

## Globe valve equipped with angle seat body and flat plug with soft seal



### Features

- ▶ Spring return closed or open, double-acting
- ▶ Stainless steel valve body standard (316SS)
- ▶ High flow rate
- ▶ Optical visual indication
- ▶ Low control air consumption due to minimized volume in the actuator
- ▶ Optional mechanical switches, proximity sensors, solenoid valve, valve positioner, stroke limiter and manual override device
- ▶ Proportional plug on request

### Applications

- Water, air, steam up to 180 °C, oils, corrosive media, neutral gases and liquids, textile dyeing and drying, ink and paint dispensing

### Specifications

#### 1) Valve Body

Size	DN15, DN20, DN25, DN32, DN40, DN50	
End Connections	Female thread, socket welding, flange type (ANSI, DIN, JIS)	
Nominal Pressure	PN16	
Wetted Material	Body	Stainless steel 316
	Plug & Steam	Stainless steel 316
	Plug Sealing	PTFE
	Packing	PTFE
Leakage Class	ANSI Class VI	
Media Viscosity	Max. 600 mm <sup>2</sup> /s	
Fluid Temperature	-10 ~ +180 °C (steam up to +180 °C)	

#### 2) Actuator

Type	Pneumatic piston actuator Normally close, normally open, double acting
Size	50mm, 63mm, 80mm, 100mm
Material	PA, PPS
Piston Seal Material	Viton
Pilot Port	G 1/4
Control Media	Air, natural gas
Control Pressure	4 ~ 10 bar
Rotation	360°
Ambient Temp.	PA : -10 °C ~ +60 °C PPS : +5 °C ~ +130 °C

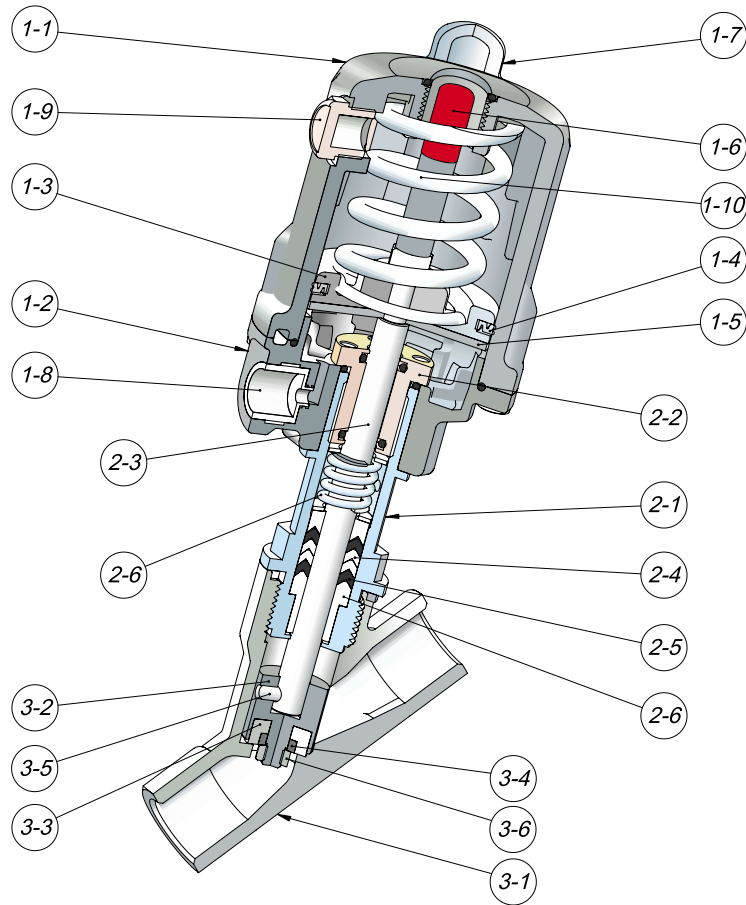


With Limit Switch Box



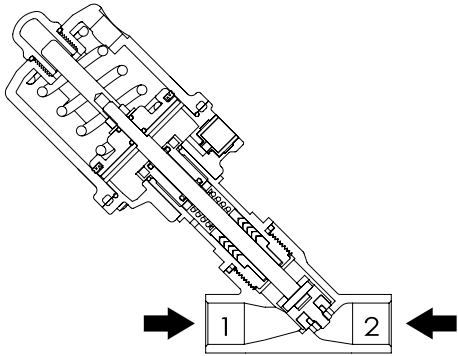
Internal View of Limit Switch Box

Internal View



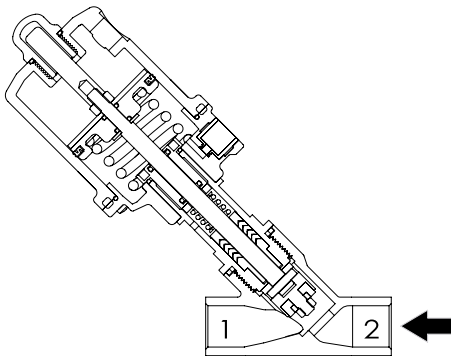
Part No.	Description	Material	Q'ty
1-1	Auctuator case (UP)	PA & PPS	1
1-2	Auctuator case (Down)	PA & PPS	1
1-3	Piston	PA & PPS	1
1-4	Piston seal	Viton	1
1-5	Piston washer	316SS	1
1-6	Indicator rod	AL	1
1-7	indicator cap	PC	1
1-8	Air inlet	Brass	1
1-9	Noise filter	Brass	1
1-10	Return Spring	SPS4	1
2-1	Stuffing box	316SS	1
2-2	Stuffing box joint screw	Brass	1
2-3	Valve stem	316SS	1
2-4	V-packing (1)	PTFE	2
2-5	V-packing (2)	Viton	2
2-6	Packing Spring	STS304	1
3-1	Valve body	CF8M(316SS)	1
3-2	Plug	316SS	1
3-3	Plug seal	PTFE	1
3-4	Plug washer	316SS	1
3-5	Plug ping	316SS	1
3-6	Lock Nut	316SS	1

Normally Close (NC) 1 → 2 or 2 → 1



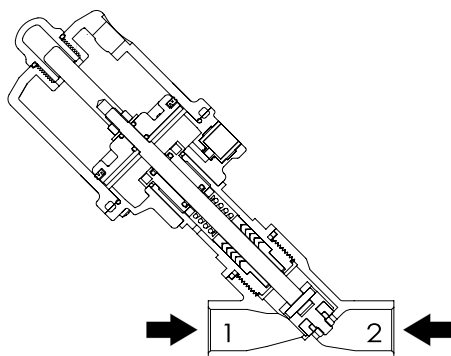
Valve size		Flow (Cv)	Operating pressure differential (bar)	Control Pressure (bar)		Actuator size (mm)	Weight (kg)	Part No.
DN	NPT			max	min			
15	1/2"	5.4	16	4.0	10	50	0.9	PG3-15XC5XX
20	3/4"	11.0	16	4.0	10	50	1.1	PG3-20XC5XX
25	1"	20.7	12	4.0	10	63	1.7	PG3-25XC6XX
32	1-1/4"	25	7	4.0	10	63	2.3	PG3-32XC6XX
32	1-1/4"	25	12	4.0	10	80	2.9	PG3-32XC8XX
40	1-1/2"	30.7	10	4.0	10	80	3.3	PG3-40XC8XX
40	1-1/2"	30.7	14	4.0	10	100	4.4	PG3-40XC9XX
50	2"	55.3	5	4.0	10	80	4.5	PG3-50XC8XX
50	2"	55.3	9	4.0	10	100	5.8	PG3-50XC9XX

Normally Open (NO) 2 → 1



Valve size		Flow (Cv)	Operating pressure differential (bar)	Control Pressure (bar)		Actuator size (mm)	Weight (kg)	Part No.
DN	NPT			max	min			
15	1/2"	5.4	16	4.0	10	50	0.9	PG3-15XO5XX
20	3/4"	11.0	16	4.0	10	50	1.1	PG3-20XO5XX
25	1"	20.7	15	4.0	10	63	1.7	PG3-25XO6XX
32	1-1/4"	25	10	4.0	10	63	2.3	PG3-32XO6XX
32	1-1/4"	25	14	4.0	10	80	2.9	PG3-32XO8XX
40	1-1/2"	30.7	10	4.0	10	80	3.3	PG3-40XO8XX
40	1-1/2"	30.7	15	4.0	10	100	4.4	PG3-40XO9XX
50	2"	55.3	8	4.0	10	80	4.5	PG3-50XO8XX
50	2"	55.3	10	4.0	10	100	5.8	PG3-50XO9XX

Double Acting, Bo-Direction 1 → 2, 2 → 1



Valve size		Flow (Cv)	Operating pressure differential (bar)	Control Pressure (bar)		Actuator size (mm)	Weight (kg)	Part No.
DN	NPT			max	min			
15	1/2"	5.4	16	4.0	10	50	0.8	PG3-15XD5XX
20	3/4"	11.0	16	4.0	10	50	1.0	PG3-20XD5XX
25	1"	20.7	16	4.5	10	63	1.5	PG3-25XD6XX
32	1-1/4"	25	12	4.5	10	63	2.1	PG3-32XD6XX
32	1-1/4"	25	16	4.5	10	80	2.4	PG3-32XD8XX
40	1-1/2"	30.7	12	4.5	10	80	2.8	PG3-40XD8XX
40	1-1/2"	30.7	16	4.5	10	100	3.1	PG3-40XD9XX
50	2"	55.3	9	4.5	10	80	4.0	PG3-50XD8XX
50	2"	55.3	12	4.5	10	100	4.5	PG3-50XD9XX

## How to Order

# PG3

Valve Size

Body Connections

Actuator Type

Actuator Size

Actuator Material

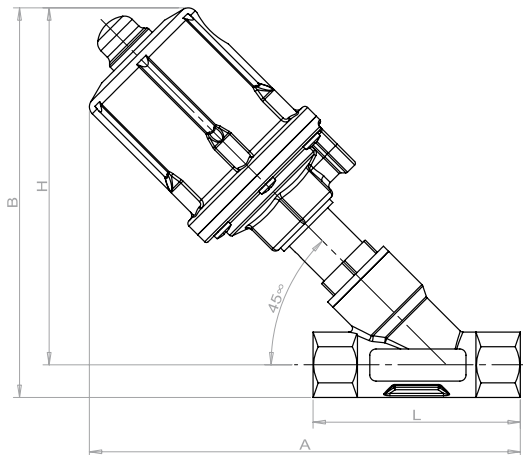
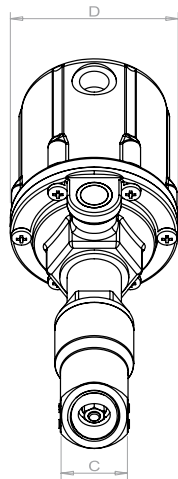
Options

\* Body material: 3 = CF8M (316SS) , Other material on request

Description	Code
<b>Valve Size:</b>	15 = 1/2" (DN15) 20 = 3/4" (DN20) 25 = 1" (DN25) 32 = 1-1/4" (DN32) 40 = 1-1/2" (DN40) 50 = 2" (DN50)
<b>Body Connections:</b>	G = G threaded(standard) N = NPT threaded S = Socket welded F = Flange type (ANSI, DIN, JIS)
<b>Actuator Type:</b>	C = Normally close O = Normally open D = Double acting

Description	Code
<b>Actuator Size:</b>	5 = 50mm 6 = 63mm 8 = 80mm 9 = 100mm
<b>Actuator Material:</b>	A = PA : -10 °C ~ +60 °C (standard) S = PPS : +5 °C ~ +130 °C
<b>Options:</b>	N = Without accessory MS = Micro switches (open and close) PS = Proximity sensors (P&F NJ2) SV = Solenoid valve EP = Positioner (E/P or P/P) SL = Stroke limiter MO = Manual override device

## Dimensions



Valve size		Actuator mm	A	B	C	D	H	L	Part No.
DN	NPT								
15	1/2"	ø50	174.5	158	27	ø68	144.5	84	PG3-15XX5XX
20	3/4"	ø50	182	163.5	34	ø68	146.5	94	PG3-20XX5XX
25	1"	ø63	211	192.5	40	ø84	172.5	104	PG3-25XX6XX
32	1-1/4"	ø63	225	211.5	49	ø84	187	120	PG3-32XX6XX
32	1-1/4"	ø80	247.5	234	49	ø105	209.5	120	PG3-32XX8XX
40	1-1/2"	ø80	252	238.5	55	ø105	211	130	PG3-40XX8XX
40	1-1/2"	ø100	294.5	281	55	ø126	253.5	130	PG3-40XX9XX
50	2"	ø80	275	267	70	ø105	232	150	PG3-50XX8XX
50	2"	ø100	317	309	70	ø126	274	150	PG3-50XX9XX

**Length**

From To→	mm	cm	m	km	in	ft	yd	mile
mm	1	0.1	0.001	-	0.03937	-	-	-
cm	10	1	0.01	-	0.393701	0.032808	-	-
m	1000	100	1	0.001	39.3701	3.28084	1.09361	-
km	-	-	1000	1	-	3280.84	1093.61	0.621371
in	25.4	2.54	-	-	1	0.083333	0.027778	-
ft	304.8	30.48	0.3048	-	12	1	0.33333	-
yd	914.4	91.44	0.9144	0.000914	36	3	1	0.000568
mile	-	-	1609.344	1.609344	-	5280	1760	1

Tip) SI Unit : mm, cm, m, km

**Square Measure**

From To→	cm <sup>2</sup>	m <sup>2</sup>	km <sup>2</sup>	in <sup>2</sup>	ft <sup>2</sup>	yd <sup>2</sup>	acre	mile <sup>2</sup>
cm <sup>2</sup>	1	0.0001	-	0.155	0.001076	0.00012	-	-
m <sup>2</sup>	10000	1	0.000001	1550	10.7639	1.19599	0.000247	-
km <sup>2</sup>	-	1000000	1	-	-	-	247.105	0.386102
in <sup>2</sup>	6.4516	0.000645	-	1	0.006944	0.000772	-	-
ft <sup>2</sup>	929.03	0.092903	-	144	1	0.111111	0.000023	-
yd <sup>2</sup>	8361.27	0.836127	-	1296	9	1	0.000207	-
acre	-	4046.86	0.004047	-	43560	4840	1	0.001562
mile <sup>2</sup>	-	-	2.589987	-	-	-	640	1

Tip) SI Unit : cm<sup>2</sup>, m<sup>2</sup>, km<sup>2</sup>

**Weight**

From To→	kg	tonne	lb	UK cwt	UK ton	UK cwt	UK ton
kg	1	0.001	2.20462	0.019684	0.000984	0.022046	0.001102
tonne	1000	1	2204.62	19.6841	0.984207	22.0462	1.10231
lb	0.453592	0.000454	1	0.008929	0.000446	0.01	0.0005
UK cwt	50.8023	0.050802	112	1	0.05	1.12	0.056
UK ton	1016.05	1.01605	2240	20	1	22.4	1.12
US cwt	45.3592	0.045359	100	0.892857	0.044643	1	0.05
US ton	907.185	0.907185	2000	17.8571	0.892857	20	1

Tip) SI Unit : kg, t

**Cubic Capacity**

From To→	cm <sup>3</sup>	m <sup>3</sup>	litre(dm <sup>3</sup> )	in <sup>3</sup>	ft <sup>3</sup>	yd <sup>3</sup>	UK pint	UK gall	UK pint	UK gall
cm <sup>3</sup>	1	-	0.001	0.061024	0.0000353	-	0.00176	0.00022	0.002113	0.000264
m <sup>3</sup>	-	1	1000	61023.7	35.3147	1.30795	1759.75	219.969	2113.38	264.172
litre(dm <sup>3</sup> )	1000	0.001	1	61.0237	0.035315	0.001308	1.75975	0.219969	2.11338	0.264172
in <sup>3</sup>	16.3871	0.000016	0.016387	1	0.000579	0.0000214	0.028837	0.003605	0.034632	0.004329
ft <sup>3</sup>	28316.8	0.028317	28.3168	1728	1	0.037037	49.8307	6.22883	59.8442	7.48052
yd <sup>3</sup>	764555	0.764555	764.555	46656	27	1	1345.429	168.1784	1615.793	201.974
UK pint	568.261	0.0005683	0.568261	34.6774	0.020068	0.000743	1	0.125	1.20095	0.150119
UK gall	4546.09	0.0045461	4.54609	277.42	0.160544	0.005946	8	1	9.6076	1.20095
UK pint	473.176	0.0004732	0.473176	28.875	0.01671	0.000619	0.832674	0.104084	1	0.125
UK gall	3785.41	0.0037854	3.785411	231	0.133681	0.004951	6.661392	0.832674	8	1

Tip) SI Unit : cm<sup>3</sup>, m<sup>3</sup>, L

**Pressure**

From To→	atmos	mm Hg	bar	Pa	in H <sub>2</sub> O	in Hg	psi	kg/cm <sup>2</sup>
atmos	1	760	1.0132	101325	406.781	29.9213	14.6959	1.033
mm Hg	0.0013158	1	0.001333	133.322	0.53524	0.03937	0.019337	0.00136
bar	0.9869	750.062	1	100000	401.463	29.53	14.504	1.01957
Pa	0.0000099	0.007501	0.00001	1	0.004015	0.000295	0.000145	0.00001
in H <sub>2</sub> O	0.0024583	1.86832	0.002491	249.089	1	0.073556	0.036127	0.00254
in Hg	0.033421	25.4	0.033864	3386.391	3.5951	1	0.491154	0.003452
psi	0.068046	51.7149	0.068948	6894.76	27.6799	2.03602	1	0.07029
kg/cm <sup>2</sup>	0.968	735.72	0.9808	98088	393.786	28.965	14.226	1

Tip) Pa = 1 N/m<sup>2</sup>      1 atmos = 1,033 kg/cm<sup>2</sup>      SI Unit : bar, Pa

**Cubic Capacity of Running Fluid**

From To→	L/s(dm³/s)	L/h	m³/s	m³/h	cfm	ft³/h	UK gall/m	UK gall/h	US gall/m	US gall/h
L/s(dm³/s)	1	3600	0.001	3.6	2.118882	127.133	13.19814	791.8884	15.85032	951.019
L/h	0.000278	1	-	0.001	0.000588	0.035315	0.003666	0.219969	0.004403	0.264172
m³/s	1000	3600000	1	3600	2118.88	127133	13198.1	791889	1585	0.3951019
m³/h	0.277778	1000	0.000278	1	0.588578	35.3147	3.66615	219.969	4.402863	264.1718
cfm	0.471947	1699.017	0.000472	1.699017	1	60	6.228833	373.73	7.480517	448.831
ft³/h	0.007866	28.3168	-	0.028317	0.016667	1	0.103814	6.228833	0.124675	7.480517
UK gall/m	0.075768	272766	0.0000758	0.272766	0.160544	9.63262	1	60	1.20095	72.057
UK gall/h	0.001263	4.54609	-	0.004546	0.002676	0.160544	0.016667	1	0.020016	1.20095
US gall/m	0.06309	227.125	0.0000631	0.227125	0.133681	8.020832	0.832674	49.96045	1	60
US gall/h	0.001052	3.785411	-	0.003785	0.002228	0.133681	0.013878	0.832674	0.016667	1

Tip) SI Unit : L/s, L/h, m³/s, m³/h

**Force**

From To→	Btu/h	W	kcal/h	kW
Btu/h	1	0.293071	0.251996	0.000293
W	3.41214	1	0.859845	0.001
kcal/h	3.96832	1.163	1	0.001163
kW	3412.14	1000	859.845	1

Tip) SI Unit : W, kW

**Energy**

From To→	Btu	Therm	J	kJ	Cal
Btu	1	0.00001	1055.06	1.055	251.996
Therm	100000	1	-	105.5	25,199.60
J	0.00094	-	1	0.001	0.2388
kJ	0.9478	0.000009478	1000	1	238.85
Cal	0.0039683	0.0039683 × 10 <sup>3</sup>	4.1868	-	1

Tip) SI Unit : W, kW

**Specific Heat**

From To→	Btu/lb °F	J/kg °C
Btu/lb °F	1	4186.8
J/kg °C	0.00023	1

Tip) 1 kcal/kg °C = 1 Btu/lb °F    SI 단위 : J/kg °C

**Electrothermal Speed**

From To→	Btu/ft²h	W/m²	kcal/m²h
Btu/ft²h	1	3.154	2.712
W/m²	0.3169	1	0.859
kcal/m²h	0.368	1.163	1

Tip) SI Unit : W/m²

**Electrothermal Coefficient**

From To→	Btu/ft²h °F	W/m² °C	kcal/m²h °C
Btu/ft²h °F	1	5.67826	4.88243
W/m² °C	0.176110	1	0.859845
kcal/m²h °C	0.204816	1.163	1

Tip) SI Unit : W/m² °C

**Unit Thermal Capacity**

From To→	Btu/lb	kJ/kg
Btu/lb	1	2.326
kJ/kg	0.4299	1

Tip) SI Unit : kJ/kg

**Temperature**

°F → °C : (°F - 32) ÷ 1.8  
 °C → °F : (°C × 1.8) + 32