

T 8115 EN

Series V2001 Valves · Clean Tech

Type 3321CT Globe Valve with pneumatic actuator

DIN and ANSI versions



Application

Compact control valve for the process industry

Valve size	DN 15 to 80 · NPS ½ to 3
Pressure rating	PN 16 and 40 · Class 150 and 300
Temperatures	–10 to 220 °C · 14 to 428 °F

Special features

Type 3321CT Globe Valve with Type 3379 Pneumatic Actuator and Type 3724 Positioner

- Completely made of stainless steel for hygienic, corrosive environments. Especially suitable for auxiliary media in the food and beverage industry as well as biotech sector
- Skid mounting and compact design facilitate installation
- Digital positioner for precise closed-loop control
- Display, auto tuning and error monitoring

Versions

Standard version for temperatures ranging from –10 to 220 °C/14 to 428 °F

- **Type 3321CT Valve** in valve sizes DN 15 to 80/NPS ½ to 3 · Flanged body made of stainless steel · Pressure rating PN 16 and 40/Class 150 and 300 · Self-adjusting packing · Gaskets and packings that comply with the EU Regulation (EC) No. 1935/2004 and the US Regulation FDA 21 CFR Section 177.1550 · With Type 3379 Pneumatic Actuator made of stainless steel · With Type 3724 Positioner (Data Sheet ► T 8395)

Further versions

- **Reduced K_{vs} coefficients:** Best operating range adapted to the operating conditions
- **Soft-seated plug** for bubble-free shut-off
- **Version functioning as on/off valve** with Type 4740 Limit Switch (see Data Sheet ► T 8357)
- Version for the **food and beverage industry** and version for the **pharmaceuticals and biotechnology sector**
Valve for **cleanroom environments:** materials (gaskets, packings, body), manufacture of parts as well as assembly conditions in accordance with the EU Regulation (EC) No. 1935/2004 and the US Regulation FDA 21 CFR Section 177.1550

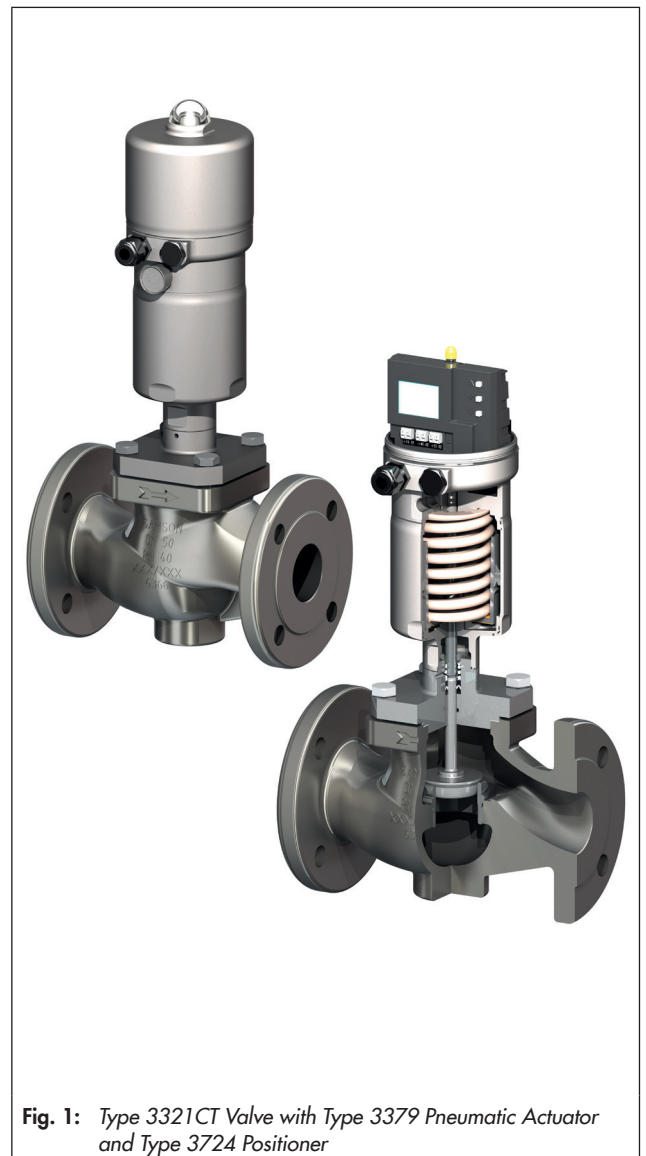


Fig. 1: Type 3321CT Valve with Type 3379 Pneumatic Actuator and Type 3724 Positioner

Principle of operation

The medium flows through the valve in the direction indicated by the arrow. The valve plug position determines the cross-sectional area between the seat and plug.

Mounting orientation

The valve can be mounted in any desired position. Generally, we recommend installing the valve with the actuator upright and on top of the valve.

Fail-safe position

Depending on how the compression springs are arranged in the pneumatic actuator, the valve has two fail-safe positions that become effective when the supply air fails:

- **Fail-close:** the valve is closed upon air supply failure.
- **Fail-open:** the valve is opened upon air supply failure.

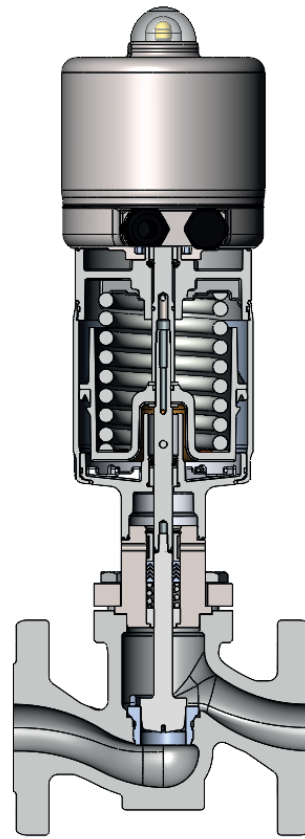


Fig. 2: Type 3321CT Valve · Fail-close valve

Table 1: Technical data for Type 3321CT

Valve size	DN 15 to 80 · NPS ½ to 3
Pressure rating	PN 16 and 40 · Class 150 and 300
Type of connection	Flanges with raised face form B1 according to EN 1092-1/RF
Seat-plug seal	Metal or soft seal
Characteristic	Equal percentage
Rangeability	50:1
Permissible medium temperature	
Standard version	–10 to 220 °C · 14 to 428 °F
Leakage class according to IEC 60534-4 or ANSI/FCI 70-2	
Metal seal	IV
Soft seal	VI
Conformity	CE
	FDA compliance Compliance with EC Directive 1935/2004

Table 2: Materials

Type 3321CT Valve	
Valve body	Stainless steel 1.4408 · A351 CF8M
Valve bonnet	Stainless steel 1.4404 or 1.4408 · A182 F316L or A351 CF8M
Seat	Stainless steel 1.4404 · A182 F316L
Plug with plug stem	Stainless steel 1.4404 · A182 F316L
Plug seal	Seal for soft-seated plug: PEEK (certified according to FDA/Regulation (EC) 1935/2004)
Guide bushing	Nickel alloy
Packing	V-ring packing: PTFE with carbon, spring: 1.4310
Body gasket	Graphite seal on metal core
Type 3379 Pneumatic Actuator	
Housing and cover	Stainless steel 1.4409 · A351 CF3M
Actuator stem	Stainless steel 1.4404 · A182 F316L
Piston	Glass-fiber-reinforced polyamide
	Stainless steel 1.4409 · A351 CF3M ¹⁾
Bearing	Polymer
Spring	Spring steel
Gasket	NBR
Type 3724 Positioner	
Housing and cover	Stainless steel 1.4409 · A351 CF3M
Transparent cover	Polycarbonate

¹⁾ For Ø150 piston**Table 3:** K_{VS} and C_V coefficients with associated valve sizes

K _{VS}	0.63	1.0	1.6	2.5	4.0	6.3	10	16	25	40	60	80
C _V	0.73	1.17	1.86	2.91	4.66	7.34	11.65	18.64	29.13	46.6	70	95
Seat bore in mm	6		12			24		31	38	48	63	80
Travel in mm	15											
DN	NPS											
15	½	•		•		•						
20	¾		•		•		•					
25	1	•		•		•		•				
32	–					•		•				
40	1½						•		•			
50	2							•		•		
65	2½								•		•	
80	3									•		•

Table 4: Permissible differential pressures Δp · Fail-close valve

DN	NPS	K _{VS}	C _V	Type 3379 Actuator area in cm ²	Bench range in bar	Supply air in bar	Differential pressure Δp in bar
15, 25	½, 1	0.63	0.75	31	2.3 to 3.7	4	40
20	¾	1	1.2				
15, 25	½, 1	1.6	2	31	2.3 to 3.7	4	40
20	¾	2.5	3				
15, 25	½, 1	4	5				
20, 32	¾	6.3	7.5	31	2.3 to 3.7	4	11
				63	2.5 to 4.0	4.2	27
25, 40	1, 1½	10	12	31	2.3 to 3.7	4	11
				63	2.5 to 4.0	4.2	27
32, 50	2	16	20	31	2.3 to 3.7	4	6
				63	2.5 to 4.0	4.2	15
					3.3 to 5.6	5.9	21
				176	1.0 to 2.3	2.4	17
					1.4 to 3.0	3.2	26
40, 65	1½, 2½	25	30	63	2.5 to 4.0	4.3	10
					3.3 to 5.6	5.9	14
				176	1.4 to 3.0	3.2	16
					2.1 to 4.6	4.6	27
50, 80	2, 3	40	47	63	2.5 to 4.0	4.3	5
					3.3 to 5.6	5.9	8
				176	1.4 to 3.0	3.2	9
					2.1 to 4.6	4.6	16
65	2½	60	70	176	1.0 to 2.3	2.4	3
					1.4 to 3.0	3.2	5
					2.1 to 4.6	4.6	9
80	3	80	95	176	1.4 to 3.0	3.2	3
					2.1 to 4.6	4.6	5

Table 5: Permissible differential pressures Δp · Fail-open valve

DN	NPS	K _{VS}	C _V	Type 3379 Actuator area in cm²	Bench range in bar	Differential pressure Δp in bar		
						With required supply pressure in bar		
						4.0	5.0	6.0
15, 25	½, 1	0.63	0.75	31	2.3 to 3.7	–	35	40
20	¾	1	1.2					
15, 25	½, 1	0.63	0.75	63	1.0 to 1.9	40	40	40
20	¾	1	1.2					
15, 25	½, 1	1.6	2	31	2.3 to 3.7	–	18	40
20	¾	2.5	3					
15, 25	½, 1	4	5					
15, 25	½, 1	1.6	2	63	1.0 to 1.9	40	40	40
20	¾	2.5	3					
15, 25	½, 1	4	5					
20, 32	¾	6.3	7.5	63	1.0 to 1.9	21	34	40
25, 40	1, 1½	10	12					
32, 50	2	16	20	63	1.0 to 1.9	12	20	27
				176	1.0 to 2.3	32	40	40
40, 65	1½, 2½	25	30	63	1.0 to 1.9	7	12	17
				176	1.0 to 2.3	20	35	40
50, 80	2, 3	40	47	63	1.0 to 1.9	4	7	10
				176	1.0 to 2.3	12	21	30
65	2½	60	70	176	1.0 to 2.3	7	12	17
80	3	80	95	176	1.0 to 2.3	4	7	10

Table 6: Dimensions and weights**Table 6.1:** Type 3321CT Valve

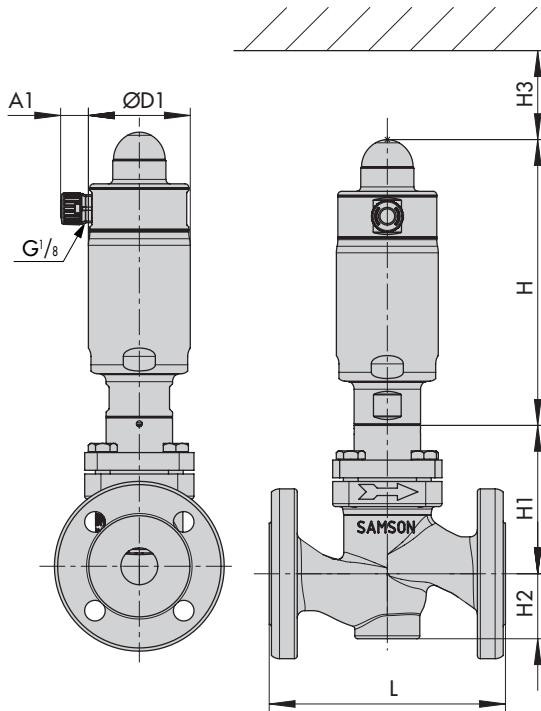
DN			15	20	25	32	40	50	65	80
NPS			½	¾	1	–	1½	2	2½	3
L	PN 16/40	mm	130	150	160	180	200	230	290	310
	Class 150	in ¹⁾	7.25	7.25	7.25	–	8.75	10	10.88	11.75
	Class 300	in ¹⁾	7.5	7.62	7.75	–	9.25	10.5	11.5	12.5
H1		mm	102			114			147	
		in ¹⁾	4.02			–	4.49		5.78	
H2		mm	44			72			98	
		in ¹⁾	1.73			–	2.83		3.86	
Weight		kg	5	6	7	11	12	16	28	32
		lbs ¹⁾	15	18	20	–	35	44	71	82

¹⁾ ANSI specifications**Table 6.2:** Type 3379 Pneumatic Actuator

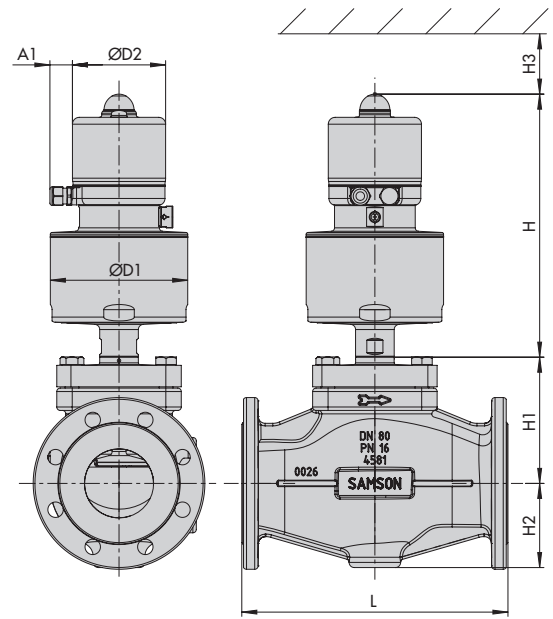
Piston diameter		mm	63	90	150
Actuator area		cm ²	31	63	176
With Type 3724 Positioner	H	mm	285		310
	H3 ¹⁾	mm	150		
	A1	mm	30		
	ØD2	mm	108		
	ØD1	mm	69	96	160
	Weight	kg (approx.)	3.7	4.9	10.7
Without positioner	H	mm	195		215
	H3 ¹⁾	mm	150		
	A1	mm	20		
	ØD1	mm	69	96	160
	Weight	kg (approx.)	1.8	3.1	8.9

²⁾ Minimum clearance required to remove the actuator

Dimensional drawings



Type 3321CT Valve with Type 3379 Pneumatic Actuator



Type 3321CT Valve with Type 3379 Pneumatic Actuator and Type 3724 Positioner

Ordering text

Globe valve	Type 3321CT
Valve size	DN/NPS ...
Pressure rating	PN/Class ...
Body material	Refer to Table 2
Seat-plug seal	Metal or soft seal
Pneumatic actuator	Type 3379
Fail-safe position	Fail-close or fail-open
Process medium	Density and temperature
Max. flow rate	in kg/h or m³/h
Pressure	p1 and p2 in bar
Pressure/temperature design	
Valve accessories	Positioner/limit switch