Achieving high durability, long life, and smooth fluid flow
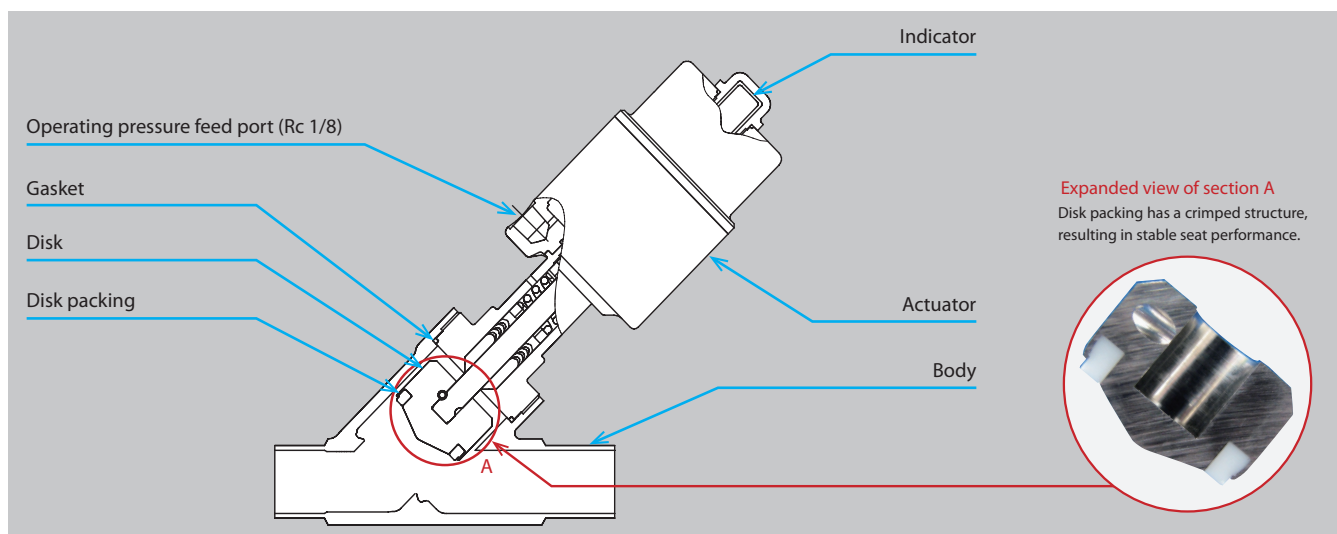
BY SERIES

ANGLE SEAT VALVES

Features

Outline of basic structure

Indicator

Operating pressure feed port (Rc 1/8)

Gasket

Disk

Disk packing

Actuator

Body

Expanded view of section A
Disk packing has a crimped structure, resulting in stable seat performance.
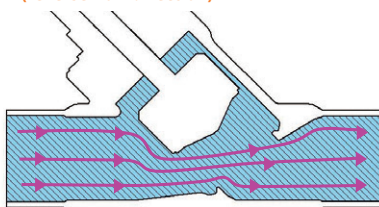
A

Actuator can turn 360°, allowing adjustment of orientation of operating pressure feed port.

No surface crack for attaching a spanner is provided (in order prevent scratching), so please hold the actuator in both hands to rotate it.
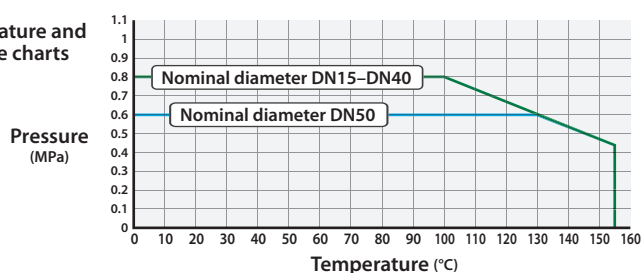
Selection of valve type

Type "FO"

For steam and gases only
(reverse flow direction)

Temperature and pressure charts

Pressure
(MPa)

Nominal diameter DN15–DN40

Nominal diameter DN50

1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
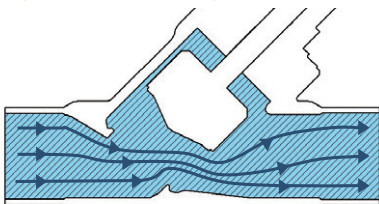
Temperature (°C)

Select when the fluid is steam or gas. Actuator size is kept compact, allowing cost to be reduced.
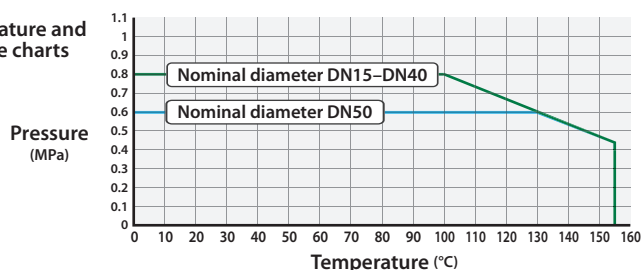
If the fluid is a liquid, water hammer may occur when the valve is closed, damaging surrounding devices, so please be cautious.

Type "FU"

For liquids, steam, and gases
(forward flow direction)

Temperature and pressure charts

Pressure
(MPa)

Nominal diameter DN15–DN40

Nominal diameter DN50

1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

Temperature (°C)

Please select when the fluid is a liquid.   Can also be used when the fluid is steam or a gas.

BNW series
Weir diaphragm valves

BSW series
Weirless diaphragm valves

LPS series
Weirless diaphragm valves

BY series
Angle seat valves

CARTEN

CARTEN

BPV series
Single-use pinch valves

BNW series
Weir diaphragm valves

BSW series
Weirless diaphragm valves

LPS series
Weirless diaphragm valves

BY series
Angle seat valves

CARTEN

CARTEN
BPV series
Single-use pinch valves

Part number format

BY C FO - 2 5 P - C 7 F A - L C - H T -

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

①	Valve series name
BY	BY series angle seat valves

②	Actuator operation type
C	Spring-back (normal close type) (N.C.)
O	Spring-back (normal open type) (N.O.)

③	Flow rate adjustment
None	On/off valve
C	Control valve

④	Flow direction
FO	Reverse flow (flow over the seat)
FU	Forward flow (flow under the seat)
None	Control valve

⑤	Disk seat size
15	15A
20	20A
25	25A
40	40A
50	50A

⑥	Disk packing wetted surface material
P	PTFE

⑦	Body material
C	ASTM A351 CF8M

⑧	Connection
1	Threaded type
2	Flange type
5	Butt weld type (BW)
7	Clamp type

⑨	Connection piping size			
Connection	Clamp type	butt weld type	Threaded type	Flange type
D	15A	1/2"	1/2B	15A
E		3/4"	3/4B	20A
F	25A (1S)	1"	1B	25A
H	40A (1.5S)	1-1/2"	1 1/2B	40A
I	50A (2S)	2"	2B	50A

⑩	Piping standards
None	ISO/IDF
A	ASME

⑪	Options
None	No options
H	With open-side opening adjustment
HC	With closed-side closing adjustment
LC	With closed-side limit switch
LO	With open-side limit switch
LD	With open/closed dual limit switches
KC	With closed-side proximity switch
KO	With open-side proximity switch
KD	With open/closed dual proximity switches
EP1	Electropneumatic positioner

⑫	Compatible with high-temperature environments
None	Standard type
HT	Type compatible with high-temperature environments

⑬	Other
	Abbreviations are inserted for special products.

*: Normal open (O) is only compatible with FU (forward flow)
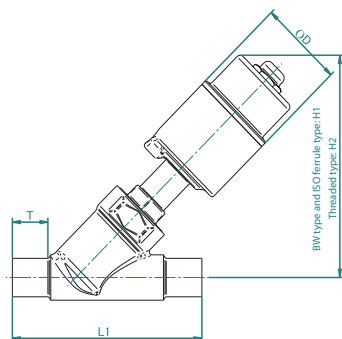*: Flange connection: In the case of a JIS 10KRF flange, an "R" is added after the part
   number ⑨.
*: Butt weld (BW) connection: ASME standard
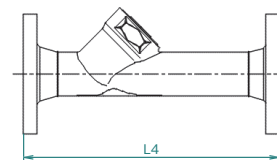
▌ Product specifications (standard)

Nominal diameter (DN)		DN15	DN20	DN25	DN40	DN50
Material	Body	ASTM A351 CF8M (cast 316 stainless steel)				
	Bonnet					
	Disk packing	PTFE (Food Sanitation Act conformant material)				
	Gland packing	PTFE + graphite (Food Sanitation Act conformant material)				
	Actuator	ADC12 (aluminum + nylon coating)				
Maximum working pressure (MPa)		0.8				0.6
Temperature range of working fluid (°C)		0–155 (low-temperature type can be produced for as low as −40)				
Body internal surface finishing		Casting surface*				
Actuator	type	N.C., N.O.				
	Feed port size	Rc 1/8				
	Operating pressure (MPa)	0.5–0.8 (for N.C. type)				
Connection method		Clamp type, butt weld type (ASME-BPE welding end), threaded type, flange type				
Cv value		2	6.9	18.4	43.8	67.7
Stroke (mm)		9	12	18	26	30
Accessory mounting thread size		M16 × 1				
Oil free		Not oil free (H1 grease applied to wetted surfaces)				

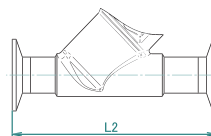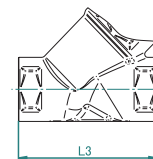*: Clamp-type valves have residual weld beads on both the inner and outer surfaces.

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BSW series
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LPS series
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BY series
Angle seat valves

CARTEN

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BPV series   Single-use pinch valves

BNW series Weir diaphragm valves

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BPV series Single-use pinch valves

Primary product dimensions

BW type

Clamp type

Threaded type

Flange type

BW type

| Nominal diameter | | Type | H1 | D | T | L | Part No. |
Orifice	BW type					L1	BW type
DN15	1/2"	FO	119	46	23	100	BYCFO-15P-C5DA
		FU	119	46			BYCFU-15P-C5DA
DN20	3/4"	FO	124	46	25	115	BYCFO-20P-C5EA
		FU	133	58			BYCFU-20P-C5EA
DN25	1"	FO	146	58	25	130	BYCFO-25P-C5FA
		FU	158	74			BYCFU-25P-C5FA
DN40	1-1/2"	FO	174	74	25	160	BYCFO-40P-C5HA
		FU	198	92			BYCFU-40P-C5HA
DN50	2"	FO	188	74	25	175	BYCFO-50P-C5IA
		FU	223	112			BYCFU-50P-C5IA

Clamp type

| Nominal diameter | | Type | H1 | D | L | Part No. |
Orifice	Clamp type				L2	ISO clamp type
DN20	15A	FO	124	46	130	BYCFO-20P-C7D
		FU	133	58		BYCFU-20P-C7D
DN25	1S	FO	146	58	150	BYCFO-25P-C7F
		FU	158	74		BYCFU-25P-C7F
DN40	1.5S	FO	174	74	180	BYCFO-40P-C7H
		FU	198	92		BYCFU-40P-C7H
DN50	2S	FO	188	74	200	BYCFO-50P-C7I
		FU	223	112		BYCFU-50P-C7I

Threaded type

| Nominal diameter | | Type | H2 | D | L | Part No. |
Orifice	Threaded type				L3	Threaded type
DN15	Rc1/2	FO	122	46	65	BYCFO-15P-C1D
		FU	122	46		BYCFU-15P-C1D
DN20	Rc3/4	FO	127	46	75	BYCFO-20P-C1E
		FU	136	58		BYCFU-20P-C1E
DN25	Rc1	FO	149	58	90	BYCFO-25P-C1F
		FU	161	74		BYCFU-25P-C1F
DN40	Rc1-1/2	FO	179	74	120	BYCFO-40P-C1H
		FU	203	92		BYCFU-40P-C1H
DN50	Rc2	FO	193	74	150	BYCFO-50P-C1I
		FU	228	112		BYCFU-50P-C1I

Flange type

| Nominal diameter | | Type | H1 | D | L | Part No. |
Orifice	JIS 10K flange type				L4	JIS 10K flange type
DN20	15A	FO	124	46	185	BYCFO-20P-C2DR-501
		FU	133	58		BYCFU-20P-C2DR-501
DN25	20A	FO	146	58	200	BYCFO-25P-C2ER-501
		FU	158	74		BYCFU-25P-C2ER-501
	25A	FO	146	58	230	BYCFO-25P-C2FR-501
		FU	158	74		BYCFU-25P-C2FR-501
DN40	40A	FO	174	74	300	BYCFO-40P-C2H
		FU	198	92		BYCFU-40P-C2H
DN50	50A	FO	188	74	300	BYCFO-50P-C2I
		FU	223	112		BYCFU-50P-C2I

List of options

Options (accessories)
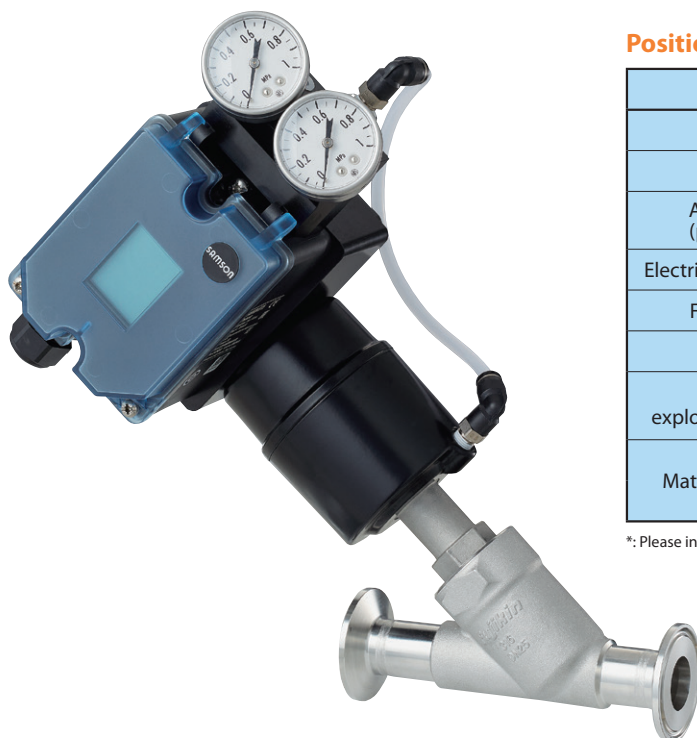

Smart positioner

Opening limitation mechanism

Proximity sensor

Automatic valve smart positioner assembly

Positioner specifications

	Positioner specifications
Model No.	3725 (manufactured by Samson)
Input signal (WA)	DC 4–20 mA (split range can be set)
Ambient temperature (positioner main unit)	−25°C to +80°C
Electrical wiring connection (°C)	Cable ground M20 × 1.5
Feed connection port	Rc 1/4
Protective structure	IP66
Accommodation of explosion-proof standards L1*	II2G Ex ia IIC T4 acc. ATEX (optional)
Material	Main unit	Polyphthalamide
	Cover	Polycarbonate (transparent)

*: Please inform Fujikin if accommodation of explosion-proof standards is desired.

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