GET INSPIRED.

schroeder valves SINCE 1889

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OUR VALUES

Safety
Prior to leaving our factory, each valve is hydraulically tested in our unique test center to ensure the highest degree of quality and functionality.

Stability
Schroeder Valves is interested in long-term partnerships and cooperation – this applies to customers as well as to suppliers and employees.

Curiosity
We maintain solid relationships with our customers and are always open for feedback. This makes you part of our R&D.

Enthusiasm
We always take up new challenges with enthusiasm because they help us to broaden our horizon.

YOUR BENEFITS

OUR EXPERIENCE

With Schroeder Valves you have chosen a family-owned, international company with a tradition that dates back more than 125 years.

For over 60 years we have been developing and manufacturing high-quality valves for the protection of pumps.

The safety of your plant and the environment is of the utmost importance to us. Our high-quality valves reliably prevent against accidents, complete breakdowns and wear.

APPLICATIONS

GLOBAL FIELDS OF APPLICATION

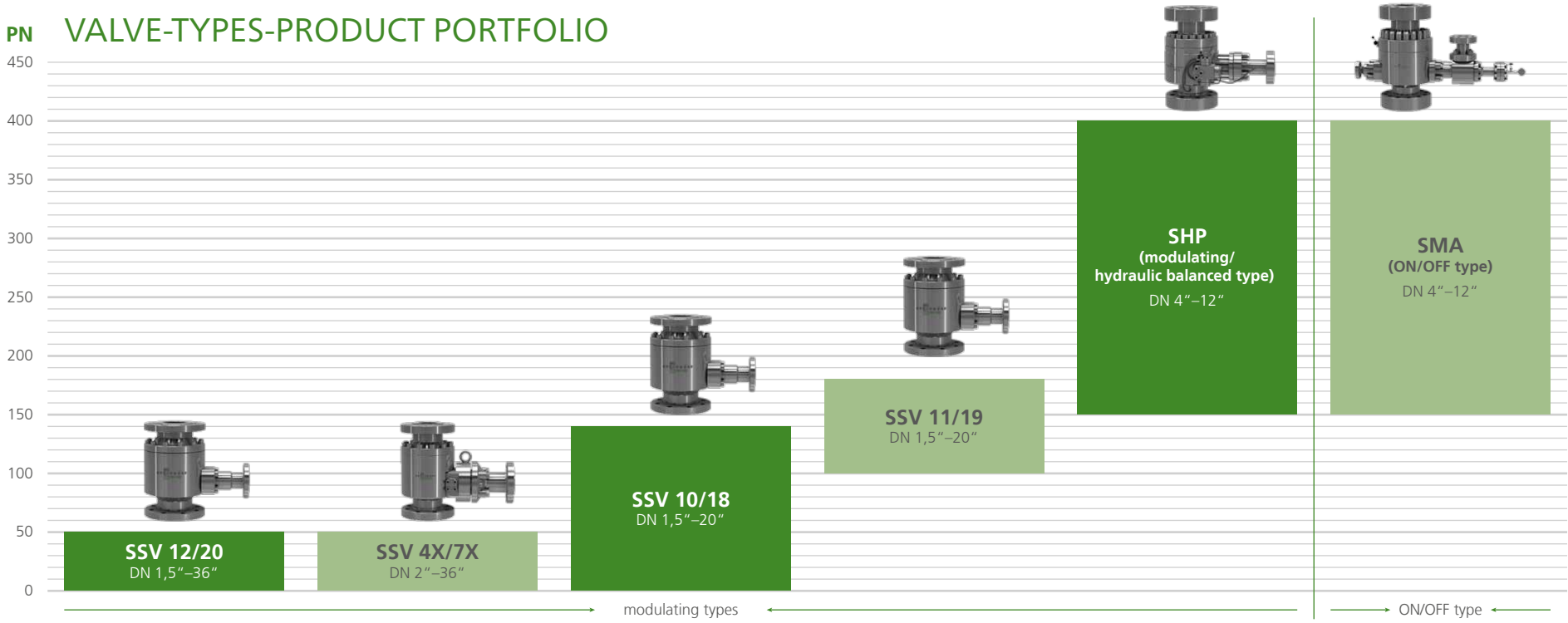
Invalid temperature rise, cavitation, dry running, high noise, vibration, breakdowns. The challenges in the operation of pumps are numerous. We meet them every day – with technology that ensures security. The operational reliability of your equipment is our top priority.

Especially in high-risk systems, such as in nuclear power plants or in the chemical industry, the safety of the pumps is essential. If it is not guaranteed, there is acute danger for people and the environment. Our valves effectively protect centrifugal pumps against damage, which can occur due to dry-running or during low-load operation. They reliably prevent industrial accidents, total loss and damage.

Our worldwide customers rely on our know-how and state-of-the-art engineering whether they work in refineries, power plants, the chemical industry, the offshore sector or in the field of renewable energy sources.

OUR PRODUCTS

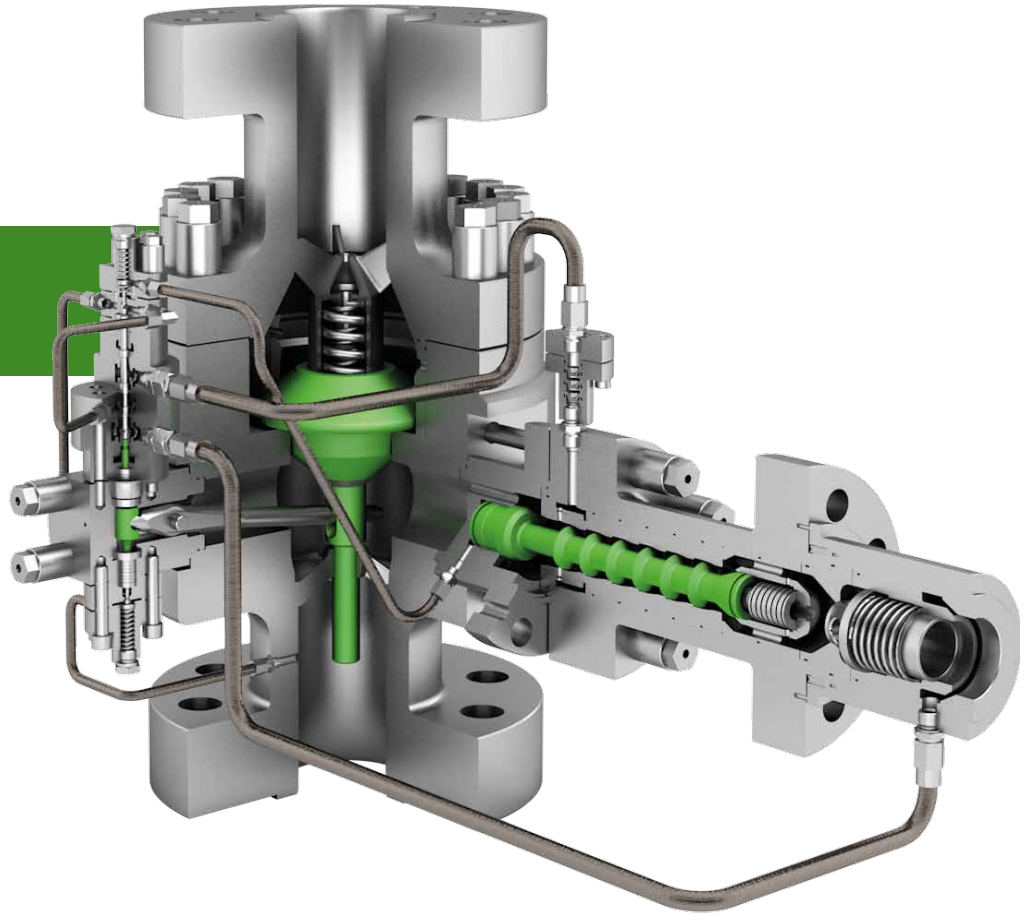
VALVE-TYPES-PRODUCT PORTFOLIO



SHP

AUTOMATIC RECIRCULATION VALVE FOR HIGH PRESSURE APPLICATIONS

The SHP series automatic recirculation valve protects pumps and equipment from damage that can occur due to the flow rate falling below the permissible minimum. The innovative design ensures that pumps and equipment are reliably protected, even in situations involving highly fluctuating pump loads and long periods of operation under extreme partial load conditions. This is achieved by using a special fully automatic minimum flow control system that ensures the release of a modulating adaptive minimum flow. In addition, the wear-intensive extreme partial load range is deliberately overridden. The shut-off and pressure reduction functions are both functionally and physically separate from each other. This makes the SHP series the ideal fitting for applications involving very flexible operating conditions, such as those commonly found in modern power plants, for example.



Pressure class
DIN 250–400 bar
ASME 1500–2500 lbs

Size
100–300 mm
4"–12"

SMA

HIGH PRESSURE VALVE WITH "ON/OFF" CONTROL

The SMA 64 automatic minimum flow system is a protective pump fitting. It automatically protects centrifugal pumps against damage that may occur as a result of the partial evaporation of the pump content when the pumps are operated under low load. As soon as the main pump flow falls below a predetermined value, the valve opens the bypass and safely drains the minimum volume, even if the pumping volume in the main flow direction drops to zero. The bypass is always completely opened or closed through its pilot-controlled valve piston. This "ON/OFF" control makes it possible to increase the previous load limit of the valves from 200 bar to 400 bar (pumping pressure). The preferred utilization range is thus between PN 250 and PN 400 or ANSI CLASS 2500. The bypass amount may be up to 35% of the main pumping volume. The valve functions without an additional source of energy.

Pressure class
DIN 250–400 bar
ASME 1500–2500 lbs

Size
80–300 mm
3"–12"

SSV

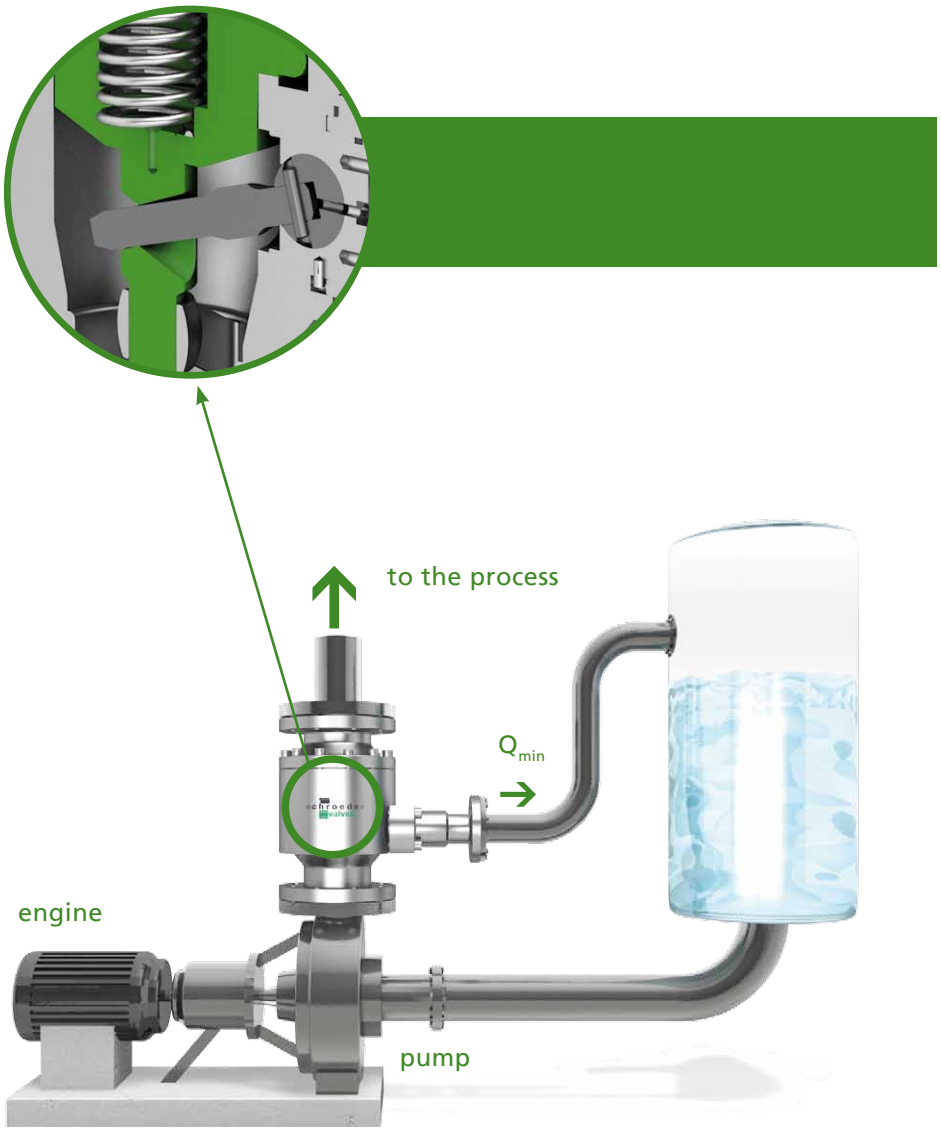
AUTOMATIC RECIRCULATION VALVE WITH BYPASS THROTTLE OR BYPASS NON-RETURN VALVE

The automatic recirculation valve from our SSV series 18–20 is a pump protection fitting which automatically protects centrifugal pumps, especially hot water pumps, against wear, complete breakdown and damage that can result from dry running or operating under low-load conditions.

As soon as the main flow falls below a certain value, the valve opens its bypass to the extent that the required pump minimum volume is discharged even if the main flow is zero. The pressure in the minimum volume is reduced via an integrated throttle line with a bypass non-return valve. If a non-return valve in the bypass is not required, the series SSV 10–12 is to be applied.

Pressure class
DIN 10–200 bar
ASME 150–2500 lbs

Size
25–500 mm
1“–20“



SSV

PRINCIPLE

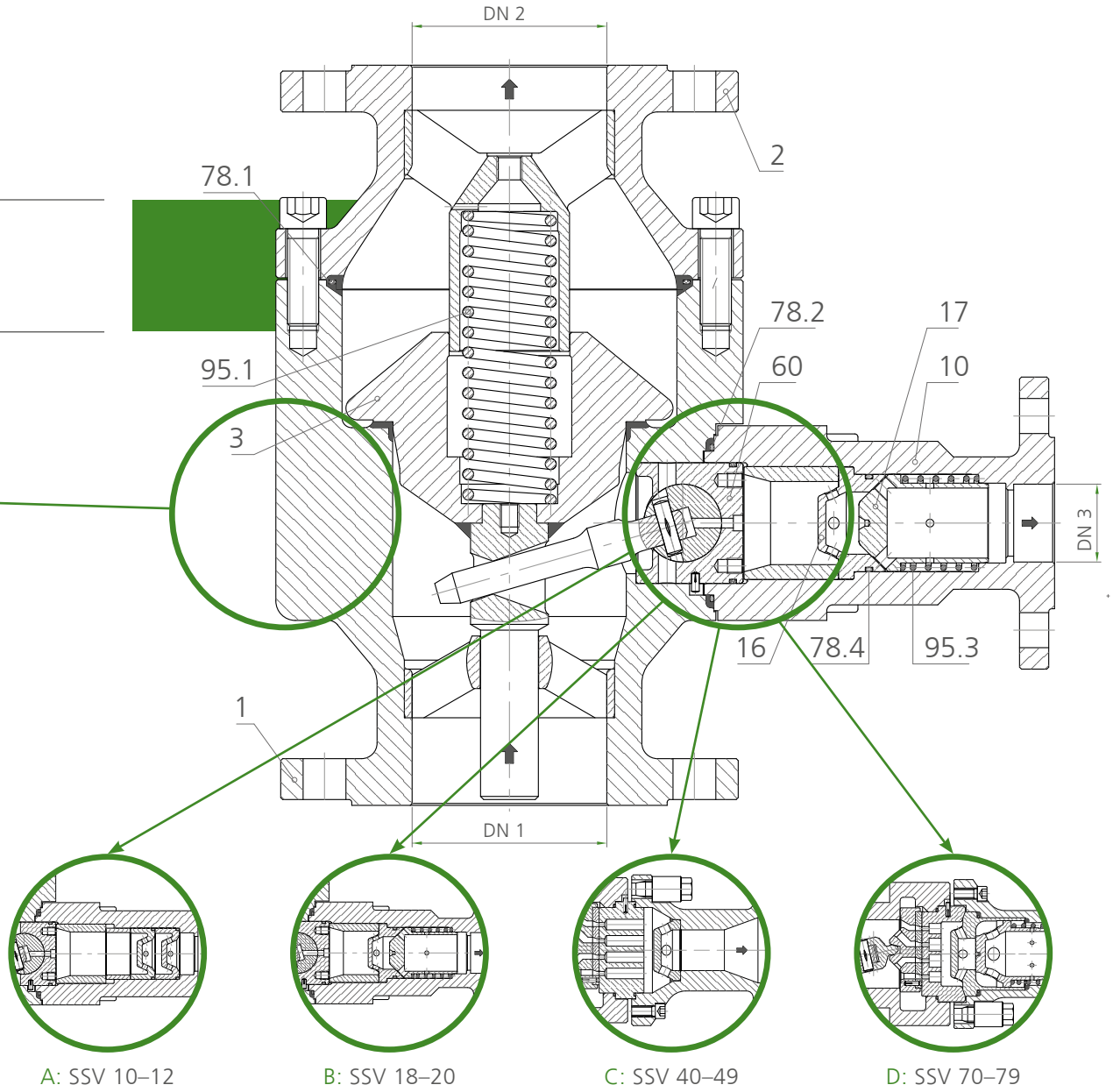
The automatic recirculation valve is volume controlled, i.e. the non-return check cone is raised solely by the main flow and in a volume-dependent position. In accordance with the design the cone reaches its upper end position at operation flow. Via a lever the non-return check cone operates the rotary slide valve in the bypass. When the cone is on the cone seat, the rotary slide valve is fully open. It closes the bypass according to the extent that the cone is raised in the direction of the main flow. The valve allows just as much liquid to flow through the bypass as is necessary to supplement the required minimum flow rate of the pump. The current branch ends as soon as the main flow exceeds the minimum volume of the pump. Then the bypass is closed. Vice versa, the bypass is opened again when the main flow falls below the minimum volume.

SSV

BYPASS VARIANTS

Optional DN 4 & 5

- Manually operated connection
- Degassing connection
- Warm-up connection (3 variants)
- Drain connection



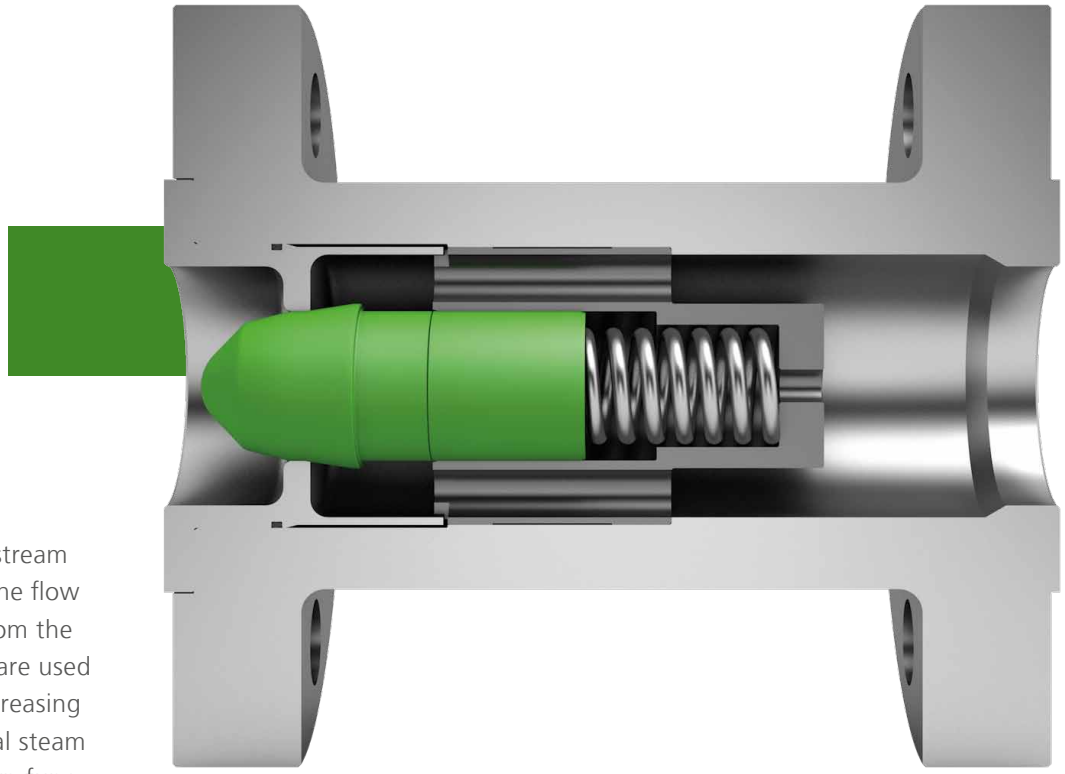
SPARE PARTS SSV 18/20

Description	Part number	Standard material	
		DIN	ASME
Lower body	1	1.0460	A105
Upper body	2	1.0460	A105
Cone	3	1.4301	A304
Bypass branch	10	1.4301	A304
Valve head complete	60	1.4122	A276
Throttle	16	1.4571	A276
Non-return valve	17	1.4112	A276
O-ring	78.1	EPDM	EPDM
O-ring	78.2	EPDM	EPDM
Coil spring	95.1	1.4310	A167
Coil spring	95.3	1.4310	A167

EXCHANGE AND SPARE PARTS SSV 18/20

Description	Part number
Bypass valve head	60
Non-return valve in bypass branch	
Throttle	16
Non-return valve	17
O-ring	78.2
Coil spring	95.3
Single spare parts	
O-ring	78.1
O-ring	78.2
Coil spring	95.1
Coil spring	95.3

SDV



SDV – BACK PRESSURE DEVICE

The back pressure device SDV does not allow the static pressure in the upstream pipe to fall below a defined minimum value. It does this independently of the flow volume. This means that the specified minimum pressure is maintained, from the nominal flow rate to the smallest volume. Normally back pressure devices are used to avoid cavitation and partial evaporation in the pumping medium. By increasing the pressure level in the system component to be protected, they stop local steam pressure from falling below requirements. The SDV has an integrated return function, i.e. the system is also protected against reverse flow if needed.

- Size depends on bypass
- (1"–12")
- Up to 400 bar
- Automatic pressure adjustment
- Material: carbon – super duplex
- For all fluids

Pressure class
DIN 10–400 bar
ASME 150–2500 lbs

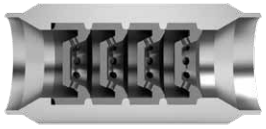
Size
25–300 mm
1"–12"

SSD

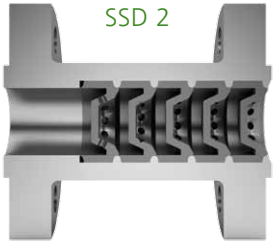
SSD – MULTIPORT THROTTLES

- Multiport throttles are used to reduce the pressure and flow volume of liquid media
- Nominal widths: DN 20–DN 500 or equal ASME
- Pressure ratings: up to PN 640
- Standard coating material: 1.0460

SSD 1

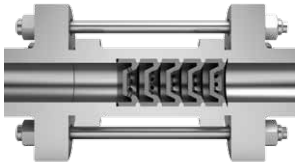


SSD 2



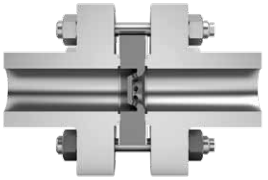
SSD 3

SSD 4



SSD 5

SSD 6



SERVICES

EXPERIENCE OUR SERVICES IN THE FOLLOWING AREAS

- Development & design
- Test center
- Technical support

AT A GLANCE

Quality products need excellent service which is why service has always been a central pillar of our culture. Schroeder Valves is known for comprehensive support and fast response times concerning both the procurement process as well as maintenance and repairs. We offer you a self-contained package – from advice in the product right up to the documentation.

To ensure 100% quality, we have established a worldwide unique test center. Prior to leaving our factory, each valve is hydraulically tested in our test center to ensure the highest degree of quality and functionality. Our own fitters are located globally and are on-site with you promptly in order to provide extensive support and competent advice. With a worldwide presence we make sure that you find an expert in each region, who will find the best solution to protect your pumps.

CERTIFICATION, STANDARDS AND REGULATIONS

MADE IN GERMANY

Our automatic recirculation valves and step throttles are designed according to the AD 2000 regulations (e.g. strength calculation, materials that can be used, etc.). Our products are CE-labelled in accordance with Directive PED 2014/68/EU for pressurized vessels and a conformity statement is issued.

All hazard groups in categories 1 to 4 are included in the certification according to Module H1 of PED 2014/68/EU. For all pressurized individual components of the valves and step throttles, all materials used have been certified in Category 3.1 or higher.

Furthermore we are certified for the Chinese market through the HAF 604 and for the Russian market through the TRCU 032 010_2016.

According to EN 10204, the products may be accompanied by the following:

1. Certificate of compliance for internal components without a construction test according to 2.1
2. Certificate of compliance for pressurized parts that have been subjected to a construction test and for which the execution of the pressure and functional test according to 2.2 has been confirmed
3. Acceptance test certificate for pressurized parts that have been subjected to a construction test according to 3.1 or 3.2

INQUIRY SPECIFICATION

AUTOMATIC RECIRCULATION VALVES

Automatic recirculation valves are protective pump fittings. They automatically protect pumps from damage which might occur due to partial evaporation of the pumps' contents during low load operation. Every recirculation valve is tailor-made for the particular pumps and plant data.

For the design of the appropriate valve for your application, please transmit the data shown on the next page to:

E-mail: info@schroeder-valves.com

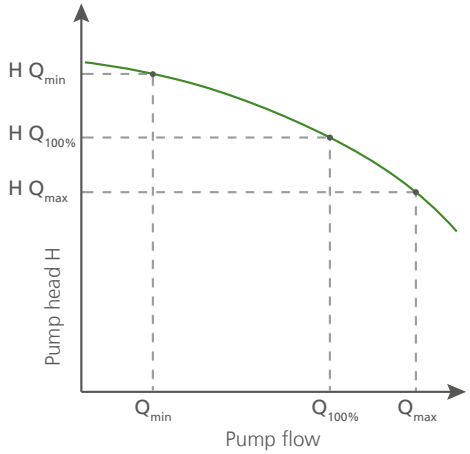
We look forward to your inquiry.

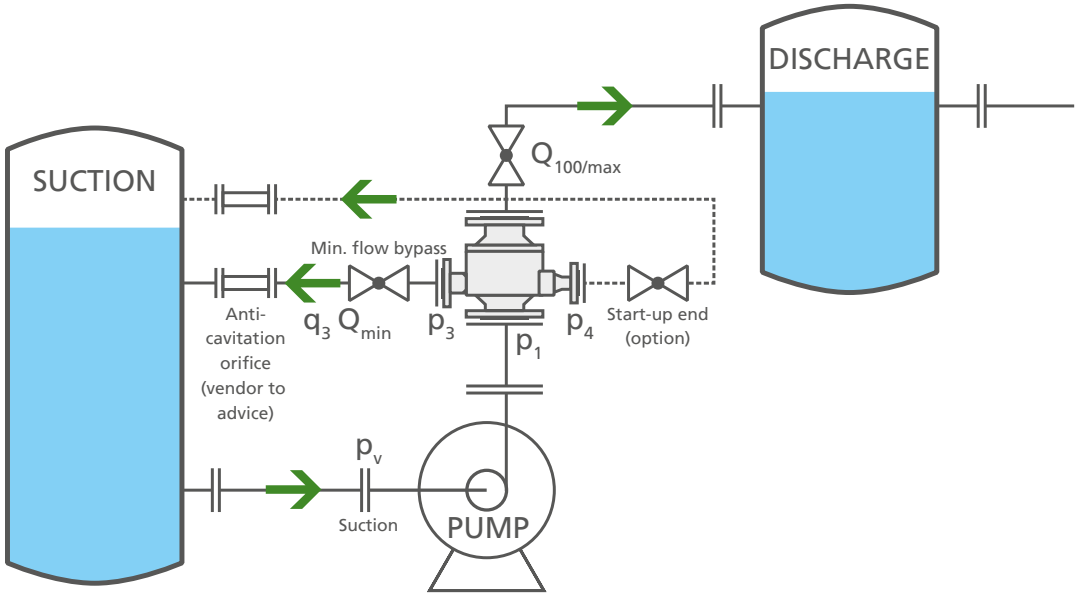
For further information on our products view:
http://www.schroeder-valves.com/en/products/
Or just scan this code:

THE FOLLOWING DATA IS NEEDED FOR THE PARTICULAR DESIGN OF YOUR VALVE:

1. Non-return valve in the bypass branch*
2. Installation*
3. Variable pump speed*
4. Medium*
5. Density*
6. Operating temperature*
7. Standards (DIN/ASME)*
8. Max. capacity Q_{max}
9. Design capacity $Q_{100\%}$*
10. Total head at $Q_{100\%}$*
11. Bypass flow Q_{By}*
12. Total head at Q_{By}*
13. Pump inlet pressure p_V*
14. Back pressure on bypass branch p_3*
15. Valve pressure rating*
16. Valve flange size/rating*
17. Valve flange sealing*
18. Additional branch
19. Pump curve attached

*requested design data





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