

DN 13 - 50, G 1/2 to G 2, gunmetal



Advantages / Benefits

- ▶ **High operating safety:**
 - maintenance-free double packing gland with intermediate relief and wiper
 - few parts
 - PTFE-seat seals
- ▶ **Easy installation:**
 - 360° positioning of actuator control ports
 - threaded ports
- ▶ **Optical position indication standard**
- ▶ **Waterhammer-free**
- ▶ **Low operating costs due to minimized control air consumption**
- ▶ **Comprehensive range of modular accessories**
- ▶ **Short face to face length (Type 251 compatible)**

Design

The pneumatically operated 3/2-way valve is operated with a piston actuator.

The actuator is available in different materials, depending on the ambient temperature.

The standard material is PA. For high ambient temperatures (e.g. external sterilization) PPS is available for temperatures up to 140°.

High flow rates are attained with the gunmetal 3-way body. The reliable self-adjusting packing gland provides high sealing integrity.

Various circuit functions of the same control function can be obtained by a simple exchange of the pressure and service ports.

These maintenance-free and robust valves can be retro-fitted with a comprehensive range of accessories for position indication, stroke limitation or manual override.

- high specific flow rate
- control function A standard, i.e. return spring above piston
- simple and safe conversion of control functions (e.g. N/O -> N/C or double-acting), due to no preloaded spring and few parts

Optional accessories:

- manual override
- various electrical position feedbacks
- adjustable stroke limiters
- pilot valves

Applications

Fluids

Application as mixer or distributor for:

Neutral gases and liquids up to 16 bar

Steam up to 10 bar/180 °C

Industries

Systems engineering

Food processing

Chemical industry

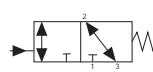
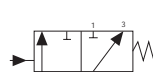
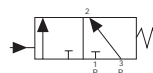
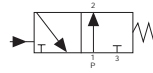
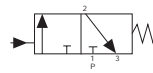
Sterilizers

bürkert
Easy Fluid Control Systems

Technical Data

Circuit Functions (CF)

- C** When de-energized, pressure port 1 closed, service port 2 exhausted
- D** When de-energized, pressure port 1 connected to service port, exhaust port 3 closed
- E** Mixer valve
When de-energized, pressure port 3 connected to service port 2, pressure port 1 closed
- F** Distributor valve
When de-energized, pressure port 2 connected to service port 3, service port 1 closed
- T** 3/2-way valve, universal functions, double-acting.
Depending on the position, ports 1 and 2 or ports 2 and 3 are connected, flow direction as required (on request)



Control Function

A = return spring above the actuator piston

Thus, port 1 is normally closed. The circuit functions (CF) C-F of the valve are realized by appropriate switching of the port connections (cf. chart).

CF	Ports		
	1	2	3
C	P	A	R
D	R	A	P
E	P	A	P ₁
F	A	P	B

A, B: service ports
P, P₁: pressure ports
R: exhaust port

Specifications

Connections	Orifice [mm]	Kv-value water [m ³ /h]		Max. operating pressure ¹⁾ [bar]		Actuator size [mm]	Weight [kg]
		1 to 2	2 to 3	up to 120 °C	120 ... 180 °C		
G 1/2	13	9	5,5	0 ... 16	0 ... 10	50	1,3
	13	9	5,5	0 ... 16	0 ... 10	63	1,6
G 3/4	20	10,5	6,5	0 ... 16	0 ... 10	50	1,3
	20	10,5	6,5	0 ... 10	0 ... 16	63	1,6
G 1	25	17	11	0 ... 10	0 ... 10	63	2,1
G 1 1/4	32	38	24	0 ... 9	0 ... 9	80	4,3
	32	38	24	0 ... 14	0 ... 10	125	8,1
G 1 1/2	40	40	26	0 ... 9	0 ... 9	80	4,3
	40	40	26	0 ... 14	0 ... 10	125	8,1
G 2	50	55	37	0 ... 10	0 ... 10	125	9,5

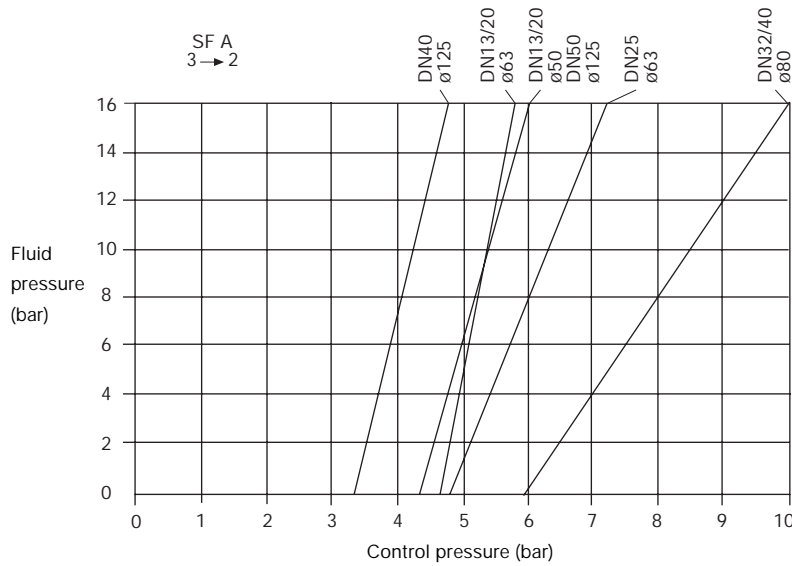
¹⁾ All pressures quoted are gauge pressures with respect to the prevailing atmospheric pressure.

Operating Data

Body material	gunmetal	Fluid temperature, depending on the seal material	-10 °C to +180 °C (PTFE)
Threaded connection	ISO 228	Packing gland	spring loaded PTFE V-ring stem seals
Control pressure	max. 10 bar 7.0 bar with ø 125 actuator	Seal materials	PTFE, NBR ²⁾ , FPM ²⁾ , EPDM ²⁾
Control fluid	neutral gases, air	Fluids	water, alcohols, oils, fuels, hydraulic liquids, salt solutions, bases, organ. solvents, steam
Max. viscosity	600 mm ² /s	Installation	as required, but preferably with actuator upright
Ambient temperature			
PA actuator	-10 °C to + 60 °C		
PPS ²⁾ actuator	+ 5 °C to +140 °C, up to 140 °C for a short period (steam sterilization)		

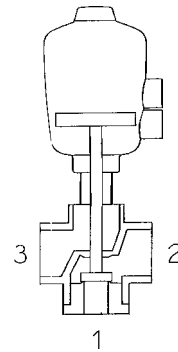
³⁾ on request

Control Pressure for Control Function A



Control function I

in CF C, D, E, F;
flow direction as required



on request only

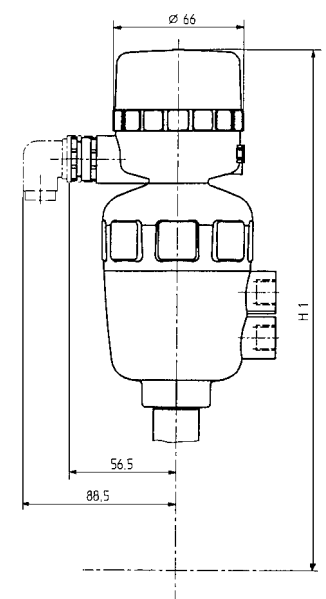
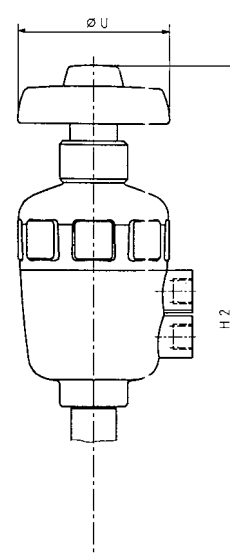
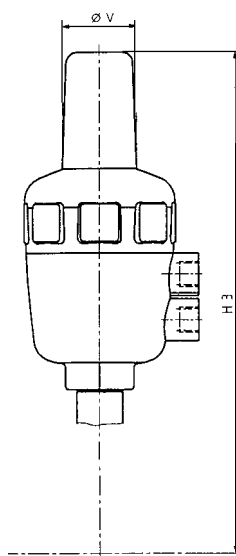
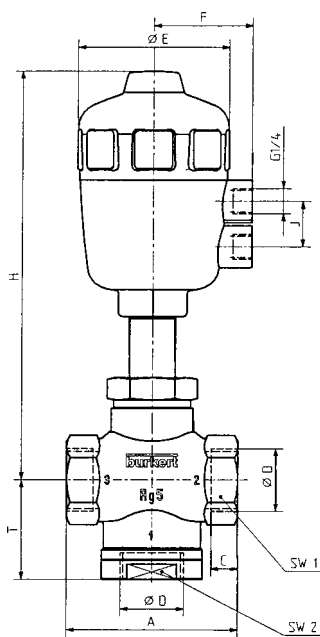
Dimensions of 3/2-way Valve incl. Accessories in mm

Optional accessories (not for ø 40 actuator)

Stroke limitation

Manual override



Electrical position feedback (Type 1062)



DN	Size (ø)	A	C	ø D	ø E	F	H	T	J	SW1	SW2	H1	ø U	H2	ø V	H3
13	50	75	12	G 1/2	64	44	179	49	24	32	36	238	80	235	39	229
20	50	75	12	G 3/4	64	44	179	49	24	32	36	238	80	235	39	229
25	63	90	14	G 1	80	52	216	52,5	24	41	46	275	80	272	39	266
32	80	120	18	G 1 1/4	101	60	237	66	24	55	65	296	80	293	39	287
40	80	120	18	G 1 1/2	101	60	237	66	24	55	65	296	80	293	39	287
50	125	160	24	G 2	153	86	350	85	30	70	70	409	150	420	53	423

Operating and Control Pressures, Standard Values with PTFE Seal Material

Max. admissible operating pressure 16 bar, max. admissible control pressure 10 bar, with water.

Control function	Application in CF	Flow direction	Actuator ø [mm]	Max. adm. Δp at orifice				Control pressure at Δp max. [bar]
				[bar] 13/20	25	32/40	50	
	C, D, E	1 → 2	50	0-11	-	-	-	4,4
		(3 → 2)	63	0-16	-	-	-	4,7
		cf. chart	63	-	0-10	-	-	4,9
			80	-	-	0-9	-	6,0
			125	-	-	0-14	-	3,4
			125	-	-	-	0-10	4,3
	F	2 → 3,	50	0-16	-	-	-	4,4
		2 → 1	63	0-16	-	-	-	4,7
			63	-	0-16	-	-	4,9
			80	-	-	0-16	-	6,0
			125	-	-	0-16	-	3,4
			125	-	-	-	0-16	4,3

¹⁾For circuit function D observe changed switching of the port connections (cf. chart)

Ordering Chart (Other Versions on Request)

Threaded port, pilot port with brass inserts, PA-actuator, PTFE seal material, gunmetal body, control function A

DN [mm]	Connections G ISO 228	Actuator ø [mm]	Max. operating pressure [bar] at fluid temperature		Order-No.
			up to 120 °C	120-180 °C	
13	1/2	50	0-16	0-10	002 131 K
13	1/2	63	0-16	0-10	002 300 R
20	3/4	50	0-16	0-10	002 132 L
20	3/4	63	0-16	0-10	002 301 E
25	1	63	0-10	0-10	002 133 M
32	1 1/4	80	0- 9	0- 9	002 134 N
32	1 1/4	125	0-14	0-14	002 302 F
40	1 1/2	80	0- 9	0- 9	002 135 P
40	1 1/2	125	0-14	0-14	002 303 G
50	2	125	0-10	0-10	002 136 Q

Options and Accessories on Request

- Control function I (double-acting actuator)
- PPS actuator material PPS for ambient temperatures up to 90 °C (up to 140 °C for a short period)
- Electrical position feedback¹⁾
- Magnet-inductive proximity sensors for position feedback¹⁾ mounted to the actuator
- Independently adjustable stroke limitation¹⁾: for high and low flow

- Manual override
- NAMUR-adaptor for pilot valve
- Pilot valves:

Pilot valves	Order-No.
Type 375, DN 1,2; 220/- (incl. double nipple) for actuator sizes 50, 63 mm	700 875 R
Type 311, DN 2,0; 220/50 (incl. double nipple) for actuator sizes 63, 80, 100, 125 mm	700 876 J

¹⁾Please refer to data sheet Modular Option Package Type 2000-2031