



**Appliance Connection Fittings.**  
By SCHELL.

# SCHELL.

Appliance connection valves, a multi-talented fitting.



Plant 1  
Production with administration building and training centre



Plant 2  
Production with logistics centre



**Choose the Original  
Choose Success!**

SCHELL supports original technology and opposes the infringement of intellectual property rights.

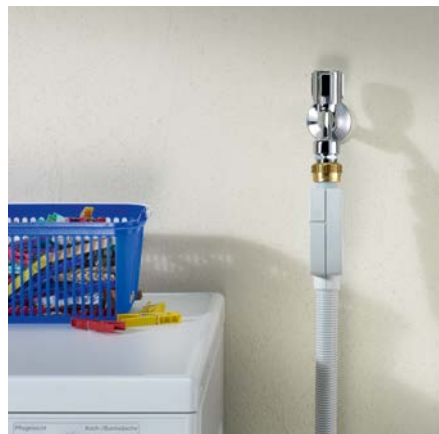
## State-of-the-art sanitary technology

SCHELL, reliable partner for the sanitary industry, can look back over 80 years of experience in the design and manufacture of practical sanitary and heating fittings. High-quality basic materials and automated manufacturing processes are the foundation for quality fittings "Made by SCHELL in Germany".

Appliance connection valves by SCHELL are highly-functional and technically sophisticated fittings that point the way forward for the modern sanitary industry. They offer the best solution for any location.

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Washing machine connection with COMFORT draw-off valve



Dishwasher connection with COMFORT appliance inclined-seat valve

# SCHELL *inside.*

SCHELL fittings belong in all places where robust, hygienic and resource-efficient solutions are needed, such as in public, semi-public and commercial sanitary rooms. Among others, our solutions can be found in the following locations all over the world:

- Schools
- Nurseries
- Hotels
- Gastronomy
- Hospitals
- Residential nursing homes
- Industry
- Administrative buildings
- Airports
- Railway stations
- Motorway service stations
- Leisure facilities
- Sports facilities
- Swimming pools



## WC flushing systems

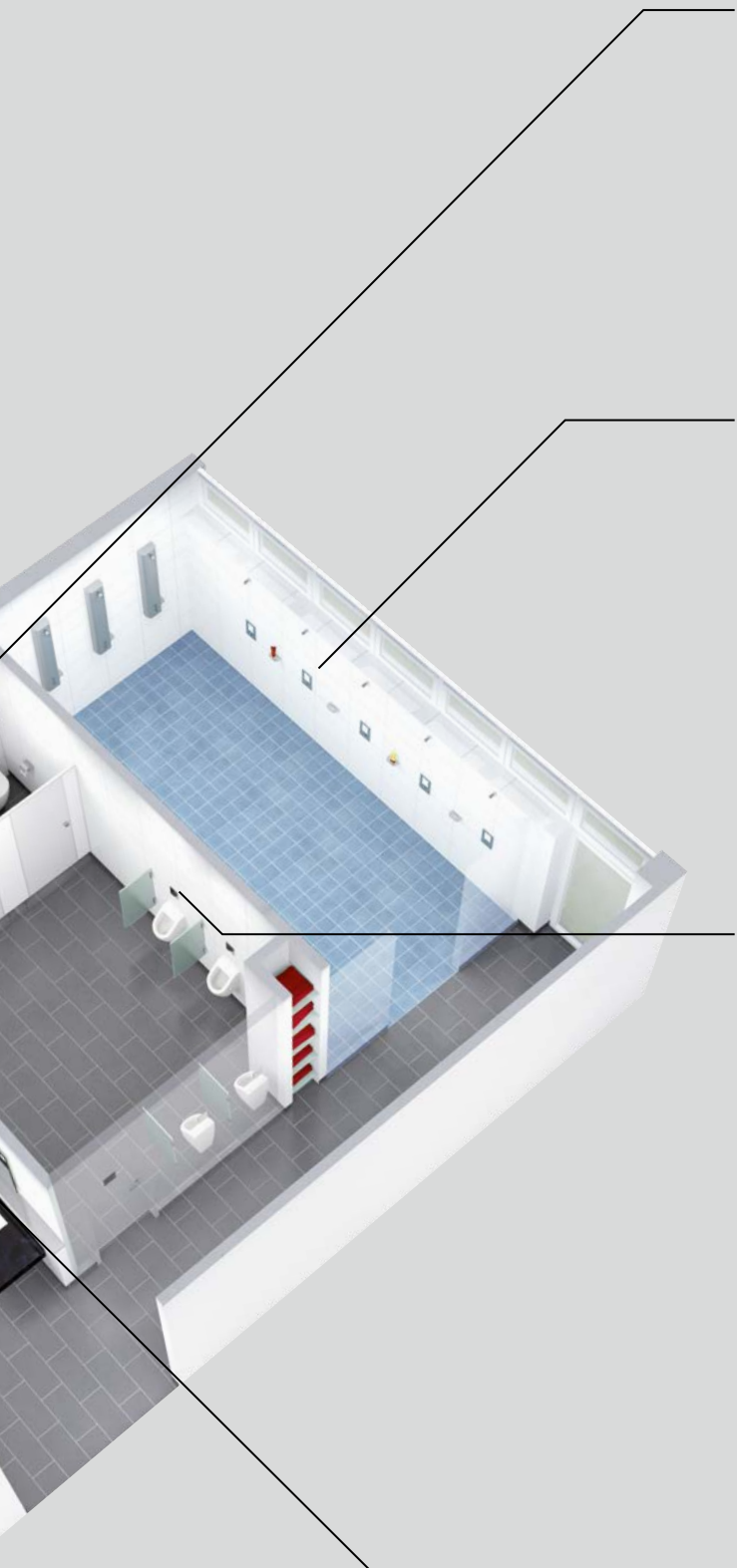
With their comprehensive range of water-saving and hygienic WC flushing systems, SCHELL also fulfils the highest demands. These include flush valves for wall-mounted installation, concealed installation solutions and concealed cisterns. These can be controlled mechanically or electronically as you choose. All in all, ideal prerequisites for both simple and speedy retrofitting in renovation projects and for new-build installations. A perfect match – our mounting modules.



## Washbasin and draw-off tap fittings

Water-saving, hygienic, robust, durable and also beautiful to look at – this is what distinguishes the washbasin draw-off taps by SCHELL. Available in a wide range of different technical designs.





### Mounting modules

SCHELL offers a complete range of mounting modules. These are distinguished by: Models for dry and wet construction, compliance with DIN 4109 (noise protection in building construction) and a considerable number of innovative detailed solutions.



### Shower fittings/shower panels

Showers in public, semi-public and commercial sanitary rooms are in constant use. Irrespective of whether in a new or renovated building: The high-quality materials and well thought-out design contribute to durability, water-saving and trouble-free operation of our shower fittings and shower panels, also under these demanding conditions.



### Urinal flushing systems

They are in demand, as wall-mounted or concealed installations: water-saving and hygienic urinal flushing systems by SCHELL. Available in mechanical and electronic designs, whereby, they are suitable for new constructions, or especially for easy and quick retrofitting in refurbishment projects. Urinal flushing systems by SCHELL: combined with our mounting modules, the perfect all-round solution.



### Angle valves

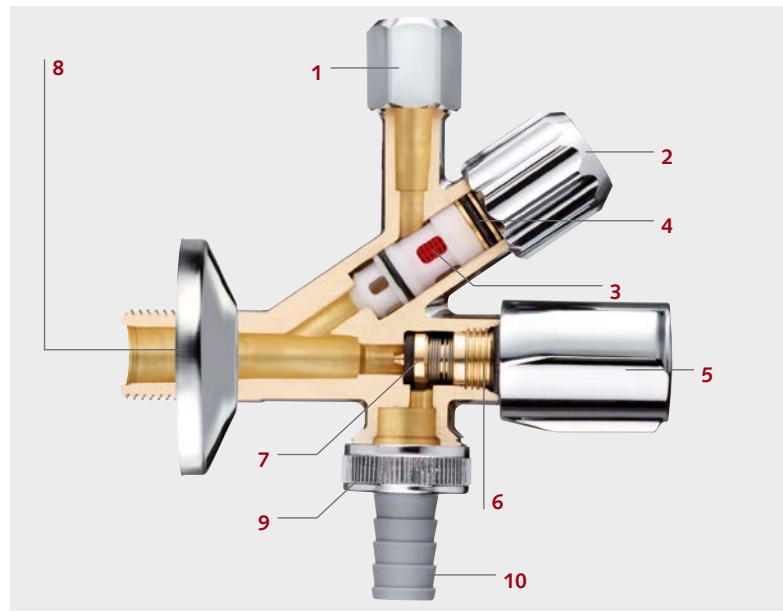
You can place high expectations on Europe's market leader for angle valves, including water-saving functions, exceptional quality, attractive design and an extensive range for all applications. These are available with an integrated backflow preventer or filter depending on requirements, and almost every model is classified in noise class I.



## Quality features of SCHELL.



High-quality materials



Combination angle valve with filter

### Materials made for drinking water

Quality fittings by SCHELL meet all the requirements according to: TrinkwV 2001 (German Drinking Water Ordinance), DIN 50930 Part 6, DIN EN 1717, KTW (German recommendations for plastics that come into contact with drinking water). DIN 50930/6 states the conditions (alloy components) needed for brass to meet the requirements of the Drinking Water Ordinance (TrinkwV). Responsible use of drinking water as a resource requires the controlled use of materials suitable for contact with drinking water.

- 1 The high-tensile brass cone compression connection with length compensation ensures secure connections with copper pipes and flexible connection hoses
- 2 The metal handwheel on the angle valve connection has a filter insert.
- 3 The filter
  - Made from extremely durable Hostaform C®, protects all sensitive components connected.
  - Can be easily released with a coin or a screwdriver and then cleaned under running water.
- 4 The double O-ring seal ensures ease of movement, even after many years of operation.
- 5 The COMFORT handle provides a secure grip in an elegant design.
- 6 The grease chamber upper part
  - To protect the brass spindle against hard water.
  - Is completely separated from the water flow, ensuring continuous ease of movement.
- 7 The integrated Backflow Preventer (BP) protects against reverse flow, back pressure and back absorption of non-drinking water into the supply system.
- 8 The push-on rosette
  - Optically unimpaired wall surround, variable with an 18 mm push rod
- 9 Metal retaining nut
- 10 Grommet made from stable plastic

## Tested quality.



Just like our customers, we place great value on materials, quality and durable function. Our products are continuously tested and distinguished by the relevant quality and safety features:

### DVGW (German Association for Gas and Water)

Products that carry the DVGW test symbol conform to the specifications given for the standards of the product.



### Belgaqua

Test symbol for fittings tested in Belgium.



### ASAG easy

The ASAG easy symbol indicates reliable installation, durable sealing and easy assembly due to the self-sealing connecting thread.



### GL

Quality management at SCHELL is certified by Germanischer Lloyd, in accordance with DIN EN ISO 9001:2000.



**Draw-off valves by SCHELL – versatile application.**



Combination draw-off  
valve COMFORT

Appliance connection fittings for reliable use of water in  
the bathroom, kitchen, cellar and garden.





Draw-off valve COMFORT



Combination draw-off valve COMFORT

### **Draw-off valve COMFORT**

Is there a modern way of conveniently drawing water or connecting household appliances, like washing machines and dish-washers? The fittings are equipped with an integrated backflow preventer to protect against backsiphonage, and they are also available in a safety combination with backflow preventer (BP) and pipe aerator (PA).

### **Combination draw-off valve COMFORT**

The ideal fitting with two draw-off outlets but only one water connection. For example, you can simultaneously connect a garden hose, whilst the second operating handle is open and water flows into a sink in the cellar, cleaning area, garage, etc.



## Auxiliary connection valves.

For subsequent connection of appliances.



AC valve COMFORT



AC valve COMFORT for hot water appliances



AC valve COMFORT for wall batteries



AC double valve for connecting another tapping point, e.g. inclined-seat valve



AC double valve COMFORT

Auxiliary connection valves are primarily used if appliance connections must be retrofitted without an additional, on-site water connection. For example, a water connection for a washing machine can be created in the cellar by installing the wall battery in combination with the auxiliary connection valve.

SCHELL auxiliary connection valves can also be connected to hot water appliances. They can be easily installed in the kitchen with other household appliances, such as dishwashers. For other optional applications, refer to Page 20 of this brochure.

## Appliance valves. For connecting household appliances.



Filter combination angle valve (connect hose to solenoid valve)



Easy filter cleaning



Combination angle valve COMFORT



Combination angle valve with filter

### Combination angle valve COMFORT

The combination angle valve is a sensible combination of angle valve and appliance connection valve. The system enables simultaneous operation of, e.g. a wash basin or sink fitting and a dishwasher/washing machine.

### Combination angle valve with filter

The filter on the combination angle valve with filter wins points, as lime and dirt particles can no longer penetrate up to the fitting. It also protects all connected, sensitive appliances, e.g. espresso machines.



Appliance valve COMFORT  
(connect to intrinsically safe washing machine)



Appliance inclined-seat valve COMFORT



Appliance valve COMFORT



Appliance inclined-seat valve COMFORT

### Appliance valve COMFORT

Existing wash basin units can be supplemented with an appliance connection directly above the angle valve using the appliance valve COMFORT. Consequently, a dishwasher or washing machine can be easily connected up in either kitchen or bathroom without any additional water connection point.

### Appliance inclined-seat valve COMFORT

The appliance inclined-seat valve COMFORT is versatile to employ and is the ergonomic solution for any single connection of appliances in the kitchen, bath, cellar or garage.

### Note

❗ Washing machines and dishwashers frequently have solenoid valves at the hose connections that automatically open when in operation. However, due to the design, appliance connection valves cannot be shut off in the closed condition from valves immediately upstream. Therefore, water must previously be flowing (switch flushing process).

## Safeguarding water – SECUR. The lockable handle.



COMFORT handle SECUR



Appliance inclined-seat valve SECUR



Draw-off tap SECUR

### **Safeguarding water**

SCHELL SECUR is suitable to ensure the water connections are safeguarded, e.g. in apartment buildings, filling stations, gardens and greenhouses, industrial buildings, sport complexes, vehicle workshops, garages, camping sites and all water connections accessible to the public.

The lockable handle SECUR provides protection against unauthorized opening of fittings in public facilities, nurseries, doctors surgeries, old-peoples homes and care centres.

## Sink valves. By SCHELL.



Sink valve COMFORT



Sink set

Sink valves are especially convenient to use in kitchen units with no separate water connection for the dishwasher. The water is supplied along the water pipe from angle valve to sink valve; the water inflow to the dishwasher is then conveniently controlled using the sink valve mounted into the work surface.

Another way of connecting household appliances is to use the sink conduit in combination with an auxiliary connection valve. No more bending under the sink to open and shut off the dishwasher or washing machine; everything can be conveniently controlled from a standing position.



Sink valve COMFORT



Sink set

## Outdoor valves. By SCHELL.



Frost-proof outdoor wall fitting POLAR II Set



Frost-proof outdoor wall fitting  
POLAR II

### Frost-proof outdoor wall fitting POLAR II

No chance of frost damage: As an option, the frost-proof outdoor wall fitting, shown here with socket and COMFORT handle, can be fitted with a SECURE handle to protect against unauthorized extraction of water. Each time the valve is closed, the water path through the area at risk of frost damage is automatically emptied. The POLAR II set as an installation kit offers the same features as the complete fitting.



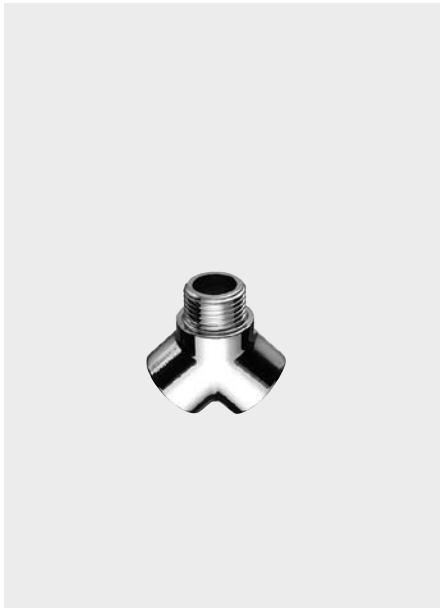
Outdoor draw-off tap

### Outdoor draw-off tap

The simple solution for protecting fittings during frosty weather. The outdoor tap is made ready for winter by a shut-off valve with a frost-resistant drain fitting. Due to the automatic ventilating valve, the outdoor valve does not have to be separately opened again to completely drain it. This reliably protects the outdoor tap from freezing during frosty weather.



## Supplementary products.



Y-piece



Hose burst preventer



PURIS wall connection elbow

### Y-piece

A genuine problem-solver for numerous applications: The Y  $\frac{1}{2} \times G \frac{1}{2}$  is used wherever a second tap must be established at a water connection.

### Hose burst preventer

The valve closes automatically when more than 18 l/min flows through the valve. This could be the case if the connecting hose to a washing machine or dishwasher bursts or slips off.

### PURIS wall connection elbows for spray hoses

One of 3 connection elbows for spray hoses. Elegant look, stylish surfaces. Quick installation using the ASAG ring, design cover hood or push-on rosette.



EDITION wall connection elbow and STANDARD wall connection elbow

## Protecting drinking water.

Safety fittings maintain the quality of drinking water.



### **Clean drinking water requires professional installations and high-quality fittings.**

The DIN EN 1717 "Protection against pollution of potable water installations" is a European norm that describes the use and installation of safety fittings for different drinking water installations. This installation standard applies to all installations within properties and buildings, as well as for domestic applications.\*\*

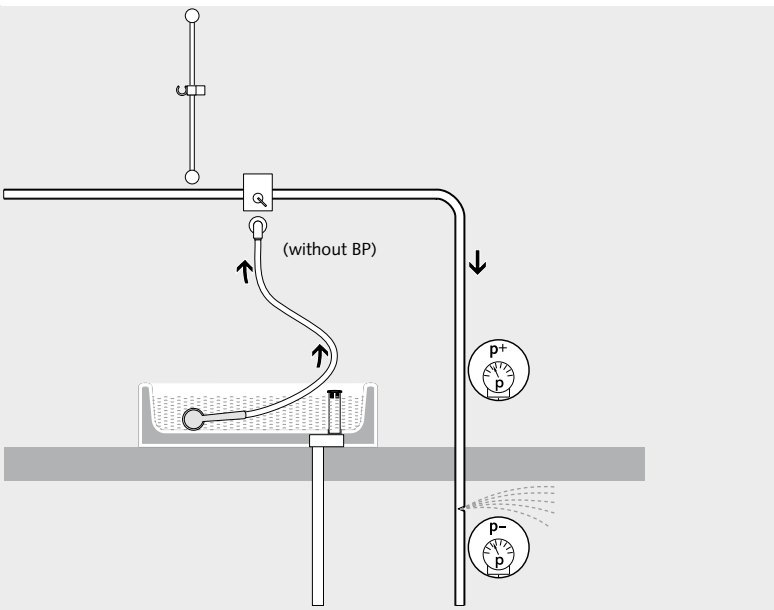
SHELL offers a comprehensive range of fittings, which adhere to the requirements of these standards. A wide product range of outlet valves for all important installations inside a domestic dwelling:

- Connection of washing machines and dishwashers
- Connection of automatic drinks machines
- Draw-off taps in cellars and garages
- Tap points for indoors and outdoors
- Connection of spray hoses

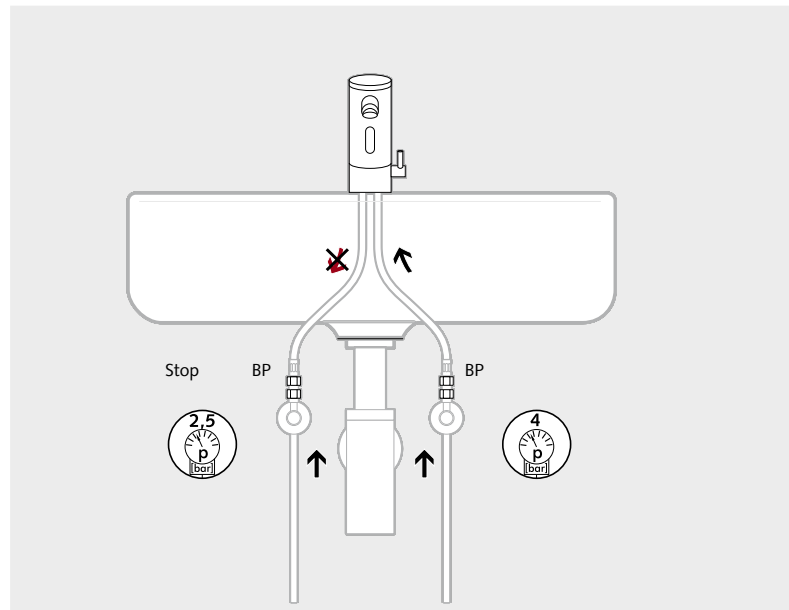
\*\*

Based on the DIN EN 1717, with the new DIN 1988-100 "Technical Regulations for drinking-water installations", a German standard was created that is to be applied in parallel to the EN 1717t. The DIN 1988-100 explains and instructs how the EN 1717 must be applied in Germany. Selection of the suitable safety facilities is determined in the DIN 1988-100 by a comprehensive list of applications for domestic and non-domestic use.

## Protecting drinking water. Water may only flow in one direction.



Back suction in a domestic dwelling, e.g. after a pipe bursting in the cellar. Action: Install a SCHELL wall connection elbow with BP (Backflow Preventer)



Back pressure, e.g. with closed solenoid valve, cold water ingresses into hot-water system. Action: Install SCHELL angle valves with BP (Backflow Preventer).







The primary aim is to reliably prevent the backflow of water or liquids. Water backflow can be caused by:

- **Back suction:** Occurs if a supply line experiences low pressure in relation to the connected tap point. Without appropriate safety devices, the water would enter the drinking water system.
- **Backpressure:** If there are different pressures between cold and hot water pipes and a fitting with a closing valve arranged downstream from the mixing valve, the water at a higher pressure can be pressed into the pipeline with the lower pressure.
- **Reverse flow:** Caused by gravity from a higher point in the system to a lower point (tank runs empty).

# Examples of applications incl. safety facilities, in accordance with DIN 1717 for the domestic sector

Bathroom	Single tap points		Appliance inclined-seat valve COMFORT EB  03 386 06 99	Appliance inclined-seat valve COMFORT HD  03 392 06 99
	Washbasin		Combination angle valve COMFORT EB  03 545 06 99	Combination angle valve COMFORT HD  03 549 06 99
	Bathtub		AC valve COMFORT EB  03 324 06 99	AC valve COMFORT HD  03 326 06 99
Kitchen	Sink fitting		Combination angle valve COMFORT EB  03 545 06 99	
	Sink fitting		Sink valve COMFORT EB  03 500 06 99	
	Sink fitting		AC valve COMFORT EB  03 324 06 99	Sink set 03 908 06 99
	Sink fitting		AC valve COMFORT EB  03 316 06 99	AC valve COMFORT HD  03 318 06 99



<p>Appliance inclined-seat valve COMFORT*</p>  <p>EB</p> <p>03 390 06 99</p>			
<p>Combination angle valve with filter COMFORT</p>  <p>EB</p> <p>03 560 06 99</p>	<p>Appliance valve COMFORT</p>  <p>EB</p> <p>03 374 06 99</p>	<p>AC valve COMFORT</p>  <p>EB</p> <p>03 309 06 99</p>	<p>Fitting set COMFORT</p>  <p>EB</p> <p>10 862 06 99</p>
<p>AC valve COMFORT</p>  <p>EB</p> <p>03 342 06 99</p>			

## Examples of applications incl. safety facilities, in accordance with DIN 1717 for the domestic sector





Cellar	Single tap points		Appliance inclined-seat valve SECUR EB	 03 387 06 99	Appliance inclined-seat valve SECUR HD	 03 388 06 99
	Sink basin		Combination draw-off valve COMFORT	 03 562 06 99		
	Single and multiple tap points		Appliance inclined-seat valve COMFORT EB	 03 386 06 99	AC double valve EB	 03 366 06 99
External area	Outdoor single tap points		Outdoor draw-off tap HD	 03 459 06 99		
	Outdoor single tap points		Frost-proof outdoor wall fitting POLAR II HD	 03 996 03 99	Frost-proof outdoor wall fitting POLAR II Set HD	 03 998 03 99

### Fittings with integrated safety device.

The combination of letters shown in the hexagon describes the safety device integrated in the fitting. For the protection device matrix, refer to pages 26/27 and 28/29.

EB Non-controllable backflow preventer

HD Pipe aerator combined with backflow preventer

Draw-off tap SECUR  	Sanitary handle SECUR 	Sanitary handle SECUR 
03 352 06 99	22 135 06 99	48 006 06 99

**Regular testing and approved safety.**

Safety devices such as the backflow preventer are subjected to recurring functional tests. The maintenance intervals differ depending on the design. Defective components must be replaced. SCHELL offers outlet valves with approved safety fittings for the domestic environment. These fittings are tested by independent institutes in accordance with current product standards and are certified by DVGW (The German Technical and Scientific Association for Gas and Water).

Installations that are fitted with a collection locking device are also permissible. The collection locking device safeguards several tap points simultaneously and must be designed for the appropriate highest liquid category. On new installations, collection locking devices should not be installed to avoid stagnant water.

## Selection of appropriate safety fittings. By SCHELL.



The DIN EN 1717 standard states five liquid categories that represent the corresponding hazard potential.

Safety fittings must be installed to prevent back suction or backpressure of water. Thereby, the different safety precautions required depending on the hazard potential of the specific liquids must be taken into consideration.

DIN EN 1717 subdivides the groups into five liquid categories, each of which describes the hazard potential of the liquids.



F <sup>1</sup>	Potential hazard of liquids	Examples <sup>2</sup>
1	No hazard to health; water for human consumption that is drawn directly from a drinking water installation.	Drinking water under elevated pressure
2	No hazard to health with impaired odour, taste or colour.	Drinks (coffee or tea), cooking foods, washing foods in a domestic environment, treated drinking water, chlorine, stagnant water
3	Hazard to health through minimally toxic substances	Washing machines and dishwashers in a domestic dwelling without free inflow, bath and shower tubs with hose shower in a domestic dwelling, installations for filling heating systems (water without inhibitors), aboveground sprinkler systems, outlet valves with threaded hose connection
4	Hazard to health through toxic substances	Bath and shower tubs with hose sprays in clinics and care homes, bath tub inlets under the rim of the tub in domestic dwellings, underground sprinkler systems, chemical cleaning facilities, installations (with inhibitors) for filling heating systems
5	Hazard to health from microbial or viral pathogens of communicable diseases	Bathtub inlets under the rim of tubs in clinics and care homes; large-scale cooking equipment, high-pressure cleaners with chemical additives, toilet bowls and urinals, filling devices for swimming pools

<sup>1</sup> Category of liquid

<sup>2</sup> Further details in Table NA.5 of the DIN EN 1717

## Safety device

Group	Type	Description
A	A	Unobstructed air gap
	B	Air gap with non-circular overflow (unlimited)
	C	Air gap with aerated immersion pipe and overflow, running
	D	Air gap with injector
	F	Air gap with circular overflow (limited)
	G	Air gap with overflow, confirmed by test with negative pressure test
B	A	Backflow preventer with controllable mid-pressure zone
C	A	Backflow preventer with different, non-controllable pressure zones
D	A	Pipe aerator, straight form
	B	Pipe interrupter Type A2 with mobile parts
	C	Pipe interrupter Type A1 with permanent connection to atmosphere
E	A	Controllable backflow preventer
	B	Non-controllable backflow preventer
	C	Controllable double backflow preventer
	D	Non-controllable double backflow preventer
G	A	Backflow preventer, non-flow-controlled
	B	Backflow preventer, flow-controlled
H	A	Hose connection with backflow preventer
	B	Pipe aerator for hose connections
	C	Automatic tap changer
	D	Pipe aerator for hose connections, combined with backflow preventer
L	A	Pressurized aerator
	B	Pressurized aerator, combined with downstream backflow preventer

Symbol	Category of liquid				
	EN 17 17				
	1	2	3	4	5
AA		●	●	●	●
AB		●	●	●	●
AC		●	●	—	—
AD		●	●	●	●
AF		●	●	●	—
AG		○	○	○	○
BA	●	●	●	●	—
CA	●	●	●	—	—
DA	○	○	○	—	—
DB					
DC	○	○	○	○	○
EA	●	●	—	—	—
EB	1				
EC	●	●	—	—	—
ED	1				
GA	●	●	●	—	—
GB	●	●	●	●	—
HA	●	●	○	—	—
HB	○	○	—	—	—
HC	1				
HD	●	●	○	—	—
LA	○	○	—	—	—
LB	●	●	○	—	—

**Protection device table:**

The safety fittings to be installed are listed in a table in the DIN EN 1717 norm. This table is used to determine up to which liquid category safety is ensured.

**Note:**

Installations with atmospheric ventilation (e.g. AA, BA, CA, GA, GB, ...) must not be installed if there is a risk of flooding, e.g. installation in cellars.

**Legend:**

- covers the risk
- only covers the risk when  $p = atm$
- does not cover the risk

<sup>1</sup> Only for particular domestic use

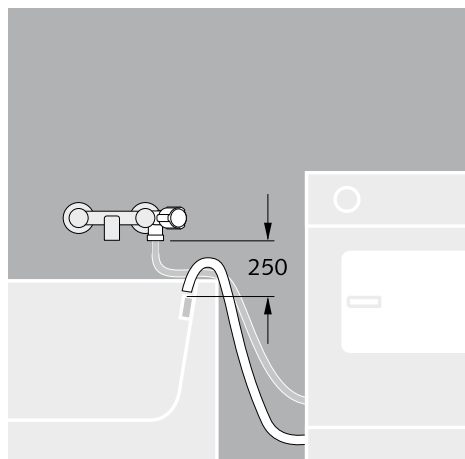
## SCHELL safety fittings cover the following applications.

### Installation instructions for safety devices in domestic dwellings:

The installation height states the distance between the highest possible wastewater level in relation to the safety device.

#### Example:

An intrinsically safe washing machine<sup>1</sup> is to be connected in a private bathroom in accordance with EN 1717; drainage is to be through the bathtub drain.



#### Result:

An appliance connection valve with safety device HD is selected (fittings with BP would also be possible). The distance between the highest possible wastewater level (bathtub overflow) and the pipe aerator of the fitting must be a minimum of 250 mm (300 mm).

#### Comment:

Installation height: States the distance between the highest possible wastewater level in relation to the safety device.

Extract from DIN 1988-100

Extract from DIN 1988-100		Pipe aerator only for design C (RB)	Fittings combination BP+PA
Numbering from DIN 1988-100	Labelling in accordance with EN 1717	DA	HD
	Installation height EN 1717 Tap point /highest possible water level	>300 mm	> 250 mm
	Installation location	Vertically downwards	Vertically downwards
	Observe maintenance and operating requirements in accordance with DIN 1988-100/ EN 806-5	Inspection/maintenance annually	Inspection/maintenance annually
	Tap point, device	• : covers the risk, ◦ : only covers the	
7	Irrigation system, underfloor system	◦	◦
13	Water softening and deacidification systems, regeneration without acids and bases	◦	◦
16	Decarbonizing of ready-to-drink and rinsing machines of commercial dishwashers with guaranteed, regular maintenance by the manufacturer	◦	◦
17	Outlet valves with threaded hose connection in a domestic environment (garden valves)	◦	◦
23	Hairdressers, reverse washing by <sup>a</sup>	◦	•
27	Drinks machine without addition of carbon dioxide	◦	•
30	Large cooking appliances, boilers with automatic filling of water for the steam area or recooling facilities convection steamers, pressure fermenting	◦	•
31	Heating filling systems**	◦	◦
44	Cleaning appliances for drink pipes in restaurants	◦	-
45	X-ray machine, cooling	◦	•
46	Hose showers on bathtubs and shower tub, washbasin in the domestic environment* <sup>a</sup>	◦	•
52	Sterilization for disinfected, packed material	◦	◦

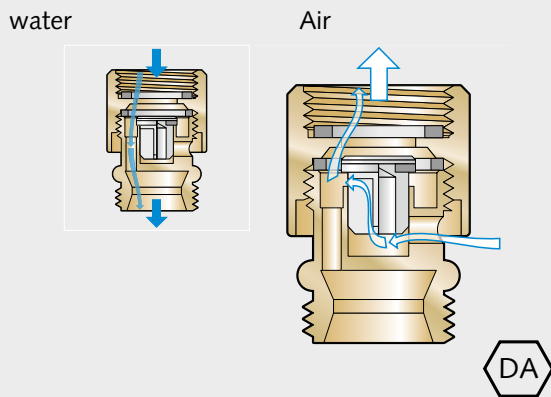
Only use DIN 1988-100 in conjunction with DIN EN 1717:2011-08 and gives explanations and instructions about using the EN 1717 in Germany. In addition, the user receives a list of examples for the selection of safety equipment in drinking water installations for the non-domestic environment.

Non-controllable Backflow Preventer (BP)	Double Backflow Preventer (BP)	Tap changer
EB	ED	HC
-	-	>250 mm
Horizontally or vertically upwards	Horizontally or vertically upwards	-
Inspection/maintenance annually	Inspection/maintenance annually	Inspection/maintenance annually

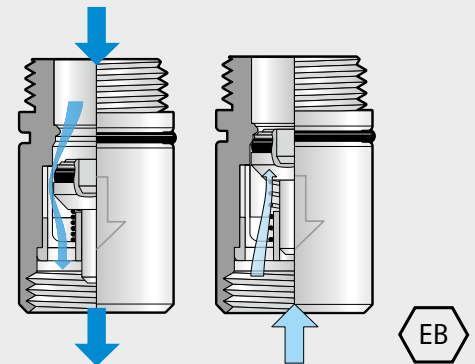
Safety equipment risk when p = atm at location of installation; - : does not cover the risk			SCHELL Products
-	-	-	03 459 06 99 HD; 03 352 06 99 HD, 03 351 06 99 HD, 03 998 03 99 HD
-	-	-	28 617 06 99 HD, 28 618 06 99 HD
•c	•c	-	28 617 06 99 HD, 03 351 06 99 HD, 28 506 06 99 EB, 03 386 06 99 EB
-	-	-	03 459 06 99 HD, 03 998 03 99 HD, 03 996 03 99 HD
•	•	○	28 612 06 99 DA, 28 617 06 99 HD, 28 505 06 99 EB
-	-	-	28 612 06 99 DA, 28 617 06 99 HD, 05 203 06 99 EB, 05 276 06 99 ED
-	-	-	28 602 06 99 DA, 28 612 06 99 DA, 28 617 06 99 HD, 28 618 06 99 HD
-	-	-	03 417 06 99 HD, 03 392 06 99 HD
-	-	-	28 612 06 99 DA
-	-	-	28 612 06 99 DA, 03 392 06 99 HD
•	•	•	06 469 06 99 EB, 28 505 06 99 EB, 06 466 06 99 EB
-	-	-	03 351 06 99 HD, 28 612 06 99 DA

- \* Not for "non domestic" environment (e.g. hospital, care home)
- \*\* Not suitable for the addition of inhibitors
- \*\*\* Replace every 10 years (EN 806-5 Appendix A)
- a Risk reduction in accordance with DIN EN 1717:2011-08, Table 3
- b With positive pressure gradient (DVGW W 570-2)
- c Replacement cycle of the backflow preventer at the latest every 5 years
- d The safety equipment must be an integrated part of the filling device or fitting

## Designs of SCHELL safety fittings. In accordance with DIN EN 1717.



Pipe aerator



Backflow preventer

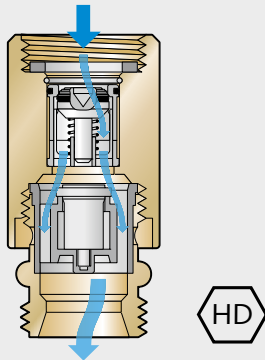
Safety fittings can be single valves or a component of an outlet valve. For specific applications, a combination of different assemblies (backflow preventer plus pipe aerator) or using in the double form (double backflow preventer) is specified. The safety fittings are subdivided into groups (first letter) and types (second letter) according to DIN EN 1717. Example: backflow preventer "EB".

### Pipe aerator DA, design C

- Function: The valve is closed under pressure in flow direction. If there is a drop in pressure, the valve opens automatically and prevents the formation of a pressure gradient towards the inlet-side of the installation.
- Installation instructions: Pay attention to the direction of flow, height above the process water level 250/300 mm
- Safety in accordance with EN 1717: Category 2/3 (domestic environment)

### Backflow preventer EB

- Function: In flow direction, the flow current opens a spring-loaded valve seat. If a liquid flows in the opposite direction, the valve remains closed.
- Installation instructions: Note flow direction
- Safety in accordance with EN 1717: Category 2/3 (domestic environment)



Combination BP and PA

### Combination BP and PA

- Function: A design C pipe aerator is installed in flow direction downstream from a backflow preventer. This prevents backpressure and simultaneously stops negative pressure building up in the pipe system. The safety combination can be installed as a single fitting, integrated into an outlet valve, or as a concealed combination.
- Installation instructions: Height above process water level 250/300 mm (DIN 1988, Part 4: 150 mm)
- Safety in accordance with EN 1717: Category 2/3 (domestic environment)

### Double backflow preventer ED

- Function: Two backflow preventers EB are installed in one casing. This design has been stipulated by the DVGW especially for adjustable shower heads on kitchen fittings.
- Installation instructions: Note flow direction
- Safety in accordance with EN 1717: Category 2/3 (domestic environment)

### Automatic tap changer

- Function: If there is a drop in pressure of 0.5 bar upstream from the battery, the tap changer automatically changes from shower to tub outlet.
- Installation instructions: In tub fittings with integrated backflow preventer
- Safety in accordance with EN 1717: Category 3 (domestic environment)



SHELL GmbH & Co. KG  
Fittings Technology  
Raiffeisenstrasse 31  
57462 Olpe  
Germany  
Tel. +49 2761 892-0  
Fax +49 2761 892-199  
info@schell.eu  
www.schell.eu

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