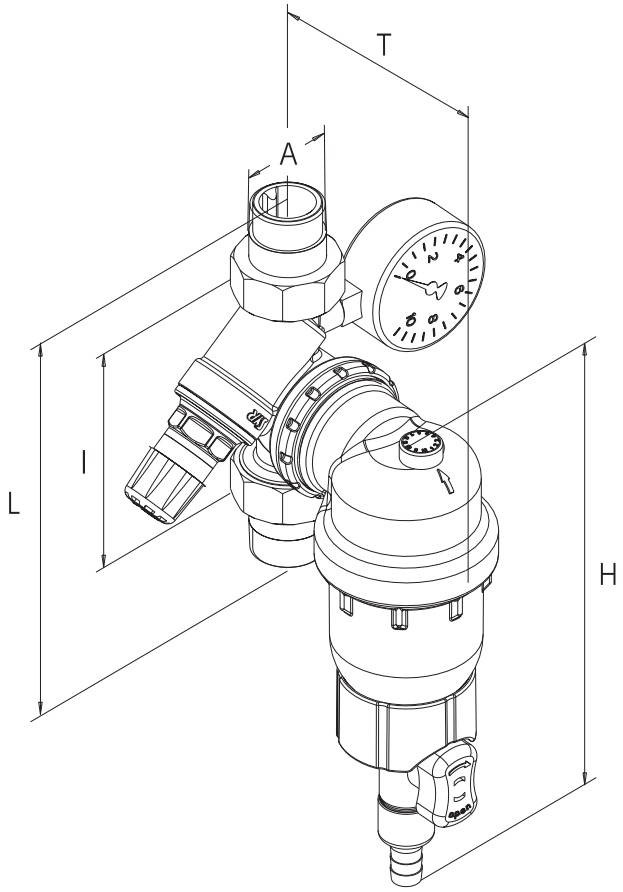
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation.
The main axis of the filter has to be in vertical position. Install the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 80 °C
Mounting position:	any, main axis of filter vertical
Fluid:	potable water
Mesh width:	lower: 90 µm, upper: 125 µm
Flow rate:	DN 20: 2.3 m^3/h at 1.1 bar Δp
Serial number:	2314 ...

Maintenance

A maintenance indicator positioned on top of the filter indicates when service is due. The filter should be backwashed every two months at the latest. Servicing the Duo DFR requires no special tools. To service the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Nominal size		DN 20	DN 20
	A	R ¾"	R 1"
Dimensions in mm	H (mm)	229	229
	L (mm)	185	185
	I (mm)	110	110
	T (mm)	120	120

Components / Order numbers

① **Pressure gauge**
0-10 bar
2314.00.907

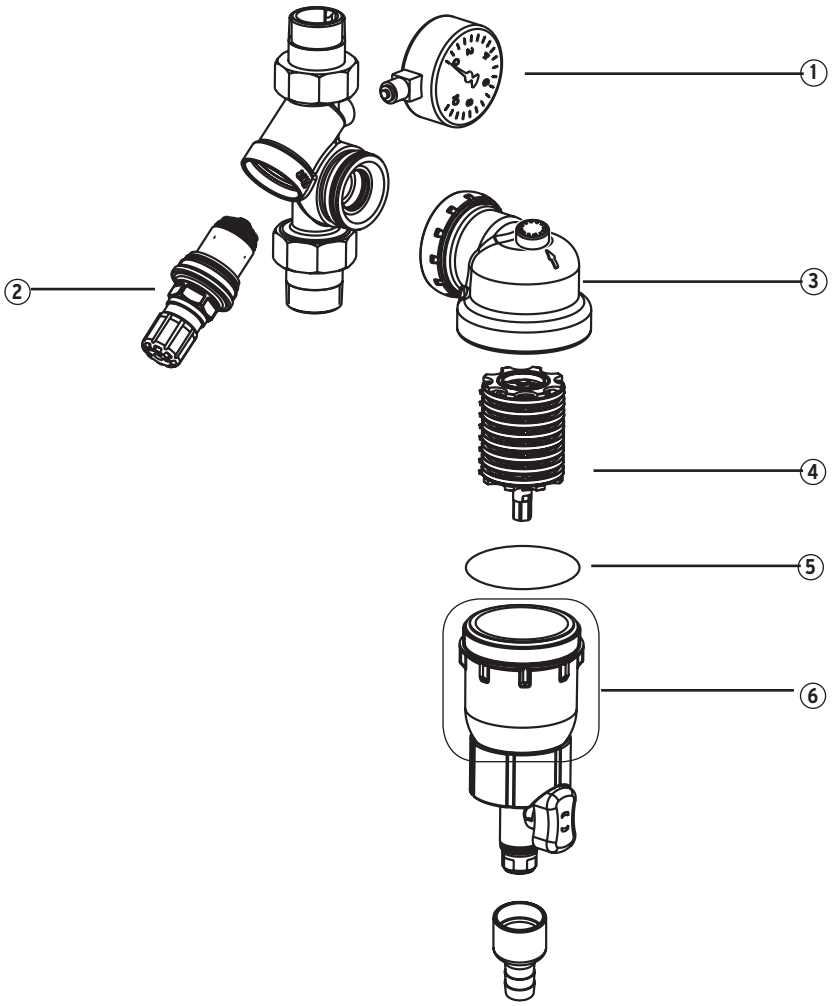
② **Pressure reducer cartridge**
0315.20.910

③ **Valve body**
- 03 / 2006 2314.00.906
04 / 2006 - 2314.00.909

④ **Filter**
2340.00.900

⑤ **O-Ring**
2340.00.903

⑥ **Filter cap**
2314.00.905



Duo FR Hot 2314

Manual Backwash Filter



Field of application

The Duo FR is the starter model of the SYR filter programme. It is a filtering valve for potable and hot water installations, which is to be mounted with the fully rotatable integrated connection flange.

The Duo FR functions in any mounting position. Its very compact construction form also allows to protect single appliances (dish washers, water heaters etc..).

Design

The manual backwash filter Duo FR is available in the connection sizes DN 20 - DN 25. The cascade-shaped filter insert is made of synthetic material.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of synthetic material. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable and hot water installations against corrosion. When used at the domestic point of entry, the Duo FR filter should be installed directly behind the water metering device and be readily accessible.

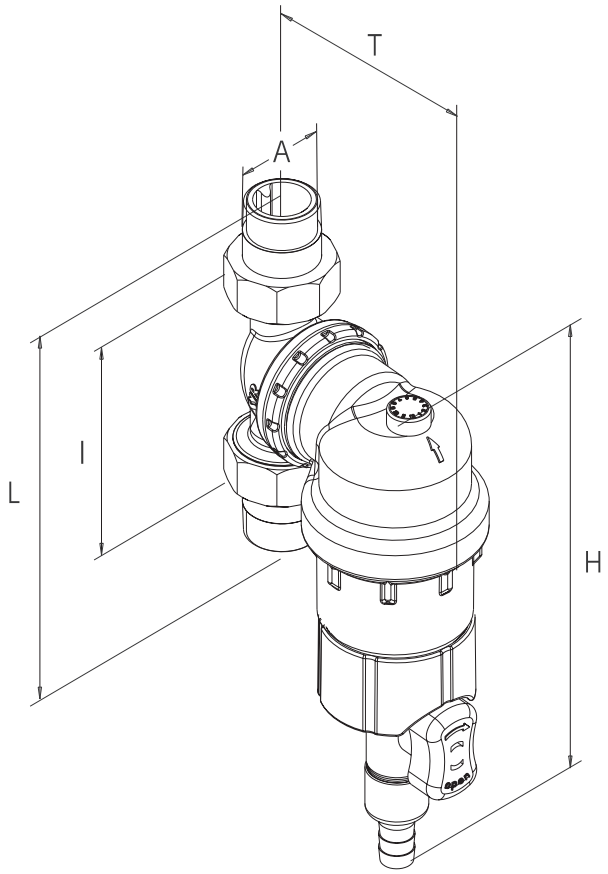
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable or hot water installation. The main axis of the filter has to be in vertical position. Install the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 80°C
Mounting position:	any, main axis of filter vertical
Fluid:	potable water
Mesh width:	lower: 90 µm, upper: 125 µm
Flow rate:	DN 20: 1.4 m^3/h at 0.2 bar Δp
	DN 25: 2.3 m^3/h at 0.2 bar Δp
	DN 20: 2.3 m^3/h at 0.5 bar Δp
	DN 25: 3.6 m^3/h at 0.5 bar Δp
Serial number:	2314 ...

Maintenance

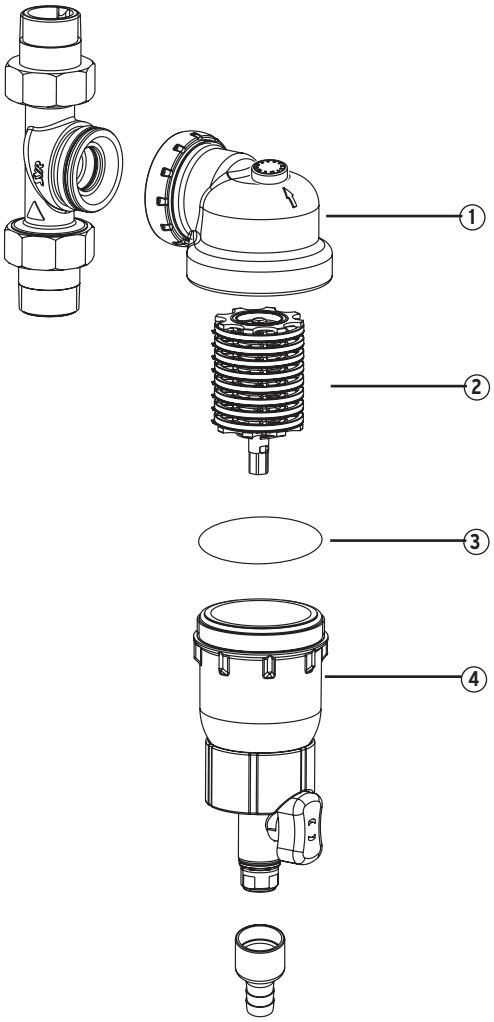
A maintenance indicator positioned on top of the filter indicates when service is due. The filter should be backwashed every two months at the latest. Servicing the Duo FR requires no special tools. To service the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Nominal size		DN 20	DN 25
	A	R ¾"	R 1"
Dimensions in mm	H (mm)	229	229
	L (mm)	185	185
	I (mm)	110	110
	T (mm)	120	120

Components / Order numbers

①
Valve body
2314.00.906
②
Filter
2340.00.900
③
O-Ring
2314.00.903
④
Filter cap
2314.00.905



Ratio DFR 5315

Manual Backwash Filter with pressure reducing valve



Field of application

The Ratio DFR is a compact filter of the SYR filter programme. It is designed as filtering valve for potable water installations. The integrated pressure reducing valve protects against excess supply pressure. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The manual backwash filter Ratio DFR is available in the connection sizes DN 15 - DN 25. The integral pressure reducing valve protects the installation against overpressure and water hammers. The cascade-shaped filter insert is made of stainless steel.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of stainless steel. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Ratio DFR filter should be installed directly behind the water metering device and be readily accessible.

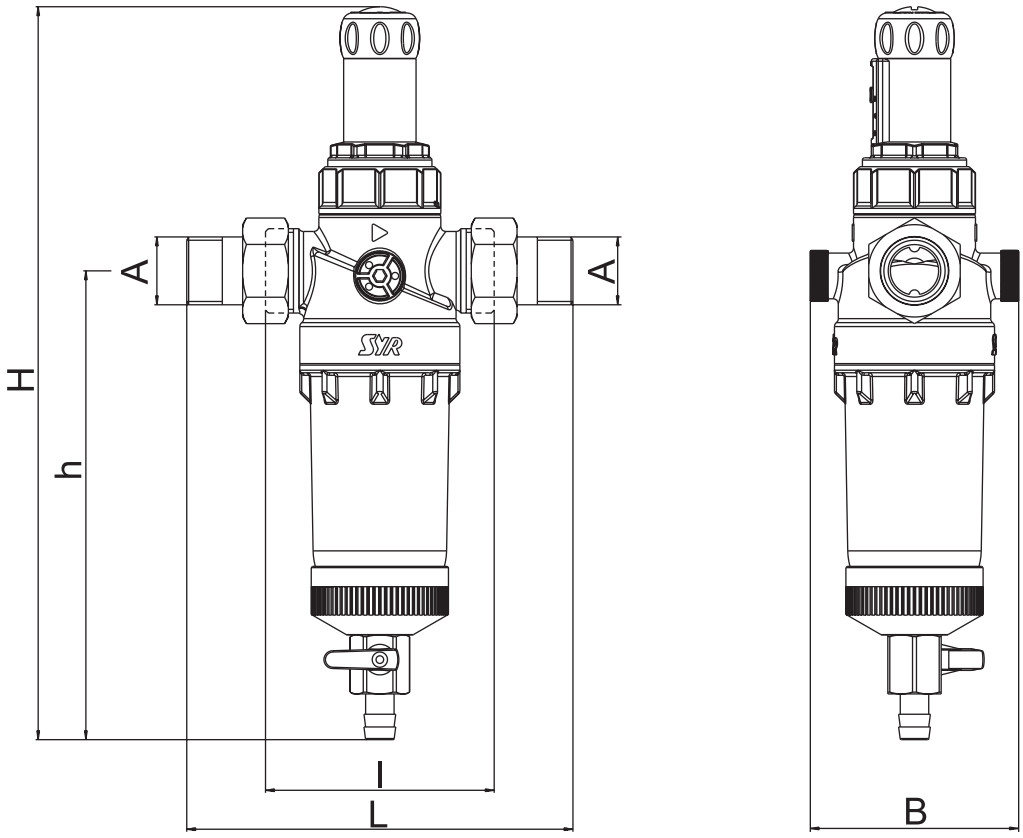
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation. The main axis of the filter has to be in vertical position. Install the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30 °C
Mounting position:	Main axis vertical
Fluid:	potable water
Mesh width:	90 µm
Flow rate:	DN 15: 1,3 m^3/h at 1,1 bar Δp
	DN 20: 2,3 m^3/h at 1,1 bar Δp
	DN 25: 2,3 m^3/h at 1,1 bar Δp
Serial number:	5315 ...

Maintenance

The filter should be backwashed every 6 months at the latest. Servicing the Ratio DFR only requires a service-key. To backwash the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Nominal size		DN 15	DN 20	DN 25
	A	R ½"	R ¾"	R 1"
Dimensions in mm	H (mm)	288,5	288,5	288,5
	h (mm)	184,5	184,5	184,5
	L (mm)	136	152	170
	l (mm)	80	90	100
	B (mm)	82	82	82

Components / Order numbers

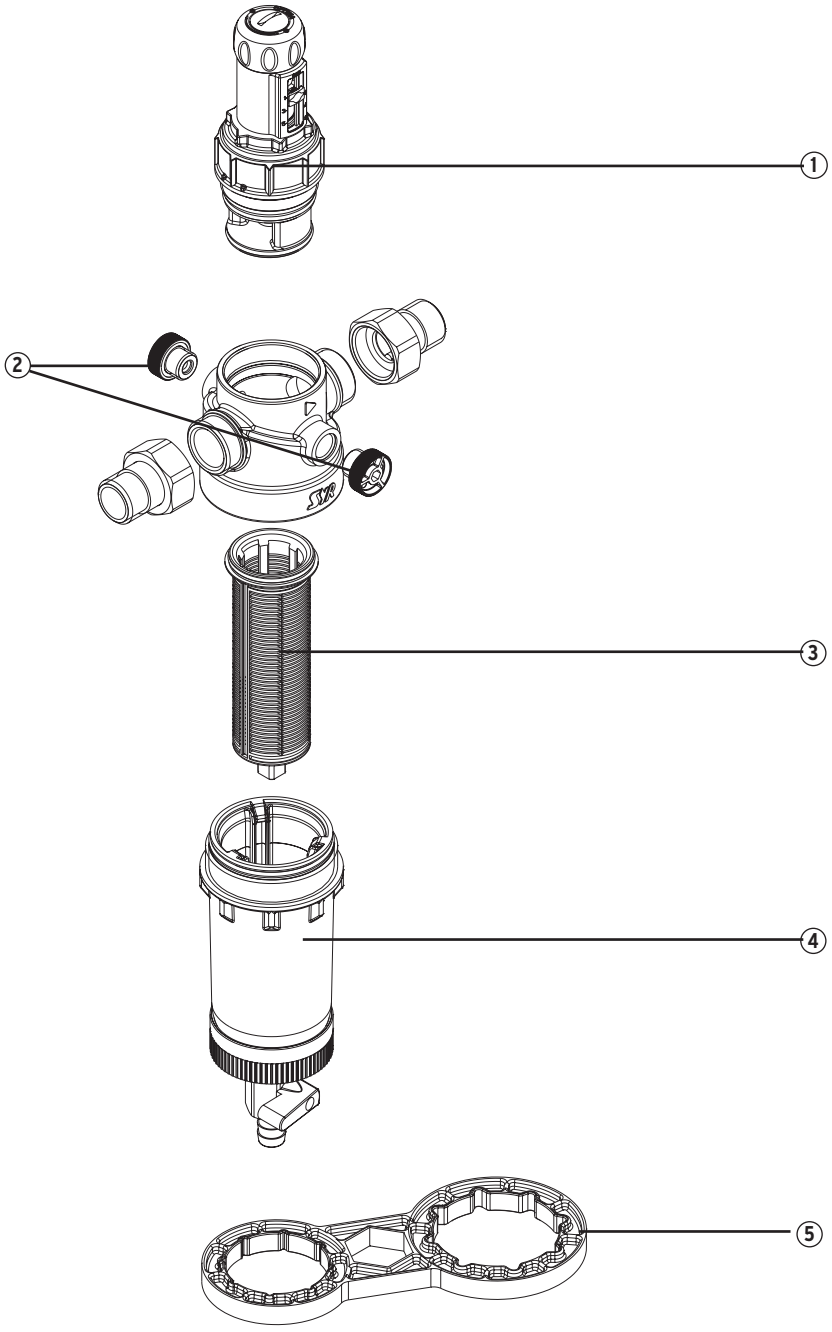
① **Pressure reducer cartridge**
5315.00.900

② **Plug**
0828.08.000

③ **Filter**
5315.00.903

④ **Filter cap complete**
5315.00.904

⑤ **Service key**
5315.00.902



Ratio FR 5315

Manual Backwash Filter



Field of application

The Ratio FR is a compact filter of the SYR filter programme. It is designed as filtering valve for potable water installations. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The manual backwash filter Ratio FR is available in the connection sizes DN 15 - DN 25. The cascade-shaped filter insert is made of stainless steel.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of stainless steel. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Ratio FR filter should be installed directly behind the water metering device and be readily accessible.

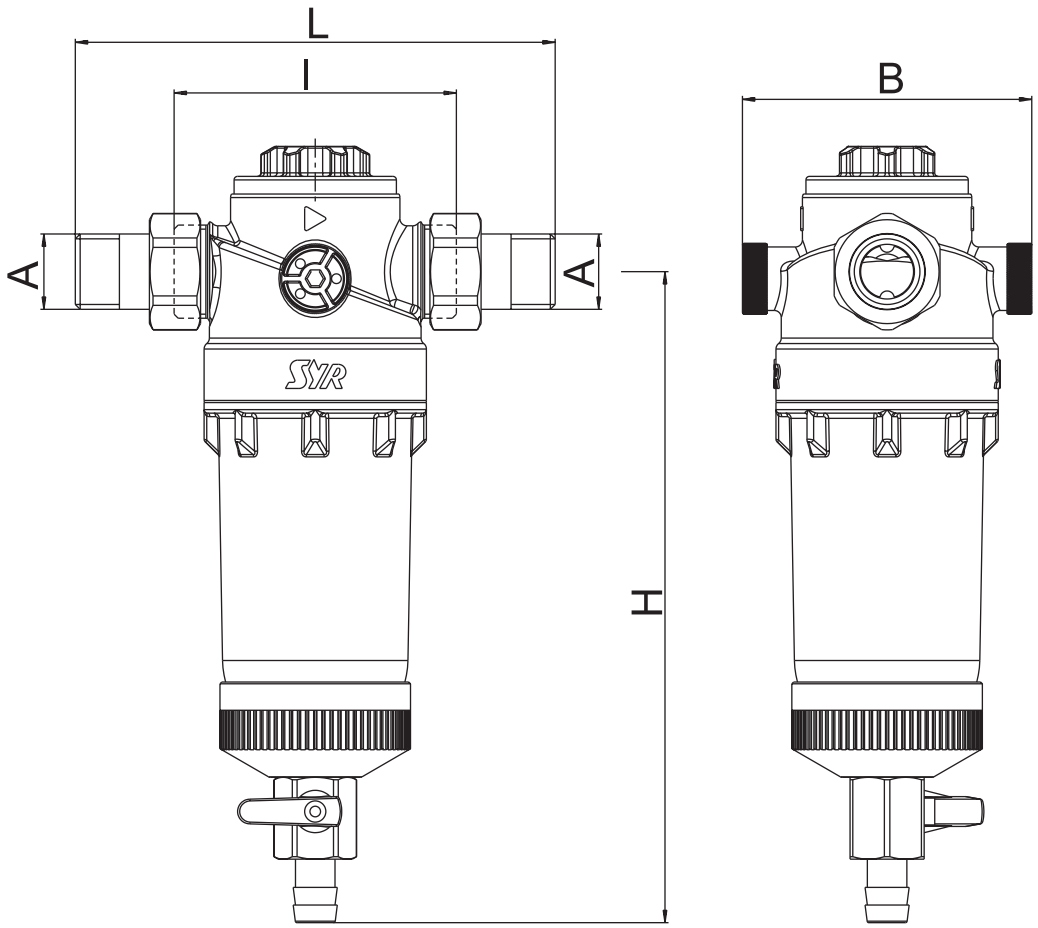
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation. The main axis of the filter has to be in vertical position. Install the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30 °C
Mounting position:	Main axis vertical
Fluid:	potable water
Mesh width:	90 µm
Flow rate:	DN 15: 2,0 m^3/h at 0,2 bar Δp
	DN 20: 2,3 m^3/h at 0,2 bar Δp
	DN 25: 3,0 m^3/h at 0,2 bar Δp
	DN 15: 3,4 m^3/h at 0,5 bar Δp
	DN 20: 4,4 m^3/h at 0,5 bar Δp
	DN 25: 5,2 m^3/h at 0,5 bar Δp
Serial number:	5315 ...

Maintenance

The filter should be backwashed every 6 months at the latest. Servicing the Ratio FR only requires a service-key. To backwash the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Nominal size		DN 15	DN 20	DN 25
	A	R ½"	R ¾"	R 1"
Dimensions in mm	H (mm)	184,5	184,5	184,5
	L (mm)	136	152	170
	l (mm)	80	90	100
	B (mm)	82	82	82

Components / Order numbers

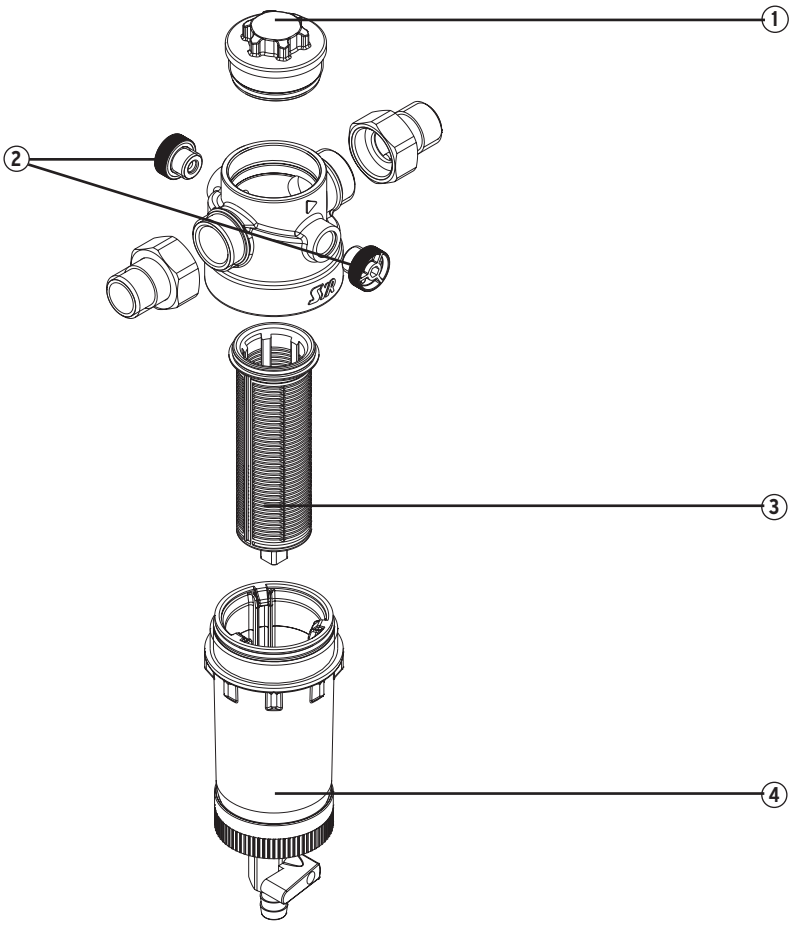
① **Plug**
5315.00.901

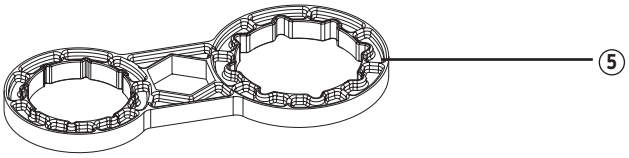
② **Gauge-Plug**
0828.08.000

③ **Filter**
5315.00.903

④ **Filter cap complete**
5315.00.904

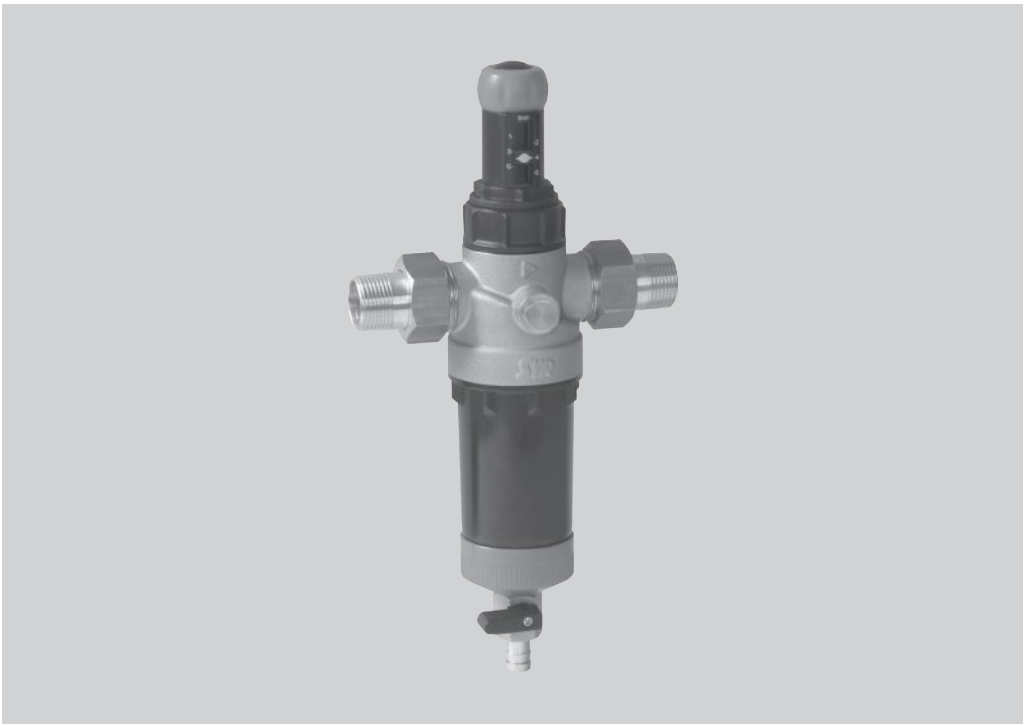
⑤ **Service key**
5315.00.902





Ratio DFR HOT 5315

Manual Backwash Filter with pressure reducing valve



Field of application

The Ratio DFR HOT is a compact filter of the SYR filter programme. It is designed as filtering valve for potable water installations. The integrated pressure reducing valve protects against excess supply pressure. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The manual backwash filter Ratio DFR HOT is available in the connection sizes DN 15 - DN 25. The integral pressure reducing valve protects the installation against overpressure and water hammers. The cascade-shaped filter insert is made of stainless steel.

5315 Ratio DFR HOT

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of stainless steel. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Ratio DFR HOT filter should be installed directly behind the water metering device and be readily accessible.

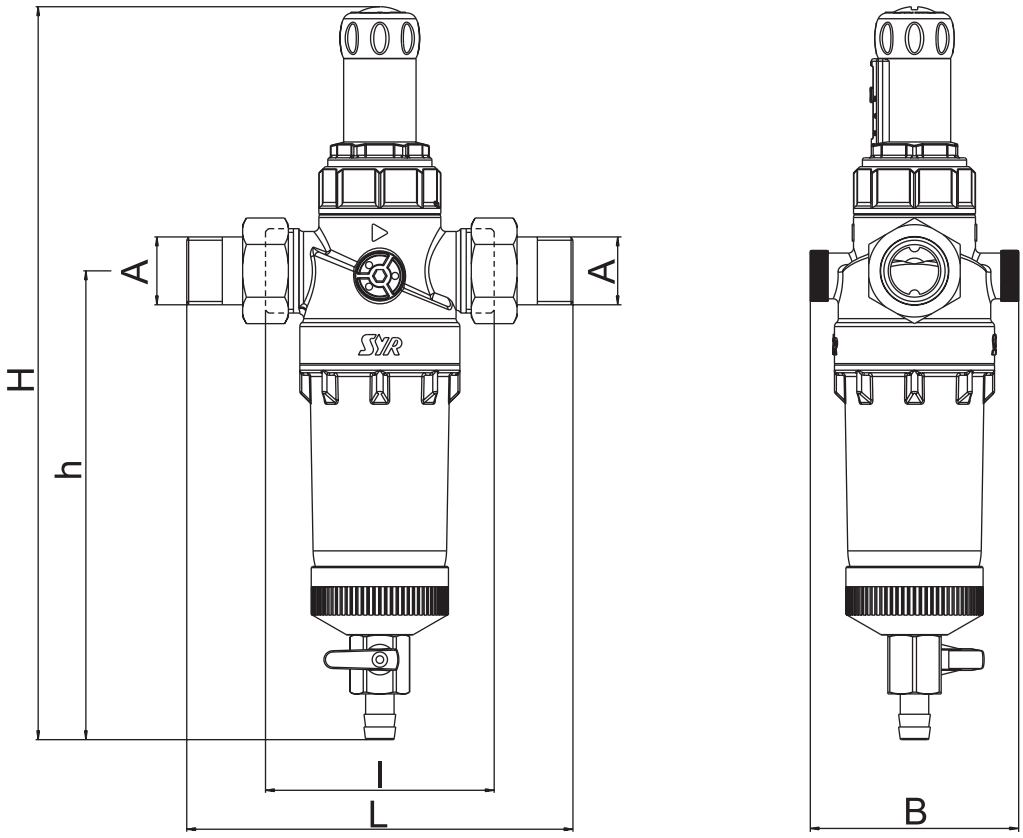
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation. The main axis of the filter has to be in vertical position. Install the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 80 °C
Mounting position:	Main axis vertical
Fluid:	potable water
Mesh width:	90 µm
Flow rate:	DN 15: 1,3 m^3/h at 1,1 bar Δp
	DN 20: 2,3 m^3/h at 1,1 bar Δp
	DN 25: 2,3 m^3/h at 1,1 bar Δp
Serial number:	5315 ...

Maintenance

The filter should be backwashed every 6 months at the latest. Servicing the Ratio DFR only requires a service-key. To backwash the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Nominal size		DN 15	DN 20	DN 25
	A	R ½"	R ¾"	R 1"
Dimensions in mm	H (mm)	288,5	288,5	288,5
	h (mm)	184,5	184,5	184,5
	L (mm)	136	152	170
	l (mm)	80	90	100
	B (mm)	82	82	82

Components / Order numbers

Pressure reducer cartridge
5315.00.905

Plug
0828.08.000

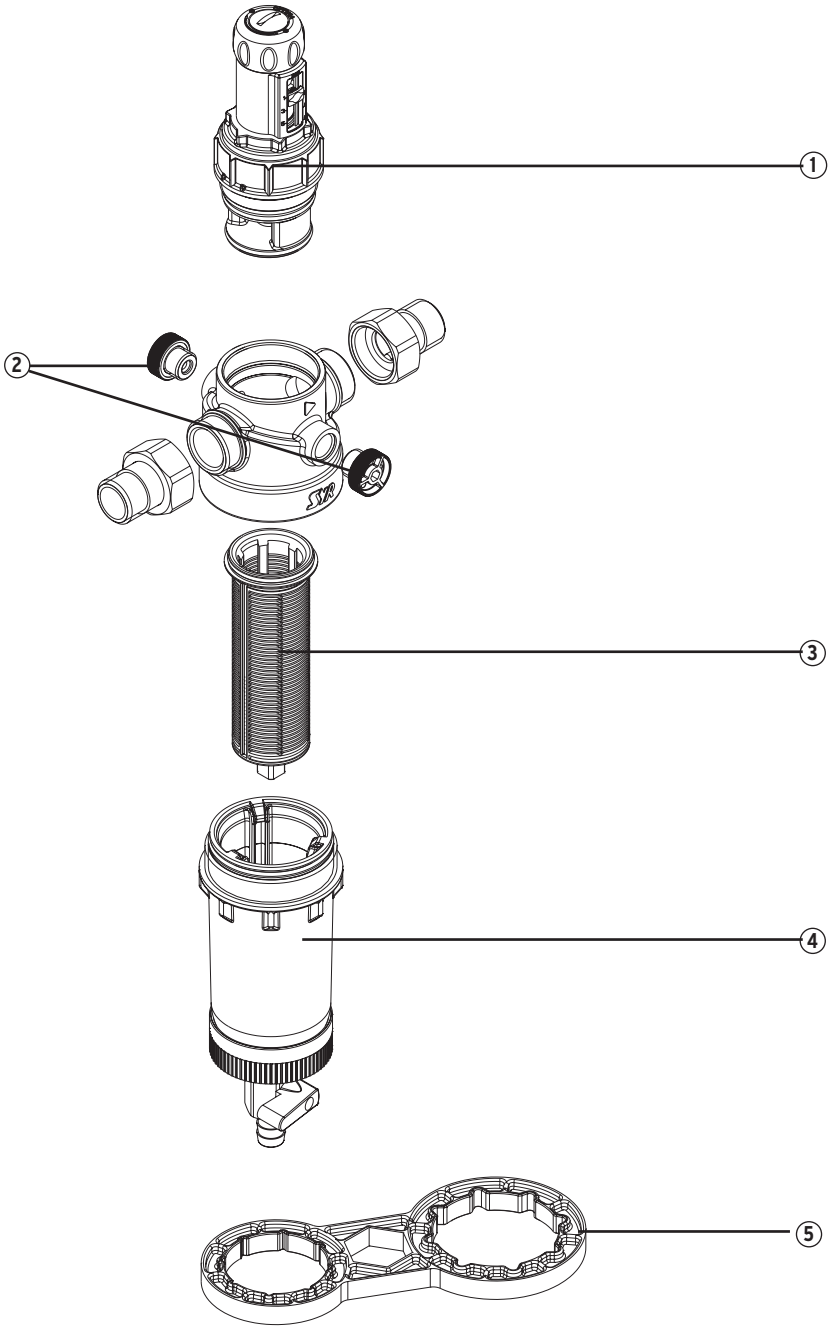
① **Filter**
5315.00.903

② **Filter cap complete**
5315.00.908

③ **Service key**
5315.00.902

④

⑤



Ratio FR HOT 5315

Manual Backwash Filter



Field of application

The Ratio FR HOT is a compact filter of the SYR filter programme. It is designed as filtering valve for potable water installations. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The manual backwash filter Ratio FR HOT is available in the connection sizes DN 15 - DN 25. The cascade-shaped filter insert is made of stainless steel.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of stainless steel. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Ratio FR HOT filter should be installed directly behind the water metering device and be readily accessible.

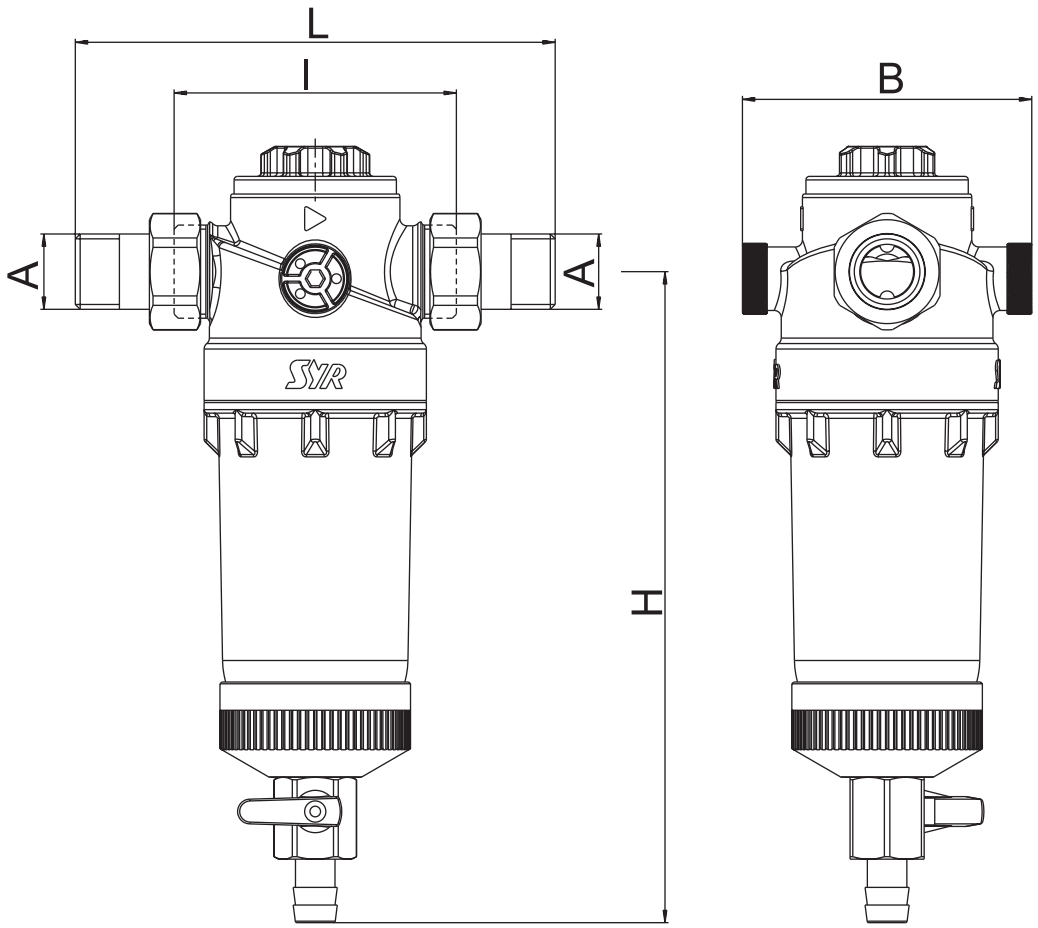
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation. The main axis of the filter has to be in vertical position. Install the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 80 °C
Mounting position:	Main axis vertical
Fluid:	potable water
Mesh width:	90 µm
Flow rate:	DN 15: 2,0 m^3/h at 0,2 bar Δp
	DN 20: 2,3 m^3/h at 0,2 bar Δp
	DN 25: 3,0 m^3/h at 0,2 bar Δp
	DN 15: 3,4 m^3/h at 0,5 bar Δp
	DN 20: 4,4 m^3/h at 0,5 bar Δp
	DN 25: 5,2 m^3/h at 0,5 bar Δp
Serial number:	5315 ...

Maintenance

The filter should be backwashed every two months at the latest. Servicing the Ratio FR only requires a service-key. To backwash the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Nominal size		DN 15	DN 20	DN 25
	A	R ½"	R ¾"	R 1"
Dimensions in mm	H (mm)	184,5	184,5	184,5
	L (mm)	136	152	170
	l (mm)	80	90	100
	B (mm)	82	82	82

Components / Order numbers

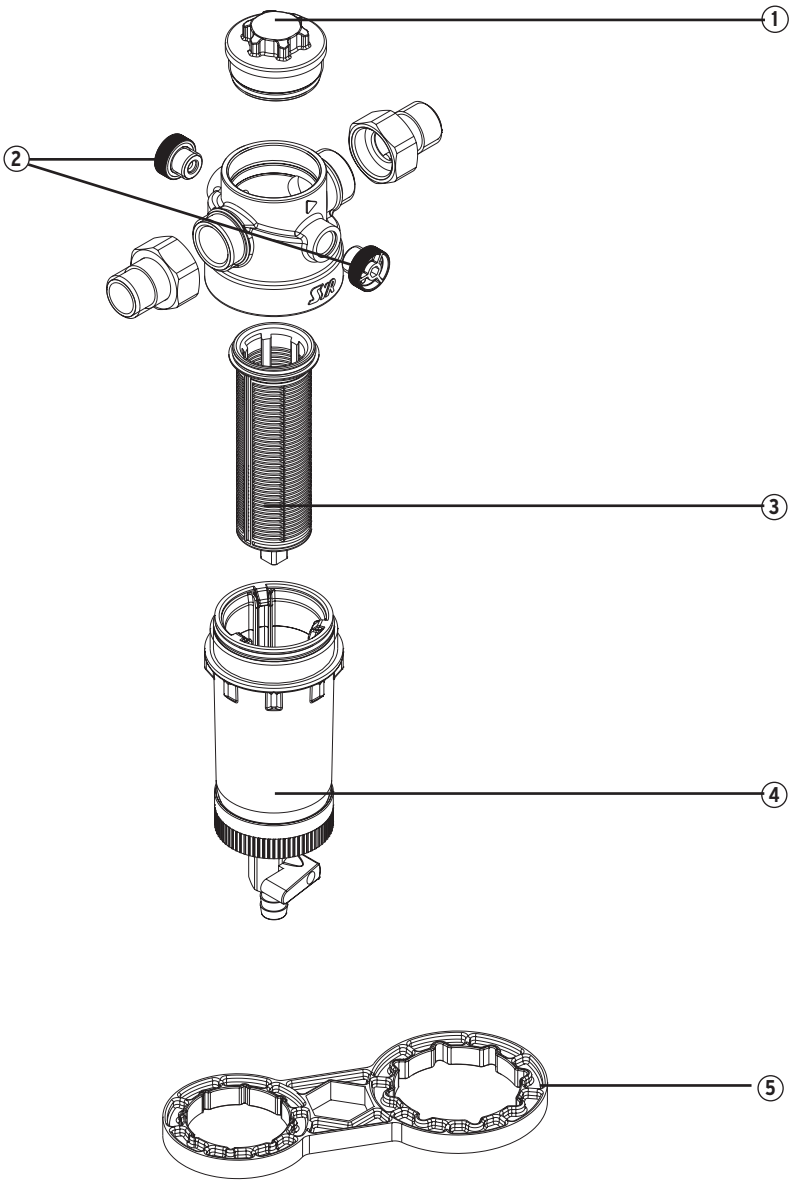
① **Plug**
5315.00.901

② **Gauge-Plug**
0828.08.000

③ **Filter**
5315.00.903

④ **Filter cap complete**
5315.00.906

⑤ **Service key**
5315.00.902



Ratio VARIO DFR 5315

Manual Backwash Filter with pressure reducing valve



Field of application

The Ratio Vario DFR is a compact filter of the SYR filter programme. It is designed as filtering valve for potable water installations. The integrated pressure reducing valve protects against excess supply pressure. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The flange for the manual backwash filter Ratio Vario DFR is available in the connection sizes DN 15 - DN 25. The integral pressure reducing valve protects the installation against overpressure and water hammers. The cascade-shaped filter insert is made of stainless steel.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of stainless steel. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Ratio Vario DFR filter should be installed directly behind the water metering device and be readily accessible.

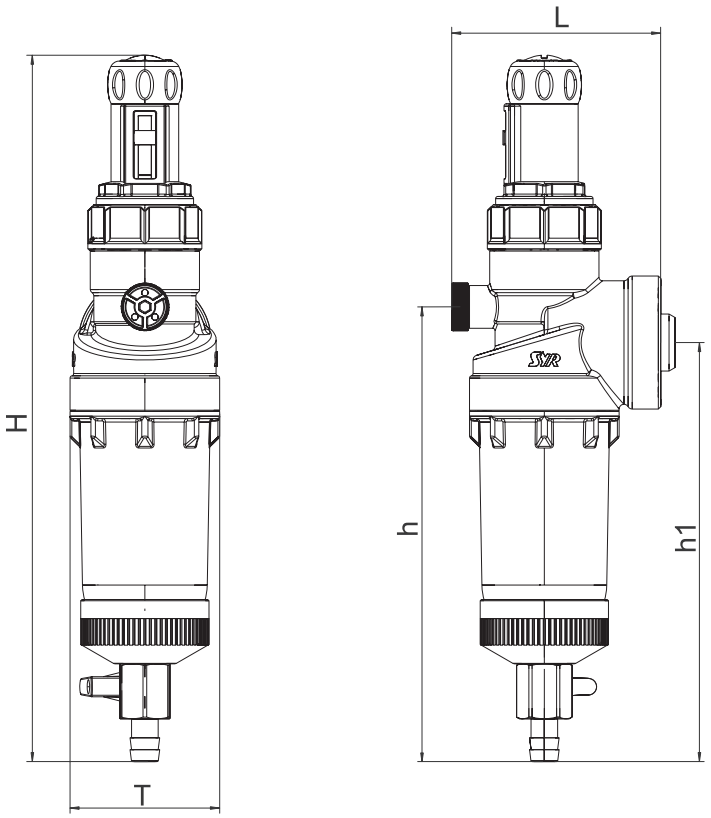
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation. The main axis of the filter has to be in vertical position. Install the flange and the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

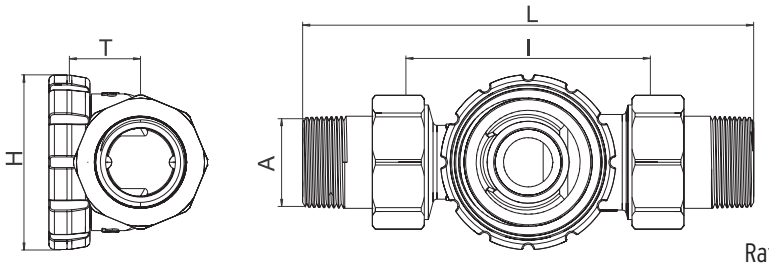
Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 80 °C
Mounting position:	Main axis vertical
Fluid:	potable water
Mesh width:	90 µm
Flow rate:	DN 15: 1,3 m^3/h at 1,1 bar Δp
	DN 20: 2,3 m^3/h at 1,1 bar Δp
	DN 25: 2,3 m^3/h at 1,1 bar Δp
Serial number:	5315.00.000

Maintenance

The filter should be backwashed every 6 months at the latest. Servicing the Ratio Vario DFR only requires a service-key. To backwash the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Ratio Vario DFR



Ratio Vario Flange

Ratio Vario DFR

Nominal size		
Dimensions in mm	H (mm)	297
	h (mm)	191
	h1 (mm)	176
	L (mm)	88
	T (mm)	63

Ratio Vario Flange

Nominal size		DN 15	DN 20	DN 25
	A	R ½"	R ¾"	R 1"
Dimensions in mm	L (mm)	160	157	165
	l (mm)	95	95	95
	H (mm)	64	64	64
	T (mm)	23	23	23

Components / Order numbers

① **Pressure reducer cartridge**
5315.00.900

② **Plug**
0828.08.000

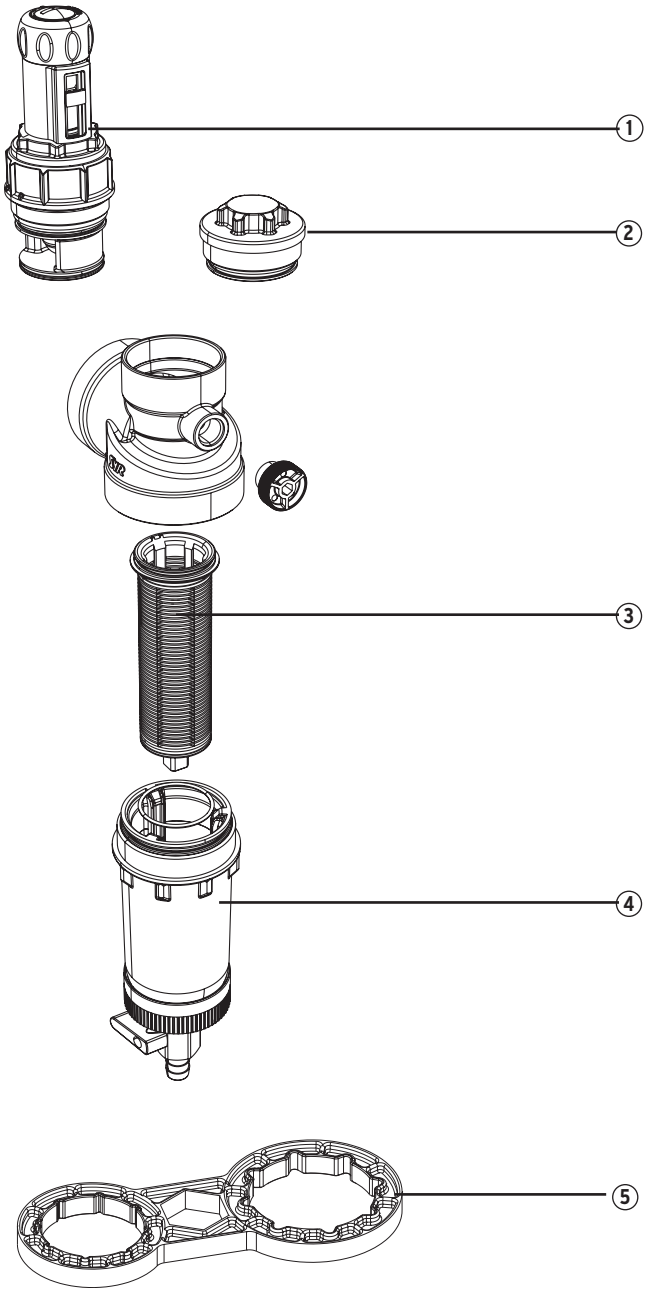
③ **Filter**
5315.00.903

④ **Filter cap complete**
5315.00.904

⑤ **Service key**
5315.00.902

no fig.
Flange

DN 15	5315.15.008
DN 20	5315.20.008
DN 25	5315.25.008



Ratio VARIO FR 5315

Manual Backwash Filter



Field of application

The Ratio Vario FR is a compact filter of the SYR filter programme. It is designed as filtering valve for potable water installations. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The flange for the manual backwash filter Ratio Vario FR is available in the connection sizes DN 15 - DN 25. The cascade-shaped filter insert is made of stainless steel.

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of stainless steel. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Ratio Vario FR filter should be installed directly behind the water metering device and be readily accessible.

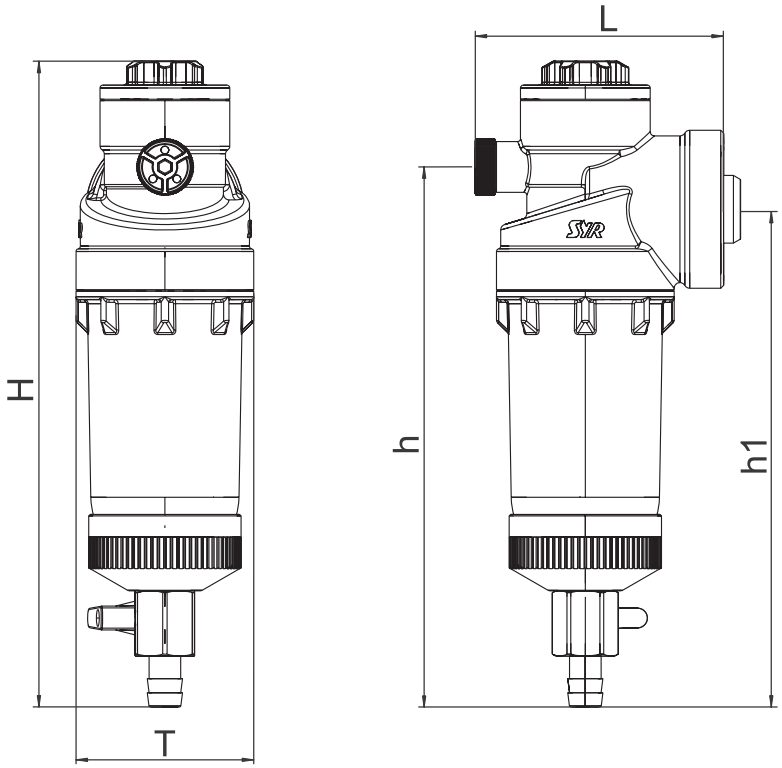
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation. The main axis of the filter has to be in vertical position. Install the flange and the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

Technical specifications

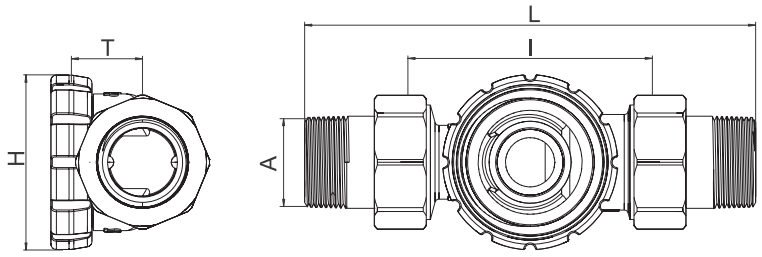
Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 80 °C
Mounting position:	Main axis vertical
Fluid:	potable water
Mesh width:	90 µm
Flow rate:	DN 15: 2,0 m^3/h at 0,2 bar Δp
	DN 20: 2,3 m^3/h at 0,2 bar Δp
	DN 25: 3,0 m^3/h at 0,2 bar Δp
	DN 15: 3,4 m^3/h at 0,5 bar Δp
	DN 20: 4,4 m^3/h at 0,5 bar Δp
	DN 25: 5,2 m^3/h at 0,5 bar Δp
Serial number:	5315.00.001

Maintenance

The filter should be backwashed every two months at the latest. Servicing the Ratio Vario FR only requires a service-key. To backwash the filter, open the ball valve and turn the lower part of the filter 2 to 3 times to the left or to right. Close the ball valve again. Even during backwashing, the device continues to supply filtered water into the potable water system.



Ratio Vario FR



Ratio Vario Flange

Ratio Vario FR

Nominal size		
Dimensions in mm	H (mm)	230
	h (mm)	191
	h1 (mm)	176
	L (mm)	88
	T (mm)	63

Ratio Vario Flange

Nominal size		DN 15	DN 20	DN 25
	A	R ½"	R ¾"	R 1"
Dimensions in mm	L (mm)	160	157	165
	l (mm)	95	95	95
	H (mm)	64	64	64
	T (mm)	23	23	23

Components / Order numbers

① **Plug**
5315.00.901

② **Gauge-Plug**
0828.08.000

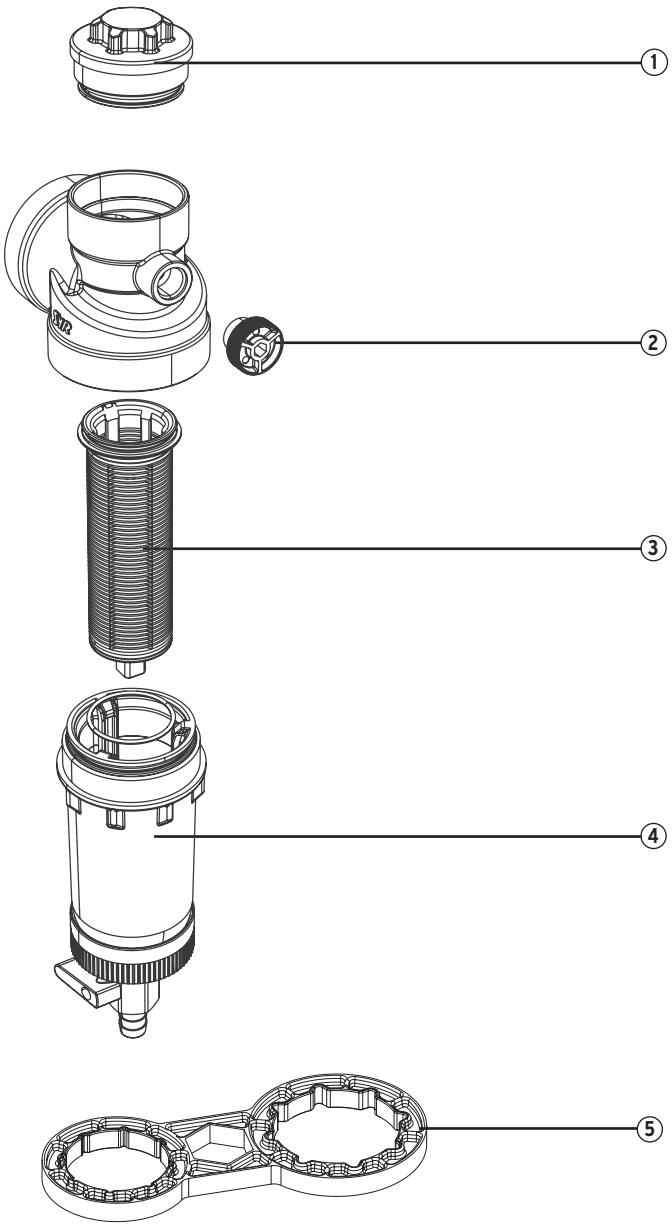
③ **Filter**
5315.00.903

④ **Filter cap complete**
5315.00.904

⑤ **Service key**
5315.00.902

no fig.
Flange

DN 15	5315.15.008
DN 20	5315.20.008
DN 25	5315.25.008



Jetfi 1998

Manual Backwash Filter



Field of application

The Jetfi 1998 is a compact filter of the SYR filter programme. It is designed as filtering valve for potable water installations. Its very compact construction form also allows to protect single appliances (dish washers, water heaters, etc..).

Design

The flange for the Jetfi 1998 is included in delivery and is fixed with a clamp. The filter insert is made of stainless steel.

1998 Jetfi

Materials

The filter cap is made of shock-resistant synthetic material and the filter insert of stainless steel. The ring seals are made of asbestos-free fibre. All materials used are state-of-the-art. The synthetic and elastomeric parts getting into contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

It is highly recommended to install filters to protect potable water installations against corrosion. When used at the domestic point of entry, the Jetfi filter should be installed directly behind the water metering device and be readily accessible.

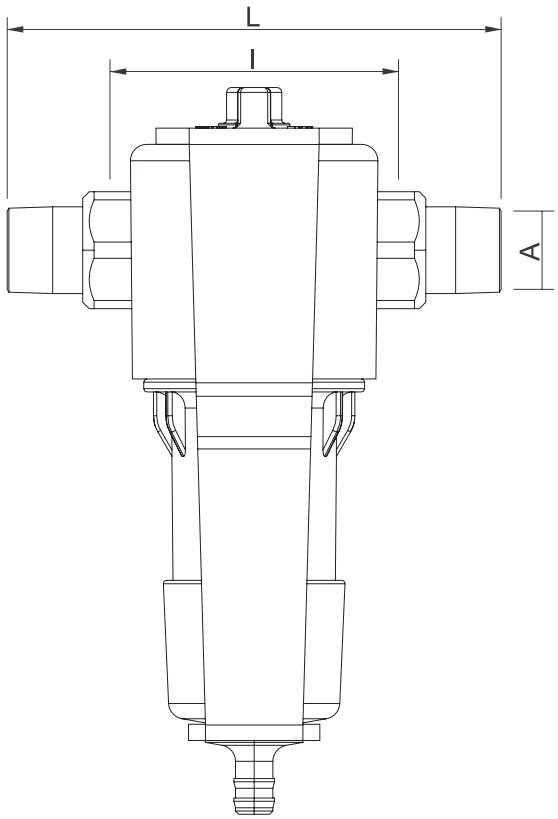
Thoroughly flush the pipe prior to installation. Use filtered water from the first onset of the potable water installation. The main axis of the filter has to be in vertical position. Install the flange and the filter under consideration of the direction of flow (arrow on the body) in the pipework without applying stresses.

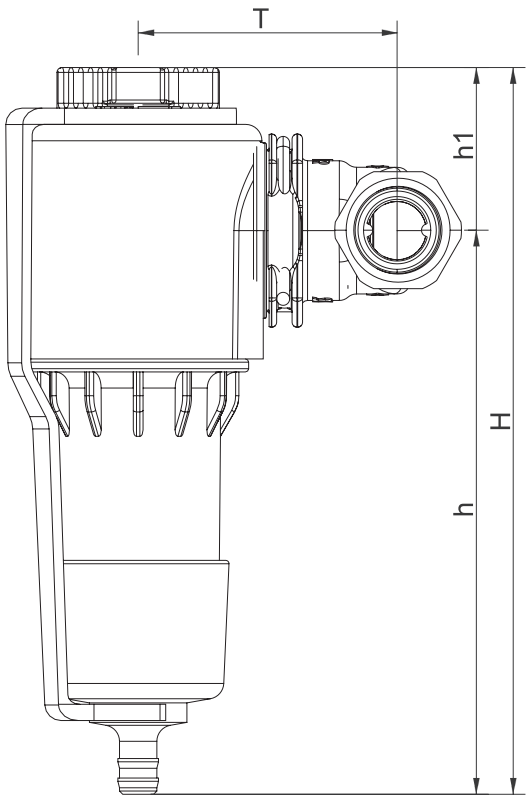
Technical specifications

Operating pressure:	min. 2 bar, max. 16 bar
Operating temperature:	max. 30 °C
Mounting position:	Main axis vertical
Fluid:	potable water
Mesh width:	40 µm
Flow rate:	1,4 m^3/h at 0,2 bar Δp
	2,5 m^3/h at 0,5 bar Δp
Serial number:	1998 ...

Maintenance

The filter should be backwashed every two months at the latest. Servicing the Jetfi 1998 only requires a service-key. To backwash the filter, turn the handle on top. Close the handle again. Even during backwashing, the device continues to supply filtered water into the potable water system.





Nominal size		DN 20
	A	¾“
Dimensions in mm	H (mm)	223,5
	h (mm)	173,5
	h1 (mm)	50
	L (mm)	152
	l (mm)	90
	T (mm)	79,7

Components / Order numbers

① **Handle**

② **Filter cap**

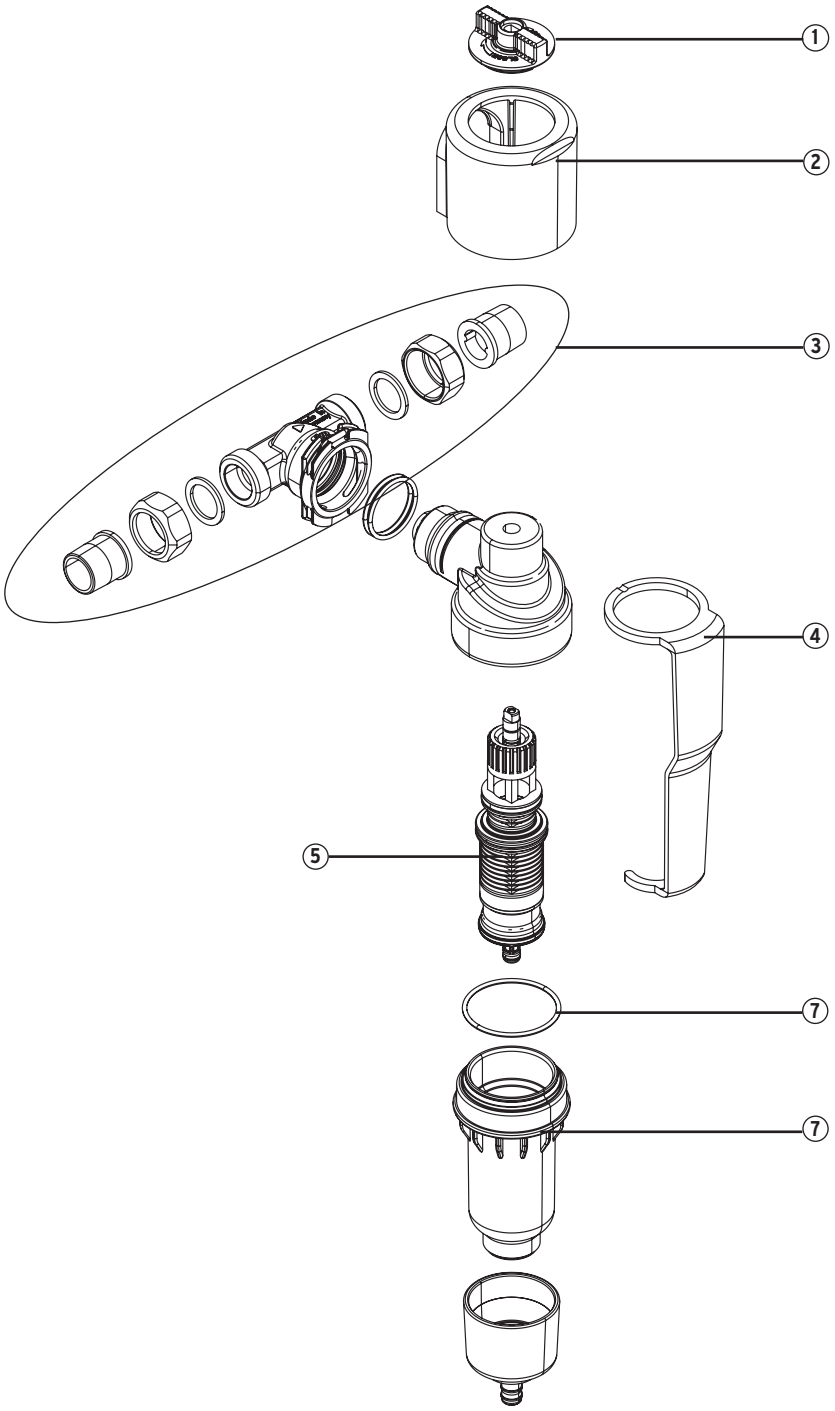
③ **Flange**

④ **Bracket**

⑤ **Filter element**

⑥ **O-ring**

⑦ **Filter cup**





Pressure regulation

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Pressure Reducing Valve 0315	169
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Pressure reducing valves reduce the inlet pressure to the admissible outlet pressure and maintain it within the admissible limits independently of the flow rate. Irregular or fluctuating inlet pressures have no considerable influence on the outlet pressure and the flow rate, as long as they are at least 1 bar higher than the set outlet pressure.
Pressure reducing valves are designed for an inlet service pressure of 16 bar (special version 25 bar). The outlet pressure has an adjustment range between 1.5 and 6 bar (special settings up to 8 bar).



Pressure reducing valves are usually required when the static pressure exceeds 5 bar at the draw-off points (even temporary).
They limit the service overpressure in the pipes, when the highest possible static pressure at any point of the potable water system can reach or exceeds the highest admissible service overpressure of the installation, or when appliances or devices are connected that can only be submitted to a minor pressure. In installations with downstream diaphragm pressure relief valves, for instance potable water heaters, the set outlet pressure of the pressure reducing valve shall not exceed 80% of the pressure relief valves. Example: when the response pressure of the pressure relief valve amounts for instance to 6 bar, the set outlet pressure of the pressure reducing valve shall not exceed 4.8 bar.

Example for calculation of water consumption:

V	=	p * kv * 1000			
V	=	Water consumption (l/h)			
p	=	Service pressure upstream of draw-off point (bar)			
kv	=	Valve coefficient = 1			
p	=	6 bar	p	=	4 bar
V	=	2449 l/h	V	=	2000 l/h

With a pressure of 4 bar, about 18% less water is required than with 6 bar!

Pressure reducing valves are also necessary for the supply of high-rises with a single pressure increasing pump, when several pressure zones are required. In this case, pressure reducing valves are installed either in the ascending pipe of each pressure zone or in the floor pipes. The special design of the pressure reducing valve allows considerable water saving. The formula on the left allows to calculate the proportional saving with different water pressures.

Installation

Pressure regulating valves are usually installed in the cold water pipe behind the water metering system and downstream of the filter. For pressure setting and maintenance, isolating valves have to be installed upstream and downstream of the pressure reducing valve. The SYR pressure reducing valves fulfil the highest acoustic requirements in Europe, so that they cause no noise annoyance even in domestic installations in which noise could possibly be generated in living rooms, sleeping rooms and workrooms.

To exclude flow turbulences, a straight line of at least five times the nominal size should be integrated at the outlet of the pressure reducing valve to allow stabilisation. If such a straight line is not installed, it can sometimes result in extreme noise, as the flow turbulences can retroactively generate so-called sympathetic vibrations in the pressure reducing system.

Prevention of pressure bridges

A pressure bridge is an undesired hydraulic connection between a pipe with higher pressure and a part of the system with reduced pressure. The most common pressure bridge is the connection between non-reduced cold water pressure and reduced hot water pressure in case of non- central location of the pressure reducing valve upstream of the potable water heater. Within the potable water installation there can be a connection between a hot and a cold water line, for instance with a thermal mixing valve or other draw-off valves (for example single control valves, etc..).
To prevent cold water from getting in the hot water pipe, for instance with thermostatical mixing valves, the latter are equipped on both inlets with check valves.

When the check valve integrated in the inlet of the hot water connection is untight, the cold water pressure can spread to the hot water lines. When the cold water pressure exceeds the response pressure of the pressure relief valve integrated upstream of the potable water heater, the diaphragm pressure relief valve drips constantly. This possibly occurs only at night, when the pressure rises in the supply network due to low consumption. However, the pressure gauge on the pressure reducer upstream of the potable water heater usually indicates the increased pressure; indeed, it is very rare that even a correctly installed check valve behind the pressure reducer closes tightly. However, the pressure reducing valve does not let any pressure through in the reverse flow direction, as long as the outlet pressure exceeds the set downstream pressure; as a result, the pressure reducing valve works like a check valve that closes absolutely tight.

When the pressure reducing valve is centrally installed directly behind the water meter, the phenomenon mentioned above cannot occur, as the cold and hot water systems are submitted to the same pressure.

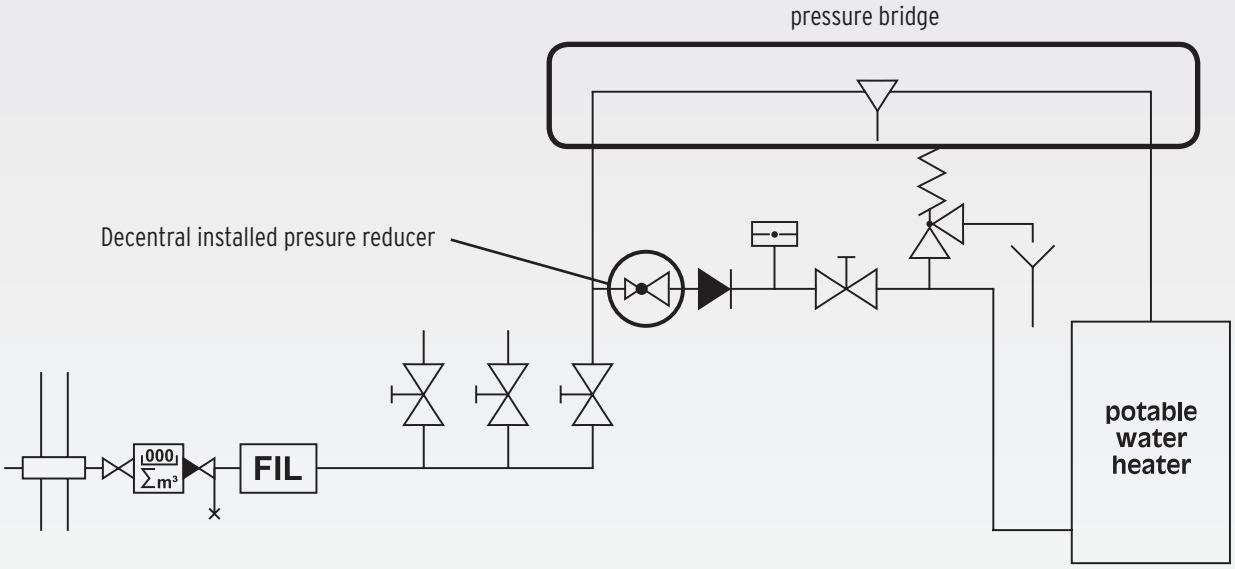


Fig. 1: Pressure bridge from cold water to hot water

However, when a draw-off point is installed upstream of the pressure reducing valve, for a garage or garden, the same phenomenon (backflow of heated water in the cold water system) can occur even with central siting of the pressure reducing valve, when a connection is made for instance between a mixing valve and the potable water heater. Please note that with a centrally located pressure reducing valve the set downstream pressure can rise up to the response pressure of the diaphragm pressure relief valve due to the expansion of hot water. As a result, this pressure increase can take place even with a centrally located pressure reducing valve, when the pressure bridge described above occurs in reverse direction.

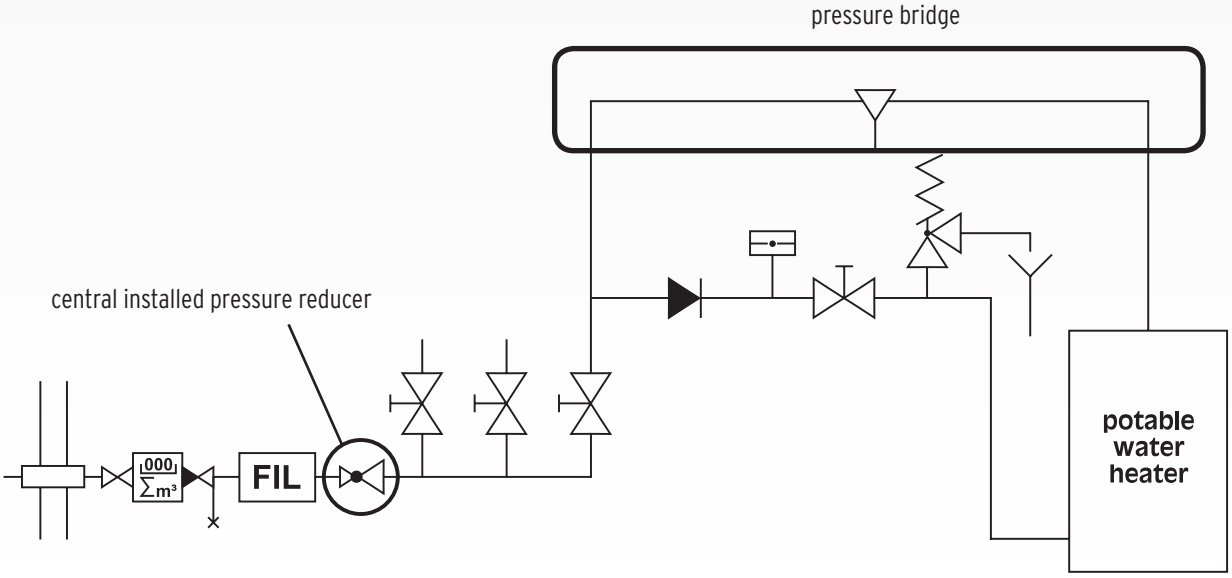


Fig. 2: Pressure bridge from hot water to cold water when the potable water heater heats up

Selection of nominal size

Pressure reducing valves should not be dimensioned according to the nominal size of the pipes. The peak flow rate occurring at the point of use determines the dimension. Use the values in the tables 1a and 1b to select the nominal size and ensure that the real maximum flow rate is as close as possible to the values in the tables without exceeding them.

Nominal size	Peak flow rate	
DN	l/s	m^3/h
15	0,35	1,27
20	0,63	2,27
25	1,0	3,6
32	1,6	5,8
40	2,53	9,1
50	3,89	14,0

Table 1a
Nominal sizes of pressure reducing valves for installations fulfilling the highest European acoustic requirements (for instance for residential buildings).

Nominal size	Peak flow rate	
DN	l/s	m^3/h
15	0,5	1,8
20	0,9	3,3
25	1,5	5,4
32	2,4	8,6
40	3,8	13,7
50	5,9	21,2

Table 1b
Nominal sizes of pressure reducing valves for installations with lower acoustic requirements (for instance for industrial and commercial applications)

The pressure loss occurring at the calculated peak flow rate and the selection of the correct setting pressure form further decisive criteria for the optimal function and safety of a pressure reducing valve.

European product standard EN 1567

The new European standard EN 1567 determines dimensions, materials, test requirements and test methods and forms a compromise worked out over many years by the member states. As a result, some national product requirements could not be integrated in the standard, so that the manometer connecting piece and the integral strainer are no longer compulsory. However, we recommend to include these important function units for best functionality and safety.

Pressure Reducing Valve 315

made of gunmetal with outlet pressure indicator





Fig. 1

Field of application

The pressure reducing valve type 315 is predominantly used in the drinking water supply and fulfils the requirements of the European Standard EN 1567. Under consideration of its specifications it also protects industrial and commercial installations against excess supply pressure. The pressure reducing valve type 315 protects water-supplying installations; it compensates and optimises upstream pressure variations and therefore it effectively prevents damages that can be caused by pressure increase. Furthermore, it economically and ecologically reduces the water consumption. The type 315 meets the highest European acoustic protection requirements.

Design

The pressure reducing valve type 315 is equipped with an outlet pressure indicator (see figure 1) that displays the set pressure. As a result, an additional pressure gauge is not necessary. The spring cap is rotatable by 360°, so that the pressure indicator is always visible. The pressure reducing valve type 315 complies with the European Standard EN 1567 and fulfils the highest acoustic protection requirements up to DN 32. The pressure reducing valve type 315 is equipped with a spring-relieved single-seat valve and a coaxially positioned strainer (mesh width: 0.25 mm). The operational parts of the system are placed in a cartridge; this complete unit can be exchanged without disassembling the whole valve and without using special tools; the outlet pressure setting remains unchanged. The special cartridge design allows any mounting position.

Materials

The materials used for the SYR pressure reducing valve type 315 comply with the high requirements of European Standards. All synthetic parts getting in contact with water are approved by the German Public Health Office (KTW). The corrosion resistance in particular is guaranteed for all used materials.

The body is made of a low-lead dezincification resistant gunmetal alloy. All rubber parts are made of ageing resistant elastomer. The diaphragm is reinforced and the high resistance of the screw cap is due to the glass fibre reinforced synthetic material.

Installation

The connection size depends on the required flow rate capacity. When choosing a pressure reducing valve, it has to be taken into consideration that a pressure drop of 1.3 bar occurs at maximum flow rate. This is the difference between the static and dynamic pressure on the outlet of the pressure reducing valve. When a defined flow rate is required for a determined draw-off point, the setting of the pressure reducer has to be calculated beforehand. A pressure reducing valve works without auxiliary energy with very little adjustment forces. Therefore it reacts sensitively to impurities. A filter installed upstream effectively protects the pressure reducing valve type 315.

Thoroughly rinse the pipe prior to installation. Install the SYR pressure reducing valve type 315 in the pipe under consideration of the flow direction (see arrow on the body) without applying stresses.

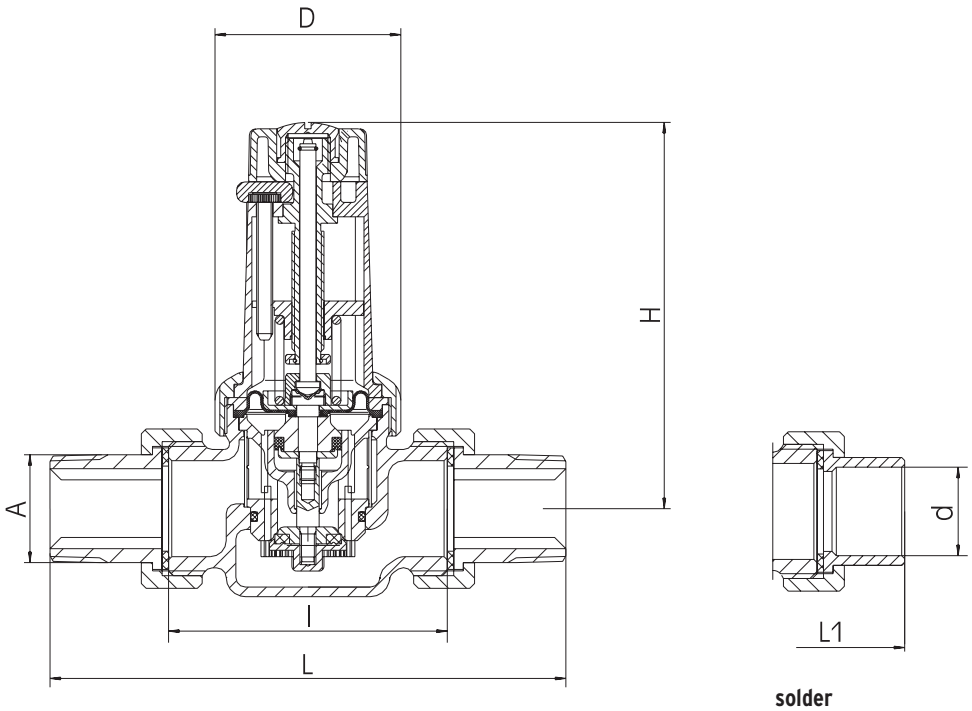
Afterwards, turn the head part without loosening the captive nut, so that the green outlet pressure indicator becomes visible.

Technical data

Inlet pressure:	max. 25 bar
Outlet pressure:	1.5 - 6 bar (factory-set to 4 bar)
Operating temperature:	max. 30 °C
Mounting position:	any
Fluid:	Water, compressed air, neutral non-adhesive fluids, neutral gases
Acoustic protection approval number:	DN 15-25 P-IX 7635/I, DN 32 P-IX 7729/I
DVGW-number:	NW-6330AT2061
Serial number:	0315...

Maintenance

The pressure has to be set at static pressure. For doing so, loosen the safety screw in the adjustment handle. The requested pressure is set with a flick of the wrist. With the well-contrived combined adjustment-display handle, the pressure reducer not only ensures an optimal pressure but also allows to read the set pressure without an additional pressure gauge. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (–), to increase it, turn the adjustment handle in the direction of the plus symbol (+).
It is recommended to carry out maintenance works on a regular basis to ensure a durable function. The perfected design of the cartridge system allows to disassemble the operational part of the pressure reducing valve without having to disassemble the whole valve and without using special tools.



solder

Nominal size		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
	A	G ½	G ¾	G 1	G 1 ¼	G 1 ½	G 2
Dimensions in mm	L (mm)	132	143	161	190	220	255
	L1 (mm)	106	117	135	170	205	240
	l (mm)	75	75	87	105	130	140
	H (mm)	123	123	121	176	176	180
	D (mm)	58	58	58	SW 75	SW 75	SW 75
Flow rate capacity in m³/h (at 2m/s)	Residential buildings according to DIN EN 1567	1.3	2.3	3.6	5.8	9.1	14
Flow rate capacity in m³/h (at 3m/s)	industrial / commercial installations	1.8	3.3	5.4	8.6	13.7	21.2

Accessory Manometer: type 11

Components /order numbers

① **Pressure reducer cartridge with outlet pressure indicator**

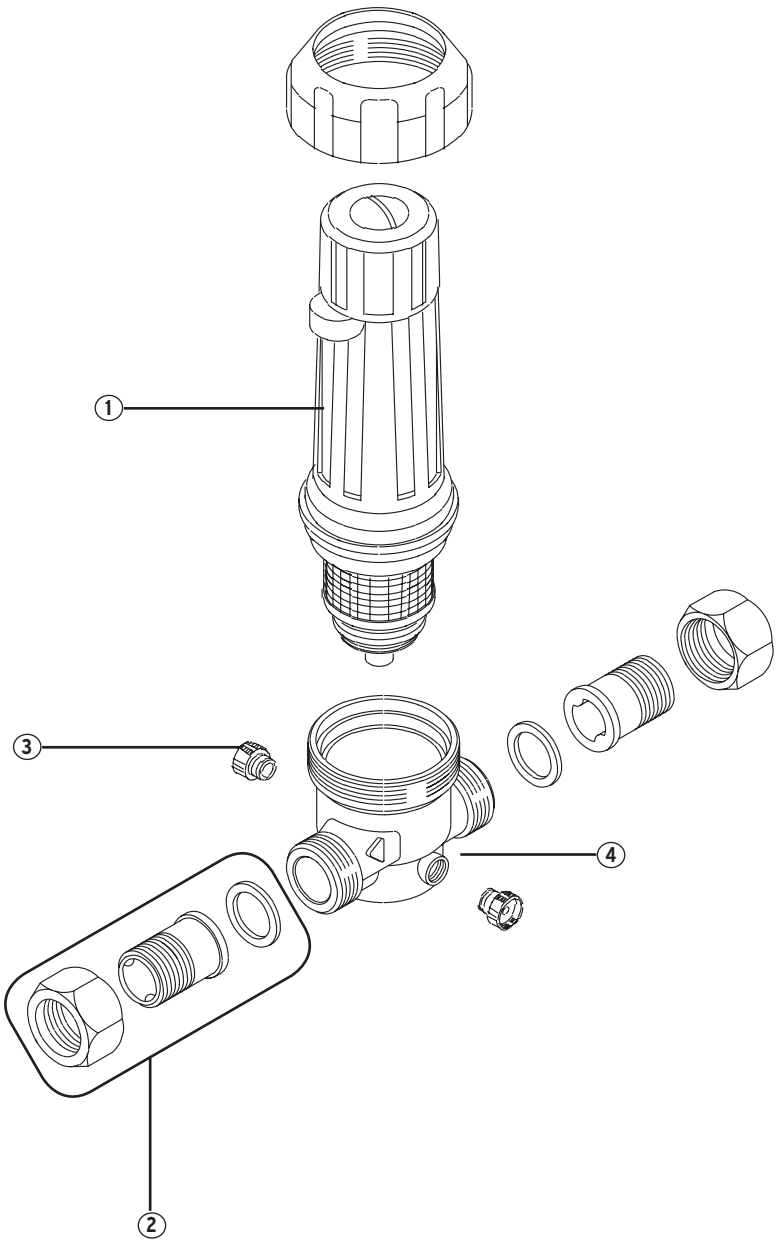
DN 15+20	0315.20.904
DN 25	0315.25.904
DN 32-50	0315.32.902

② **Threaded union and seal**

DN 15	0812.15.900
DN 20	0812.20.900
DN 25	0812.25.900
DN 32	0812.32.900
DN 40	0812.40.900
DN 50	0812.50.900

③ **Manometer plug**
0828.08.000

④ **Body**



Pressure Reducing Valve 315 AB

made of gunmetal with outlet pressure indicator





Fig. 1

Field of application

The pressure reducing valve type 315 AB is predominantly used in the drinking water supply and fulfils the requirements of the European Standard EN 1567. Under consideration of its specifications it also protects industrial and commercial installations against excess supply pressure. The pressure reducing valve type 315 AB protects water-supplying installations; it compensates and optimises upstream pressure variations and therefore it effectively prevents damages that can be caused by pressure increase. Furthermore, it economically and ecologically reduces the water consumption. The type 315 AB meets the highest European acoustic protection requirements.

Design

The pressure reducing valve type 315 AB is equipped with an outlet pressure indicator (see figure 1) that displays the set pressure. As a result, an additional pressure gauge is not necessary. The spring cap is rotatable by 360°, so that the pressure indicator is always visible. The pressure reducing valve type 315 complies with the European Standard EN 1567 and fulfils the highest acoustic protection requirements up to DN 32. The pressure reducing valve type 315 AB is equipped with a spring-relieved single-seat valve and a coaxially positioned strainer (mesh width: 0.25 mm). The operational parts of the system are placed in a cartridge; this complete unit can be exchanged without disassembling the whole valve and without using special tools; the outlet pressure setting remains unchanged. The special cartridge design allows any mounting position.

Materials

The materials used for the SYR pressure reducing valve type 315 AB comply with the high requirements of European Standards. All synthetic parts getting in contact with water are approved by the German Public Health Office (KTW). The corrosion resistance in particular is guaranteed for all used materials. The body is made of a low-lead dezincification resistant gunmetal alloy. All rubber parts are made of ageing resistant elastomer. The diaphragm is reinforced and the high resistance of the screw cap is due to the glass fibre reinforced synthetic material.

Installation

The connection size depends on the required flow rate capacity. When choosing a pressure reducing valve, it has to be taken into consideration that a pressure drop of 1.3 bar occurs at maximum flow rate. This is the difference between the static and dynamic pressure on the outlet of the pressure reducing valve. When a defined flow rate is required for a determined draw-off point, the setting of the pressure reducer has to be calculated beforehand. A pressure reducing valve works without auxiliary energy with very little adjustment forces. Therefore it reacts sensitively to impurities. A filter installed upstream effectively protects the pressure reducing valve type 315 AB.

Thoroughly rinse the pipe prior to installation. Install the SYR pressure reducing valve type 315 AB in the pipe under consideration of the flow direction (see arrow on the body) without applying stresses.

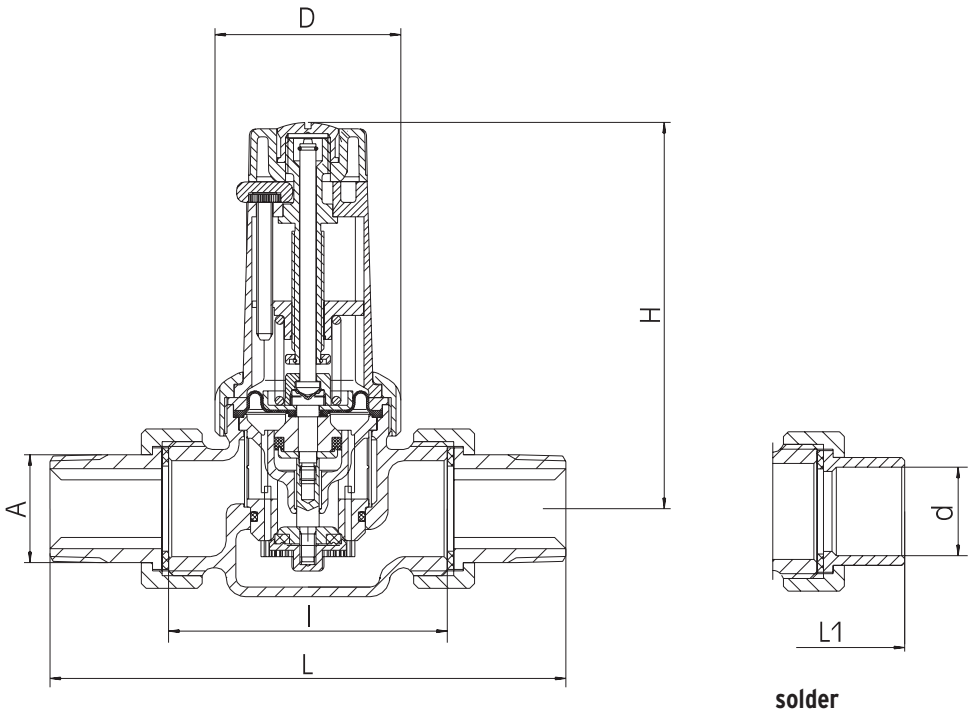
Afterwards, turn the head part without loosening the captive nut, so that the green outlet pressure indicator becomes visible.

Technical data

Inlet pressure:	max. 25 bar
Outlet pressure:	1.5 - 6 bar (factory-set to 4 bar)
Operating temperature:	max. 30 °C
Mounting position:	any
Fluid:	Water, compressed air, neutral non-adhesive fluids, neutral gases
Acoustic protection approval number:	DN 15-25 P-IX 7635/I, DN 32 P-IX 7729/I
DVGW-number:	NW-6330AT2061
Serial number:	0315...

Maintenance

The pressure has to be set at static pressure. For doing so, loosen the safety screw in the adjustment handle. The requested pressure is set with a flick of the wrist. With the well-contrived combined adjustment-display handle, the pressure reducer not only ensures an optimal pressure but also allows to read the set pressure without an additional pressure gauge. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+).
It is recommended to carry out maintenance works on a regular basis to ensure a durable function. The perfected design of the cartridge system allows to disassemble the operational part of the pressure reducing valve without having to disassemble the whole valve and without using special tools.



solder

Nominal size		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
	A	G ½	G ¾	G 1	G 1 ¼	G 1 ½	G 2
Dimensions in mm	L (mm)	140	160	175	190	220	255
	L1 (mm)	112	132	148	170	205	240
	l (mm)	80	90	100	105	130	140
	H (mm)	123	123	121	176	176	180
	D (mm)	58	58	58	SW 75	SW 75	SW 75
Flow rate capacity in m³/h (at 2m/s)	Residential buildings according to DIN EN 1567	1.3	2.3	3.6	5.8	9.1	14
Flow rate capacity in m³/h (at 3m/s)	industrial / commercial installations	1.8	3.3	5.4	8.6	13.7	21.2

Accessory Manometer: type 11

Components /order numbers

① **Pressure reducer cartridge with outlet pressure indicator**

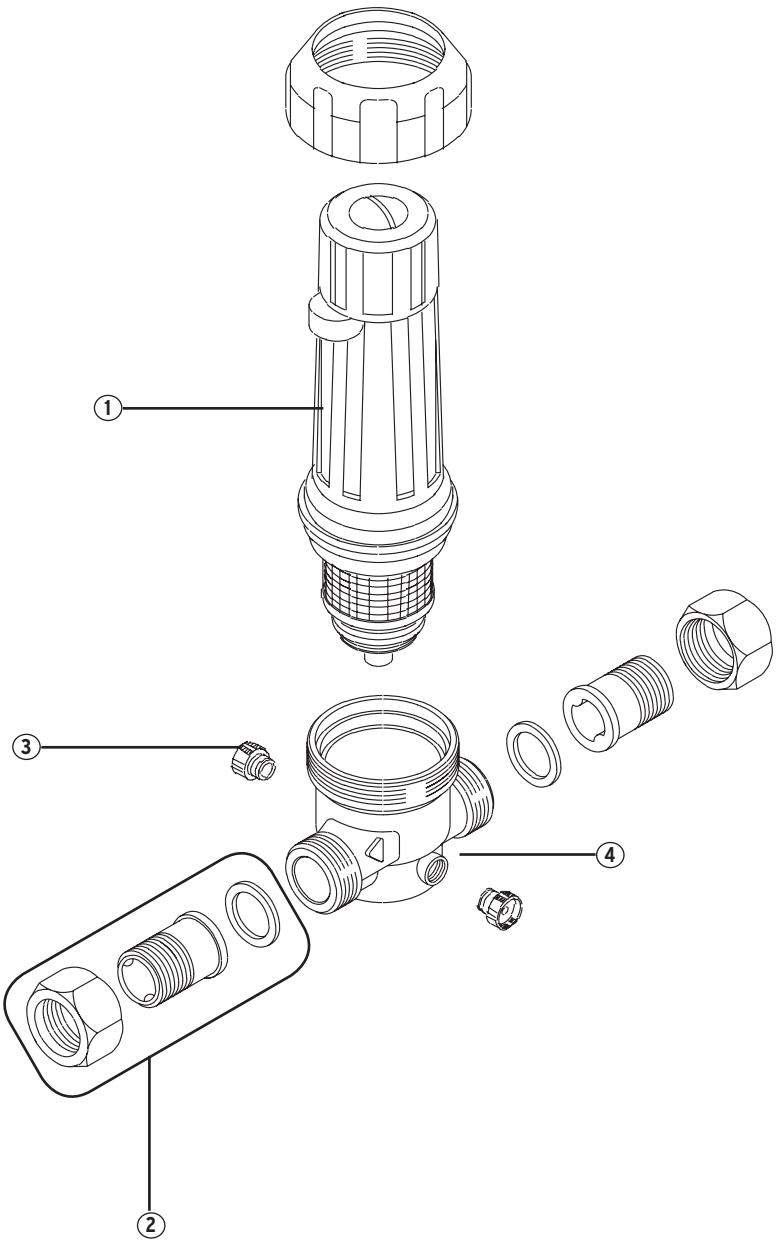
DN 15+20	0315.20.904
DN 25	0315.25.904
DN 32-50	0315.32.902

② **Threaded union and seal**

DN 15	0812.15.900
DN 20	0812.20.900
DN 25	0812.25.900
DN 32	0812.32.900
DN 40	0812.40.900
DN 50	0812.50.900

③ **Manometer plug**
0828.08.000

④ **Body**



Pressure reducing valve 315.2

made of hot-pressed brass with outlet pressure indicator





Fig. 1

Field of application

The pressure reducing valve type 315.2 is predominantly used in potable water installations in accordance with EN 806-2. Under consideration of its specifications, it also protects industrial and commercial installations against excess supply pressure. The pressure reducing valve type 315.2 protects water-supplying installations by compensating and optimising upstream pressure variations and therefore it effectively prevents damage that can be caused by pressure increase. Furthermore, it economically and ecologically reduces the water consumption. The type 315.2 meets the highest European acoustic protection requirements.

Design

The pressure reducing valve type 315.2 is equipped with an outlet pressure indicator (see figure 1) that displays the set pressure. An additional pressure gauge is not necessary. The spring cap is rotatable by 360°, so that the pressure indicator is always visible. The pressure reducing valve type 315.2 complies with the European Standard EN 1567 and fulfils the DVGW requirements from DN 15 to DN 50 as well as the highest acoustic protection requirements up to DN 32. The pressure reducing valve type 315.2 is equipped with a spring-relieved single-seat valve and a coaxially positioned strainer (mesh width: 0.25 mm). The operational parts of the system are placed in a cartridge that can be exchanged without disassembling the whole valve and without using special tools; the outlet pressure setting remains unchanged. The special cartridge design allows for any mounting position.

Materials

The materials used for the SYR pressure reducing valve type 315.2 comply with the high requirements of European Standards. All synthetic parts getting into contact with water are approved by the German Public Health Office (KTW). The corrosion resistance in particular is guaranteed for all used materials. The body is made of high quality hot-pressed brass. All rubber parts are made of ageing resistant elastomer. The diaphragm is reinforced and the high resistance of the screw cap is due to the glass fibre reinforced synthetic material.

Installation

The connection size depends on the required flow rate capacity. When choosing a pressure reducing valve, consider that a pressure drop of 1.1 bar occurs at maximum flow rate. This is the difference between the static and dynamic pressure at the outlet of the pressure reducing valve. When a specific flow rate is required for a particular draw-off point, calculate the setting of the pressure reducer beforehand. A pressure reducing valve works without auxiliary energy with very little adjustment forces. Therefore, it reacts sensitively to impurities. A filter installed upstream effectively protects the pressure reducing valve type 315.2.

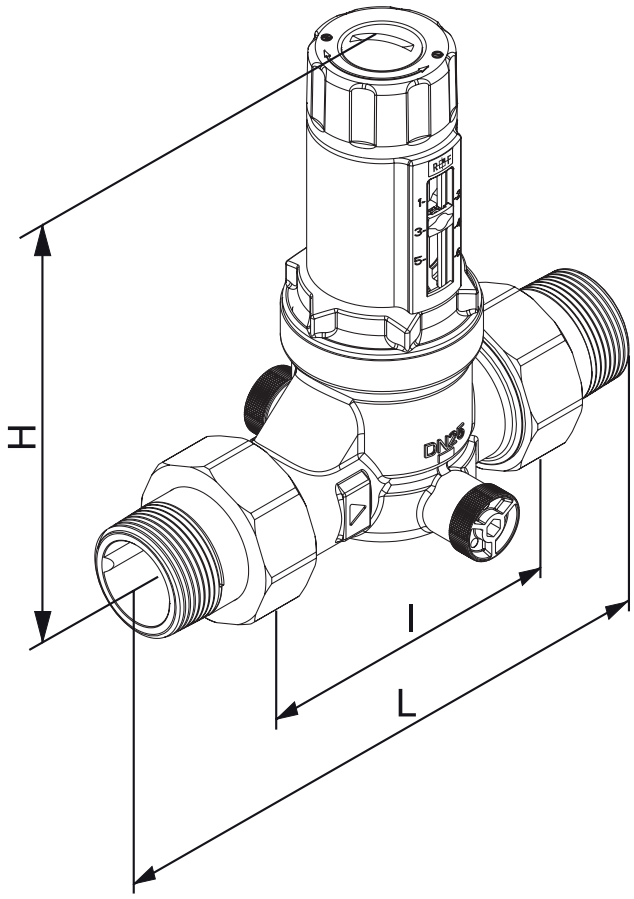
Thoroughly flush the pipe prior to installation. Mount the SYR pressure reducing valve type 315.2 in the pipe under consideration of the direction of flow (see arrow on the body) without applying stresses. Afterwards, turn the head part without loosening the captive nut until the green outlet pressure indicator becomes visible.

Technical specifications

Inlet pressure:	max. 25 bar
Outlet pressure:	1.5 - 6 bar (factory set to 4 bar)
Service temperature:	max. 70°C
Mounting position:	any
Medium:	water, compressed air, neutral non-adhesive fluids, neutral gases
Serial number:	0315...

Maintenance

The pressure has to be set at static pressure. Proceed as follows: loosen the safety screw in the adjustment knob. The requested pressure is set with a flick of the wrist. With the well-contrived outlet pressure indicator, the pressure reducer not only ensures the optimal pressure but also allows for reading the set pressure without an additional pressure gauge. To reduce the outlet pressure, turn the adjustment knob in the direction of the minus symbol (-), to increase it, turn the adjustment knob in the direction of the plus symbol (+). It is recommended to carry out maintenance works on a regular basis to ensure durable functionality. The perfected design of the cartridge system allows to disassemble the pressure reducer's operational part without removing the whole valve and without using special tools.



Soldered union

Nominal size		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
	A	G ½	G ¾	G 1	G 1 ¼	G 1 ½	G 2
Dimensions in mm	L (mm)	125	134	175	190	220	255
	l (mm)	69	72	100	105	130	140
	H (mm)	107	107	132	194	194	187
Peak flow rate in m³/h (at 2m/s)	Residential buildings according to EN 1567	1,3	2,3	3,6	5,8	9,1	14
Peak flow rate in m³/h (at 3m/s)	Industrial/commercial buildings according to EN 806-2	1,8	3,3	5,4	8,6	13,7	21,2

Accessories Pressure gauge: Type 11

Components / Order numbers

① **Pressure reducer cartridge with outlet pressure indicator**

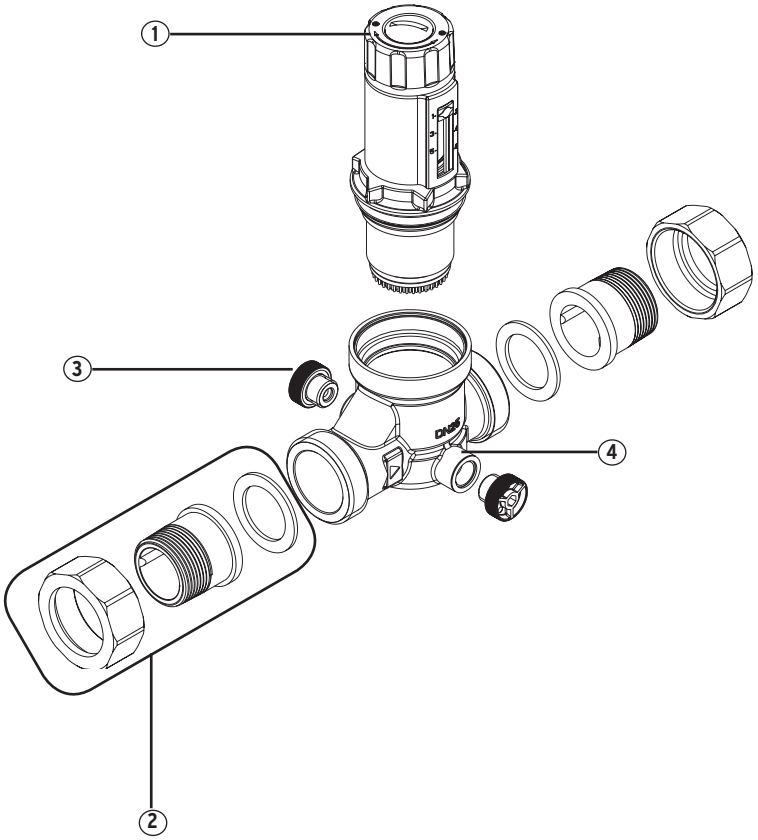
DN 15+20	0315.15.924
DN 25	0315.25.924
DN 32 - 50	0315.32.924

② **Threaded union**
composed of:
captive nut, union piece, seal

DN 15	0812.15.900
DN 20	0812.20.900
DN 25	0812.25.900
DN 32	0812.32.900
DN 40	0812.40.900
DN 50	0812.50.900

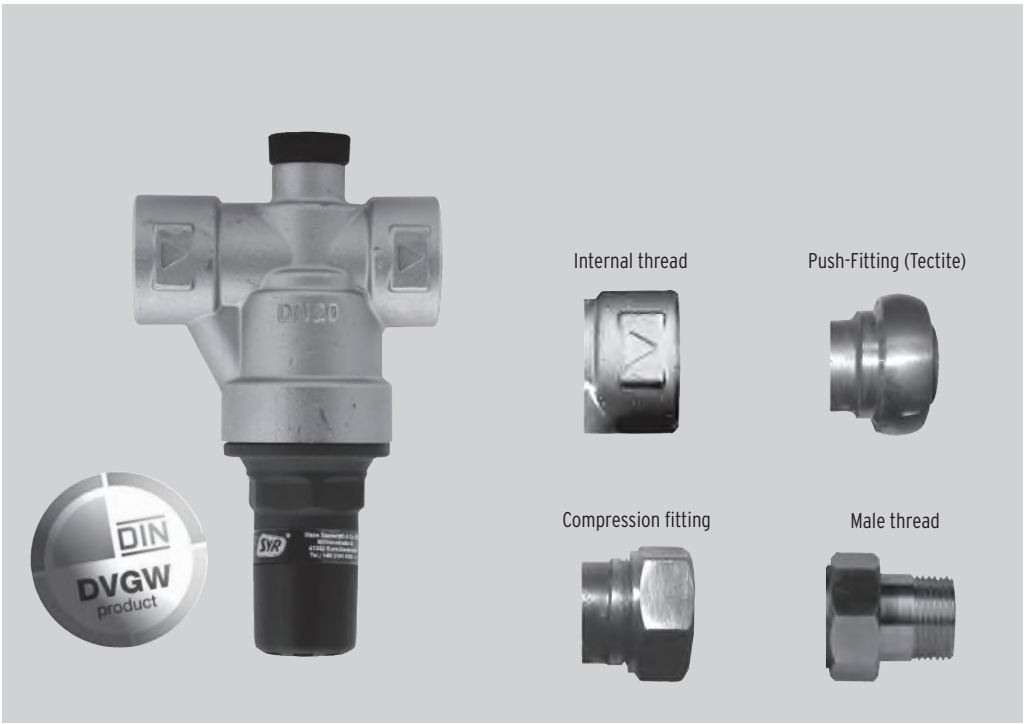
③ **Pressure gauge plug**
0828.08.000

④ **Body**



Pressure Reducing Valve type 312 Euro plus

Compact Pressure Reducing Valve



Field of application

The Pressure Reducing Valve type 312 Euro plus, which complies with the European Standard EN 1567 is predominantly used in the field of potable water installations. It also protects industrial and commercial installations against excess supply pressure according to its specifications.

The Pressure Reducing Valve type 312 Euro plus protects water supply systems by compensating and optimising upstream pressure variations, which effectively prevents damages that can result from pressure increase. In addition, it economically and ecologically reduces water consumption.

Design

The Pressure Reducing Valve type 312 Euro plus is equipped with a spring-relieved single seat valve and a coaxially positioned strainer (mesh width: 0.25 mm). The operational parts of the system are placed in a cartridge, which can be exchanged without disassembling the device and without using special tools. The outlet pressure remains unchanged. The special cartridge design allows any mounting position. The Pressure Reducing Valve type 312 Euro plus meets the requirements of the European Standard EN 1567.

Materials

The materials used for the SYR Pressure Reducing Valve type 312 Euro plus comply with the high requirements of European Standards. All parts getting into contact with water are approved by the German Public Health Office (KTW). The corrosion resistance is guaranteed for all used materials.

The body is made of a high-quality, low-lead brass alloy. All rubber parts are made of ageing-resistant elastomer. Reinforced diaphragm. The high-resistant screw cap is made of glass fibre reinforced synthetic material.

Installation

The connection size depends on the required flow rate capacity. When selecting a Pressure Reducing Valve, it is important to consider that a pressure drop of 1.1 bar occurs at maximum flow rate. This is the difference between the static and dynamic pressure on the outlet of the Pressure Reducing Valve. When a defined flow rate is required at a specific draw-off point, the setting of the pressure reducer has to be calculated beforehand. A Pressure Reducing Valve works without auxiliary energy with very little adjustment forces. Therefore, it reacts sensitively to impurities. A filter installed upstream effectively protects the Pressure Reducing Valve type 312 Euro plus (EN 13443-1).

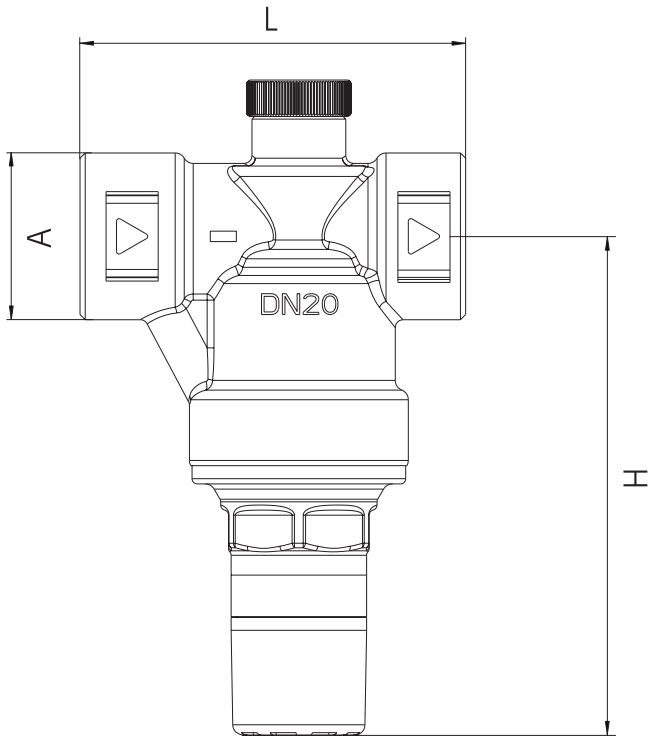
Thoroughly flush the pipe prior to installation. Install the SYR Pressure Reducing Valve type 312 Euro plus in the pipe under consideration of the direction of flow (see arrow on the body) without applying stresses.

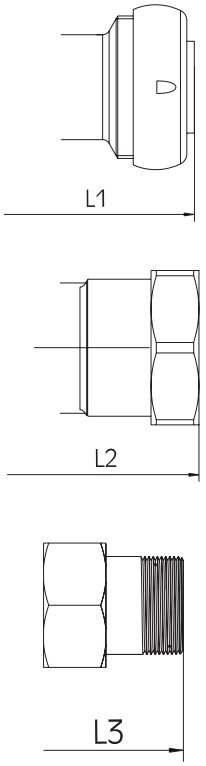
Technical specifications

Inlet pressure:	max. 16 bar
Outlet pressure:	adjustment range: 1.5 - 5.5 bar or with preset and sealed cartridge
Operating temperature:	max. 30 °C / max. 80°C available on request
Mounting position:	any
Fluid:	Water, compressed air, neutral gases
Acoustic protection approval number:	P-IX 6736/I
Certification:	NW-6330BR0050
Serial number:	0312...

Maintenance

The pressure has to be set at static pressure. Lift the adjustment knob and turn it to set the desired pressure. To reduce the outlet pressure, turn the adjustment knob in the direction of the minus symbol (-) and to increase it, turn the adjustment knob in the direction of the plus symbol (+). Let the adjustment knob click into its original position. It is recommended to carry out maintenance works on a regular basis to ensure perfect functionality. The perfected design of the cartridge system allows to disassemble the functional part of the pressure reducer without having to disassemble the whole device and without using special tools.





Male thread, Compression- and Push-fittings 15 and 22 mm optionally available for connection sizes DN 15 and DN 20.

Nominal size		DN 10	DN 15	DN 20
	A	G d“	G ½“	G ¾“
Dimensions in mm	L (mm)	64	72	74
	L1 (mm)	-	88	100
	L2 (mm)	-	86	88
	L3 (mm)	-	74	80
	H (mm)	100	97	97
Flow rate capacity in m³/h (at 2m/s)	Residential buildings according to DIN EN 1567	0.56	1.3	2.3
Flow rate capacity in m³/h (at 3m/s)	industrial / commercial installations	0.85	1.8	3.3

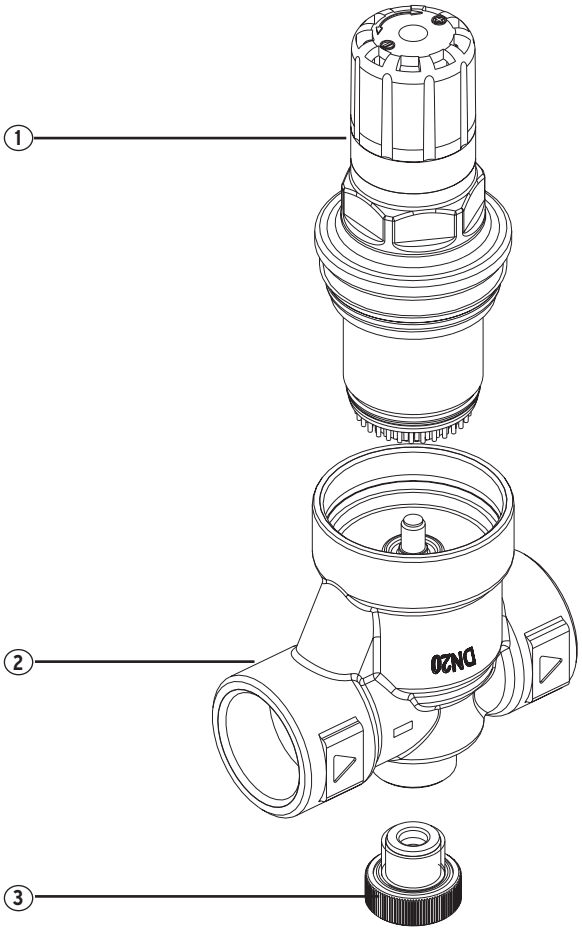
Accessory Manometer: Type 11

Components / Order numbers

① **Pressure reducer cartridge adjustable**
DN 8 - 20 0312.20.927

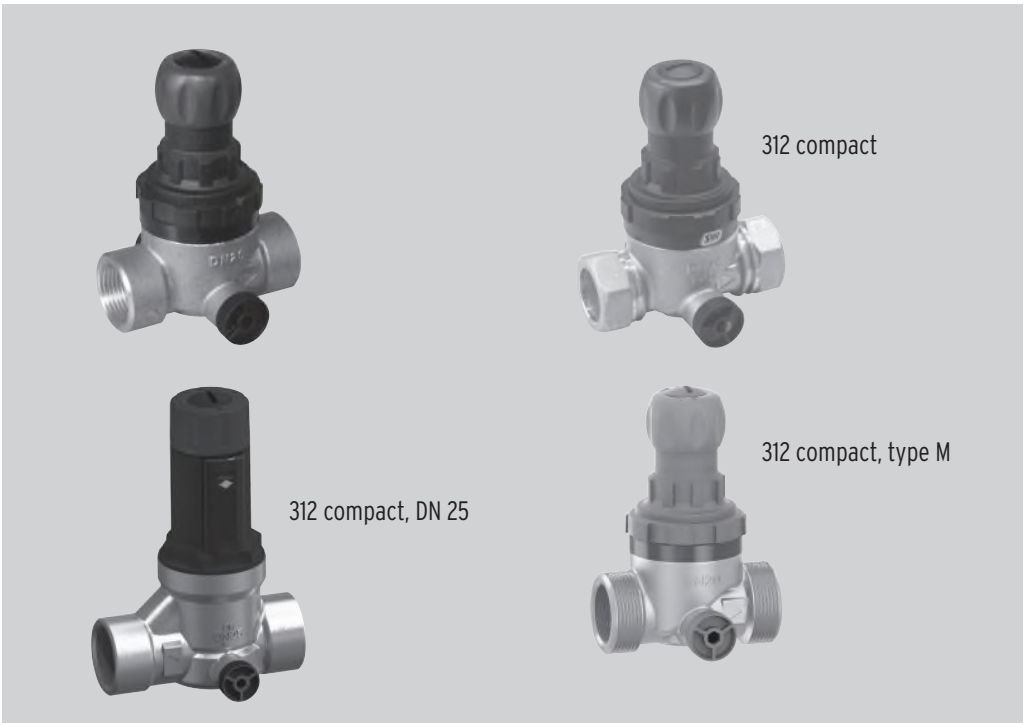
② **Body**

③ **Manometer plug**
0828.08.000



Pressure Reducing Valve 312 compact

Compact pressure reducing valve



Field of application

In accordance with its specifications the pressure reducing valve type 312 compact that complies with the European Standard EN 1567 protects industrial and commercial installations against excess supply pressure. It is predominantly used to reduce pressure upstream of apparatuses like drink vending machines, dosing apparatuses, washing machines, high-pressure cleaners and laboratory equipment.

The pressure reducing valve type 312 protects water-supplying installations; it compensates and optimises upstream pressure variations and therefore effectively prevents any damages that can be caused by pressure increase. Furthermore, it economically and ecologically reduces the water consumption.

Design

The pressure reducing valve type 312 compact is equipped with a spring-relieved single-seated valve and a coaxially positioned strainer (mesh width: 0.25 mm). The operational parts of the system are placed in a cartridge; this complete unit can be exchanged without disassembling the valve and without using special tools; the outlet pressure setting remains unchanged. The special cartridge design allows any mounting position.

Materials

The materials used for the SYR pressure reducing valve type 312 compact comply with the high requirements of European Standards. All parts getting in contact with water are approved by the German Public Health Office (KTW). The corrosion resistance in particular is guaranteed for all used materials. The body is made of a low-lead dezincification resistant gunmetal alloy. All rubber parts are made of ageing resistant elastomer. The diaphragm is reinforced and the high resistance of the screw cap is due to glass fibre reinforced synthetic material.

Installation

The connection size depends on the required flow rate capacity. When choosing a pressure reducing valve, it has to be taken into consideration that a pressure drop of 1.1 bar occurs at maximum flow rate. This is the difference between the static and dynamic pressure on the outlet of the pressure reducing valve. When a defined flow rate is required for a determined draw-off point, the setting of the pressure reducer has to be calculated beforehand. A pressure reducing valve works without auxiliary energy with very little adjustment forces. Therefore it reacts sensitively to impurities. A filter installed upstream effectively protects the pressure reducing valve type 312 compact.

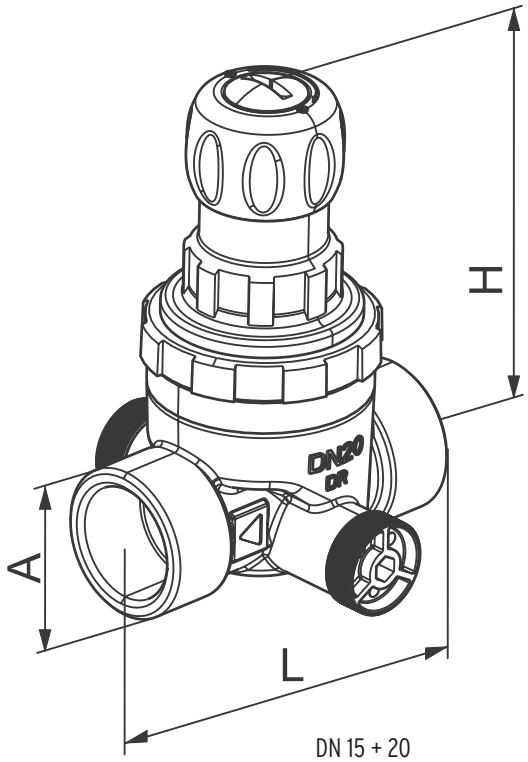
Thoroughly rinse the pipe prior to installation. Install the SYR pressure reducing valve type 312 compact in the pipe under consideration of the flow direction (see arrow on the body) without applying stresses.

Technical data

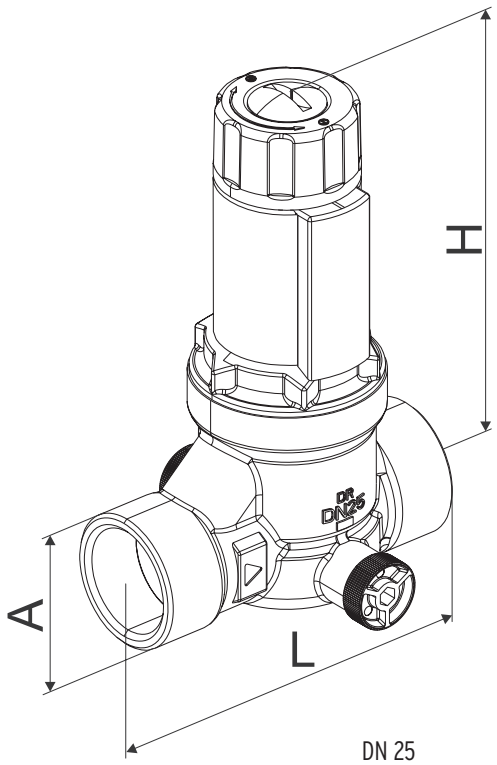
Inlet pressure:	max. 16 bar
Outlet pressure:	1,5 - 6 bar (factory-set to 4 bar)
Operating temperature:	max. 45°C (70°C on request)
Mounting position:	any
Fluid:	Water, compressed air, neutral gases, neutral non-aggressive or non-adhesive fluids
Serial number:	0312...

Maintenance

The pressure has to be set at static pressure. For doing so, loosen the safety screw in the adjustment handle and the requested pressure is set with a flick of the wrist. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+). It is recom-mended to carry out maintenance works on a regular basis to ensure a durable function. The perfected design of the cartridge system allows to disassemble the operational part of the pressure reducer without having to disassemble the whole valve and without using special tools.



DN 15 + 20



DN 25

Nominal size		DN 15	DN 20	DN 25	Comp. fitting	Comp. fitting
	A	G ½	G ¾	G 1	15 mm	22 mm
Dimensions in mm	L (mm)	72	76	100	62	65
	H (mm)	92	92	142,5	92	92
Flow rate capacity in m³/h (at 2m/s)	Residential buildings according to DIN EN 1567	1.3	2.3	3,6	1.3	2.3
Flow rate capacity in m³/h (at 3m/s)	industrial / commercial installations	1.8	3.3	5,4	1.8	3.3

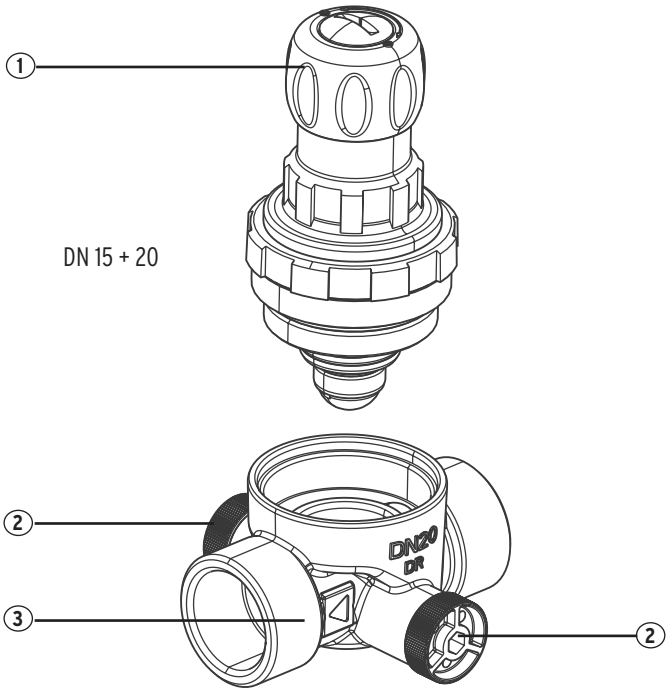
Accessory Manometer: type 11

Components / Order numbers

① **Pressure reducer cartridge**
DN 10+15 0312.15.900
DN 20 0312.20.909

② **Manometer plug**
0828.08.000

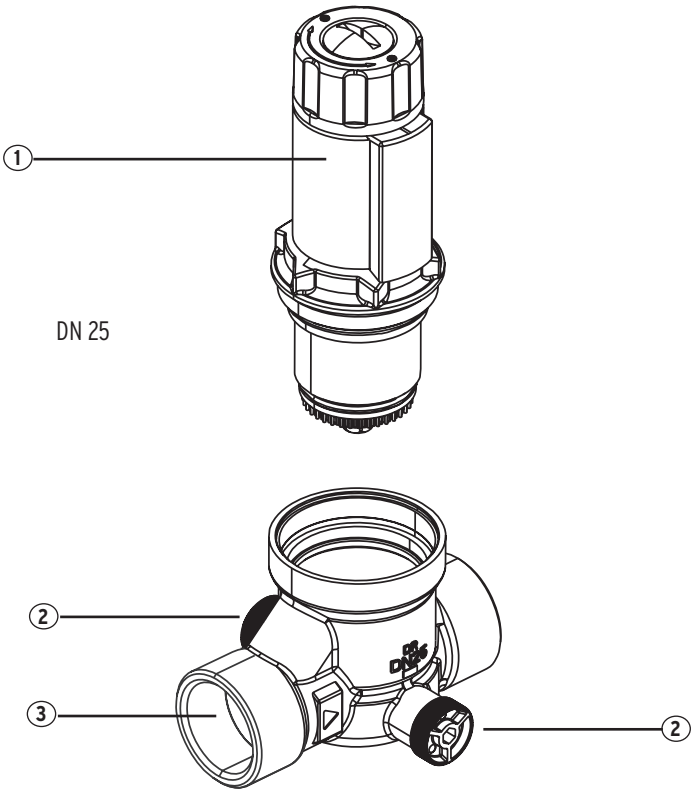
③ **Body**



① **Pressure reducer cartridge**
DN 25 0312.25.921

② **Manometer plug**
0828.08.000

③ **Body**



Pressure Regulating Valve 6203

Proportionally operating pressure regulating valve for industrial applications



Field of application

The SYR pressure regulating valve type 6203 is used to regulate the pressure in industrial installations and apparatuses with media in accordance with the given specifications. As proportionally working pressure regulating valve, it prevents an excessive pressure in-crease in the system located upstream by opening in proportion to the rising pressure. The design of the pressure regulating valve type 6203 allows to install it in drain or return pipes of longer size where back pres-sures can occur.

Design

The pressure regulating valve type 6203 is designed as a proportionally operating diaphragm controlled valve. It is equipped with an outlet pressure indicator that displays the set pressure. As a result, an additional pressure gauge is not necessary. The spring cap is rotatable by 360°, so that the pressure indicator is always visible. The pressure regulating valve type 6203 is equipped with a coaxially arranged strainer (mesh width: 0.25 mm). The operational parts of the system are placed in a car-tridge; this complete unit can be exchanged without disassembling the whole valve and without using special tools; when disassembling the cartridge the outlet pressure setting remains unchanged. The special car-tridge design allows any mounting position.

Materials

The body and the captive nut are made of a low-lead dezincification resistant gunmetal alloy. All rubber parts are made of ageing resistant elasto-mer. The diaphragm is re-inforced and the high resistance of the screw cap is due to glass fibre reinforced synthetic material. The sealing elements are made of heat and ageing resistant elas-tomer. The spring is made of corrosion pro-tected spring steel wire.

Installation

The connection size depends on the requi-red flow rate capacity. A pressure regulating valve works without auxiliary energy with very little adjustment forces and therefore it reacts sensitively to impuri-ties. A filter installed upstream effectively protects the pressure regulating valve type 6203.

Thoroughly rinse the pipe prior to installa-tion. Install the SYR pressure regulating valve type in the pipe under consideration of the flow direction (see arrow on the body) without applying stresses.

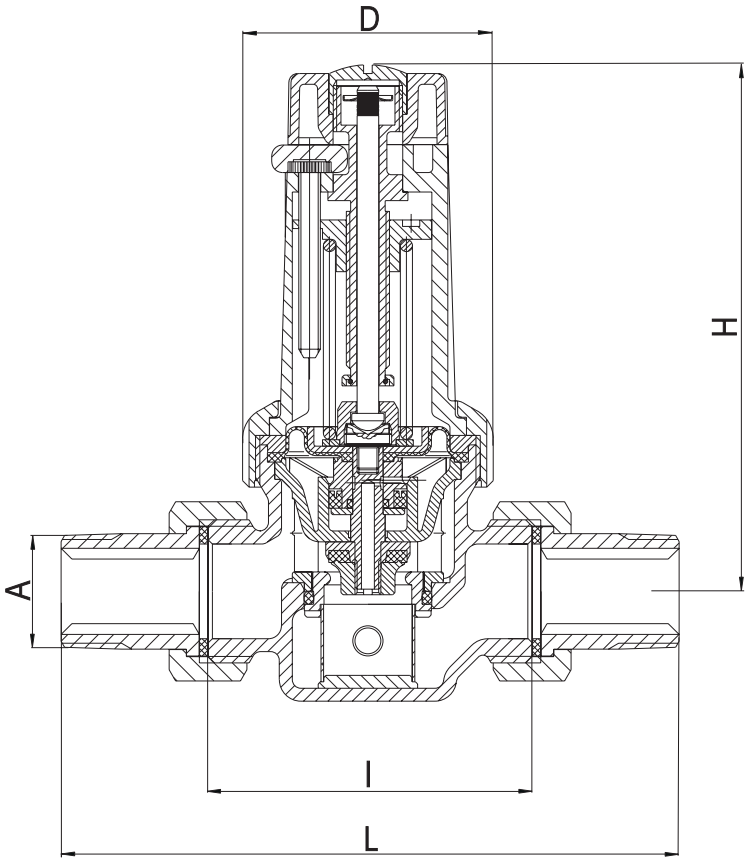
Afterwards, turn the head part without loosening the captive nut, so that the green outlet pres-sure indicator becomes visible.

Technical data

Operating overpressure:	max. 25 bar
Outlet pressure:	type 6203.1: 1.5 bis 5 bar type 6203.2: 5 - 8 bar
Operating temperature:	max. 110°C
Mounting position:	any
Fluid:	water, compressed air, neutral fluids, oil-free air, neutral gases
Certification:	CE 0085
Serial number:	6203...

Maintenance

Depending on the use, the valve can be adjusted to the opening pressure or to a desired system pressure occurring at maximum flow rate. For doing so, loosen the safety screw in the adjustment handle. The requested pressure is set with a flick of the wrist. With the well-contrived combined adjustment-display handle, the pressure regulating valve not only ensures an optimal pressure but also allows to read the set pressure without an additio-nal pressure gauge. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (–), to increase it, turn the adjust-ment handle in the direction of the plus symbol (+). According to the operating conditions, it is neces-sary to carry out maintenance works on a regular basis. The perfected design of the cartridge system allows to exchange and service the operational part of the pressure regulating valve without having to disassemble the whole valve and without using special tools.



Nominal size		DN 15	DN 20	DN 25	DN 32
	A	G ½	G ¾	G 1	G 1 ¼
Dimensions in mm	L (mm)	132	143	161	190
	l (mm)	75	75	87	105
	H (mm)	123	123	121	176
	D (mm)	58	58	58	KW* 75

* Key width

Components / Order numbers

① **Cartridge of pressure regulating valve with outlet pressure indicator**

1,5 - 5 bar

DN 15 + 20	6203.15.903
DN 25	6203.25.903
DN 32 - 50	6203.32.903

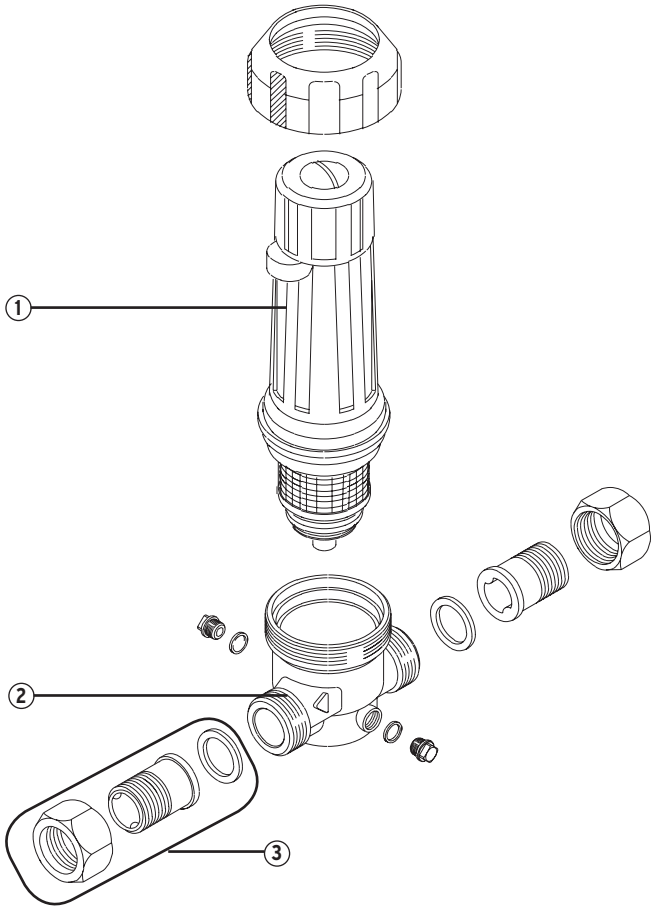
5 - 8 bar

DN 15 + 20	6203.15.904
DN 25	6203.25.904
DN 32 - 50	6203.32.904

② **Body**

③ **Threaded union and seal**

DN 15	0812.15.900
DN 20	0812.20.900
DN 25	0812.25.900



Pressure Reducing Valve 6243

Pressure reducing valve made of gunmetal for industrial applications



Field of application

The SYR pressure reducing valve type 6243 is used to regulate the pressure in industrial systems and apparatuses with media as given in the specifications. The pressure reducing valve regulates the pressure in the downstream part of the installation by closing in case of pressure increase.

Design

The pressure reducing valve type 6243 is designed as spring-relieved single-seated valve with a coaxially arranged strainer (mesh width: 0.25 mm). It is equipped with an outlet pressure indicator that displays the set pressure. As a result, an additional pressure gauge is not necessary. The spring cap is rotatable by 360°, so that the pressure indicator is always visible. The operational parts of the system are placed in a cartridge; this complete unit can be exchanged without disassembling the whole valve and without using special tools; when disassembling the cartridge the outlet pressure setting remains unchanged. The special cartridge design allows any mounting position.

Materials

The body and the captive nut are made of a low-lead dezincification resistant gunmetal alloy. All rubber parts are made of ageing resistant elastomer. The diaphragm is reinforced and the high resistance of the screw cap is due to glass fibre reinforced synthetic material. The sealing elements are made of heat and ageing resistant elastomer. The spring is made of corrosion protected spring steel wire.

Installation

The connection size depends on the required flow rate capacity. A pressure reducing valve works without auxiliary energy with very little adjustment forces and therefore it reacts sensitively to impurities. A filter installed upstream effectively protects the pressure reducing valve type 6243. Thoroughly rinse the pipe prior to installation.

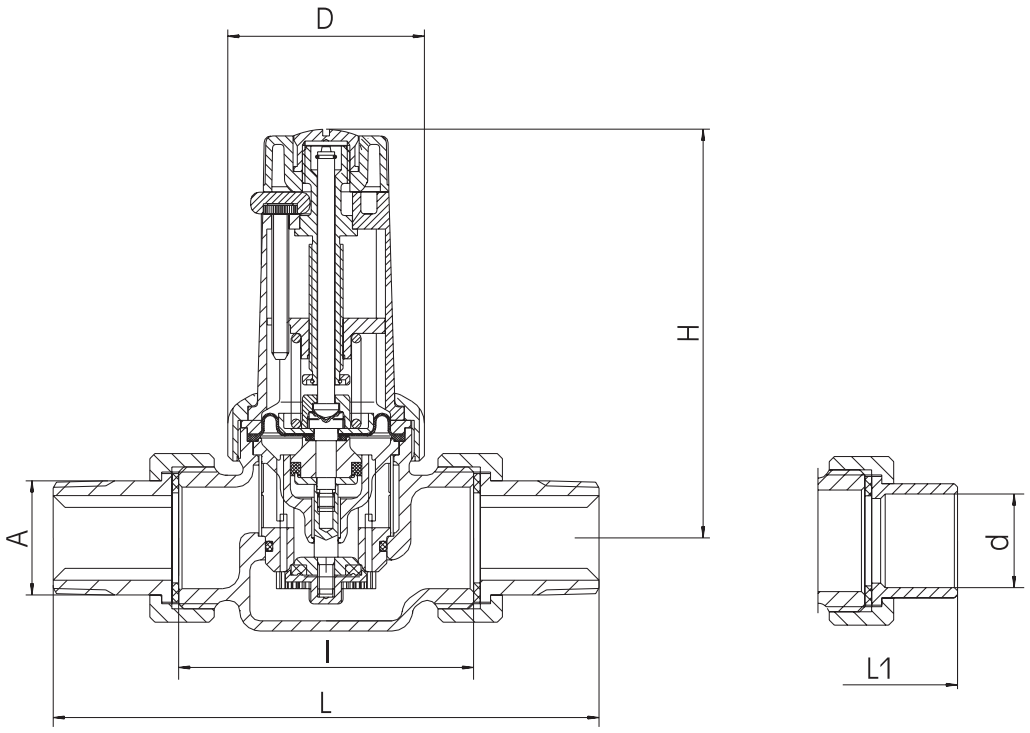
Install the SYR pressure reducing valve in the pipe under consideration of the flow direction (see arrow on the body) without applying stresses. Afterwards, turn the head part without loosening the captive nut, so that the green outlet pressure indicator becomes visible.

Technical data

Operating overpressure:	max. 25 bar
Outlet pressure:	type 6243.1: 1.5 bis 5 bar type 6243.2: 5 - 8 bar
Operating temperature:	max. 90°C
Mounting position:	any
Fluid:	water, compressed air, neutral fluids, oil-free air, neutral gases
Serial number:	6243...

Maintenance

The inlet pressure available has to be at least one bar higher than the desired outlet pressure. For the adjustment, all draw-off valves on the outlet side have to be closed. For doing so, loosen the safety screw in the adjustment knob. The requested pressure is set with a flick of the wrist. With the well-contrived combined adjustment-display handle, the pressure reducer not only ensures an optimal pressure but also allows to read the set pressure without an additional pressure gauge. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+).
It is recommended to carry out maintenance works on a regular basis to ensure a durable function. The perfected design of the cartridge system allows to disassemble the operational part of the pressure reducing valve without having to disassemble the whole valve and without using special tools.



Nominal size		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
	A	G ½"	G ¾"	G 1"	G 1 ¼"	G 1 ½"	G 2"
Dimensions in mm	L (mm)	132	143	161	190	220	255
	L1 (mm)	106	117	135	170	205	240
	l (mm)	75	75	87	105	130	140
	H (mm)	123	123	121	176	176	180
	D (mm)	58	58	58	KW* 75	KW* 75	KW* 75
Flow rate capacity in m³/h (at 2m/s)	Residential buildings according to DIN EN 1567	1.3	2.3	3.6	5.8	9.1	14
Flow rate capacity in m³/h (at 3m/s)	industrial / commercial installations	1.8	3.3	5.4	8.6	13.7	21.2

* Key width

Accessory Manometer 0011.08.000

Components / Order numbers

① **Pressure reducer cartridge with outlet pressure indicator**

1,5 - 5 bar

DN 15 + 20	6243.15.902
DN 25	6243.25.907
DN 32 - 50	6243.32.907

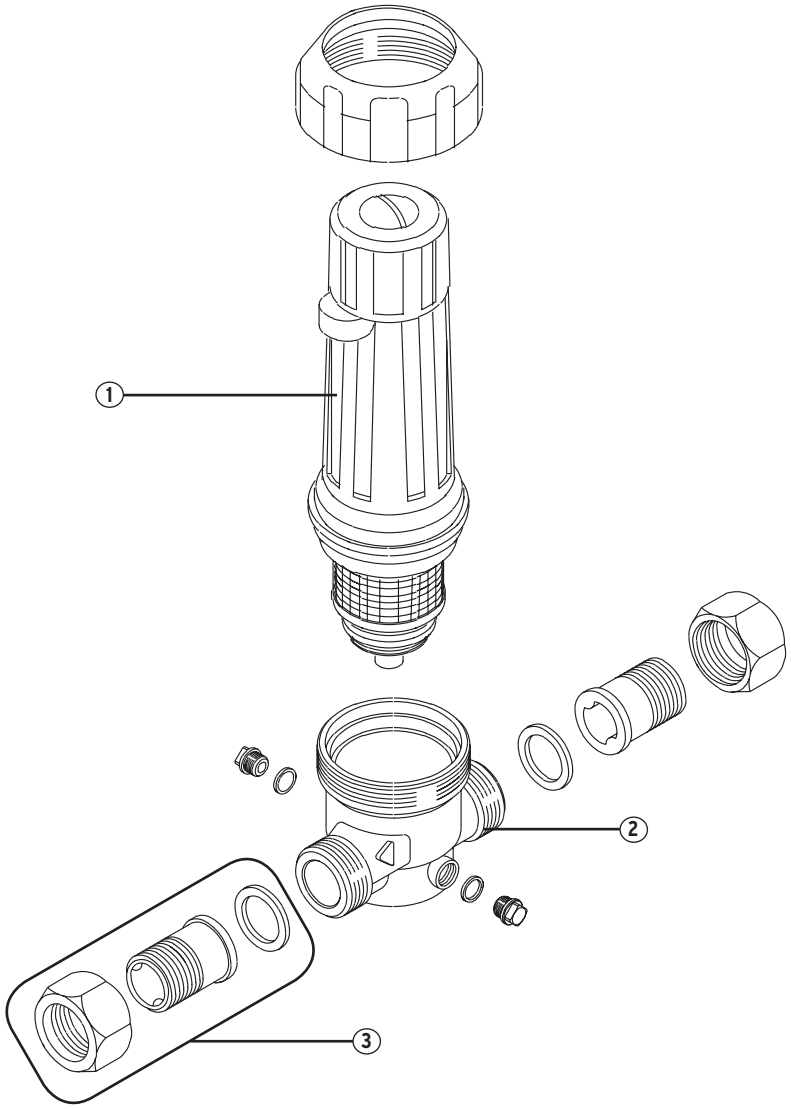
5 - 8 bar

DN 15 + 20	6243.15.903
DN 25	6243.25.908
DN 32 - 50	6243.32.908

② **Body**

③ **Threaded union and seal**

DN 15	0812.15.900
DN 20	0812.20.900
DN 25	0812.25.900
DN 32	0812.32.900
DN 40	0812.40.900
DN 50	0812.50.900



Pressure Reducing Valve with flange connection 6247

made of gun metal with flange connection and outlet pressure indicator



Field of application

The pressure reducing valve with flange connection type 6247 protects in compliance with its specifications industrial and commercial installations against excess supply pressure. It is predominantly used in the drinking water supply and fulfils the requirements of the European Standard EN 1567.

The pressure reducing valve with flange connection type 6247 protects water-supplying installations; it compensates and optimises upstream pressure variations and therefore effectively prevents damages that can be caused by pressure increase.

Design

The pressure reducing valve with flange connection type 6247 is equipped with one pressure reducer cartridge and designed with a flange connection. The pressure reducer cartridge is equipped with a spring-relieved single-seat valve and a coaxially positioned strainer (mesh width: 0.6 mm). The operational parts of the system are placed in a cartridge; this complete unit can be exchanged without disassembling the whole valve and without using special tools; the outlet pressure setting remains unchanged. The special cartridge design allows any mounting position. The pressure reducing valve with flange connection type 6247 is also equipped with connection facilities for upstream or downstream pressure gauges.

Materials

The body and the captive nut are made of a low-lead dezincification resistant gunmetal alloy. All materials are tested and approved by DVGW, an internationally recognised test institute. All synthetic parts getting into contact with water are approved by the German Public Health Office (KTW). The corrosion resistance in particular is guaranteed for all used materials. All rubber parts are made of ageing resistant elastomer. The diaphragm is reinforced and the high resistance of the screw cap is due to glass fibre reinforced synthetic material.

Installation

The connection size depends on the required flow rate capacity. When choosing a pressure reducing valve, it needs to be considered that a pressure drop of 1.3 bar occurs at maximum flow rate. This is the difference between the static and dynamic pressure at the outlet of the pressure reducing valve. When a specific flow rate is required for a particular draw-off point, the setting of the pressure reducer has to be calculated beforehand. A pressure reducing valve works without auxiliary energy with very little adjustment forces. Therefore it reacts sensitively to impurities. A filter installed upstream effectively protects the pressure reducing valve with flange connection type 6247.

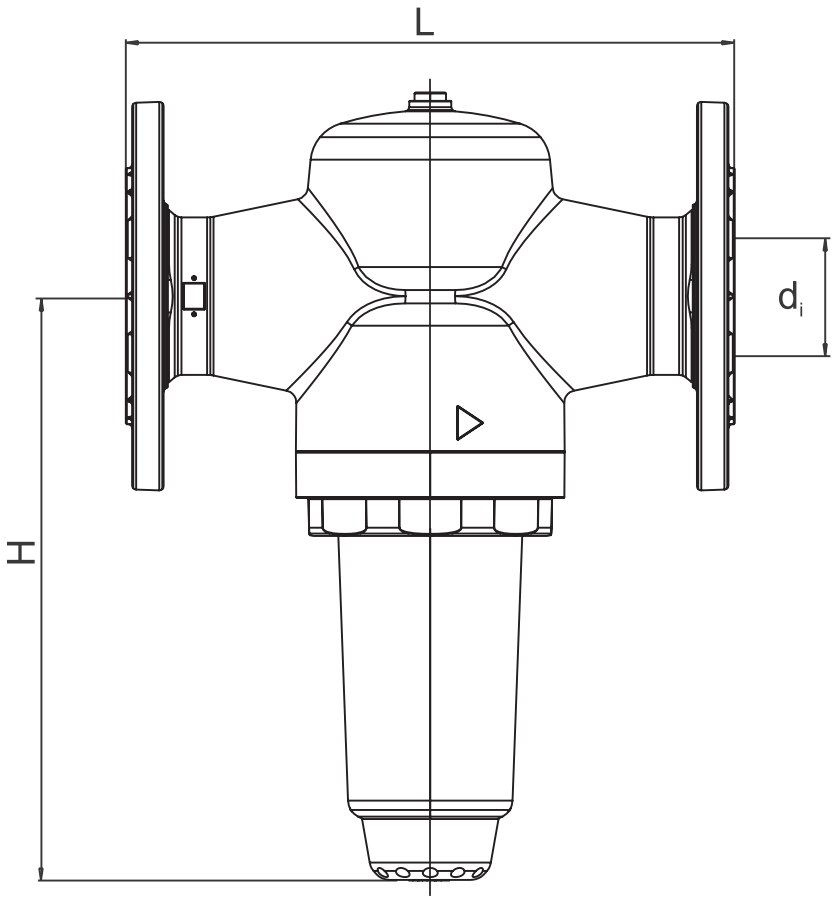
Thoroughly flush the pipe prior to installation. Install the pressure reducing valve with flange connection type 6247 in the pipe under consideration of the direction of flow direction (see arrow on the body; do not apply stresses. Afterwards, turn the head part without loosening the captive nut, so that the green outlet pressure indicator becomes visible.

Technical specifications

Inlet pressure:	max. 16 bar
Outlet pressure:	1.5 - 6 bar (factory-set to 4 bar)
Operating temperature:	max. 30 °C
Mounting position:	any
Fluid:	Water, compressed air, neutral non-adhesive fluids, neutral gases
Serial number:	6247...

Maintenance

The pressure has to be set at static pressure. Remove the cap at the upper end of the cartridge. Use a spanner of size 19 to adjust the pressure. Turn the adjustment screw in the direction of the minus symbol (-) to reduce the outlet pressure; to increase it, turn the adjustment screw in the direction of the plus symbol (+). The pressure reducing valve with flange connection is factory-set to 4 bar. This meets the requirements of most applications and saves time and money on the installation spot. It is recommended to carry out maintenance works on a regular basis to ensure durable functionality. The perfected design of the cartridge system allows to disassemble the operational part of the pressure reducing valve without having to disassemble the whole valve and without using special tools.



Nominal size		DN 65	DN 80	DN 100
Dimensions in mm	L (mm)	290	310	350
	H (mm)	278	278	278
	d_i (mm)	67	80	100
	Distance between the bores (mm)	145	160	180
	Quantity of bores	4	8	8
Flow rate capacity in m³/h (at 2m/s)	Residential buildings according to DIN EN 1567	24	36	56

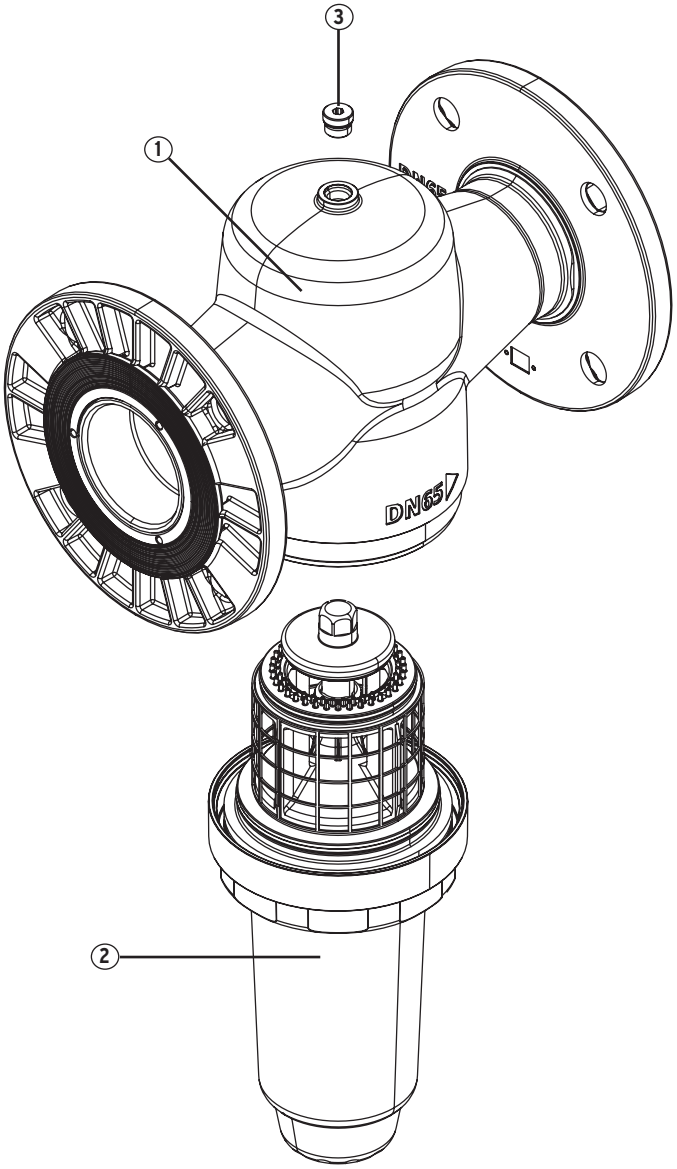
Accessories Pressure gauge 0 - 10 bar: 2000.00.906
0 - 25 bar: 2000.00.907

Components / Order numbers

① **Body**

② **Pressure reducer cartridge DN 65 - 100**
6247.50.903

③ **Manometer plug**
0828.08.000



Tenant Valve Assembly 2370

Pressure reducing valve with water meter unit



Field of application

The Tenant Valve Assembly is designed to be used for the recording of water consumption in houses or dwellings. It combines four functionalities, previously associated with four individual products, into one compact unit. These functions are: pressure reducing valve, water meter, isolating valve and double-check-valve.
It is designed in such a way as to lean itself to easy maintenance and accessibility.

Design

The Tenant valve Assembly is supplied with an isolating valve, pressure reducing valve, two check valves and a connection for a pressure gauge. A blanking cap is fitted over the section in the body where a water meter can be fitted.

Materials

The materials used for the Tenant Valve Assembly comply with the high requirements of European Standards. All parts getting into contact with water are approved by the German Public Health Office (KTW). The corrosion resistance is guaranteed for all used materials. The body is made of a high-quality, low-lead brass alloy. All rubber parts are made of ageing-resistant elastomer. Reinforced diaphragm. The high-resistant screw cap is made of glass fibre reinforced synthetic material.

Installation

The connection size depends on the required flow rate capacity. When choosing a pressure reducing valve, it needs to be considered that a pressure drop of 1.3 bar occurs at maximum flow rate. This is the difference between the static and dynamic pressure at the outlet of the pressure reducing valve. When a specific flow rate is required for a particular draw-off point, the setting of the pressure reducer has to be calculated beforehand. A pressure reducing valve works without auxiliary energy with very little adjustment forces. Therefore it reacts sensitively to impurities. A filter installed upstream effectively protects the Tenant Valve Assembly 2370.

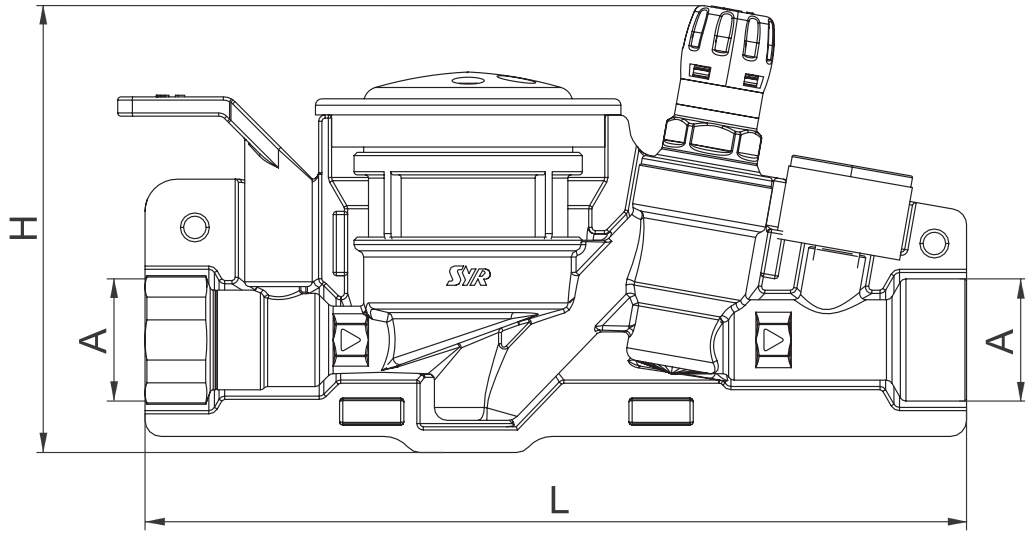
Thoroughly flush the pipe prior to installation. Install the Tenant Valve Assembly in the pipe under consideration of the direction of flow direction (see arrow on the body; do not apply stresses.

Technical specifications

Inlet pressure:	max. 16 bar
Outlet pressure:	1 - 5 bar (factory-set to 4 bar)
Operating temperature:	max. 80 °C
Mounting position:	any
Fluid:	Water, compressed air, neutral non-adhesive fluids, neutral gases
Serial number:	2370...

Maintenance

The pressure has to be set at static pressure. Lift the adjustment knob and turn it to set the desired pressure. To reduce the outlet pressure, turn the adjustment knob in the direction of the minus symbol (-) and to increase it, turn the adjustment knob in the direction of the plus symbol (+). Let the adjustment knob click into its original position. The Tenant Valve Assembly is factory-set to 4 bar. This meets the requirements of most applications and saves time and money on the installation spot. It is recommended to carry out maintenance works on a regular basis to ensure durable functionality. The perfected design of the cartridge system allows to disassemble the operational part of the pressure reducing valve without having to disassemble the whole valve and without using special tools.



Nominal size		DN 20	DN 25
	A	G ¾“	G 1“
Dimensions in mm	L (mm)	255,7	255,7
	H (mm)	140	140
Flow rate capacity in m³/h (at 2m/s)	Residential buildings according to DIN EN 1567	2,3	3,6

Components / Order numbers

① **Body**

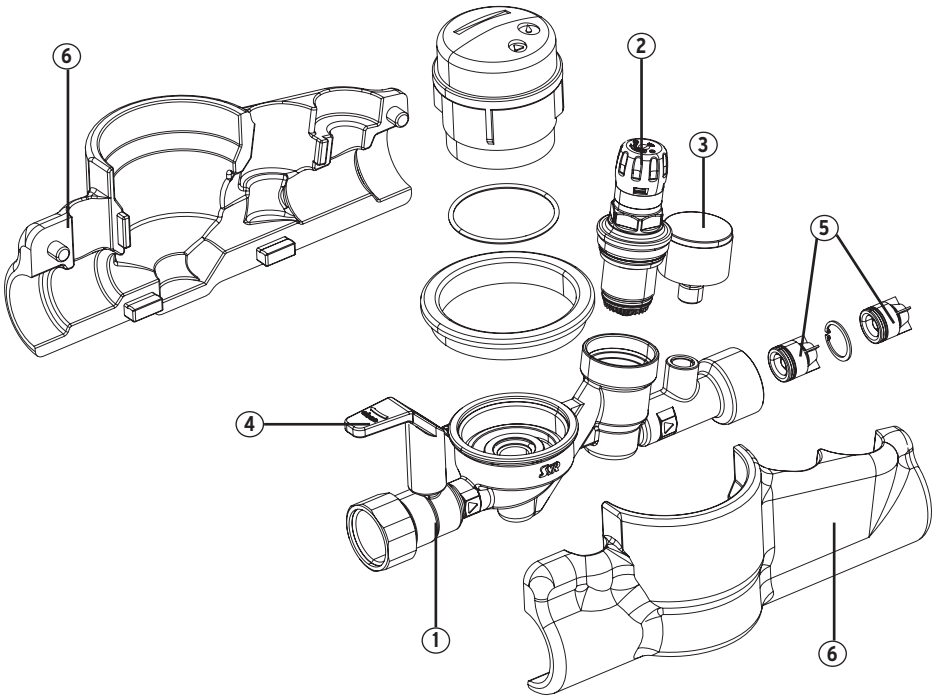
② **Pressure reducer cartridge**

③ **Manometer**

④ **Isolating valve**

⑤ **Check valve**

⑥ **Insulating cover**





Safety devices

Technical Information	206
STS 5 Safety Disconnection unit 6500	211
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The European standard EN 1717 regulates the „protection against pollution of potable water installations and general requirements of devices to prevent pollution by backflow". It was published in May 2001. Basically, a protection level of higher quality than the prescriptions in EN 1717 can be applied without infringing the recognised technical rules. The European Standard EN 1717 works with five risk categories, which are designated as fluid categories (see table).
The SYR Backflow Preventer ensures optimal protection against backflow, backpressure and backsiphonage up to the indicated fluid category.

Safety institution		Category of fluids				
		1	2	3	4	5
AA	Unrestricted air gap	*	●	●	●	●
AB	Air gap with overflow non-circular (unrestricted)	*	●	●	●	●
AC	Air gap with submerged feed incorporating air inlet plus overflow	*	●	●	-	-
AD	Air gap with injector	*	●	●	●	●
AF	Air gap with overflow circular (restricted)	*	●	●	●	-
AG	Air gap with overflow tested by vacuum measurement	*	●	●	-	-
BA	Backflow preventer with controllable reduced pressure zones	●	●	●	●	-
CA	Backflow preventer with different non controllable pressure zones	●	●	●	-	-
DA	In line anti-vacuum valve	○	○	○	-	-
DB	Pipe interrupter with atmospheric vent and moving element	○	○	○	○	-
DC	Pipe interrupter with permanent atmospheric vent	○	○	○	○	○
EA	Controllable anti-pollution check-valve	●	●	-	-	-
EB	Non controllable anti-pollution check-valve	Only for certain domestic uses (see clause 6)				
EC	Controllable anti-pollution double check-valve	●	●	-	-	-
ED	Non controllable anti-pollution double check-valve	Only for certain domestic uses (see clause 6)				
GA	Mechanical disconnector direct actuated	●	●	●	-	-
GB	Mechanical disconnector hydraulic actuated	●	●	●	●	-
HA	Hose union backflow preventer	●	●	○	-	-
HB	Shower hose union anti-vacuum valve	○	○	-	-	-
HC	Automatic diverter	Only for certain domestic uses (see clause 6)				
HD	Hose union anti-vacuum valve combined with a check-valve	●	●	○	-	-
LA	Pressurized air inlet valve	○	○	-	-	-
LB	Pressurized air inlet valve combined with a check-valve located downstream	●	●	○	-	-

General remarks:
Units with an atmospheric vent may not be installed where it is liable to flooding (for example AA, BA, CA, GA, GB, ...).

● Covers the risk
○ Covers the risk only if p = atm
- does not cover the risk
* is not applicable

Fluid category: safety devices and corresponding fluid categories



Safety Backflowp Prevention with 3 pressure zones system up to category 4

Backflow preveter type BA with isolating valves

The Backflow Preventer type BA is a backflow preventer with controllable pressure zones. It offers optimal safety for installations with fluids up to category 4 in compliance with the European Standard EN 1717. Category 4 stands for fluids, which are carriers of one or several noxious and particularly noxious substances and/or mutagenic and carcinogenic substances (for instance insecticides) and therefore represent a health hazard for humans.

Function: The BA Backflow Preventer is designed as a 3 pressures zones system. This system was initially used in the USA and in English-speaking countries. On principle, the Backflow Preventer is composed of two consecutive check valves, which are equipped with an intermediate pressure zone that can be vented to the atmosphere. The venting device is controlled by the differential pressure between the first and second pressure zone. In case of pressure loss, at the latest when the differential pressure between the first and second pressure zone has dropped to 0.14 bar, for instance when a check valve is not tight, the discharge valve opens the venting device, which ensures the disconnection. A useful indicator allows quick and easy verification of the Backflow Preventer's status.

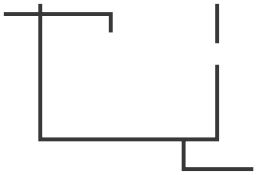
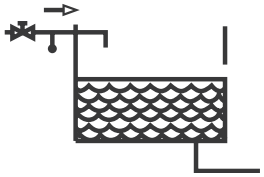
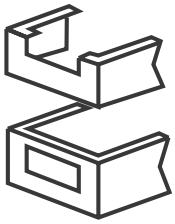


Safety use up to category 3

Backflow preveter type CA

The Backflow Preventer type CA is a backflow preventer with different non-controllable pressure zones. It ensures the protection of installations up to the fluid category 3 in compliance with the European Standard EN 1717. Category 3 stands for fluids, which are carriers of one or several less noxious substances (for instance heated water) and therefore represent a health hazard for humans.

The main field of application for this device is the filling of heating installations. A useful indicator allows quick and easy verification of the Backflow Preventer's status.

Family	Air gap	A
Type	**Air gap with overflow non-circular (unrestricted)**	**B**
 fig A.5 Grafic Symbol protection device	 fig A.6 Symbol protection unit	 fig A.7 Grafic symbol protection unit
 fig A.8 Design principle	**Definition:** • An „AB" air gap is a permanent and vertical distance between the lowest point of the feed orifice and the critical water level. • The overflow shall be non-circular in design and capable of draining the maximum inflow of water under positiv pressure fault condition.	

Product requirements

The protection device shall conform to the national standard transposing the European Standard as available.

Installation requirements

- Every float-operated valve or other device which controls the inflow of water to a receiving vessel shall be securely and rigidly fixed to that vessel.
- Every feed pipe supplying water to such a valve or other device shall be fixed in its position to prevent it from moving or buckling.
- The inlet device shall not come into contact in any way with a product from downstream, wether owing to backflow, bending or deformation of the assembly.
- The device shall not be installed in locations liable to flooding.

Requirements set by EN 1717 for type AB

Family	Controllable Disconnection	B
Type	Backflow preventer with controllable reduced pressure zones	A

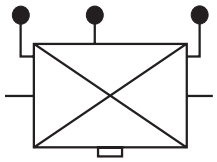


fig A.25
Grafic symbol protection device



fig A.26
Symbol protection unit

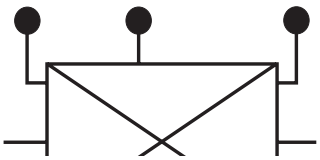


fig A.27
Grafic symbol protection unit

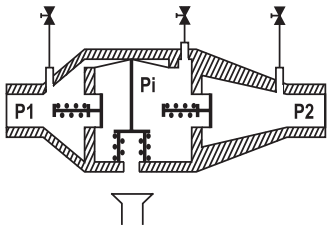


fig A.25
Design principle

Definition – the specific characteristics of the „BA" devices are as follows:

- p_1 - p_i ι 14 kPa (140 mbar);
- connection of the intermediate pressure zone (pi) to the atmosphere when p1 - pi² 14 kPa (140 mbar);
- disconnection by venting the intermediate pressure zone p_1 to the atmosphere when p_1 will be up to 14 kPa (140 mbar);
- a minimum set discharge flow (backflow rate);
- devices that allow verification in every zone of the disconnection and the sealing of the protection devices (obturators, discharge valves).

Product requirements

The protection device shall conform to the national standard transposing the European Standard as available.

Installation requirements

- the device shall be readily accessible;
- it shall not be installed in locations liable to flooding;
- it shall be installed in an aerated enviroment (unpolluted atmosphere);
- the drain shall be capable of taking the discharge;
- it shall be protected against frost or excessive temperature;
- it shall be installed horizontally, with the discharge valve opening downwards. Pressure taps shall make it possible to carry out inspection test without difficulty;
- it can be installed only for potential backflows not exceeding the discharge capacity of the protection device.

Requirements set by EN 1717 for type BA

Family	Non controllable disconnection	C
Type	Backflow preventer with different non controllable pressure zones	A

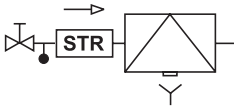


fig A.29
Grafic symbol protection device



fig A.30
Symbol protection unit

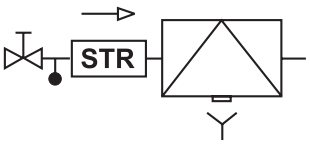


fig A.31
Grafic symbol protection unit

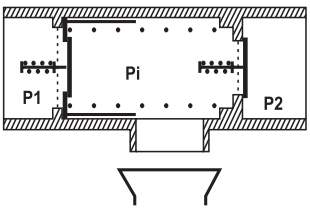


fig A.32
Design priciple

Definition – the „CA" is divided into three zones:

- one upstream zone p_1;
- one intermediate zone (p_i not measurable) vented to the atmosphere;
- one downstream zone p_2

The device provides disconnection by venting the intermediate pressure zone to the atmosphere when the difference of pressure between the intermediate zone and the upstream zone is less than 10% of the upstream pressure ($p_i - p_1 < 10\% \; p_1$).

It ensures a discharge flow (backflow rate) through the intermediate zone, at least equal to the given discharge flow rate.

Means for the control of the protection device are not included.

Product requirements

The protection device shall conform to the national standard transposing the European Standard as available.

Installation requirements

- the device shall be readily accessible;
- it shall not be installed in locations liable to flooding;
- it shall be installed in an aerated enviroment (unpolluted atmosphere);
- the drain shall be capable of taking the discharge;
- it shall be protected against frost or excessive temperature.

Requirements set by EN 1717 for type CA

Safety Disconnection Unit STS 5 6500

for fluid category 5



Field of application

The Safety Disconnection Unit STS 5 from SYR is a compact backflow prevention device in compliance with EN 1717, with a feed tank system and an air gap. It conforms with the type AB air gap as defined in this standard and can be used as a protective device up to and including fluid category 5. It is designed to prevent the backflow or backsiphonage of non-potable water into the public drinking water system. The Safety Disconnection Unit STS 5 covers a wide range of applications (e.g. in dental offices, garden sprinkler systems, laboratories, cattle troughs, car wash facilities etc.)

Design

The Safety Disconnection Unit STS 5 includes all components as defined in EN 1717 and is designed as feed tank system with an air gap. It is also equipped with a pre-filter and a wall bracket.

Safety Disconnection unit STS 5

Materials

The valve is made of high-quality corrosion resistant synthetic materials or stainless steel. The pre-filter is made of a high-quality low-lead brass alloy and heat resistant synthetic material.

All synthetic parts getting in contact with drinking water are approved by the German Public Health Office (KTW).

Installation

Permanent access to the valve has to be provided. Do not mount in rooms subject to flooding, frost or high temperatures. Install only in a well-ventilated environment.

Thoroughly flush the pipe prior to installation. Install the Safety Disconnection Unit in horizontal position on an even wall under consideration of the direction of flow and without applying stresses.

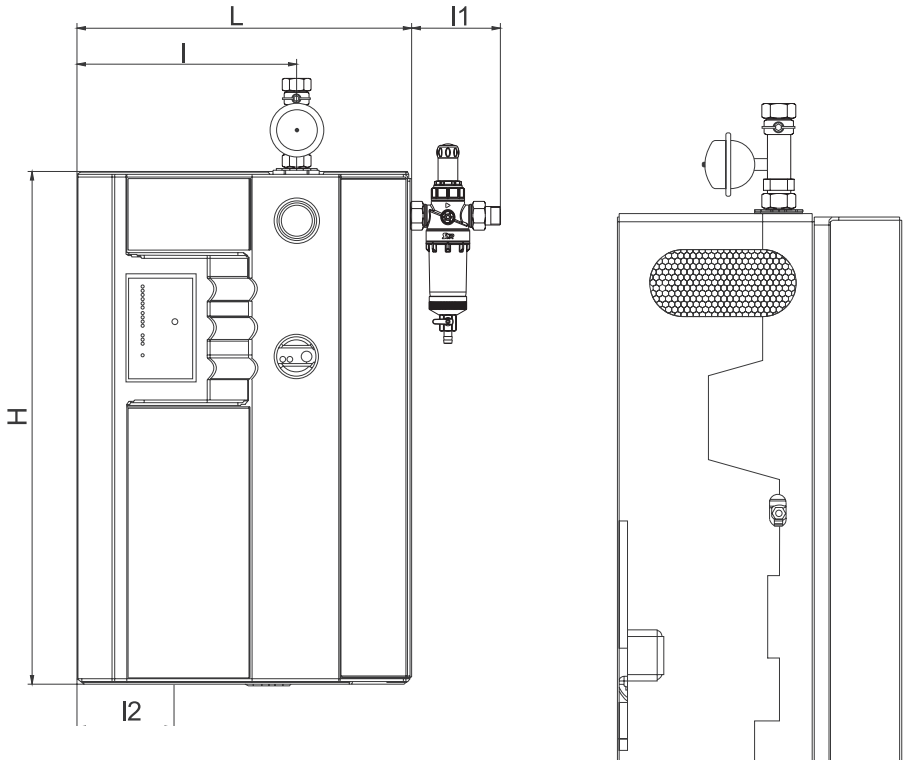
Technical specifications

Service pressure:	max. 10 bar
Ambient temperature:	min. 15 °C, max. 35 °C
Max. flow rate:	2.8 m^3/h
Supply voltage:	230 V / 50 Hz
Type of protection:	IP 42
Potable water connection:	¾“ AG
Pressure connection:	1“ AG
Serial number:	6500.00.000

Maintenance

Servicing the Safety Disconnection Unit STS on a regular basis is compulsory. Therefore, maintenance agreements between user and installer are very useful. The correct function of the floater, the pump and the seals has to be verified after six months.

Concerning the body and the shock absorber, the correct function has to be verified after the first service year and then periodically in accordance with the operating conditions, but at the latest after one year.



Dimensions	H (mm)	580
	L (mm)	380
	l (mm)	250
	T (mm)	274

Components / Order numbers

① **Pump**
6500.00.901

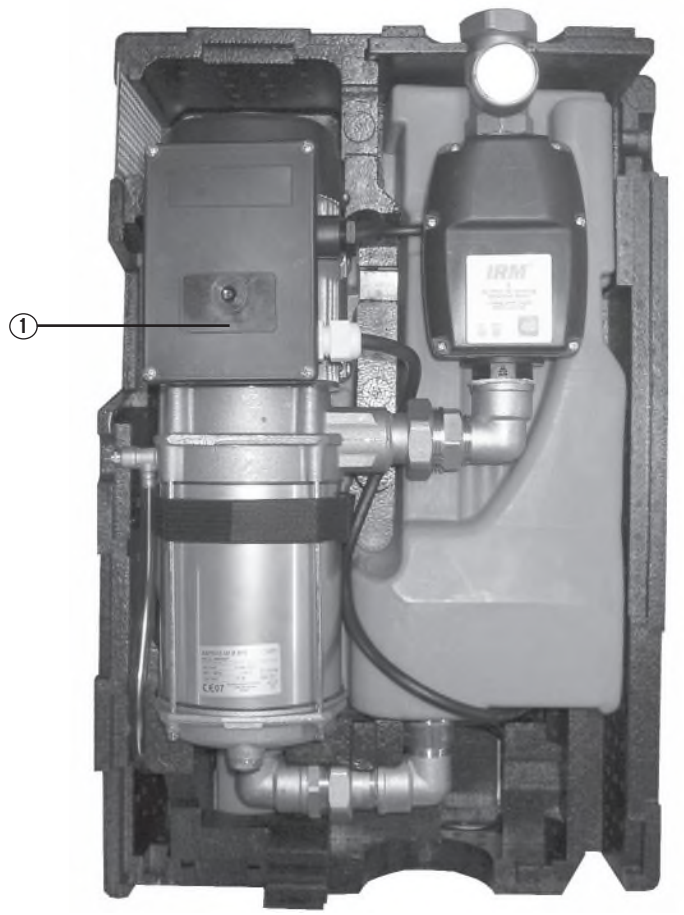
no figure
Shock absorber
6500.00.902

no figure
Pressure regulator
6500.00.903

no figure
Floating valve ¾“
6500.00.904

no figure
Condenser
6500.00.905

no figure
Tank lip seal
6500.00.906



Backflow Preventer type BA 6600

Controllable Backflow Preventer with isolating valves



Field of application

The SYR Backflow Preventer type BA is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installations and general requirements for devices to prevent pollution by backflow), group B (three pressure zones system). It is in con-formity with type BA described in EN 1717 and therefore it can be used as a protective device up to fluid category 4 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The Backflow Preventer type BA covers numerous application possibilities (for instance printing, chemical and food industry, laboratories and medical technology).

Design

The Backflow Preventer type BA includes all components determined in the European standard EN 1717 and is designed as 3-pressure zones-system with controllable upstream / intermediate and downstream pressure zones. In addition, it includes two isolating valves and an integral strainer. The ball valves on top of each of the three pressure zones are used in combination with a test kit to verify functionality by pressure measurement. The Backflow Preventer is composed of 2 consecutive check valves with an intermediate pressure zone that can be vented to the atmosphere. When no water is drawn off, both check valves are open and the discharge valve is closed. In case of back-siphonage, the inlet pressure drops. The discharge valve opens at the latest when the differential pressure between upstream and intermediate pressure zone has dropped to 0.14 bar.

6600 Backflow preventer BA

Materials

The body is made of low-lead dezincification resistant gunmetal alloy. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW. All synthetic parts getting in contact with drinking water intended for human consumption are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

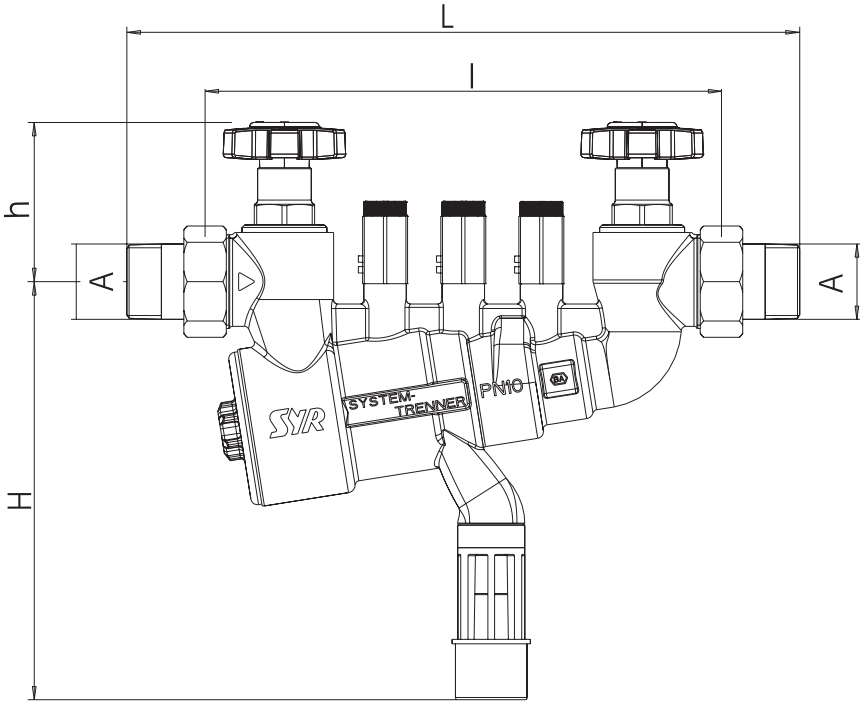
Permanent access to the valve has to be provided and it shall not be mounted in rooms liable to flooding, frost or high temperatures. The installation should only be carried out in an well-ventilated environment. The connected discharge device must be able to collect the discharge volume. The Backflow Preventer type BA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards.
The test ports should be easily accessible. For a perfect function, it is recommended to locate a drinking water filter upstream. Thoroughly rinse the pipe prior to the installation. Install the Backflow Preventer type BA in horizontal position in the pipe under consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	horizontal, tundish facing downwards
Fluid:	Drinking water
Flow rate capacity:	DN 15: 1.75 m^3/h at 1.5 bar Δp DN 20: 4.10 m^3/h at 1.5 bar Δp DN 25: 5.70 m^3/h at 1.5 bar Δp
Serial number:	6600...

Maintenance

According to EN 1717, the Backflow Preven-ter type BA has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accordance with the operating conditions, but every two years at the latest. The ball valves on top of each pressure zone are used in combination with a test kit to verify functionality. This Backflow Preventer type BA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Nominal size		DN 15	DN 20	DN 25
	A	R ½“	R ¾“	R 1“
Dimension in mm	L (mm)	223	293	301
	l (mm)	167	231	231
	H (mm)	132.2	187	187
	h (mm)	56.2	58.4	81.4

Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

Components / Order numbers

① **Ball valve**
6600.00.904

② **Tundish**
6600.00.927

③ **Cartridge**

DN 15	6600.00.938
DN 20/25	6600.00.923

④ **Plug**

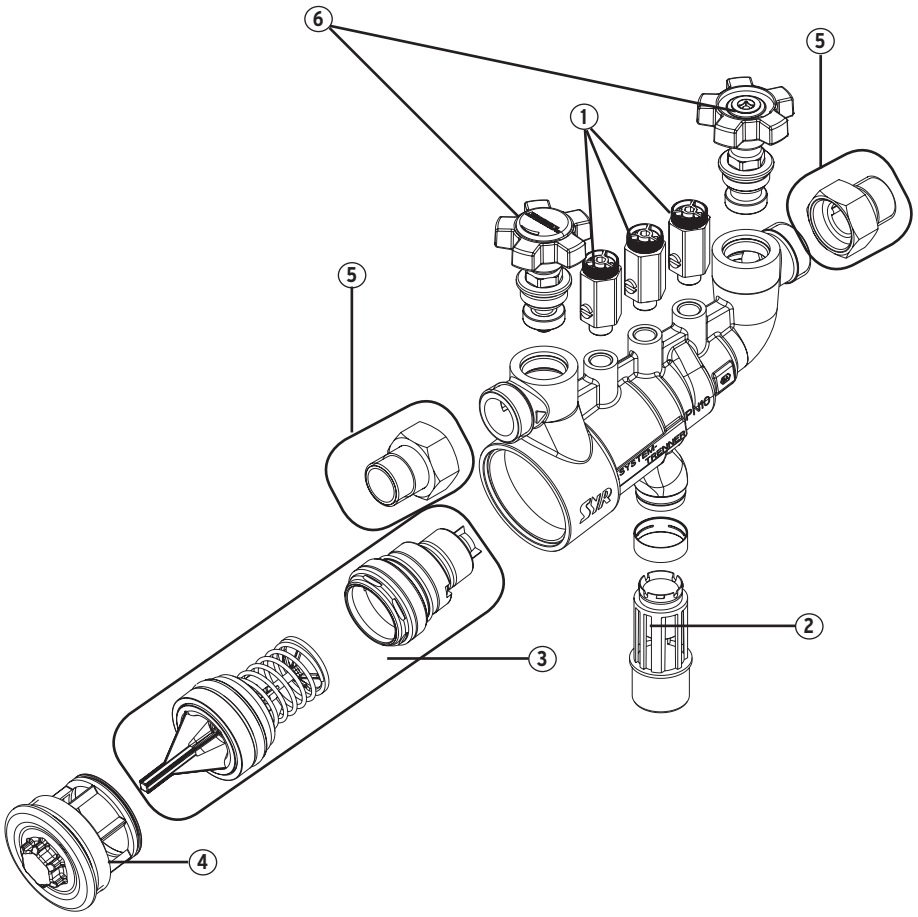
DN 15	6600.00.936
DN 20/25	6600.00.925

⑤ **Union connection**

DN 15	6600.00.928
DN 20	6600.00.929
DN 25	6600.00.930

⑥ **Isolating valve**

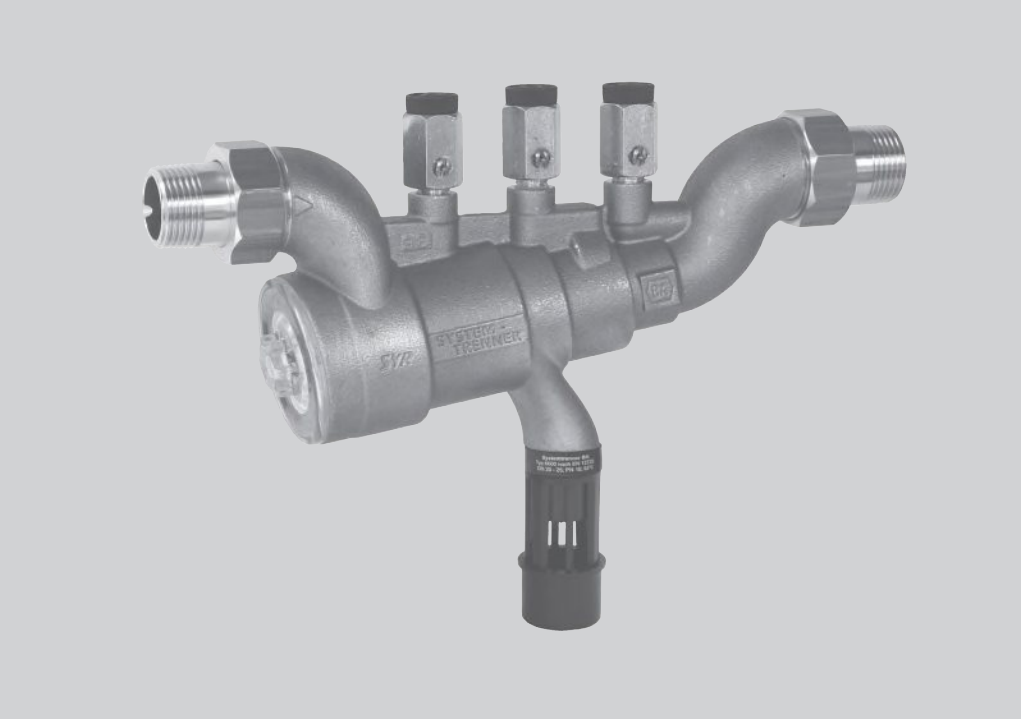
DN 15	6600.00.931
DN 20	6600.00.932
DN 25	6600.00.933



not illustrated
Service key for BA cartridge
6600.00.908

Backflow Preventer type BA 6600

Controllable Backflow Preventer



Field of application

The SYR Backflow Preventer type BA is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installa-tions and general requirements for devices to prevent pollution by backflow), group B (three pressure zones system). It is in con-formity with type BA described in EN 1717 and therefore it can be used as a protective device up to fluid category 4 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The Backflow Preventer type BA covers numerous application possibilities (for instance printing, chemical and food industry, laboratories and medical technology).

Design

The Backflow Preventer type BA includes all components determined in the European standard EN 1717 and is designed as 3-pressure zones-system with controllable upstream/ intermediate and downstream pressure zones. In addition, it includes an integral strainer. The ball valves on top of each of the three pressure zones are used in combination with a test kit to verify functionality by pressure measurement. The Backflow Preventer is composed of 2 consecutive check valves with an intermediate pressure zone that can be vented to the atmosphere. When no water is drawn off, both check valves are open and the discharge valve is closed. In case of back-siphonage, the inlet pressure drops. The discharge valve opens at the latest when the differential pressure between upstream and intermediate pressure zone has dropped to 0.14 bar.

6600 Backflow preventer BA

Materials

The body is made of low-lead dezincification resistant gunmetal alloy. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW. All synthetic parts getting in contact with drinking water intended for human consumption are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

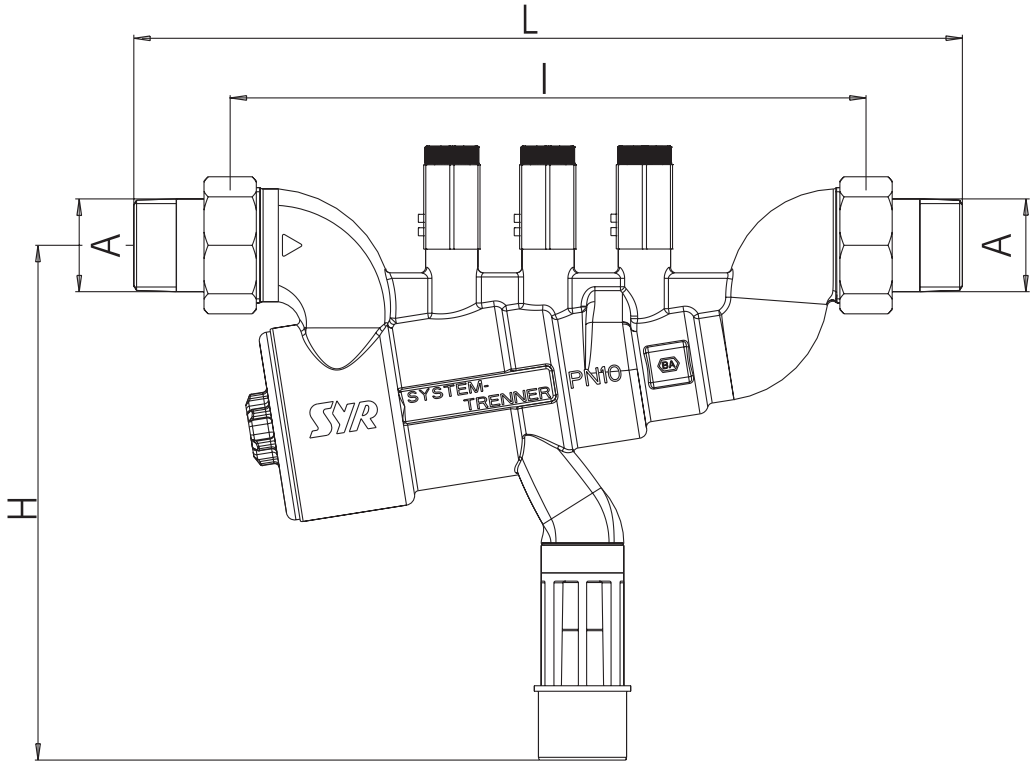
Permanent access to the valve has to be provided and it shall not be mounted in rooms liable to flooding, frost or high temperatures. The installation should only be carried out in an well-ventilated environmaent. The connected discharge device must be able to collect the discharge volume. The Backflow Preventer type BA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards.
The test ports should be easily accessible. For a perfect function, it is recommended to locate a drinking water filter upstream. Thoroughly rinse the pipe prior to the installation. Install the Backflow Preventer type BA in horizontal position in the pipe under consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	horizontal, tundish facing downwards
Fluid:	Drinking water
Flow rate capacity:	DN 15: 2.9 m^3/h at 1.5 bar Δp DN 20: 5.1 m^3/h at 1.5 bar Δp DN 25: 7.9 m^3/h at 1.5 bar Δp
Serial number:	6600...

Maintenance

According to EN 1717, the Backflow Preven-ter type BA has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accordance with the operating conditions, but every two years at the latest. The ball valves on top of each pressure zone are used in combination with a test kit to verify functionality. This Backflow Preventer type BA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Noninal size		DN 15	DN 20	DN 25
	A	R ½“	R ¾“	R 1“
Dimensions	L (mm)	223	293	301
	l (mm)	167	231	231
	H (mm)	132.2	187	187

Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

Components / Order numbers

① **Ball valve**
6600.00.904

② **Tundish**
6600.00.903

③ **Cartridge**

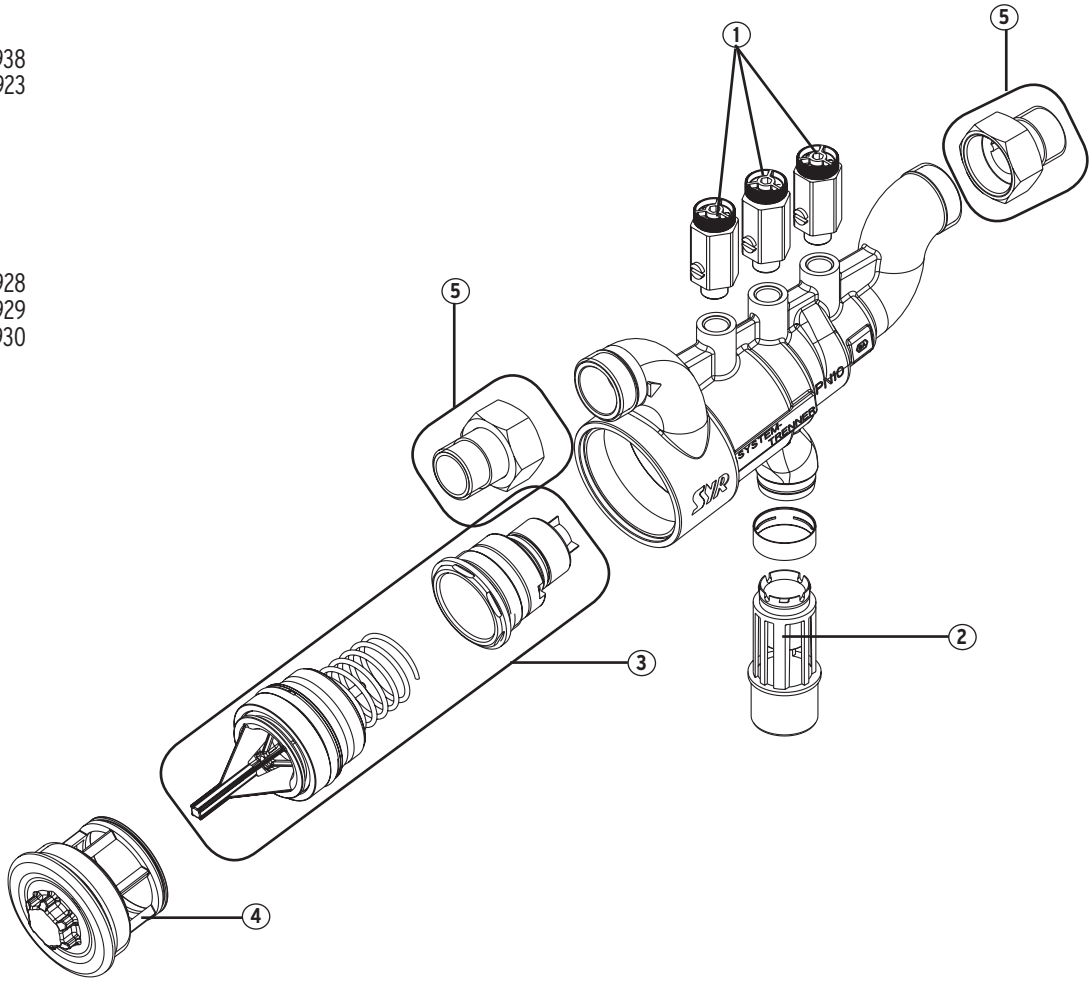
DN 15	6600.00.938
DN 20/25	6600.00.923

④ **Plug**
6600.00.907

⑤ **Union connection**

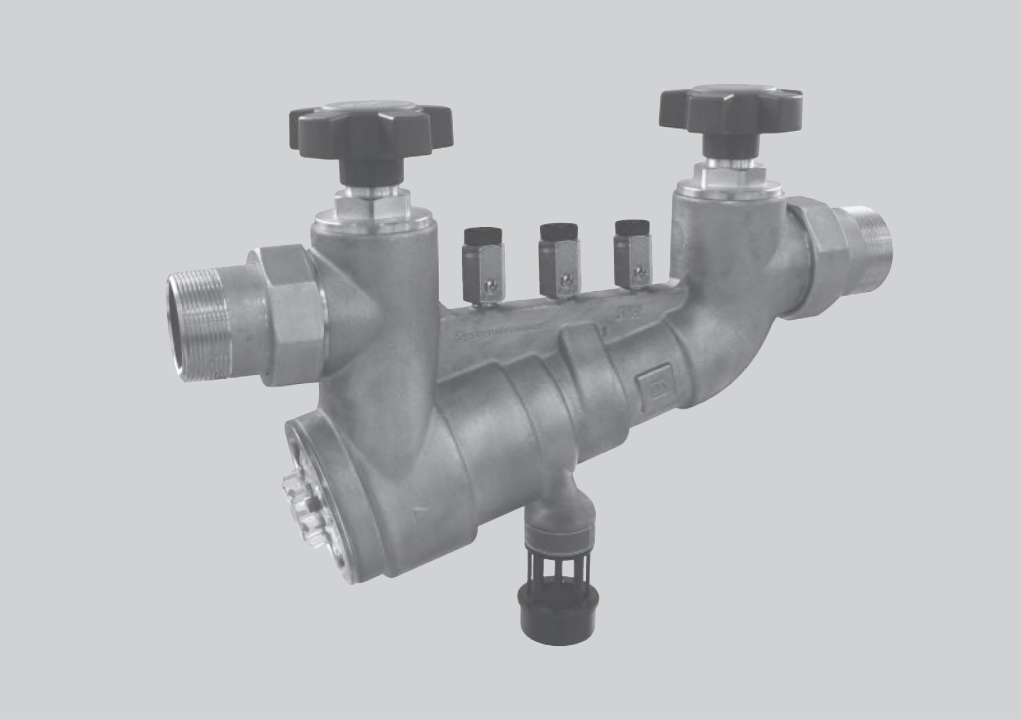
DN 15	6600.00.928
DN 20	6600.00.929
DN 25	6600.00.930

not illustrated
Service key for BA cartridge
6600.00.908



Backflow Preventer type BA 6600 max

Controllable Backflow Preventer with isolating valves



Field of application

The SYR Backflow Preventer type BA is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installa-tions and general requirements for devices to prevent pollution by backflow), group B (three pressure zones system). It is in con-formity with type BA described in EN 1717 and therefore it can be used as a protective device up to fluid category 4 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The Backflow Preventer type BA covers numerous application possibilities (for instance printing, chemical and food industry, laboratories and medical technology).

Design

The Backflow Preventer type BA includes all components determined in the European standard EN 1717 and is designed as 3-pressure zones-system with controllable upstream/ intermediate and downstream pressure zones. In addition, it includes two isolating valves and an integral strainer. The ball valves on top of each of the three pressure zones are used in combination with a test kit to verify functionality by pressure measurement. The Backflow Preventer is composed of 2 consecutive check valves with an intermediate pressure zone that can be vented to the atmosphere. When no water is drawn off, both check valves are open and the discharge valve is closed. In case of back-siphonage, the inlet pressure drops. The discharge valve opens at the latest when the differential pressure between upstream and intermediate pressure zone has dropped to 0.14 bar.

6600 Backflow preventer BA max

Materials

The body is made of low-lead dezincification resistant gunmetal alloy. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW. All synthetic parts getting in contact with drinking water intended for human consumption are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

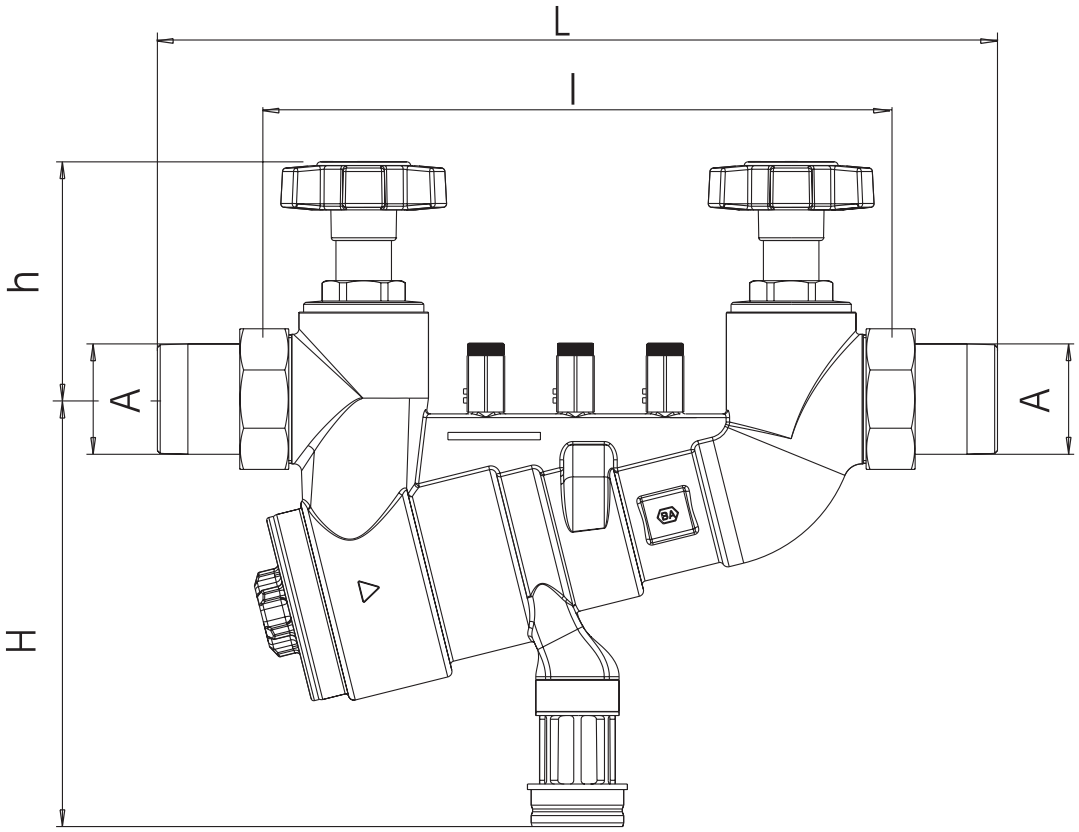
Permanent access to the valve has to be provided and it shall not be mounted in rooms liable to flooding, frost or high temperatures. The installation should only be carried out in an well-ventilated environment. The connected discharge device must be able to collect the discharge volume. The Backflow Preventer type BA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards.
The test ports should be easily accessible. For a perfect function, it is recommended to locate a drinking water filter upstream. Thoroughly rinse the pipe prior to the installation. Install the Backflow Preventer type BA in horizontal position in the pipe under consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	horizontal, tundish facing downwards
Fluid:	Drinking water
Flow rate capacity:	DN 32: 8.0 m^3/h at 1.5 bar Δp
	DN 40: 13.0 m^3/h at 1.5 bar Δp
	DN 50: 21.2 m^3/h at 1.5 bar Δp
Serial number:	6600...

Maintenance

According to EN 1717, the Backflow Preven-ter type BA has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accordance with the operating conditions, but every two years at the latest. The ball valves on top of each pressure zone are used in combination with a test kit to verify functionality. This Backflow Preventer type BA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Nominal size		DN 32	DN 40	DN 50
	A	R 1¼“	R 1½“	R 2“
Dimensions	L (mm)	432	436	454
	l (mm)	340	340	340
	H (mm)	231	231	231
	h (mm)	128	128	128

Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

Components / Order numbers

① **Ball valve**
6600.00.912

② **Tundish**
6600.50.900

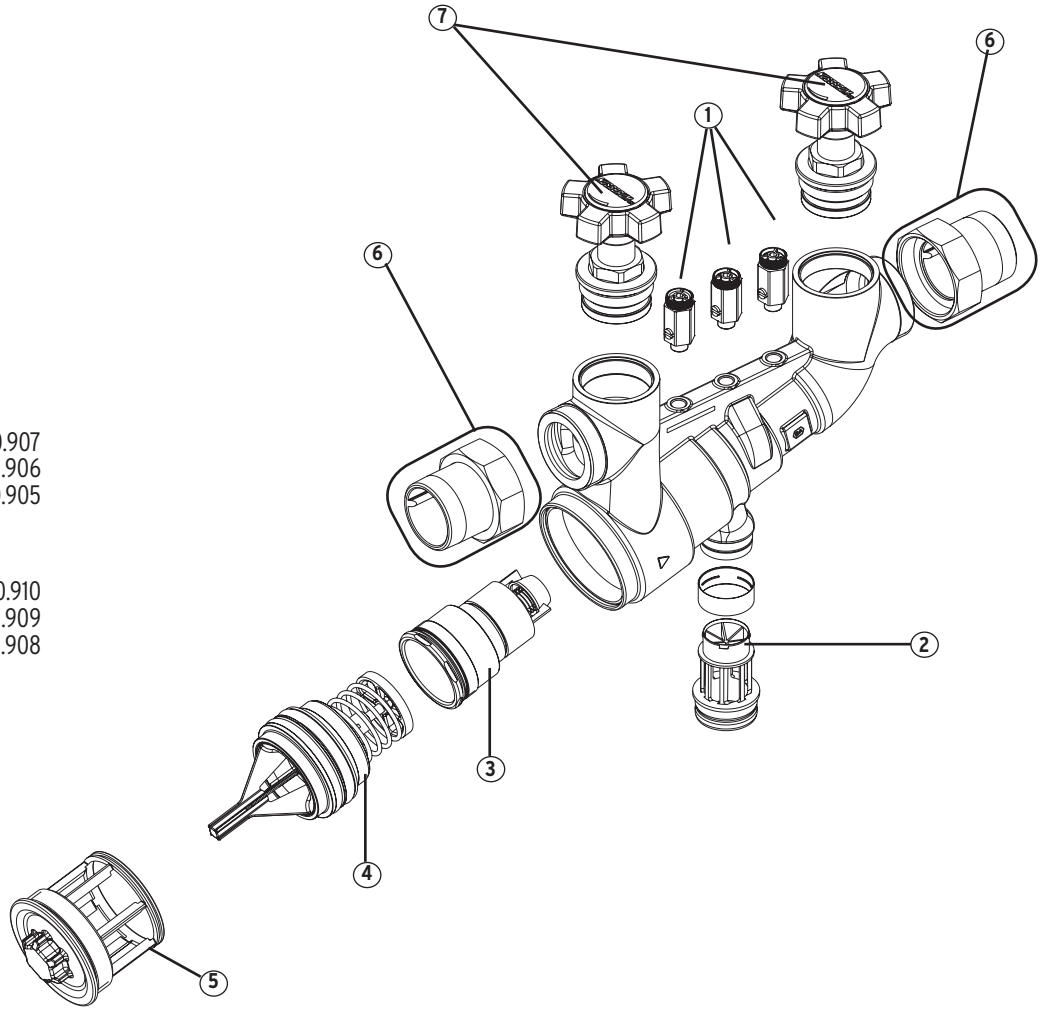
③ **Cartridge**
6600.50.901

④ **Hub**
6600.50.902

⑤ **Plug**
6600.50.903

⑥ **Union connection**
DN 32: 6600.50.907
DN 40: 6600.50.906
DN 50: 6600.50.905

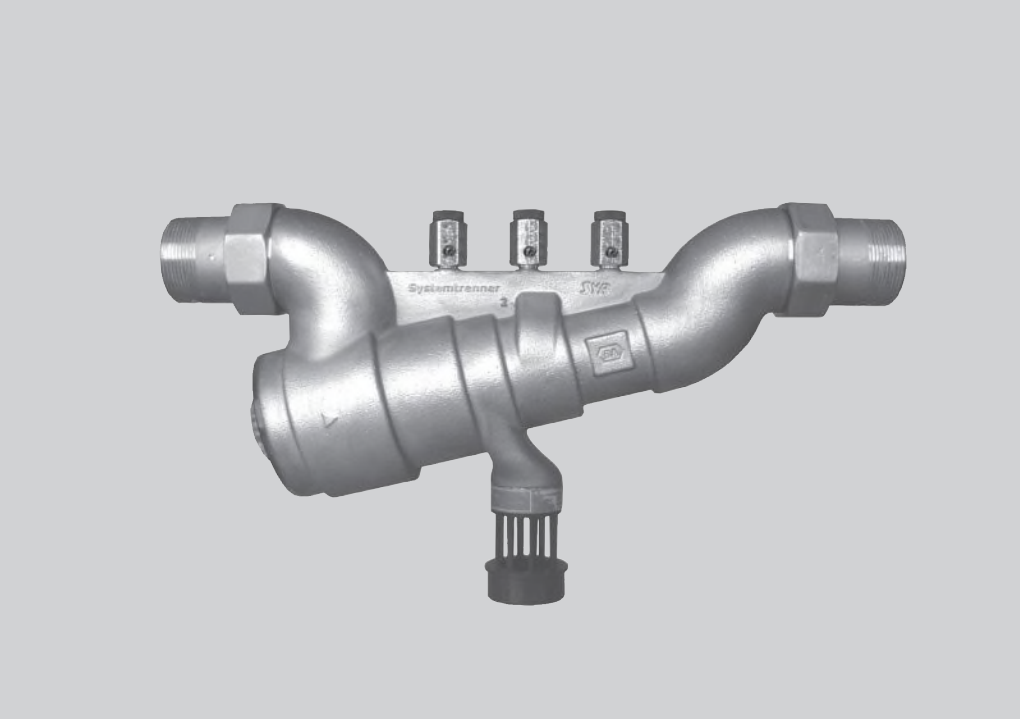
⑦ **Isolating valve**
DN 32: 6600.50.910
DN 40: 6600.50.909
DN 50: 6600.50.908



not illustrated
Service key for BA cartridge
6600.00.908

Backflow Preventer type BA 6600 max

Controllable Backflow Preventer



Field of application

The SYR Backflow Preventer type BA is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installa-tions and general requirements for devices to prevent pollution by backflow), group B (three pressure zones system). It is in con-formity with type BA described in EN 1717 and therefore it can be used as a protective device up to fluid category 4 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The Backflow Preventer type BA covers numerous application possibilities (for instance printing, chemical and food industry, laboratories and medical technology).

Design

The Backflow Preventer type BA includes all components determined in the European standard EN 1717 and is designed as 3-pressure zones-system with controllable upstream/ intermediate and downstream pressure zones. In addition, it includes an integral strainer. The ball valves on top of each of the three pressure zones are used in combination with a test kit to verify functionality by pressure measurement. The Backflow Preventer is composed of 2 consecutive check valves with an intermediate pressure zone that can be vented to the atmosphere. When no water is drawn off, both check valves are open and the discharge valve is closed. In case of back-siphonage, the inlet pressure drops. The discharge valve opens at the latest when the differential pressure between upstream and intermediate pressure zone has dropped to 0.14 bar.

6600 Backflow preventer BA max

Materials

The body is made of low-lead dezincification resistant gunmetal alloy. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW. All synthetic parts getting in contact with drinking water intended for human consumption are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

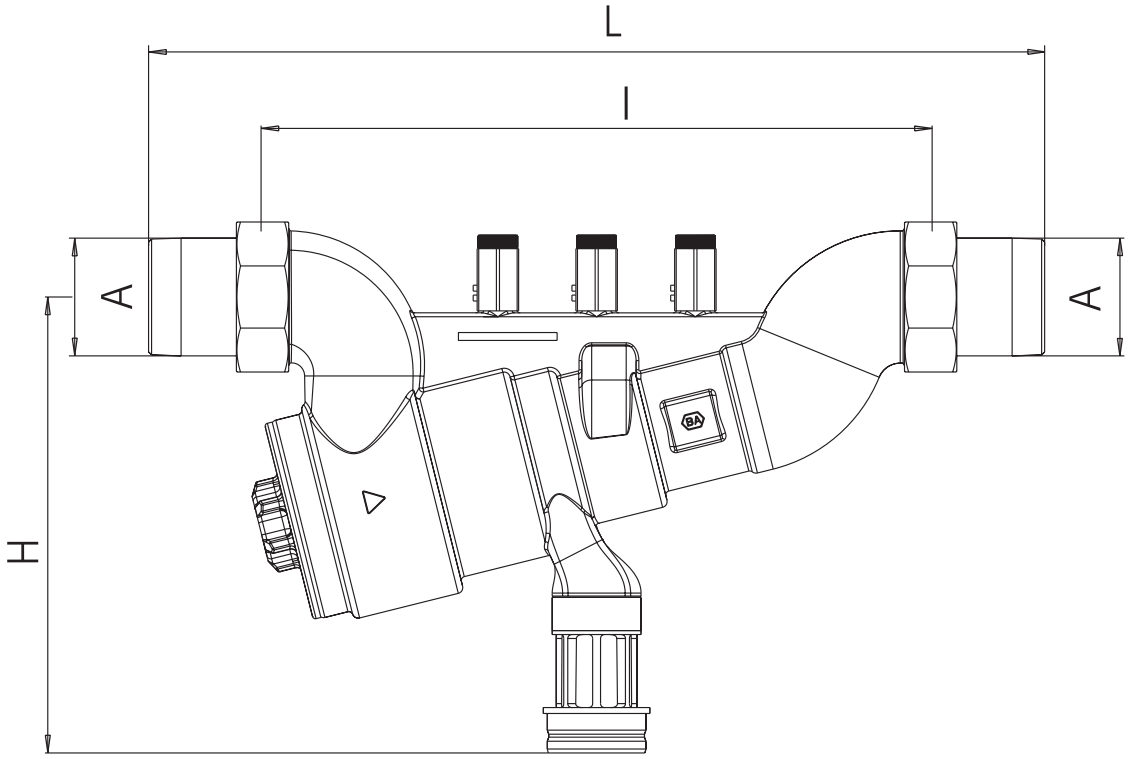
Permanent access to the valve has to be provided and it shall not be mounted in rooms liable to flooding, frost or high temperatures. The installation should only be carried out in an well-ventilated environment. The connected discharge device must be able to collect the discharge volume. The Backflow Preventer type BA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards.
The test ports should be easily accessible. For a perfect function, it is recommended to locate a drinking water filter upstream. Thoroughly rinse the pipe prior to the installation. Install the Backflow Preventer type BA in horizontal position in the pipe under consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	horizontal, tundish facing downwards
Fluid:	Drinking water
Flow rate capacity:	DN 32: 13.0 m^3/h at 1.5 bar Δp
	DN 40: 20.3 m^3/h at 1.5 bar Δp
	DN 50: 31.8 m^3/h at 1.5 bar Δp
Serial number:	6600...

Maintenance

According to EN 1717, the Backflow Preven-ter type BA has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accordance with the operating conditions, but every two years at the latest. The ball valves on top of each pressure zone are used in combination with a test kit to verify functionality. This Backflow Preventer type BA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Nominal size		DN 32	DN 40	DN 50
	A	R 1¼“	R 1½“	R 2“
Dimensions	L (mm)	432	436	454
	l (mm)	340	340	340
	H (mm)	231	231	231
	h (mm)	128	128	128

Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

Components / Order numbers

① **Ball valve**
6600.00.912

② **Tundish**
6600.50.900

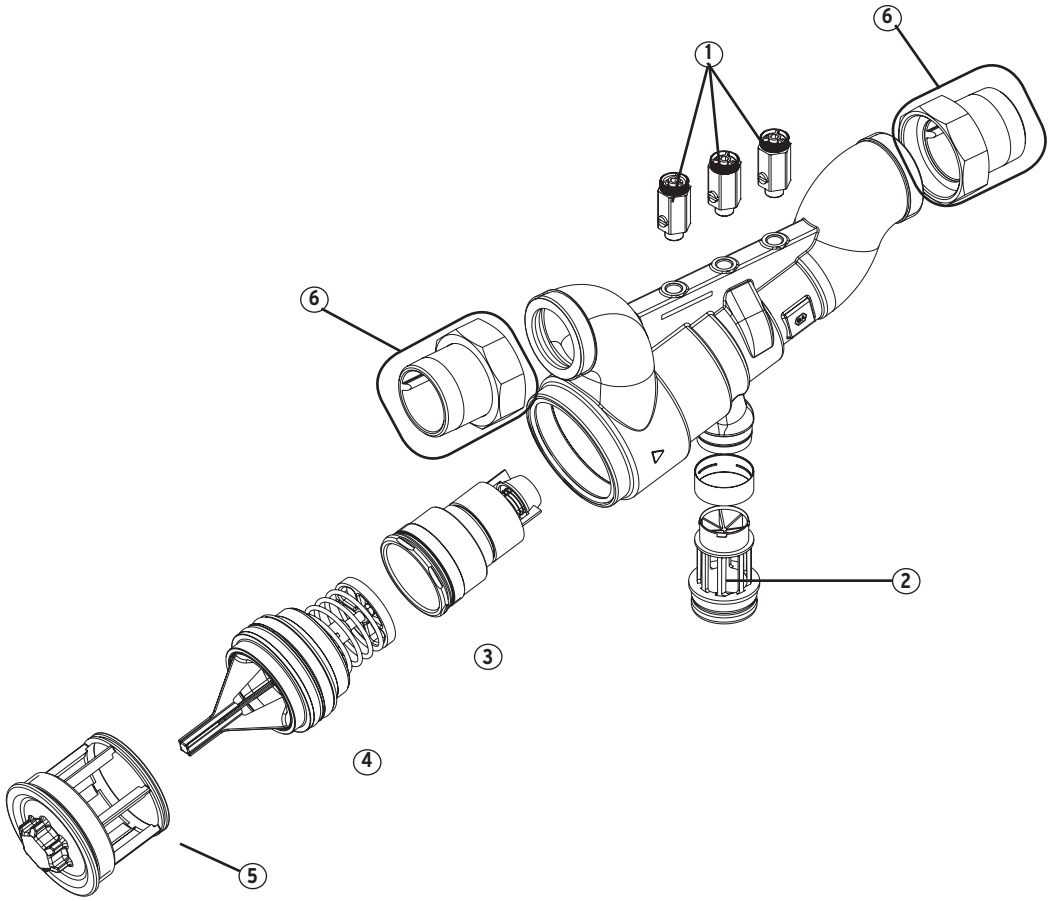
③ **Cartridge**
6600.50.901

④ **Hub**
6600.50.902

⑤ **Plug**
6600.50.903

⑥ **Union connection**

DN 32:	6600.50.907
DN 40:	6600.50.906
DN 50:	6600.50.905



not illustrated
Service key for BA cartridge
6600.00.908

Flange Backflow Preventer type BA 6600

Controllable Backflow Preventer



Field of application

The SYR Backflow Preventer type BA is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installa-tions and general requirements for devices to prevent pollution by backflow), group B (three pressure zones system). It is in con-formity with type BA described in EN 1717 and therefore it can be used as a protective device up to fluid category 4 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The Backflow Preventer type BA covers numerous application possibilities (for instance printing, chemical and food industry, laboratories and medical technology).

Design

The Backflow Preventer type BA includes all components determined in the European standard EN 1717 and is designed as 3-pressure zones-system with controllable upstream/ intermediate and downstream pressure zones. In addition, it includes an integral strainer. The ball valves on top of each of the three pressure zones are used in combination with a test kit to verify functionality by pressure measurement. The Backflow Preventer is composed of 2 consecutive check valves with an intermediate pressure zone that can be vented to the atmosphere. When no water is drawn off, both check valves are open and the discharge valve is closed. In case of back-siphonage, the inlet pressure drops. The discharge valve opens at the latest when the differential pressure between upstream and intermediate pressure zone has dropped to 0.14 bar.

6600 Flange Backflow preventer BA

Materials

The body is made of low-lead dezincification resistant gunmetal alloy. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW. All synthetic parts getting in contact with drinking water intended for human consumption are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

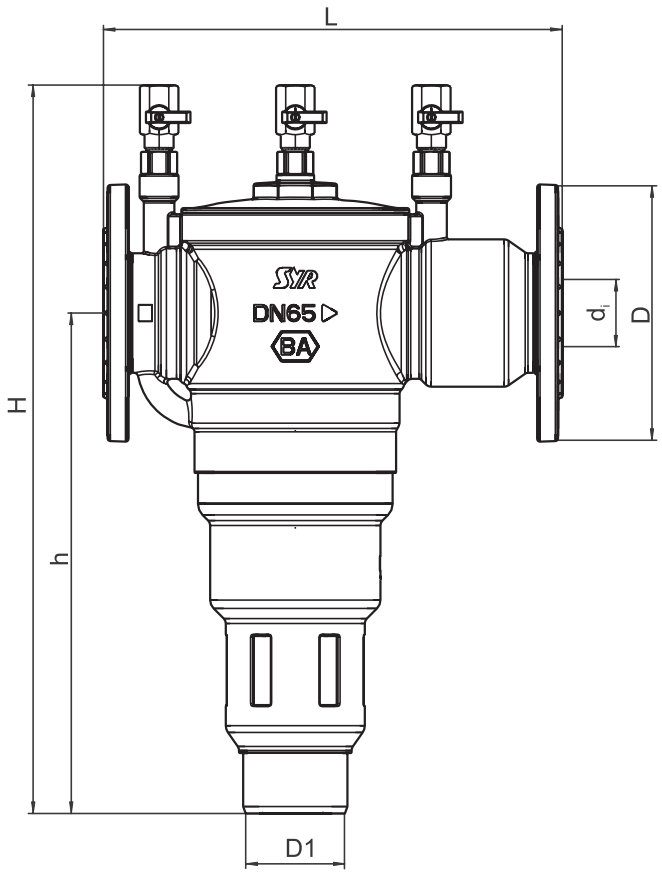
Permanent access to the valve has to be provided and it shall not be mounted in rooms liable to flooding, frost or high temperatures. The installation should only be carried out in an well-ventilated environment. The connected discharge device must be able to collect the discharge volume. The Backflow Preventer type BA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards.
The test ports should be easily accessible. For a perfect function, it is recommended to locate a drinking water filter upstream. Thoroughly rinse the pipe prior to the installation. Install the Backflow Preventer type BA in horizontal position in the pipe under consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	horizontal, tundish facing downwards
Fluid:	Drinking water
Flow rate capacity:	DN 65: 80,0 m^3/h at 1.5 bar Δp
	DN 80: 110,0 m^3/h at 1.5 bar Δp
	DN 100: 125,0 m^3/h at 1.5 bar Δp
Serial number:	6600 ...

Maintenance

According to EN 1717, the Backflow Preven-ter type BA has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accordance with the operating conditions, but every two years at the latest. The ball valves on top of each pressure zone are used in combination with a test kit to verify functionality. This Backflow Preventer type BA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Nominal size		DN 65	DN 80	DN 100
Dimensions	L (mm)	330	350	350
	H (mm)	496,5	513,5	537,5
	h (mm)	365	370	382,5
	d_i (mm)	65	80	100
	D (mm)	185	200	220
	D1 (mm)	75	75	75

Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

Components / Order numbers

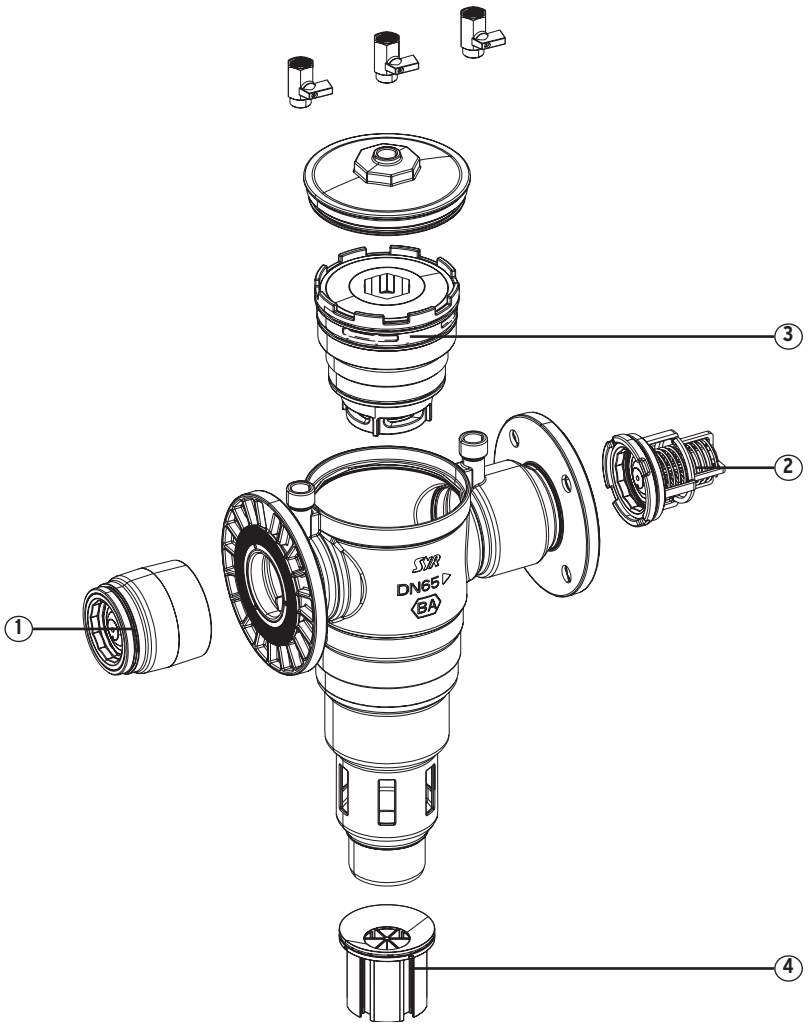
① **Check valve (Inlet)**
DN 65: 6600.65.900
DN 80: 6600.80.900
DN 100: 6600.100.900

② **Check valve (Outlet)**
DN 65: 6600.65.901
DN 80: 6600.80.901
DN 100: 6600.100.901

③ **Control unit**
6600.00.980

④ **Tundish**
6600.00.981

no picture
Assembly tools
6600.65.904



Backflow Preventer BA 6610 In-line

Controllable Backflow Preventer



Field of application

The SYR Backflow Preventer 6610 type BA is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installations and general requirements for devices to prevent pollution by backflow), group B (three pressure zones system). It is in con-formity with type BA described in EN 1717 and therefore it can be used as a protective device up to fluid category 4 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The Backflow Preventer type BA covers numerous application possibilities (for instance printing, chemical and food industry, laboratories and medical technology).

Design

The Backflow Preventer type BA includes all components determined in the European standard EN 1717 and is designed as 3-pressure zones-system with controllable upstream/ intermediate and downstream pressure zones. In addition, it includes an integral strainer. The ball valves on top of each of the three pressure zones are used in combination with a test kit to verify functionality by pressure measurement. The Backflow Preventer is composed of 2 consecutive check valves with an intermediate pressure zone that can be vented to the atmosphere. When no water is drawn off, both check valves are open and the discharge valve is closed. In case of back-siphonage, the inlet pressure drops. The discharge valve opens at the latest when the differential pressure between upstream and intermediate pressure zone has dropped to 0.14 bar.

Materials

The body is made of-high-quality, leed-free materials and high-quality synthetic material. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW. All synthetic parts getting in contact with drinking water intended for human consumption are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

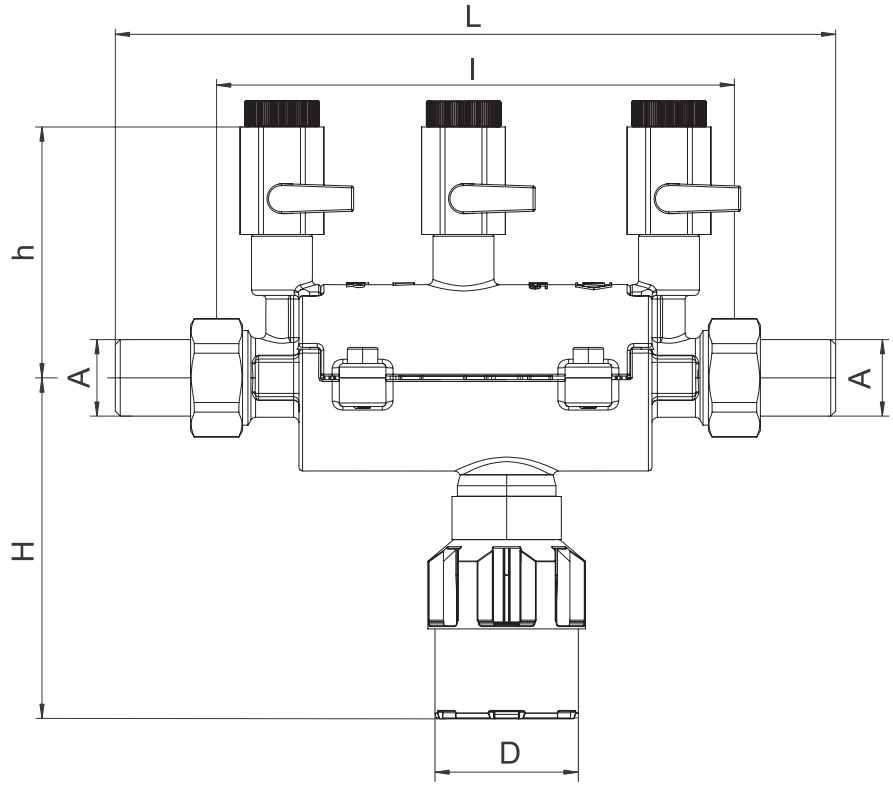
Permanent access to the valve has to be provided and it shall not be mounted in rooms liable to flooding, frost or high temperatures. The installation should only be carried out in an well-ventilated environment. The connected discharge device must be able to collect the discharge volume. The Backflow Preventer type BA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards.
The test ports should be easily accessible. For a perfect function, it is recommended to locate a drinking water filter upstream. Thoroughly rinse the pipe prior to the installation. Install the Backflow Preventer type BA in horizontal position in the pipe under consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	horizontal, tundish facing downwards
Fluid:	Drinking water
Flow rate capacity:	DN 15: 2.9 m^3/h at 1.5 bar Δp DN 20: 5.1 m^3/h at 1.5 bar Δp DN 25: 7.9 m^3/h at 1.5 bar Δp
Serial number:	6610...

Maintenance

According to EN 1717, the Backflow Preventer type BA 6610 has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accordance with the operating conditions, but every two years at the latest. The ball valves on top of each pressure zone are used in combination with a test kit to verify functionality. This Backflow Preventer type BA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Nominal size		DN 15	DN 20	DN 25
	A	R ½“	R ¾“	R 1“
Dimensions	L (mm)	201	240	248
	l (mm)	145	178	178
	H (mm)	95	95	95
	h (mm)	70	79	79
	D (mm)	40	40	40

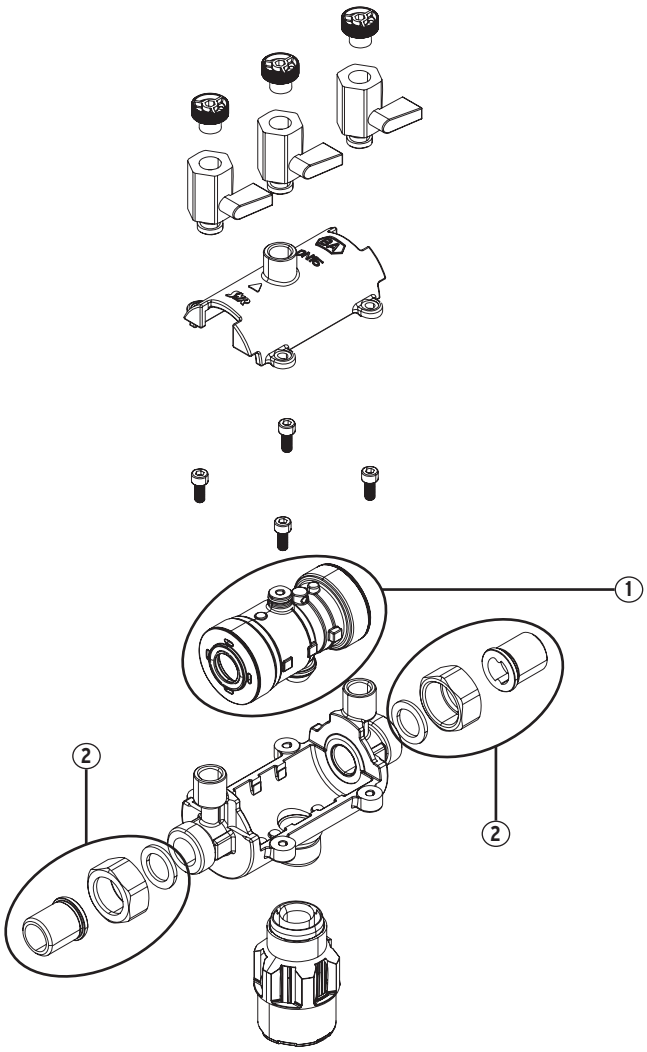
Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

Components / Order numbers

①
Cartridge
DN 15 6610.00.900
DN 20/25 6610.00.901

②
Connection
R ½" 0805.15.902
R ¾" 0805.20.903
R 1" 0805.25.900



Backflow Preventer BA Mini 6600D

Controllable Backflow Preventer with isolating valves



Field of application

The SYR Backflow Preventer type BA Mini is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installa-tions and general requirements for devices to prevent pollution by backflow), group B (three pressure zones system). It is in con-formity with type BA described in EN 1717 and therefore it can be used as a protective device up to fluid category 4 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The Backflow Preventer type BA covers numerous application possibilities (for instance printing, chemical and food industry, laboratories and medical technology).

Design

The Backflow Preventer type BA Mini includes all components determined in the European standard EN 1717 and is designed as 3-pressure zones-system with controllable upstream/ intermediate and downstream pressure zones. In addition, it includes two isolating valves and an integral strainer. The ball valves on top of each of the three pressure zones are used in combination with a test kit to verify functionality by pressure measurement. The Backflow Preventer is composed of 2 consecutive check valves with an intermediate pressure zone that can be vented to the atmosphere. When no water is drawn off, both check valves are open and the discharge valve is closed. In case of back-siphonage, the inlet pressure drops. The discharge valve opens at the latest when the differential pressure between upstream and intermediate pressure zone has dropped to 0.14 bar.

6600D Backflow preventer BA Mini

Materials

The body is made of a high-quality, low-lead brass alloy and high-quality synthetic material. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW.

All synthetic parts getting in contact with drinking water intended for human consumption are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

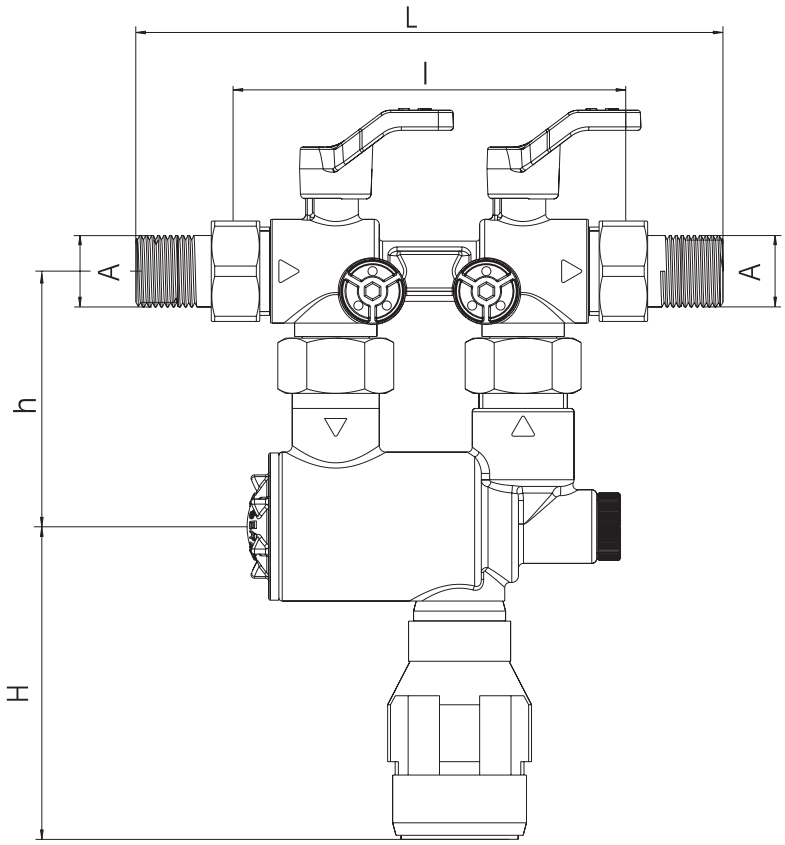
Permanent access to the valve has to be provided and it shall not be mounted in rooms liable to flooding, frost or high temperatures. The installation should only be carried out in an well-ventilated environment. The connected discharge device must be able to collect the discharge volume. The Backflow Preventer type BA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards. The test ports should be easily accessible. For a perfect function, it is recommended to locate a drinking water filter upstream. Thoroughly rinse the pipe prior to the installation. Install the Backflow Preventer type BA in horizontal position in the pipe under consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	horizontal, tundish facing downwards
Fluid:	Drinking water
Flow rate capacity:	DN 15: 2.0 m^3/h at 1.5 bar Δp
Serial number:	6600...

Maintenance

According to EN 1717, the Backflow Preven-ter type BA has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accordance with the operating conditions, but every two years at the latest. The ball valves on top of each pressure zone are used in combination with a test kit to verify functionality. This Backflow Preventer type BA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Nominal size		DN 15	DN 15
	A	R ½“	R ¾“
Dimensions	L (mm)	175	175
	l (mm)	117	117
	H (mm)	93.5	93.5
	h (mm)	76	76

Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

Components / Order numbers

① **Body**
synthetic: 6600.00.919
metal: 6600.00.920

② **Tundish**
6600.00.903

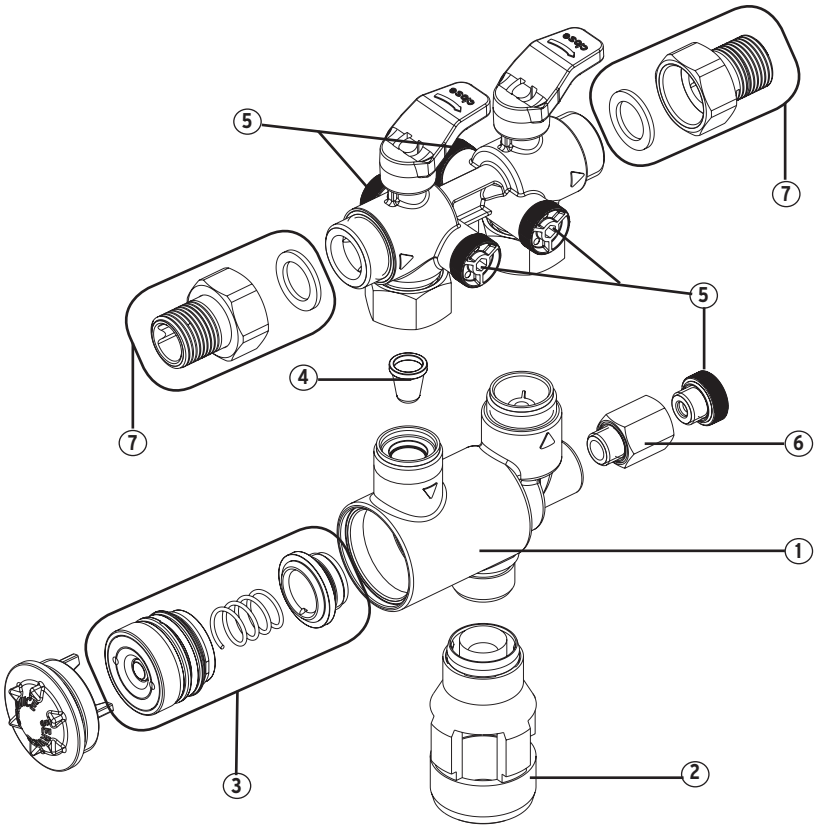
③ **Cartridge**
6600.00.921

④ **Strainer**
6600.00.922

⑤ **Manometer plug**
0828.08.000

⑥ **Adapter** (only synthetic-Version)
6600.00.918

⑦ **Union connection**
DN 15: 0812.15.900
DN 20: 0816.20.900



Backflow Preventer BA 6600 ST

Controllable Backflow Preventer for standpipes



Field of application

The SYR Backflow Preventer 6600 ST is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installations and general requirements for devices to prevent pollution by backflow), group B (three pressure zones system). It is in con-formity with type BA described in EN 1717 and therefore it can be used as a protective device up to fluid category 4 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The Backflow Preventer type BA covers numerous application possibilities (for instance trade shows, funfairs, construction sides, emergency care and standpipes for temporary water draw off).

Design

The Backflow Preventer 6600 ST includes all components determined in the European standard EN 1717 and is designed as 3-pressure zones-system with controllable upstream/ intermediate and downstream pressure zones. In addition, it includes two isolating valves and an integral strainer. The ball valves on top of each of the three pressure zones are used in combination with a test kit to verify functionality by pressure measurement. The Backflow Preventer is composed of 2 consecutive check valves with an intermediate pressure zone that can be vented to the atmosphere. When no water is drawn off, both check valves are open and the discharge valve is closed. In case of back-siphonage, the inlet pressure drops. The discharge valve opens at the latest when the differential pressure between upstream and intermediate pressure zone has dropped to 0.14 bar.

6600 Backflow preventer ST

Materials

The body is made of a high-quality, low-lead brass alloy and high-quality synthetic material. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW.

All synthetic parts getting in contact with drinking water intended for human consumption are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

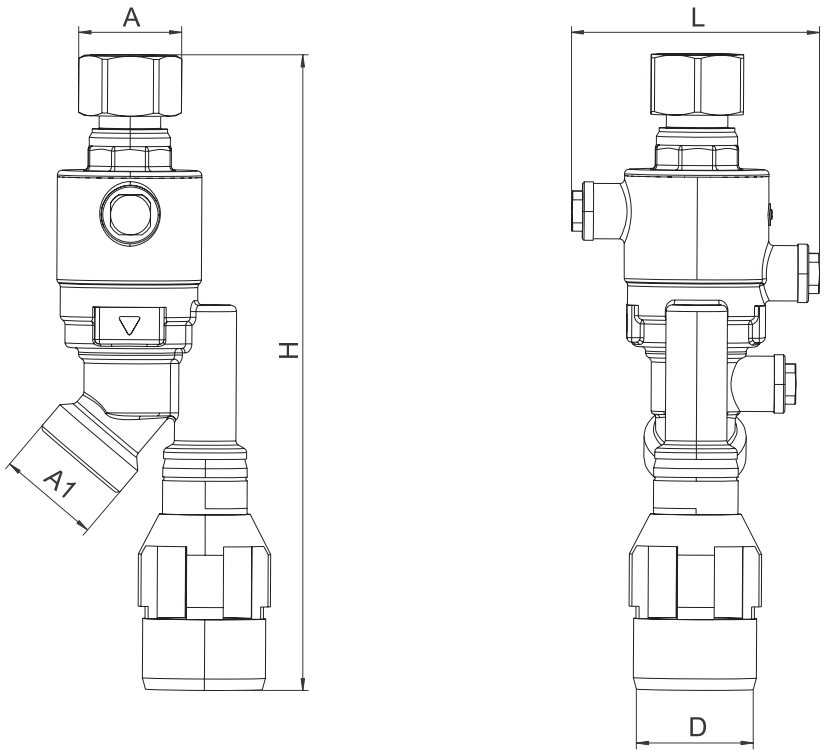
Permanent access to the valve has to be provided and it shall not be mounted in rooms liable to flooding, frost or high temperatures. The installation should only be carried out in an well-ventilated environment. The connected discharge device must be able to collect the discharge volume. The Backflow Preventer type BA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards. The test ports should be easily accessible. For a perfect function, it is recommended to locate a drinking water filter upstream. Thoroughly rinse the pipe prior to the installation. Install the Backflow Preventer 6600 ST in horizontal position in the pipe under consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 30°C (Inlet), max. 65°C (Outlet)
Mounting position:	horizontal, tundish facing downwards
Fluid:	Drinking water
Flow rate capacity:	DN 15: 1.8 m^3/h at 1.5 bar Δp
Serial number:	6600...

Maintenance

According to EN 1717, the Backflow Preven-ter 6600 ST has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accordance with the operating conditions, but every two years at the latest. The ball valves on top of each pressure zone are used in combination with a test kit to verify functionality. This Backflow Preventer type BA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Nominal size		DN 15	DN 15
	A	G ¾“	G 1“
	A1	G 1“	G 1“
Dimensions	L (mm)	81	81
	H (mm)	207	207
	D (mm)	40	40

Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

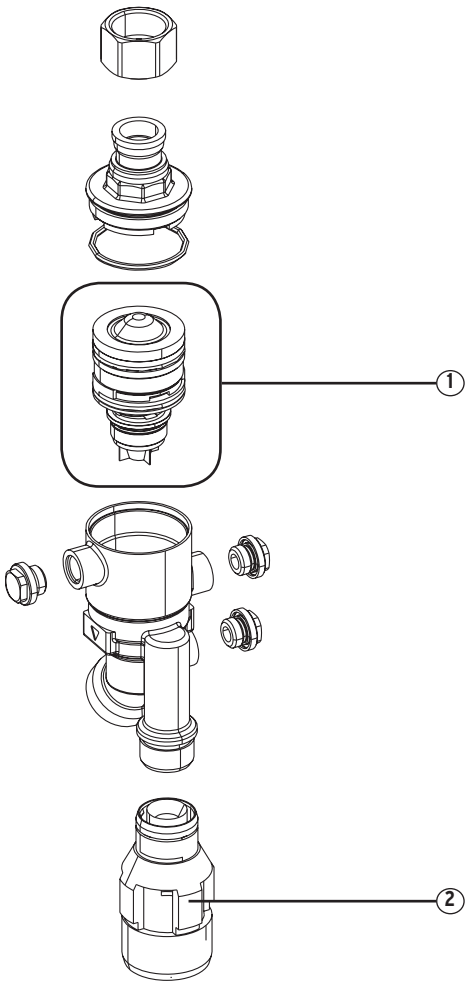
Components / Order numbers

① **Cartridge**
6600.00.917

② **Tundish**
6600.00.903

no picture
Locking clamp

G ¾“	6600.00.972
G 1“	6600.00.965



Backflow Preventer BA STBA 100

Controllable Backflow Preventer



Field of application

The backflow preventer type BA STBA 100 from SYR is a compact safety device in conformity with EN 1717, group B, with controllable disconnection (three zones system). It complies with the installation type BA as defined in EN 1717 and can be used as a protective device up to and including fluid category 4. It is designed to prevent back-siphonage, backpressure or backflow of non-potable water into the public drinking water system. The BA Backflow Preventer covers a wide range of applications (i.e. printing houses, chemicals and food producing companies, laboratories and medical technology).

Design

The BA backflow preventer, which includes all components set by EN 1717 is designed as three zones system with a controllable upstream, intermediate and downstream pressure zone. It also includes a strainer. Each pressure zone can be equipped with test valves (accessories 6625.15.902) to verify the safety devices by pressure measurement. The backflow preventer is equipped with two consecutive check valves with an intermediate pressure zone in between, which can be vented to the atmosphere. When no water is drawn off, the check valves on either side and the drain valve are closed. In case of backsiphonage, the inlet pressure drops. The drain valve opens at the latest, when the differential pressure between the upstream and intermediate zone decreases to 0.14 bar.

Materials

The body is made of a high-quality low-lead brass alloy and heat-resistant synthetic material. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All synthetic parts getting in contact with drinking water are approved by the German Public Health Office (KTW). The valve's tundish is made of high-quality synthetic material.

Installation

Permanent access to the valve has to be provided. Do not mount in rooms subject to flooding, frost or high temperatures. Install only in a well-ventilated environment. The connected discharge device must be able to collect the discharged volume. Install the BA backflow preventer in horizontal or vertical position with the tundish connection facing downwards. Free access to the test devices shall be provided to facilitate the inspection of the backflow preventer. It is recommended to mount a drinking water filter upstream to ensure perfect function.

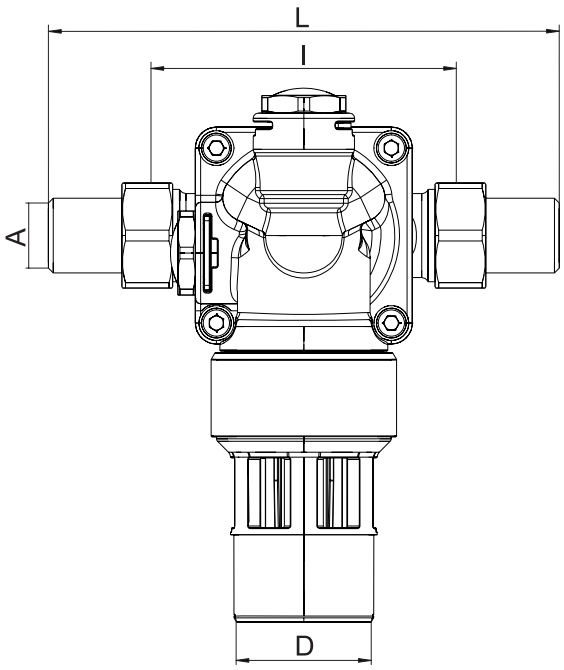
Thoroughly flush the pipe prior to installation. Install the backflow preventer type BA in horizontal or vertical position under consideration of the direction of flow and without applying stresses.

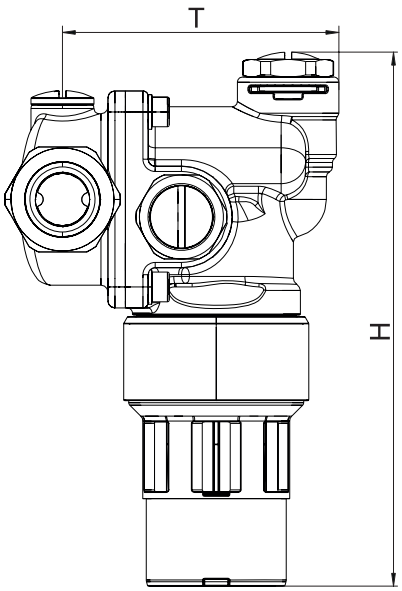
Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	any, when tundish facing downwards
Fluid:	potable water
Flow rate capacity:	DN 15: 1.8 m^3/h at 1.5 bar Δp
Serial number:	6625.15.000

Maintenance

According to EN 806, part 5, the BA backflow preventer has to be serviced on a regular basis. Therefore, maintenance agreements between user and installer are very useful. The correct function has to be verified after the first service year and then periodically in accordance with the operating conditions, but at the latest after one year. The test devices in each pressure zone allow to check the correct operation of the valve by means of corresponding measuring devices. The backflow preventer is designed with a cartridge system, which makes maintenance works simple and unproblematic.





Nominal size		DN 15	DN 15
	A	R ½“	R ¾“
Dimensions	L (mm)	146	164
	I (mm)	90	90
	H (mm)	152,5	152,5
	T (mm)	79	79
	D (mm)	40	40

Accessories

Test kit: electronic pressure measurement device for inspection and maintenance. 6600.00.000

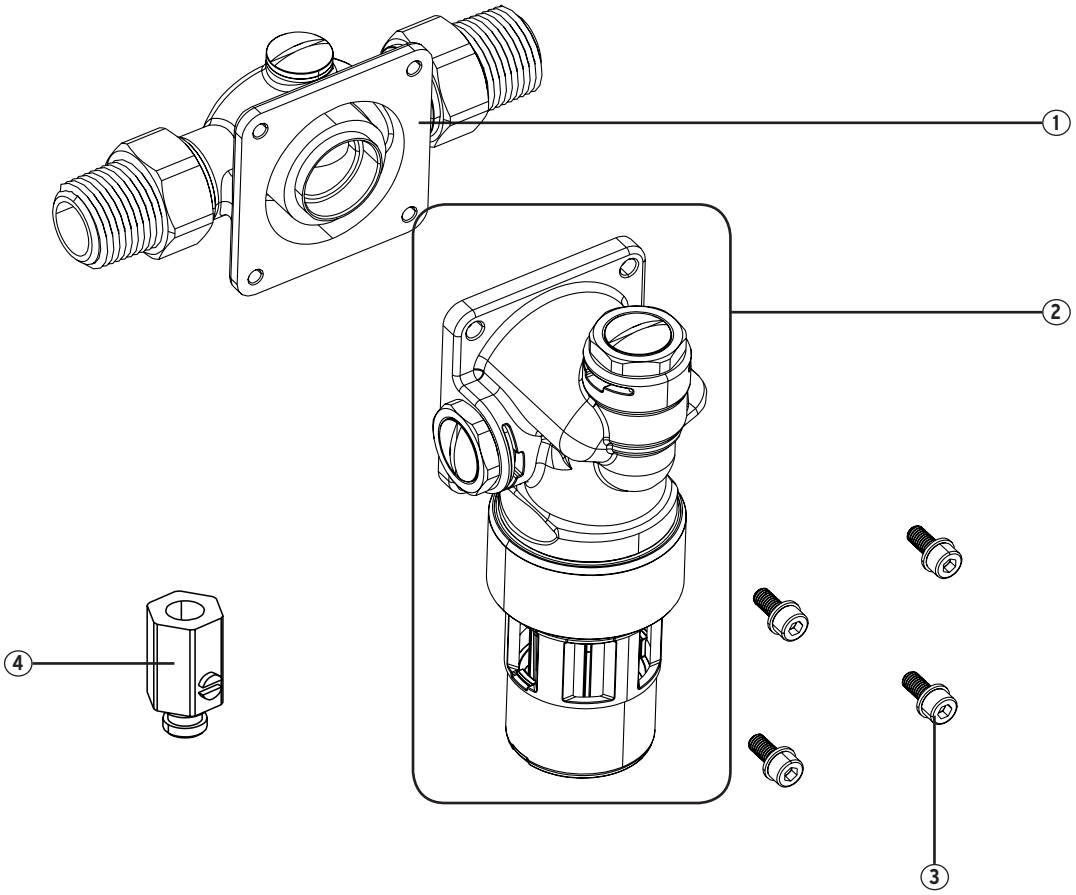
Components / Order numbers

① **Body**

② **Backflow preventer cartridge**
6625.15.900

③ **Four hexagon socket screws**

④ **Three test valves for maintenance**
6625.15.902



Backflow Preventer type CA 6800

Non-controllable Backflow Preventer with different pressure zones - type CA



Field of application

The SYR backflow preventer type CA is a compact safety valve in compliance with the European standard EN 1717 (Protection against pollution of potable water installations and general requirements of devices to prevent pollution by backflow), group C (three zones system). It is in conformity with the installation type CA described in EN 1717 and therefore it can be used as a protective device up to the fluid category 3 (included). Its task is to prevent back-siphonage or backflow of non-drinking water into the public potable water system. The backflow preventer type CA is mainly used to fill heating installations without inhibitors and allows to perma-nently connect the filling device of the heating installation to the drinking water system.

Design

The backflow preventer type CA includes all components determined in the European standard EN 1717 and is divided into 3 zones: an upstream pressure zone, a non-measurable intermediate pressure zone (venting to the atmosphere) and a downstream pressure zone. The backflow preventer CA provides disconnection by venting the intermediate pressure zone to the atmosphere, when the pressure difference between intermediate and upstream pressure zone is below 10% of the upstream pressure. The volume that can be discharged through the intermediate pressure zone is at least equivalent to the determined volume of the inlet flow rate.

6800 Backflow preventer CA

Materials

The body is made of a high-quality low-lead brass alloy. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All materials are tested and approved by DVGW. All synthetic parts getting in contact with drinking water are approved by the German Public Health Office (KTW). The discharge outlet on the valve is made of high-quality synthetic material.

Installation

Permanent access to the valve has to be provided and it shall not be mounted in rooms where flooding, frost or high temperatures are possible. The installation should only be carried out in a well-ventilated environment. The connected discharge device must be able to collect the discharged volume. The backflow preventer type CA has to be installed in horizontal position with the discharge valve (tundish connection) facing downwards. For a perfect function, it is recommended to locate a drinking water filter upstream.

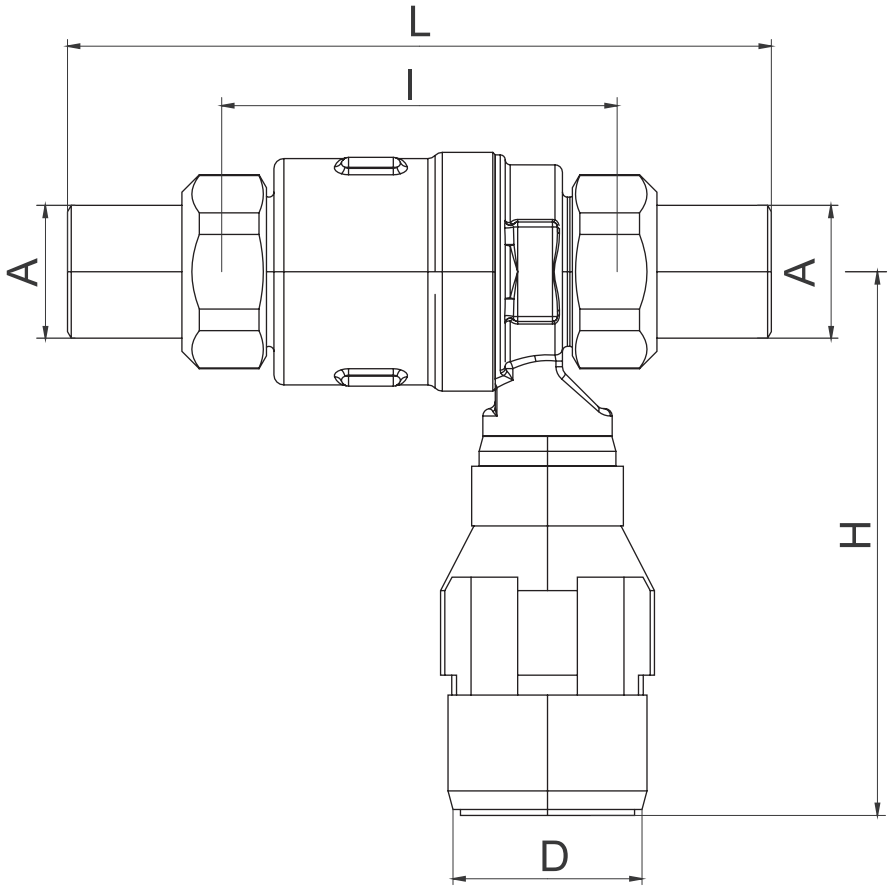
Thoroughly rinse the pipe prior to the installation. Install the backflow preventer type CA in horizontal position in the pipe un-der consideration of the flow direction without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 65°C
Mounting position:	horizontal, tundish facing downwards
Media:	Drinking water
Flow rate:	DN 15: 2.0 m^3/h bei 1.7 bar Δp DN 20: 3.2 m^3/h bei 1.7 bar Δp
Serial-Nr.:	6800...

Maintenance

According to EN 1717, the backflow preventer type CA has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are useful. The proper function has to be verified after the first service year and then periodically in accor-dance with the operating conditions, but every two years at the latest. This backflow preventer type CA is designed with a cartridge system which makes the maintenance easy and unproblematic.



Nominal size		DN 15	DN 20
	A	G ½	G ¾
Dimensions	L (mm)	135,5	141,5
	l (mm)	79,5	79,5
	H (mm)	109	109
	D (mm)	40	40

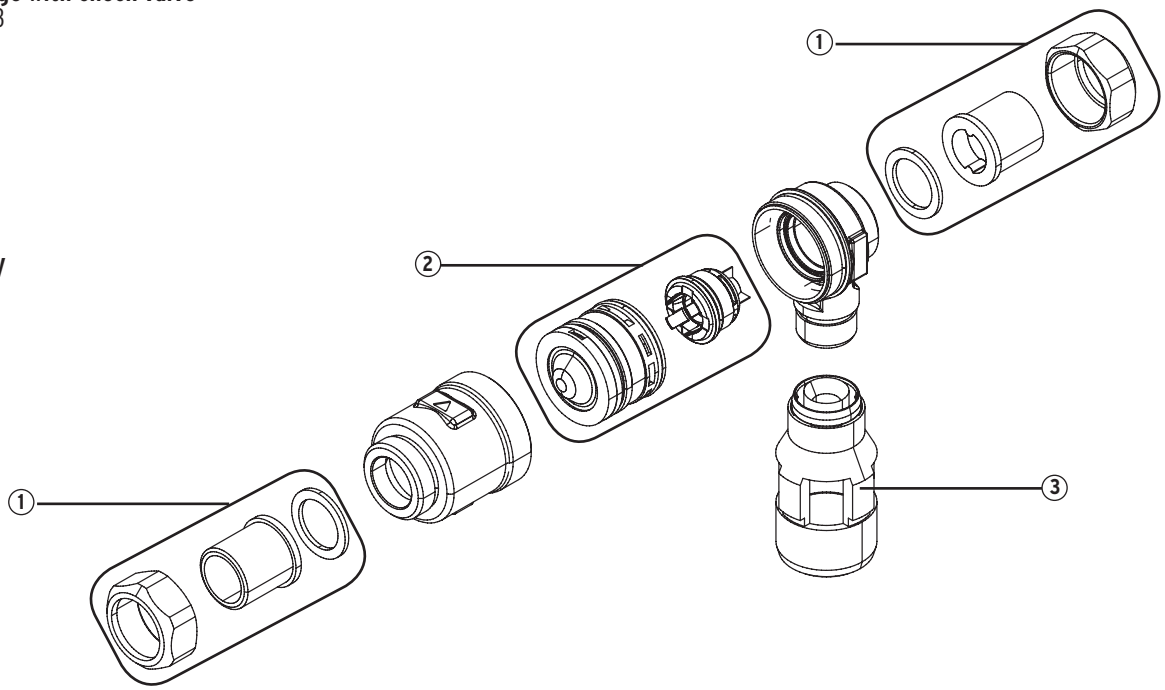
Components / Order numbers

① **Threated union and seal**
DN 15: 0812.15.903
DN 20: 0812.20.903

② **CA-Cartridge with check valve**
6800.00.903

③ **Tundish**
6800.00.901

no pict.
Service key
6600.00.971



Air Break 65



Field of application

The SYR Air Break type 0065 compensates negative pressure in pipe systems and prevents backsiphonage of water into the potable water system. Backsiphonage may occur in case of vacuum in the pipe system and when the latter gets in contact with water outside of this system, for instance by means of a hose. In case of vacuum, the Air Break allows air to enter into the potable water system. The Air Break allows air to escape from a pipe only when the pipe system is not under pressure, for instance when a new pipe is being filled.
When a real air vent is required, we recommend to install the automatic air vent type 0062.

Design

The SYR Air Break is a vacuum breaker without drain of dripping water. It works with a spring-loaded valve. The water pressure closes the ventilation valve, which obstructs the air inlet port. In case of negative pressure, the spring force opens the valve seat and clears the air inlet port, which prevents backsiphonage of non potable water into the installation. The compression fittings allow an easy connection to the installation. The colour of the valve cap facilitates the distinction between cold and hot water applications: red for hot water and green for cold water.

65 Air break

Materials

Housing and union made of high quality, low-lead brass alloy. Remaining components made of ageing and hot water resistant synthetic materials, approved by the German Health Office (KTW) for use with potable water.

Installation

Install in ascending pipes. It is recommended to mount the Air Break at the highest vertical point of a pipe distribution system within each floor.
It is important that no stop valve can isolate the part of the pipe in which the vacuum breaker is installed. Mount the device above the highest possible water level with a minimum distance of 150 mm to the branch pipe.

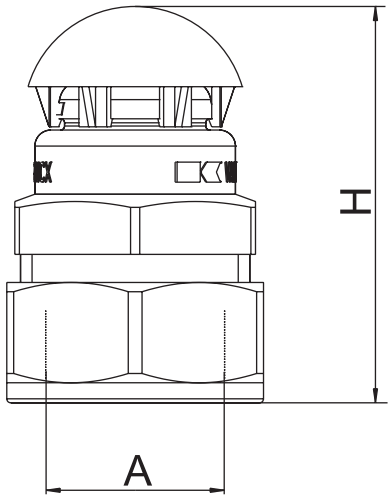
Technical data

Inlet pressure:	max. 16 bar
Connection size:	compression fittings 15 and 22 mm
Fluid:	water
Operating Temperature:	max. 60 °C
Serial-Nr.:	0065...

Maintenance

To inspect the device, isolate the water supply at the first upstream isolating valve. If the water left in the piping can still be drained, the device works. When impurities have accumulated in the device, disassemble the valve and clean it with clear water.

The integral check valve cannot be removed for safety reasons. When impurities adhering to the sealing elements cannot be removed or in case of damaged sealing elements, it is recommended to exchange the Air Break.



Nominal size		Compression fitting	
	A (mm)	15	22
Dimensions	H (mm)	46.3	147.5

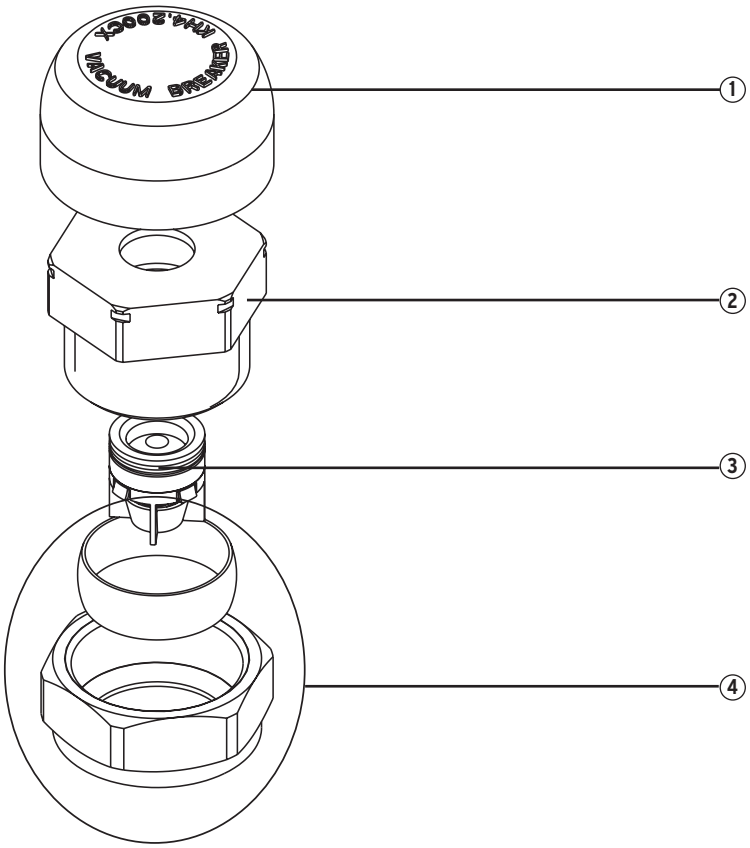
Components / Order numbers

① Cap

② Body

③ Check valve

④ Fitting (15 or 22 mm)





Safety valves for potable water heaters

Technical Information	260
SafetyCenter 4807	265
SYRobloc-Safety group 24	269
SYRobloc-Safety group 25	273
Safety group with non return 34	277
Safety Assembly 322	281
Safety Assembly 323	285
Safety Assembly 324	289
Safety group for warm water heaters 0330	293
Pressure relief valve 2115	297
Pressure relief valve with stainless steal seat	301
Exchange cartridge 2116	305
Pressure relief valve 2117	309
Thermostatic mixing valve 0702 Safe	313
Thermostatic mixing valve 0705	317
T&P valve 2303	321

Diaphragm pressure relief valve

A diaphragm pressure relief valve opens automatically to prevent pressure from exceeding the service pressure and closes automatically when the pressure has been reduced. Each unvented (pressurised) potable water heater should be equipped with at least one diaphragm pressure relief valve. Instant water heaters with a nominal volume below 3 litres are the exception to the rule. Only spring-loaded diaphragm pressure relief valves should be used up to a nominal volume of 5000 litres. In case of unvented potable water heaters with a nominal volume of more than 5000 litres and/or a heating capacity of more than 250 kW, the pressure relief valve has to be selected in accordance with the manufacturer's instructions. Table 1 determines the nominal size of pressure relief valves.



Installation

Observe the following rules for the installation of diaphragm pressure relief valves:
The pressure relief valves shall be installed in the cold water pipe. There shall be no isolating valves, narrowings or strainers between the pressure relief valve and the potable water heater. The pressure relief valves have to be sited close to the potable water heater and be readily accesible. The nominal size of the feed pipe of the valve has to be at least equal to the connection dimension of the potable water heater.
The installation height of the pressure relief valve has to allow mounting the relief pipe with continuous incline. It is recommended to locate the pressure relief valve above the potable water heater, so that it can be exchanged without having to drain the latter.

Observe the following rules for the connection of the relief pipe:
The correct installation must ensure that persons are not endangered by escaping water when the pressure relief valves discharge. For this reason, each pressure relief valve requires a relief pipe, which is made of heat and sufficiently corrosion resistant material and is protected against frost.

The relief pipe that must have at least the diameter of the valve outlet has to end within a building 20 to 40 mm over a drain device or a tundish and has to be readily accessible. It shall not include more than two bends and have a length of maximally 2 meters. When more bends or a length exceeding 2 meters are necessary, the relief pipe must be one size larger. More than 3 bends and a length exceeding 4 meters are not admissible.
A label with the inscription: „When heating, water has to escape from the relief pipe for safety reasons! Do not obturate!" has to be placed close to the drain pipe.
The drain pipe connected to the tundish must have at least the double cross-section of the relief pipe.

Observe the following rules for the response pressure of pressure relief valves:
The pressure relief valves are factory-set. The response pressure of the pressure relief valve has to be equal or lower than the admissible service overpressure of the potable water heater.

The maximum pressure in the cold water pipe must be at least 20% below the response pressure of the pressure relief pipe (see table 2). When the maximum pressure in the cold water pipe exceeds these 20%, a pressure reducing valve has to be installed.

Nominal volume (l)	Size of valve (DN min.)	Heating capacity (kW max.)
up to 200	15	75
from 201 to 1.000	20	150
from 1.001 to 5.000	25	250

Table 1: Nominal sizes of pressure relief valves for unvented potable water heaters



Each diaphragm pressure relief valve has to be marked permanently with the manufacturer's logo, approval number, nominal size (with letter W for potable water or F for fluids) and the set pressure. Figure 1 shows a typical example of a marking plate.
Diaphragm pressure relief valves are sealed by the manufacturer. Changing the set pressure without destroying the cap for lead seal is impossible. The pressure relief valve loses its approval in case of visible manipulation.

The necessity to install a pressure reducing valve in the potable water system upstream of the potable water heater is justified inter alia by the way the valves work. Diaphragm safety valves work within an admissible tolerance of + 10% and - 20% of the response pressure. This means that when the service overpressure exceeds 10% of the response pressure, they have to be fully open and when the service pressure drops to less than 20% of the response pressure, they have to be fully closed. A pressure relief valve with a response pressure of 6 bar can no longer close in case of a permanent service pressure in the cold water pipe of approximately 5 bar - this results in a continuous loss of water and energy.

Admissible service pressure of potable water heater (bar)	Response pressure of pressure relief valve (bar)	max. pressure in cold water pipe (bar)*
6	6	4,8
8	8	6,4
10	10	8,0

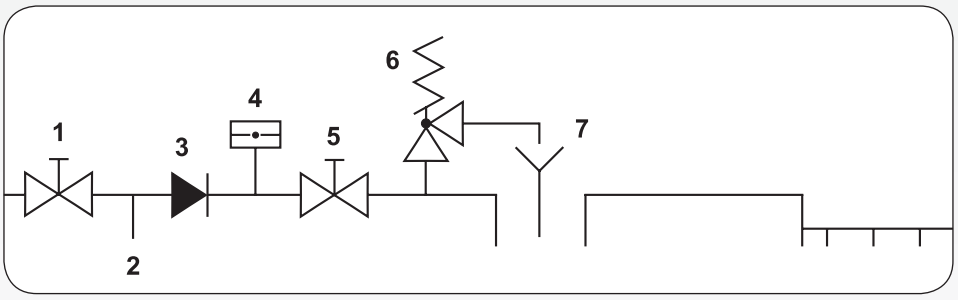
Tabelle 2: Examples for selection of response pressure

*From 5 bar a pressure reducing valve is necessary.



Safety groups for potable water heaters according to DIN EN 1488

Unvented (pressurised) potable water heaters up to 10 litres only require a diaphragm pressure relief valve to ensure the protection. For unvented potable water heaters from 10 to 1000 litres, an approved safety group should be installed that includes the following components: an isolating valve, a test port, a check valve, a manometer connection, a second isolating valve, a diaphragm pressure relief valve and a tundish.



1. Isolating valve
2. Test port
3. Check valve
4. Manometer
5. 2nd Isolating valve
6. Diaphragm pressure relief valve
7. Tundish

A check valve has to be installed in the cold water pipe independently of the type of heating of the potable water heater. In case of unvented (pressurised) potable water heaters, it is indispensable to install an isolating valve upstream and downstream close to the check valve in order to test and exchange the latter. Potable water heaters up to 200 litres do not require a second check valve. A test device is needed between the first isolating valve and the check valve. The check valve protects the upstream piping and technical appliances against the backflow of heated water.
The additional safety equipment for potable water heaters in combination with the diaphragm pressure relief valve (dealt with in previous chapter) is internationally designated as „safety group for protection of unvented (pressurised) potable water heaters". Figure 2 illustrates a safety group designed as a unit.

European product standard EN 1488

EN 1488 is the new European product standard for safety groups for expansion water. It determines dimensions, materials, performance requirements as well as test methods. EN 1488 is the first product standard to define requirements for safety groups. Beforehand, the separate function units of a safety group had to fulfil various test requirements. Like all European standards set up recently, EN 1488 forms a compromise between the various member states; in order to maintain a high quality level, some additional requirements should be met.

Anti-Legionella diaphragm expansion vessels according to DIN 4807, part 5



SYR Safety-Center 4807

The installation of diaphragm expansion vessels in the potable water installation is not compulsory. However, these devices allow considerable water and energy saving and are state-of-the-art.

Only Anti-Legionella diaphragm expansion vessels should be installed. Long stagnation periods can decisively impair the potable water quality in the pipework and appliances due to high concentrations of dissolving pipe materials and micro-biological growth, so that requirements applicable to potable water are no longer fulfilled. To ensure the quality of potable water, diaphragm expansion vessels in the potable water installation have to fulfil higher requirements than in heating installations. To protect the potable water quality, the Anti-Legionella function, the corrosion resistance and the hygienic safeness should be submitted to tests. An isolating valve with a drain possibility should be provided for the maintenance of the diaphragm expansion vessel.

Anti-Legionella function

The diaphragm expansion vessel for the potable water installation should ensure the Anti-Legionella function independently of the pre-filled gas pressure and even in case of malfunction. For this reason, the expansion vessels are designed with a forced Anti-Legionella function. The pre-filled gas pressure should be verifiable.

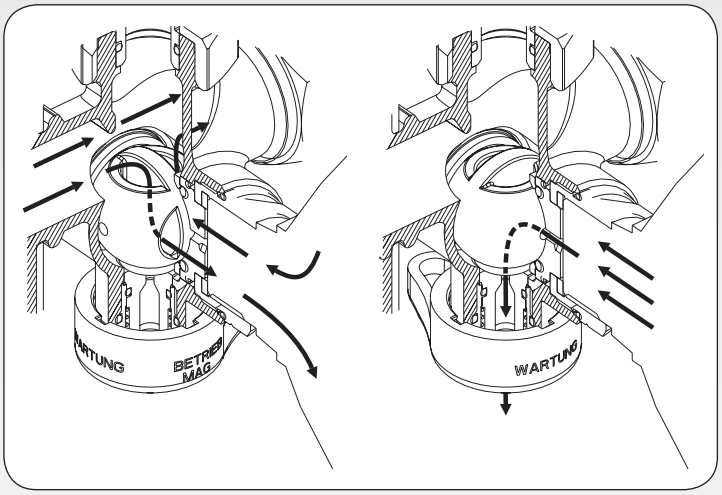
Corrosion protection of components in contact with water

The protection against corrosion is provided by the selection of corrosion resistant materials and coatings. The components not coming in contact with water shall have a sufficient corrosion protection.

Hygienic safeness

The non-metallic components in contact with water (internal wall, coating and diaphragm) have to meet national hygienic prescriptions.

Functioning principle of the Anti-Legionella diaphragm expansion vessel



The vessel is filled with nitrogen. The pre-filled gas pressure is preset in factory. When the device is delivered, the diaphragm clings to the vessel wall. When the temperature and pressure rise in the installation, the diaphragm expansion vessel collects the expansion water generated by the heating process of the potable water heater. The diaphragm bulges and presses the nitrogen together. To achieve high effectiveness of the diaphragm expansion vessel, the pre-filled gas pressure should be set as follows: pre-filled gas pressure diaphragm expansion vessel = static pressure of installation - 0.2 bar.

Operation

The water flows with approximately 15% of the flow rate in the diaphragm expansion vessel and is drawn out of the vessel by vacuum formation along with the remaining flow rate.

Maintenance

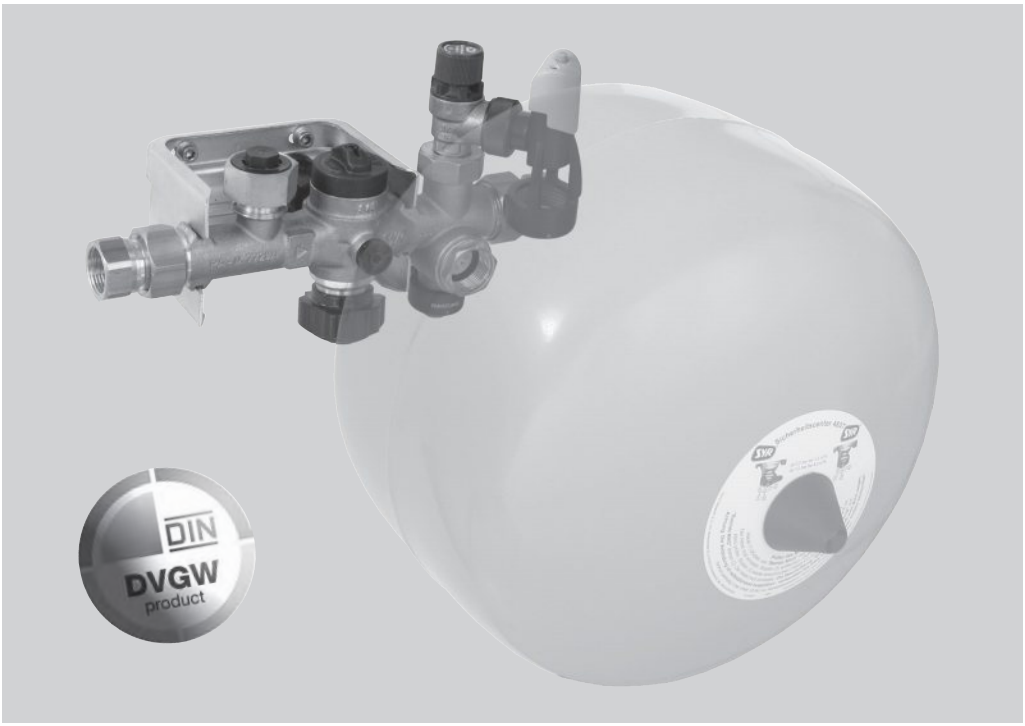
The diaphragm expansion vessel can be isolated and disassembled without interrupting the service of the potable water heater. The water can flow out of the drain valve of the diaphragm expansion vessel through small bores of the isolating ball valve.

Installation

Install the diaphragm expansion vessel in the cold water pipe. To ensure a constant static pressure in the installation, install a pressure reducing valve behind the water metering system. For maintenance and verification of the pre-filled gas pressure, install an isolating valve that is protected against unintentional closing and is equipped with a drain possibility. There should be no isolating valves, narrowings or strainers between the connection of the pressure relief valve and the potable water heater.

Safety Center 4807

Safety group for potable water heaters with expansion vessel



Field of application

The SYR Safety Center 4807 ensures the protection of unvented (pressurised) potable water heaters up to a maximum of 560 l. It includes in a compact unit all components required for the point of entry equipment of potable water heaters, as well as an Anti-Legionella valve with an integrated isolating valve and an Anti-Legionella diaphragm expansion vessel with a nominal volume of 12 l or 18 l.

Design

The Safety Center 4807 includes a connection for an additional cold water user, a double isolating system with an integral test port for the check valve, a check valve, a pressure relief valve with stainless steel seat and tundish, an Anti-Legionella valve with integral isolating valve for the diaphragm expansion vessel as well as an assembly plate with a screwed connection for the adjustment of the distance to the wall. The special design of the group allows the installation as angle or in-line type in horizontal and vertical pipes. The diaphragm pressure relief valve can be rotated by 360° to adapt the device to various assembly conditions. The assembly plate allows a safe and time-saving installation. The enclosed exchange cartridges (8 + 10 bar) for the pressure relief valve cover the different potable water heater volumes and maximum service pressures. Using the integrated system check it can be quickly retrieved if the safety valve has dropped and what maintenance is required. The Safety Center 4807 fulfils the highest acoustic requirements.

Materials

The body is made of a low-lead dezincification resistant gunmetal alloy. All spare parts are made of stainless steel; all pressure submitted synthetic parts of glass fibre reinforced synthetic material. The diaphragm and the sealing rings are made of heat and ageing resistant elastomeric synthetic material. The springs are made of corrosion resistant spring steel wire or stainless steel. The expansion vessel is made of coated steel and the diaphragm of NBR. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

Install the Safety Center 4807 close to the potable water heater or near the domestic point of entry. It is possible to combine the device with the DRUFI and the distribution modules. The domestic installation should be equipped with a filter and a pressure reducing valve. The set outlet pressure shall not exceed 80 % of the opening pressure of the pressure relief valve. The assembly plate renders the installer's work very easy: the time-consuming installation with the distance to be met between the wall and the diaphragm expansion vessel and the complicated mounting of the latter with brackets and fixtures are no longer required. All directions of flow are possible as a result of the various mounting options.

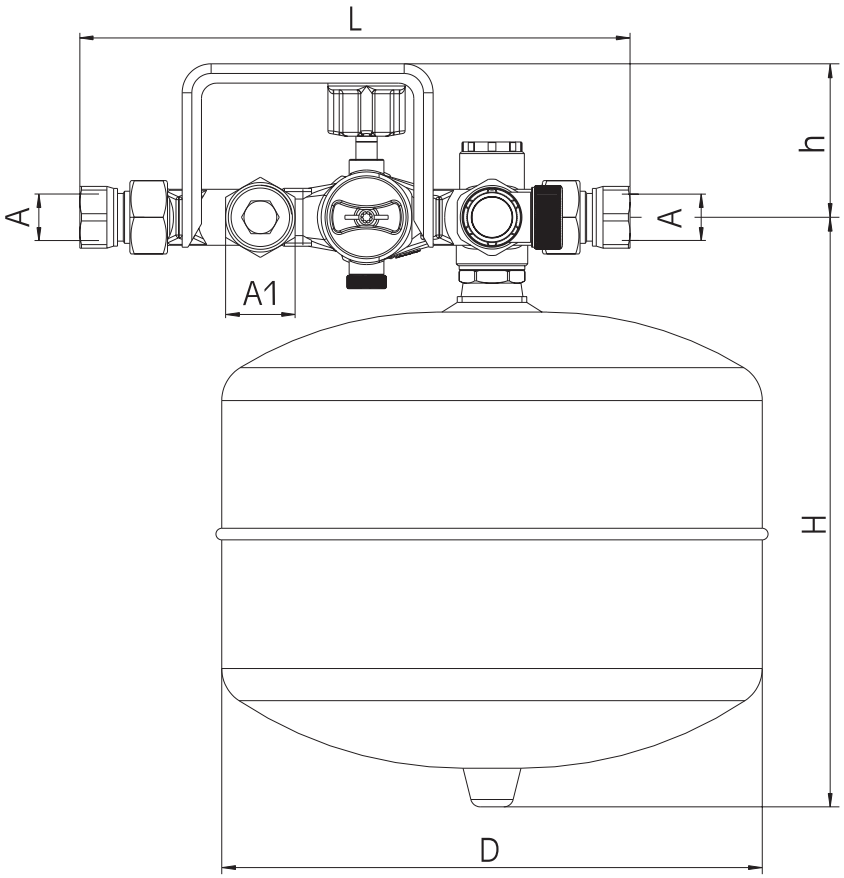
Thoroughly flush the pipe prior to installation. Install the device without applying stresses. With the assembly plate included in the delivery, the distance to the wall is of 80 mm. This distance can be adjusted in a range between 80 and 95 mm by means of a screwed connection. The tundish of the pressure relief valve has a 20 mm telescopic extension. To extend the drain line, it is also possible to use a copper pipe (22 mm) instead of the tundish. The exchange cartridges available as accessories can be easily replaced with the enclosed assembly key.

Technical data

Inlet pressure:	max. 80 % of opening point of pressure relief valve
Service temperature:	max. 30 °C inlet temperature
Fluid:	potable water
Opening pressure:	6, 8 or 10 bar possible with enclosed exchange cartridges
Mounting position:	any
Flow rate:	1.9 m^3/h bei 0.2 bar Δp 4.5 m^3/h bei 1.0 bar Δp
Acoustic approval:	PA-IX 7728/I
Components approval number:	TÜV-SV-15-545-DN-W-p
Certified by DVGW:	NW-6160AT2654
Serial number:	4807...

Maintenance

The pre-filled gas pressure in the diaphragm expansion vessel should be set at 0.2 bar below the static pressure of the installation. It is recommended to carry out maintenance works on the components on a regular basis in order to ensure the durable operation of the Safety Centre 4807. The pre-filled gas pressure in the diaphragm expansion vessel and the functionality of the check valve should be controlled once per year. The pressure relief valve can be lifted by means of the rotatable knob. The design of the device allows easy maintenance or repair of all components.

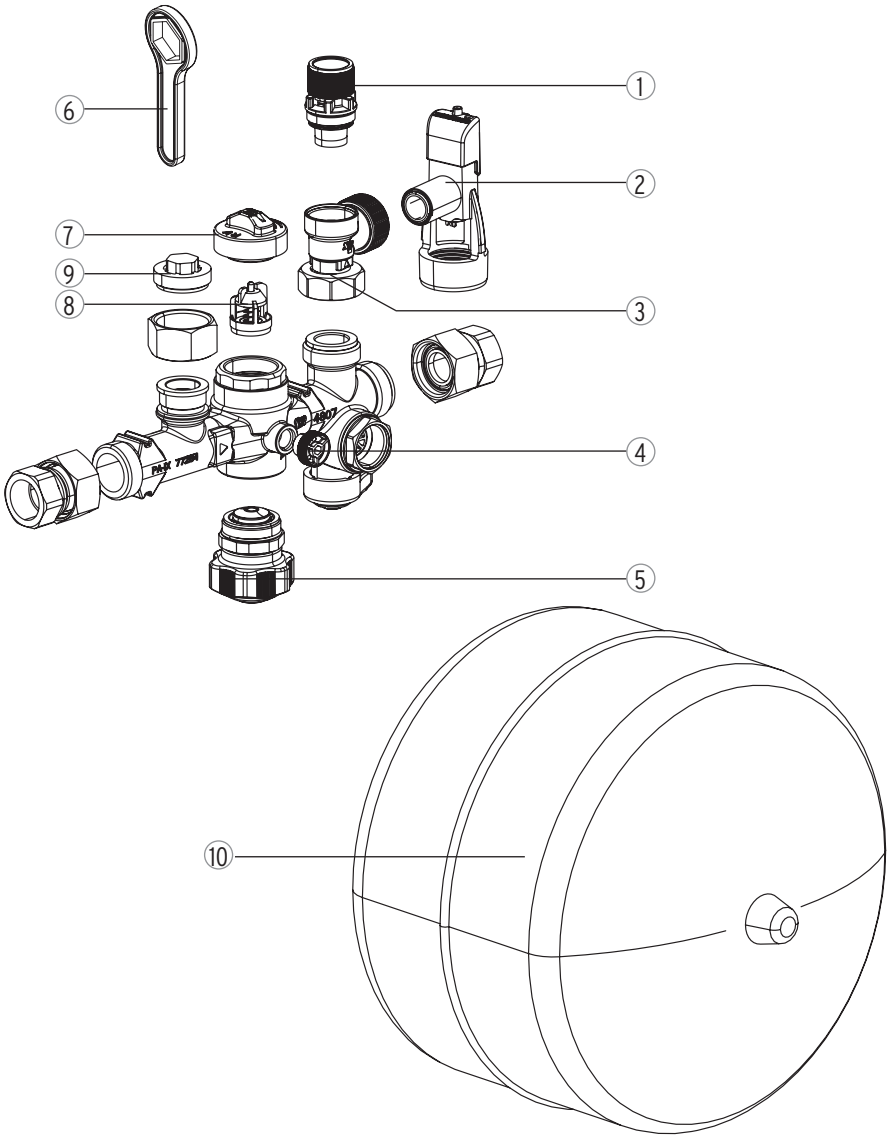


Nominal size				DN 20		
	A			G ¾"		
	A1			G 1"		
Dimensions in mm	L (mm)			285		
	h (mm)			80-90 (changable)		
	H (mm)			305 (12 litre MAG), 409 (18 litre MAG)		
	D (mm)			280		
Nominal volume of expansion vessel	12 litre			18 litre		
opening pressure of pressure relief valve	6 bar	8 bar	10 bar	6 bar	8 bar	10 bar
max. potable water heater volume	200 l	310 l	380 l	300 l	460 l	560 l

Accessories

Manometer with angle connection: 4807.00.900
Tester of gas pressure for diaphragm expansion vessel: 4807.00.905

Components / Order numbers



①
Exchange cartridge
6 bar 2116.20.060
8 bar 2116.20.061
10 bar 2116.20.062

②
Tundish fwith Systemcheck
4807.00.922

③
Diaphragm pressure relief valve
6 bar 2115.20.050
8 bar 2115.20.051
10 bar 2115.20.052

④
Manometer plug
0828.08.000

⑤
Double isolating valve
4807.00.903 (up to 12/2015)
0024.15.912 (from 10/2016)

⑥
Assembly key for cartridge exchange
max. Anzugsmoment 15 Nm
4807.00.906

⑦
Maintenance cap
4807.00.904

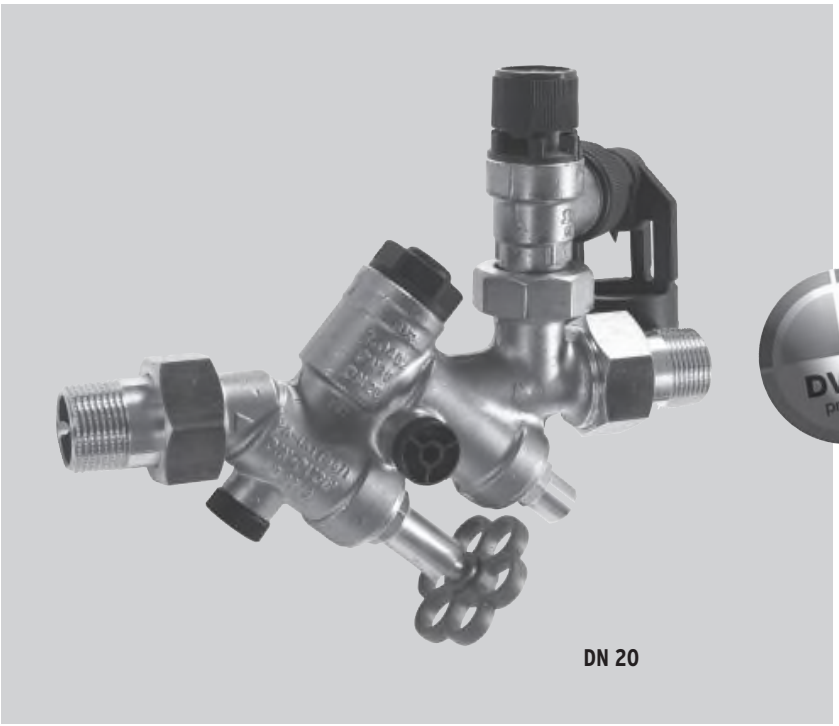
⑧
Check valve
4807.00.902

⑨
Plug
4807.00.908

⑩
Diaphragm expansion vessel
12 Liter 4807.00.901
18 Liter 4807.00.909

SYRobloc-Safety Group 24

for water heaters, with wear-resistant stainless steel seat





Field of application

The SYRobloc-Safety Group type 24 optimally protects pressurised water heaters against excess pressure according to international standards. It also fulfils the highest European acoustic requirements. It includes all necessary components in a compact form. The pressure relief valve protects the water heater located downstream; the check valve prevents the backflow of heated drinking water.

Design

The SYRobloc Safety Group type 24 is composed of a shut-off valve, a check valve with a test port (DN 20 model supplied with a 2nd shut-off valve), a manometer connection, a diaphragm pressure relief valve as well as a drain tundish with a pipe interrupter that prevents back-siphonnage of drain water. The diaphragm pressure relief valve with a wear-resistant stainless steel seat is very simple to exchange; a screw connection allows to rotate it by 360° in order to adapt to various installation conditions.

Materials

All materials used for the SYRobloc-Safety Group type 24 fulfil the highest requirements of international standards. All synthetic components getting in contact with water are approved by the German Public Health Office (KTW). The corrosion resistance in particular is guaranteed for all materials. The body, internal parts and unions are made of a high-quality low-lead brass alloy. The spring cap of the pressure relief valve is made of glass fibre reinforced synthetic material; the spring of the pressure relief valve is made of spring steel wire and the spring of the check valve of stainless steel.

Installation

The opening pressure of the pressure relief valve shall not exceed the admissible operating pressure of the water heater. The dimensioning of the safety group depends on the volume and heating capacity of the water heater (ref. table). SYRobloc 24 is used when the supply pressure does not exceed 80% of the opening pressure of the pressure relief valve. If the supply pressure is higher, install SYRobloc type 25 equipped with a pressure reducing valve.

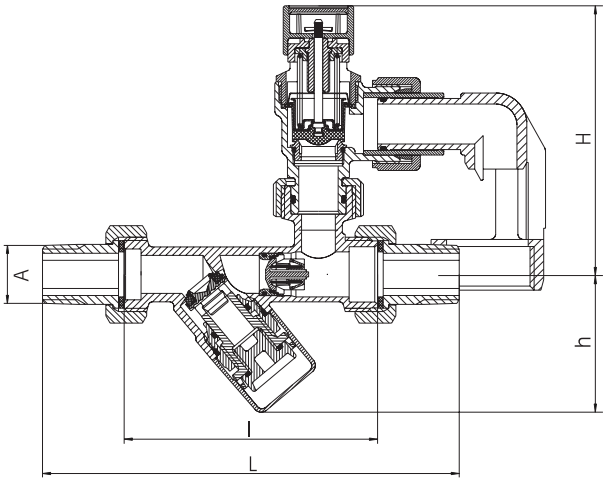
Always install the SYRobloc-Safety Group upstream of the water heater under consideration of the direction of flow; it has to be fitted without applying stresses in the cold water pipe that has been thoroughly flushed beforehand. The particular design of the group allows to install it in angle or in-line way in horizontal and - provided the direction of flow runs upwards - also in vertical pipes.
There shall be no shut-off valves, narrowings or strainers between the pressure relief valve and the water heater. Install the safety group above the water heater to ensure that the group is readily accessible in order to facilitate servicing and maintenance works. When the safety group is installed as mentioned above, the pressure relief valve can be easily exchanged without having to drain the water heater beforehand. When particular installation conditions do not allow fitting the group that way, use the soldering connection set (accessories) to extend the connection pipe to the pressure relief valve.

Technical data

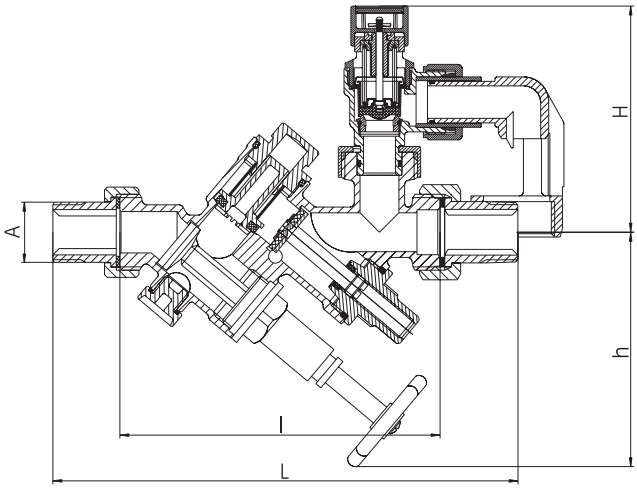
Inlet pressure:	max. 80 % of opening point of pressure relief valve
Service temperature:	max. 30 °C inlet temperature
Fluid:	potable water
Opening pressure:	6, 8 or 10 bar possible with enclosed exchange cartridges
Mounting position:	any
Flow rate:	DN 15: 2.0 m^3/h bei Δp 1.0 bar DN 20: 4.0 m^3/h bei Δp 1.0 bar
ABP-Number:	PA-IX 1794/I
Components approval number:	TÜV-SV-15-545-DN-W-p
DVGW-Number:	DVGW NW-6311AP2713
Serial number:	0024...

Maintenance

It is recommended for a durable function of the SYRobloc Safety Group to carry out maintenance works on a regular basis. The seat and sealing of the pressure relief valve can be cleaned without altering the pressure setting. The exchange of the stainless steel seat is very simple. The nominal size DN 20 allows the exchange of the check valve without having to drain the water heater. The exchangeable pressure relief valve 2115.1 can be replaced without disassembling the whole group from the pipe.



DN 15



DN 20

Nominal size		DN 15	DN 20
		G ½"	G ¾"
	A	½" | ¾"	¾" | 1"
Dimensions	L (mm)	147 | 160	205 | 230
	l (mm)	90	140
	H (mm)	90	100
	h (mm)	50	115
max. potable water heater volume	(l)	200	1000
Heating capacity	(Kw)	max. 75	max. 150

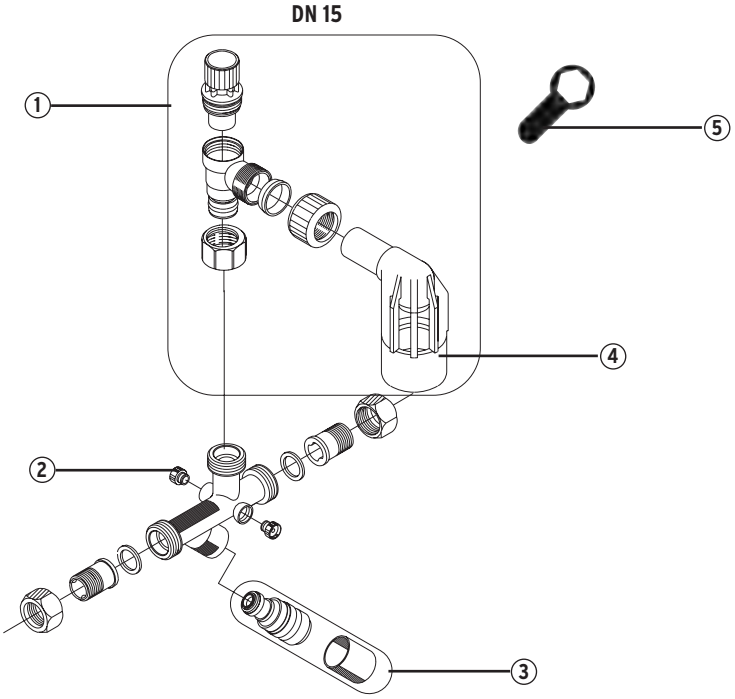
Accessories

Manometer: Type 11
Soldering connection set:
DN 15: 0024.15.905
DN 20: 0024.20.906

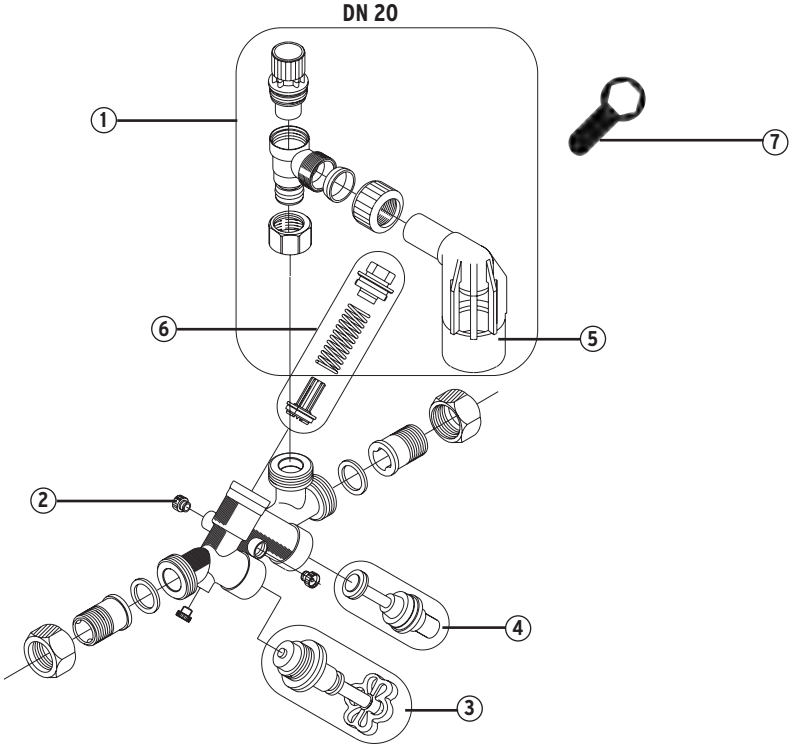
Components / Order numbers

①
Exchangeable pressure relief valve 2115.1
2115.15.018 6 bar
2115.15.019 8 bar
2115.15.020 10 bar

②
Manometer plug
0828.08.000
③
Shutt-off valve
0024.15.900
④
Tundish
0214.00.902
⑤
Assembly key
for exchangeable head part
4807.00.906
max. torque 15Nm



①
Exchangeable pressure relief valve 2115.1
2115.20.015 6 bar
2115.20.016 8 bar
2115.20.017 10 bar
②
Manometer plug
0828.08.000
③
1st shut-off valve
0024.20.903
④
2nd shut-off valve
0024.20.902
⑤
Tundish
0214.00.902
⑥
Check valve
0024.20.901
⑦
Assembly key
for exchangeable head part
4807.00.906
max. torque 15 Nm



SYRobloc-Safety Group 25

for water heaters, with pressure reducing valve and wear-resistant stainless steel seat





Field of application

The SYRobloc-Safety Group type 25 optimally protects pressurised (unvented) water heaters against excess pressure according to international standards. It also fulfils the highest European acoustic requirements. It includes all necessary components in a compact form. The pressure relief valve protects the water heater located downstream; the check valve prevents the backflow of heated drinking water.
In addition, a pressure reducing valve located upstream regulates the required system pressure.

Design

The SYRobloc Safety Group type 25 is composed of a pressure reducing valve, a shut-off valve, a check valve with a test port (DN 20 supplied with 2nd shut-off valve), a manometer connection, a diaphragm pressure relief valve as well as a drain tundish with a pipe interrupter that prevents backsiphonnage of drain water. The diaphragm pressure relief valve with a wear-resistant stainless steel seat is very simple to exchange; a screw connection allows to rotate it by 360° in order to adapt to various installation conditions.

Materials

All materials used for the SYRobloc-Safety Group type 25 fulfil the highest requirements of international standards. All synthetic components getting in contact with water are approved by the German Public Health Office (KTW). The corrosion resistance in particular is guaranteed for all materials. The body, internal parts and unions are made of high-quality low-lead brass alloy. The spring cap of the pressure relief valve is made of glass fibre reinforced synthetic material; the spring of the pressure relief valve is made of spring steel wire and the spring of the check valve of stainless steel. All rubber parts in the pressure reducing valve are made of ageing-resistant elastomers and the screw cap of glass fibre reinforced synthetic material. Reinforced diaphragm.

Installation

The opening pressure of the pressure relief valve shall not exceed the permissible operating pressure of the drinking water heater. The dimensioning of the safety group depends on the volume and heating capacity of the water heater (ref. table).

SYRobloc 25 is used when the supply pressure exceeds 80% of the opening pressure of the pressure relief valve. The pressure reducing valve reduces the inlet pressure.

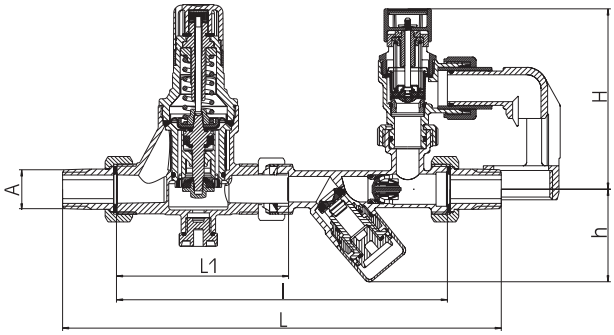
Always install the SYRobloc-Safety Group upstream of the water heater under consideration of the direction of flow; it has to be fitted without applying stresses in the cold water pipe that has been thoroughly flushed beforehand. The particular design of the group allows to install it in angle or in-line way in horizontal and - provided the direction of flow runs upwards - also in vertical pipes.
There shall be no shut-off valves, narrowings or strainers between the pressure relief valve and the water heater. Install the safety group above the water heater to ensure that the group is readily accessible in order to facilitate servicing and maintenance works. When the safety group is installed as mentioned above, the pressure relief valve can be easily exchanged without having to drain the water heater beforehand. When particular installation conditions do not allow fitting the group that way, use the soldering connection set (accessories) to extend the connection pipe to the pressure relief valve.

Technical data

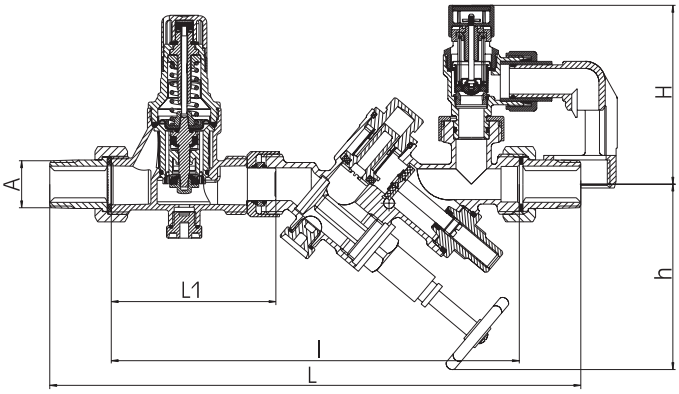
Inlet pressure (pressure reducing valve):	10 bar according EN 1488
Inlet pressure:	16 bar
Service temperature:	max. 30 °C inlet temperature
Fluid:	potable water
Opening pressure:	6, 8 or 10 bar
Mounting position:	any
Components approval number:	TÜV-SV-15-545-DN-W-p
ABP-Number:	P-IX 6736/I (PRV), PA-IX 1794/I
DVGW-Number:	NW-6330BR0050 (PRV); DVGW NW-6311AP2713 (SG)
Serial number:	0024...

Maintenance

It is recommended for a durable function of the SYRobloc Safety Group to carry out maintenance works on a regular basis. The seat and sealing of the pressure relief valve can be cleaned without altering the pressure. The stainless steel seat is very simple to exchange. The nominal size DN 20 allows the exchange of the check valve without having to drain the water heater. The exchangeable pressure relief valve 2115.1 can be replaced without having to disassemble the whole group from the pipe.
The maintenance of the pressure reducer cartridge can be carried out when mounted and without special tools.



DN 15



DN 20

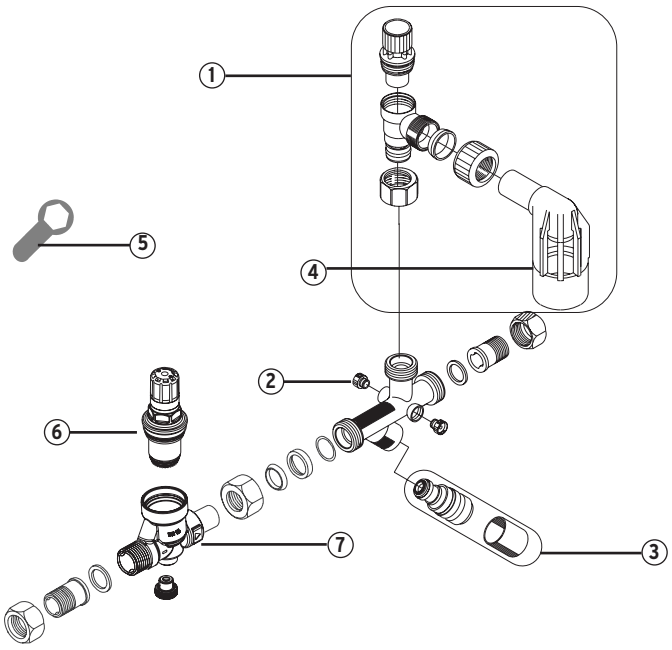
Nominal size		DN 15		DN 20	
		R ½"		R ¾"	
	A	½"	¾"	¾"	1"
Dimensions in mm	L (mm)	232	247	290	310
	L1 (mm)	91		91	
	l (mm)	175		225	
	H (mm)	90		100	
	h (mm)	50		115	
max. potable water heater volume	(l)	200		1000	
Heating capacity	(Kw)	max. 75		max. 150	

Accessories

Manometer: Type 11
Soldering connection set:
DN 15: 0024.15.905
DN 20: 0024.20.906

Components / Order numbers

DN 15



① **Exchangeable pressure relief valve 2115.1**
2115.15.018 6 bar
2115.15.019 8 bar
2115.15.020 10 bar

② **Manometer plug**
0828.08.000

③ **Shut-off valve**
0024.15.900

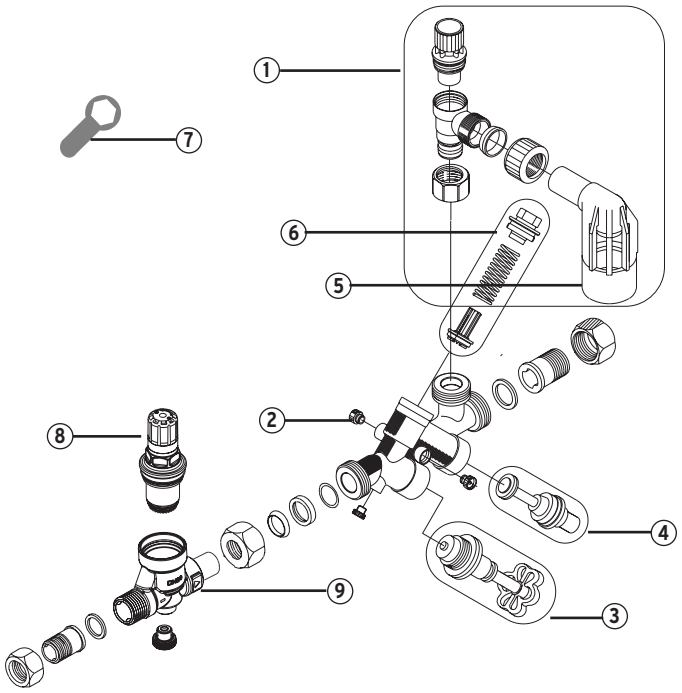
④ **Tundish**
0214.00.902

⑤ **Assembly key for head part exchange**
4807.00.906
max. torque 15 Nm

⑥ **Pressure reducer cartridge**
0312.20-927

⑦ **Pressure reducing valve, complete**
0315.15.009

DN 20



① **Exchangeable pressure relief valve 2115.1**
2115.20.015 6 bar
2115.20.016 8 bar
2115.20.017 10 bar

② **Manometer plug**
0828.08.000

③ **1st shut-off valve**
0024.20.903

④ **2nd shut-off valve**
0024.20.902

⑤ **Tundish**
0214.00.902

⑥ **Check valve**
0024.20.901

⑦ **Assembly key for head part exchange**
4807.00.906
max. torque 15 Nm

⑧ **Pressure reducer cartridge**
0312.20.927

⑨ **Pressure reducing valve, complete**
0315.20.005

Safety Group with non return 0034

safety group to protect unvented water heaters



Field of application

The small and compact Safety Group type 34 is used to protect unvented electrically heated usually wall-mounted potable water heaters with a maximum volume of up to 200 L. It is a reliable and well-designed compact valve in the form of an in-line model. The protection is ensured by a safety valve and a check valve. The safety valve protects the downstream potable water heater by automatic opening, which prevents the pressure from exceeding the admissible operating pressure. The check valve prevents the backflow of heated potable water into the supply line.

Design

The operational parts in the pressure relief valves are protected against direct contact with the fluid (protection against corrosion). The pressure relief valves can be lifted by means of a rotatable handle. Cleaning the seat and the seal after having removed the head part will not have changed the opening pressure.

Materials

The body is chrome-plated and made of a high-quality low-lead brass alloy; the spring cap, the diaphragm and other internal parts are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion resistant spring steel wire.

Installation

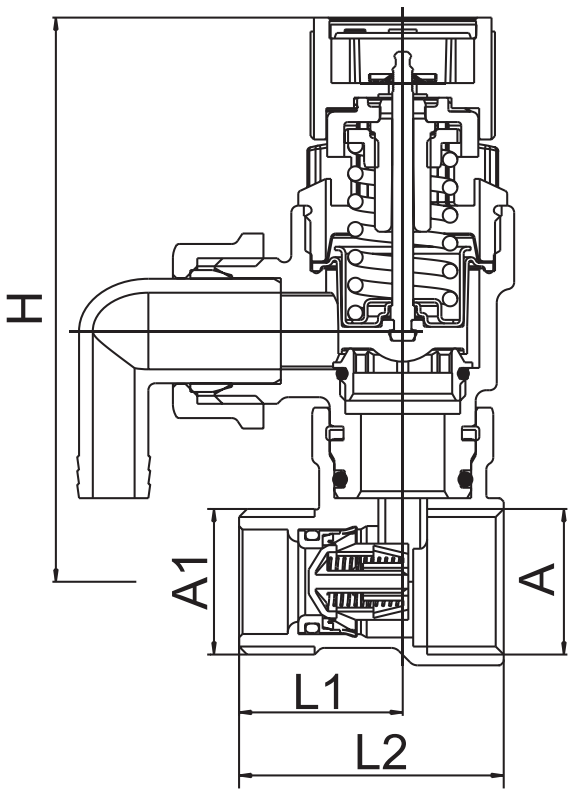
We recommend to install the safety group 0034 vertically with the inlet connections facing downwards. The length of the supply pipe shall not exceed 1 m, bends are not admissible and its nominal size must be the size of the valve inlet. Position the valve at the highest point of the heat-generating device or in the safety pipe close to the heat-generating device. There shall be no isolating valves, strainers or similar devices in the supply pipe. The diameter of the relief pipe must be at least equal to the nominal size of the valve outlet. The relief pipe has to be installed with continuous incline. It can maximally include 2 bends and have a length of 2 meters. When a length exceeding 2 m is necessary, the pipe must be one size larger. Caution: more than 3 bends and a length exceeding 4 meters are not admissible. The outlet of the relief pipe must be free from obstruction, controllable and positioned in such a way that persons are not endangered by steam relief. When the relief pipe ends over a tundish, it is indispensable that its drain pipe has at least the double cross section of the valve inlet. Free access to the pressure relief valve must be provided. Thoroughly flush the pipe prior to installation. Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

Connection size:	DN 15 and DN 20
Opening pressure:	6, 8 and 10 bar
Fluids:	water, other neutral non-adhesive fluids
Operating temperature:	max. 90 °C
Serial number:	0034 ...

Maintenance

The correct function of the pressure relief valve should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. Depressurise the system to carry out service works: isolate the cold water supply and drain the hot water pipes. Then, maintenance works on the valve can be carried out. To clean the valve seat and seal, unscrew the head part. After cleaning, refit the head part; the opening pressure remains unchanged after this operation. In case of repair or service, you can order a separate exchange cartridge under article no. 2116.20....



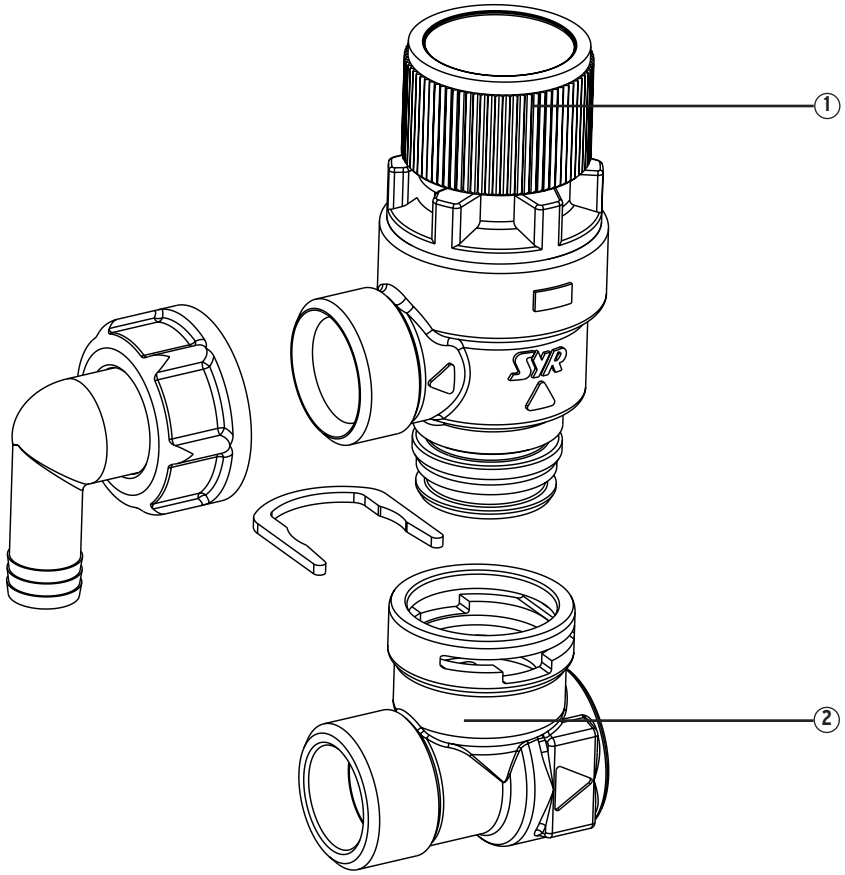
Nominal size		DN 15	DN 20
	A	G ½"	G ¾"
	A1	G ½"	G ¾"
Dimensions in mm	H (mm)	81	81
	L1 (mm)	23,5	23,5
	L2 (mm)	38	38

Inlet -> male threads ; Outlet -> female threads

Components / Order numbers

① **Valve body**

② **Service cartridge**
2116.20.006



Safety Assembly 322

for electric storage water heaters up to 10 l, with stainless steel seat



Field of application

The safety assembly type 322 protects unvented (pressurised) electric wall-mounted water heaters up to a volume of 10 l. This streamline-shaped compact valve includes all components required for protection, such as isolating valve and diaphragm pressure relief valve. The pressure relief valve protects the downstream water heater by automatic opening, which prevents the pressure from exceeding the admissible service pressure. The safety assembly type 322 is a robust model with a stainless steel seat, which is also suitable for aggressive water conditions. The isolation of the device can also be used as a flow limiting valve.

Design

The safety assembly type 322 is made of a high mirror finished chrome-plated brass housing. The safety assembly type 322.1 including a tested pressure relief valve, a wear resistant stainless steel seat, an isolating valve, a manometer plug and chrome-plated connection accessories is also supplied with a siphon to collect expansion water. The SYR module system allows easy maintenance or exchange of all components of the safety assembly type 322.

Safety Assembly 322

Materials

The body, internal components, plug and unions of the safety assembly type 322 are made of a high quality low-lead brass alloy. The seat of the pressure relief valve is made of wear-resistant stainless steel. The isolating knob and the siphon are made of high quality synthetic material. The diaphragm of the pressure relief valve and all sealing elements are made of heat and ageing resistant elastomeric synthetic material. The spring of the pressure relief valve is made of corrosion resistant spring steel wire. The connecting tubes are made of chrome-plated copper. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

Install the safety assembly type 322 in the cold water pipe upstream of the water heater according to specifications. Install a filter upstream at the domestic point of entry in order to ensure durable functionality of the device. The safety assembly should be readily accessible to simplify maintenance works. Due to heat expansion water can drip from the drain pipe for safety reasons when the water heater is heating. Do not shut off!
Follow the manufacturers' indications for the water heater when installing the safety assembly type 322.

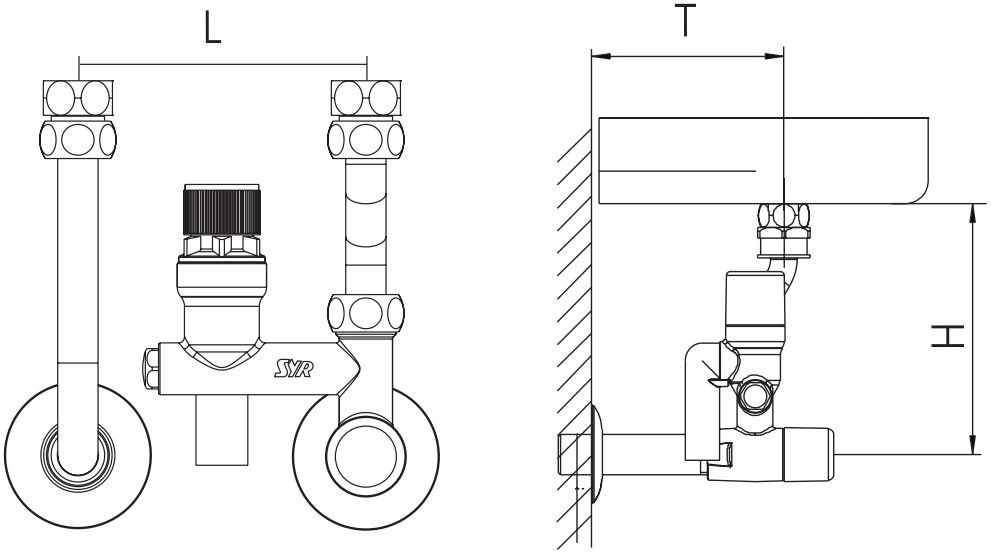
Thoroughly flush the pipe prior to installation. Install the safety assembly type 322 in the cold water supply line according to manufacturers' indications. Use the connecting pipes included in the delivery for connection with the potable water heater. Do not apply stresses. Make sure that the union is correctly positioned.

Technical data

Inlet pressure:	max. 16 bar
Service pressure:	max. 20 % below set pressure of pressure relief valve
Standard setting:	322: 7 bar, 322.1: 10 bar
Operating temperature:	max. 30 °C (inlet temperature)
Fluid:	potable water
Components approval number:	TÜV-SV-15-545-DN-W-p
Certified by DVGW:	NW-6311AU2210
Acoustic testing:	PA-IX 7722/I
Serial number:	0322...

Maintenance

It is recommended to carry out maintenance works on a regular basis for durable functionality of the safety assembly type 322. The diaphragm pressure relief valve can be lifted by means of the rotatable knob. The supply line can be isolated by means of the stop valve in the safety assembly for maintenance works on the downstream system (incl. pressure relief valve). Unscrew the head part for cleaning the seat and seal of the pressure relief valve; the opening pressure remains unchanged. Use the exchange cartridge type 2116 for repair of the pressure relief valve. The stainless steel seat can also be replaced, if required.



Nominal size		DN 15
		G ½“
Dimensions in mm	L (mm)	100
	T (mm)	70 - 100
	H (mm)	125 - 140

Models

Typ 322: without siphon
Typ 322.1: with siphon

Accessories

Manometer: 0010.08.500

Components / Order numbers

① **Warm water connection**
0323.15.900

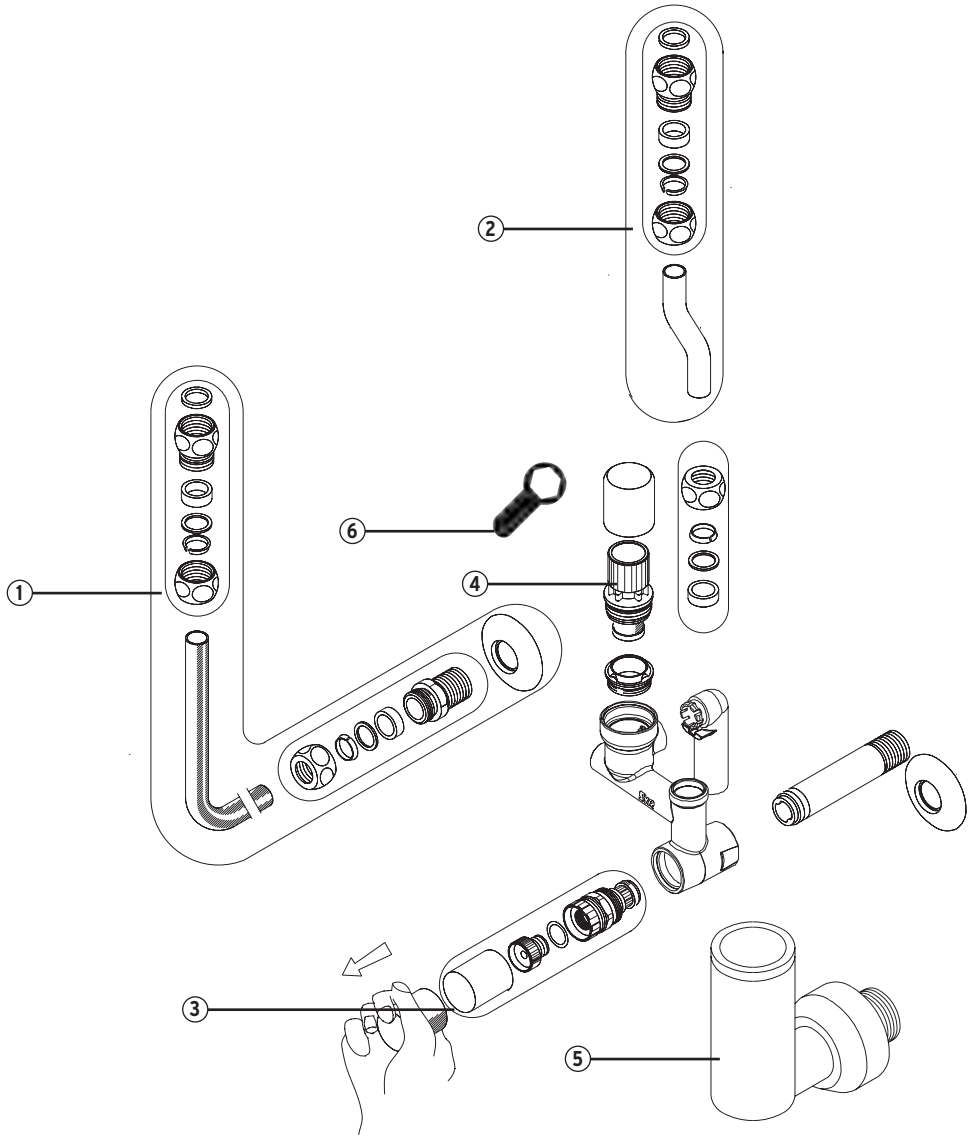
② **Cold water connection**
0323.15.901

③ **Isolating unit**
0323.15.906

④ **Exchange cartridge**
2116.20.006

⑤ **Siphon (only 322.1)**
0319.25.900

⑥ **Assembly key for exchange of head part**
4807.00.906
max. torque 15Nm



Safety Assembly 323

for electric storage water heaters up to 200 l, with stainless steel seat



Field of application

The safety assembly type 323 protects unvented (pressurised) electric wall-mounted water heaters up to a volume of 200 l. This streamline-shaped compact valve includes all components required for protection, such as isolating valve, check valve and diaphragm pressure relief valve. The pressure relief valve protects the downstream water heater by automatic opening, which prevents the pressure from exceeding the admissible service pressure.

The check valve prevents the backflow of heated drinking water.
The safety assembly type 323 is a robust model with a stainless steel seat, which is also suitable for aggressive water conditions. The isolation of the device can also be used as a flow limiting valve. When the water heater works at temperatures above 60°C, use the safety assembly type 323.3 (with thermostatic mixing valve).

Design

The safety assembly type 323 is made of a high mirror finished chrome-plated brass housing.
The safety assembly type 323 includes a tested pressure relief valve, a wear resistant stainless steel seat, an isolating valve, a manometer plug, a check valve, a test port, a siphon with cover plate and chrome-plated connection accessories. The SYR module system allows easy maintenance or exchange of all components of the safety assembly type 323. The device can be retrofitted with the pressure reducing valve 314 and the thermostatic mixing valve 703.

Safety Assembly 323

Materials

The body, internal components, plug and unions of the safety assembly type 323 are made of a high quality low-lead brass alloy. The seat of the pressure relief valve is made of wear-resistant stainless steel. The isolating knob, check valve and siphon are made of high quality synthetic material. The diaphragm of the pressure relief valve and all sealing elements are made of heat and ageing resistant elastomeric synthetic material. The spring of the pressure relief valve is made of corrosion resistant spring steel wire. The connecting tubes are made of chrome-plated copper. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

Install the safety assembly type 323 in the cold water pipe upstream of the water heater according to specifications. Install a filter upstream at the domestic point of entry in order to ensure durable functionality of the device. The safety assembly should be readily accessible to simplify maintenance works. Due to heat expansion water can drip from the drain pipe for safety reasons when the water heater is heating. Do not shut off!
Follow the manufacturers' indications for the water heater when installing the safety assembly type 323.

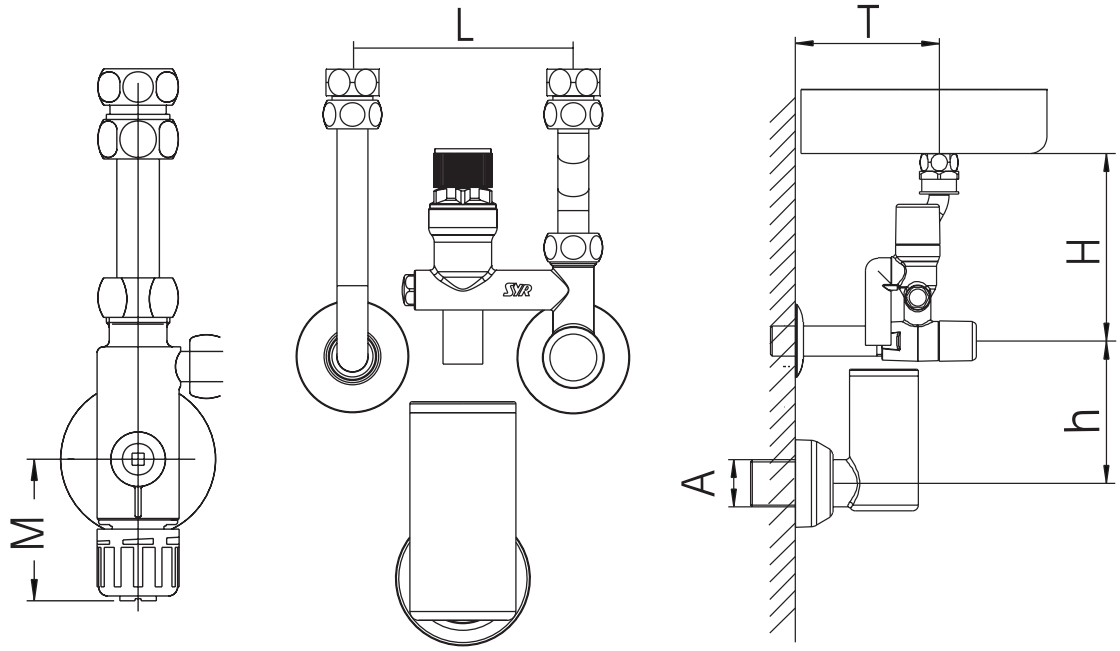
Thoroughly flush the pipe prior to installation. Install the safety assembly type 323 in the cold water supply line according to manufacturers' indications. Use the connecting pipes included in the delivery for connection with the water heater. Do not apply stresses. Make sure that the union is correctly positioned.

Technical data

Inlet pressure:	max. 16 bar
Service pressure:	max. 20 % below set pressure of pressure relief valve
Standard setting:	323: 6 bar, 323.1: 7 bar
Operating temperature:	max. 30 °C (inlet temperature)
Regulation range of mixing valve (323.3):	40 °C - 60°C
Fluid:	potable water
Components approval number:	TÜV-SV-50-545-DN-W-p
Certified by DVGW:	NW-6311AU2210
Acoustic testing:	PA-IX 7722/I
Serial number:	0323...

Maintenance

It is recommended to carry out maintenance works on a regular basis for durable functionality of the safety assembly type 323. The diaphragm pressure relief valve can be lifted by means of the rotatable knob. The supply line can be isolated by means of the stop valve in the safety assembly for maintenance works on the downstream system (incl. pressure relief valve). Unscrew the head part for cleaning the seat and seal of the pressure relief valve; the opening pressure remains unchanged. Use the exchange cartridge type 2116 for repair of the pressure relief valve. The stainless steel seat can also be replaced, if required.



Mixing valve (only 323.3)

Nominal size		DN 15
		G ½“
	A	G 1“
Dimensions	L (mm)	100
	T (mm)	70 - 100
	H (mm)	125 - 140
	h (mm)	100
	M (mm)	80

Models

Type 323: opening pressure 6bar
Type 323.1: opening pressure 7 bar
Type 323.3: opening pressure 6 bar with thermostatic mixing valve

Accessories

Manometer: 0010.08.500
Thermostatic mixing valve: Type 703

Components / Order numbers

① **Warm water connection**
0323.15.900

② **Cold water connection**
0323.15.901

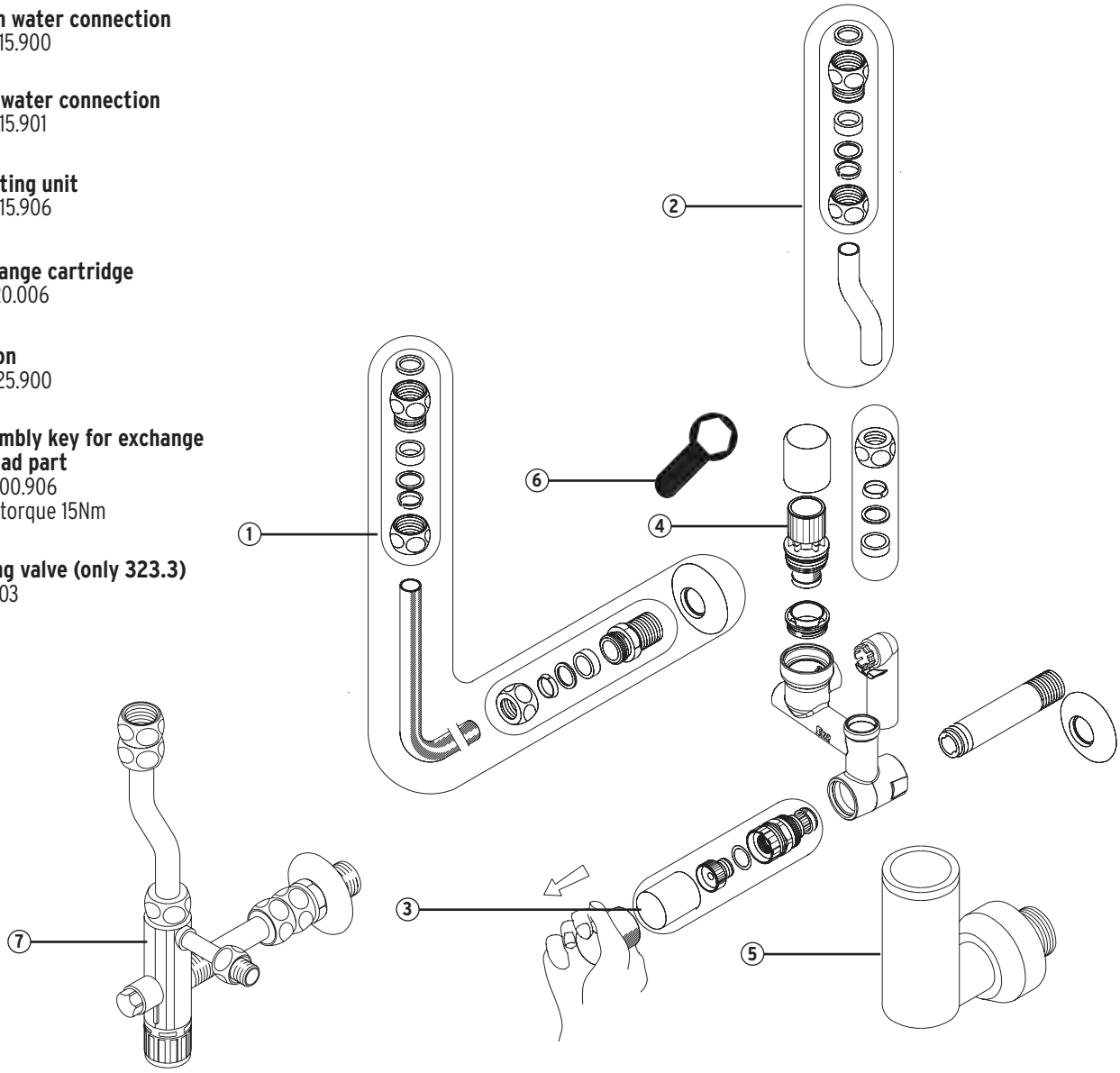
③ **Isolating unit**
0323.15.906

④ **Exchange cartridge**
2116.20.006

⑤ **Siphon**
0319.25.900

⑥ **Assembly key for exchange of head part**
4807.00.906
max. torque 15Nm

⑦ **Mixing valve (only 323.3)**
Typ 703



Safety Assembly 324

for electric storage water heaters up to 200 l, with PRV and stainless steel seat



Field of application

The safety assembly type 324 protects unvented (pressurised) electric wall-mounted water heaters up to a volume of 200 l. This streamline-shaped compact valve includes all components required for protection, such as isolating valve, check valve and diaphragm pressure relief valve. The pressure relief valve protects the downstream water heater by automatic opening, which prevents the pressure from exceeding the admissible service pressure. The check valve prevents the backflow of heated drinking water. In addition, the safety assembly type 324 includes a pressure reducing valve located upstream, which reduces excessive inlet pressures to the required system pressure. When the inlet pressure is unstable, there is no uncontrolled dripping of the pressure relief valve.
The safety assembly type 324 is a robust model with a stainless steel seat, which is also suitable for aggressive water conditions. The isolation of the device can also be used as a flow limiting valve. When the water heater works at temperatures above 60°C, use the safety assembly type 324.3 (with thermostatic mixing valve).

Design

The safety assembly type 324 is made of a high mirror finished chrome-plated brass housing. The safety assembly type 324 includes a tested pressure relief valve, a wear resistant stainless steel seat, an isolating valve, a manometer plug, a check valve, a test port, a pressure reducing valve, a siphon with cover plate and chrome-plated connection accessories. The SYR module system allows easy maintenance or exchange of all components of the safety assembly type 324. The device can be retrofitted with the thermostatic mixing valve 703.

Materials

The body, internal components, plug and unions of the safety assembly type 324 are made of a high quality low-lead brass alloy. The seat of the pressure relief valve is made of wear-resistant stainless steel. The isolating knob, check valve and siphon are made of high quality synthetic material. Glass fibre reinforced spring cap. The diaphragm of the pressure relief valve and all sealing elements are made of heat and ageing resistant elastomeric synthetic material. The spring of the pressure relief valve is made of corrosion resistant spring steel wire. The connecting tubes are made of chrome-plated copper. All materials are tested and certified by an internationally recognised test institute in Germany (DVGW). All synthetic components getting in contact with water designed for human consumption are approved by the German Public Health Office (KTW).

Installation

Install the safety assembly type 324 in the cold water pipe upstream of the water heater according to specifications. Install a filter upstream at the domestic point of entry in order to ensure durable functionality of the device. The safety assembly should be readily accessible to simplify maintenance works. Due to expansion water can drip from the drain pipe for safety reasons when the water heater is heating. Do not shut off! Follow the manufacturers' indications for the water heater when installing the safety assembly type 324.

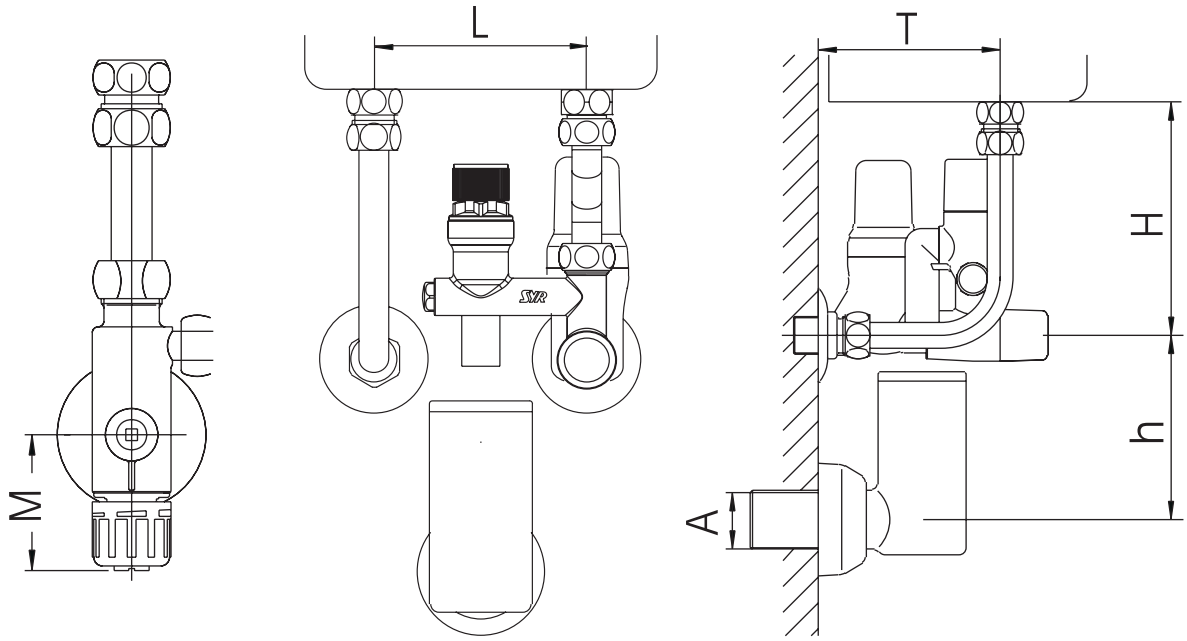
Thoroughly flush the pipe prior to installation. Install the safety assembly type 324 in the cold water supply line according to manufacturers' indications. Use the connecting pipes included in the delivery for connection with the water heater. Do not apply stresses. Make sure that the union is correctly positioned.

Technical data

Inlet pressure:	max. 16 bar
Outlet pressure:	1.5 - 5 bar, adjustable
Factory setting of pressure reducer:	4 bar
Service pressure:	max. 20% below set pressure of pressure relief valve
Standard setting of pressure relief valve:	6 bar
Operating temperature:	max. 30°C (inlet temperature)
Regulation range of mixing valve (324.3):	40°C - 60°C
Fluid:	potable water
Components approval number:	TÜV-SV-15-545-DN-W-p
Certified by DVGW:	NW-6330AT2061(DM)+NW-6311AU2210(SG)
Acoustic testing:	PA-IX 7636/I(PRV)+PA-IX 7722/I(SG)
Serial number:	0324...

Maintenance

It is recommended to carry out maintenance works on a regular basis for durable functionality of the safety assembly type 324. The diaphragm pressure relief valve can be lifted by means of the rotatable knob. The supply line can be isolated by means of the stop valve in the safety assembly for maintenance works on the downstream system (incl. pressure relief valve). Unscrew the head part for cleaning the seat and seal of the pressure relief valve; the opening pressure remains unchanged. Use the exchange cartridge type 2116 for repair of the pressure relief valve. The stainless steel seat can also be replaced, if required. The pressure reducer cartridge can be cleaned or exchanged without having to disassemble the whole device from the pipe.



Mixing valve (only 324.3)

Nominal size		DN 15
		G ½
	A	G 1
Dimensions in mm	L (mm)	100
	T (mm)	70 - 100
	H (mm)	125 - 140
	h (mm)	100
	M (mm)	80

Models

Type 324: opening pressure 6 bar
Type 324.3: opening pressure 6 bar with thermostatical mixing valve type 703

Accessories

Manometer: 0010.08.500

Components / Order numbers

① **Warm water connection**
0323.15.900

② **Cold water connection**
0323.15.901

③ **Isolating unit**
0323.15.906

④ **Exchange cartridge**
2116.20.006

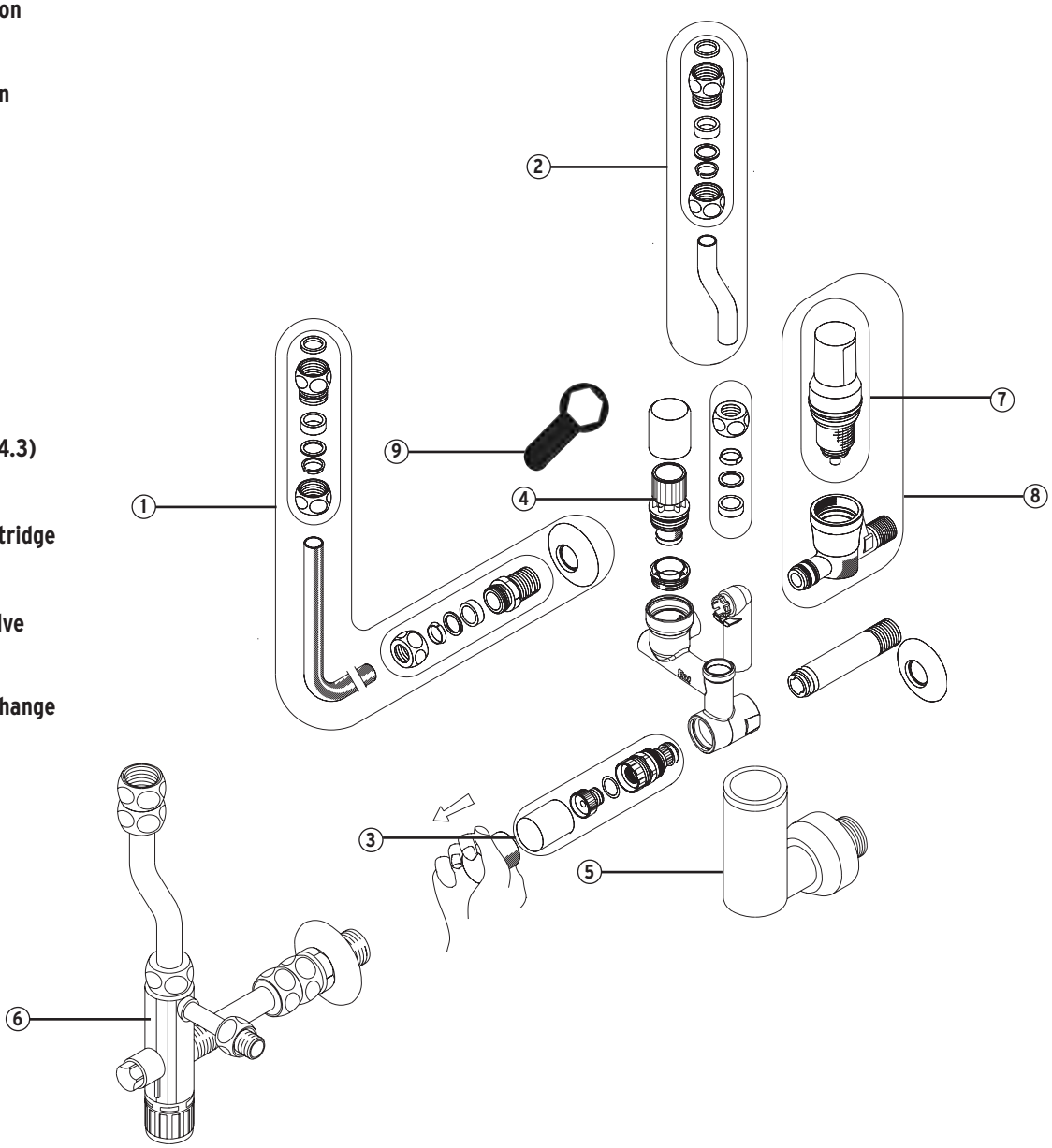
⑤ **Siphon**
0319.25.900

⑥ **Mixing valve (only 324.3)**
Type 703

⑦ **Pressure reducer cartridge**
0314.15.902

⑧ **Pressure reducing valve**
0314.15.004

⑨ **Assembly key for exchange of head part**
4807.00.906
max. torque 15 Nm



Safety Group for Warm Water Heaters 0330

for pressure resistant water heaters up to 10 kW



Field of application

The safety group type 0330 is designed for the optimal protection against excess pressure in unvented water heaters in compliance with NF EN 1487. This compact device includes all components required by the standard NF EN 1487 for the equipment of water heaters. The pressure relief valve protects the downstream installation. The check valve prevents the backflow of heated potable water.

Design

The safety group type 0330 includes an isolating valve, a check valve with test port, a diaphragm pressure relief valve as well as a rotatable tundish with a pipe interrupter, which prevents the back-siphonage of drain water. The special siphon allows to drain the water resulting from excess pressure without spillage. The diaphragm pressure relief valve, which is simple to exchange, is equipped with a stainless steel seat to ensure wear and corrosion resistance.

Materials

All materials used in the safety group type 0330 comply with the high requirements of the NF EN 1487 standard. The synthetic materials getting into contact with potable water fulfil the ACS requirements (Attestation de Conformité Sanitaire). All materials are corrosion resistant. The body, internal components and unions are made of a high-quality low lead alloy. The spring cap of the pressure relief valve is made of glass fibre reinforced synthetic material; the spring of the corrosion resistant pressure relief valve is made of spring steel wire and the spring of the check valve of stainless steel.

Installation

The response pressure of the safety group shall not exceed the admissible service pressure of the water heater. The safety group type 0330 is used when the supply pressure does not exceed 75% of the response pressure of the pressure relief valve. When the supply pressure exceeds this value, the pressure reducing valve available as accessory needs to be installed. In case of uncertain pressure conditions, we recommend the safety group, which includes a pressure reducing valve. It is normal that water leaks during the heating process; the volume of this drain water can amount to approximately 3% of the water heater capacity.

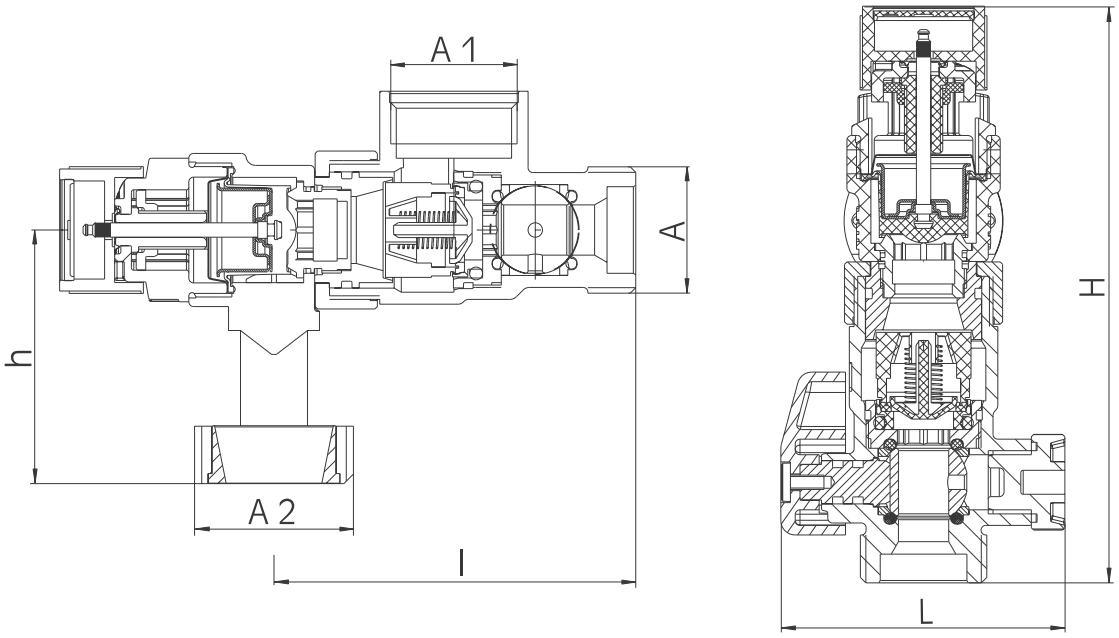
Always mount the safety group upstream of the water heater under consideration of the direction of flow; it has to b fitted without applying stresses in the cold water supply pipe, which has been thoroughly flushed beforehand. The special design of the group allows the installation in vertical or horizontal position. There shall be no isolating valve, narrowing or strainer between the pressure relief valve and the water heater. The safety group should be readily accessible to simplify maintenance works. Connect the siphon included in the delivery to the tundish of the diaphragm pressure relief valve by means of the adaptor. It is rotatable and allows optimal fixing and positioning when being installed. The special design prevents the spillage of overpressure water. If necessary, a Teflon-Isolator (available as accessory) can be installed for the protection against overvoltage. Mount the pipe interrupter so that it prevents any stoppage. Follow the sanitary prescriptions.
Only qualified personnel is authorized to install and to service the device. Follow the maintenance indications! The special packaging secures the device for transport. Should the packaging or the product be seriously damaged, do not install. The warranty does not cover malfunctions of the group caused by the accumulation of impurities.

Technical specifications

Fluids:	potable water
Service pressure:	5.25 bar (25% below the response pressure of the pressure relief valve)
Response pressure:	factory set to 7 bar
Service temperature:	max. 95°C
Flow rate:	3.5 m^3/h accord. to NF EN 1487 for DN 20
Serial number:	0330...

Maintenance

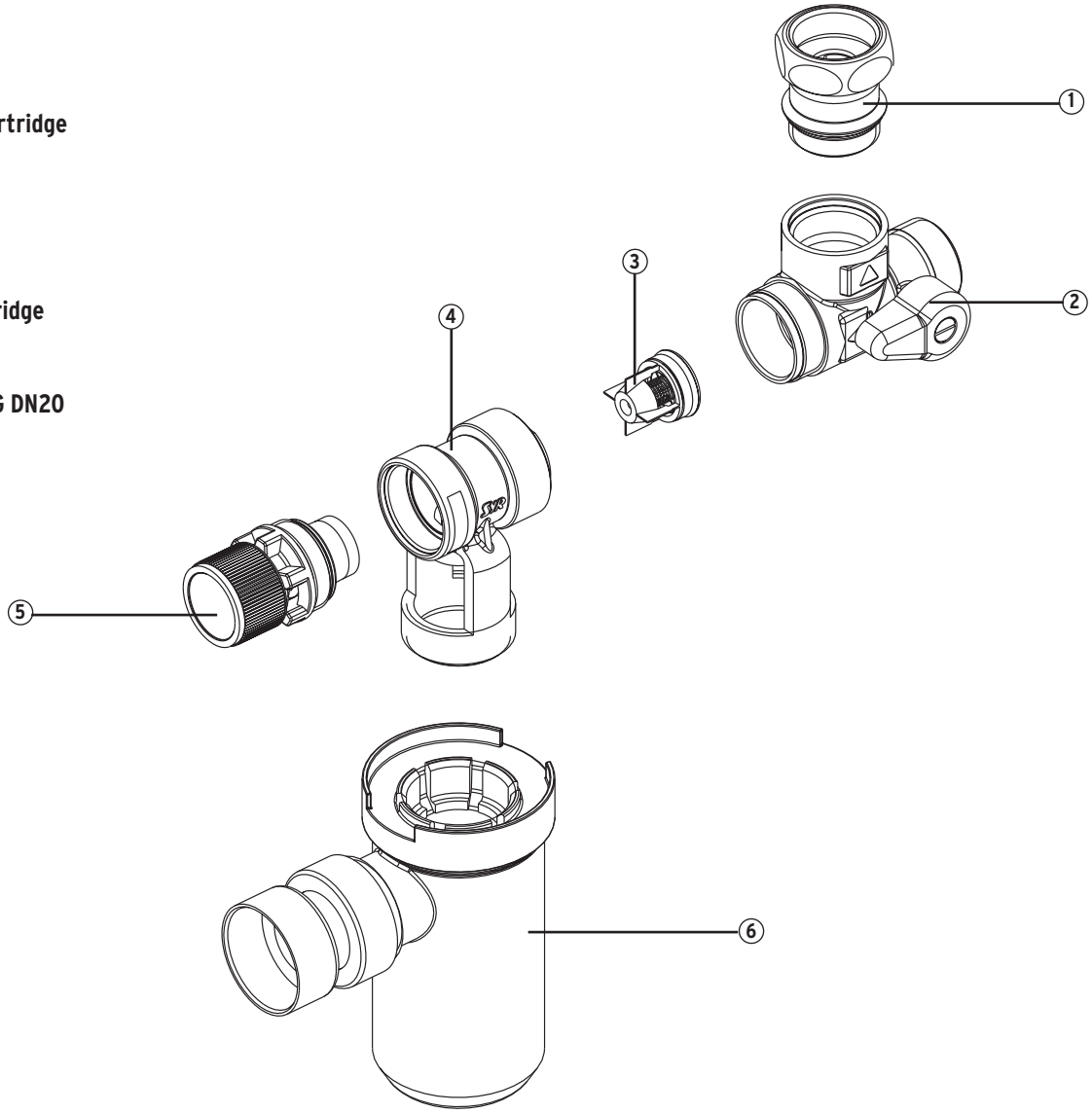
It is recommended to carry out maintenance works on a regular basis in order to ensure perfect functionality of the safety group. The seat and seal can be cleaned without altering the pressure. The function test and, if required, the check valve exchange can be done any time; first close the integrated ball valve. The check valve becomes accessible by loosening the fitting of the tundish and of the pressure relief valve. Actuate the pressure relief valve and the isolating valve at least once per month.



Nominal size		DN 20
	A	G ¾"
	A 1	G ¾"
	A 2	G 1"
Dimensions in mm	L (mm)	120
	l (mm)	76
	H (mm)	59
	h (mm)	53

Components / Order numbers

① **Accessory I SG DN20**
0330.20.900
② **Isolating unit**
0330.20.902
③ **Check valve cartridge**
0330.20.904
④ Body
0330.20.903
⑤ **Exchange cartridge**
0330.20.905
⑥ **Accessory II SG DN20**
0330.20.901



Pressure Relief Valve 2115

for unvented (pressurised) water heaters



Field of application

The pressure relief valve type 2115 is designed to protect pressurised fluid systems against overpressurisation in unvented (pressurised) water heaters. The connection size has to be determined in accordance with the heating capacity of the heat-generating device to be protected as given in the table. The relief capacity is indicated in the table.

The opening pressure of the pressure relief valve indicated on the black seal pressed in the lifting handle of the valve has to be at least 20 % below the highest permissible operating pressure of the system to be protected.
The pressure relief valve type 2115 is suitable for use in solar heating systems.

Design

The operational parts in the pressure relief valve type 2115 are protected against direct contact with the medium (protection against corrosion). The pressure relief valve can be lifted by means of the rotatable handle.

Pressure relief valve 2115

Materials

The body and the internal parts are made of a high-quality low-lead brass alloy (DN 15 - DN 32) or a dezincification resistant low-lead gunmetal alloy (DN 40 - DN 50); the spring cap is made of high-quality glass fibre reinforced synthetic material or zinc die-casting. The diaphragm and the seat are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion protected spring steel wire.

Installation

The pressure relief valve type 2115 has to be installed in the cold-water inlet of the water heater. To avoid draining the water heater when the valve is serviced, it should be placed above the top surface of the water heater. There shall be no isolating valves, strainers or similar devices between the pressure relief valve and the water heater.
The enclosed adhesive label with the inscription: „When heating, water has to escape from the relief pipe for safety reasons! Do not obturate!" has to be placed close to the valve in a visible position.
The diameter of the relief pipe must be at least equal to the nominal size of the valve outlet. The relief pipe has to be installed with continuous incline. It can maximally include 2 bends and have a length of 2 meters. When a length exceeding 2 m is necessary, the pipe must be one size larger. Caution: more than 3 bends and a length exceeding 4 meters are not admissible. The outlet of the relief pipe must be free from obstruction, controllable and positioned in such a way that persons are not endangered. The relief pipe has to end in a drain device or over a tundish within the building. When the relief pipe ends over a tundish, it is indispensable that its drain pipe has at least the double cross section of the valve inlet.

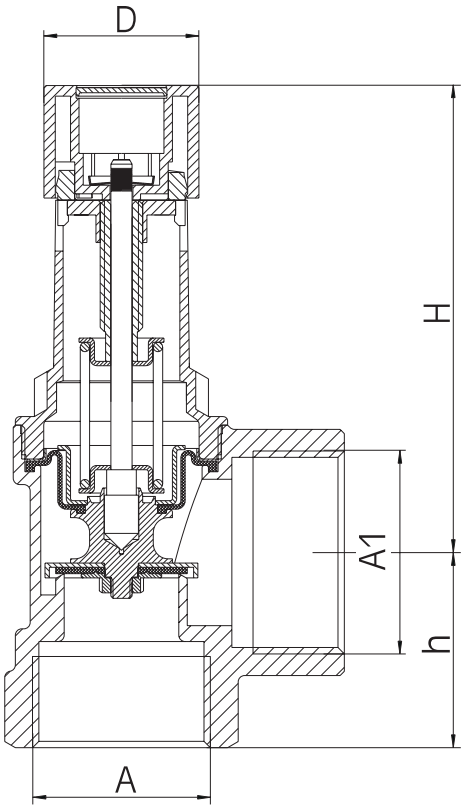
Thoroughly rinse the pipe prior to installation. Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

Operating temperature:	max. 110 °C
Opening pressure:	2 - 10 bar
Standard setting:	6, 8, 10 bar
Mounting position:	preferably main axis vertical, inlet connection pieces facing downwards
Components approval number:	TÜV-SV-15-545-DN-W-N-p
Fluids:	water, neutral non adhesive fluids
Serial number:	2115...
	CE 0085

Maintenance

It is recommended to service the device on a regular basis.
The correct function of the pressure relief valve should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. To clean the valve seat and seal, unscrew the head part. The seat seal is exchangeable for valves with a connection size of DN 40 or more. After cleaning, refit the head part; the opening pressure remains unchanged after this operation. Pressure relief valves DN 15 and DN 20 with a damaged valve seat can be repaired by means of the exchange cartridge 2116, which makes them equivalent to a new valve.



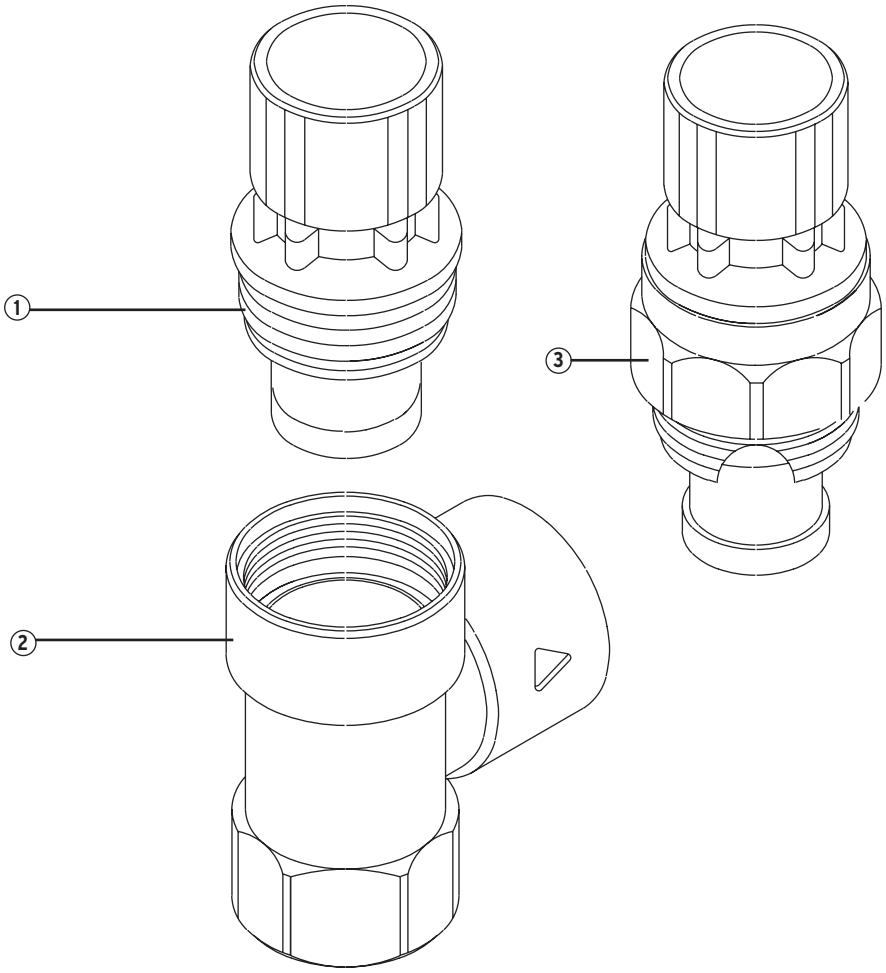
Nominal size		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
	A	R ½"	R ¾"	R 1"	R 1 ¼"	R 1 ½"	R 2"
	A 1	R ¾"	R 1"	R 1 ¼"	R 1 ½"	R 2"	R 2 ½"
Dimensions in mm	H (mm)	50	52	79	110	176	195
	h (mm)	28	34	40	46	55	66
	D (mm)	31	31	49	51	75	75
Capacity of unvented (pressurized) water heaters	l	up to 200	201-1000	1001-5000	> 5001		
Heating capacity	max. kW	75	150	250			
Opening pressure	bar			max. relief capacity m³/h			
	4	2.8	3	9.5	14.3	19.2	27.7
	4,5	3	3.2	10.1	15.1	20.4	29.3
	5	3.1	3.4	10.6	16	21.5	30.9
	5,5	3.3	3.6	11.1	16.1	22.5	32.4
	6	3.4	3.7	11.6	17.5	41.2	50.9
	7	3.7	4	12.6	18.9	44.5	54.9
	8	4	4.3	13.4	20.2	47.6	58.7
	9	4.2	4.6	14.3	21.4	50.5	62.3
	10	4.4	4.8	15	22.6	53.2	65.7

Components / Order numbers

① **Head part**

② **Body**

③ **Exchangeable cartridge 2116**
DN 15+DN 20: 6.0 bar: 2116.20.000
DN 15+DN 20: 8.0 bar: 2116.20.001
DN 15+DN 20:10.0 bar: 2116.20.002



Pressure Relief Valve 2115 stainless steel

with **stainless steel seat** DN 15 + DN 20 for unvented (pressurised) water heaters



Field of application

The pressure relief valve type 2115 stainless steel in sizes DN 15 and DN 20 is designed to protect pressurised fluid systems against overpressurisation. It is predominantly used for unvented (pressurised water heaters.The connection size has to be determined in accordance with the heating capacity of the heat-generating device to be protected as given in the table. The relief capacity is indicated in the table.
The opening pressure of the pressure relief valve indicated on the black seal pressed in the lifting handle of the valve has to be at least 20 % below the highest permissible operating pressure of the system to be protected.
The pressure relief valve type 2115 stainless steel is suitable for use in solar heating systems.

Design

The operational parts in the pressure relief valve type 2115 stainless steel are protected against direct contact with the medium (protection against corrosion). The pressure relief valve 2115 stainless steel can be lifted by means of the rotatable handle.

Pressure relief valve 2115

Materials

The body and the internal parts are made of a high-quality low-lead brass alloy; the spring cap is made of high-quality glass fibre reinforced synthetic material.
The diaphragm and the seat are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion protected spring steel wire. The valve seat is made of high-quality stainless steel.

Installation

The pressure relief valve type 2115 stainless steel has to be installed in the cold water inlet of the water heater. To avoid draining the water heater when the valve is serviced, it should be placed above the top surface of the water heater. There shall be no isolating valves, strainers or similar devices between the pressure relief valve and the water heater.
The enclosed adhesive label with the inscription: „When heating, water has to escape from the relief pipe for safety reasons! Do not obturate!" has to be placed close to the valve in a visible position.
The diameter of the relief pipe must be at least equal to the nominal size of the valve outlet. The relief pipe has to be installed with continuous incline. It can maximally include 2 bends and have a length of 2 meters. When a length exceeding 2 m is necessary, the pipe must be one size larger. Caution: more than 3 bends and a length exceeding 4 meters are not admissible. The outlet of the relief pipe must be free from obstruction, controllable and positioned in such a way that persons are not endangered. The relief pipe has to end in a drain device or over a tundish within the building. When the relief pipe ends over a tundish, it is indispensable that its drain pipe has at least the double cross section of the valve inlet.

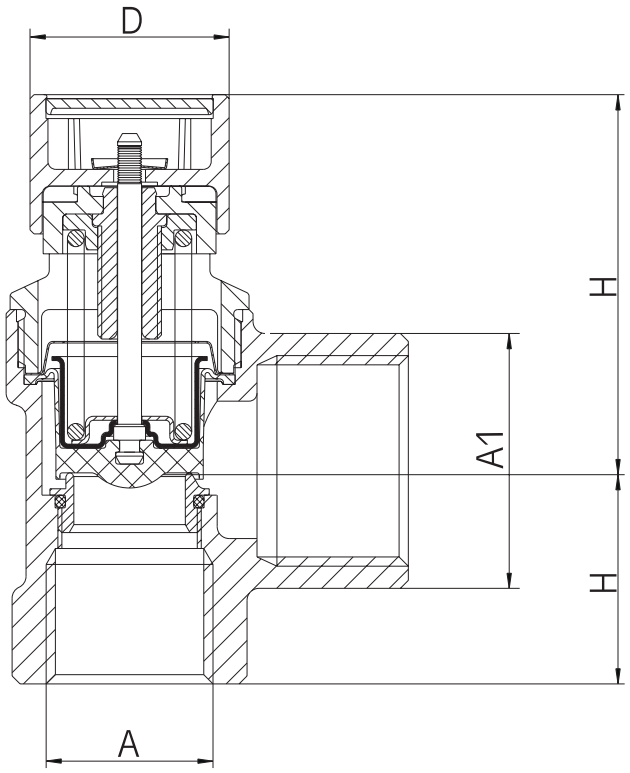
Thoroughly rinse the pipe prior to installation.
Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

Operating temperature:	max. 110 °C
Opening pressure:	2 - 10 bar
Standard setting:	6, 8, 10 bar
Mounting position:	preferably main axis vertical, inlet connection pieces facing downwards
Components approval number:	TÜV-SV-15-545-DN-W-N-p
Fluids:	water, neutral non adhesive fluids
Serial number:	2115 stainless steel ...
	CE 0085

Maintenance

It is recommended to service the device on a regular basis.
The correct function of the pressure relief valve should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. To clean the valve seat and seal, unscrew the head part. After cleaning, refit the head part; the opening pressure remains unchanged. If required, the stainless steel seat of the pressure relief valve type 2115 stainless steel can be exchanged.



Nominal size		DN 15	DN 20
	A	R ½“	R ¾“
	A 1	R ¾“	R 1“
Dimensions in mm	H (mm)	50	52
	h (mm)	28	34
	D (mm)	31	31
Capacity of unvented (pressurized) water heaters	l	up to 200	201-1000
Heating capacity	max. kW	75	150
Opening pressure	bar	max. relief capacity m^3/h	
	4	2.8	3
	4.5	3	3.2
	5	3.1	3.4
	5.5	3.3	3.6
	6	3.4	3.7
	7	3.7	4
	8	4	4.3
	9	4.2	4.6
	10	4.4	4.8

Components / Order numbers

Components / Order numbers

①

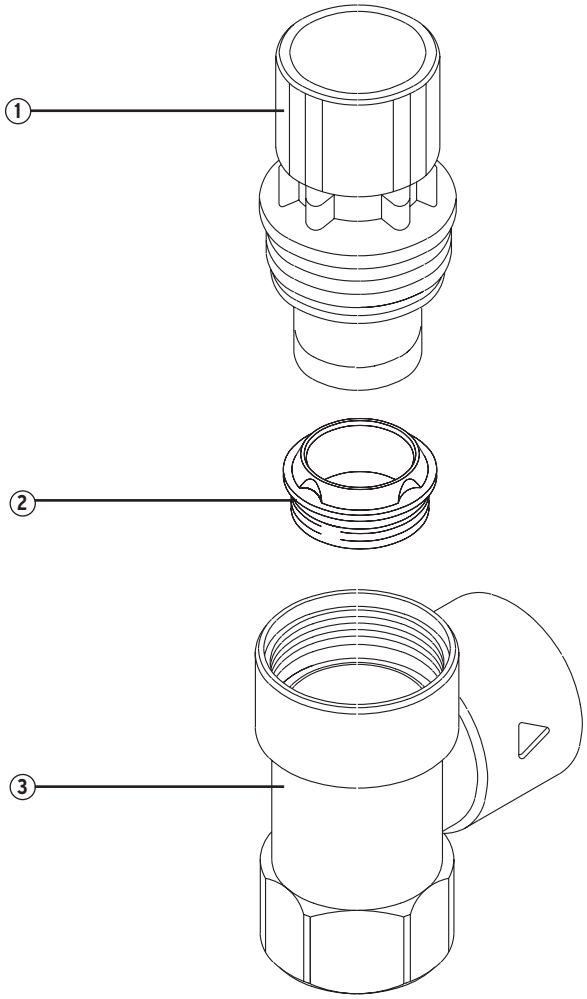
Head part

②

Stainless steel seat
4807.00.907
(no fig.): tool for exchange
4807.00.911

③

Body



Exchange Cartridge 2116

for SYR pressure relief valves and safety groups DN 15 + DN 20



Field of application

The field of application of the exchange cartridge type 2116 is to repair pressure relief valves type 2115, sizes DN 15 and DN 20 as well as pressure relief valves in the SYRobloc safety groups type 24 and 25 and safety groups type 322 to 324. It can be used for all applications of the original valves.
The installation of the exchange cartridge has no negative effect on the operating performance.

Design

The operational parts in the exchange cartridge type 2116 are protected against direct contact with the medium (protection against corrosion).
The exchange cartridge can be lifted by means of the rotatable handle. After being disassembled, the seat and the seal can be cleaned; the opening pressure remains unchanged.

Exchange cartridge 2116

Materials

The body made of a high-quality low-lead brass alloy is also available as chromium-plated model. The spring cap is made of glass fibre reinforced synthetic material, the diaphragm and the seals are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion protected spring steel wire.

Installation

Should the pressure relief valve have become unserviceable - indicated by constant dripping -, unscrew the head part and replace it with the exchange cartridge. Ensure that the opening pressure of the exchange cartridge does not exceed the maximum admissible operating pressure of the installation.

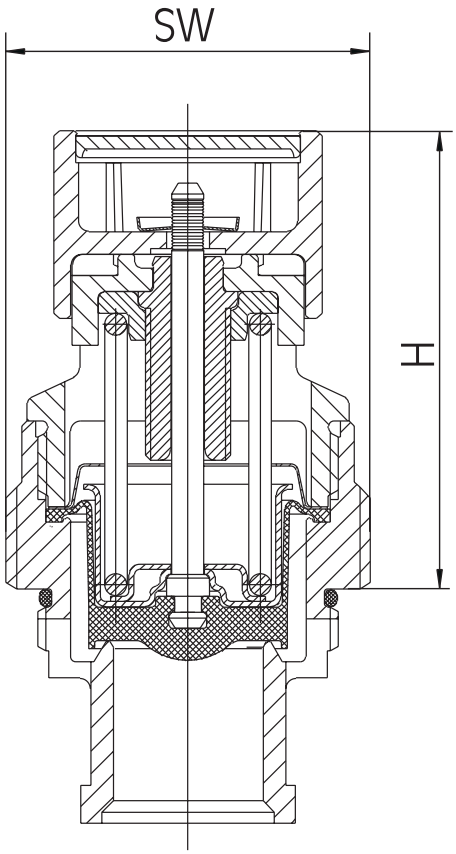
Before disassembling the original head part, depressurise or drain the installation. Clean the valve seat before mounting the exchange cartridge. The exchange cartridge is positioned with the metallic side directly on the valve seat and therefore has to be tightened with an adequate tool after being screwed in.

Technical data

Operating temperature:	max. 110°C
Opening pressure:	2 - 10 bar
Mounting position:	like original valve
Componen approval number:	TÜV-SV-15-545-DN-W-N-P
Fluids:	water, neutral non-adhesive fluids
Serial number:	2116...
	CE 0085

Maintenance

It is recommended to service the device on a regular basis.
The correct function should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight.



Nominal size		DN 15
	A	G ½“
Dimensions in mm	H (mm)	44
	Kw*	32

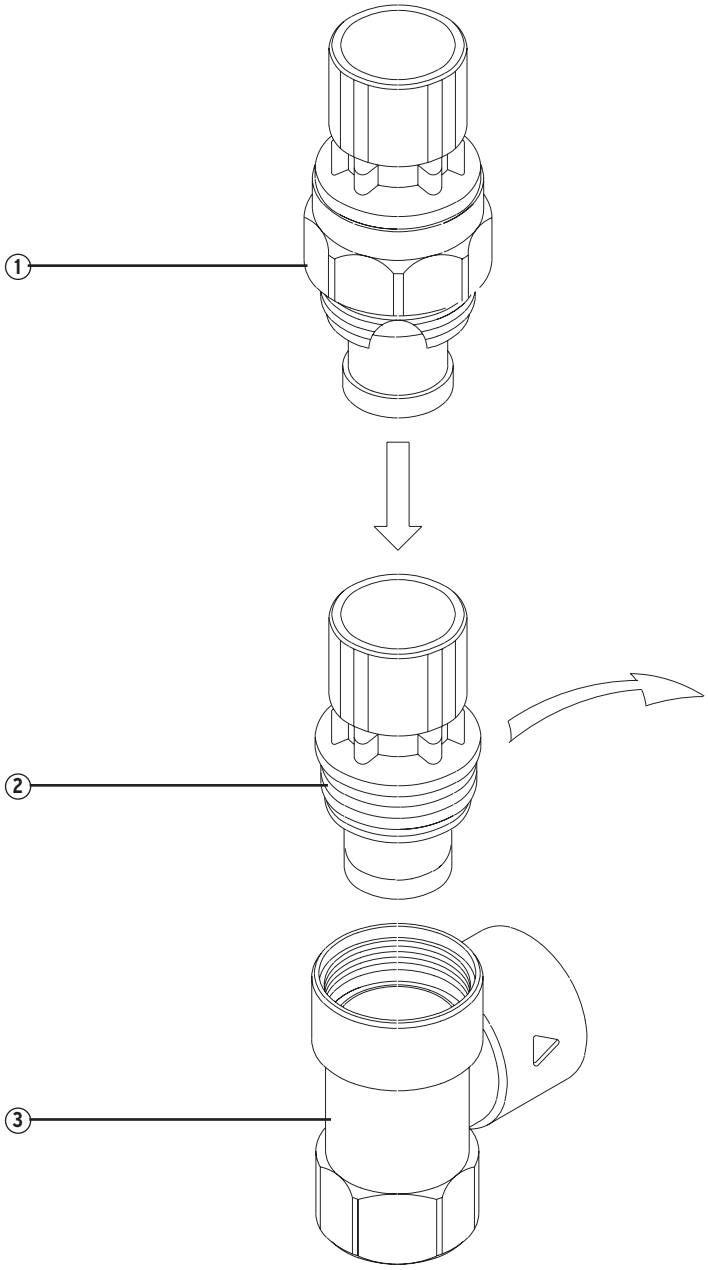
* Kw = Key width

Components / Order numbers

① **Exchange cartridge 2116**
DN 15 + DN 20
brass alloy:
6 bar: 2116.20.000
8 bar: 2116.20.001
10 bar: 2116.20.002
chromium-plated:
6 bar: 2116.20.006
7 bar: 2116.20.011
8 bar: 2116.20.007
10 bar: 2116.20.008

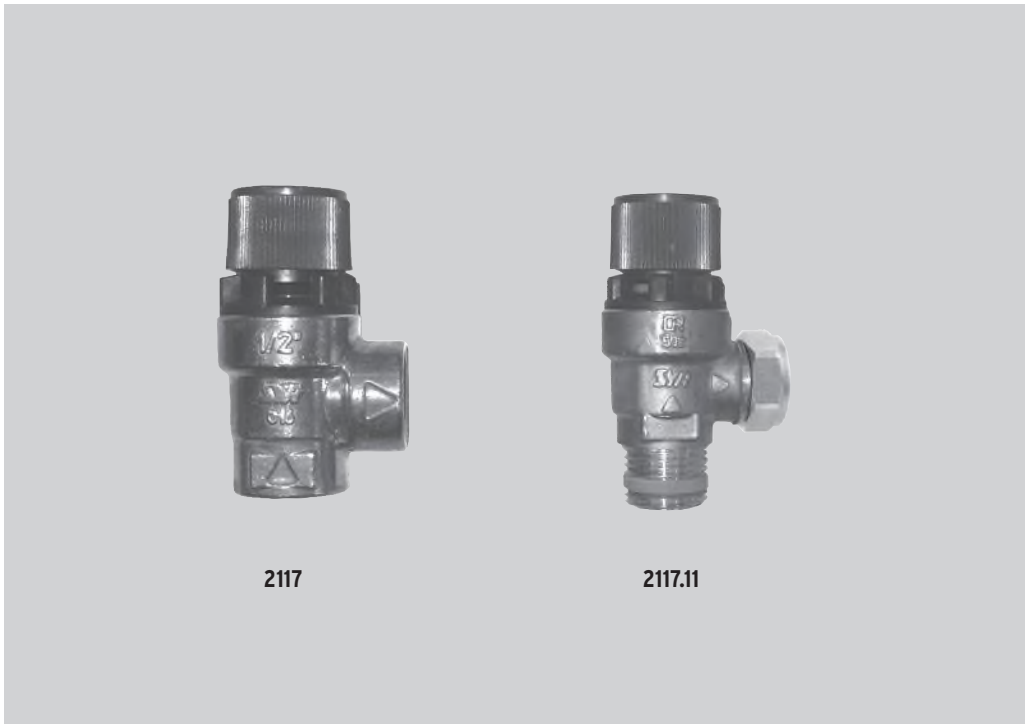
② **Disassembled head part**

③ **Valve body**



Pressure Relief Valve 2117

for unvented (pressurised) water heaters



2117 2117.11

Field of application

The pressure relief valve type 2117 is designed to protect pressurised fluid systems against overpressurisation in unvented (pressurised) water heaters. The connection size has to be determined in accordance with the heating capacity of the heat-generating device to be protected. The opening pressure of the pressure relief valve indicated on the black seal pressed in the lifting handle of the valve has to be at least 20 % below the highest permissible inlet pressure of the system to be protected.

Design

The operational parts in the pressure relief valve type 2117 are protected against direct contact with the medium (protection against corrosion). The pressure relief valve can be lifted by means of the rotatable handle.

Pressure relief valve 2117

Materials

The body and the internal parts are made of a high-quality low-lead brass alloy (DN 15 - DN 32) or a dezincification resistant low-lead gunmetal alloy (DN 40 - DN 50); the spring cap is made of high-quality glass fibre reinforced synthetic material or zinc die-casting. The diaphragm and the seat are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion protected spring steel wire.

Installation

The pressure relief valve type 2117 has to be installed in the cold-water inlet of the water heater. To avoid draining the water heater when the valve is serviced, it should be placed above the top surface of the water heater. There shall be no isolating valves, strainers or similar devices between the pressure relief valve and the water heater.
The enclosed adhesive label with the inscription: „When heating, water has to escape from the relief pipe for safety reasons! Do not obturate!" has to be placed close to the valve in a visible position.
The diameter of the relief pipe must be at least equal to the nominal size of the valve outlet. The relief pipe has to be installed with continuous incline. It can maximally include 2 bends and have a length of 2 meters. When a length exceeding 2 m is necessary, the pipe must be one size larger. Caution: more than 3 bends and a length exceeding 4 meters are not admissible. The outlet of the relief pipe must be free from obstruction, controllable and positioned in such a way that persons are not endangered. The relief pipe has to end in a drain device or over a tundish within the building. When the relief pipe ends over a tundish, it is indispensable that its drain pipe has at least the double cross section of the valve inlet.

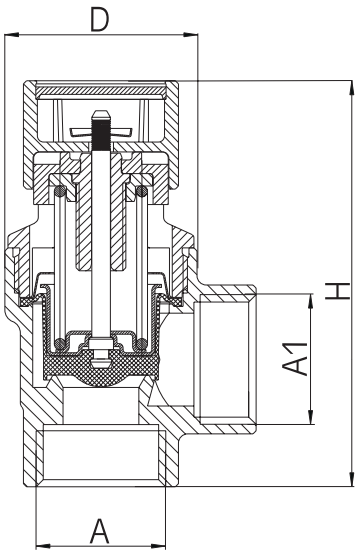
Thoroughly rinse the pipe prior to installation. Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

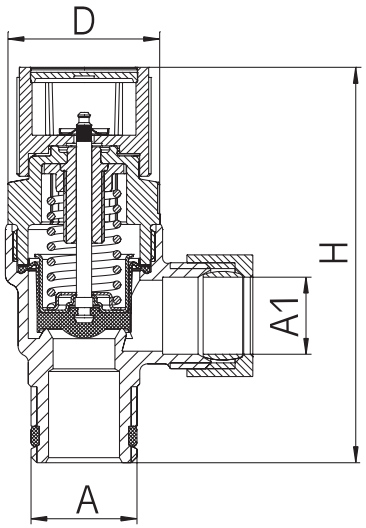
Opening pressure:	4 - 10 bar
Standard setting:	6, 8, 10 bar
Mounting position:	preferably main axis vertical, inlet connection pieces facing downwards
Components approval number:	TÜV-SV-15-545-DN-W-N-p
Media:	water, neutral non adhesive fluids
Serial number:	2117...

Maintenance

It is recommended to service the device on a regular basis.
The correct function of the pressure relief valve should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. To clean the valve seat and seal, unscrew the head part. The seat seal is exchangeable for valves with a connection size of DN 40 or more. After cleaning, refit the head part; the opening pressure remains unchanged after this operation. Pressure relief valves DN 15 and DN 20 with a damaged valve seat can be repaired by means of the exchange cartridge 2116, which makes them equivalent to a new valve.



2117



2117.11

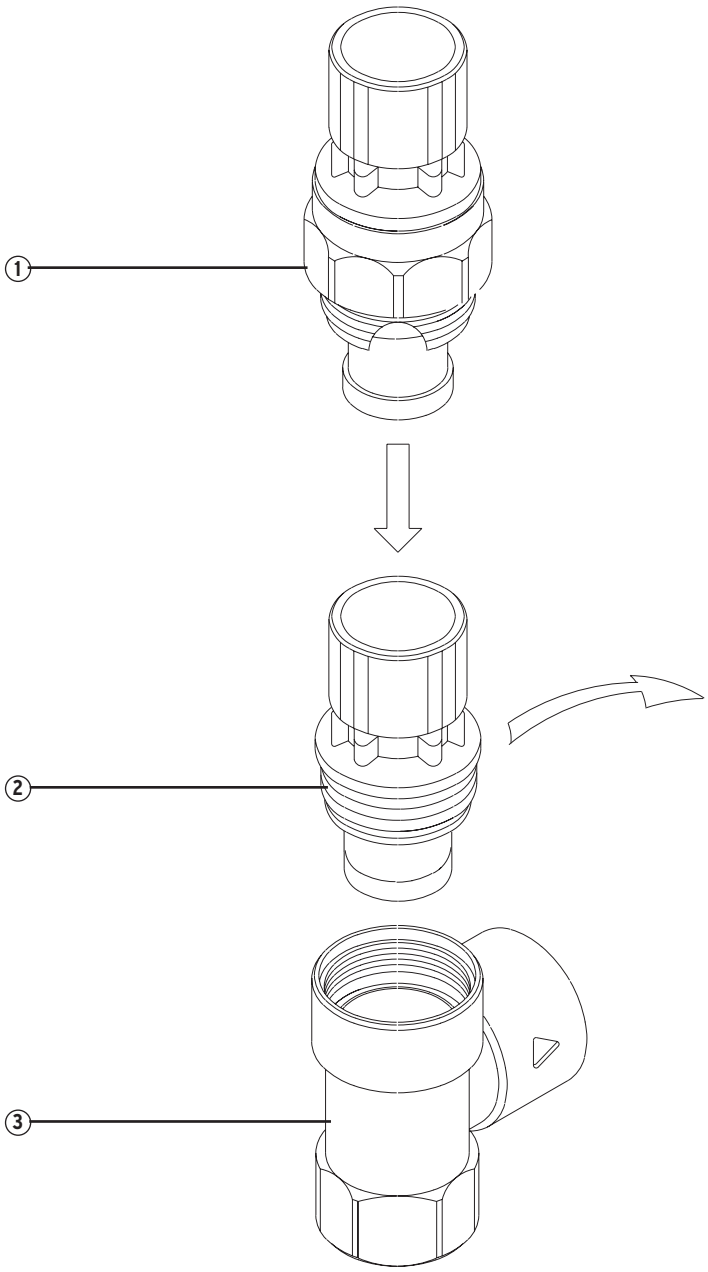
Nominal size		2117		2117.11	
		DN 15	DN 20	DN 15	DN 20
	A	½" female	¾" female	½" male	¾" male
	A1	½" female	¾" female	15 mm compr. fitting	22 mm compr. fitting
Dimensions in mm	H (mm)	64	75	79	79
	D (mm)	31	31	31	31

Components / Order numbers

① **Exchange cartridge 2116**

② **Disassembled head part**

③ **Valve body**



Thermostatic Mixing Valve 702 Safe

with protection against scalding



Field of application

The thermostatic mixing valve type 702 Safe is used for the central and local regulation of the water temperature in potable water supply installations. It is the optimal solution for kindergarten, retirement homes, swimming pools, public buildings etc. Corrosion and sediments are reduced as it is installed directly at the hot water outlet of potable water heaters that operate at high temperatures for capacity or system inherent reasons. In addition, the operation with a reduced draw-off temperature is more economic. The thermostatical mixing valve type 702 Safe can also limit the return temperature in heating installations or underfloor heating systems.

Design

This device works as a proportionally operating thermostatic mixing valve with a thermoelement. The body (nickel-plated) supplied with threaded unions on all sides (soldered unions available on request) is removable along with the thermostatical element. The integral scalding protection (in compliance with European Standards) automatically stops the incoming hot water when the cold water supply is interrupted. The check valves installed in both cold and hot water inlets prevent any incorrect circulation. The integral strainers protect the function parts against impurities originating from the supply network.When the mixing valve is installed in a system with a circulation pump, it is recommended to have a time or temperature controlled pump.

Thermostatic mixing valve 702

Materials

The body and internal parts are made of a high quality low-lead brass alloy and glass fibre reinforced synthetic material; the adjustment knob is also made of high quality synthetic material. The spring is made of corrosion resistant spring steel wire and the sealing elements of heat resistant elastomeric synthetic material.

Installation

Install the mixing valve in any mounting position. Follow the connection instructions in the user's manual.

Thoroughly flush the pipes prior to installation. It is recommended to install a filter at the domestic point of entry to ensure a durable and correct operation. Install the device in the pipe without applying stresses. The cold water inlet is marked with „C" and the hot water inlet with „H".

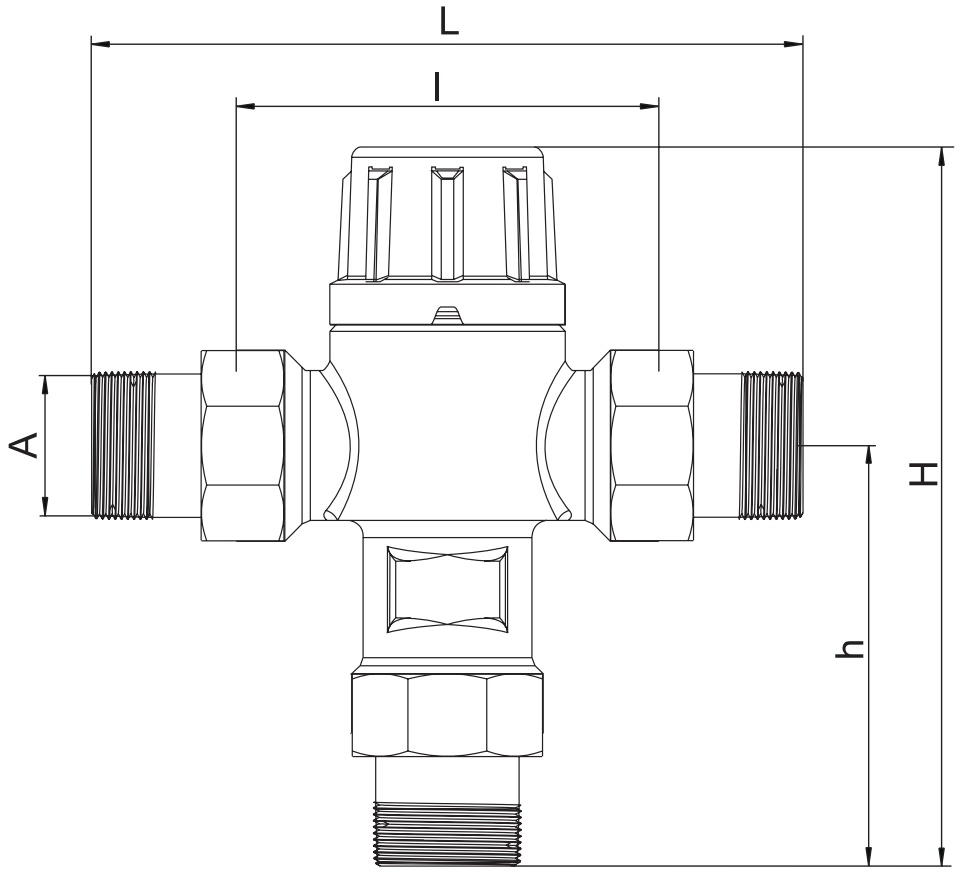
Technical data

Operating pressure:	max. 10 bar
Inlet temperature, hot water (PWH):	max. 90 °C
Inlet temperature, cold water:	max. 25°C
Temperature setting range:	40 - 60°C
Factory-set temperature:	43°C
Flow rate:	2,9 m^3/h at Δp 0,5 bar
Mounting position:	any
Fluid:	water
Serial number:	0702...

* the inlet temperature hot water (PWH) must be at least 10 K higher than the setting in the control range

Maintenance

Remove the blue cap to adjust the desired temperature. The key included in the delivery allows to easily regulate the temperature with open draw-off valve and both hot and cold water inlets fully turned on. Turn anti-clockwise to increase the temperature and clockwise to decrease it. No particular maintenance is required under normal operating circumstances.



Nominal size		DN 15	DN 20
	A	G ½“	G ¾“
Dimensions in mm	H (mm)	147	148
	h (mm)	50	50
	L (mm)	143	146
	l (mm)	78	78

Components / Order numbers

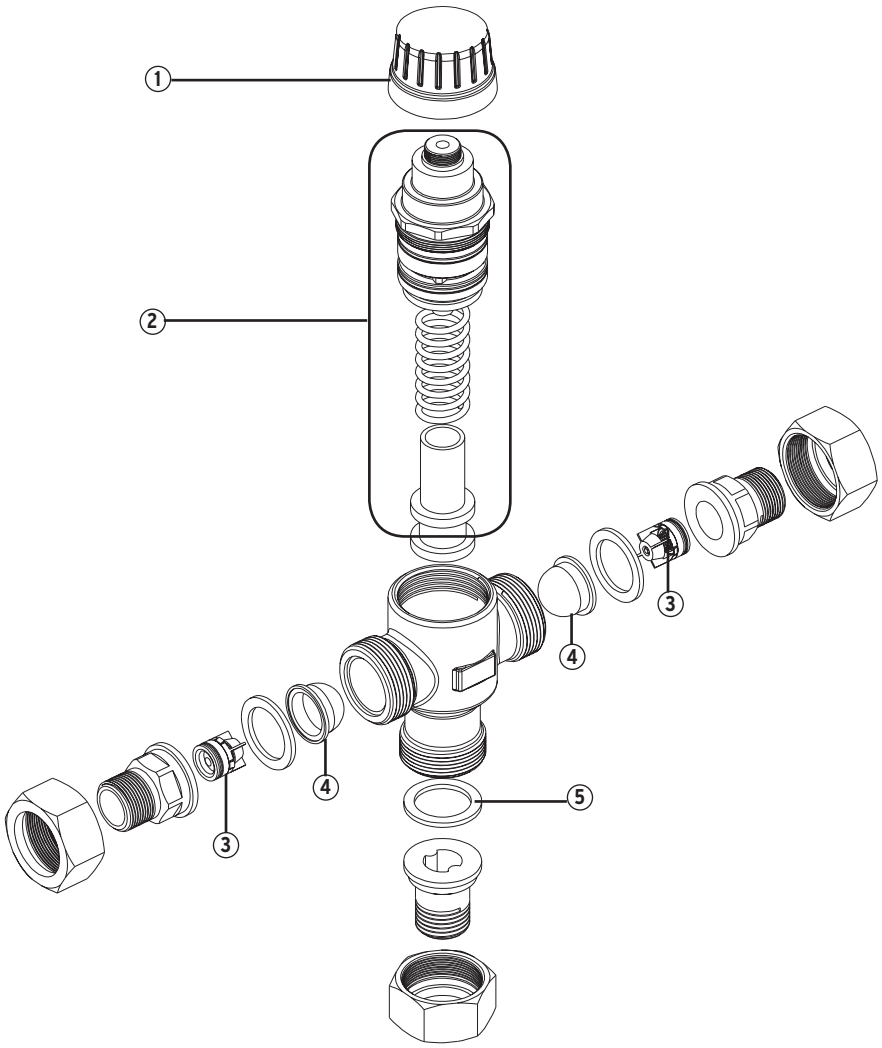
① **Cap**

② **Thermoelement, spring and control piston**

③ **Check valve**
DN 15: 0702.15.901
DN 20: 0702.20.901

④ **Strainer**
0702.00.901

⑤ **Sealing kit (3 units)**
0702.00.900



Thermostatic Mixing Valve 705

with protection against scalding



Field of application

The thermostatic mixing valves 705 offer accurate temperature control between the cold and hot water supply. The valves are designed to control water temperature for central mixing applications for domestic hot water systems, including solar systems and heat pumps.

Design

This devices work as proportionally operating thermostatic mixing valves with a thermoelement. The valves are equipped with a special easy to use push fitting mounting system. With the 705 adjustable mixing valve the required water temperature can simply be set by turnig the adjustment knob. The synthetic material of body and internal Parts reduces lime scale and increases service performance.

Thermostatic mixing valve 705

Materials

The body and internal parts are made of glass fibre reinforced synthetic material; the adjustment knob is also made of high quality synthetic material. The spring is made of corrosion resistant spring steel wire and the sealing elements of heat resistant elastomeric synthetic material.

Installation

Install the mixing valve in any mounting position. Follow the connection instructions in the user's manual.

Thoroughly flush the pipes prior to installation. It is recommended to install a filter at the domestic point of entry to ensure a durable and correct operation. Install the device in the pipe without applying stresses. The cold water inlet is marked with „C" and the hot water inlet with „H".

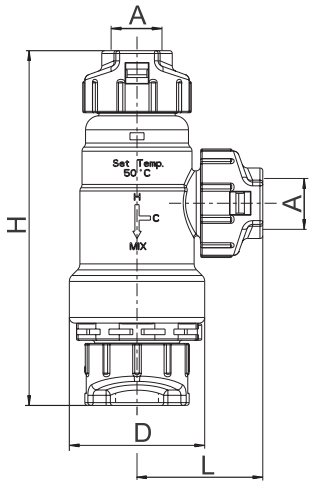
Technical data

Operating pressure:	max. 6 bar
Inlet temperature, hot water (PWH):	15 - 90 °C
Inlet temperature, hot water (PWC):	5 - 30 °C
Mising temperature (0705 / 0705 rotatable):	55 °C
Temperature setting range (0705 adjustable):	35 - 55 °C
Factory-set temperature:	55°C
Flow rate:	0,7 m^3/h at Δp 0,5 bar
Mounting position:	any
Fluid:	water
Serial number:	0705...

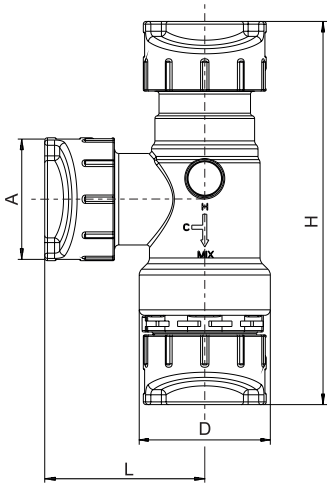
* the inlet temperature hot water (PWH) must be at least 10 K higher than the setting in the control range

Maintenance

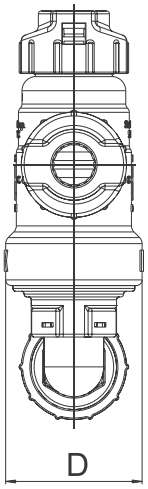
Low maintenance and the valve should be checked every two years. Do not clean systhetic parts with solvent-based detergents.

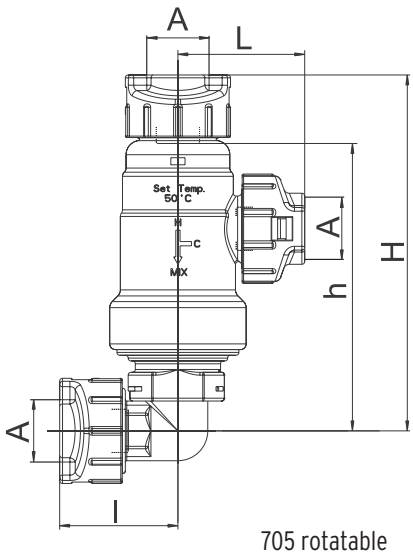


705



705 adjustable





705 rotatable

Nominal size		0705 DN 15	0705 rotatable DN 15	0705 adjustable DN 20
	A (mm)	15 mm push-fitting	15 mm push-fitting	22 mm push-fitting
Dimensions in mm	H (mm)	126	125	140
	h (mm)	-	101	-
	L (mm)	45	45	59
	l (mm)	-	42	-
	D (mm)	48	48	48

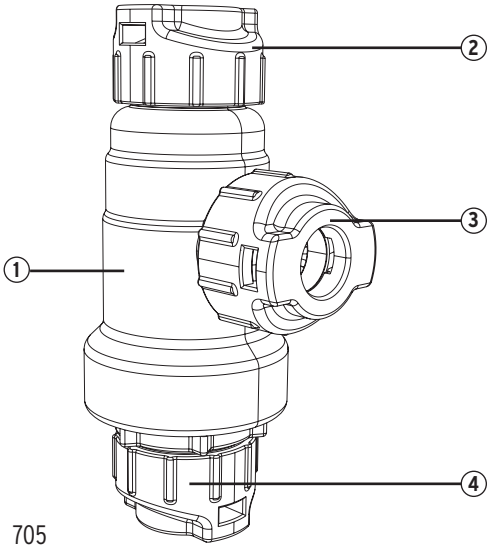
Components / Order numbers

① **Body**

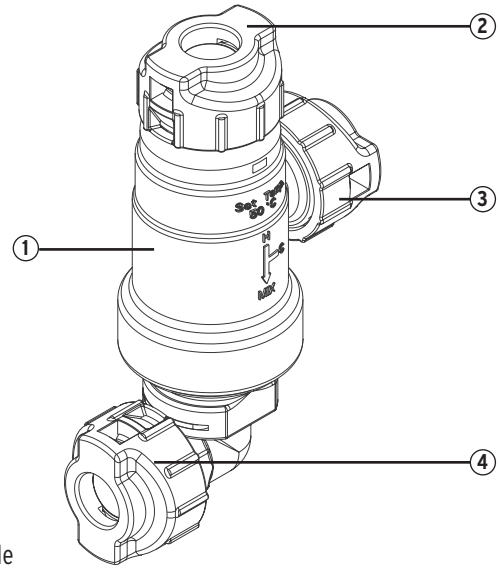
② **Coupling**
Hot water supply (red)

③ **Coupling**
Cold water supply (blue)

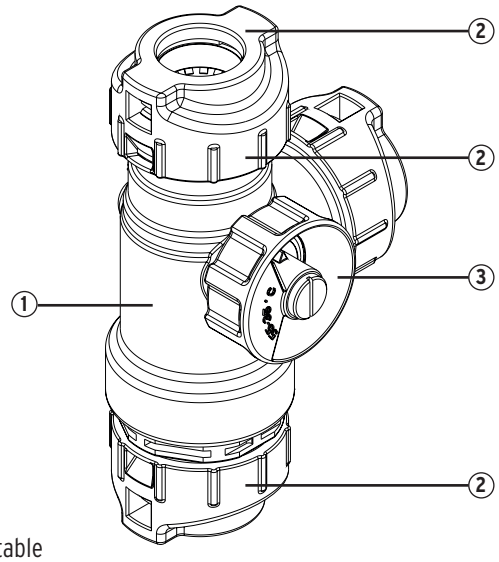
④ **Coupling**
Mixed water (black)



705



705 rotatable



705 adjustable

T&P Valve 2303

Temperature and pressure relief valve with stainless steel seat for hot water storage tanks



Field of application

The temperature and pressure relief valve (T&P Valve) type 2303 is used as a safety valve to reduce excess pressure stemming from overheated water and normal water pressure. This valve prevents pressure from causing a tank to rapture or explode due to high pressures. The T&P Valve is used for unvented hot water tanks and hot water storage tanks.

Design

The operational parts in the T&P Valve type 2303 are protected against direct contact with the medium (protection against corrosion). The valve can be lifted by means of the rotatable handle.

T&P valve 2303

Materials

The body is made of low-lead dezincification resistant gunmetal alloy; the spring cap is made of high-quality glass fibre reinforced synthetic material. The diaphragm is made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion resistant spring steel wire. The valve seat is made of high quality stainless steel to avoid erosion.

Installation

It is essential that T&P Valves should be fitted in accordance with the following guidelines:
The T&P Valve must be installed so that the temperature-sensing probe is directly immersed in the hottest water i.e. in the top six inches or top 20% of the capacity of the tank/vessel.
Do not apply a wrench on any other surface than those spanner flats provided on the body when fitting the T&P Valve. As an alternative to a wrench, temporary screw a 300mm pipe into the T&P Valve's outflow.
Drain lines should run to a safe place of disposal i.e. outside or drain. It should have the same diameter than the valves outflow and be pitched with a downward slope not exceed 9 meters and have limited elbows preferably less than 4.0. On completion of the installation a pressure test of the system should be conducted at 1.5 times the normal operating pressure. For this purpose the P&T Valve should be removed.
Do not leave the relief valve in place for the test and isolate the discharge line. This will cause damage to the valve and is therefore strictly forbidden.

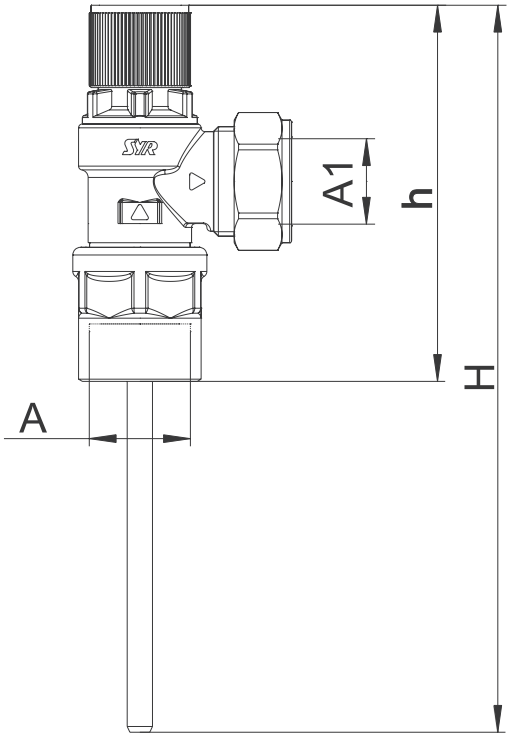
Technical data

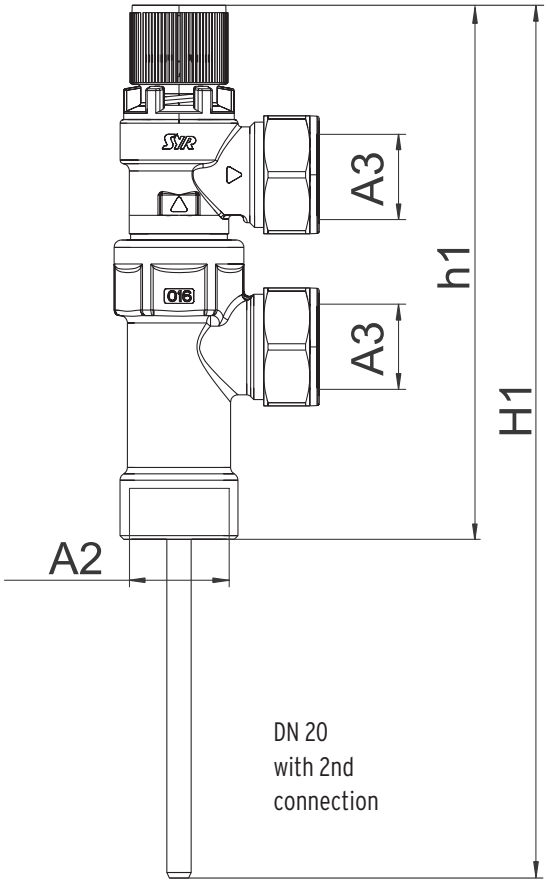
Available Set pressure:	3 - 10 bar (other settings on request)
Mounting position:	any; discharge opening facing downwards
Fluid:	potable water
Connection size:	DN 15 - 50
Set temperature:	93 - 98 °C
Serial-Nr.:	2303 ...

Maintenance

When the system is in operation a plumber should check the valve's operation annually. Should the T&P Valve drip constantly the most likely cause is that the valve's seat has been clogged. Depressurise the system to carry out service works: isolate the cold water supply and drain the hot water pipes. Then, maintenance works on the valve can be carried out.

To clean the valve, unscrew the cap and the seat can easily be cleaned. After cleaning, refit the cap into the seat and screw tightly. This cleaning process will not have altered the response pressure. Whenever the valve's seat gets damage due to aggressive water, the exchangeable cartridge can be replaced with the appropriate replacement.





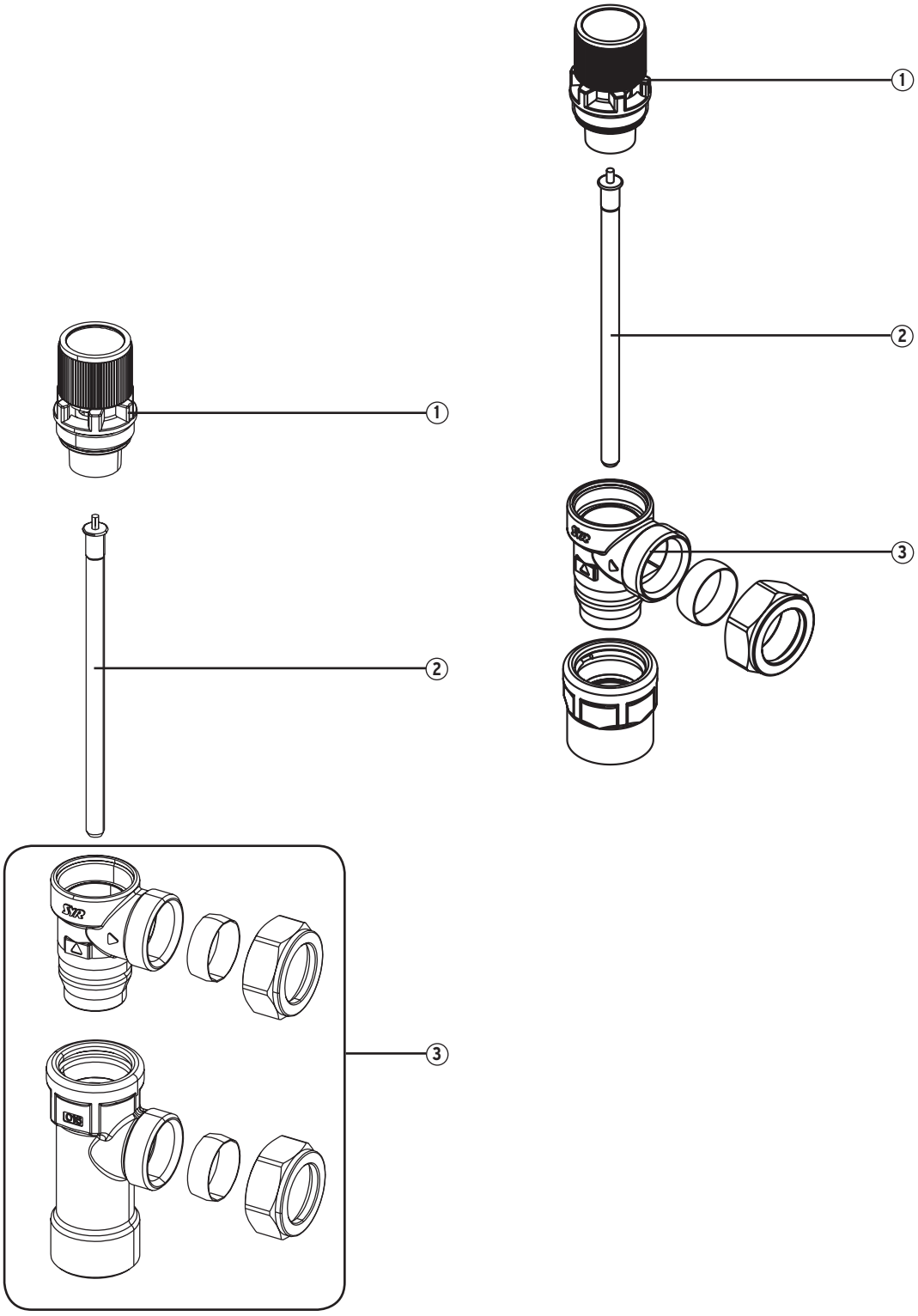
Nominal size		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
	A	R½“	¾“ female / male	1“ female	1¼“ female	1½“ female	2“ female
	A 1	15 mm compr. fitt.	22 mm compr. fitt.	1¼“ female	1½“ female	2“ female	2½“ female
	A 2	-	¾“ female	-	-	-	-
	A 3	-	22 mm compr. fitt.	-	-	-	-
Dimensions	H (mm)	192,5	190	258	288	378	378
	H1 (mm)	-	237	-	-	-	-
in mm	h (mm)	106,7	98	150	188	270,5	289,5
	h1 (mm)	-	145	-	-	-	-

Components / Order numbers

① **Head part**

② **Probe**

③ **Body**





Water treatment for heating systems

Technical Information	326
ConnectingCentre 3200 with Cartridge-System	331
ConnectingCentre 3228 All-in-One with Cartridge-System	335
Mobile filling device Mini 3200	339
Mobile filling device 3200	343
Fill Caddy 3200	347
Fully automatic filling system for heating installations	351
FillDOS 3220	355

Guideline VDI 2035

The Guideline VDI 2035 determines important measures to protect heating installations against limescale buildup and corrosion and helps saving energy. When heating water, hard water lowers the lime's solubility, leading to a stubborn layer of limescale. Deposits from hard water reduce the energy efficiency and lead to malfunctions – such as local overheating causing crack formation or boiling noise. Therefore, limescale prevention is as important for heating installations as for drinking water systems. Only 1 mm of limescale, for instance on a heat exchanger, increases the energy costs by approximately 10%!
For these reasons, the protection of heating installations against limescale according to the guideline VDI 2035 and servicing at regular intervals are of paramount importance. The limit values for the total hardness, conductivity and pH-value are set out in the installation conditions of the device manufacturers.





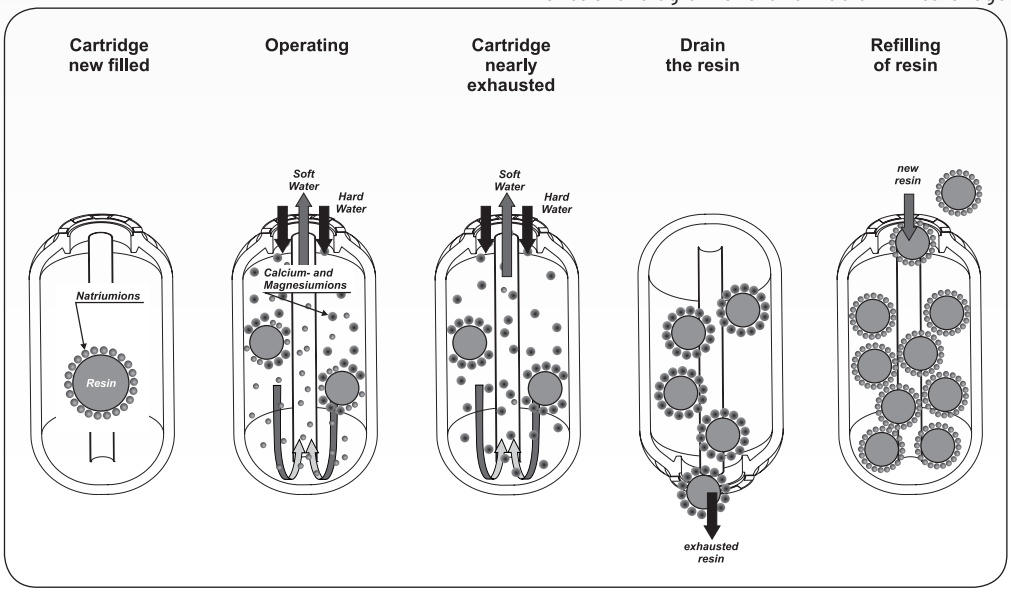
Standard-conforming and convenient filling of heating installations

SYR ConnectionCenter 3228 All-in-One and ConnectionCenter 3200

Both SYR ConnectionCenters form the base of the refillable SYR cartridge system. The cartridges are filled with different granules - depending on the desired type of heating water conditioning: HWE for heating water softening, HVE for complete demineralization of heating water and HVE Plus for full demineralization of heating water with pH-value stabilizer. The blending valve integrated in the ConnectionCenter can be adjusted to the required method. The digital capacity control permanently calculates the residual filling volume and stops the filling process when the granules quantity is too low. The cartridges available in various sizes are easy to refill with the corresponding refill-granules (funnel included). The installer saves a lot of time on-site, as he does not have to procure a new cartridge first.

Note: SYR's ConnectionCenter 3228 All-in-One includes all elements required to fill a heating installation in accordance with the applicable standards. A BA Backflow Preventer (e.g. FillingCombi BA 6628) has to be installed upstream of the ConnectionCenter 3200 to meet the requirements set in EN 1717.

Functional diagram of the refillable HWE cartridge



Cartridge Softening (HWE)		Cartr. Full Demineralization (HVE)		Cartr. Full Demineraliz. (HVE Plus)	
Capacity 2.5 liters	9.100 l/°dH	2.5 liters	3.125 l/°dH	2.5 liters	2.185 l/°dH
4 liters	14.560 l/°dH	4 liters	5.000 l/°dH	4 liters	3.500 l/°dH
7 liters	25.480 l/°dH	7 liters	8.750 l/°dH	7 liters	6.500 l/°dH
14 liters	50.960 l/°dH	14 liters	17.500 l/°dH	14 liters	13.000 l/°dH
30 liters	109.200 l/°dH	30 liters	37.500 l/°dH	30 liters	27.850 l/°dH

Determination of the filling water volume

Type of installation	Filling volume in liters/kW about
Tube and steel radiators	35
Cast iron radiators	25
Underfloor heating about 60 W/m²	20
Panel radiators	15
Convectors	10
Systems with buffer storage tanks	> 20

Cartridge capacity calculation - Examples

Calculation example HWE 4 l

$$\frac{\text{Capacity}}{\text{Hardness difference* (Raw water- hardness at outlet)}}$$

$$\frac{14.560 \text{ liters}}{(20\ °dH - 8\ °dH)\ 12\ °dH}$$

= 1213 liters

Calculation example HVE 4 l

$$\frac{\text{Capacity}}{\text{Total hardness*}}$$

$$\frac{5.000 \text{ liters}}{20\ °dH}$$

= 250 liters

Calculation example HVE Plus 4 l

$$\frac{\text{Capacity}}{\text{Total hardness*}}$$

$$\frac{3.500 \text{ liters}}{20\ °dH}$$

= 175 liters

*Hardness difference = raw water hardness - hardness at outlet

*No blending with full demineralization

Softening or complete demineralization?

It is important to decide using either saline water or water with a low salt content when filling an installation.
Both principles offer advantages and disadvantages.

Saline ⟷	Low salt content
Partial softening	Full demineraliz.
about 8 °dH	0 °dH
Conductivity remains	Conductiv. drops

The VDI guideline gives general reference values for filling heating systems with softened or fully demineralized water. However, due to the wide range of heating systems and their materials, each manufacturer specifies other values to fill his heating system. Therefore, follow the manufacturer's instructions first.

VDI 2035 reference values for filling and refilling water

Group	Total heating capacity	< 20 l/kW	≥ 20 l/kW & < 50 l/kW	≥ 50 l/kW
1	< 50 kW	16.8 °dH for circulation heaters	≤ 11.2 °dH	< 0.11 °dH
2	50 - 200 kW	≤ 11.2 °dH	≤ 8.4 °dH	< 0.11 °dH
3	200 - 600 kW	≤ 8.4 °dH	≤ 0.11 °dH	≤ 0.11 °dH
4	> 600 kW	< 0.11 °dH	< 0.11 °dH	< 0.11 °dH



Mobile filling device (in a trolley case) for heating systems

SYR Fill-trolley case 3200

SYR's fill-trolley case 3200 is specially designed for filling heating systems on-site according to standards. It also meets the requirements set in the Guideline VDI 2035. Its field of application is any place where it is not possible to install a permanent ConnectionCenter. This trolley case includes all elements required to fill heating systems on the spot in a variable and safe way: a BA backflow preventer, a pressure reducing valve, connection hoses, a cartridge and a digital capacity control.
The trolley case is available for both versions, i.e. heating water softening (HWE) and complete demineralization (HVE). The HWE and HVE cartridges are interchangeable. The enclosed filling protocol ensures with all remaining parts the observance of the warranty conditions set by the heating system manufacturer.



Mobile filling device for heating systems

SYR Fill-Caddy 3200

SYR's Fill-Caddy is specially designed for filling large heating systems or cleaning large glass surfaces (VE-version).
The site is easily accessible with the sack truck. The plug-in connector for usual hose systems makes the connection very simple. The device includes all valves required when filling heating systems according to standards: a BA backflow preventer, a pressure reducing valve, two connection hoses as well as a 30-liter cartridge plus digital capacity control. When the resin is used up, it can be easily replaced with new granules.



Mobile filling device for heating systems

SYR Fill-Case 3200 Mini

The portable SYR fill-Case 3200 mini is very compact while including all elements required when filling or refilling heating installations: SYR's new ConnectionCenter 3200 All-in-One with a BA backflow preventer, stop valves, a pressure reducing valve and a blending device. It also comes with a filled 2.5 l-cartridge (heating water softening HWE, total demineralization of heating water HVE or total demineralization of heating water with pH-stabiliser HVE Plus), a hardness measuring device, two connection hoses and a solid carrying strap. When the cartridge's capacity is used up, it can be refilled with new granules.





Fully automatic filling of heating systems

HVA 3200 Connect

The HVA 3200 Connect includes all elements required when filling heating installations according to VDI 2035 and EN 1717. This filling system with a backwashable prefilter works fully automatically. As the pressure is monitored electronically, the automatic system stops the filling process, when the desired pressure is reached in the installation. The electronic capacity control of the water treatment stops the filling process, when the cartridge capacity is used up. This prevents unintentional filling with non-conditioned water and ensures a standard-conforming operation as well as the observance of the manufacturer's warranty conditions.
The system can be used either with SYR's HWE cartridges to soften the heating water, SYR's HVE cartridges to totally demineralize the heating water or SYR's HVE Plus for the complete demineralization with pH-value stabilization (not included in the delivery).

Corrosion inhibitors

FillSafe plus 3220 and pH-value increase 3220



These inhibitors are designed to protect water-based heating installations against corrosion.

FillSafe plus 3220 is a combination product based on molybdate (MoO_4^{2-}), polycarboxylic acid, amine compounds and copper inhibitor. It forms a protective film for example on steel and aluminium surfaces. Thus, the FillSafe plus 3220 prevents deposits conducive to corrosion on metal surfaces.

The pH-value increase 3220 is designed for the alcalization of the water in heating circuits. This product avoids deposits and corrosion in heating circuits, thus preventing malfunctions.

Protection for heating systems

FillDOS 3220 Filling pump for heating systems



The filling pump for heating systems FillDOS 3220 pumps the inhibitors mentioned above in the heating system, thus preventing for instance corrosion and protecting heating installations made of materials containing steel, copper and aluminium.
The filling pump for heating systems is operated by means of a battery-powered screw driver pumping the liquid in the heating system with a maximum of 500 rpm.

Connecting Centre 3200



Field of application

The SYR Connecting-Center 3200 is a connecting module used for filling the heating installation with soft and demineralized water and with water for pH-stabilization. Relevant for the method is the refillable water softener or demineralization cartridge.

Design

The cartridges are refillable and available for 2,5, 4, 7, 14 and 30 Litres. The Connecting-Center is equipped with an inlet and outlet ball valve, integrated blending valve which can be changed from water softening to demineralization, digital capacity-control with remaining capacity display and a wall bracket.

3200 Connecting Centre

Materials

Body, internal parts and isolating valve are made of high-quality, low-lead brass alloy or stainless steel. Seals are made of elastomeric synthetic material (hot-water and ageing-resistant). The springs are made of corrosion-resistant spring steel wire.

Installation

Install the Connecting Center before the heating installation. Do not install the device in rooms liable to humidity or frost. Fit the center to the wall bracket. Mount the cartridges from below to the Connecting Center. The 14 litre-cartridges contain a pedestal (included in delivery).

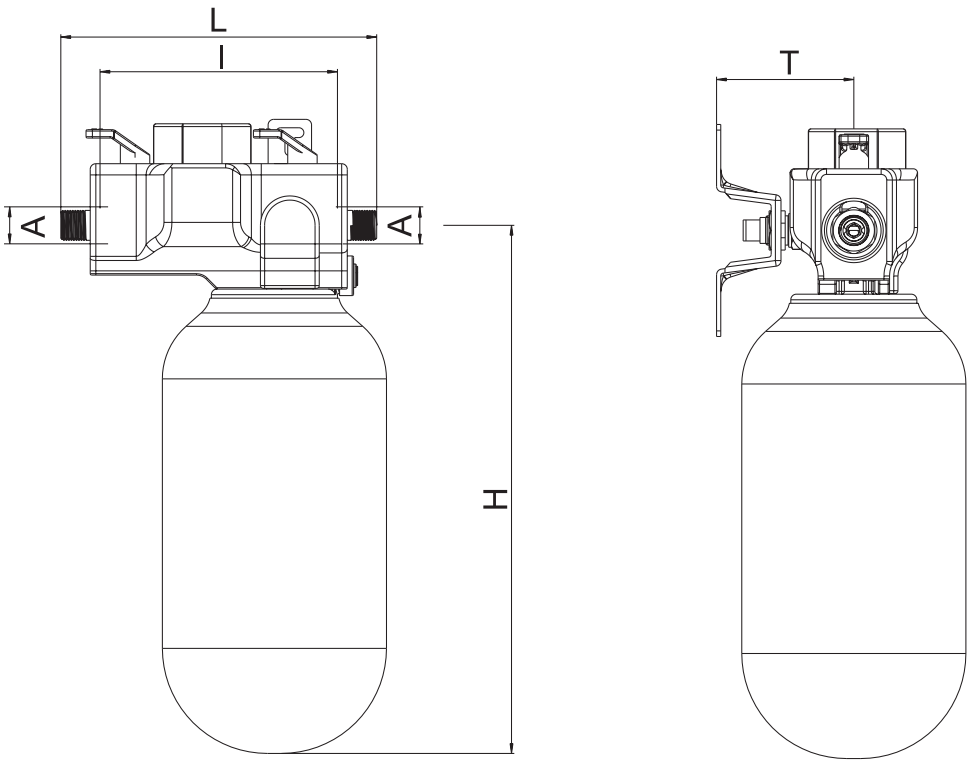
Install the connecting centre horizontally in the pipe under consideration of the direction of flow and without applying stresses.

Technical data

Operating pressure:	max. 6 bar
Operating temperature:	max. 30 °C
Mounting position:	main axis horizontal
Medium:	potable water
Flow rate capacity:	0,5 m^3/h
Serial number:	3200.15.010

Maintenance

The connecting centre automatically reports an exhausted cartridge. Just refill the cartridge with the refill resin. Pay attention to order the appropriate resin and size of the cartridge.



Nominal size		DN 15
Dimensions	A	R ¾"
	L (mm)	226
	l (mm)	170
	H (mm)	286 (2,5 Litres), 377 (4 Litres), 585 (7 Litres), 1016 (14 Litres), 955 (30 Litres)
	T (mm)	90 - 105

Components / Order numbers

①
Connection-Center
3200.15.010

②
Cartridge water softener (already filled)
2,5 Litres 3200.00.021
4 Litres 3200.00.001
7 Litres 3200.00.003
14 Litres 3200.00.004
30 Litres 3200.00.018

Cartridge demineralization (already filled)
2,5 Litres 3200.00.022
4 Litres 3200.00.011
7 Litres 3200.00.013
14 Litres 3200.00.014
30 Litres 3200.00.017

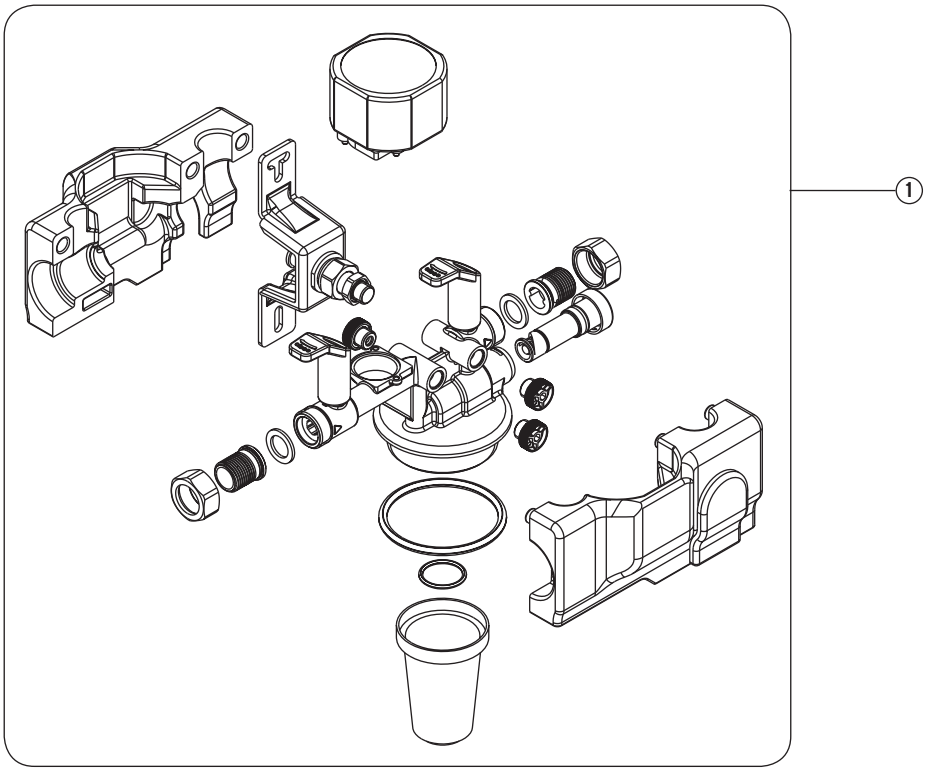
Cartridge pH-stabilization (already filled)
2,5 Litres 3200.00.023
4 Litres 3200.00.015
7 Litres 3200.00.005
14 Litres 3200.00.006
30 Litres 3200.00.016

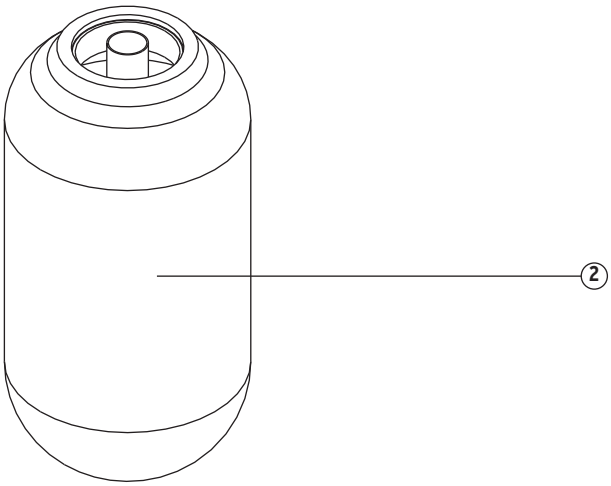
Exchange-granules for water softener (no picture)
2,5 Litres 3200.00.942
4 Litres 3200.00.904
7 Litres 3200.00.906
10 Litres 3200.00.937
14 Litres = 2 x 7 Litres
30 Litres = 4 x 7 Litres

Exchange-granules for demineralization (no picture)
2,5 Litres 3200.00.943
4 Litres 3200.00.914
7 Litres 3200.00.916
10 Litres 3200.00.938
14 Litres = 2 x 7 Litres
30 Litres = 4 x 7 Litres

Exchange-granules for pH-stabilization (no picture)
2,5 Litres 3200.00.944
4 Litres 3200.00.927
7 Litres 3200.00.926
10 Litres 3200.00.939
14 Litres = 2 x 7 Litres
30 Litres = 4 x 7 Litres

Conductivity meter
from 09/2015 (no pict.)
3200.00.928





Connecting Center All-in-one 3228



Field of application

The SYR Connecting-Center 3228 All-in-one is a connecting module used for filling the heating installation with soft and demineralized water and with water for pH-stabilization. Relevant for the method is the refillable water softener or demineralization cartridge.

Design

The cartridges are refillable and available for 2,5, 4, 7, 14 and 30 Litres. The integrated BA-Filling-Combi automatically fills and refills central heating installations. The Connecting-Center All-in-one is equipped with an inlet and outlet ball valve, integrated blending valve which can be changed from water softening to demineralization, digital capacity-control with remaining capacity display, a wall bracket, pressure gauge and and pressure reducing valve.

3228 Connecting Centre All-in-one

Materials

Body, internal parts and isolating valve are made of high-quality, low-lead brass alloy or stainless steel. Seals are made of elastomeric synthetic material (hot-water and ageing-resistant). The springs are made of corrosion-resistant spring steel wire.

Installation

Install the Connecting Center before the heating installation. Do not install the device in rooms liable to humidity or frost. Fit the center to the wall bracket. Mount the cartridges from below to the Connecting Center. The 14 litre-cartridges contain a pedestal (included in delivery).

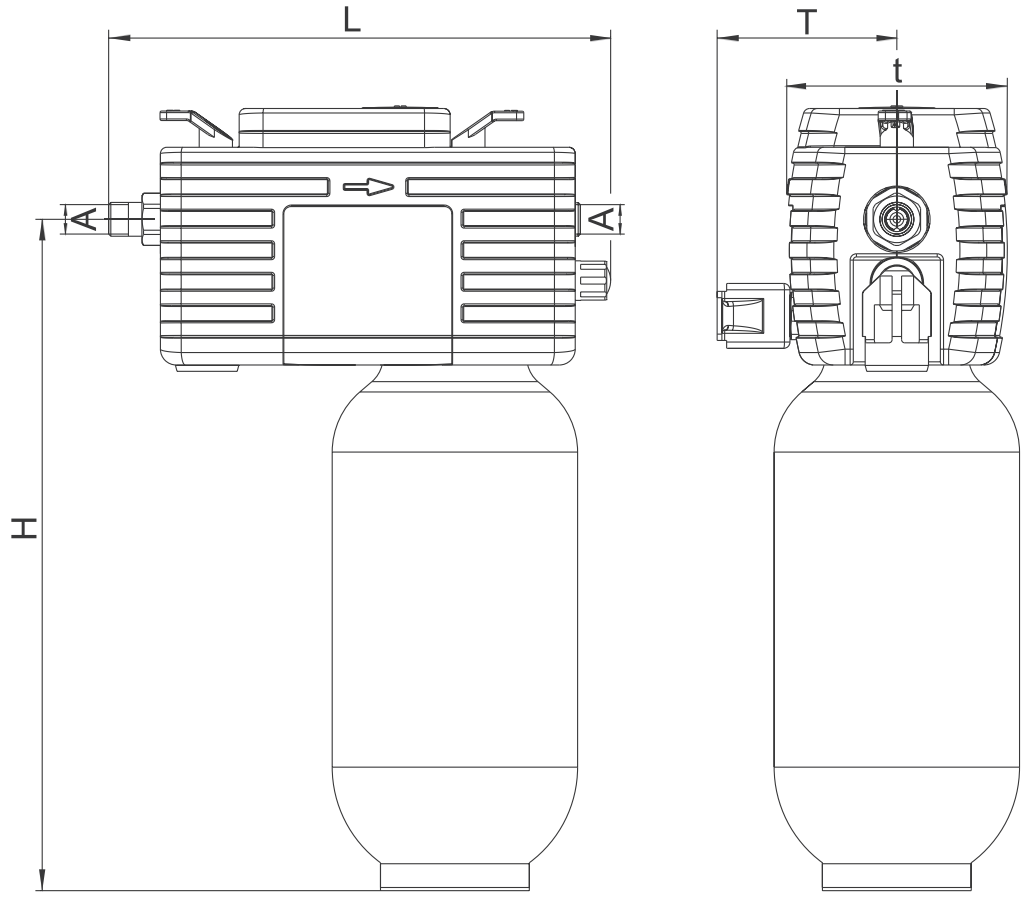
Install the connecting centre horizontally in the pipe under consideration of the direction of flow and without applying stresses.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 30 °C (inlet); max 65 °C (outlet)
Outlet pressure:	1 - 5 bar (factory set to 1,5 bar)
Mounting position:	main axis horizontal
Medium:	potable water
Flow rate capacity:	0,3 m^3/h (with 2,5l-cartridge)
	0,5 m^3/h (with 4-14l-cartridge)
Serial number:	3228.15.010

Maintenance

The connecting centre automatically reports an exhausted cartridge. Just refill the cartridge with the refill resin. Pay attention to order the appropriate resin and size of the cartridge.



Nominal size		DN 20
Dimensions	A	R ½"
	L (mm)	317
	T (mm)	91 - 113,5 (adjustable)
	t (mm)	139
	H (mm)	326 (2,5 Litres), 424 (4 Litres), 544 (7 Litres), 983 (14 Litres), 992 (30 Litres)

Components / Order numbers

① **Double pressure gauge**
3228.00.902

② **BA-cartridge**
6600.00.974

③ **Digital capacity control**
3200.15.906

④ **Pressure reducing cartridge**
0315.00.900

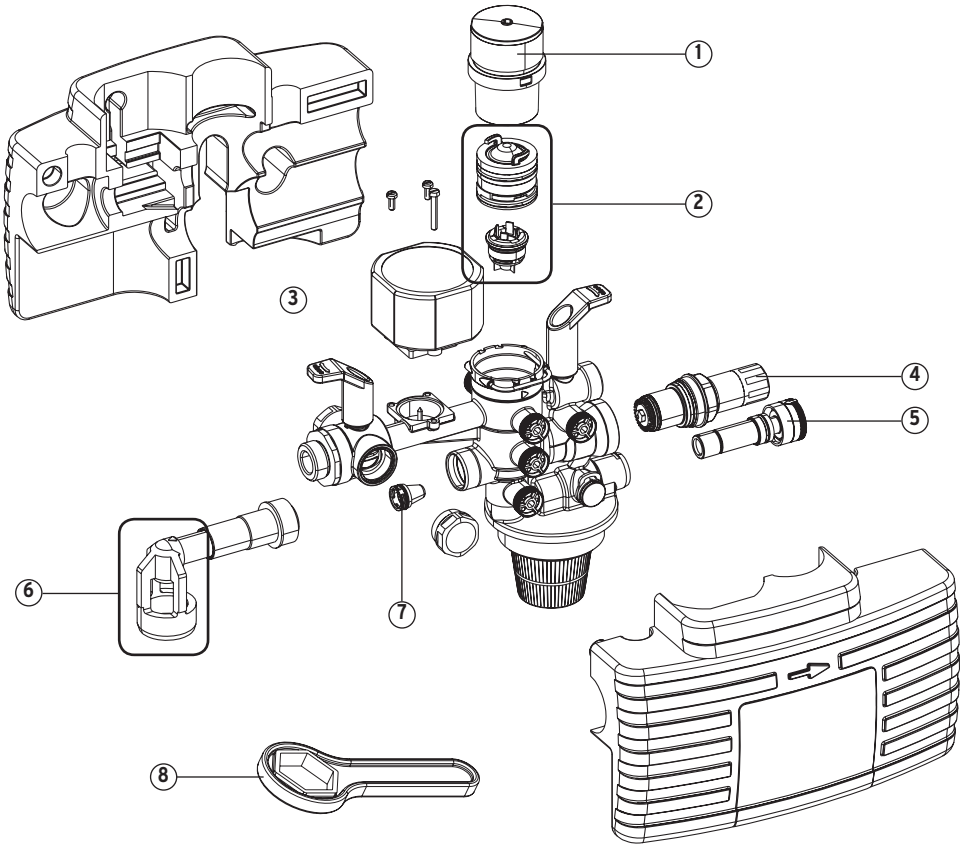
⑤ **Blending valve**
3200.15.914

⑥ **Tundish**
3228.00.901

⑦ **Strainer**
0330.20.908

⑧ **Service key**
4807.00.906

Exchange tool (no pict)
6600.00.970



Cartridge water softener (already filled)
2,5 Litres 3200.00.021
4 Litres 3200.00.001
7 Litres 3200.00.003
14 Litres 3200.00.004
30 Litres 3200.00.018

Cartridge demineralization (already filled)
2,5 Litres 3200.00.022
4 Litres 3200.00.011
7 Litres 3200.00.013
14 Litres 3200.00.014
30 Litres 3200.00.017

Conductivity meter from 09/2015 (no pict.)
3200.00.928

Cartridge pH-stabilization (already filled)
2,5 Litres 3200.00.023
4 Litres 3200.00.015
7 Litres 3200.00.005
14 Litres 3200.00.006
30 Litres 3200.00.016

Exchange-granules for water softener (no pict.)
2,5 Litres 3200.00.942
4 Litres 3200.00.904
7 Litres 3200.00.906
10 Litres 3200.00.937
14 Litres = 2 x 7 Litres
30 Litres = 3 x 10 Litres

Exchange-granules for demineralization (no pict.)
2,5 Litres 3200.00.943
4 Litres 3200.00.914
7 Litres 3200.00.916
10 Litres 3200.00.938
14 Litres = 2 x 7 Litres
30 Litres = 3 x 10 Litres

Exchange-granules for pH-stabilization (no pict.)
2,5 Litres 3200.00.944
4 Litres 3200.00.927
7 Litres 3200.00.926
10 Litres 3200.00.939
14 Litres = 2 x 7 Litres
30 Litres = 3 x 10 Litres

Mobile filling device Mini 3200



Field of application

SYR's filling device mini 3200 is designed for the mobile filling of heating systems with softened, fully demineralized water or water for pH-stabilization (VDI 2035/I). It includes all components required for a standard-conforming filling process.

Design

The mobile filling device mini 3200 from SYR includes the Connection Center 3228 All-in-one with integrated BA backflow preventer and a pressure reducing valve, digital capacity control, double pressure gauge, a 2,5 Litre cartridge for soft, fully demineralized water or water for pH-stabilization, an exchange granulate (only with the mobile filling device for full demineralization), two connection hoses (2m), a water hardness measuring device and a service report. The Connection Center can be converted from water softening to full demineralization.

3200 Mobile filling device mini

Materials

The functional parts are made of high-quality synthetic material. The body and internal synthetic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art.

Installation

Install the connection center 3200 All-in-one upstream of the heating system by means of the enclosed hoses under consideration of the correct direction of flow. Screw the respective cartridges from below to the connection center.

Use only potable water when filling the system.

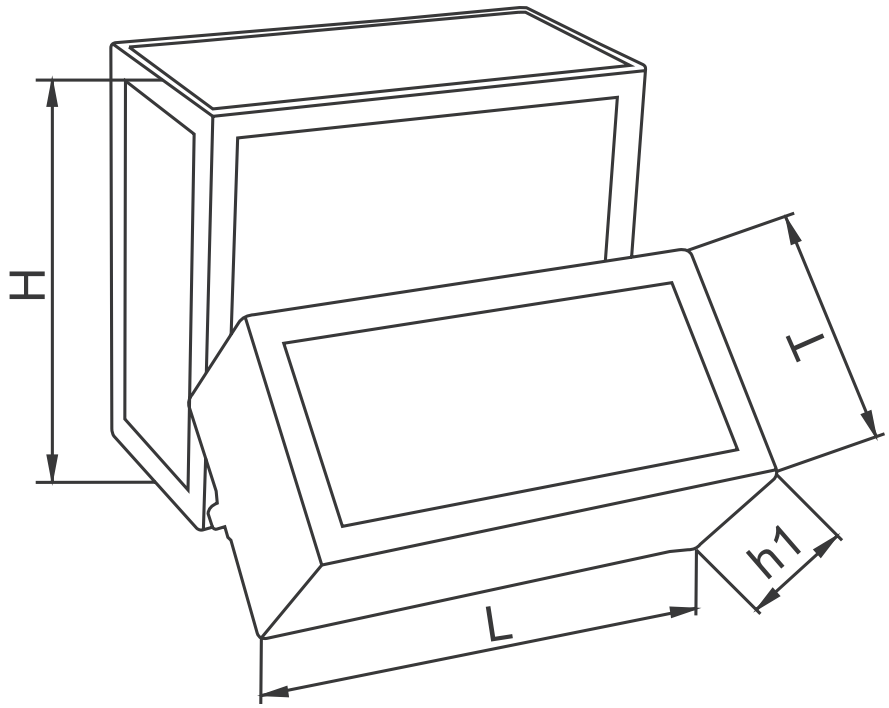
Technical specifications

Operating pressure:	max. 6 bar
Operating temperature:	max. 30 °C (inlet) max. 65 °C (outlet)
Mounting position:	main axis: vertical
Medium:	potable water
Outlet pressure:	1 - 5 bar
Flow rate:	0.3 m^3/h
Serial number:	3228.15. ...

Maintenance

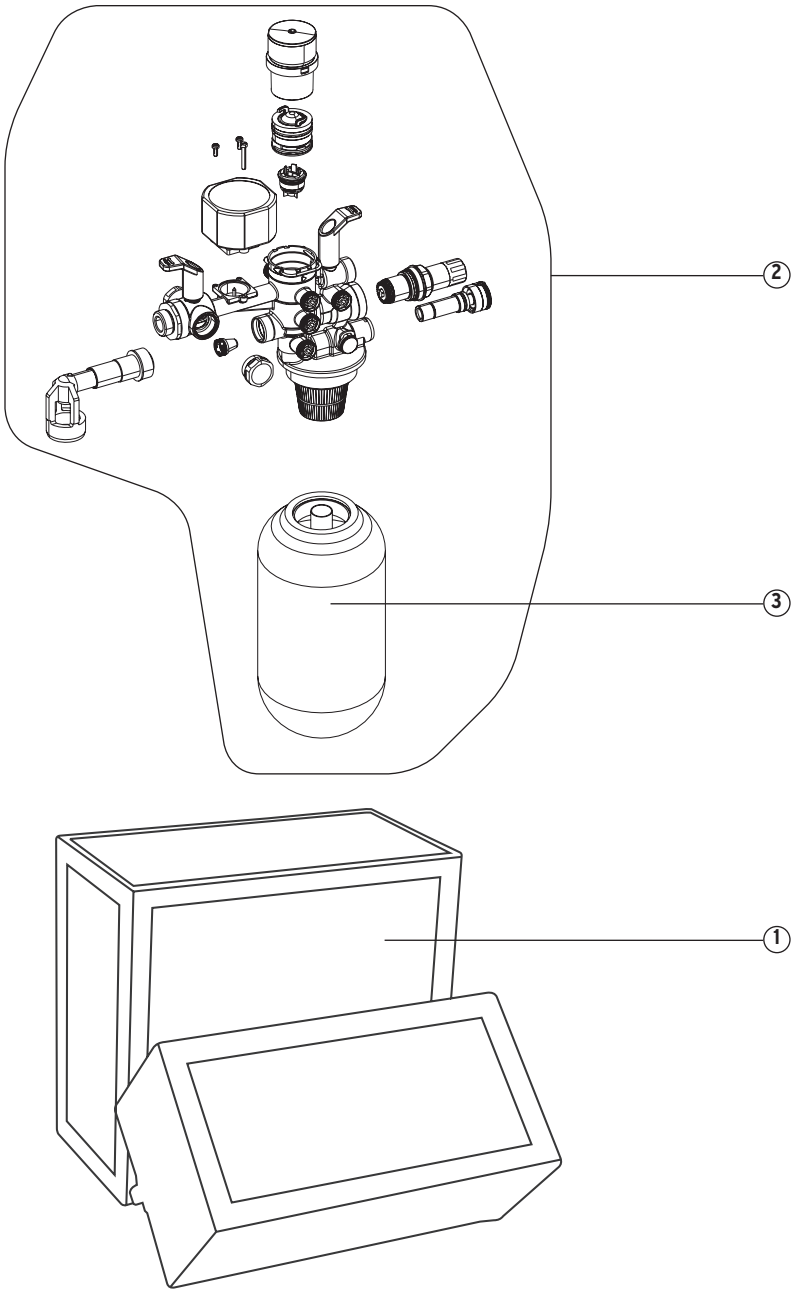
The Connection Center All-in-one produces an automatic signal when a cartridge is used up, in which case the latter only has to be refilled. As the functional parts are designed as cartridge system, the pressure reducer cartridge can be serviced and repaired without having to drain the system.

Service the pressure reducing valve on a regular basis. The BA backflow preventer has to be serviced once per year. As each pressure zone is equipped with connections for ball valves, use the relevant accessories (maintenance kit art. 6600.00.000) to make the functional test of the device.



Nominal size		
Dimensions	H (mm)	300
	h1 (mm)	170
	L (mm)	370
	T (mm)	230
	(Kg)	16

Components / Order numbers



① **Trolley case**

② **Connection Center All-in-one 3228**

③ **Cartridges 2,5 Litres**

Water softening
3200.00.021

Deminieralization
3200.00.022

pH-stabilization
3200.00.023

Exchange-granules for water softener (no picture)
2,5 Litres 3228.00.903

Exchange-granules for demineralization (no picture)
2,5 Litres 3228.00.913

Exchange-granules for pH-stabilization (no picture)
2,5 Litres 3228.00.923

Mobile filling device 3200



Field of application

SYR's filling device 3200 is designed for the mobile filling of heating systems with softened, fully demineralized water or water for pH-stabilization (VDI 2035/I). It includes all components required for a standard-conforming filling process.

Design

The mobile filling device 3200 from SYR includes a Euro Filling-Combi, type BA with an integrated BA backflow preventer and a pressure reducing valve, a Connection Center 3200 from SYR with a digital capacity control, a 4 Litre cartridge for soft, fully demineralized water or water for pH-stabilization, an exchange granulate (only with the mobile filling device for full demineralization), two connection hoses (2m), a water hardness measuring device and a service report. The Connection Center can be converted from water softening to full demineralization.

3200 Mobile filling device

Materials

The functional parts are made of high-quality synthetic material. The body and internal synthetic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art.

Installation

Install the BA Euro Filling-Combi and the Connection Center 3200 upstream of the heating system by means of the enclosed hoses under consideration of the correct direction of flow. Screw the respective cartridges from below to the Connection Center.

Use only potable water when filling the system.

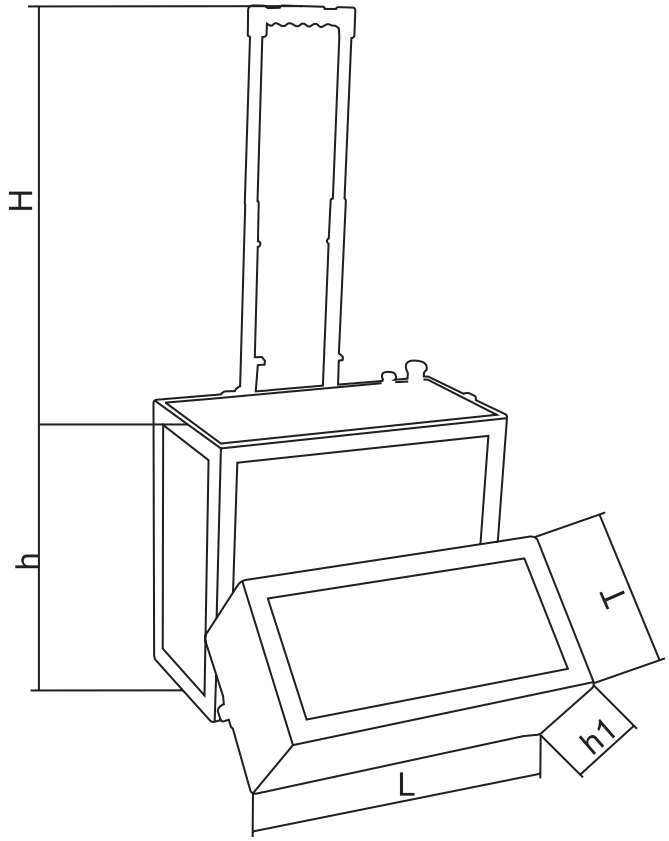
Technical specifications

Operating pressure:	max. 6 bar
Operating temperature:	max. 30 °C (Connection Center) max. 30 °C (inlet) - BA Euro Filling-Combi max. 65 °C (outlet) - BA Euro Filling-Combi
Mounting position:	Main axis: vertical
Medium:	Potable water
Outlet pressure:	1.5 - 5 bar
Flow rate:	0.5 m^3/h
Serial number:	3200 ...

Maintenance

The Connection Center produces an automatic signal when a cartridge is used up, in which case the latter only has to be refilled. As the functional parts are designed as cartridge system, the pressure reducer cartridge can be serviced and repaired without having to drain the system.

Service the pressure reducing valve on a regular basis. The BA backflow preventer has to be serviced once per year. As each pressure zone is equipped with connections for ball valves, use the relevant accessories (maintenance kit art. 6600.00.000) to make the functional test of the device.



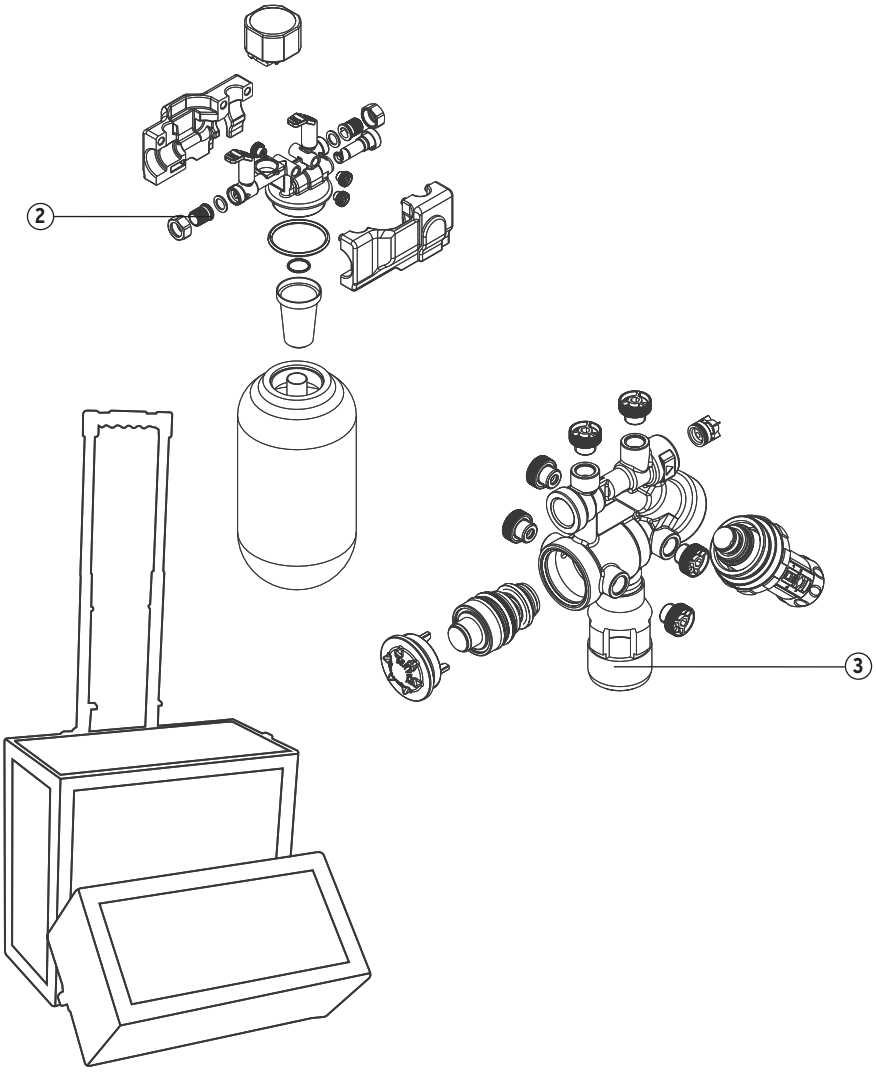
Nominal size		
Dimensions	H (mm)	390
	h (mm)	400
	h1 (mm)	170
	L (mm)	450
	T (mm)	230
	(Kg)	16

Components / Order numbers

① **Trolley case**

② **Connection Center 3200**

③ **Euro Filling-Combi type BA 6628**
6628.00.919



Cartridge water softener (already filled)
4 Litres 3200.00.001

Cartridge demineralization (already filled)
4 Litres 3200.00.011

Cartridge pH-stabilization (already filled)
4 Litres 3200.00.015

Exchange-granules forwater softener (no picture)
4 Litres 3200.00.904

Exchange-granules for demineralization (no picture)
4 Litres 3200.00.914

Exchange-granules for pH-stabilization (no picture)
4 Litres 3200.00.927

Fill-Caddy 3200



Field of application

SYR's Fill-Caddy 3200 is designed for the mobile filling of large heating plants with softened, fully demineralized water or water for pH-stabilization (VDI 2035/I). It includes all components required for a standard-conforming filling process.

Design

The Fill-Caddy 3200 from SYR includes a Euro Filling-Combi, type BA with an integrated BA backflow preventer and a pressure reducing valve, a backwashable pre-filter a Connection Center 3200 from SYR with a digital capacity control, an already filled 30 Litres cartridge, two connection ½" hoses (4m) with a quick couplings system, a water hardness measuring device and a service report.

Materials

The functional parts are made of high-quality synthetic material. The body and internal synthetic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art.

Installation

Install the BA Euro Filling-Combi and the connection center 3200 upstream of the heating system by means of the enclosed hoses under consideration of the correct direction of flow.

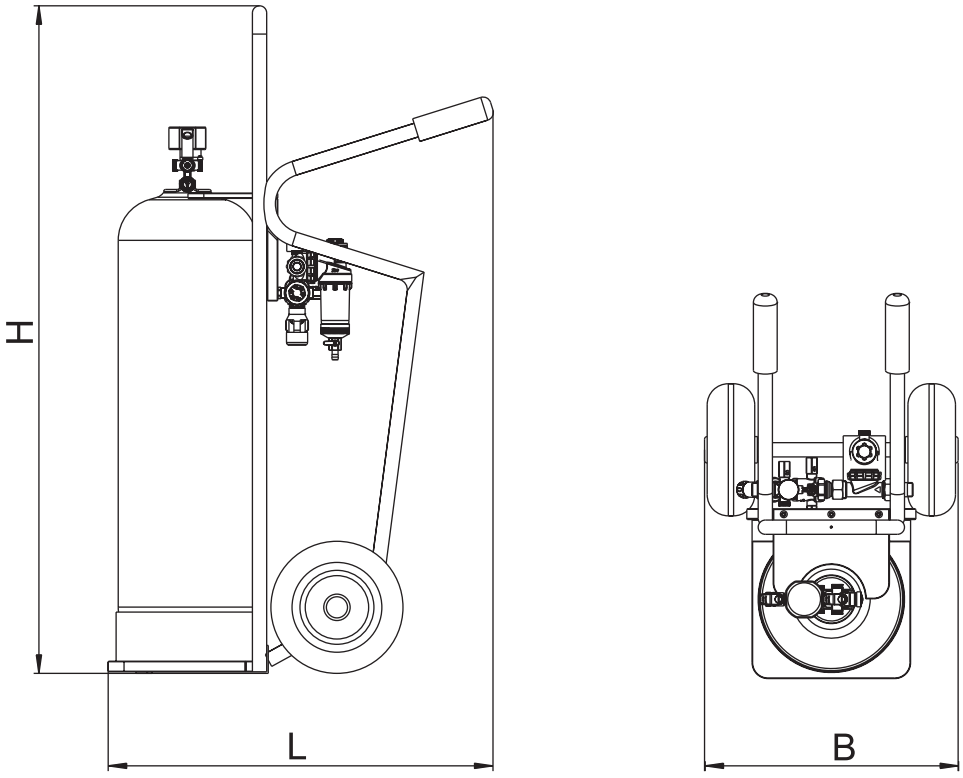
Use only potable water when filling the system.

Technical specifications

Operating pressure:	Pre-filter: max. 16 bar BA Filling-Combi: 10 bar Connecting Center: 6 bar
Operating temperature:	Pre-Filter: max. 30 °C BA Filling-Combi: max. 30 °C (inlet) BA Filling-Combi: max. 65 °C (outlet) Connection Center: max. 30 °C
Medium:	Potable water
Cartridge-Volume	30 Litre
Capacity:	109.200 litres x °dH (water softening) 37.500 litres x °dH (demineralization) 27.850 litres x °dH (pH-stabilization)
Serial number:	3200.15. ...

Maintenance

The Connection Center produces an automatic signal when a cartridge is used up, in which case the latter only has to be refilled. As the functional parts are designed as cartridge system, the pressure reducer cartridge can be serviced and repaired without having to drain the system. Service the pressure reducing valve on a regular basis. The filter needs to be serviced every 6 months or when the flow rate is reduced due to increased pressure loss. The BA backflow preventer has to be serviced once per year. As each pressure zone is equipped with connections for ball valves, use the relevant accessories (maintenance kit art. 6600.00.000) to make the functional test of the device.



Nominal size		
Dimensions	H (mm)	1300
	L (mm)	600
	B (mm)	570

Components / Order numbers

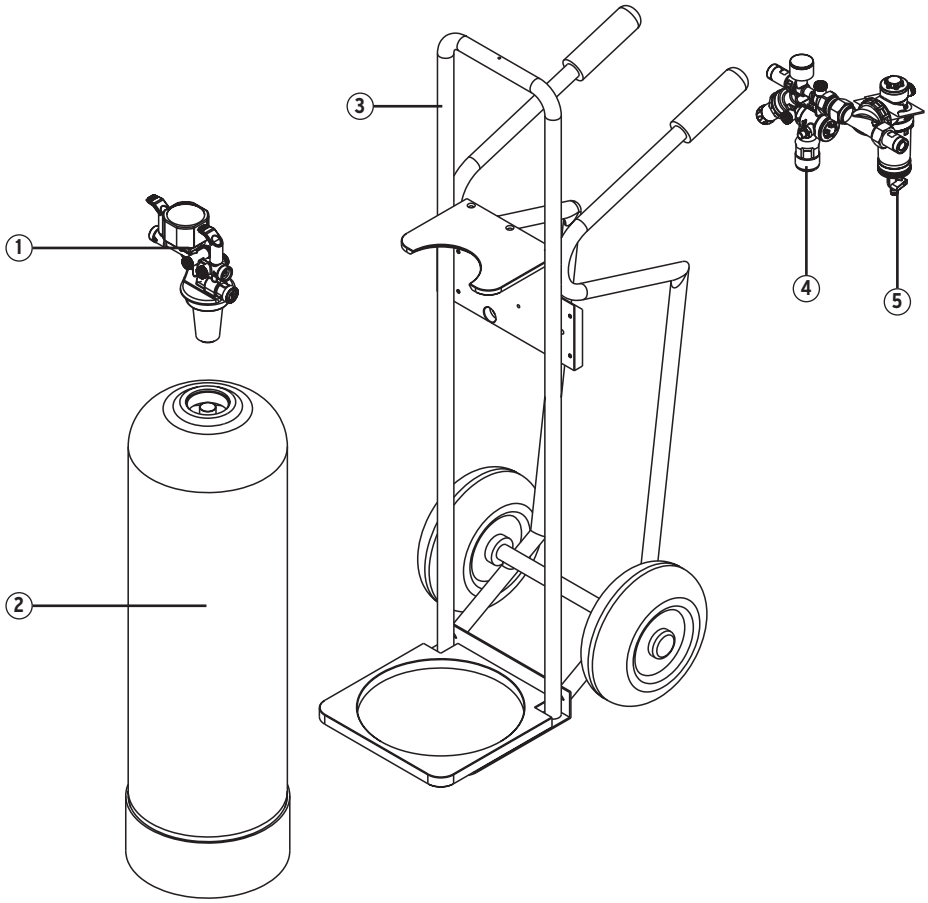
① **Connecting Center**
3200.15.010

② **Cartridge (already filled)**
30 Litres

③ **Sack Trolley**

④ **BA Euro Filling-Combi**
6628.00.919

⑤ **Pre-Filter**



no picture
water hardness measuring device
3000.00.913

Exchange-granules for water softener (no picture)
30 litre = 3 x 10 litres
3200.00.937

Exchange-granules for demineralization (no picture)
30 litre = 3 x 10 litres
3200.00.938

Exchange-granules for pH-stabilization (no picture)
30 litre = 3 x 10 litres
3200.00.939

Fully automatic filling system for heating installations 3200

Filling pump for heating inhibitors



Field of application

Fully automatic filling according to DIN EN 1717 heating installations with with softened, fully demineralized water or water for pH-stabilization (VDI 2035/I) and DIN EN 1717. The fully automatic filling automatically interrupts the filling process when the capacity of the cartridge is exhausted. That ensures the permanent filling with treaded water. A leakage protection prevents uncontrolled filling of the heating system.

Design

The fully automatic filling includes a pre-filter, a conductivity sensor, digital capazity-control, a leakkage modul, blending valve and backflow preventer BA, pressure reducer and pressure sensor.
The fully automatic filling can be used for softened, fully demineralized water or water for pH-stabilization depending of the choise of the cartridge. The cartridges are refillable and availlable in the sizes 2,5 4, 7, 14 and 30 Litres.

3200 Fully automatic filling

Materials

The functional parts are made of high-quality synthetic material. The body and internal synthetic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art.

Installation

Install the Connecting Center before the heating installation. Do not install the device in rooms liable to humidity or frost. Mount the cartridges from below to the Connecting Center. The 14 litre-cartridges contain a pedestal (included in delivery).

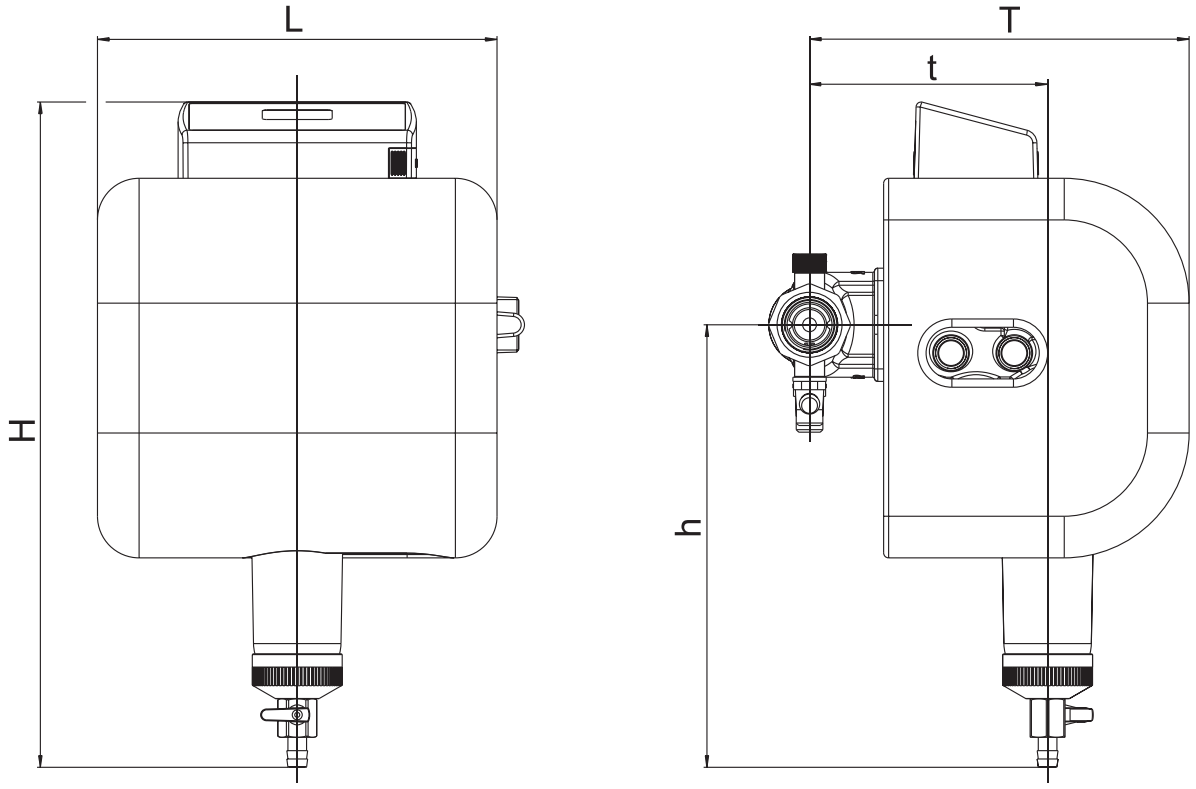
Install the Connecting Center horizontally in the pipe under consideration of the direction of flow and without applying stresses.

Technical specifications

Operating pressure:	Pre-filter: 16 bar Backflow preventer BA: 10 bar Connecting Center: 6 bar
Operating temperature:	Pre-filter: 30 °C Backflow preventer BA: 30 °C (inlet) 65 °C (outlet) Connecting Center: 30 °C
Outlet pressure	1,5 - 5 bar (factory set to 3 bar)
Medium:	potable water
Voltage power supply unit (optional):	9V DC
Batteries:	4 x LR06
Load external potential-free contact	IN: min. 12V / 20 mA OUT: max. 24V / 2A
Serial-No:	3200.20.030

Maintenance

The fully automatic filling reports a exhausted cartridge it only needs to be refilled. the maintenance of the pressure reducer is possible without draining the heating installation. The filter needs to be serviced every 6 months or when the flow rate is reduced due to increased pressure loss according to DIN EN 806,5. The BA backflow preventer has to be serviced once per year. As each pressure zone is equipped with connections for ball valves, use the relevant accessories (maintenance kit art. 6600.00.000) to make the functional test of the device.



Nominal size		
Dimensions	L (mm)	240
	H (mm)	400
	h (mm)	266
	T (mm)	228
	t (mm)	143

Components / Order numbers

① **Control unit**

② **Cover**

③ **HWS-Flange**

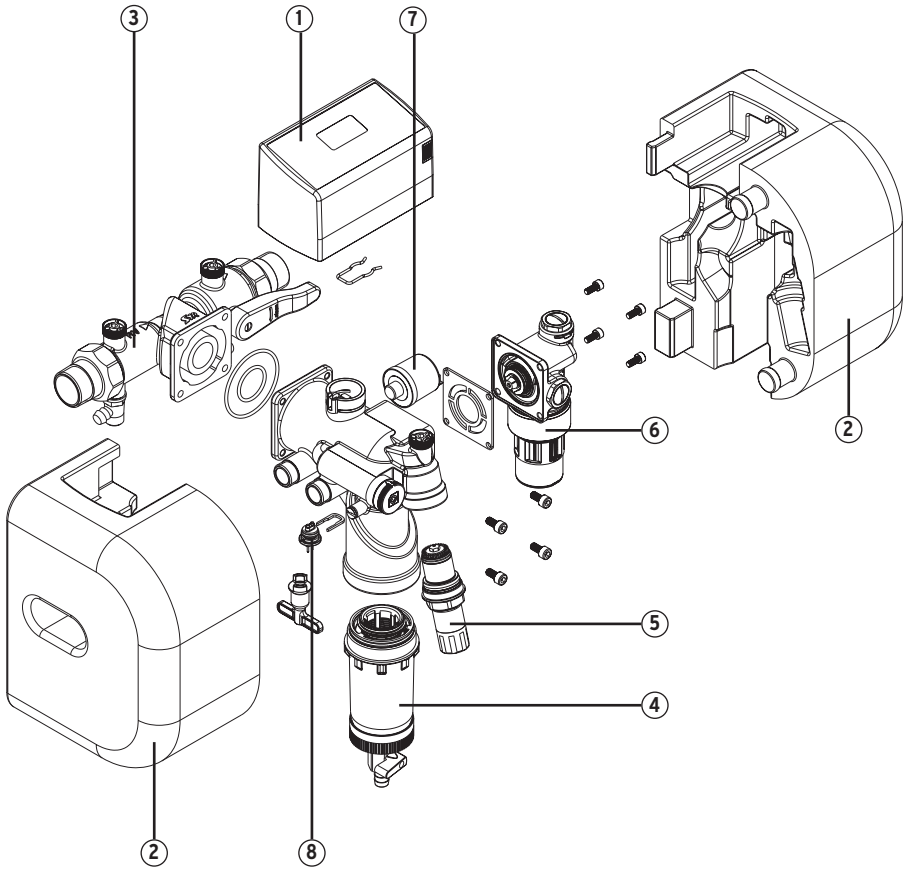
④ **Filter-bowl**
3200.00.929

⑤ **Pressure reducing valve**
6628.00.904

⑥ **Backflow preventer cartridge**
6625.00.900

⑦ **Pressure sensor**
3200.00.930

⑧ **Conductivity measurement cartridge**
3200.00.928



Cartridge water softener (already filled)
2,5 litres 3200.00.021
4 litres 3200.00.001
7 litres 3200.00.003
14 litres 3200.00.004
30 litres 3200.00.018

Cartridge demineralization (already filled)
2,5 litres 3200.00.022
4 litres 3200.00.011
7 litres 3200.00.013
14 litres 3200.00.014
30 litres 3200.00.017

Cartridge pH-stabilization (already filled)
2,5 litres 3200.00.023
4 litres 3200.00.015
7 litres 3200.00.005
14 litres 3200.00.006
30 litres 3200.00.016

Exchange-granules for water softener (no pict.)
2,5 litres 3200.00.942
4 litres 3200.00.904
7 litres 3200.00.906
10 litres 3200.00.937
14 litres = 2 x 7 litres
30 litres = 3 x 10 litres

Exchange-granules for demineralization (no pict.)
2,5 litres 3200.00.943
4 litres 3200.00.914
7 litres 3200.00.916
10 litres 3200.00.938
14 litres = 2 x 7 litres
30 litres = 3 x 10 litres

Exchange-granules for pH-stabilization (no pict.)
2,5 litres 3200.00.944
4 litres 3200.00.927
7 litres 3200.00.926
10 litres 3200.00.939
14 litres = 2 x 7 litres
30 litres = 3 x 10 litres

FillDOS 3220

Filling pump for heating inhibitors



Field of application

The SYR FillDOS 3220 is a dosing pump used for simple filling of heating systems with appropriate inhibitors (e.g. FillSafe plus 3220.00.001 or pH value increase 3220.00.010).

Design

The SYR FillDOS 3220 consists of the pump head, a connection hose, a connecting piece ¼" for connection to the connection center 3200 and a shaft (SW 6) for operating a cordless screwdriver. With this screwdriver the inhibitor is pumped into the heating system. Furthermore, there is an adapter ¼" to ¾" with a changeover to a commercial drain valve and an empty 2- litre container for various inhibitors.

Materials

The functional parts are made of high-quality synthetic material. The body and internal synthetic parts are made of shock-resistant thermoplast and the rubber parts of ageing-resistant elastomer. All remaining functional parts are made of a dezincification-resistant brass alloy and stainless steel. The materials used are state-of-the-art.

Installation

The corresponding inhibitor (accessories) is supplied in a 2 litre container, which is screwed at the pump head and pumped into the heating system using a cordless screwdriver.

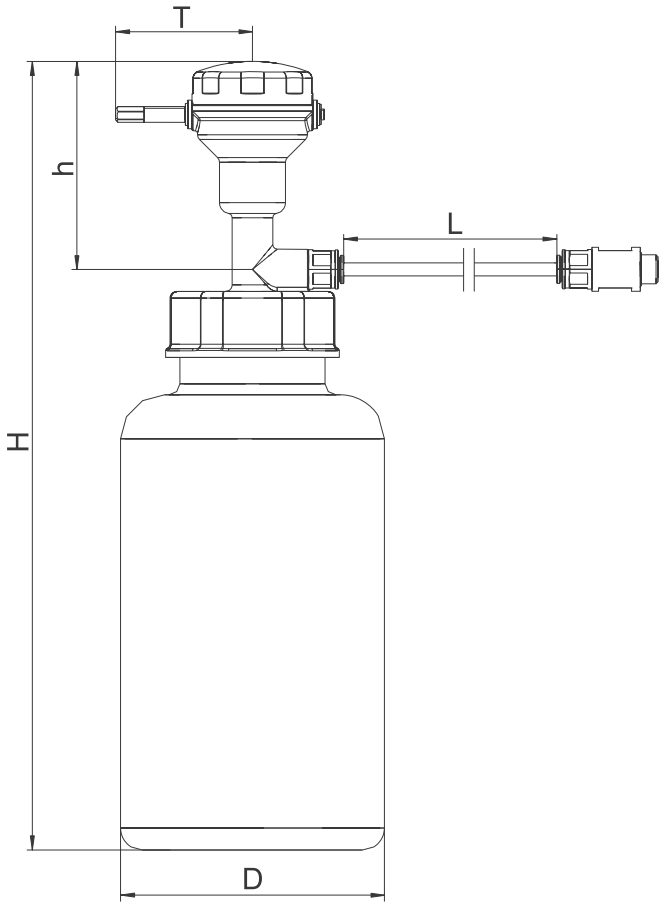
The filling pump is screwed via the connecting piece into a ¼" connection (e.g. on the output side manometer plug of the SYR Connection Center). If there is no possible connection to a ¼" port , you can use the included adapter from ¼" to ¾" flat seal (e.g. for a drain valve).

Technical specifications

operating pressure:	max. 10 bar
Fluid:	anti-corrosion fluid, water, non- adhesive fluids (Attention: not suitable for sealant)
Rotation speed:	max. 500 U/min
Connecting size shaft:	¼" Bit support
Volume container:	max. 2 Litres
Connecting size canister thread (nach DIN 61):	ø outside: 65,2 mm ø core: 61,8 mm
Serial number:	3220.00.000

Maintenance

Basically the pump is maintenance-free. Only the o-rings of the pump head should be replaced at regular intervals.



Nominal size		
Dimensions	H (mm)	355
	h (mm)	95
	T (mm)	63
	D (mm)	120
	L (mm)	200

Components / Order numbers

① **Pump head**

② **Connecting piece**

③ **Hose, 2m**

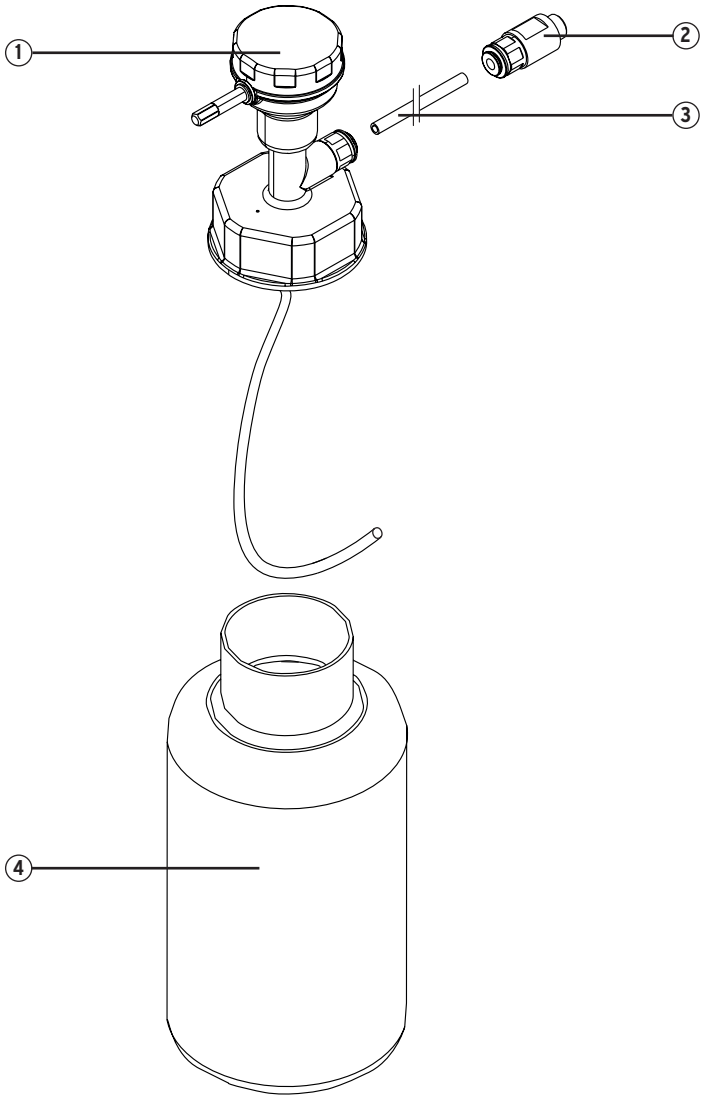
④ **Accessories**
FillSafe plus 3220, 2 litres
3220.00.010

Accessories
pH-value increase, 2 litres
3220.00.001

no picture
Reducing fitting ¼" / ¾"

no picture
6 O-Rings for pump head

no picture
Molybdenum measuring device
3220.00.900





Heating Valves

Technical Information	360
Heating filter HF 3415	365
Heating filter HF 3415	369
BA-Filling-Combi 6628	373
BA-Filling-Combi 6628 Plus	377
BA-Filling-Combi 6628 Plus with water meter	381
BA-Filling-Combi 6628.2	385
CA-Filling-Combi 6828	389
Euro CA-Filling-Combi 6827 with isolating valve	393
Euro CA-Filling-Combi 6827 with isolating valve	397
Backflow Preventer STBA 200	401
Backflow Preventer STBA 400	405
Backflow Preventer STBA 600	409
Filling-Group 2128	413
Pressure Relief Valve 1915	417
Pressure Relief Valve 1918	421
Pressure Relief Valve for solar systems 8115	425
Pressure Relief Valve 1917	429
Exchange cartridge 1916	433
Water level limiter 932	437
Water level limiter 933	441
Thermal safety valve 3065	445
Differential Pressure Regulator 390	449
Differential Pressure Regulator 391	453
Draft Regulator 2620	457
Automatic air vent 62	461
Pressure Relief Valve 6104/6105	465

Thermal safety valves

Thermal safety valves are designed for heating capacities of up to a maximum of 100 kW. These protective devices have to bear a TÜV-approval mark and be constructed and tested according to EN 14597.

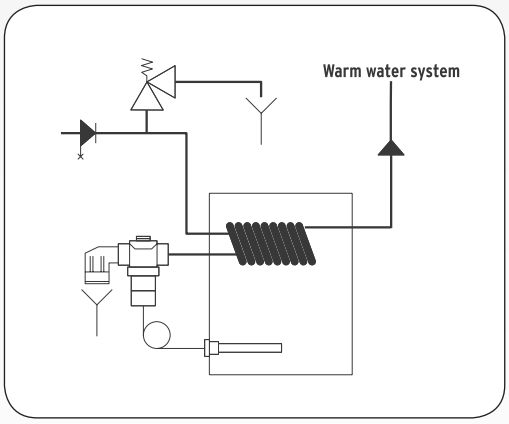


Thermal safety valves are designed for the following applications:

Application 1:
Water heaters directly fired with solid fuels or exhaust gases.

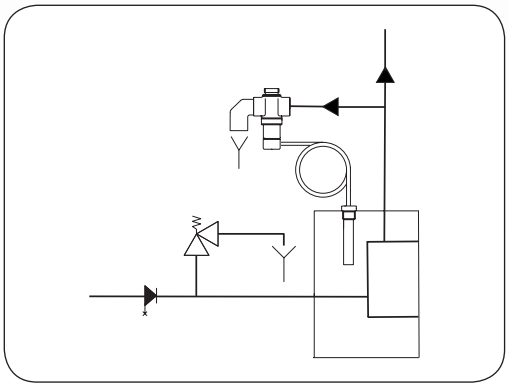
Application 2:
Water heaters that can be directly fired with solid fuels via unvented heating systems according to EN 12828 (multi fuel boilers and multi fuel changeover boilers).

Application 3:
For the protection of unvented heating systems fired with solid fuels or exhaust gases according to EN 12828 .

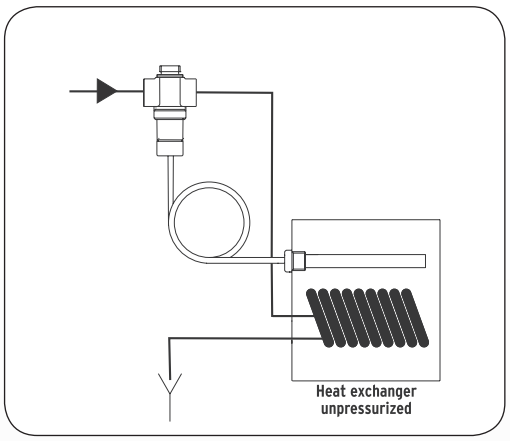


Installation instructions:

Type of installation 1:
In this application, the thermal safety valves are exclusively used for the protection of unvented water heaters directly fired with solid fuels or exhaust gases. When water heaters cannot automatically stop the heat build-up, the thermal safety valves prevent the temperature from exceeding 95°C by heat dissipation. In no event, they replace the pressure relief valve required for this type of water heater. While the diaphragm pressure relief valve is mounted in the cold water pipe, the thermal safety valve has to be installed on the hot side in the water heater at the place (connecting piece) defined by the manufacturer. When installing, it has to be ensured that no stagnation is possible at the water heater's connection.



Type of installation 2:
This type of protection is designed for heating installations that are directly connected to water heaters as multi fuel boilers, multi fuel changeover boilers and open fireplaces.
The temperature probe has to be located in the heating water near the heat generator – i.e. in the boiler as close as possible to the firing, at the spot with the maximum temperature. The thermal safety valve has to be connected to the outgoing hot water pipe. A tundish connects the outlet to the drain.



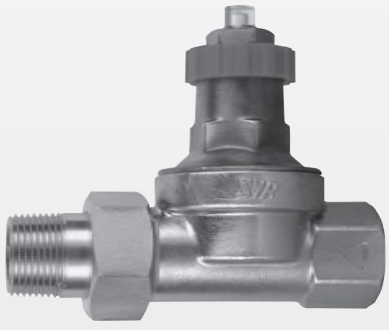
Type of installation 3:
Another way of protecting solid fuel fired boilers are integrated heat exchangers that are not installed for the hot water production but exclusively for safety reasons for the heat dissipation. The thermal safety valve can be installed in two ways for this application.
When the thermal safety valve is mounted between the boiler und the drain connection, a diaphragm pressure relief valve has to be installed between the protecting device and the heat exchanger connection, in order to prevent excess service pressure in the heat exchanger. It is generally preferable to mount the thermal safety valve in the cold water inlet upstream of the heat exchanger, as this prevents limescale build-up in the thermal safety valve.

Differential pressure regulator

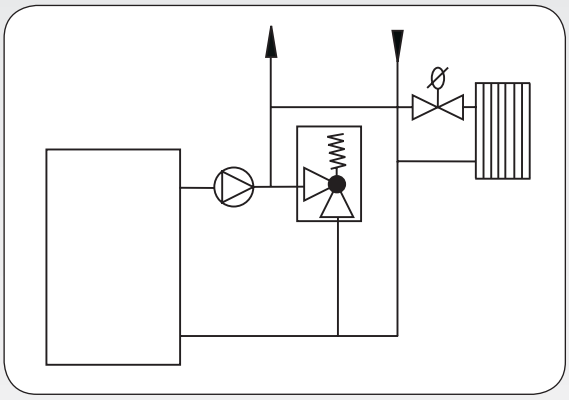
Differential pressure regulators are designed to stabilize the pressure in hot water based heating systems equipped with a pump. They reduce the flowing noise in the installation, especially when throttling the radiator valves. The backflow temperature in the boiler increases, which prevents corrosion due to the condensation of flue gas. In case of closed radiator valves and temperature settings controlled by outside temperatures, differential pressure regulators ensure a permanent water circulation at the supply pipe sensor. When in case of gas circulating water heaters the thermostatic valves or radiator valves are closed, they ensure a minimum circulating water volume. The differential pressure regulator has to be mounted between the radiator supply line and the return line.



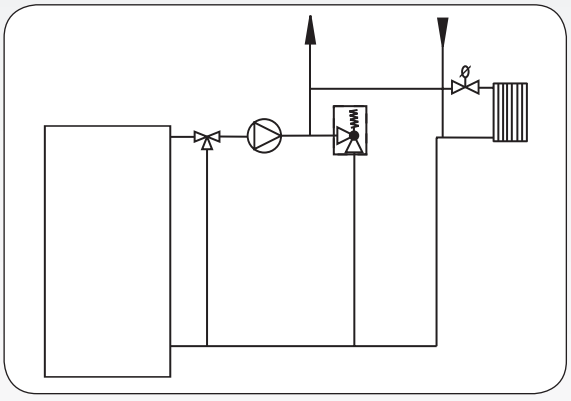
Type 390



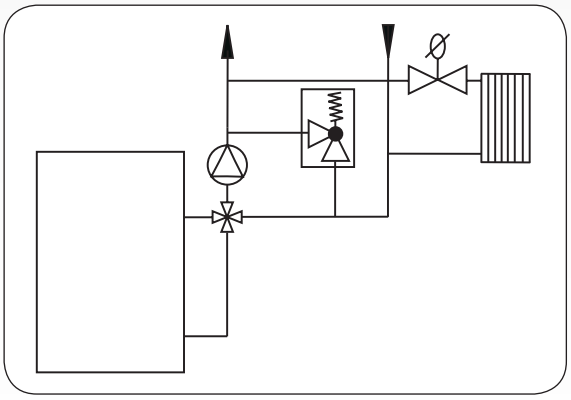
Type 391



Installation when the system is not equipped with a mixing valve



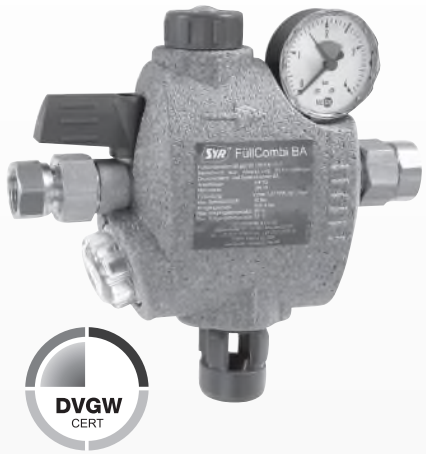
Installation when the system is equipped with a 3-way mixing valve



Installation when the system is equipped with a 4-way mixing valve

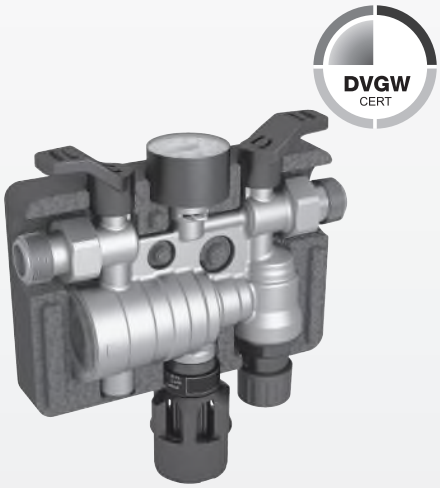
Automatic filling of unvented heating installations

SYR BA-FillingCombi



SYR's BA FillingCombi prevents the backpressure, backflow and backsiphonage of heating water into the potable water system. The integrated BA backflow preventer ensures a permanent connection between the heating installation and the potable water system in accordance with EN 1717. When installing the connecting pipe, it has to be made sure that water cannot stagnate. Heating water with inhibitors (anti-corrosive and anti-freeze agents) can also be permanently connected to the drinking water system via the filling combination. The BA FillingCombi featuring a stop valve, a pressure reducing valve, a pressure gauge, a BA backflow preventer and a drain connection includes all components required for filling heating sytems in a reliable way. The time-consuming connection of a hose is no longer necessary, as the BA FillingCombi makes it possible to automatically fill and refill heating installations. The integrated pressure reducing valve ensures that the heating system is always filled at the desired service pressure. When the filling process is completed, the stop valve of the BA FillingCombi should be closed again.

SYR CA FillingCombi plus



SYR's CA FillingCombi plus, like the BA version prevents the backpressure, backflow and backsiphonage of heating water into the potable water system. The integrated CA backflow preventer ensures a permanent connection between the installation and the potable water system in accordance with EN 1717 and protects the drinking water system up to and including fluid category 3. The CA FillingCombi featuring a stop valve, a pressure reducing valve, a pressure gauge and a backflow preventer includes all components for a reliable fill and refill of the installation.

Air separation and filtration of heating water





SYR Heating system filter HF3415

Pearl-technology
The Pearl-technology fighting sediments and hematite is the secret of the efficiency of SYR's heating system filter HF 3415: the synthetic pearls in the HF 3415 are electrostatically charged due to the volume flow circulating in the heating installation. As a result, sludge developing in the heating system (hematite) and suspended sediments adhere to these pearls.

Automatic vent
The filter's upper part stores the air entering the heating installation, which is then released through the automatic vent.

Magnetic bar against magnetite
The core element of the HF 3415 is the magnetic bar placed in an immersion sleeve made of synthetic material. Thus, it remains dry as it does not come into contact with the fluid. SYR's advantage: the hematite cannot leave a deposit on the bar since the Pearl Technology will eliminate it beforehand.
The magnetic bar attracts the magnetized dirt particles in the installation so efficiently that they cannot return into the water circuit via the volume flow.

Clean backwashing
An ideal solution is to combine the backwashable heating system filter HF 3415 with the BA FillingCombi, which can be directly connected to the cross-type flange. As soon as the ball valve of the HF 3415 is opened, a mechanism interrupts the hydraulic volume flow. The backwash water eliminates the pearls' electrostatic charge and the hematite is flushed out through the filter along with the water. The bar has to be pulled out manually at the same time. The bound magnetite is now in „free suspension" and will then be flushed out when backwashing without leaving residues.

Easy mounting with the cross-type flange
The HF 3415 can be installed in horizontal or vertical position with the cross-type flanges DN 20, 25 and 32. When mounted with SYR's FillingCombi, the HF 3415 can be upgraded with SYR's automatic backwash system RSA, turning it into a fully automatic device.

Installation video

3-D-product animation

Heating filter HF 3415
3415

Backwash filter with automatic air vent for heating installations



Field of application

The heating system filter HF 3415 from SYR is a combined dirt and air separator for heating systems and is designed for the filtration, desludging, magnetic separation and degasification of hot water heating circuits in accordance with EN 12828. The high-performance filter combination removes coarse-grained and fine-grained impurities (e.g. rusty sludges) that may lead to malfunctions of control and regulating valves, as well as noisy and corrosive gases (e.g. nitrogen, oxygen). It also removes magnetic and non-magnetic particles and the cleaning of the filter can easily be done by backwashing. To mount the device in the pipe, use SYR's universal flange with additional outlet connections for heating systems listed under Accessories.

Design

The heating system filter 3415 from SYR is composed of a body chamber with a backwash filter and is equipped with a self-actuating air separator including a gas venting valve and a magnetic separator. To mount the flange, use the hexagonal socket screws and the corresponding wrench included in the delivery.

3415 Heating filter

Materials

The body, the internal parts, the stop valve and the gasket are made of a high-quality low-lead brass alloy and stainless steel or elastomeric synthetic material (hot water and ageing resistant). The heating system filter is also equipped with an insulating cover.

Installation

Always install the body of the heating system filter in vertical position in the supply or return line. Make sure that the installation space is dry and frost-free. To ensure perfect backwashing, observe a free space of at least 400 mm below the heating system filter. Connect a manual or automatic filling system by means of the universal flange with additional outlet connections required for the installation. We recommend the convenient automatic BA Filling-Combi, type 6628.
When mounting the device, prevent any water stagnation (supply pipe max. 10 x DN).

Mount the device with the universal flange with additional outlet connections (to be ordered separately). It is suited for vertical and horizontal pipes.

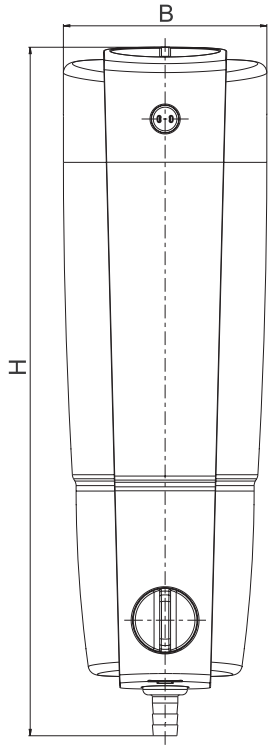
Install the flange in the pipe under consideration of the direction of flow without applying stresses. The surface of the flange has to be in vertical position.

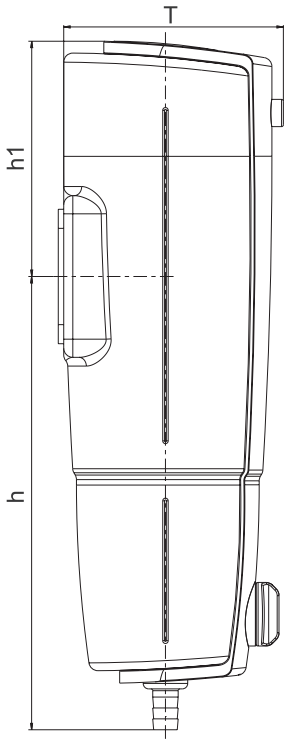
Technical specifications

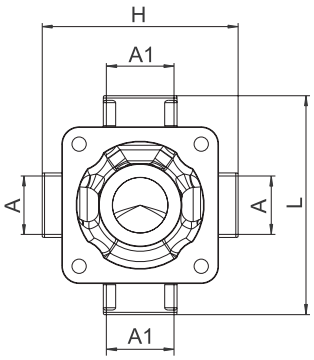
Fluid:	heating water
Service pressure:	max. 10 bar
Service temperature:	max. 110 °C
Mounting position:	main axis in vertical position
Flow rate/ Pressure loss:	DN 20 - 32: 2 m^3/h, 0.1 bar
Kvs-value:	8,5
Min. pressure for backwashing:	1.5 bar
Serial number:	3415.00.000

Maintenance

Backwash the heating system filter on a regular basis depending on the accumulation of dirt. Drain the backwash water (3 liters) by means of a suitable hose or collect it in a bucket. The backwashing process requires a standard-conforming potable water connection at the flange to ensure that the filter can be flushed top down when backwashing. Backwashing can be automated with the automatic backwash system RSA 2316.00.081.







flange not included in delivery

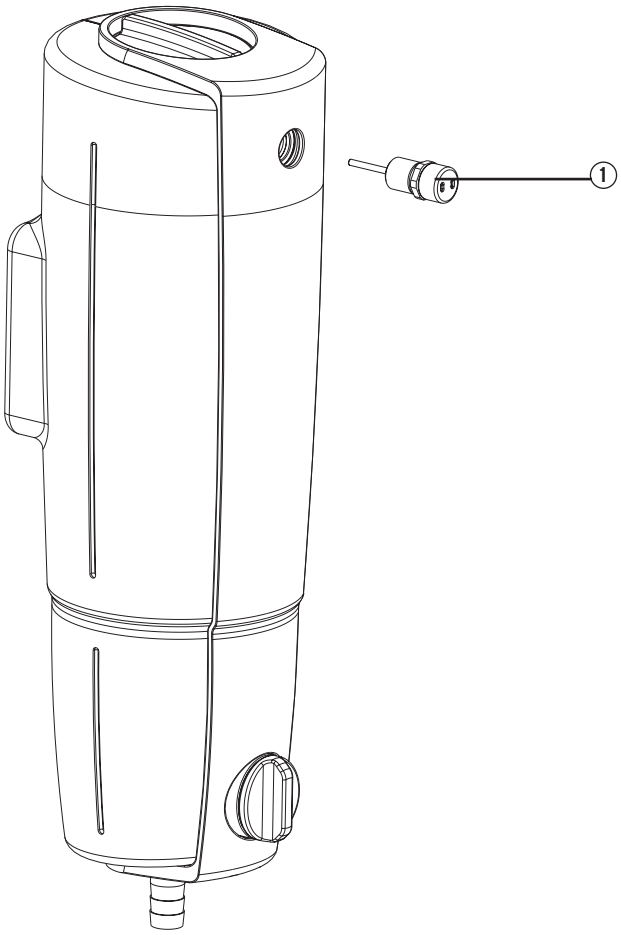
Dimensions of filter	H (mm)		379	
	h (mm)		249,5	
	h1 (mm)		129,5	
	B (mm)		112	
	T (mm)		121	
		DN 20	DN 25	DN 32
Dimensions of flange	A	Rp ½"	Rp ½"	Rp ½"
	A1	Rp ¾"	Rp 1"	Rp 1¼"
	H (mm)	95	100	108
	L (mm)	85	85	85

Accessories:

Flange with additional outlet connections	DN 20: 3415.20.000
Flange with additional outlet connections	DN 25: 3415.25.000
Flange with additional outlet connections	DN 32: 3415.32.000
BA Filling-Combi DN 20: 6628.20.000	

Components / Order numbers

①
Vent
3415.00.900



Heating filter HF 3415 mini 3415

Backwash filter with automatic air vent for heating installations



Field of application

The heating system filter HF 3415 from SYR is a dirt separator for heating systems and is designed for the filtration, desludging and magnetic separation of hot water heating circuits in accordance with EN 12828. The high-performance filter combination removes coarse-grained and fine-grained impurities (e.g. rusty sludges) that may lead to malfunctions of control and regulating valves. It also removes magnetic and non-magnetic particles and the cleaning of the filter can easily be done by backwashing. To mount the device in the pipe, use SYR's universal flange with additional outlet connections for heating systems listed under Accessories.

Design

The heating system filter 3415 from SYR is composed of a body chamber with a backwash filter including a magnetic separator. To mount the flange, use the hexagonal socket screws and the corresponding wrench included in the delivery.

3415 mini Heating filter

Materials

The body, the internal parts, the stop valve and the gasket are made of a high-quality low-lead brass alloy and stainless steel or elastomeric synthetic material (hot water and ageing resistant). The heating system filter is also equipped with an insulating cover.

Installation

Always install the body of the heating system filter in vertical position in the supply or return line. Make sure that the installation space is dry and frost-free. To ensure perfect backwashing, observe a free space of at least 400 mm below the heating system filter. Connect a manual or automatic filling system by means of the universal flange with additional outlet connections required for the installation. We recommend the convenient automatic BA Filling-Combi, type 6628.
When mounting the device, prevent any water stagnation (supply pipe max. 10 x DN).

Mount the device with the universal flange with additional outlet connections (to be ordered separately). It is suited for vertical and horizontal pipes.

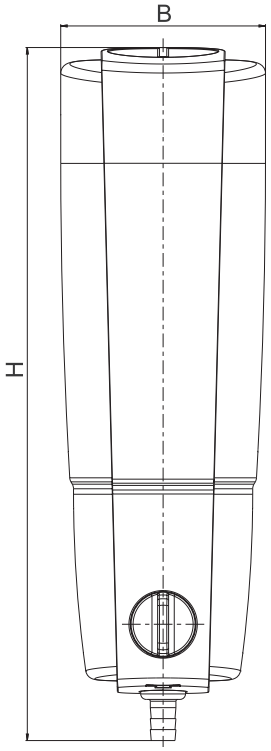
Install the flange in the pipe under consideration of the direction of flow without applying stresses. The surface of the flange has to be in vertical position.

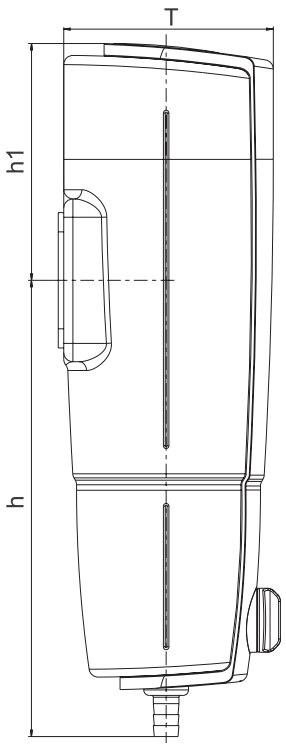
Technical specifications

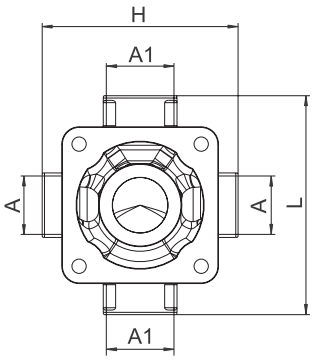
Fluid:	heating water
Service pressure:	max. 10 bar
Service temperature:	max. 110 °C
Mounting position:	main axis in vertical position
Flow rate/ Pressure loss:	DN 20 - 32: 2 m^3/h, 0.1 bar
Kvs-value:	8,5
Min. pressure for backwashing:	1.5 bar
Serial number:	3415.00.003

Maintenance

Backwash the heating system filter on a regular basis depending on the accumulation of dirt. Drain the backwash water (3 liters) by means of a suitable hose or collect it in a bucket. The backwashing process requires a standard-conforming potable water connection at the flange to ensure that the filter can be flushed top down when backwashing. Backwashing can be automated with the automatic backwash system RSA 2316.00.081.







flange not included in delivery

Dimensions of filter	H (mm)		379	
	h (mm)		249,5	
	h1 (mm)		129,5	
	B (mm)		112	
	T (mm)		119	
		DN 20	DN 25	DN 32
Dimensions of flange	A	Rp ½"	Rp ½"	Rp ½"
	A1	Rp ¾"	Rp 1"	Rp 1¼"
	H (mm)	95	100	108
	L (mm)	85	85	85

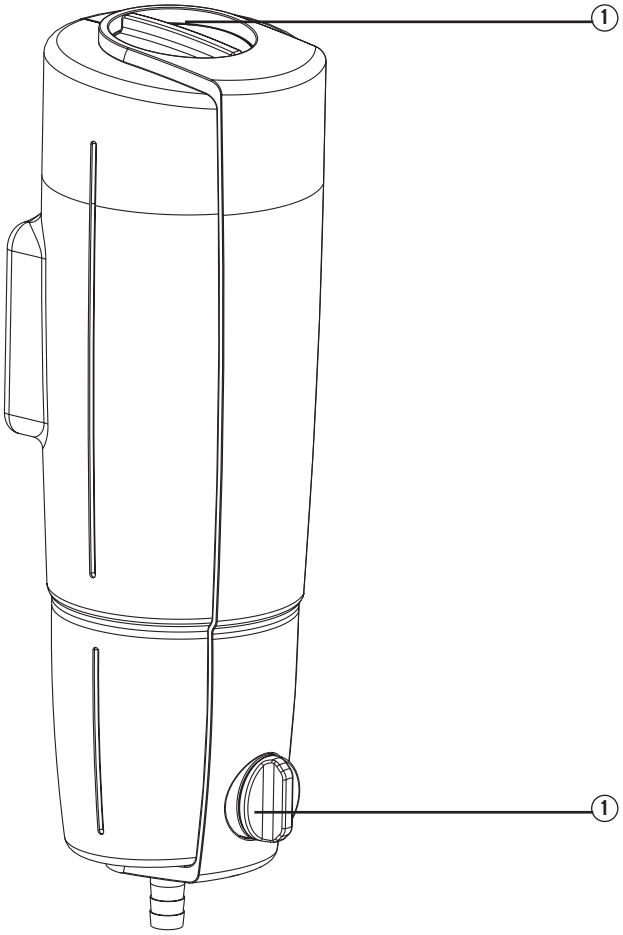
Accessories:

Flange with additional outlet connections	DN 20: 3415.20.000
Flange with additional outlet connections	DN 25: 3415.25.000
Flange with additional outlet connections	DN 32: 3415.32.000
BA Filling-Combi DN 20: 6628.20.000	

Components / Order numbers

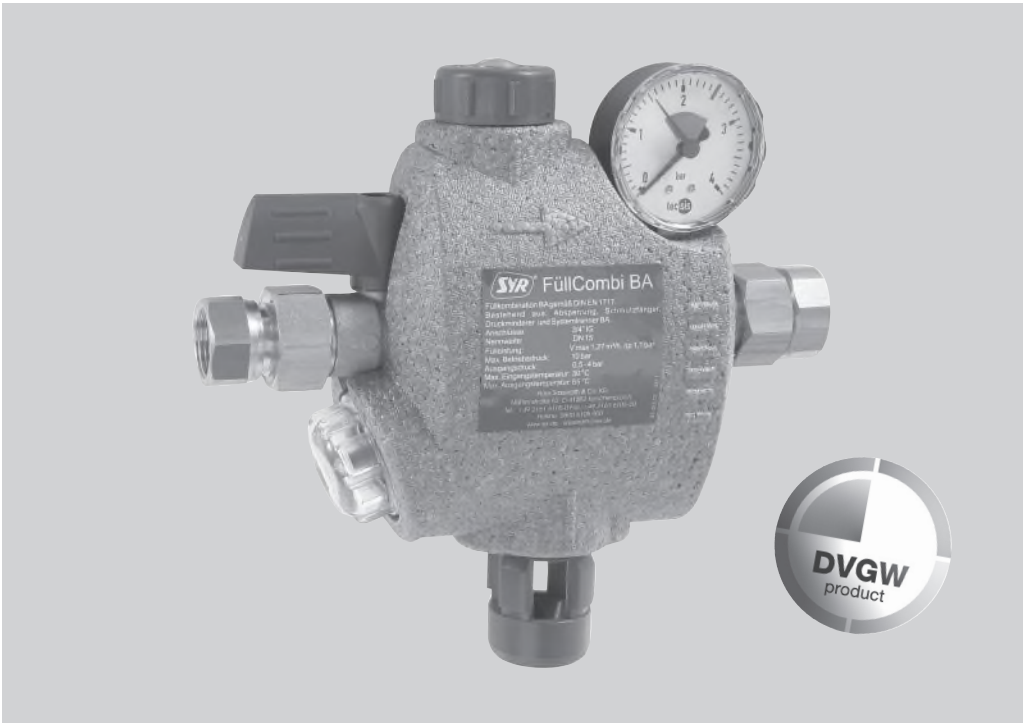
① **Handle magnetic bar**

① **Backwash handle**



BA-Filling-Combi 6628

with permanent connection for automatic filling of heating installations according to EN 1717



Field of application

The BA-Filling-Combi 6628 automatically fills and refills central heating installations. It is permanently connected to the potable water pipe as stipulated by EN 1717. When the supply pressure falls below the pressure of the heating installation during the filling operation, the integral BA backflow preventer prevents the backflow of heating water into the potable water pipe. Even heating water with inhibitors (anti-corrosion products and antifreezer) can be permanently connected to the potable water system by means of the BA-Filling- Combi, which makes the laborious hose connection unnecessary. When the system is filled, the isolating valve of the BA-Filling-Combi should be closed again.

Design

The BA-Filling-Combi 6628 includes an isolating valve, a pressure reducing valve, a pres-sure gauge, a BA backflow preventer and a drain connection, i.e. all the components required to fill a heating installation in con-formity with European Standards.

Materials

The body is made of dezincification-resistant brass, the screw caps of high-quality glass fibre reinforced synthetic material and the rubber parts of ageing-resistant elastomer. The diaphragm is reinforced by means of polyamide. The springs are made of corrosion protected spring steel wire, all other parts of stainless steel 1.4305 or dezincification-resistant brass. The stainless steel strainer has a mesh width of 0.25 mm.

Installation

The BA-Filling-Combi is permanently con-nected to the heating installation. Free access to the device must be provided permanently and it shall not be installed in locations liable to flooding or frost. The connected drain device must be able to collect the drained volume. No hose needs to be connected anymore for the filling operation. When connecting the filling device, observe EN 1717. We recommend to install a drinking water filter upstream in order to ensure the perfect function of the valve. Thoroughly rinse the pipe prior to installa-tion. Install the BA-Filling-Combi horizon-tally in the heating pipe under consideration of the direction of flow and without apply-ing stresses. When install-ling the connection line, ensure that water cannot stagnate.
The BA-Filling-Combi is suitable for direct connec-tion to the flange of the SYR heating filter.

Technical data

Connection size:	DN 20
Inlet pressure:	max. 10 bar
Outlet pressure:	0.5 – 4 bar
Factory setting:	1.5 bar
Fluids:	potable water
Filling capacity:	1,35 m^3/h at 1,5 bar Δp
Operating temperature:	max. 30 °C (inlet side) max. 65 °C (outlet side)
Mounting position:	horizontal, tundish connection downwards
DVGW number:	DW-6305BP0084
Serial number:	6628.20.000

Maintenance

The pressure reducing valve of the BA-Filling-Combi is factory-set to 1.5 bar. To adjust the pressure, loosen the safety screw in the adjustment handle. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direc-tion of the plus symbol (+). The perfected design of the cartridge system allows to carry out repair and maintenance works on the pressure reducer cartridge without having to drain the installation. EN 1717 prescribes maintenance works on the BA backflow preventer on a regular basis. The con-nections for ball valves available in each pressure zone allow testing the function of the valve with the corresponding accessories (service kit number 6600.00.000).

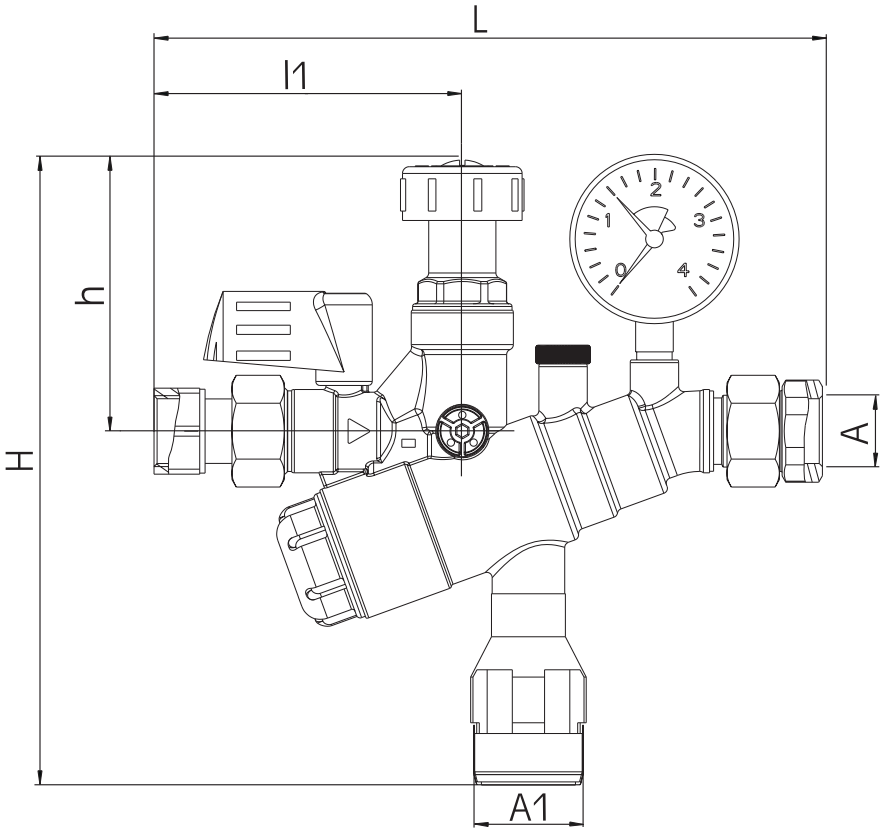


Fig.: without thermal covering

Nominal size		DN 20
	A	R ¾“
Dimensions in mm	L (mm)	249
	H (mm)	230
	A 1	40
	h (mm)	101
	l1 (mm)	140

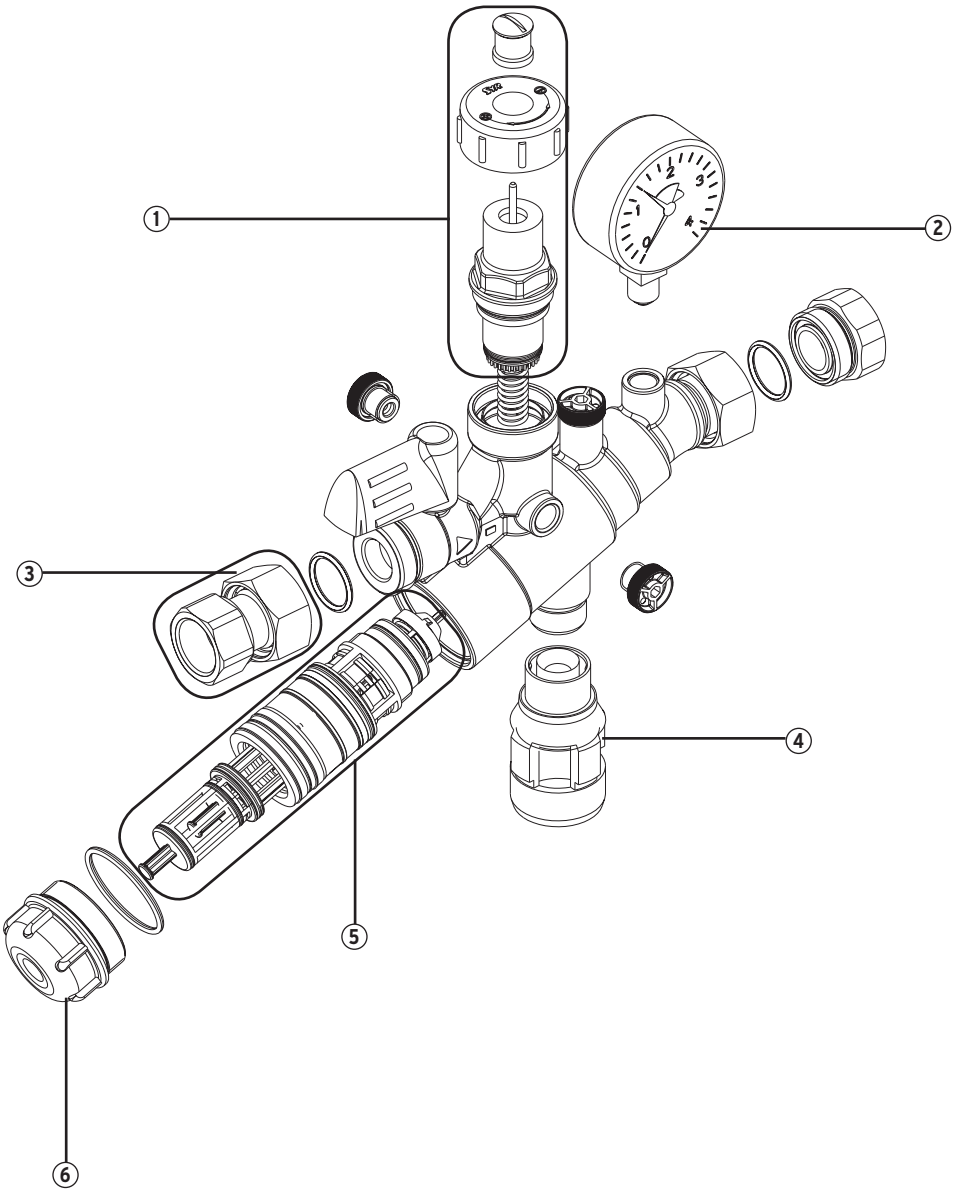
Accessory:

Test kit: electronic pressure measurement device for inspection and maintenance:	6600.00.000
Service key for BA cartridge:	6600.00.908

Components / Order numbers

① **Pressure reducer unit**
6628.00.900
② **Pressure gauge**
6628.00.901
③ **Union**
6628.00.903
④ **Tundish**
6628.00.905
⑤ **Cartridge**
6628.00.907
⑥ **Plug**
6628.00.907

Accessory:
Service key for BA cartridge
6600.00.908



BA-Filling-Combi Plus 6628

with permanent connection for automatic filling of heating installations according to EN 1717



Field of application

The BA-Filling-Combi 6628 Plus automatically fills and refills central heating installations. It is permanently connected to the potable water pipe as stipulated by EN 1717. When the supply pressure falls below the pressure of the heating installation during the filling operation, the integral BA backflow preventer prevents the backflow of heating water into the potable water pipe. Even heating water with inhibitors (anti-corrosion products and antifreezer) can be permanently connected to the potable water system by means of the BA-Filling-Combi, which makes the laborious hose connection unnecessary.
When the system is filled, the isolating valve of the BA-Filling-Combi should be closed again.

Design

The BA-Filling-Combi 6628 includes an inlet and outlet isolating valve, a pressure reducing valve, a pressure gauge, a BA backflow preventer and a drain connection, i.e. all the components required to fill a heating installation in con-formity with European Standards.

Materials

The body is made of dezincification-resistant brass, the screw caps of high-quality glass fibre reinforced synthetic material and the rubber parts of ageing-resistant elastomer. The diaphragm is reinforced by means of polyamide. The springs are made of corrosion protected spring steel wire, all other parts of stainless steel 1.4305 or dezincification-resistant brass. The stainless steel strainer has a mesh width of 0.25 mm.

Installation

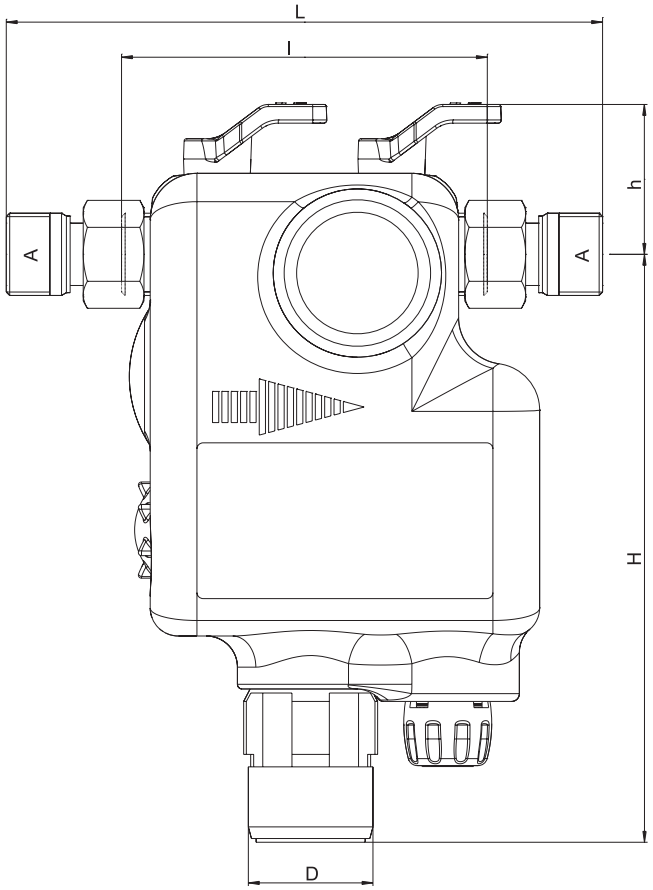
The BA-Filling-Combi Plus is permanently connected to the heating installation. Free access to the device must be provided permanently and it shall not be installed in locations liable to flooding or frost. The connected drain device must be able to collect the drained volume. No hose needs to be connected anymore for the filling operation. When connecting the filling device, observe EN 1717. We recommend to install a drinking water filter upstream in order to ensure the perfect function of the valve.
Thoroughly rinse the pipe prior to installa-tion. Install the BA-Filling-Combi horizontally in the heating pipe under consideration of the direction of flow and without apply-ing stresses. When installing the connection line, ensure that water cannot stagnate.
The BA-Filling-Combi is suitable for direct connection to the flange of the SYR heating filter.

Technical data

Connection size:	DN 20
Inlet pressure:	max. 10 bar
Outlet pressure:	1 – 5 bar
Factory setting:	1.5 bar
Fluids:	potable water
Filling capacity:	0,9 m^3/h at 1,5 bar Δp
Operating temperature:	max. 30 °C (inlet side) max. 65°C (outlet side)
Mounting position:	horizontal, tundish connection downwards
DVGW number:	DW-6370BT0081
Serial number:	6628.20.005

Maintenance

The pressure reducing valve of the BA-Filling-Combi is factory-set to 1.5 bar. To adjust the pressure, pull the knob for unlocking. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+). When the intended outlet pressure is reached, push the knob downwards to lock it into place again. The perfected design of the cartridge system allows to carry out repair and maintenance works on the pressure reducer cartridge without having to drain the installation.
EN 1717 prescribes maintenance works on the BA backflow preventer on a regular basis. The connections for ball valves available in each pressure zone allow testing the function of the valve with the corresponding accessories (service kit number 6600.00.000).



Nominal size		DN 15
	A	R ¾“
Dimensions	H (mm)	188,7
	h (mm)	48,1
	L (mm)	191,4
	l (mm)	117,4
	D (mm)	40

Accessory:

Test kit: electronic pressure measurement device for inspection and maintenance:	6600.00.000
Service key for BA cartridge:	6600.00.908

Components / Order numbers

① **Insulating Cover**

② **Handles isolating valve**

③ **Body**

④ **Backflow preventer cartridge**
6628.00.917

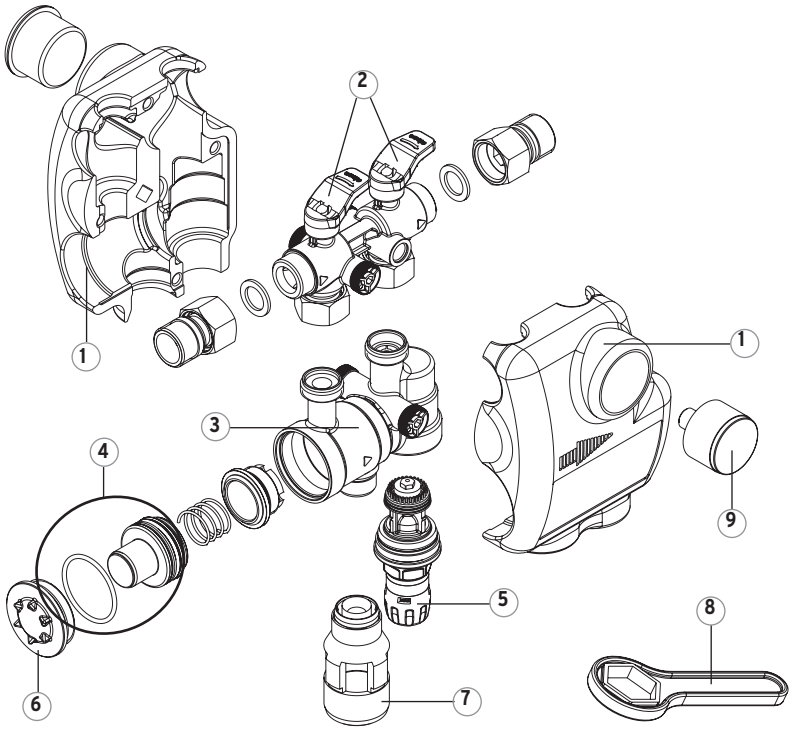
⑤ **Pressure reducing cartridge**
6628.00.918

⑥ **Blanking cap**

⑦ **Tundish**
6628.00.901

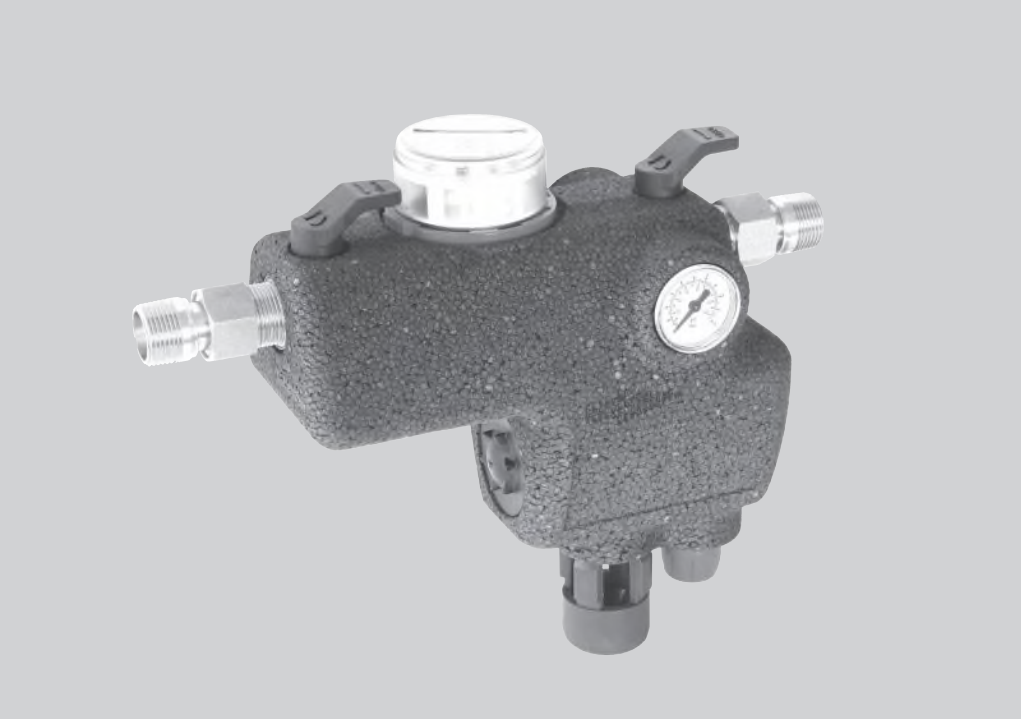
⑧ **Assembly key**
4807.00.906

⑨ **Pressure gauge**
6628.00.914



BA-Filling-Combi Plus with water meter 6628

with permanent connection for automatic filling of heating installations according to EN 1717



Field of application

The BA-Filling-Combi 6628 Plus automatically fills and refills central heating installations. It is permanently connected to the potable water pipe as stipulated by EN 1717. When the supply pressure falls below the pressure of the heating installation during the filling operation, the integral BA backflow preventer prevents the backflow of heating water into the potable water pipe. Even heating water with inhibitors (anti-corrosion products and antifreezer) can be permanently connected to the potable water system by means of the BA-Filling-Combi, which makes the laborious hose connection unnecessary.
When the system is filled, the isolating valve of the BA-Filling-Combi should be closed again.

Design

The BA-Filling-Combi 6628 includes an inlet and outlet isolating valve, a water meter, pressure reducing valve, a pressure gauge, a BA backflow preventer and a drain connection, i.e. all the components required to fill a heating installation in con-formity with European Standards.

Materials

The body is made of dezincification-resistant brass, the screw caps of high-quality glass fibre reinforced synthetic material and the rubber parts of ageing-resistant elastomer. The diaphragm is reinforced by means of polyamide. The springs are made of corrosion protected spring steel wire, all other parts of stainless steel 1.4305 or dezincification-resistant brass. The stainless steel strainer has a mesh width of 0.25 mm.

Installation

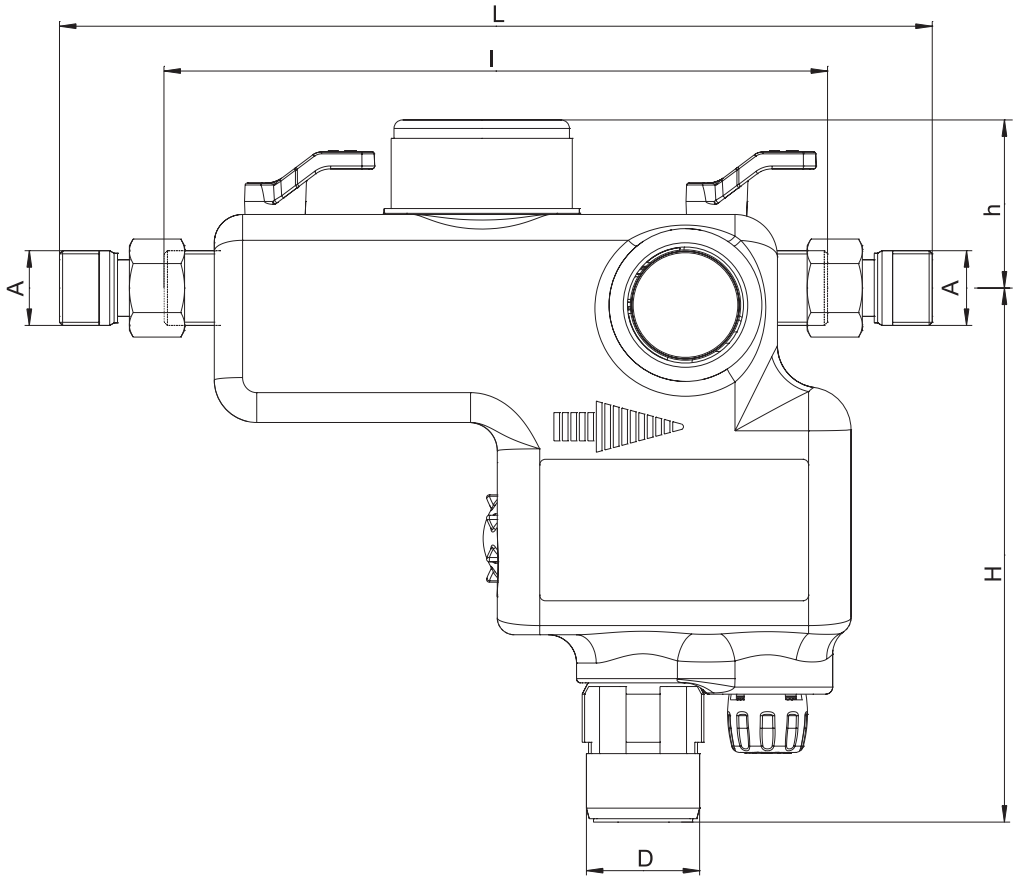
The BA-Filling-Combi Plus is permanently connected to the heating installation. Free access to the device must be provided permanently and it shall not be installed in locations liable to flooding or frost. The connected drain device must be able to collect the drained volume. No hose needs to be connected anymore for the filling operation. When connecting the filling device, observe EN 1717. We recommend to install a drinking water filter upstream in order to ensure the perfect function of the valve.
Thoroughly rinse the pipe prior to installa-tion. Install the BA-Filling-Combi horizontally in the heating pipe under consideration of the direction of flow and without apply-ing stresses. When installing the connection line, ensure that water cannot stagnate.
The BA-Filling-Combi is suitable for direct connection to the flange of the SYR heating filter.

Technical data

Connection size:	DN 20
Inlet pressure:	max. 10 bar
Outlet pressure:	1 – 5 bar
Factory setting:	1.5 bar
Fluids:	potable water
Filling capacity:	0,9 m^3/h at 1,5 bar Δp
Operating temperature:	max. 30 °C (inlet side) max. 65°C (outlet side)
Mounting position:	horizontal, tundish connection downwards
Serial number:	6628.20.005

Maintenance

The pressure reducing valve of the BA-Filling-Combi is factory-set to 1.5 bar. To adjust the pressure, pull the knob for unlocking. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+). When the intended outlet pressure is reached, push the knob downwards to lock it into place again. The perfected design of the cartridge system allows to carry out repair and maintenance works on the pressure reducer cartridge without having to drain the installation.
EN 1717 prescribes maintenance works on the BA backflow preventer on a regular basis. The connections for ball valves available in each pressure zone allow testing the function of the valve with the corresponding accessories (service kit number 6600.00.000).



Nominal size		DN 15
	A	R ¾“
Dimension	H (mm)	188,7
	h (mm)	59,4
	L (mm)	308,5
	l (mm)	234,5
	D (mm)	40

Accessory:

Test kit: electronic pressure measurement device for inspection and maintenance:	6600.00.000
Service key for BA cartridge:	6600.00.908

Components / Order numbers

① **Insulating Cover**

② **Handles isolating valve**

③ **Body**

④ **Backflow preventer cartridge**
6628.00.917

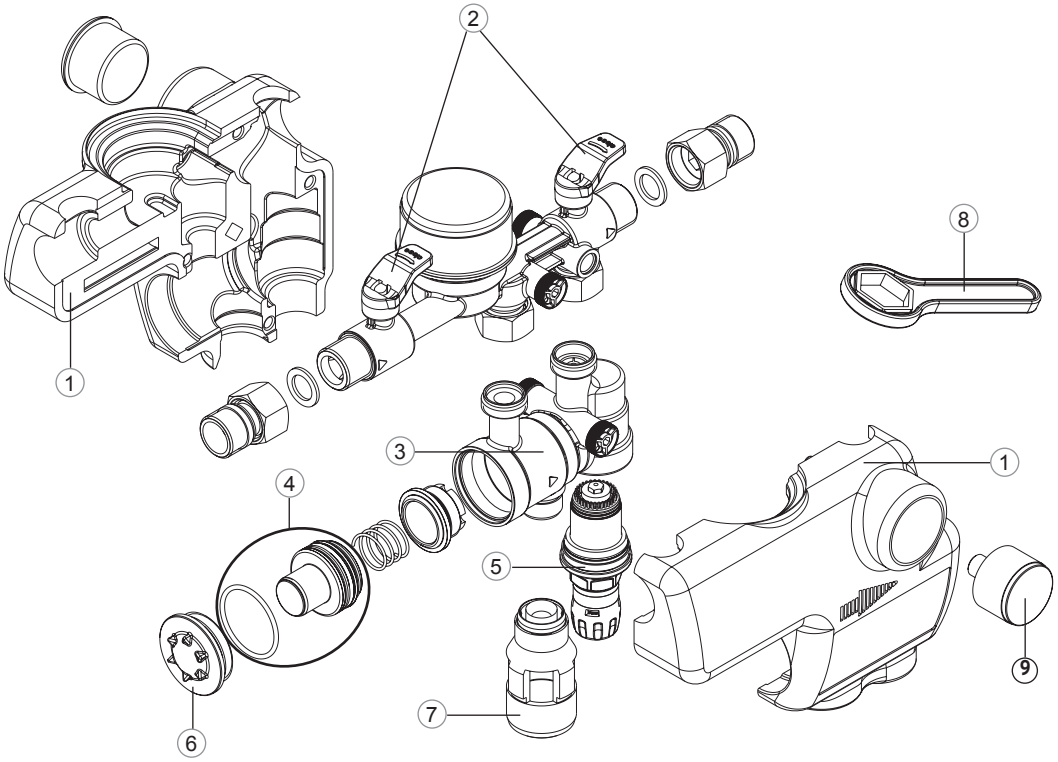
⑤ **Pressure reducing cartridge**
6628.00.918

⑥ **Blanking cap**

⑦ **Tundish**
6628.00.901

⑧ **Assembly key**
4807.00.906

⑨ **Pressure gauge**
6628.00.914



BA-Filling-Combi with double pressure gauge 6628.2

with permanent connection for automatic filling of heating installations according to EN 1717



Field of application

The BA-Filling-Combi 6628 automatically fills and refills central heating installations. It is permanently connected to the potable water pipe as stipulated by EN 1717. When the supply pressure falls below the pressure of the heating installation during the filling operation, the integral BA backflow preventer prevents the backflow of heating water into the potable water pipe. Even heating water with inhibitors (anti-corrosion products and antifreezer) can be permanently connected to the potable water system by means of the BA-Filling-Combi, which makes the laborious hose connection unnecessary. When the system is filled, the isolating valve of the BA-Filling-Combi should be closed again.

Design

The BA-Filling-Combi 6628 includes an inlet and outlet isolating valve, a pressure reducing valve, a double pressure gauge, a BA backflow preventer and a drain connection, i.e. all the components required to fill a heating installation in con-formity with European Standards.

Materials

The body is made of dezincification-resistant brass, the screw caps of high-quality glass fibre reinforced synthetic material and the rubber parts of ageing-resistant elastomer. The diaphragm is reinforced by means of polyamide. The springs are made of corrosion protected spring steel wire, all other parts of stainless steel 1.4305 or dezincification-resistant brass. The stainless steel strainer has a mesh width of 0.25 mm.

Installation

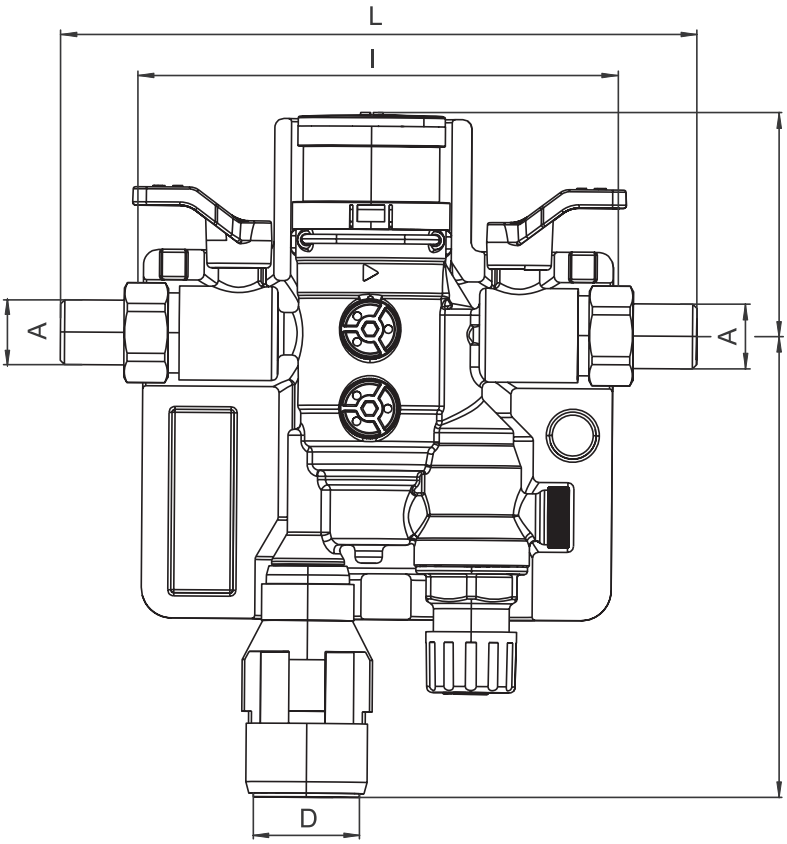
The BA-Filling-Combi 6628 is permanently connected to the heating installation. Free access to the device must be provided permanently and it shall not be installed in locations liable to flooding or frost. The connected drain device must be able to collect the drained volume. No hose needs to be connected anymore for the filling operation. When connecting the filling device, observe EN 1717. We recommend to install a drinking water filter upstream in order to ensure the perfect function of the valve.
Thoroughly rinse the pipe prior to installation. Install the BA-Filling-Combi horizontally in the heating pipe under consideration of the direction of flow and without apply-ing stresses. When installing the connection line, ensure that water cannot stagnate.

Technical data

Connection size:	DN 20
Inlet pressure:	max. 10 bar
Outlet pressure:	1,5 – 5 bar
Factory setting:	1.5 bar
Fluids:	potable water
Filling capacity:	1,5 m^3/h at 1,5 bar Δp
Operating temperature:	max. 30 °C (inlet side) max. 65°C (outlet side)
Mounting position:	horizontal, tundish connection downwards
Serial number:	6628.20.008

Maintenance

The pressure reducing valve of the BA-Filling-Combi 6628 is factory-set to 1.5 bar. To adjust the pressure, loosen the safety screw in the adjustment handle. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+). The perfected design of the cartridge system allows to carry out repair and maintenance works on the pressure reducer cartridge without having to drain the installation. EN 1717 prescribes maintenance works on the BA backflow preventer on a regular basis. The connections for ball valves available in each pressure zone allow testing the function of the valve with the corresponding accessories (service kit number 6600.00.000).



Nominal size		DN 20
	A	R ¾“
Dimension	H (mm)	153
	h (mm)	73
	L (mm)	210
	l (mm)	154
	D (mm)	40

Accessory:

Test kit: electronic pressure measurement device for inspection and maintenance:	6600.00.000
Service key for BA cartridge:	6600.00.970

Components / Order numbers

① **Double pressure gauge**
3328.00.902

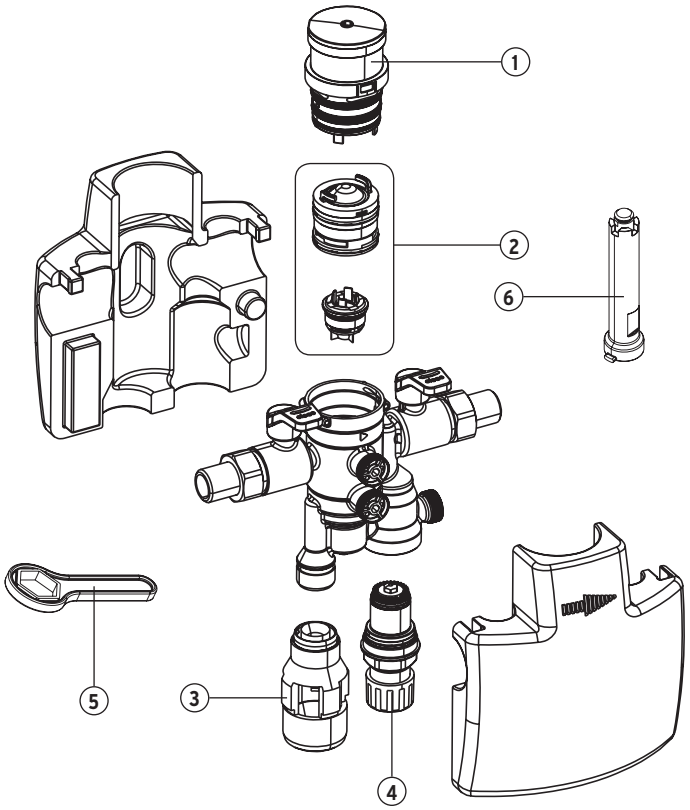
② **BA cartridge, complete**
6600.00.974

③ **Tundish, complete**
6600.00.903

④ **Pressure reducing cartridge**
0315.00.900

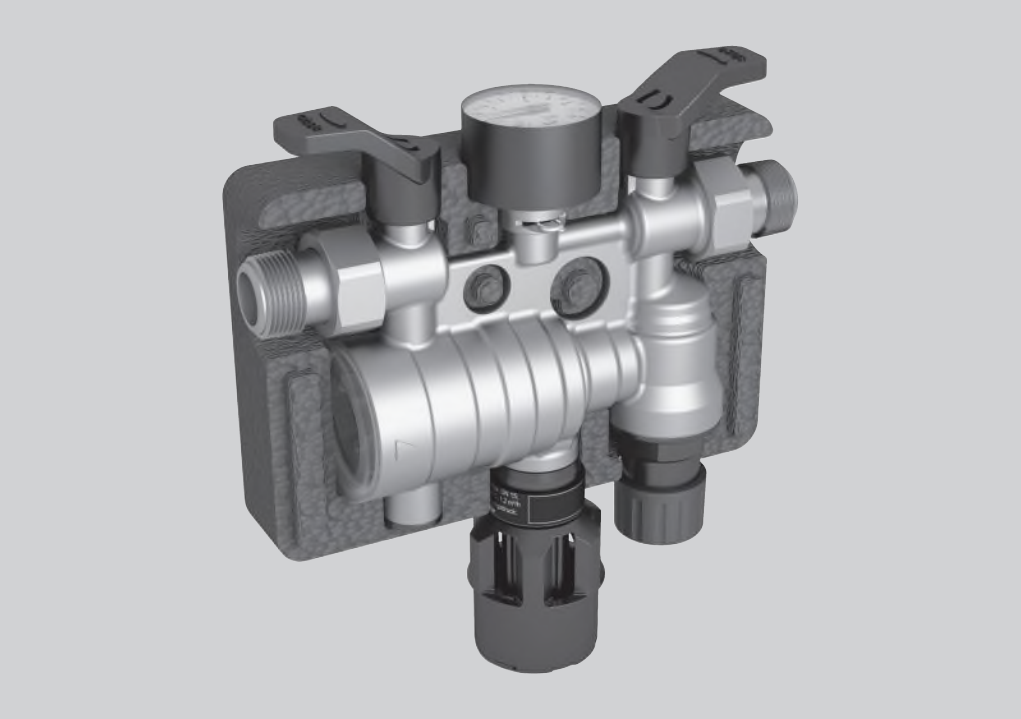
⑤ **Assembly key**
4807.00.906

⑥ **Service key**
6600.00.970



CA-Filling-Combi 6828 plus

with permanent connection for automatic filling of unvented (pressurised) systems according to EN 1717



Field of application

The CA-Filling-Combi 6828 plus automatically fills and refills unvented (pressurised) systems. It is permanently connected to the potable water pipe as stipulated by EN 1717 and provides protection up to category 3. When the supply pressure falls below the system pressure during the filling operation, the integral CA backflow preventer (class „a“) prevents the backflow of non potable water into the potable water pipe.

Design

The CA-Filling-Combi 6828 plus consists of a pressure reducing valve, a CA backflow preventer, isolating valves and a drain connection. It includes all components required to fill unvented and vented systems in conformity with European Standards.

6828 CA-Filling-Combi plus

Materials

The body is made of dezincification-resi-stant brass. The diaphragm is reinforced by means of polyamide. The springs are made of corrosion protected spring steel wire, all other parts of stainless steel or dezincification-resistant brass. The stainless steel strainer has a mesh width of 0.25 mm. All synthetic parts getting into contact with water comply with the recommendations of the German Health Office (KTW).

Installation

The CA-Filling-Combi plus is permanently connected to the unvented system. Free access to the device must be provided permanently and it shall not be installed in locations liable to flooding or frost. The connected drain device must be able to collect the drained volume. The connection of a hose is no longer needed to fill the system. When connecting the filling device, observe EN 1717. We recommend to install a drinking water filter upstream in order to ensure durable functionality of the valve.

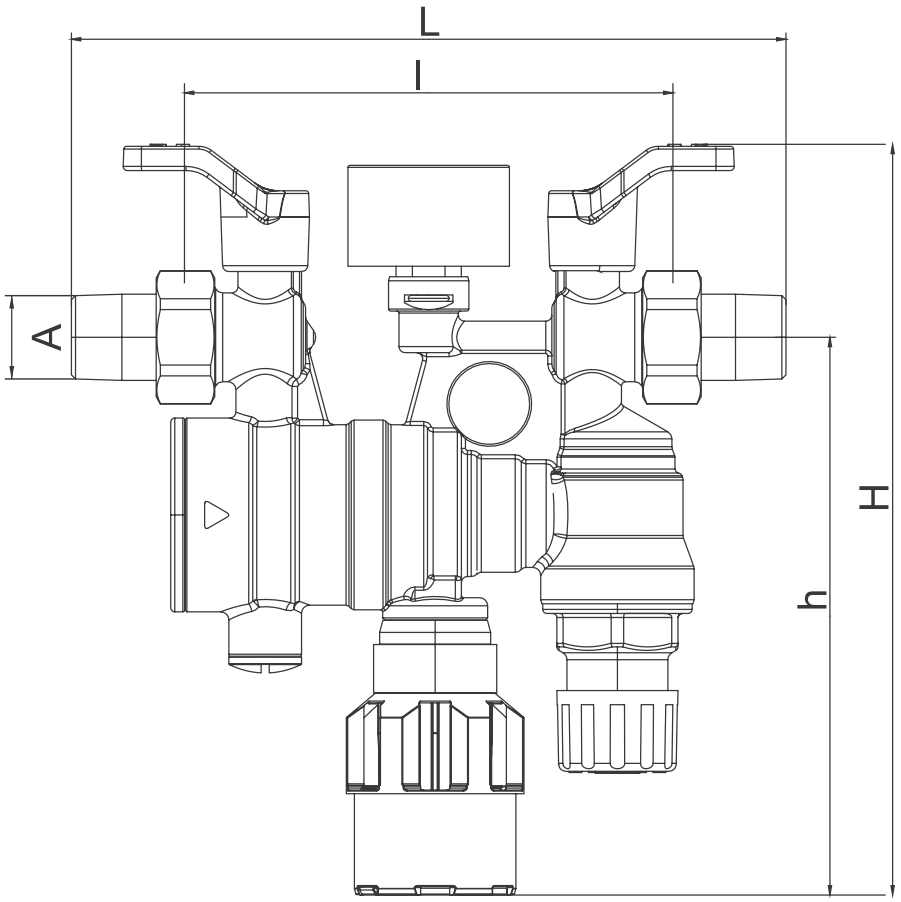
Thoroughly rinse the pipe prior to installation. Install the CA-Filling-Combi plus in the system under consideration of the direction of flow and without applying stresses. Make sure that the tundish faces downwards. When installing the connection line, ensure that water cannot stagnate.

Technical specifications

Connection size:	DN 15
Inlet pressure:	max. 10 bar
Outlet pressure:	1.5 – 5 bar
Factory setting:	1.5 bar
Fluids:	potable water
Filling capacity:	1,3 m^3/h at 1,5 bar Δp
Operating temperature:	max. 30 °C (inlet side)
Mounting position:	horizontal, tundish connection downwards
Serial number:	6828.15.005

Maintenance

The pressure has to be set at static pressure. To adjust the pressure, loosen the safety screw in the adjustment handle. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+). The perfected design of the cartridge system allows to carry out repair and maintenance works on the pressure reducer cartridge without having to drain the installation. It is recommended to carry out mainte-nance works on a regular basis to ensure a durable function.



Nominal size		DN 15
	A	R ½"
Dimensions	L (mm)	177
	l (mm)	121
	H (mm)	186
	h (mm)	138

Components / Order numbers

① **Manometer**
6828.00.905

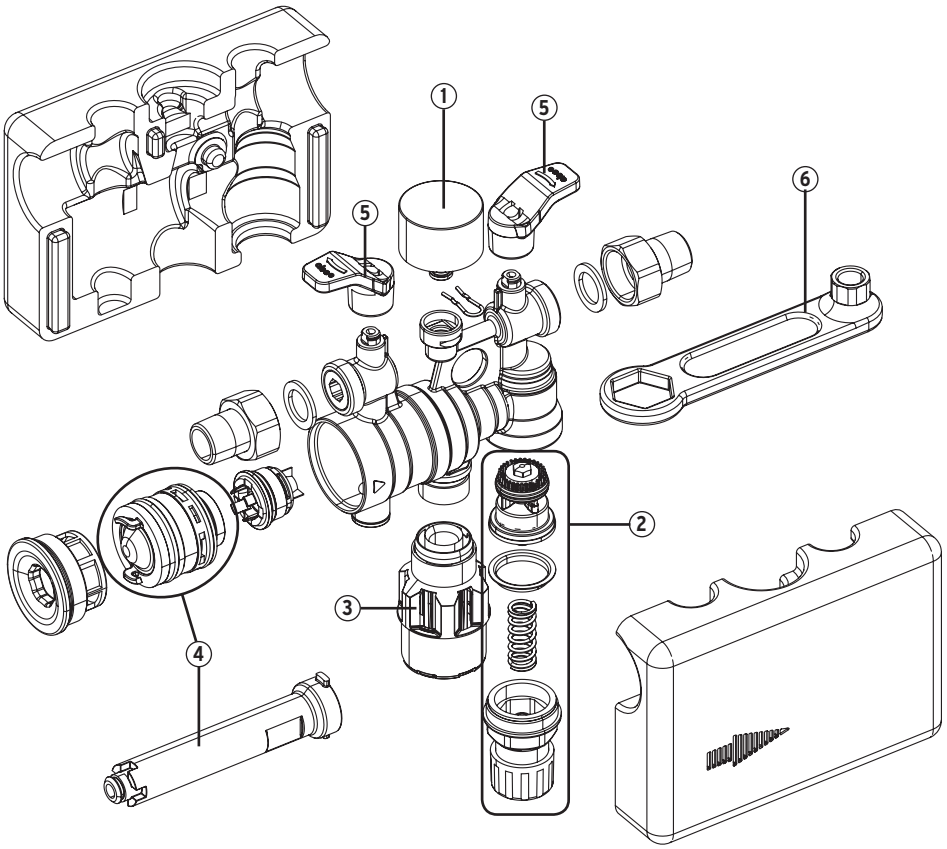
② **Pressure reducer unit**
6629.00.905

③ **Tundish**
6629.00.900

④ **CA cartridge, complete with mounting help**
6600.00.974

⑤ **Isolating handle**
6828.00.904

⑥ **Mounting key for Backflow preventer and pressure reducing cartridge**
6628.00.933



Euro CA-Filling-Combi 6827 - with isolating valve

with permanent connection for automatic filling of unvented (pressurised) systems according to EN 1717



Field of application

The Euro CA-Filling-Combi 6827 automatically fills and refills unvented (pressurised) systems. It is permanently connected to the potable water pipe as stipulated by EN 1717 and provides protection up to category 3. When the supply pressure falls below the system pressure during the filling operation, the integral CA backflow preventer (class „a") prevents the backflow of non potable water into the potable water pipe.

Design

The Euro CA-Filling-Combi 6827 consists of a pressure reducing valve, a CA backflow preventer, an isolating valve and a drain connection. It includes all components required to fill unvented and vented systems in conformity with European Standards.

Materials

The body is made of dezincification-resistant brass. The diaphragm is reinforced by means of polyamide. The springs are made of corrosion protected spring steel wire, all other parts of stainless steel or dezinci-fication-resistant brass. The stainless steel strainer has a mesh width of 0.25 mm. All synthetic parts getting into contact with water comply with the recommendations of the German Health Office (KTW).

Installation

The Euro CA-Filling-Combi is permanently connected to the unvented system. Free access to the device must be provided permanently and it shall not be installed in locations liable to flooding or frost. The connected drain device must be able to collect the drained volume. The connection of a hose is no longer needed to fill the system. When connecting the filling device, observe EN 1717. We recommend to install a drinking water filter upstream in order to ensure durable functionality of the valve.

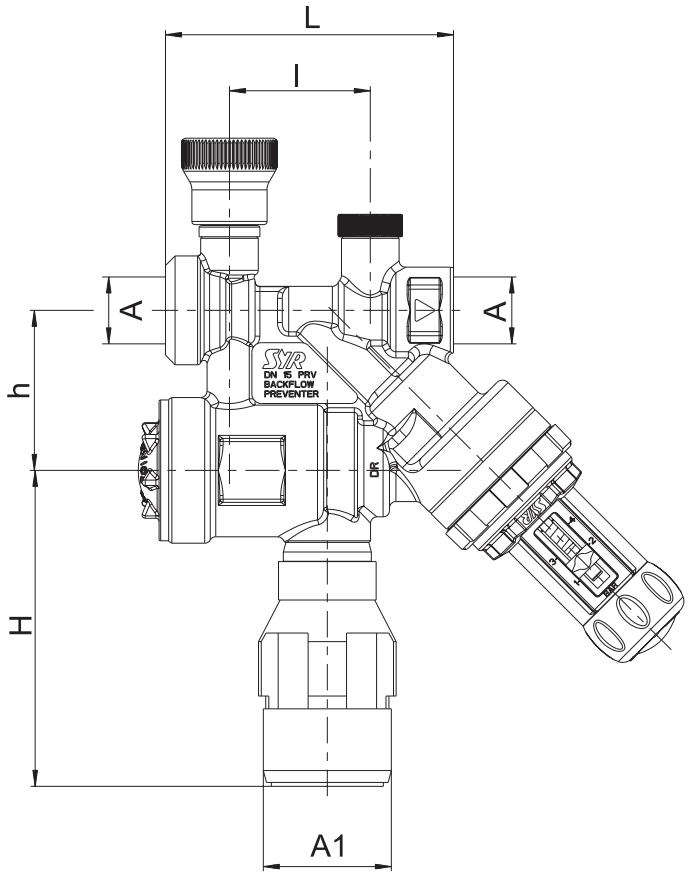
Thoroughly rinse the pipe prior to installation. Install the Euro CA-Filling-Combi in the system under consideration of the direction of flow and without applying stresses. Make sure that the tundish faces downwards. When installing the connection line, ensure that water cannot stagnate.

Technical specifications

Connection size:	DN 15
Inlet pressure:	max. 10 bar
Outlet pressure:	1.5 - 5 bar
Factory setting:	1.5 bar
Fluids:	potable water
Filling capacity:	1,35 m³/h at 1,5 bar Δp
Operating temperature:	max. 30 °C (inlet side) max. 80°C (outlet side)
Mounting position:	horizontal, tundish connection downwards
Filling capacity:	1,3 m³/h at Δp 1,5 bar
Serial number:	6827 ...

Maintenance

The pressure has to be set at static pressure. For doing so, loosen the safety screw in the adjustment handle. The requested pressure is set with a flick of the wrist. With the well-contrived combined adjustment-display handle, the pressure reducer not only ensures an optimal pressure but also allows to read the set pressure without an additional pressure gauge. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+).It is recommended to carry out mainte-nance works on a regular basis to ensure a durable function.



Nominal size		DN 10
	A	R ½"
	A1	40 mm
Dimensions	L (mm)	90
	l (mm)	44
	H (mm)	99
	h (mm)	50

Components / Order numbers

① **Gauge**
6828.00.901

② **Full cartridge Pressure reducing valve**
2328.15.905

③ **Gauge port plug**
0828.08.000

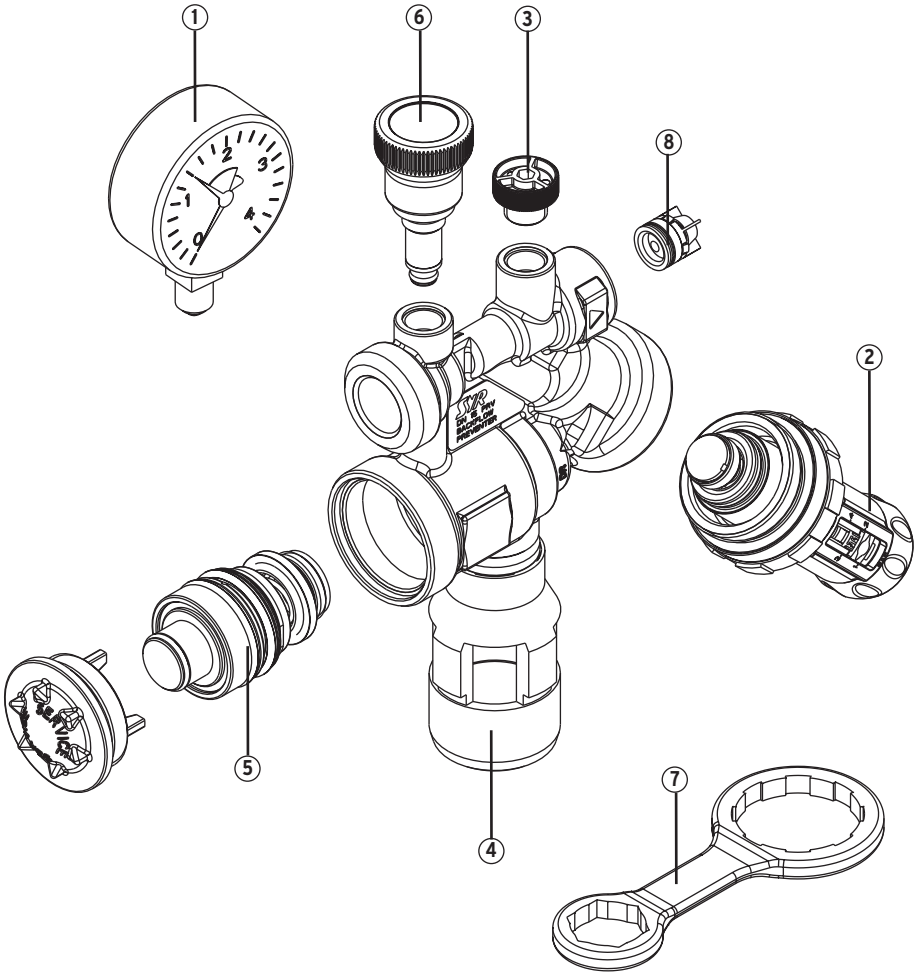
④ **Tundish**
6628.00.905

⑤ **CA cartridge - strainer integrated**
6827.15.900

⑥ **Isolating valve**

⑦ **Key**
2328.15.906

⑧ **Additional check valve**



Euro CA FillingCombi 6827

with permanent connection for automatic filling of unvented (pressurised) systems according to EN 1717



Field of application

The Euro CA-Filling-Combi 6827 automatically fills and refills unvented (pressurised) systems. It is permanently connected to the potable water pipe as stipulated by EN 1717 and provides protection up to category 3. When the supply pressure falls below the system pressure during the filling operation, the integral CA backflow preventer (class „a“) prevents the backflow of non potable water into the potable water pipe.

Design

The Euro CA-Filling-Combi 6827 consists of a pressure reducing valve, a CA backflow preventer and a drain connection. It includes all components required to fill unvented and vented systems in conformity with European Standards.

6827 Euro CA-Filling-Combi

Materials

The body is made of dezincification-resi-stant brass. The diaphragm is reinforced by means of polyamide. The springs are made of corrosion protected spring steel wire, all other parts of stainless steel or dezinci-fication-resistant brass. The stainless steel strainer has a mesh width of 0.25 mm. All synthetic parts getting into contact with water comply with the recommendations of the German Health Office (KTW).

Installation

The Euro CA-Filling-Combi is permanently con-nected to the unvented system. Free access to the device must be provided permanently and it shall not be installed in locations liable to flooding or frost. The connected drain device must be able to collect the drained volume. The connection of a hose is no longer needed to fill the system. When connecting the filling device, observe EN 1717. We recommend to install a drinking water filter upstream in order to ensure durable functionality of the valve.

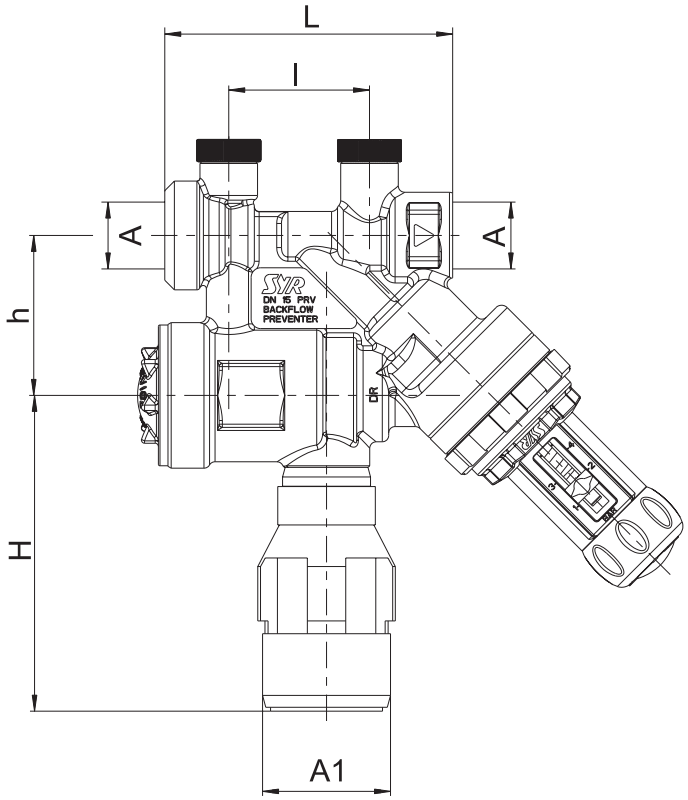
Thoroughly rinse the pipe prior to installation. Install the Euro CA-Filling-Combi in the system under consideration of the direction of flow and without applying stresses. Make sure that the tundish faces downwards. When installing the connection line, ensure that water cannot stagnate.

Technical specifications

Connection size:	DN 15
Inlet pressure:	max. 10 bar
Outlet pressure:	1.5 – 5 bar
Factory setting:	1.5 bar
Fluids:	potable water
Filling capacity:	1,35 m³/h at 1,5 bar Δp
Operating temperature:	max. 30 °C (inlet side) max. 80°C (outlet side)
Mounting position:	horizontal, tundish connection downwards
Filling capacity:	1,3 m³/h at Δp 1,5 bar
Serial number:	6827 ...

Maintenance

The pressure has to be set at static pressure. For doing so, loosen the safety screw in the adjustment handle. The requested pressure is set with a flick of the wrist. With the well-contrived combined adjustment-display handle, the pressure reducer not only ensures an optimal pressure but also allows to read the set pressure without an additional pressure gauge. To reduce the outlet pressure, turn the adjustment handle in the direction of the minus symbol (-), to increase it, turn the adjustment handle in the direction of the plus symbol (+).It is recommended to carry out maintenance works on a regular basis to ensure a durable function.



Nominal size		DN 10
	A	R ½"
	A1	40 mm
Dimension	L (mm)	90
	l (mm)	44
	H (mm)	99
	h (mm)	50

Components / Order numbers

① **Full cartridge Pressure reducing valve**
2328.15.905

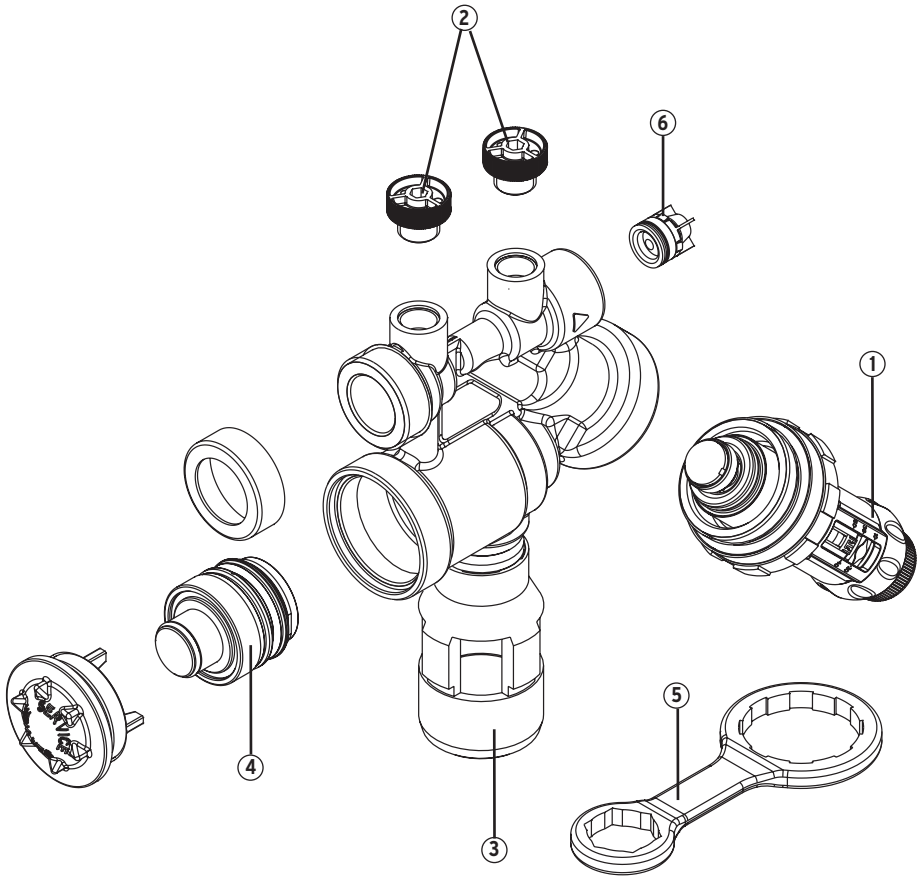
② **Gauge port plug**
0828.08.000

③ **Tundish**
6628.00.905

④ **CA cartridge - strainer integrated**
6827.15.900

⑤ **Key**
2328.15.906

⑥ **Additional check valve**



BA Backflow Preventer STBA 200

Type BA - to be connected to a draw-off valve



Field of application

The backflow preventer type BA STBA 200 from SYR is a compact safety device in accordance with EN 1717, group B, with controllable disconnection (three zones system). It complies with the installation type BA as defined in EN 1717 and can be used as a protective device up to and including fluid category 4. It is designed to prevent back-siphonage, backpressure or backflow of non-potable water into the public drinking water system. The BA backflow preventer, which can be connected to a draw-off valve, covers a wide range of applications (e.g. chemical cleaning systems, sprinklers, high pressure cleaners, constructions and agriculture, potable water supply for non-stationary systems, non-potable and fire water supply). It can also be used to fill heating installations.

Design

The backflow preventer BA STBA 200 from SYR, which includes all components set by EN 1717 is designed as three zones system with a controllable upstream, intermediate and downstream pressure zone. It also includes a strainer. Each pressure zone can be equipped with test valves (accessories 6625.15.902) to verify the safety devices by pressure measurement. The backflow preventer is equipped with two consecutive check valves with an intermediate pressure zone in between, which can be vented to the atmosphere. When no water is drawn off, the check valves on either side and the drain valve are closed. In case of back-siphonage, the inlet pressure drops. The drain valve opens at the latest, when the differential pressure between the upstream and intermediate zone decreases to 0.14 bar.

BA Backflow Preventer STBA 200

Materials

The body is made of a high-quality low-lead brass alloy and heat-resistant synthetic material. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All synthetic parts getting in contact with drinking water are approved by the German Public Health Office (KTW). The valve's tundish is made of high-quality synthetic material.

Installation

Permanent access to the valve has to be provided. Do not mount in rooms subject to flooding, frost or high temperatures. Install only in a well-ventilated environment. The connected discharge device must be able to collect the discharged volume. Mount the BA backflow preventer in vertical position with the tundish connection facing downwards. Free access to the pressure test devices shall be provided to facilitate the inspection of the backflow preventer. It is recommended to install a drinking water filter upstream to ensure perfect function.

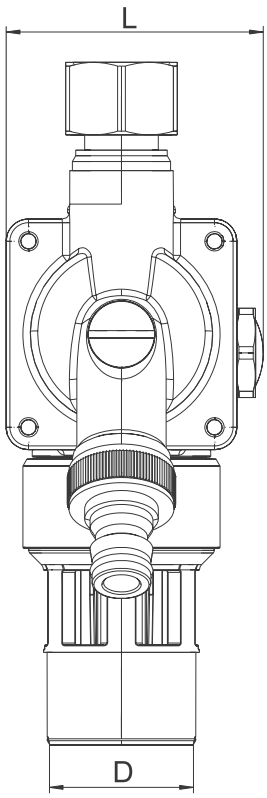
Thoroughly flush the pipe prior to installation. Install the backflow preventer type BA in vertical position under consideration of the direction of flow and without applying stresses.

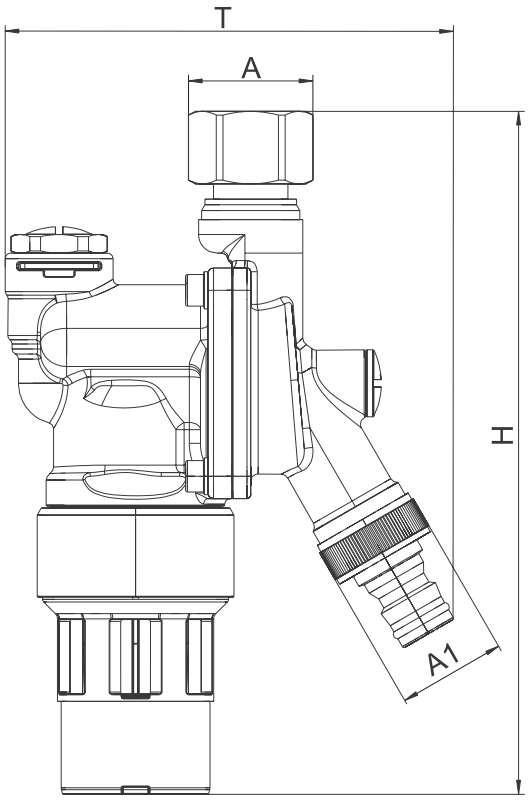
Technical specifications

Service pressure:	max. 10 bar
Service temperature:	max. 30°C (inlet), max 65°C (outlet)
Ambient temperature:	5°C - 40°C
Mounting position:	vertical, tundish facing downwards
Fluid:	potable water
Flow rate:	1.27 m^3/h at 1.5 bar Δp
Serial number:	6625.15.002

Maintenance

According to EN 806, part 5, the BA backflow preventer has to be serviced on a regular basis. Therefore. maintenance agreements between user and installer are very useful. The correct function has to be verified after the first service year and then periodically in accordance with the operating conditions, but after one year at the latest. The ball valves in each pressure zone allow to check the correct operation of the valve by means of corresponding measuring devices. The backflow preventer is designed with a cartridge system, which makes maintenance works simple and unproblematic.





Nominal size		DN 15
	A	R ¾“
	A1	R ¾“
Dimensions	L (mm)	69
	H (mm)	183,5
	T (mm)	120,5
	D (mm)	40

Accessories

Service kit: Differential pressure measurement device for inspection and maintenance 6600.00.000

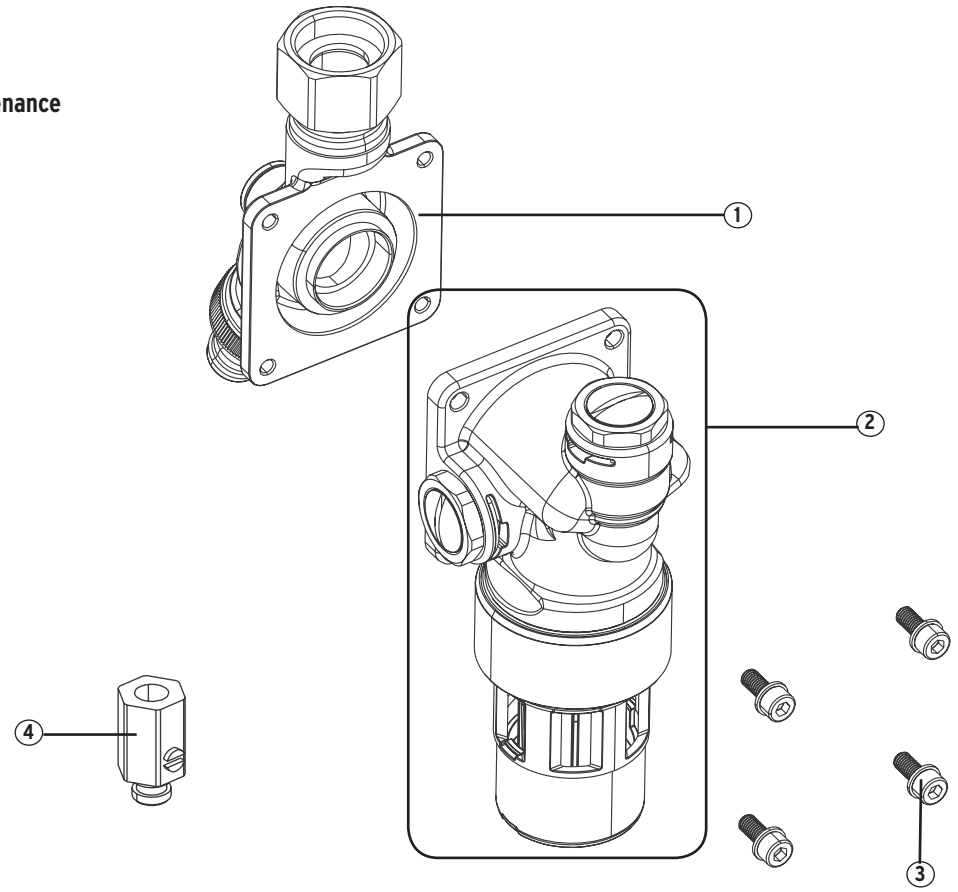
Components / Order numbers

① **Body**

② **Backflow preventer cartridge**
6625.15.900

③ **Four hexagon socket screws**

④ **Three test valves for maintenance**
6625.15.902



BA Backflow Preventer STBA 400

Type BA - Drain valve with hose connection



Field of application

The backflow preventer type BA STBA 400 from SYR is a compact safety device in accordance with EN 1717, group B, with controllable disconnection (three zones system). It complies with the installation type BA as defined in EN 1717 and can be used as a protective device up to and including fluid category 4. It is designed to prevent back-siphonage, backpressure or backflow of non-potable water into the public drinking water system. The backflow preventer type BA STBA 400, which is designed as a drain valve with a hose connection covers a wide range of applications (e.g. chemical cleaning systems, sprinklers, high-pressure cleaners, constructions and agriculture, potable water supply for non-stationary systems, non potable and fire water supply). It can also be used to fill heating installations.

Design

The backflow preventer BA STBA 400 from SYR, which includes all components set by EN 1717 is designed as three zones system with a controllable upstream, intermediate and downstream pressure zone. It also includes a strainer. Each pressure zone can be equipped with test valves (accessories 6625.15.902) to verify the safety devices by pressure measurement. The backflow preventer is equipped with two consecutive check valves with an intermediate pressure zone in between, which can be vented to the atmosphere. When no water is drawn off, the check valves on either side and the drain valve are closed. In case of back-siphonage, the inlet pressure drops. The drain valve opens at the latest, when the differential pressure between the upstream and intermediate zone decreases to 0.14 bar.

BA Backflow Preventer STBA 400

Materials

The body is made of a high-quality low-lead brass alloy and heat-resistant synthetic material. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All synthetic parts getting in contact with drinking water are approved by the German Public Health Office (KTW). The valve's tundish is made of high-quality synthetic material.

Installation

Permanent access to the valve has to be provided. Do not mount in rooms subject to flooding, frost or high temperatures. Install only in a well-ventilated environment. The connected discharge device must be able to collect the discharged volume. Mount the BA backflow preventer in vertical position with the tundish connection facing downwards. Free access to the pressure test devices shall be provided to facilitate the inspection of the backflow preventer. It is recommended to install a drinking water filter upstream to ensure perfect function.

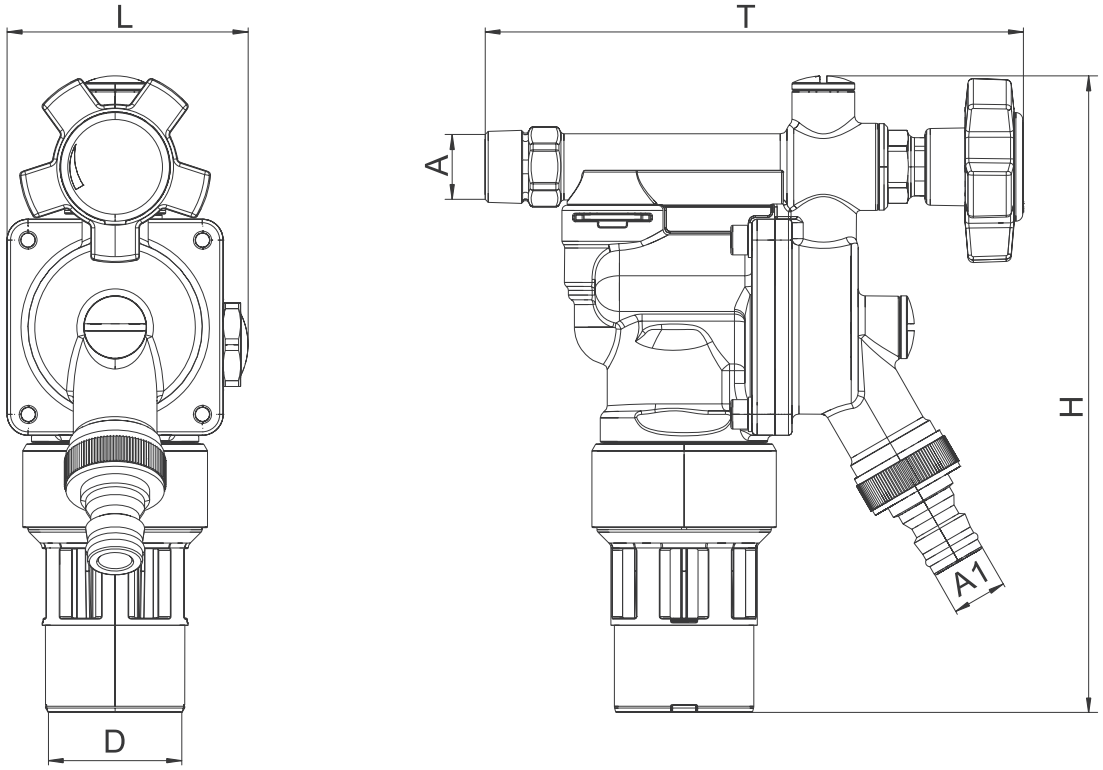
Thoroughly flush the pipe prior to i nstallation. Install the backflow preventer type BA in vertical position under consideration of the direction of flow and without applying stresses.

Technical specifications

Service pressure:	max. 10 bar
Service temperature:	max. 30°C (inlet), max 65°C (outlet)
Ambient temperature:	5°C - 40°C
Mounting position:	vertical with tundish facing downwards
Fluid:	potable water
Flow rate:	1.27 m^3/h at 1.5 bar Δp
Serial number:	6625.15.004

Maintenance

According to EN 806, part 5, the BA backflow preventer has to be serviced on a regular basis. Therefore, maintenance agreements between user and installer are very useful. The correct function has to be verified after the first service year and then periodically in accordance with the operating conditions, but after one year at the latest. The ball valves in each pressure zone allow to check the correct operation of the valve by means of corresponding measuring devices. The backflow preventer is designed with a cartridge system, which makes maintenance works simple and unproblematic.



Nominal size		DN 15
	A	R ½“
	A1	R ¾“
Dimensions	L (mm)	69
	H (mm)	182,5
	T (mm)	154,5
	D (mm)	40

Accessories

Service kit: Differential pressure measurement device for inspection and maintenance 6600.00.000

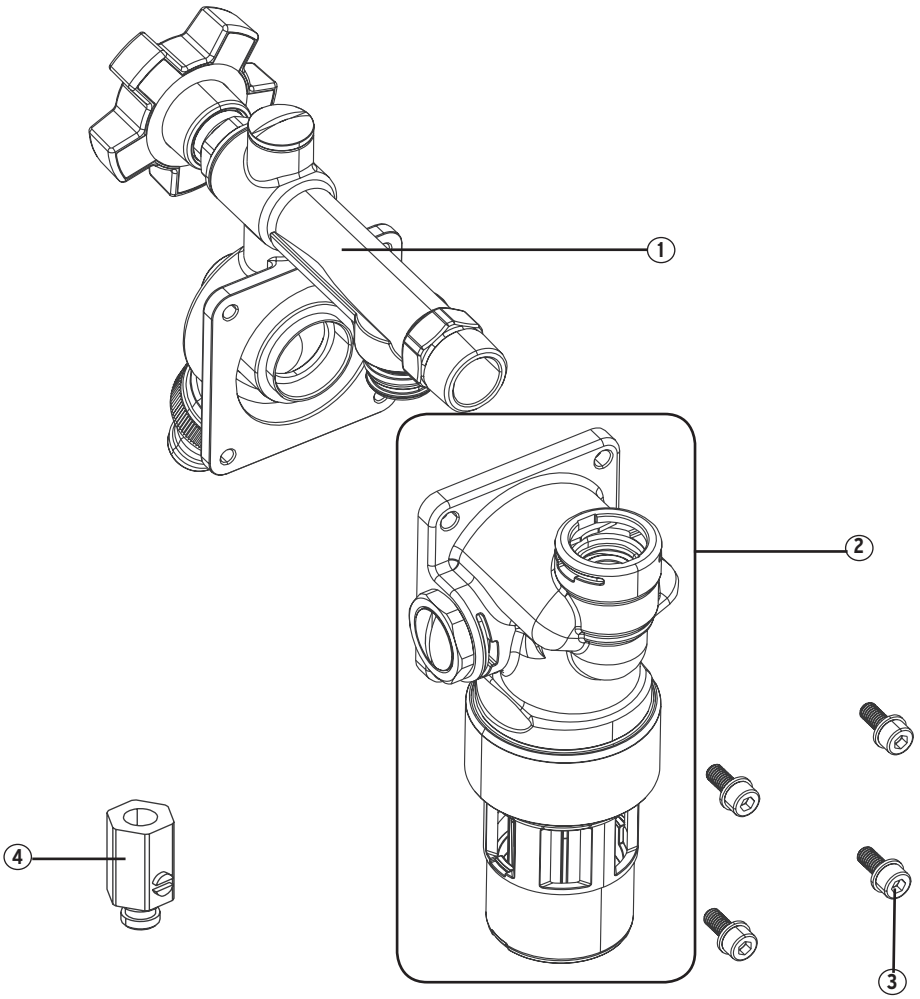
Components / Order numbers

① **Body**

② **Backflow preventer cartridge**
6625.15.900

③ **Four hexagon socket screws**

④ **Three test valves for maintenance**
6625.15.902



BA Backflow Preventer STBA 600

Type BA - Filling unit for heating systems with pressure reducing valve



Field of application

SYR's filling unit for heating systems STBA 600 with pressure reducing valve and integrated BA backflow preventer is a compact safety device in accordance with EN 1717, group B, with controllable disconnection (three zones system). It complies with the installation type BA as defined in EN 1717 and can be used as a protective device up to and including fluid category 4. It is designed to prevent back-siphonage, backpressure or backflow of non-potable water into the public drinking water system. The filling unit for heating systems is mainly used as protective device when filling heating installations.

Design

The filling unit for heating systems from SYR, which includes all components set by EN 1717 is designed as three zones system with a controllable upstream, intermediate and downstream pressure zone. It also includes a strainer. The pressure reducing valve can be set within a range from 1.5 to 6 bar. Each pressure zone can be equipped with test valves (accessories 6625.15.902) to verify the safety devices by pressure measurement. The backflow preventer is equipped with two consecutive check valves with an intermediate pressure zone in between, which can be vented to the atmosphere. When no water is drawn off, the check valves on either side and the drain valve are closed. In case of back-siphonage, the inlet pressure drops. The drain valve opens at the latest, when the differential pressure between the upstream and intermediate zone decreases to 0.14 bar.

BA Backflow Preventer STBA 600

Materials

The body is made of a high-quality low-lead brass alloy and heat-resistant synthetic material. The internal parts are made of high-quality corrosion resistant synthetic materials or stainless steel. All synthetic parts getting in contact with drinking water are approved by the German Public Health Office (KTW). The valve's tundish is made of high-quality synthetic material.

Installation

Permanent access to the valve has to be provided. Do not mount in rooms subject to flooding, frost or high temperatures.Install only in a well-ventilated environment. The connected discharge device must be able to collect the discharged volume. Mount the BA backflow preventer in vertical position with the tundish connection facing downwards. Free access to the pressure test devices shall be provided to facilitate the inspection of the backflow preventer. It is recommended to install a drinking water filter upstream to ensure perfect function.

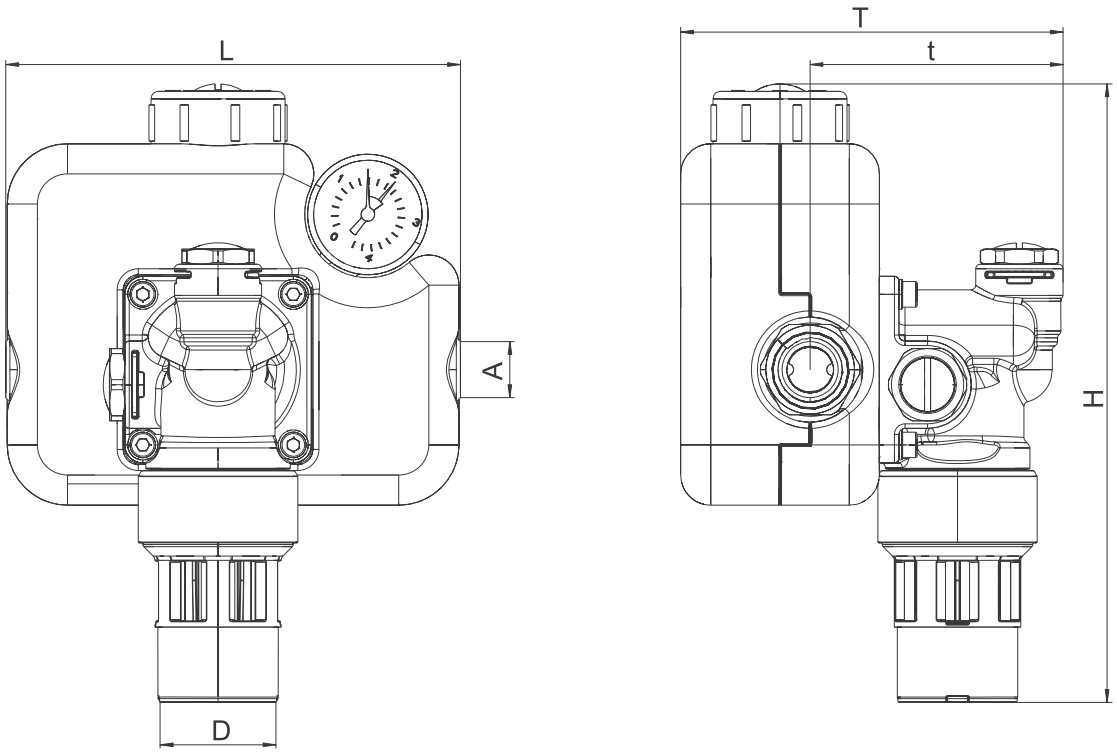
Thoroughly flush the pipe prior to installation. Mount the backflow preventer type BA in vertical position under consideration of the direction of flow and without applying stresses.

Technical specifications

Service pressure:	max. 10 bar
Service temperature:	max. 30°C (inlet), max 65°C (outlet)
Ambient temperature:	5°C - 40°C
Outlet pressure:	1.5 - 6 bar
Mounting position:	vertical, with tundish facing downwards
Fluid:	potable water
Flow rate:	1.27 m3/h at 1.5 bar –p
Serial number:	6625.15.006

Maintenance

According to EN 806, part 5, the BA backflow preventer has to be serviced on a regular basis. Therefore maintenance agreements between user and installer are very useful. The correct function has to be verified after the first service year and then periodically in accordance with the operating conditions, but at the latest after one year. The ball valves in each pressure zone allow to check the correct operation of the valve by means of corresponding measuring devices. The backflow preventer is designed with a cartridge system, which makes maintenance works simple and unproblematic.



Nominal size		DN 15
	A	R ½“
Dimensions	L (mm)	151
	H (mm)	206
	T (mm)	127
	t (mm)	84
	D (mm)	40

Accessories

Service kit: Differential pressure measurement device for inspection and maintenance 6600.00.000

Components / Order numbers

① **Heat insulation cover**

② **Pressure reducer cartridge**
6625.15.901

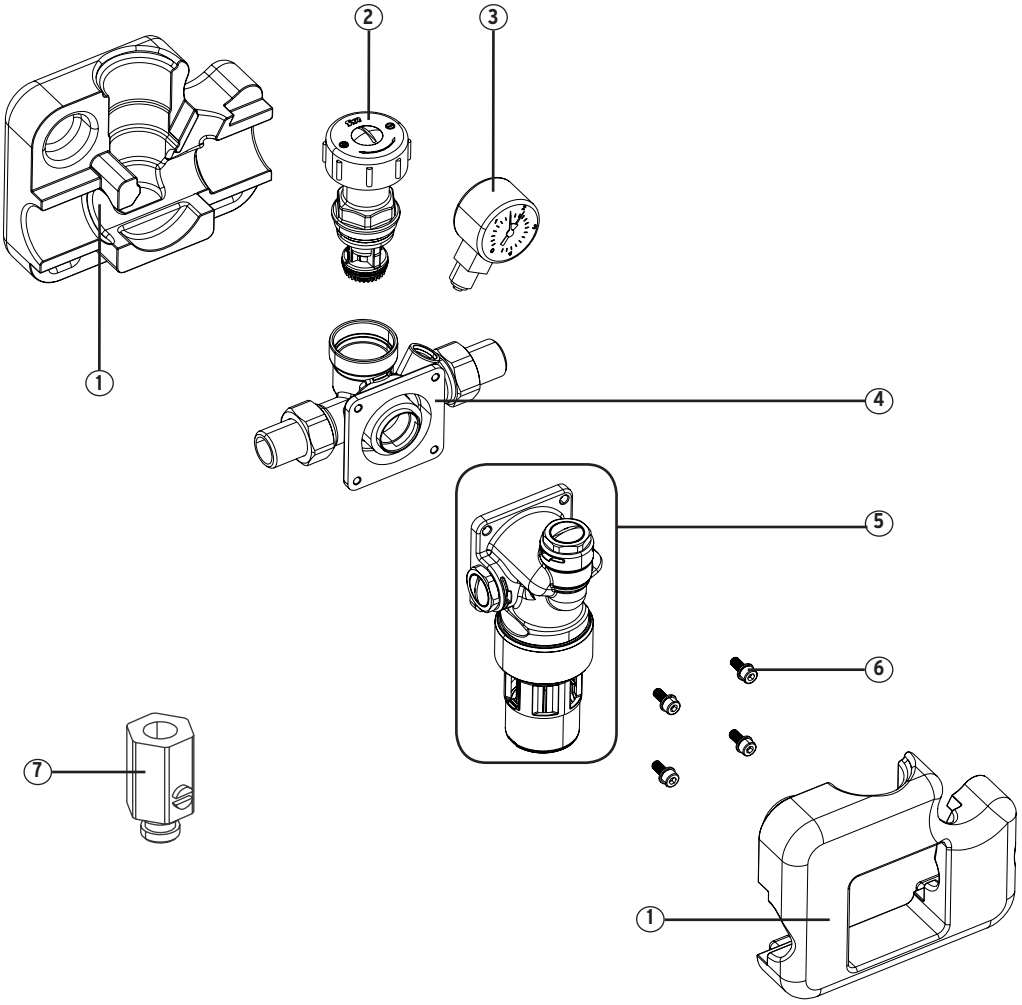
③ **Pressure gauge**

④ **Body**

⑤ **Backflow preventer cartridge**
6625.15.900

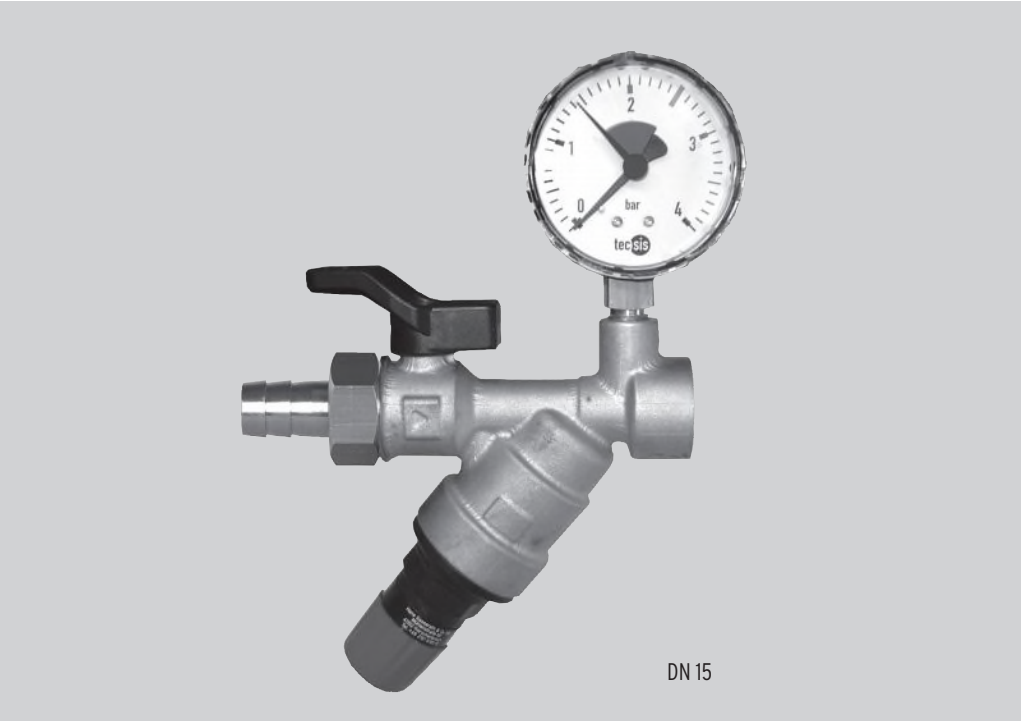
⑥ **Four hexagon socket screws**

⑦ **Three test valves for inspection**
6625.15.902



Filling-Group 2128

Compact valve for filling of heating installations



DN 15

Field of application

The Filling-Group type 2128 is designed to automatically fill and refill central heating installations. The Filling-Group is permanently connected to the heating installation. The connection to the potable water system is made with a hose. When the supply pressure falls below the pressure of the heating installation during the filling operation, the integral check valve prevents the backflow of heating water into the potable water system.

Design

The Filling-Group type 2128 consists of a hose connection, an adjustable pressure reducing valve, an isolating valve and a check valve. It includes all components necessary to fill a heating installation as set by European Standards.

2128 Filling group

Materials

The body is made of dezincification-resistant brass (DN 15) or high-quality, low-lead gunmetal alloy (DN 20). The rubber parts of ageing-resistant elastomer. The diaphragm is reinforced with polyamide. The spring is made of corrosion-resistant spring steel wire and all other parts are made of stainless steel or dezincification-resistant brass. The strainer is made of stainless steel and has a mesh width of 0.25 mm.

Installation

The Filling-Group has to be permanently connected to the heating installation. For the filling operation, connect it to the potable water pipe with a hose.

The connection of the Filling-Group to the potable water system is exclusively foreseen for the filling operation. When the filling operation is finished, isolate the supply line and remove the hose connection.

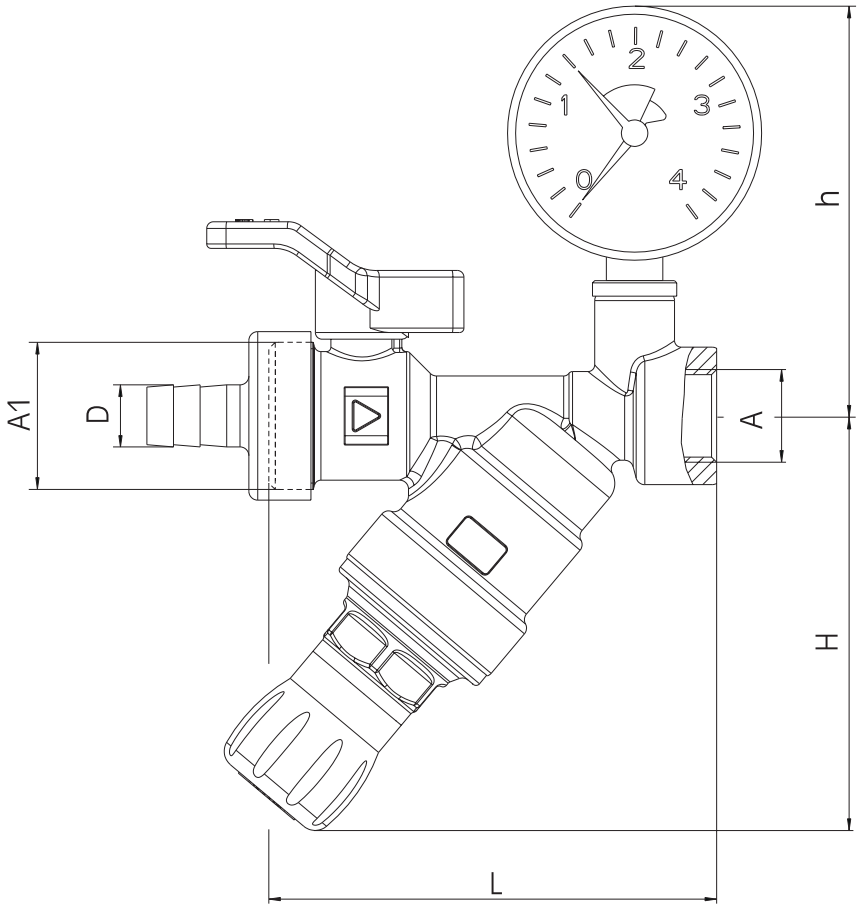
Remove this hose connection after the filling operation.

Technical Data

Manometer connection:	G 1/4“
Inlet pressure:	max. 16 bar
Outlet pressure:	1,0 - 5,0 bar
Factory setting:	1.5 bar
Fluid:	potable water
Operating temperature:	max. 30°C (inlet), max. 80°C (outlet)
Mounting position:	Any
Serial number:	2128...

Maintenance

The pressure reducing valve of the Filling-Group is factory-set to 1.5 bar. To adjust the pressure, pull the knob on top of the pressure reducing cartrigde. To reduce the outlet pressure, turn the knob in the direction of the minus symbol (-), to increase it, turn the adjustment knob in the direction of the plus symbol (+). After pressure adjusting push the knob back. The integral check valve allows to carry out maintenance works on the pressure reducer cartridge without having to drain the installation.



Nominal size		DN 15	DN 20
Dimensions in mm	A	G ½"	G ¾"
	A1	G ¾"	G ¾"
	L (mm)	101	101
	H (mm)	93,5	93,5
	h (mm)	102,5	102,5
	d (mm)	14	21

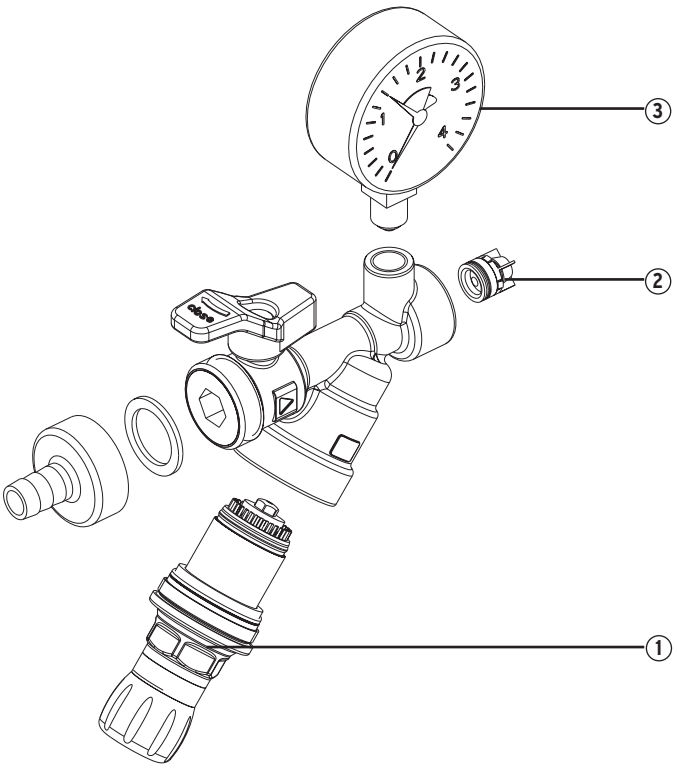
Accessory Manometer 6628.00.901

Components / Order numbers

① **Pressure reducer cartridge**
0312.15.933

② **Check valve**
0312.10.901

③ **Manometer (optional)**
6628.00.901



Pressure Relief Valve 1915

for heating installations



Field of application

The pressure relief valve type 1915 is desig-ned to protect heating installations against excess pressure. The connection size has to be determined in accordance with the heating capacity of the heat-generating device to be protected. The highest admissible operating pressure of the installation and the resulting maximum opening pressure of the pressure relief valve shall be observed. For systems with a heating capacity exceeding the values in the table, observe the following rule: 3 pressure relief valves per heat-generating device are admissible.

The pressure relief valve type 1915 can be used as safety component in compliance with the Pressure Equipment Directive 97/23/EG for directly or indirectly heated pressure tanks designed to generate steam or hot water according to Art. 3 section 1.2 up to category IV.
The pressure relief valve type 1915 is available with 2,5 and 3 bar as standard, or as 6115 series with pressure setting to customers request, example 7 bar.

Design

The operational parts in the pressure relief valve type 1915 are protected against direct contact with the medium (protection against corrosion). The pressure relief valve can be lifted by means of the rotatable handle. Cleaning the seat and the seal after having removed the head part does not change the opening pressure.

1915 Pressure relief valve

Materials

The body is made of a high-quality low-lead brass alloy (DN 15 - DN 32) or a dezincification resistant low-lead gunmetal alloy (DN 40 - DN 50); the spring cap, the diaphragm and other internal parts are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion protected spring steel wire.

Installation

Install the pressure relief valve type 1915 vertically with the inlet connections facing downwards. The length of the supply pipe shall not exceed 1 m, bends are not admissible and its nominal size must be the size of the valve inlet. Position the valve at the highest point of the heat-generating device or in the radiator supply line close to the heat-generating device. There shall be no isolating valves, strainers or similar devices in the supply pipe. The diameter of the relief pipe must be at least equal to the nominal size of the valve outlet. The relief pipe has to be installed with continuous incline. It can maximally include 2 bends and have a length of 2 meters. When a length exceeding 2 m is necessary, the pipe must be one size larger. Caution: more than 3 bends and a length exceeding 4 meters are not admissible. The outlet of the relief pipe must be free from obstruction, controllable and positioned in such a way that persons are not endangered. When the relief pipe ends over a tundish, it is indispensable that its drain pipe has at least the double cross section of the valve inlet. Free access to the pressure relief valve must be provided; it has to be located in the boiler room.

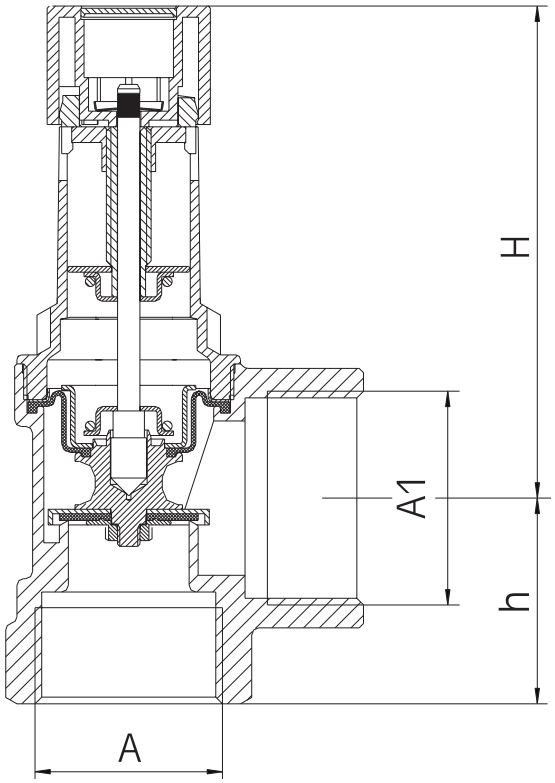
Thoroughly rinse the pipe prior to installation. Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

Operating temperature:	-10°C to max. 120°C
Opening pressure:	0.8 - 6 bar
Standard setting:	2.5 and 3 bar (type-tested)
Special setting:	0.8 - 6 bar (EG-type-examination tested)
Mounting position:	main axis vertical, inlet connections facing downwards
Component approval number:	TÜV-SV-15-525-H-P-p
Fluids:	water; neutral non-adhesive fluids
Serial number:	1915 ...
	CE 0085

Maintenance

The correct function of the pressure relief valve should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. To clean the valve seat and seal, unscrew the head part. The seat seal is exchangeable for valves with a connection size of DN 40 or more. After cleaning, refit the head part; the opening pressure remains unchanged after this operation. Pressure relief valves DN 15 with a damaged valve seat can be repaired by means of the exchange cartridge 1916, which makes them equivalent to a new valve.



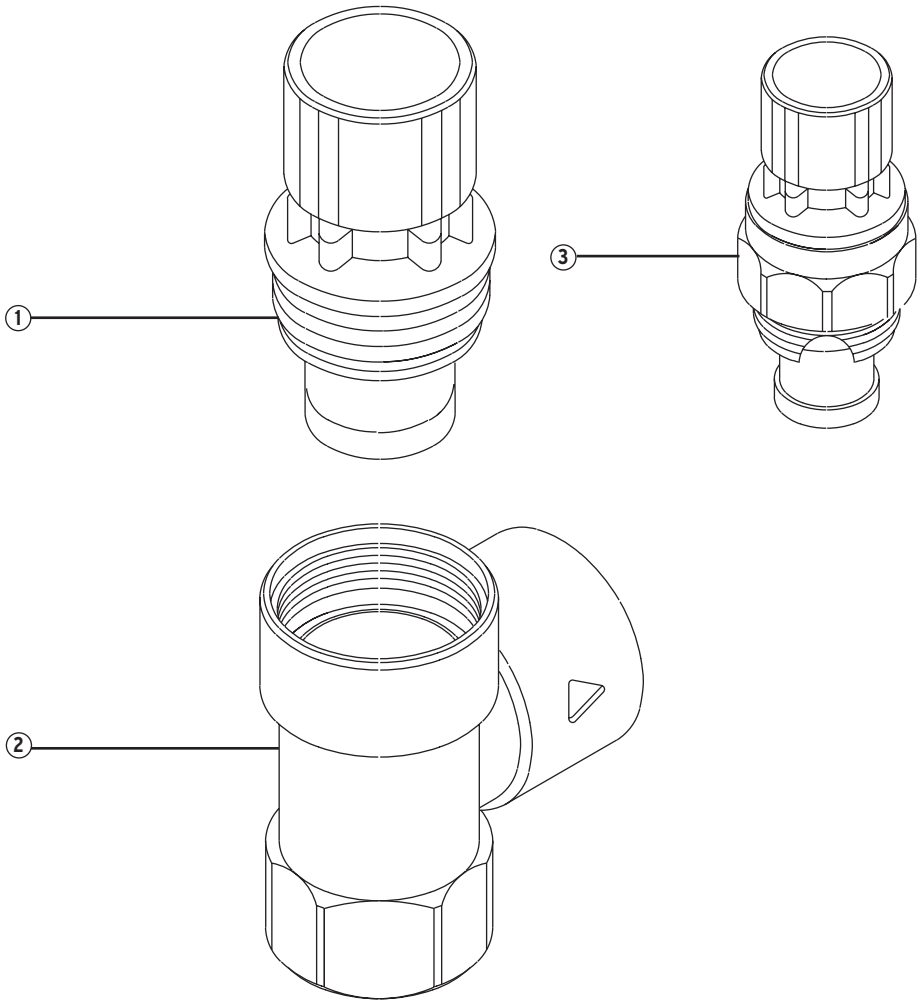
Nominal size		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
	A	R ½"	R ¾"	R 1"	R 1 ¼"	R 1 ½"	R 2"
	A 1	R ¾"	R 1"	R 1 ¼"	R 1 ½"	R 2"	R 2 ½"
Dimension in mm	H (mm)	50	52	79	110	176	195
	h (mm)	28	34	40	46	55	66
	Opening pressure (bar)	max heating capacity og the heat generating device (kw)					
	1,5	36	72	144	252	433	650
	2	43	86	172	302	518	778
	2,5	50	100	200	350	600	900
	3	50	100	200	350	600	900
	4	70	140	280	490	840	1260
	5	84	168	336	588	1008	1512
	6	94	189	379	66	1140	1700

Components / Order numbers

① **Head part**

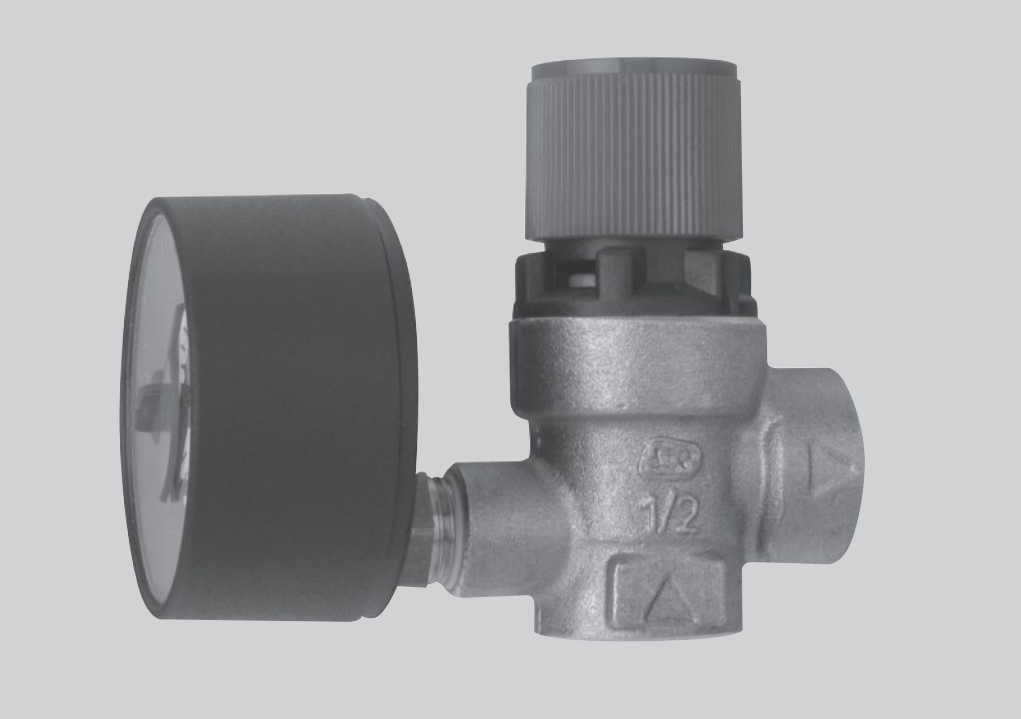
② **Body**

③ **Exchange cartridge 1916**
DN 15 2.5 bar: 1916.15.000
DN 15 3.0 bar: 1916.15.001



Pressure Relief Valve 1918

for heating installations



Field of application

The pressure relief valve type 1918 is designed to protect unvented (pressurised) heating installations against excess pressure. The connection size has to be determined in accordance with the heating capacity of the heat-generating device to be protected. The highest admissible operating pressure of the installation and the resulting maximum opening pressure of the pressure relief valve shall be observed. Note: 3 pressure relief valves per heat-generating device are admissible.

Design

The operational parts in the pressure relief valve type 1918 are protected against direct contact with the medium (protection against corrosion). The pressure relief valve can be lifted by means of the rotatable handle. Cleaning the seat and the seal after having removed the head part does not change the opening pressure. Available in DN 15 only. The connection and relief sides have the same cross-section. The particularity of this valve is the integrated manometer connection plug. The corresponding pressure gauge is enclosed in the delivery.

1918 Pressure relief valve

Materials

The body is made of a high-quality low-lead brass alloy; the spring cap, the diaphragm and other internal parts are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion resistant spring steel wire.

Installation

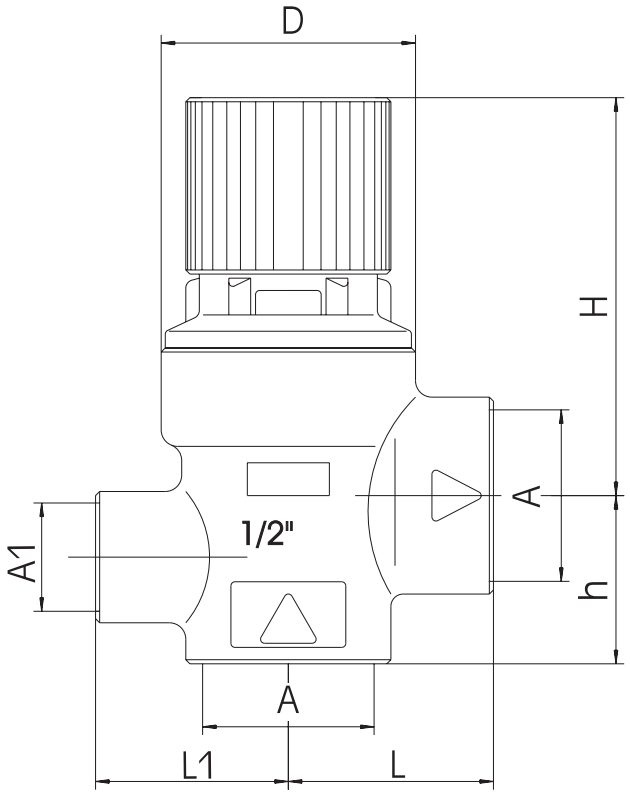
Install the pressure relief valve type 1918 vertically with the inlet connections facing downwards. The length of the supply pipe shall not exceed 1 m, bends are not admissible and its nominal size must be the size of the valve inlet. Position the valve at the highest point of the heat-generating device or in the radiator supply line close to the heat-generating device. There shall be no isolating valves, strainers or similar devices in the supply pipe. The diameter of the relief pipe must be at least equal to the nominal size of the valve outlet. The relief pipe has to be installed with continuous incline. It can maximally include 2 bends and have a length of 2 meters. When a length exceeding 2 m is necessary, the pipe must be one size larger. Caution: more than 3 bends and a length exceeding 4 meters are not admissible. The outlet of the relief pipe must be free from obstruction, controllable and positioned in such a way that persons are not endangered. When the relief pipe ends over a tundish, it is indispensable that its drain pipe has at least the double cross section of the valve inlet. Free access to the pressure relief valve must be provided; it has to be located in the boiler room. Thoroughly flush the pipe prior to installation. Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

Response pressure:	2,5 to 3 bar (other upon request)
Capacity hot water storage tank:	max. 200 l
Fluid:	water; neutral non-adhesive fluids
Connection size:	DN 15, female thread
Operating Temperature:	-10 °C to max. 140 °C
Serial-Nr.:	1918 ...

Maintenance

The correct function of the pressure relief valve should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. To clean the valve seat and seal, unscrew the head part. After cleaning, refit the head part; the opening pressure remains unchanged after this operation. Pressure relief valves DN 15 with a damaged valve seat can be repaired by means of the exchange cartridge 1916, which makes them equivalent to a new valve.



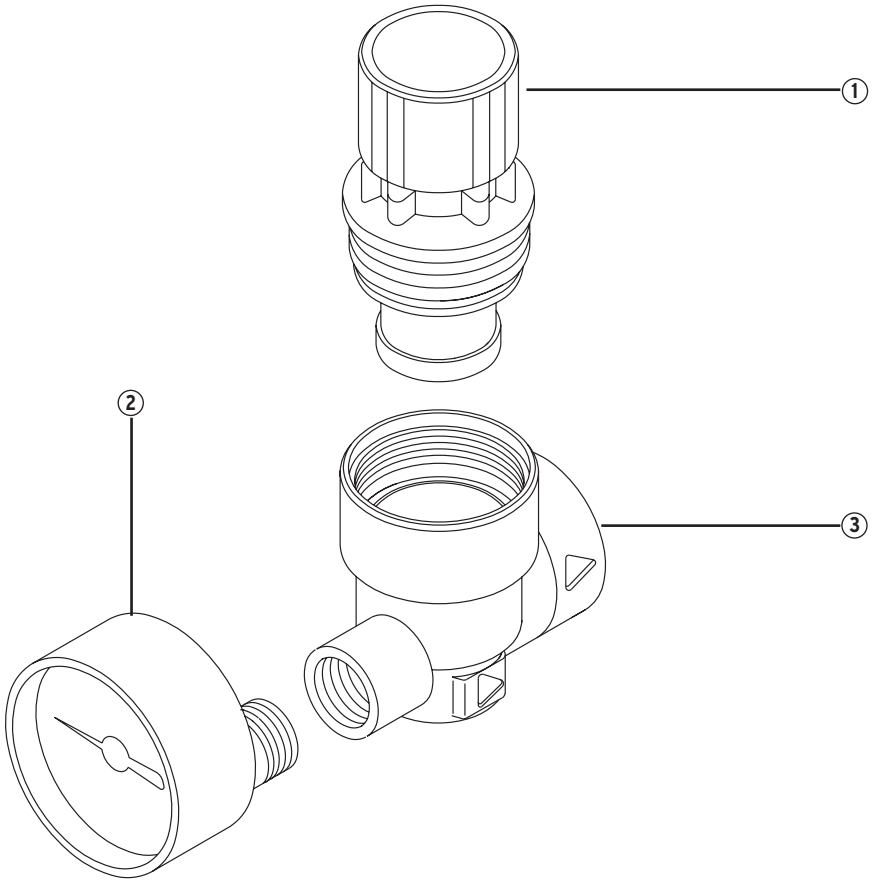
Nominal size		DN 10
	A	G ½"
	A1	G ¼"
	D (mm)	31
Dimensions in mm	L (mm)	25
	L1(mm)	23,5
	H (mm)	48,5
	h (mm)	20,5

Components / Order numbers

① **Exchange cartridge 1916**
DN 15 2,5 bar: 1916.15.000
DN 15 3,0 bar: 1916.00.901

② **Manometer**
1962.00.901

③ **Body**



Pressure Relief Valve for Solar Systems 8115

for the protection of solar collectors and for special applications



Field of application

The pressure relief valve type 8115 is used as a protection for solar heating systems. It can be used for the protection of other hydraulic systems as well.

The table indicates the required connection size in accordance with the collector size.

Design

The operational parts in the pressure relief valve type 8115 are protected against direct contact with the medium (protection against corrosion). The pressure relief valve 8115 can be lifted by means of the rotatable handle.

8115 Pressure relief valve Solar

Materials

The body is made of high-quality low-lead brass; the spring cap is made of zinc die-casting. The diaphragm and the seat are made of heat and ageing resistant synthetic material and the spring of corrosion protected spring steel wire.

Installation

There shall be no obturators or narrows in the connecting pipe between the solar collector group and the pressure relief valve. Pipe bends shall have a bend diameter of at least 3xD (pipe diameter) in the centre line of the pipe. There is no restriction for intrinsically safe installations as regards the length of the connecting pipe. An adequate arrangement of the connecting pipe should prevent the formation of dirt within the pipe. The relief pipe of the pressure relief valve shall not freeze up and the accumulation of water in it shall be prevented. The outlets of the relief pipe have to be located in such way that the heat transfer medium coming out of the pressure relief valve can be drained under visual control and without presenting any danger. When antifreezer is added to the water and the boiling point of the antifreezer is above the boiling point of the water, the relief and drain pipes shall end in an open container that is capable of holding the complete volume of the collectors.

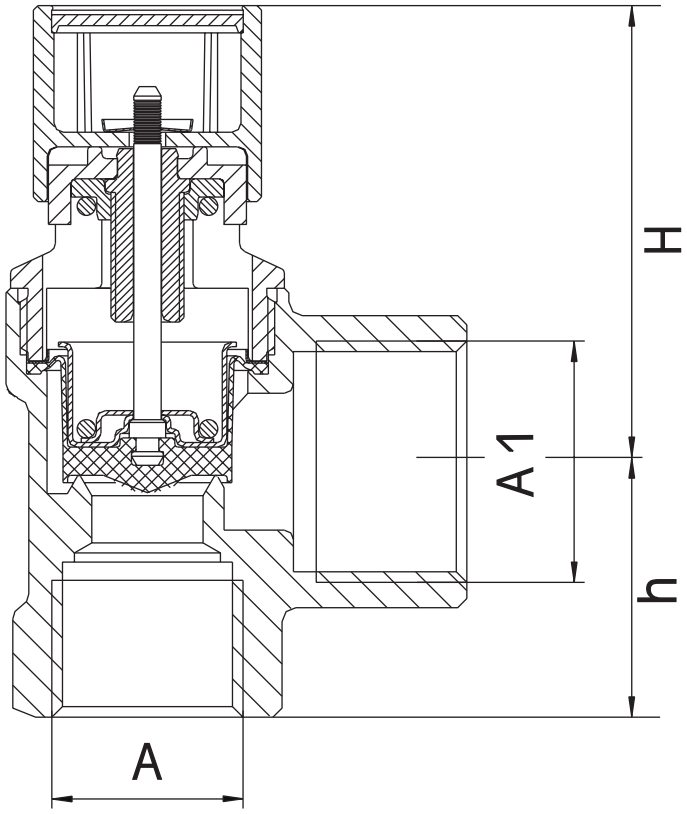
Thoroughly rinse the pipe prior to installation. Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

Operating temperature:	max. 160 °C
Opening pressure:	2.5 bar, 3.0 bar, 4 bar and 6 bar
Mounting position:	preferably main axis vertical, inlet connection pieces facing downwards
Fluids:	water, neutral non-adhesive fluids, blend of glycol and water up to a mixture ratio of 1 : 1
Components approval number:	TÜV-SV-10-1127-SOL-50-p
Serial number:	8115...
	CE 0085

Maintenance

The correct function of the pressure relief valve should be checked by qualified personnel at initial operation: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. To clean the valve seat and seal, unscrew the head part. After cleaning, refit the head part; the opening pressure remains unchanged after this operation.



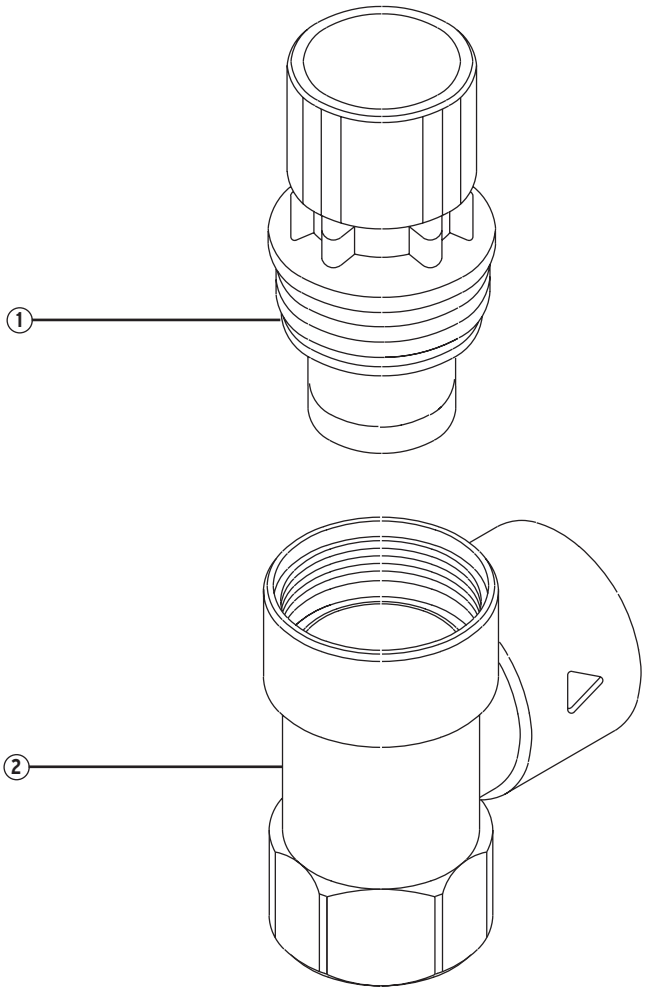
Nominal size		DN 15	DN 20
	A	R ½“	R ¾“
	A 1	R ¾“	R 1“
Dimensions in mm	H (mm)	50	52
	h (mm)	28	34
Size of Collector	m^3	bis 50	bis 100

Designs Special sizes up to DN 50 on request

Components / Order numbers

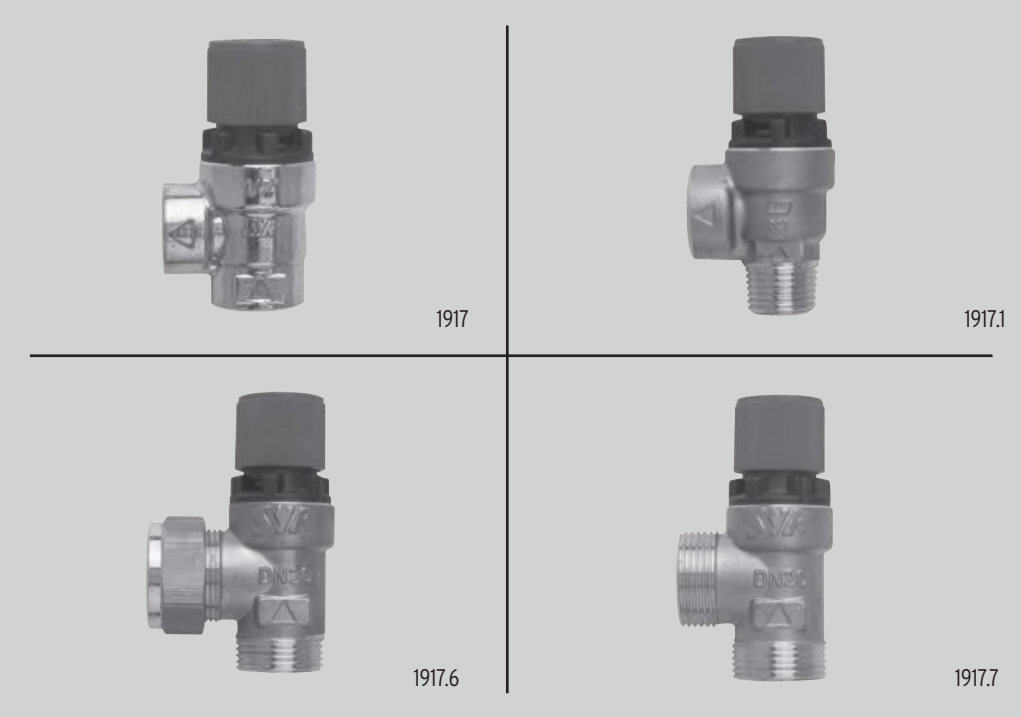
① **Head part**
DN 15:
2,5 bar: 8115.15.000
3,0 bar: 8115.15.001
4,0 bar: 8115.15.002
6,0 bar: 8115.15.003
DN 20:
2,5 bar: 8115.20.000
3,0 bar: 8115.20.001
6,0 bar: 8115.20.002

② **Body**



Pressure Relief Valve 1917

for heating installations



Field of application

The pressure relief valve type 1917 is designed to protect closed-circuit heating installations against excess pressure. The connection size has to be determined in accordance with the heating capacity of the heat-generating device to be protected. The highest admissible operating pressure of the installation and the resulting maximum opening pressure of the pressure relief valve shall be observed. For systems with a heating capacity exceeding the values in the table, observe the following rule: 3 pressure relief valves per heat-generating device are admissible.
The pressure relief valve type 1917 can be used as safety component in compliance with the Pressure Equipment Directive 97/23/EG for directly or indirectly heated pressure tanks designed to generate steam or hot water according to Art. 3 section 1.2 up to category IV.

Design

The operational parts in the pressure relief valve type 1917 are protected against direct contact with the medium (protection against corrosion). The pressure relief valve can be lifted by means of the rotatable handle. Cleaning the seat and the seal after having removed the head part does not change the opening pressure.
This product exists in various models with different connection sizes and connection types as specified in the following table: (1917; 1917.1; 1917.6 and 1917.7).

1917 Pressure relief valve

Materials

The body is made of a high-quality low-lead brass alloy; the spring cap, the diaphragm and other internal parts are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion protected spring steel wire.

Installation

Install the pressure relief valve type 1917 vertically with the inlet connections facing downwards. The length of the supply pipe shall not exceed 1 m, bends are not admissible and its nominal size must be the size of the valve inlet. Position the valve at the highest point of the heat-generating device or in the radiator supply line close to the heat-generating device. There shall be no isolating valves, strainers or similar devices in the supply pipe. The diameter of the relief pipe must be at least equal to the nominal size of the valve outlet. The relief pipe has to be installed with continuous incline. It can maximally include 2 bends and have a length of 2 meters. When a length exceeding 2 m is necessary, the pipe must be one size larger. Caution: more than 3 bends and a length exceeding 4 meters are not admissible. The outlet of the relief pipe must be free from obstruction, controllable and positioned in such a way that persons are not endangered. When the relief pipe ends over a tundish, it is indispensable that its drain pipe has at least the double cross section of the valve inlet. Free access to the pressure relief valve must be provided; it has to be located in the boiler room.

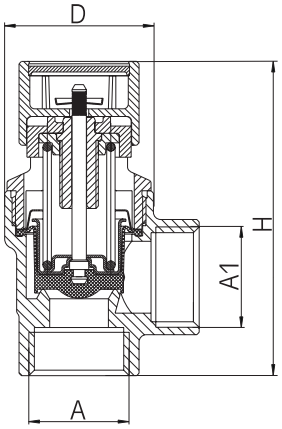
Thoroughly rinse the pipe prior to installation. Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

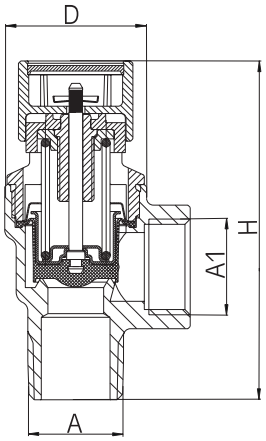
Operating temperature:	-10 °C to max. 120°C
Opening pressure:	1.5 - 3.0 bar
Standard setting:	2.5 and 3 bar
Mounting position:	main axis vertical, inlet connections facing downwards
Media:	water; neutral non-adhesive fluids;
Connection sizes and connection types:	as specified in table on next page
Serial number:	1917...

Maintenance

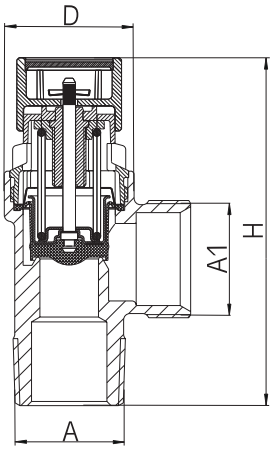
The correct function of the pressure relief valve should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. To clean the valve seat and seal, unscrew the head part. After cleaning, refit the head part; the opening pressure remains unchanged after this operation. Pressure relief valves DN 15 with a damaged valve seat can be repaired by means of the exchange cartridge 1916, which makes them equivalent to a new valve.



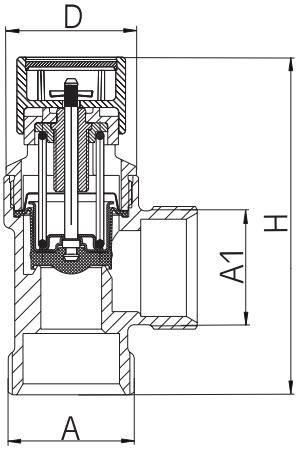
1917



1917.1



1917.6



1917.7

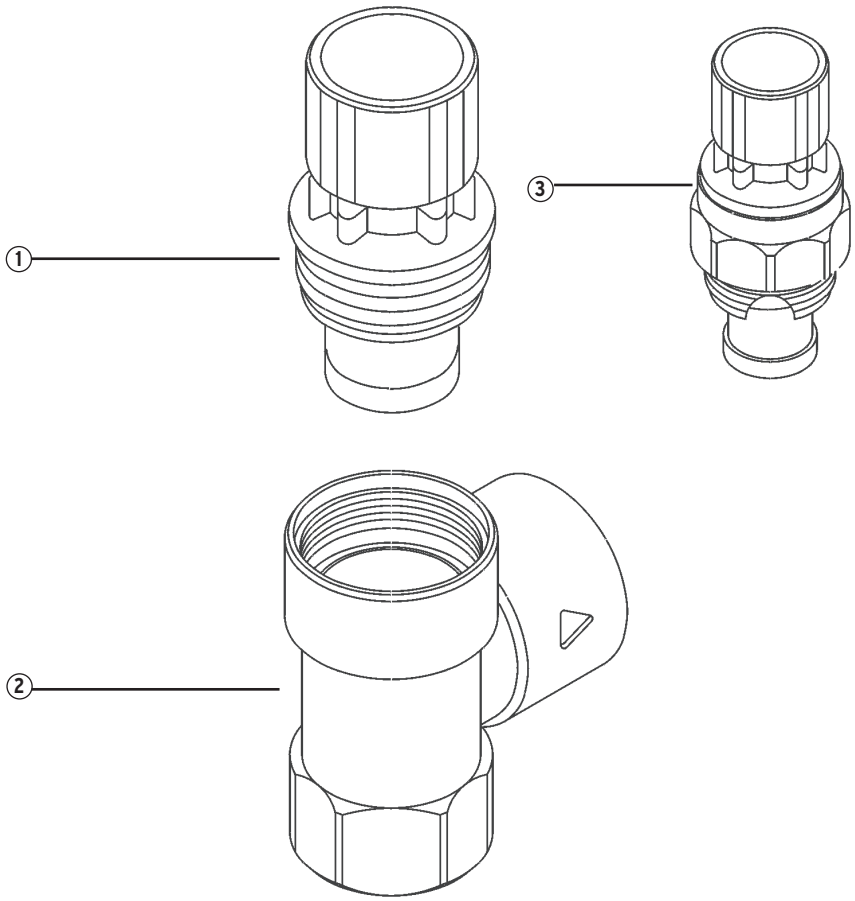
Nominal size		1917		1917.1	1917.6	1917.7
	A	DN 15 female	DN 20 female	DN 15 male	DN 20 male	DN 20 male
	A1	DN 15 female	DN 20 female	DN 15 female	22 mm Comp.	DN 20 male
Dimensions in mm	D (mm)	31	31	31	28	30
	H (mm)	49	52	49	48	48
	h (mm)	19	27	29	35	29

Components / Order numbers

① **Head part**

② **Body**

③ **Exchange cartridge 1916**
DN 15 2.5 bar: 1916.15.000
DN 15 3.0 bar: 1916.15.001



Exchange Cartridge 1916

for SYR pressure relief valve type 1915 DN 15 - 2.5 and 3 bar



Field of application

The field of application of the exchange cartridge type 1916 is to repair pressure relief valves type 1915, size DN 15. It can be used for all admissible applications of the original valves. The exchange cartridge type 1916 can be used as a safety component in compliance with the Pressure Equipment Directive 97/23/EG for directly or indirectly heated pressurised tanks with danger of overheating designed to generate steam or hot water according to Art. 3 section 1.2 up to category IV.
The installation of the exchange cartridge has no negative effect on the operating performance.

Design

The operational parts in the exchange cartridge type 1916 are protected against direct contact with the medium (protection against corrosion). The exchange cartridge can be lifted by means of the rotatable handle. Cleaning the seat and the seal after having removed the head part does not change the opening pressure.

1916 Exchange cartridge

Materials

The body is made of a high-quality low-lead brass alloy; the spring cap is made of zinc diecasting, the diaphragm and seals of heat and ageing resistant elastomeric synthetic material and the spring of corrosion protected spring steel wire.

Installation

Should the pressure relief valve have become unserviceable - indicated by constant dripping-, unscrew the head part and replace it with the exchange cartridge. Ensure that the opening pressure of the exchange cartridge does not exceed the maximum admissible operating pressure of the installation.

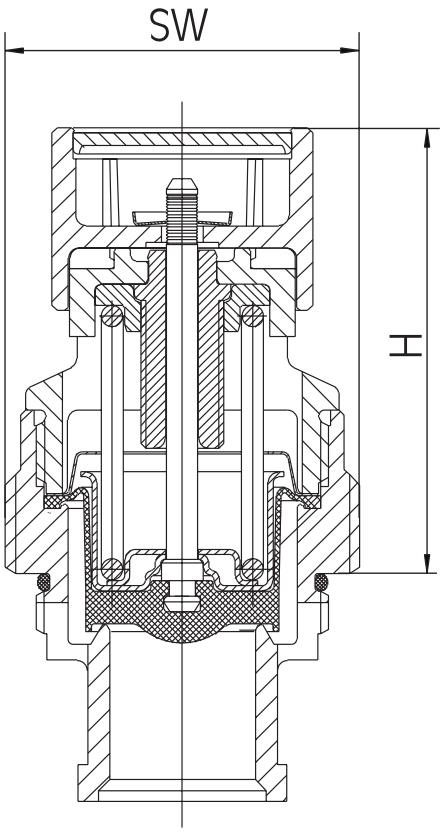
Before disassembling the original head part, depressurise or drain the installation. Clean the valve seat before mounting the exchange cartridge. The exchange cartridge is positioned with the metallic side directly on the valve seat and therefore has to be tightened with an adequate tool after being screwed in.

Technical data

Opening pressure:	Standard setting 2.5 or 3 bar
Fluids:	water; neutral non-adhesive fluids
Operating temperature:	-10 °C up to max. 120°C
Mounting position:	like original valve
Component approval number:	TÜV-SV-15-525-H-P-p
Serial number:	1916...
	CE 0085

Maintenance

The correct function should be checked by qualified personnel at initial operation and then on a regular basis: turn the lifting handle in the direction of the arrow until you hear a click. Afterwards, the valve has to be closed tight.



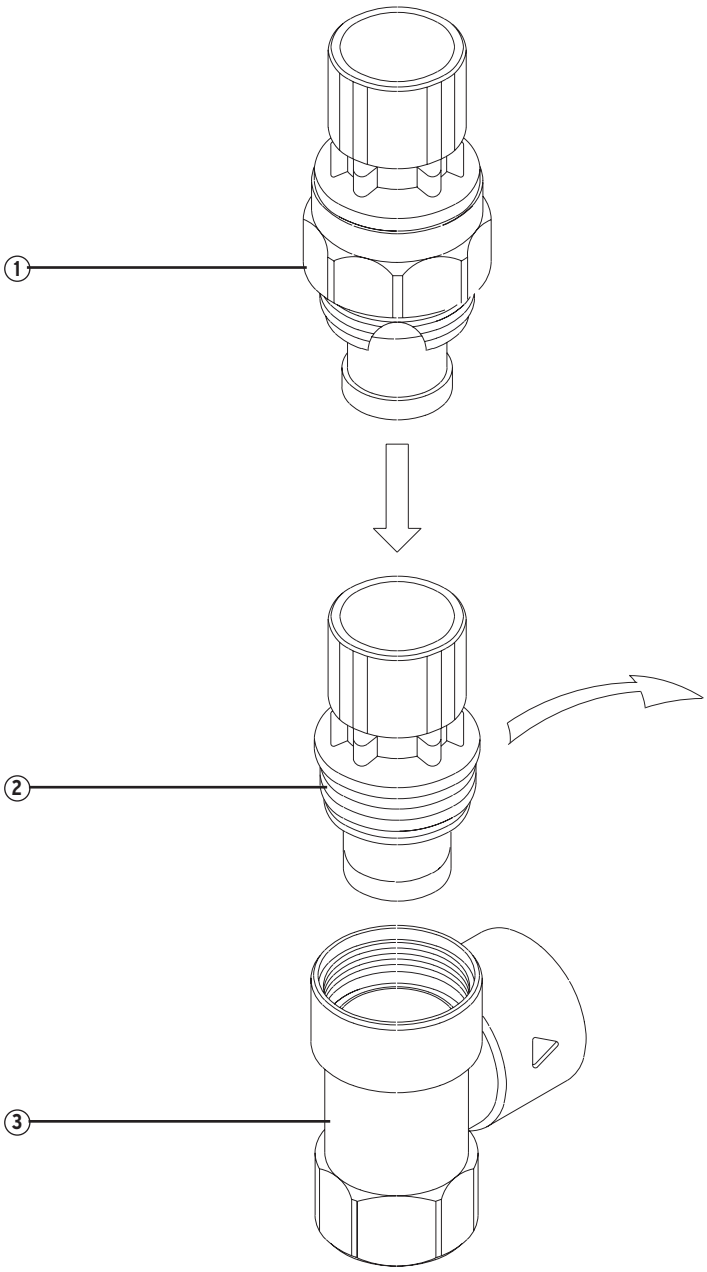
Nominal size		DN 15
		G ½"
Dimensions in mm	H (mm)	44
	SW	32

Components / Order numbers

① **Exchange cartridge 1916**
DN 15 2.5 bar: 1916.15.000
DN 15 3.0 bar: 1916.15.001

② **Disassembled head part**

③ **Valve body**



Water Level Limiter 932

Protection against insufficient water level in boilers



Field of application

The water level limiter type 932 protects boilers in heating installations against dry-heating resulting from an insufficient water level. The installation of such a device is highly recommended for safety reasons.

The water level limiter type 932 can also be used for any device, which operates with water level dependent electric switches and requires a test possibility without lowering the water level.

Design

The water level limiter type 932 is designed with magnetic transmission of the float movement to a microswitch; it allows testing without lowering the water level. The electric switch unit is rotatable by 360° and can be exchanged without draining the installation. The water level limiter type 932 isolates the system after cutting the burner off. When the malfunction is eliminated, re-connect the system by means of the unlock key on the water level limiter. Another type with a compacter construction form is available as special model 932.5.

Materials

The nipple, the test sensor, the magnetic glide sleeve and the internal parts are made of a high quality low-lead brass alloy. The float is made of a heat and pressure resistant special glass and the switch unit body of synthetic material. All brass and copper parts in contact with water are nickel-plated. The sealing elements are made of heat and ageing resistant elastomeric synthetic material. The electric connection is made with a hardwired cable H 05 VV-F 4G 0.75 mm^2, length 2.5 m.

Installation

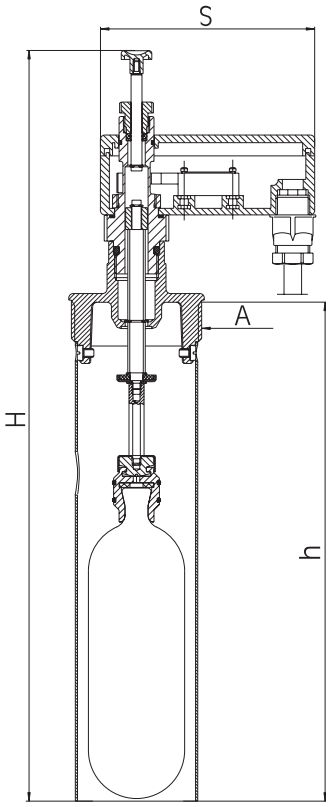
Screw the water level limiter type 932 in the pre-installed connection piece (DN 50) on the boiler. When installing, imperatively ensure that the float is not damaged. The electric connection has to be made by an electrician in compliance with the prescriptions of the local power supply company under consideration of the circuit diagram and the cable designation. After the installation, fill and vent the system. Afterwards, vent the water level limiter separately: loosen the gland packing on the test sensor until water comes out; then, re-tighten. To start up the installation, pull the test sensor upwards to the stop; then, press the unlock key.

Technical data

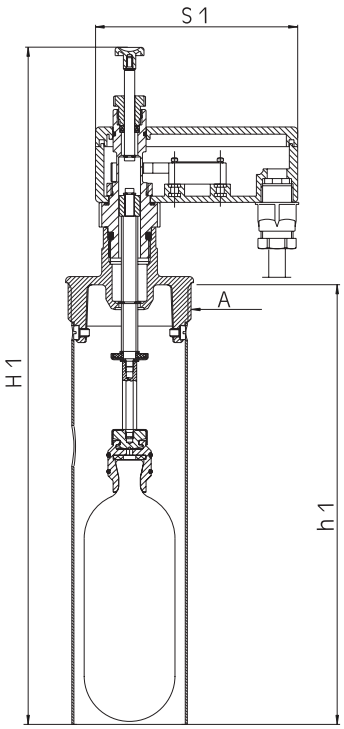
Operating overpressure:	max. 10 bar
Operating temperature:	max. 120 °C
Service temperature:	max. 70°C
Type of protection:	IP 65
Microswitch:	on-off switch, single pole
Mounting position:	main axis vertical
Capacity:	10 (4) A / 250 Volt
Component approval:	TÜV - HWB - 16-206
VDE-Nr.:	139223
Serial number:	0932...
	CE 0085

Maintenance

The device requires no regular maintenance. However, it should be unlocked manually once per year in order to test functionality. All components can be exchanged separately. The switch unit can be exchanged without draining the installation.



932.1



932.5

Nominal size		DN 50
	A	G 2“
Dimensions in mm	H (mm)	343
	h (mm)	229
	S (mm)	64 x 98
	H 1 (mm)	247
	h 1 (mm)	150
	S 1 (mm)	64 x 98

Models:

Type 932.1 standard construction form
Type 932.5 compact construction form

Components / Order numbers

① **Test sensor**
0933.20.911
0932.50.904 (932.5)

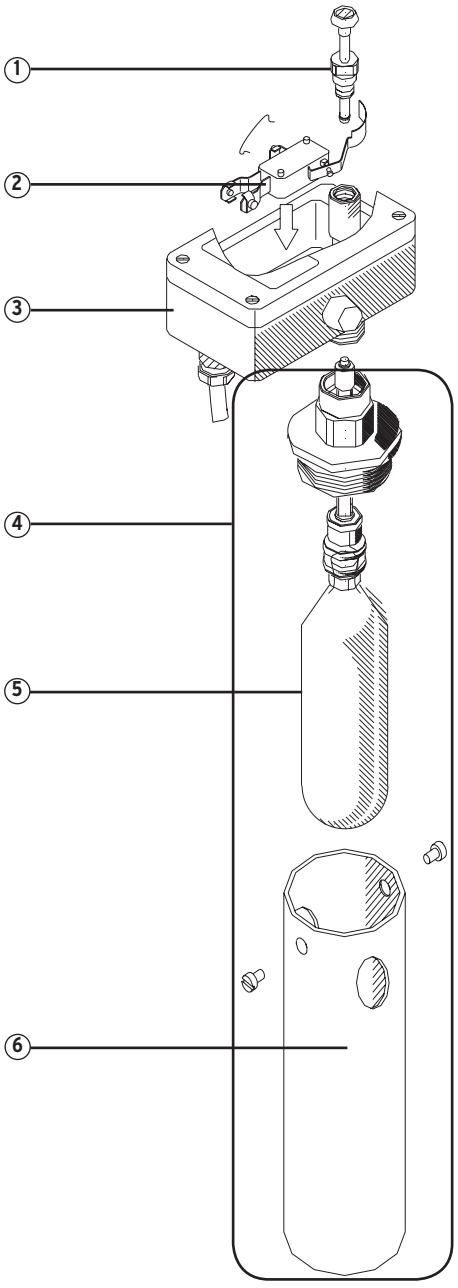
② **Microswitch**
0933.20.912

③ **Switch unit**
0932.50.900
0932.50.905 (932.5)

④ **Complete float device**
0932.50.901
0932.50.903 (932.5)

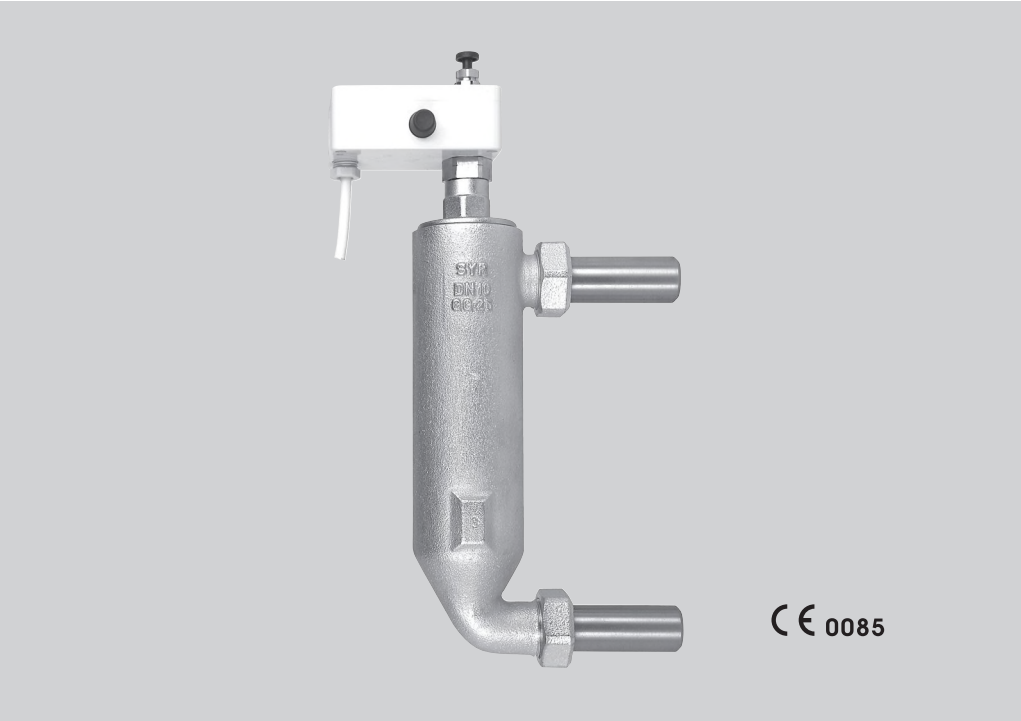
⑤ **Glass float**
0933.20.906
0932.50.906 (932.5)

⑥ **Immersion sleeve with screws**
0932.50.906



Water Level Limiter 933

Protection against insufficient water level, for installation in pipes



Field of application

The water level limiter type 933 protects boilers in heating installations against dry-heating resulting from an insufficient water level. The installation of such a device is highly recommended for safety reasons.

The water level limiter type 933 can also be used for any device, which operates with water level dependent electric switches and requires a test possibility without lowering the water level.

Design

The water level limiter type 933 is designed with magnetic transmission of the float movement to a microswitch; it allows testing without lowering the water level. The electric switch unit is rotatable by 360° and can be exchanged without draining the installation. Two models of the water level limiter type 933 are available: type 933.1 isolates the system after cutting the burner off. When the malfunction is eliminated, re-connect the system by means of the unlock key on the water level limiter. Type 933.2 does not isolate the system after cutting the burner off; therefore, the following electric circuit will have to provide the isolation.

933 Water level limiter

Materials

The nipple, the test sensor, the magnetic glide sleeve and the internal parts are made of a high quality low-lead brass alloy. The float is made of a heat and pressure resistant special glass and the switch unit body of synthetic material. All brass and copper parts in contact with water are nickel-plated. The sealing elements are made of heat and ageing resistant elastomeric synthetic material. The housing and the captive nut are made of malleable cast iron. The electric connection is made with a hardwired cable H 05 VV-F 4G 0.75 mm^2, length 2.5 m.

Installation

Install the water level limiter type 933 as external appliance in parallel to the radiator supply line of the boiler.

Screw the water level limiter type 933 in the preinstalled connection piece (DN 20) in the radiator supply line of the boiler. When installing, imperatively ensure that the float is not damaged. The electric connection has to be made by an electrician in compliance with the prescriptions of the local power supply company under consideration of the circuit diagram and the cable designation.

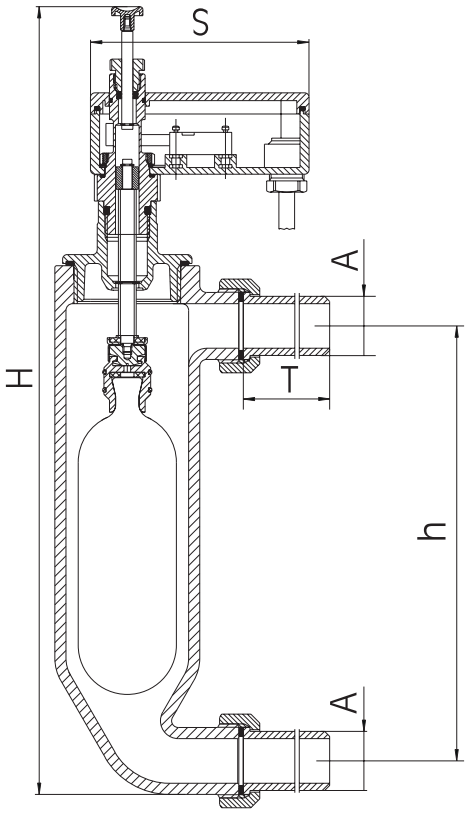
After the installation, fill and vent the system. Afterwards, vent the water level limiter separately: loosen the gland packing on the test sensor until water comes out; then, re-tighten. To start up the installation, pull the test sensor (only with type 933.1) upwards to the stop; then, press the unlock key.

Technical data

Operating overpressure:	max. 10 bar
Operating temperature:	max. 120 °C
Service temperature:	max. 70°C
Type of protection:	IP 65
Microswitch:	on-off switch, single pole
Mounting position:	main axis vertical
Capacity:	10 (4) A / 250 Volt
Component approval:	TÜV - HWB - 16-190
VDE-Nr.:	139223
Serial number:	0933...
	CE 0085

Maintenance

The device requires no regular maintenance. However, it should be unlocked manually once per year in order to test functionality. All components can be exchanged separately. The switch unit can be exchanged without draining the installation.



Nominal size		DN 20
	A	20 mm
Dimensions in mm	H (mm)	370
	h (mm)	195
	S (mm)	64 x 98
	T (mm)	70

Models

Type 933.1 with interlock
Type 933.2 without interlock

Components / Order numbers

① **Test sensor**
0933.20.911

② **Microswitch**
0933.20.912

③ **Complete switch unit**
0933.20.904

④ **Complete float**
0933.20.910

⑤ **Valve without housing**
0933.20.900

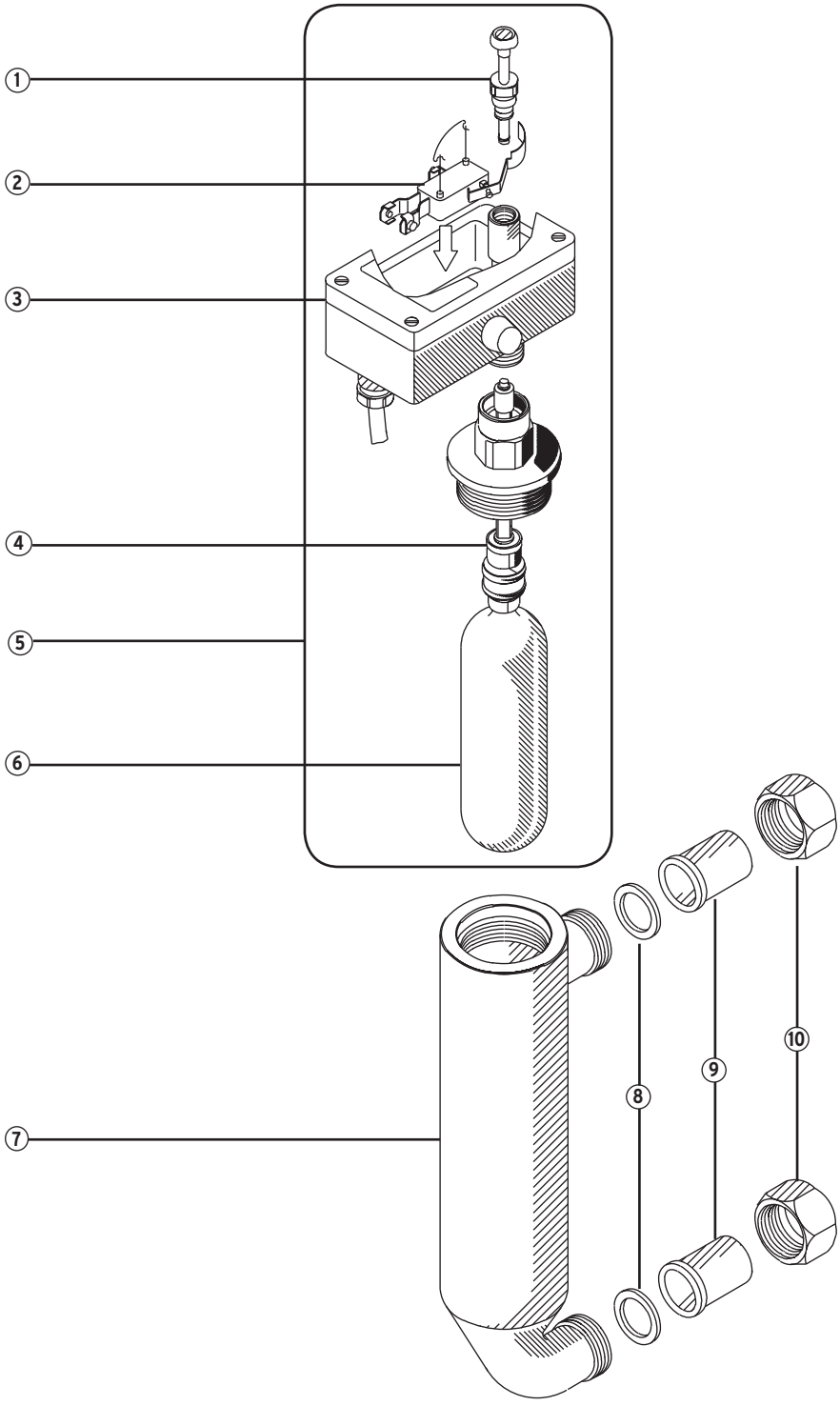
⑥ **Glass float**
0933.20.906

⑦ **Housing**

⑧ **Seal**

⑨ **Socket**

⑩ **Captive nut**



Thermal Safety Valve 3065

Safety valves for solid fuel fired boilers



Field of application

The SYR thermal safety valve type 3065 prevents excess temperatures in solid fuel fired boilers in water-based closed circuit heating systems. Heating capacities of up to a maximum of 100 kW are allowed for theses systems. It is indispensable to install a thermal safety valve in systems in which the heat-generating device is equipped with a water heater.

Design

The thermal safety valve type 3065 is a pressure-relieved single-seated valve that opens in case of rising temperature. It is controlled by means of two independent temperature transmitters. The thermal safety valve is liftable. Cleaning the seat and seal does not change the temperature setting. The compact temperature transmitter can be removed to facilitate the assembly of the valve. A metal hose coating prevents any damages on the capillary tubes from the sensor to the transmitter.

3065 Thermal safety valve

Materials

Body, inner parts, cap, immersion sleeve and union are made of a high quality low-lead brass alloy. Valve and immersion sleeve are nickel-plated. Piston and temperature transmitter are made of heat resistant synthetic material, spring of stainless steel. All seals are made of heat and ageing resistant elastomeric synthetic material. Capillary tubes and temperature sensor are made of copper.

Installation

Install the thermal safety valve preferably in the cold water inlet of the safety heat exchanger. This type of installation protects the valve against impurities due to lime scale deposits or similar effects. Install the valve in the warm water outlet only in case of older boiler models where the protection is provided by an integrated potable water heater without temperature control. The boiler is indirectly cooled down by the cold water flowing into the potable water heater, which prevents the temperature from exceeding the admissible maximum of 115°C.

Thoroughly flush the pipe prior to installation. Install the valve without applying stresses. It is recommended to install a potable water filter in order to ensure perfect and durable functionality.

The correct positioning of the valve and a thorough check of the surrounding system prevent malfunctions. The correct positioning of the immersion sleeve in the boiler is of particular importance.

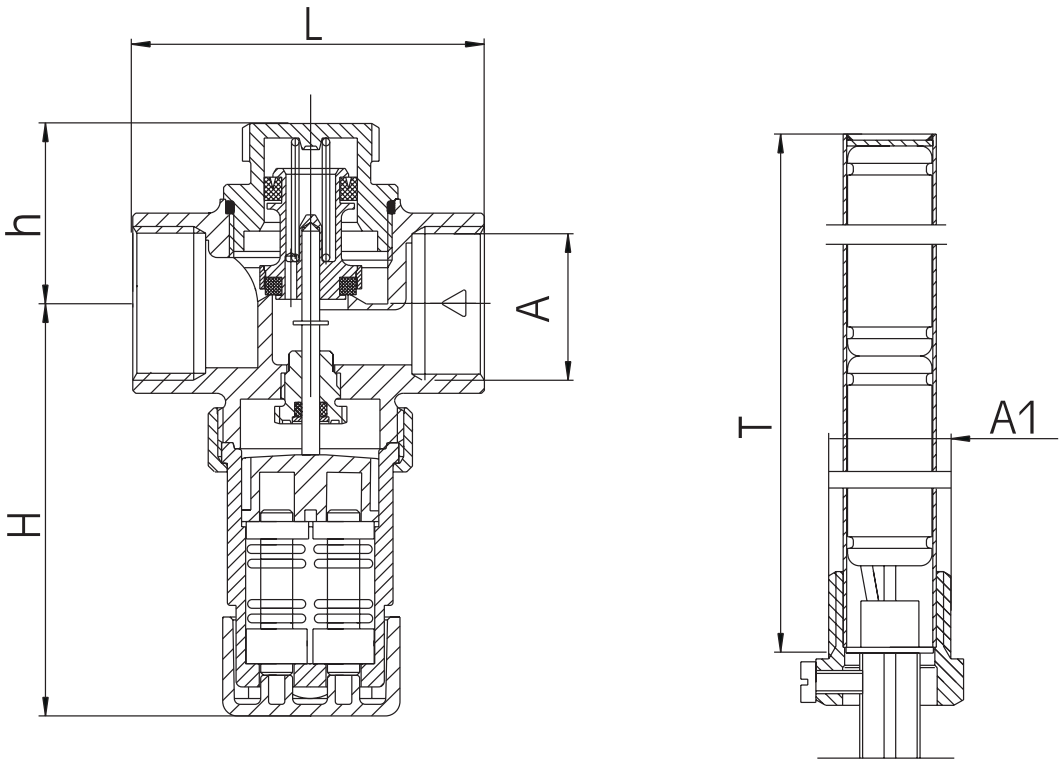
Technical data

Operating overpressure:	max. 10 bar
Operating temperature:	max. 125°C
Opening temperature:	95°C, special model: 55°C
Mounting position:	any
Length of capillary tube:	1.3 m, special model: 5 m
Approval number:	TH 797
Serial number:	3065...
	CE 0085

Maintenance

Should the thermal safety valve drip constantly, it is generally due to impurities. When impurities have damaged the seal, the piston can be exchanged separately.

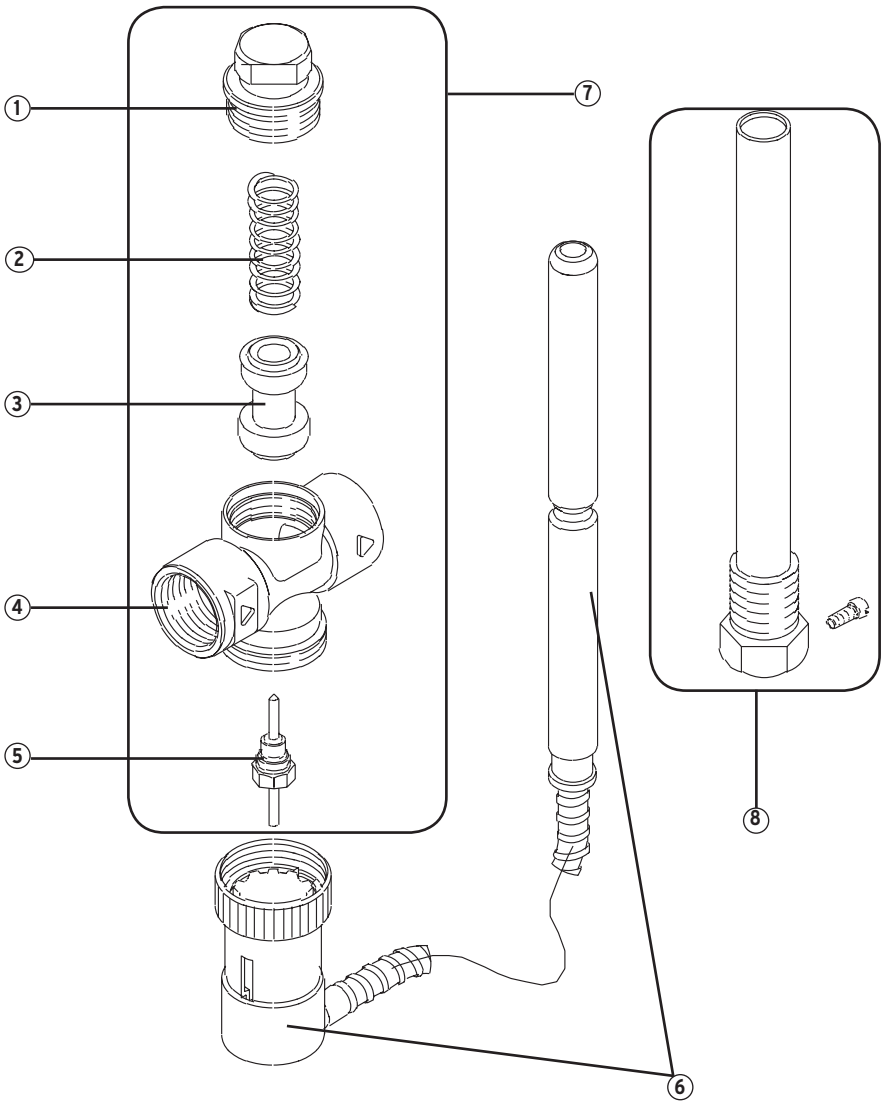
The disassembly of the valve for mainte-nance or repair is not required due to the separate positioning of the components within the thermal safety device.



Nominal size		DN 20
	A	G ¾“
Dimensions in mm	L (mm)	60
	H (mm)	70
	h (mm)	31
	T (mm)	150
	A1	½“

Components / Order numbers

① **Screw cap**
3065.20.909
② **Spring**
3065.20.918
③ **Piston**
3065.20.921
④ **Body**
3065.20.919
⑤ **Stuffing box**
3065.20.911
⑥ **Temperature probe**
3065.20.903
⑦ **Body complete**
3065.20.920
⑧ **Immersion sleeve**
3065.20.902



Differential Pressure Regulator 390

Angle type



Field of application

The differential pressure regulator type 390 stabilises the rate of circulating water as well as the differential pressure in pumped central heating installations that regulate the room temperature by means of thermostatic radiator or zone valves. The differential pressure regulator type 390 can also be used for district heating systems. The circulating water quantity fluctuates between zero and the maximum value according to the heat requirement and as a result the pump pressure varies according to the pump specifications; the differential pressure regulator type 390 reduces both phenomena to a minimum. With the system load and the circulation rate being reduced, the differential pressure increases according to the pump specifications up to the opening pressure of the differential pressure regulator. Then, the latter maintains a defined circulating water quantity in the boiler circuit and prevents the differential pressure from rising to the maximum pump pressure. Advantages: for boilers with low water content, the risk of possible overheating of the heating chamber is eliminated. An additional boiler circulation pump is no longer required. In steel boilers, the mixing effect prevents low-temperature corrosion that results from excessively cold return water. As the differential pressure can only rise insignificantly above the required pressure, the regulating valves and the pump no longer generate annoying noise.

390 Differential pressure regulator

Design

The differential pressure regulator type 390 operates as a proportional by-pass valve. Additional control lines are not required as a result of the internal balance of the static pressure. The factory-set opening pressure can be adjusted on a spindle by means of a lockable turning handle. In general, it is not necessary to re-adjust the system. A visible lift indicator allows to control functionality.

Materials

The body, cap, internal components and unions are made of a high quality low-lead brass alloy. The spring is made of corrosion resistant spring steel wire. The diaphragm and sealing rings are made of heat resistant elastomeric synthetic material.

Installation

Install the differential pressure regulator type 390 behind the heating pump with a by-pass line between the radiator supply line and the return line. The installation can be horizontal or vertical.

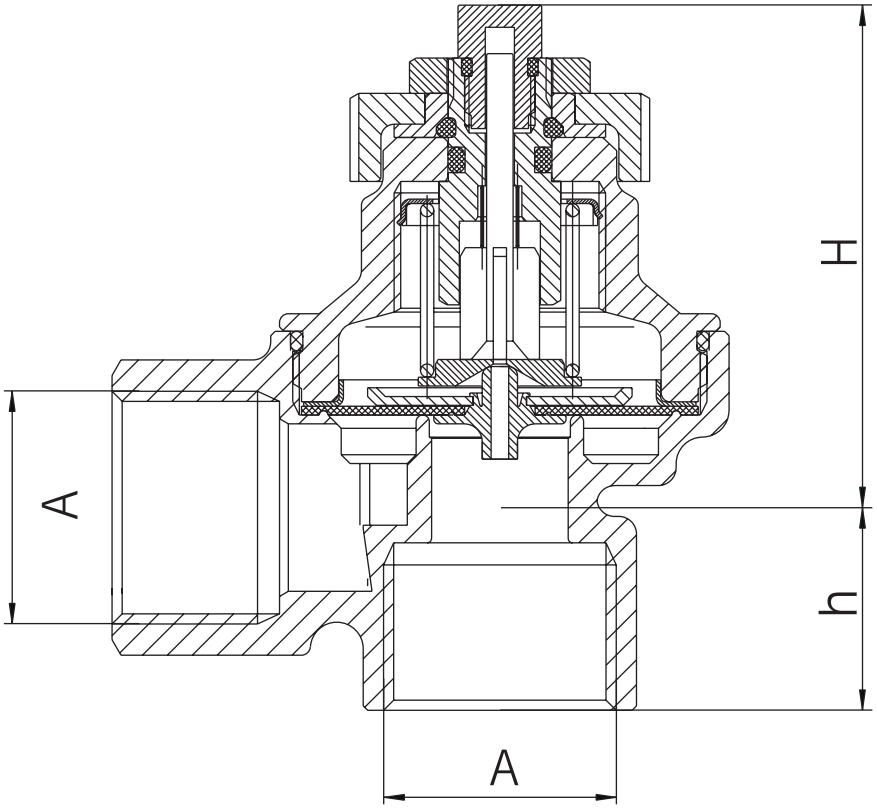
Thoroughly flush the pipe prior to installation. Install the differential pressure regulator in the pipe without applying stresses under consideration of the direction of flow. The valve should be readily accessible to facilitate service and setting.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 120 °C
Differential pressure:	adjustable 0.05 - 0.7 bar, factory-set to 0.2 bar
Mounting position:	any
Fluids:	water
Serial number:	serial number:

Maintenance

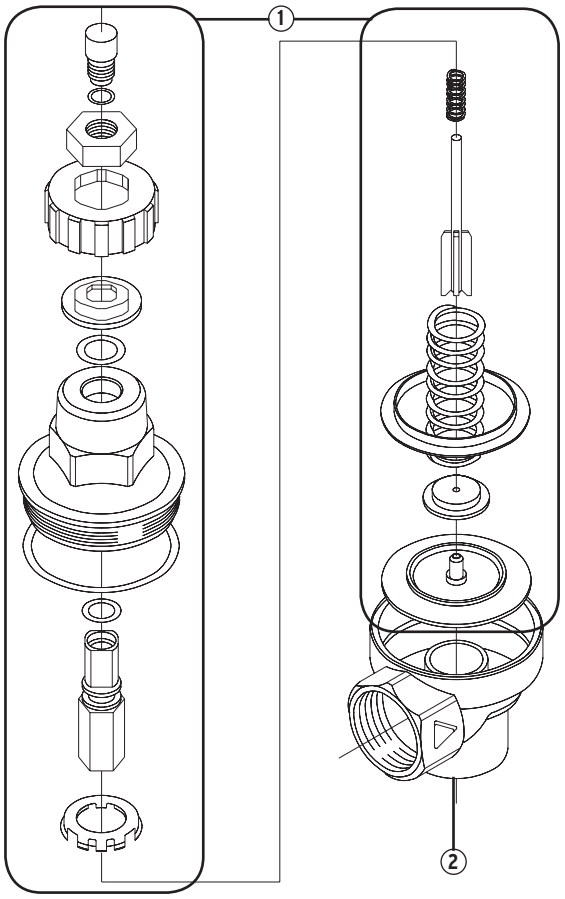
To adjust the pressure regulator type 390, loosen the fixing nut on the adjustment handle. To set the desired pressure, simply turn the handle to the desired value. The integral lift indicator allows to control functionality. Re-tighten the fixing nut. The seal of the adjustment spindle can be exchanged without draining the installation.



Nominal size		DN 20	DN 25
	A	G ¾“	G 1“
Dimensions	H (mm)	72	110
	h (mm)	23	30

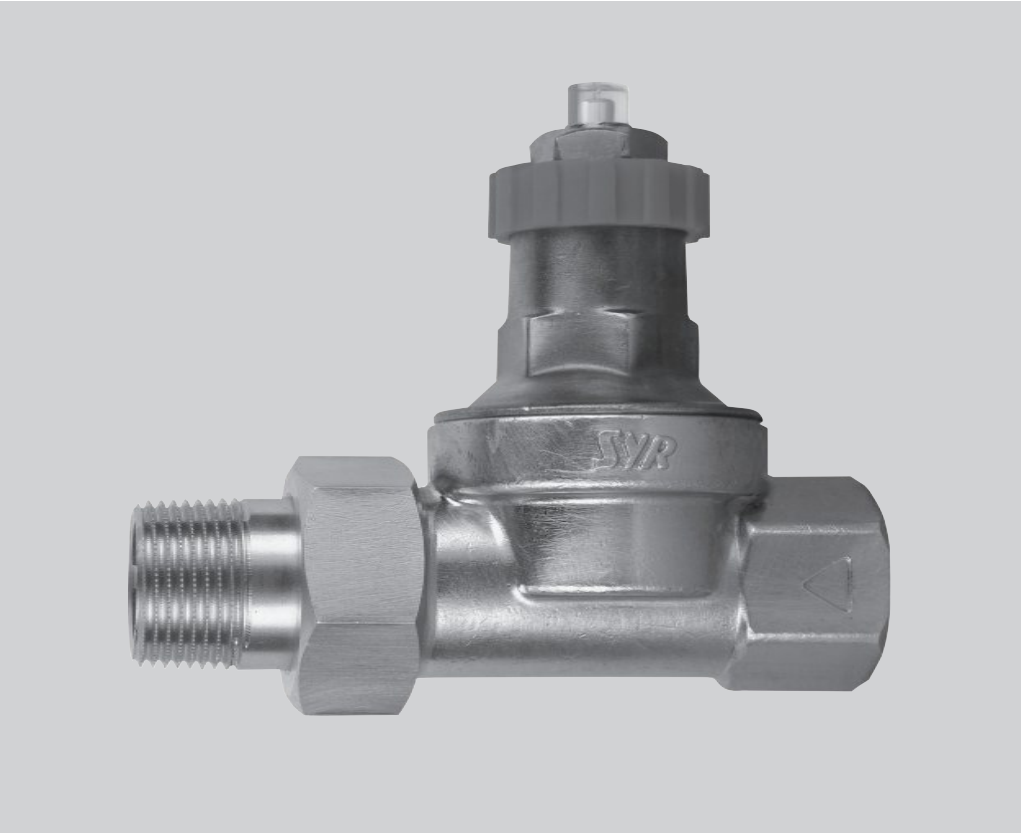
Components / Order numbers

①
Screw cap unit
DN 20 0390.20.900
DN 25 0390.25.900
②
Body



Differential Pressure Regulator 391

In-line type



Field of application

The differential pressure regulator type 391 stabilises the rate of circulating water as well as the differential pressure in pumped central heating installations that regulate the room temperature by means of thermostatic radiator or zone valves. The differential pressure regulator type 391 can also be used for district heating systems. The circulating water quantity fluctuates between zero and the maximum value according to the heat requirement and as a result the pump pressure varies according to the pump specifications; the differential pressure regulator type 391 reduces both phenomena to a minimum. With the system load and the circulation rate being reduced, the differential pressure increases according to the pump specifications up to the opening pressure of the differential pressure regulator. Then, the latter maintains a defined circulating water quantity in the boiler circuit and prevents the differential pressure from rising to the maximum pump pressure. Advantages: for boilers with low water content, the risk of possible overheating of the heating chamber is eliminated. An additional boiler circulation pump is no longer required. In steel boilers, the mixing effect prevents low-temperature corrosion that results from excessively cold return water. As the differential pressure can only rise insignificantly above the required pressure, the regulating valves and the pump no longer generate annoying noise.

391 Differential pressure regulator

Design

The differential pressure regulator type 391 operates as a proportional by-pass valve. Additional control lines are not required as a result of the internal balance of the static pressure. The factory-set opening pressure can be adjusted on a spindle by means of a lockable turning handle. In general, it is not necessary to re-adjust the system. A visible lift indicator allows to control functionality.

Materials

The body, cap, internal components and unions are made of a high quality low-lead brass alloy. The spring is made of corrosion resistant spring steel wire. The diaphragm and sealing rings are made of heat resistant elastomeric synthetic material.

Installation

Install the differential pressure regulator type 391 behind the heating pump with a by-pass line between the radiator supply line and the return line. The installation can be horizontal or vertical.

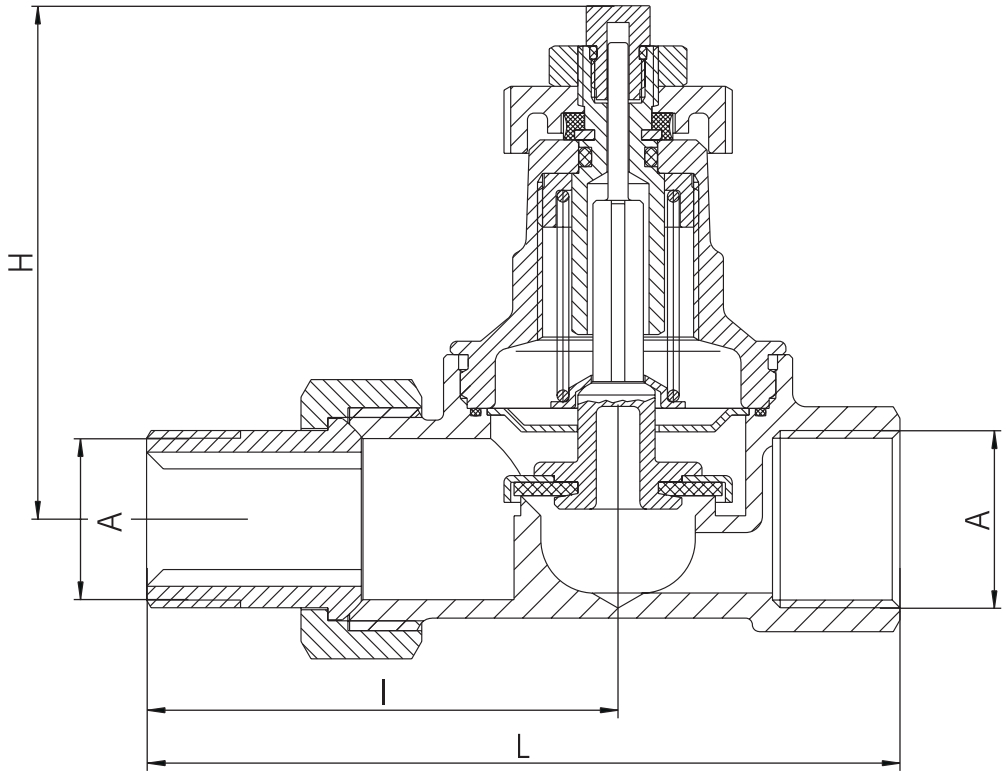
Thoroughly flush the pipe prior to installation. Install the differential pressure regulator in the pipe without applying stresses under consideration of the direction of flow. The valve should be readily accessible to facilitate service and setting.

Technical data

Operating pressure:	max. 10 bar
Operating temperature:	max. 120 °C
Differential pressure:	adjustable 0.05 - 0.7 bar, factory-set to 0.2 bar
Mounting position:	any
Fluid:	water
Serial number:	0391.20.000

Maintenance

To adjust the pressure regulator type 391, loosen the fixing nut on the adjustment handle. To set the desired pressure, simply turn the handle to the desired value. The integral lift indicator allows to control functionality. Re-tighten the fixing nut. The seal of the adjustment spindle can be exchanged without draining the installation.

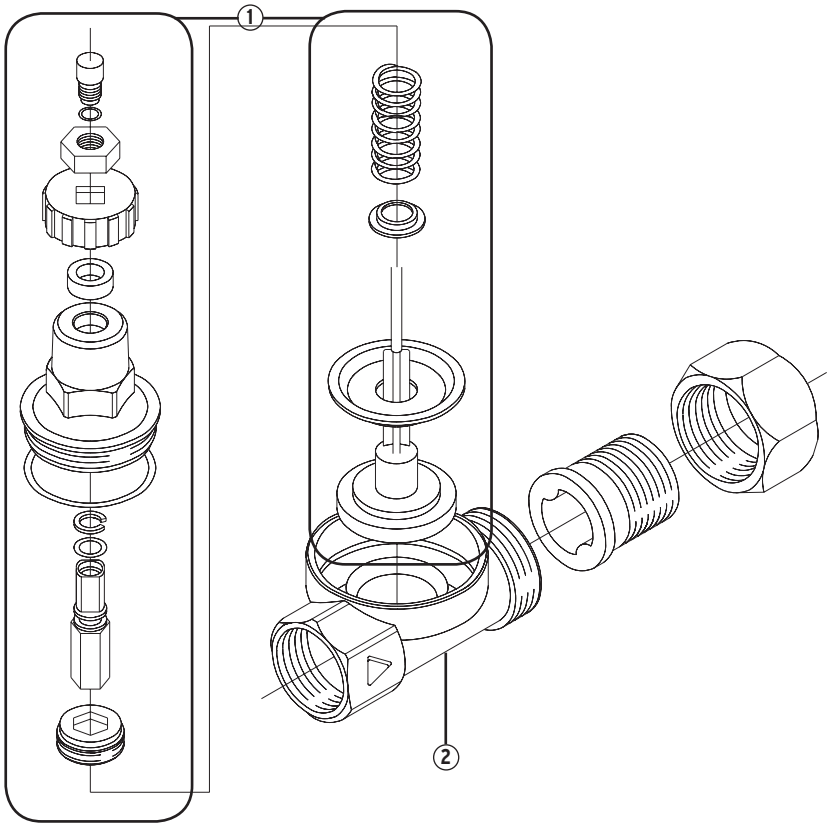


Nominal size		DN 20
	A	G ¾“
Dimensions in mm	H (mm)	76
	L (mm)	112
	l (mm)	42

Components / Order numbers

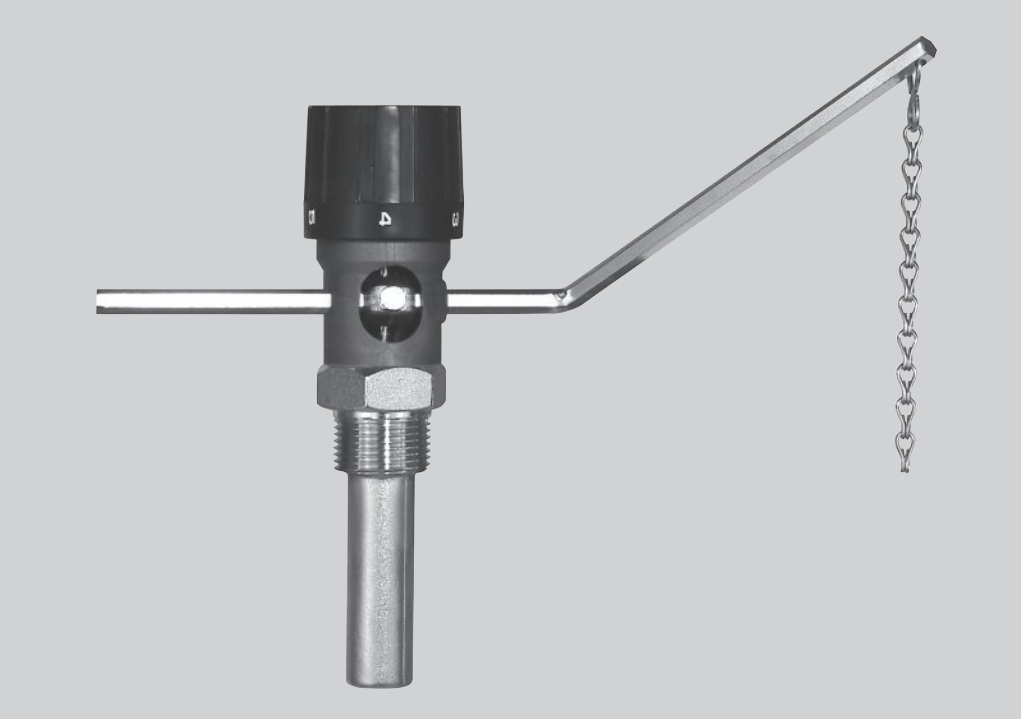
① **Screw cap unit**
DN 20
0391.20.900

② **Body**



Draft Regulator 2620

Regulating valve for solid fuel fired boilers



Field of application

The SYR draft regulator type 2620 regulates the temperature for solid fuel fired boilers in heating systems. The draft regulator type 2620 regulates the temperature by opening and closing the damper in dependence of the deviation from the required temperature.

Design

The damper is actuated by the thermostatically controlled draft regulator. The rated temperature is adjustable by means of an insulated adjustment knob. The thermoelement is located outside the water and can be exchanged without draining the system.

2620 Draft regulator

Materials

The immersion sleeve and the head part are made of a high quality low-lead brass alloy. The internal components are made of a high quality brass alloy or stainless steel. The lever fixture and the chain are made of corrosion resistant steel. The adjustment knob is made of synthetic material resisting to very high temperatures.

Installation

Screw the draft regulator type 2620 in the inlet connection piece located in the upper part of the boiler. Depending on the boiler type, it can be installed with the main axis either in vertical or horizontal position. The adjustment knob has a double dial graduation to facilitate the adjustment.

When installed in horizontal position, the point of reference is the marking on the head part (shall face upwards); when installed in vertical position, it is the lever (shall face to the front) designed for mounting the draw rod.

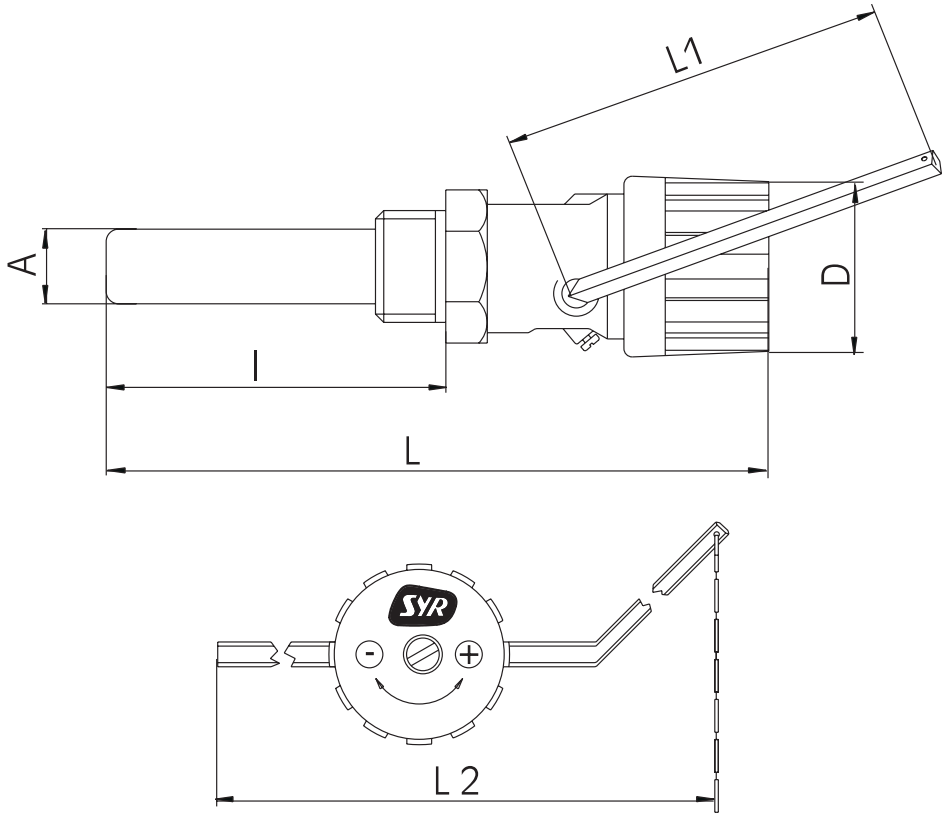
Screw the draft regulator type 2620 with hemp or sealing tape in the corresponding connection piece of the boiler. For initial adjustment, heat the boiler to any temperature in the setting range of the regulator. Set the temperature on the draft regulator and shorten the chain so that the damper just closes. Afterwards, the draft regulator can be adjusted to any temperature in the setting range.

Technical data

Service overpressure (immersion sleeve):	max. 3.5 bar
Service temperature:	max. 110 °C
Setting range:	40 - 100 °C
Mounting position:	horizontal or vertical
Actuating force:	max. 8 N
Lift:	60 mm
Serial number:	2620.20.000

Maintenance

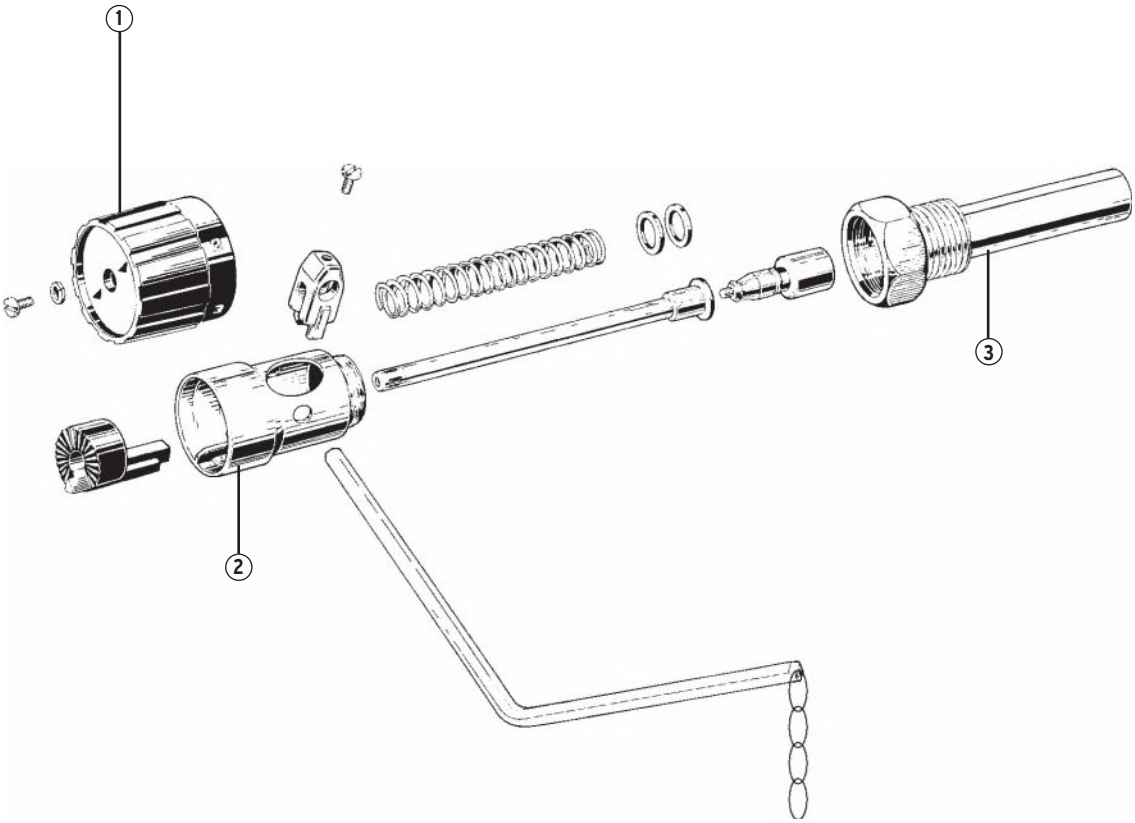
The draft regulator requires no maintenance. Should it nevertheless become necessary to exchange the thermoelement, the system does not need to be drained. Unscrew the head part of the regulator, remove the thermoelement with a suitable tool and exchange it.



Nominal size		DN 20
	A	G ¾“
Dimensions in mm	L (mm)	185
	l (mm)	70
	L1 (mm)	110 (175)
	L2 (mm)	200
	D (mm)	41

Components / Order numbers

① **Adjustment knob**
② **Body**
③ **Immersion sleeve**



Automatic Air Vent 62

Automatic air vent for heating installations



Field of application

The air vent type 62 automatically aerates and de-aerates liquid-filled systems. It is specially used for water heating systems.

Design

Manufactured as non-porous all-metal model, the air vent type 62 is equipped with a cover that can be unscrewed, an own isolating valve and a float made of synthetic material. The float opens the aeration/ de-aeration valve according to the water level in the automatic air vent.

62 Automatic air vent

Materials

The body, the cover of the automatic air vent, the internal parts, the isolating valve and sealing elements are made of a high-quality, low-lead brass alloy or stainless steel or elastomeric hot water and ageing resistant synthetic material.

Installation

Install the automatic air vent 62 imperatively in vertical position at the highest points of the system as well as at any point where air may collect. Likewise, it is advisable to install it in the radiator supply line on the pressure side of the pump. For doing so, it is recommended to extend the pipe at the connection. Do not remove the valve cap from the air vent to prevent dirt particles from entering and causing the automatic air vent to malfunction. Undoing the cap with two turns provides sufficient cross section to ensure perfect functioning.

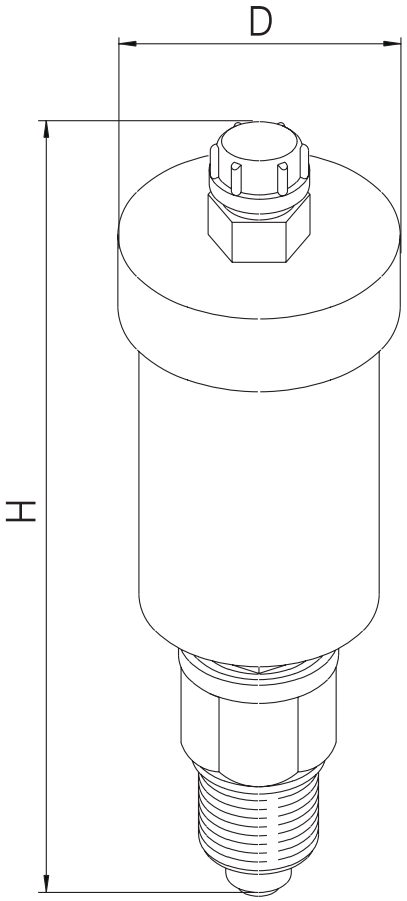
Thoroughly flush the pipe prior to installation in order to prevent dirt particles from accumulating in the sealing area of the air vent. Furthermore, the lower part of the enclosed isolating valve should be immersed in an adequately wide free cross-section in the pipe to ensure perfect functioning. The dimensioning of the supply pipe should be at least DN 15.

Technical data

Fluid:	water
Operating temperature:	max. 110 °C
Operating pressure:	10 bar
Mounting position:	vertical
Pipe connection:	3/8“ AG
Serial number:	0062.10.001

Maintenance

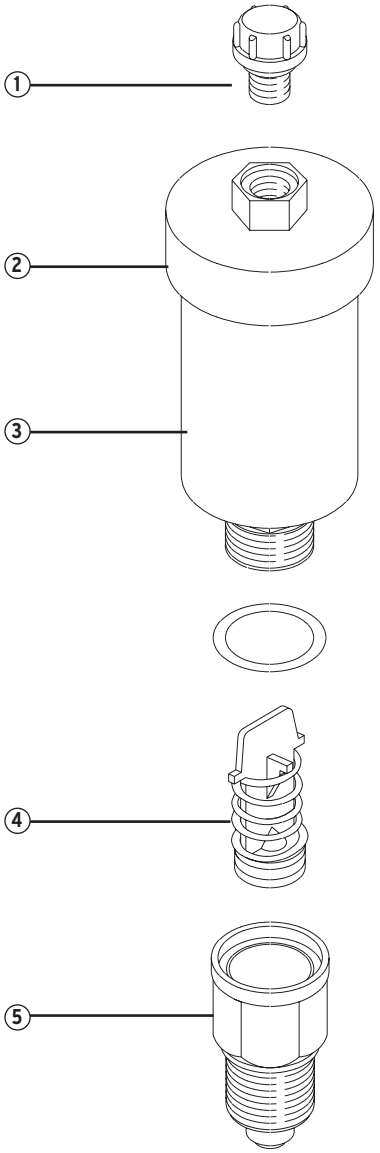
Should the air vent have become untight due to dirt particles, the enclosed isolating valve allows to remove it without any problem, even when the system is pressurised.
For cleaning, unscrew the cover of the air vent after the disassembly to get access to the seat sealing area. In case of deterioration, the automatic air vent should be completely removed and replaced by a new one.



Nominal size		DN 10
	A	G 3/8"
Dimensions in mm	H (mm)	101
	D (mm)	38

Components / Order numbers

① **Valve cap**
② **Body cover**
③ **Body**
④ **Isolating valve**
⑤ **Fitting**



Pressure Relief valve 6104 / 6105

for industrial applications



Type 6104

Field of application

The pressure relief valves type 6104/ 6105 are used as protection against overpressure for devices and systems working with air, neutral gases or steam. They are designed for industrial applications such as coffee dispensers, steamers, bakeries, food industry, cleaners etc.

Design

The operational parts in the pressure relief valves type 6104/6105 are protected against direct contact with the medium (protection against corrosion). The pressure relief valves can be lifted by means of a rotatable handle or a lever depending on the model. Cleaning the seat and the seal after having removed the head part does not change the opening pressure.
This product exists in various models: 6104 with lever or rotatable handle and 6105 only with rotatable handle. They are designed in different connection sizes and connection types as specified in the following table.

6104 / 6105 Pressure relief valve

Materials

The body is made of a high-quality low-lead brass alloy; the spring cap, the diaphragm and other internal parts are made of heat and ageing resistant elastomeric synthetic material and the spring of corrosion protected spring steel wire.

Installation

Install the pressure relief valves type 6104 /6105 vertically with the inlet connections facing downwards. The length of the supply pipe shall not exceed 1 m, bends are not admissible and its nominal size must be the size of the valve inlet. Position the valve at the highest point of the heat-generating device or in the safety pipe close to the heat-generating device. There shall be no isolating valves, strainers or similar devices in the supply pipe. The diameter of the relief pipe must be at least equal to the nominal size of the valve outlet. The relief pipe has to be installed with continuous incline. It can maximally include 2 bends and have a length of 2 meters. When a length exceeding 2 m is necessary, the pipe must be one size larger. Caution: more than 3 bends and a length exceeding 4 meters are not admissible. The outlet of the relief pipe must be free from obstruction, controllable and positioned in such a way that persons are not endangered by steam relief. When the relief pipe ends over a tundish, it is indispensable that its drain pipe has at least the double cross section of the valve inlet. Free access to the pressure relief valve must be provided.

Thoroughly rinse the pipe prior to installation. Install the pressure relief valve under consideration of the flow direction (see arrow on the body) in compliance with the instructions.

Technical data

Operating temperature:	-10°C to max. 120°C
Opening pressure:	0.5 - 4 bar
Pressure setting:	individual setting, only
Mounting position:	main axis vertical, inlet connections facing downwards
Media:	steam; neutral non-adhesive fluids
Component approval no:	TÜV-SV-08-754-d-D/G-p
Serial number:	6104/6105...

Maintenance

The correct function of the pressure relief valve should be checked by qualified personnel at initial operation and then once a year: turn the lifting handle in the direction of the arrow until you hear a click (for the model equipped with a lever: lift the lever, check the relief and close it again). Afterwards, the valve has to be closed tight. Should the valve drip constantly, it is very likely that impurities have built up in the seat. To clean the valve seat and seal, unscrew the head part. After cleaning, refit the head part; the opening pressure remains unchanged after this operation.

Important instructions regarding the operation and maintenance of potable water installations

To ensure perfect operation, the installer has to inform the user about the correct handling of the potable water installation.

The installer should set up a starting-up report and a delivery receipt to be signed by the user. The documents and use instruc-tions of the devices integrated in the installation have to be handed over to the user. It is highly recommended to make maintenance contracts between the installer and user, which represent the best legal protection for the installer.

Filters

All backwashable filters have to be serviced every two months and the non-back-washable filters every six months. The intervals can be shorter, for example in case of a decreasing flow rate. Renoun-cing to use a filter or disregarding the maintenance instructions can release the insurer from his liability to recourse.

Pressure reducing valves

To inspect a pressure reducing valve, first isolate the supply pipe. To diminish the pipe pressure, open a downstream draw-off point and close it again, before opening the supply pipe. Watch the pressure reducing valve for a period of 10 minutes to check whether the set pressure remains constant. A pres-sure increase is due to accumulated dirt or damage. It is advisable to carry out a flow rate test. Open a draw-off point at correctly set pressure. Gene-ral rule: in case of a pressure drop of more than one bar, the pressure reducing valve needs to be serviced (probably due to impurities). Inspect the device once per year.

Pressure relief valves

Inspect the pressure relief valves every 6 months. It is advisable to verify functionality by activating the lifting function. Check whether the valve closes again after the lifting operation and whether the water is completely drained off. It is also advisable to switch on the potable water heater and to test whether the pressure relief valve drains off the expansion water.

Check valves

The functionality of check valves should be verified once per year. Isolate the supply pipe and open the test device of the check valve. There shall be no backflow of water from the filled downstream installation.

9.9002.97 1828 • Subject to alteration

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