DATA SHEET

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 50 · NPS ½ to 2**
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 50/NPS ½ to 2 · Body made of stainless steel with flanges · 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 with Type 3725 or Type 3730 Positioner** for hazardous areas or with PROFIBUS-PA and FOUNDATION™ fieldbus

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

– 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

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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.

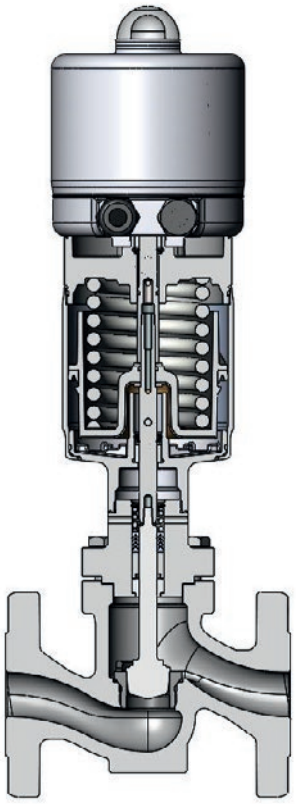


Fig. 2: *Type 3321CT Valve · Fail-close valve*

Table 1: *Technical data for Type 3321CT*

Valve size	**DN 15 to 50 · NPS ½ to 2**
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

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
Bearing	Polymer
Spring	Epoxy-coated steel
Gasket	NBR
Type 3724 Positioner	
Housing and cover	Stainless steel 1.4409 · A351 CF3M
Transparent cover	Polycarbonate

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**
C_V		**0.73**	**1.17**	**1.86**	**2.91**	**4.66**	**7.34**	**11.65**	**18.64**	**29.13**	**46.6**
Seat bore in mm		6		12			24		31	38	48
DN	**NPS**										
15	½	•		•		•					
20	¾		•		•		•				
25	1	•		•		•		•			
32	–						•		•		
40	1½							•		•	
50	2								•		•

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

DN	NPS	K_{VS}	C_V	Type 3379 Actuator area in cm²	Bench range in bar	Supply air in bar	Differential pressure Δp in bar
15…25	½ to 1	0.63	0.73	31	2.3 to 3.7	4.0	40
20	¾	1.0	1.17				
15 to 25	½ to 1	1.6	1.86	31	2.3 to 3.7	4.0	31
20	¾	2.5	2.91				
15 to 25	½ to 1	4.0	4.66				
20 to 32	¾	6.3	7.34	31	2.3 to 3.7	4.0	6
				63	2.5 to 4.0	4.5	22
25 to 40	1 to 1½	10	11.65	31	2.3 to 3.7	4.0	6
				63	2.5 to 4.0	4.5	22
32 to 50	2	16	18.64	63	2.5 to 4.0	4.5	13
					3.3 to 5.6	6.0	19
				176 [1]	1.5 to 2.7	3.2	23
					2.2 to 4.0	4.5	40
40	1½	25	29.13	63	2.5 to 4.0	4.5	8
					3.3 to 5.6	6.0	12
				176 [1]	1.5 to 2.7	3.2	15
					2.2 to 4.0	4.5	25
					2.9 to 5.3	6.0	35
50	2	40	46.6	63	2.5 to 4.0	4.5	5
					3.3 to 5.6	6.0	7
				176 [1]	1.5 to 2.7	3.2	9
					2.2 to 4.0	4.5	15
					2.9 to 5.3	6.0	22

[1] On request

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 to 25	½ to 1	0.63	0.73	31	2.3 to 3.7	–	14	40
20	¾	1.0	1.17					
15 to 25	½ to 1	0.63	0.73	63	1.0 to 1.9	40	40	40
20	¾	1.0	1.17					
15 to 25	½ to 1	1.6	1.86	31	2.3 to 3.7	–	6	31
20	¾	2.5	2.91					
15 to 25	½ to 1	4.0	4.66					
15 to 25	½ to 1	1.6	1.86	63	1.0 to 1.9	40	40	40
20	¾	2.5	2.91					
15 to 25	½ to 1	4.0	4.66					
20 to 32	¾	6.3	7.34	63	1.0 to 1.9	17	30	40
25 to 40	1 to 1½	10	11.65					
32 to 50	2	16	18.64	63	1.0 to 1.9	10	17	25
				176 [1]	1.1 to 2.0	34	40	40
40	1½	25	29.13	63	1.0 to 1.9	6	11	16
				176 [1]	1.1 to 2.0	22	36	40
50	2	40	46.6	63	1.0 to 1.9	-	7	10
				176 [1]	1.1 to 2.0	14	22	31

[1] On request

Table 6: *Dimensions and weights*

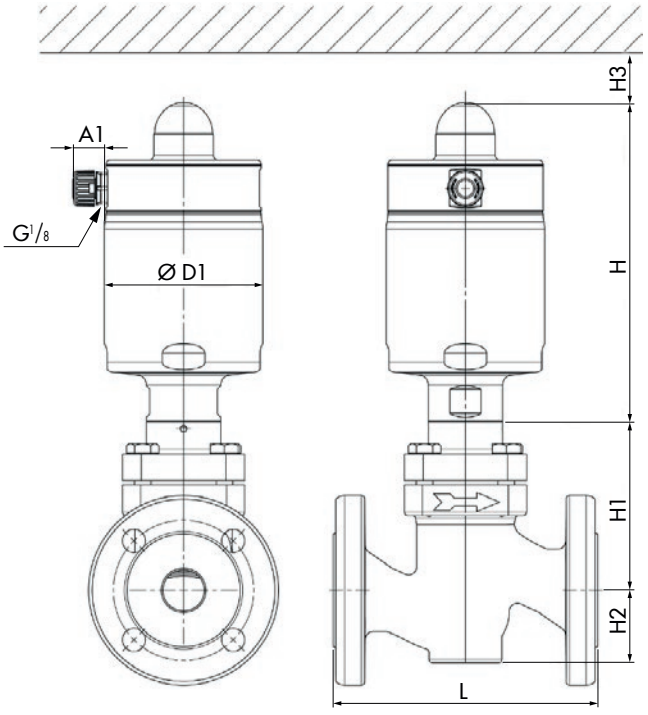
Table 6.1: *Type 3321CT Valve*

DN		15	20	25	32	40	50
NPS		½	¾	1	–	1½	2
L	mm	130	150	160	180	200	230
	in	5.12	5.91	6.3	–	7.87	9.06
H1	mm	102			114	114	
	in	4.02			–	4.49	
H2	mm	40			72	72	
	in	1.57			–	2.83	
Weight	kg	5	6	7	11	12	16
	lbs	11	13	15	–	26	35

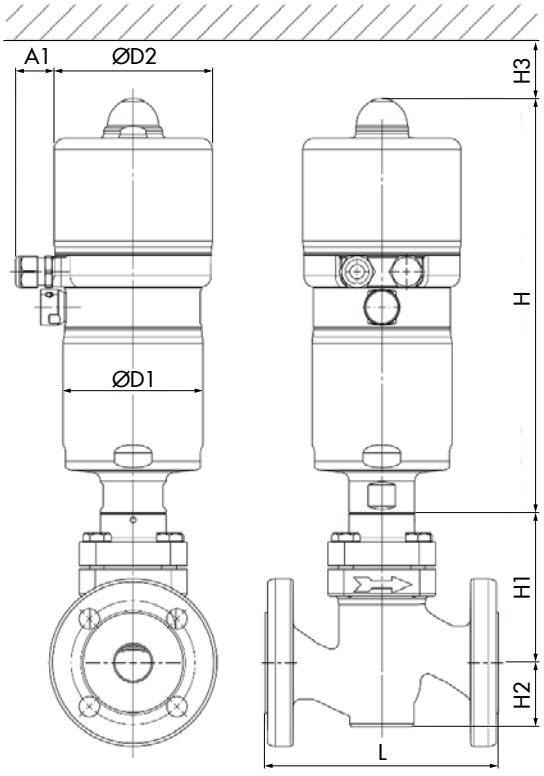
Table 6.2: *Type 3379 Pneumatic Actuator · Dimensions in mm and weights in kg*

Actuator area		31 cm²	63 cm²
ØD1		69	96
Without positioner	H	195	
	A1	20	
	H3	200	
	Weight	3	4
With Type 3724 Positioner	H	285	
	A1	30	
	H3	200	
	ØD2	109	
	Weight	4	5

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 m^3/h
Pressure	p1 and p2 in bar
Pressure/temperature design	
Valve accessories	Positioner/limit switch