Flansche Flanges Brides					Kom.-Nr.
	DN 1	80	PN	100 DIN 2547 E	25813
	DN 2	80		100 DIN 2547 E	
	DN 3	25		100 DIN 2547 E	

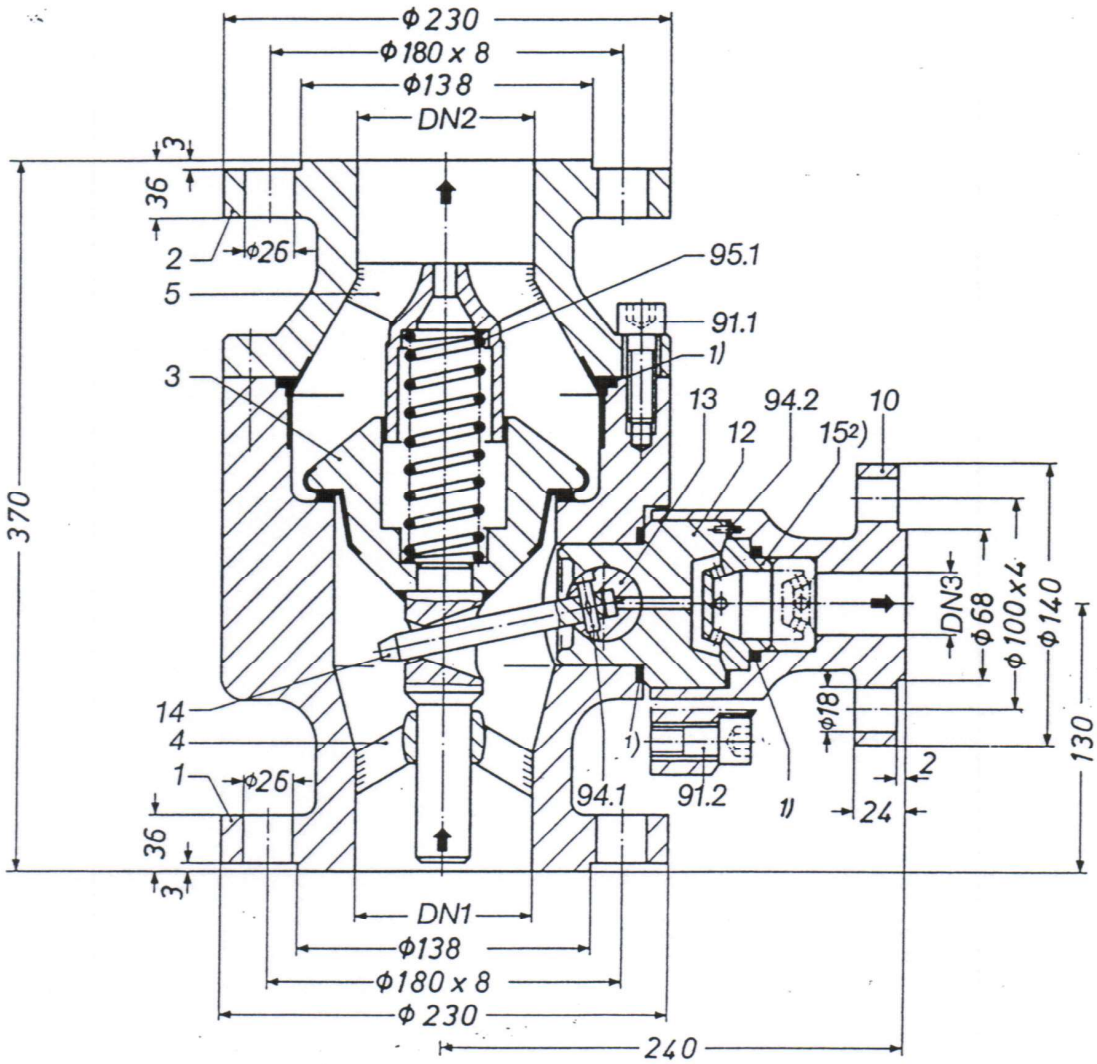
1) metallische Dichtung, metal-to-metal sealing, joint métallique

2) ___ Stufen, Stages, étages

C-94850

zu Bl. Nr. 5/6

Anlage 6



				Freimaßtoleranzen mittel DIN 7168 Oberflächen Reihe 2 DIN 3141	Werkstoff-Nr. 1.0566	Für diese Zeichnung behalten wir uns alle Rechte vor	
					Gewicht in kg	Clapet de décharge automatique et de retenue Compensating Bypass Check Valve **Freilauf-Rückschlagventil** Type SSV 10 - 80/100	Maßstab
6				19	Datum	Name	
5				Bearb.	27.08.94	Scher	
4				Gepr.			
3				Norm			
2				**H. Schroeder & Co.** Engelskirchen/Elbach		Zeichnungs-Nr. 4K 105k 0076	Blatt ___ von ___
1						Ursprung	
Index	Änderung	Datum	Name			Ersatz für	Ersetzt durch

Figure 2

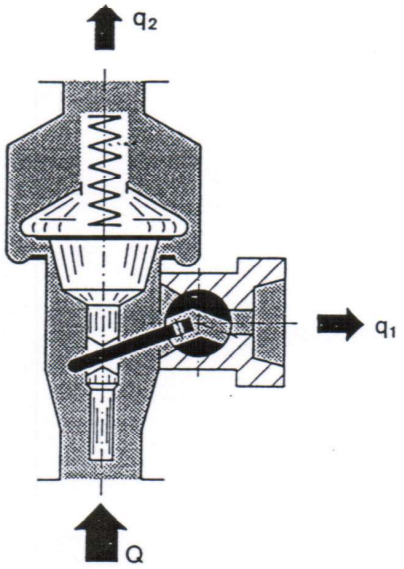


Figure 3

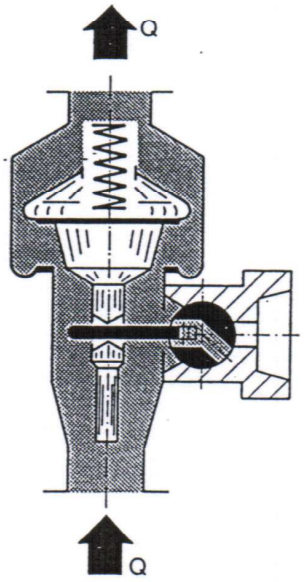


Diagram 4 represents a typical operating diagram of a Compensating Bypass Check Valve.
The designations represent:

Q = total flow through main check valve
Q_{min} = minimum pump flow (max. bypass capacity)
q_1 = full or partial min. flow (through bypass branch)
q_2 = partial min. flow (through main check valve)
q_3 = min. flow (through secondary hand-op. bypass branch)
SP = shut-off point (measured flow rate with bypass about to close)
OP = opening point (measured flow rate with bypass about to open)
Δq = flow rate differential
Δp_V = pressure loss
h = cone stroke

The partial flows q_1 and q_2 only occur within the divided flow range

$$Q = q_1 + q_2 \geqq Q_{min.}$$

The maximum bypass capacity Q_{min} occurs when the rotary bypass valve is fully open.

The bypass valve closes at point (2), but re-opens at point (1) with a slight delay. This is caused by a certain amount of clearance between main cone stem and slide valve operating lever, and by friction of the rotary slide caused by internal pressure. The resulting flow rate differential amounts to approx. 15% of Q_{min}. The maximum partial minimum flow rate q_2 through the main valve is therefore greater than the pump minimum flow by at least Δq:

$$\text{max. } q_2 = SP \geqq 1{,}15\ Q_{min.}$$

Special cone design results in the pressure loss curve (b). It applies to all valve sizes, and excludes other flow-related parameters (kv-values) for bypass non-return valves.

Diagram 4
Characteristic Curves for Compensating Bypass Check Valves Type SSV 10

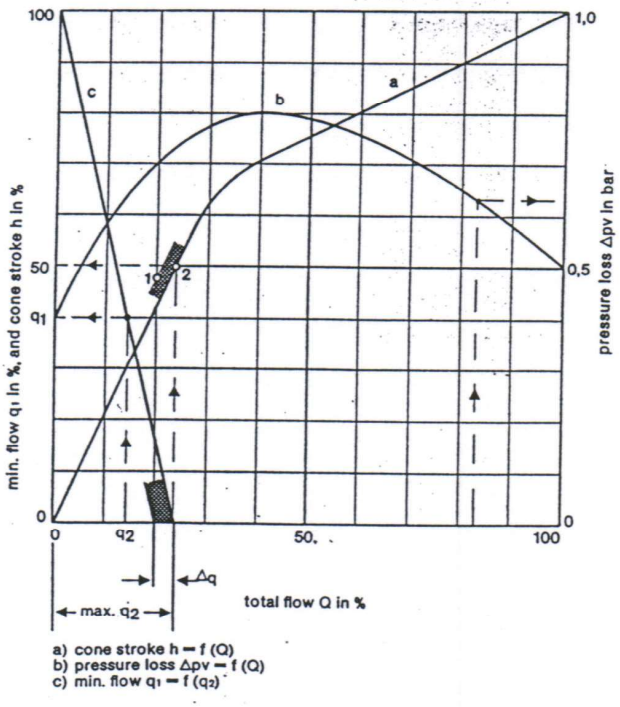


Illustration 5
Bypass Return with additional hand-operated branch

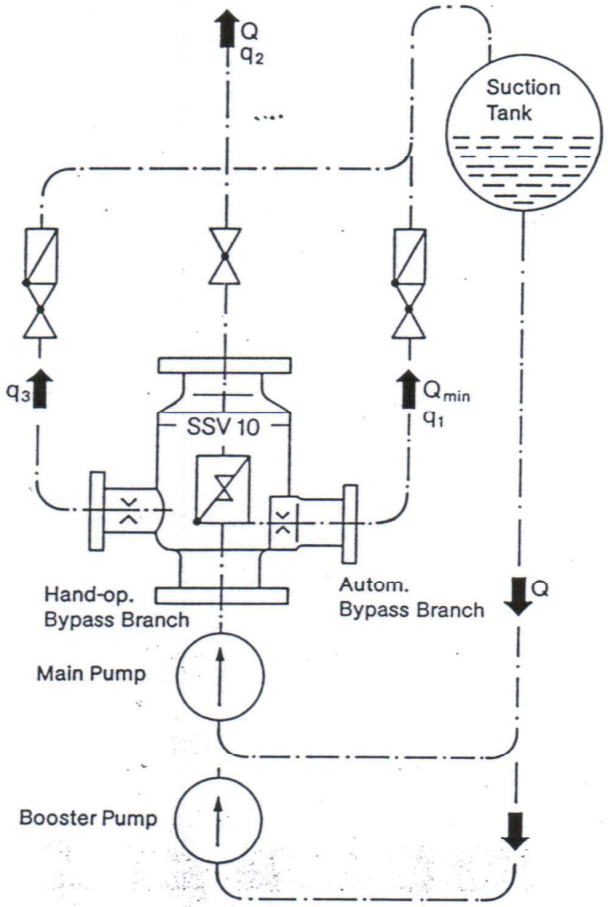


Table 6
Maximum Flow Rates through Autom. Bypass and Hand-op. Bypass Branches

DN_3 / DN_4	[mm]	15	25	32	40	50	65	80	100
$Q_{max.}$	[m³/h]	6,3	18	29	40	70	120	180	280
	[l/s]	1,8	5	8	12,5	20	33	50	80

Installation

Valves SSV 10 should preferably be connected directly to the pump discharge branch, and must be mounted vertically with flow entry from below. Limited possibilities for horizontal installation exist, but must be confirmed by the manufacturer.

The bypass flow is piped back to the suction tank. All bypass valve components are easily serviced. We recommend a removeable flanged pipe approx. 1 m long to be fitted to the bypass branch, to facilitate servicing of the bypass valve. We also recommend installing a stop valve, but this must be of a type which can be locked in the OPEN position.

Illustration 5 shows a typical arrangement and flow schematic of our Compensating Bypass Check Valve. The hand-operated bypass feature is optional.

Construction

The Valve SSV 10 comprises a radially split body with non-return cone, and a separate bypass device in the bypass branch.

All sliding parts are machined from proven stainless steels suitably matched to each other. Parts subject to wear such as the check valve seat are stellite-faced. The coil springs are also made from stainless steel.

Body and part of the cone are normally of forged steel C 22.8 (1.0460). Special stainless steel valves of different qualities are also available. From size DN 100 all wetted parts can be supplied stellite-faced.

The pump minimum flow rate is bypassed **automatically through the flow-controlled bypass valve.** The pump discharge pressure is reduced through one or several throttles, depending on the valve pressure rating.

The hand-operated bypass branch with integral multi-port throttle (in conjunction with an external stop/check valve combination) is used to pass off the minimum flow.

To be used for boiler filling, and to protect the automatic bypass valve during extreme operating conditions (high differential pressure and extended low flow operation).

The hand-operated bypass branch is located below the main valve seat. The automatic bypass line remains open, and must be closed manually.

Optional branches and sockets can be provided for warming-up, draining, pressure gauge fitting, etc.

Flanges

DN_1 = main valve inlet	PN 16 to DIN 2543
DN_2 = main valve outlet	PN 25 to DIN 2544
DN_3 = autom. bypass branch	PN 40 to DIN 2545
DN_4 = hand-op. bypass branch	PN 63 to DIN 2546
	PN 100 to DIN 2547
raised faces	PN 160 to DIN 2548
to DIN 2526	PN 250 to DIN 2549

Flanges to ANSI, BS and related standards are possible.