



# Industrial Control Valves

Selection Guide



# For control valves, count on azbil.

We have extensive experience in process automation at home and abroad.

For over 80 years, since we made Japan's first domestically produced control valves in 1936, we have delivered products to a wide variety of process automation sites inside and outside Japan.

The technology we have accumulated through our abundant experience in the field is the heritage of each newly developed product, and is utilized to make ever more advanced general-purpose control valves with higher performance and greater reliability.

In addition to general-purpose valves, we have developed a number of products for specific applications, such as high or low temperature, super high pressure, corrosion resistance, abrasion resistance, and environmental friendliness.

In recent years, in order to create added value for plant operation by improving maintenance efficiency, reducing plant operating costs, etc., we acted quickly to make our valve positioners smart. These smart valve positioners, when connected with our PLUG-IN Valstaff control valve maintenance support system, provide new benefits throughout the control valve life cycle, such as assistance in preparing an efficient maintenance plan.

As a comprehensive supplier of control valves, the azbil Group continues to provide customers with added value in a variety of areas.



Chemical plants



Petrochemical plants



Thermal power stations



Oil refineries



Steel mills



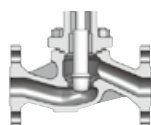
# Selection of Control Valve

Select the **appropriate valve**.

General-purpose valves

## Single seated valves

Basic and most versatile type of control valve

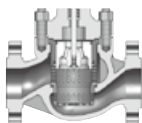


Model No. AGVB\_ \_ \_ , AGVM\_ \_ \_  
ACT\_ \_ \_  
HLS\_ \_ \_ , HTS\_ \_ \_  
HLC\_ \_ \_ , HSC\_ \_ \_

P 6

## Cage valves, Double seated valves, and Low-noise valves

For heavy-duty, high pressure and high differential pressure service



Model No. ADVB\_ \_ \_ , ADVM\_ \_ \_ , AC2\_ \_ \_  
ACP\_ \_ \_ , HCB\_ \_ \_ , HPC\_ \_ \_  
ACN\_ \_ \_ , HCN\_ \_ \_ , VDN\_ \_ \_

P 8

Large-port and high-flow valves

## Rotary valves

For processes requiring high capacity and wide control range



Model No. VFR\_ \_ \_

P 10

Angle/3-way valves

## Angle valves

For high differential pressure, slurry, or flashing service

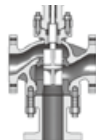


Model No. HAV\_ \_ \_ , HAH\_ \_ \_ , HAF\_ \_ \_  
HAL\_ \_ \_ , VAU\_ \_ \_

P 10

## 3-way valves

Fluid mixing/separating by a single valve



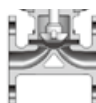
Model No. AMT\_ \_ \_ , HDT\_ \_ \_

P 10

Special purpose valves

## Corrosion-resistant or abrasion-resistant valves

For operations and clean processes requiring corrosion-resistance or abrasion-resistance



Model No. VDD\_ \_ \_ , VNP\_ \_ \_ , HIT\_ \_ \_  
HIC\_ \_ \_ , HMC\_ \_ \_

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## Valves for the electric power market

For power generation facilities and special applications

Model No. EGVM\_ \_ \_ , EAVM\_ \_ \_  
EGVT\_ \_ \_ , EGVM\_ \_ \_  
EGVD\_ \_ \_ , EAVD\_ \_ \_

Please contact us.

## Motorized valves

For fluid control without a compressed air supply



Model No. AGVB\_ \_ \_ , AGVM\_ \_ \_  
HLS\_ \_ \_ , HTS\_ \_ \_  
ACT\_ \_ \_

P 12

Select the **actuator type**.

## Diaphragm actuators

General-purpose, most frequently used type of actuator

Model No. HA\_ \_ \_ , HL\_ \_ \_  
PSA\_ \_ \_ , VA5\_ \_ \_

P 14

## Cylinder actuators

For high-pressure, large-port valves

Model No. PSA6R, PSA7R,  
DAP560, DAP1000, DAP1500  
GOM\_ \_ \_

P 14

Select the **accessories**.

## Positioners

Selected according to the operating conditions, including input signal, actuator, and atmospheres (waterproof, explosion-proof).

Model No. AVP\_ \_ \_ , HTP\_ \_ \_  
VPE04\_ \_ \_ , VPE05\_ \_ \_  
VPP02\_ \_ \_ , VPP03\_ \_ \_ , VPP08\_ \_ \_  
VPR02\_ \_ \_

P 16

## Air lock valve, pilot valve

If the air supply malfunctions these devices secure (lock) the valve position and control pneumatic circuit switchover.

Model No. VF02/03/04 or OEM products

P 18

## Regulators with filter

Using KZ03 as the basic model number, select low/high pressure type, connection type, etc.

Model No. KZ03\_ \_ \_ or OEM products

P 17

## Solenoid valves

If needed, this device controls switchover of the pneumatic circuit (signals or supply pressure) with electric signals (on-off).

Model No. OEM products

P 18

## Volume booster

Used to make the pneumatic actuator operate more quickly or to reduce the delay of pneumatic signals.

Model No. OEM products

P 18

## Limit switches

Added to the actuator in order to produce electric signals corresponding to the valve position (open/closed).

Model No. VCL5000  
VCX7001, 1LX7001  
VCX8001, 1LX8001

P 18

Single seated valves

Cage valves, Double seated valves, Low-noise valves

Rotary valves

Angle valves

3-way valves

Corrosion-resistant or abrasion-resistant valves

Motorized valves

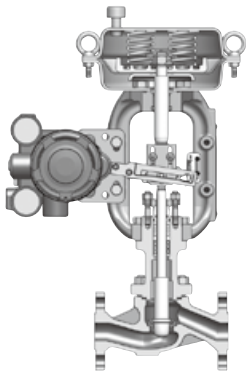
Actuators

Accessories

Special purpose valves

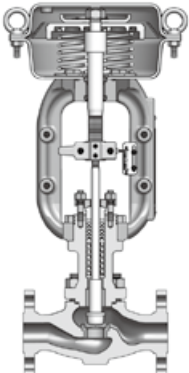


Structural drawing



Top guided single seated control valve

Valve type	AGVB_ _ _ / AGVM_ _ _
Model No.	
Size	1/2" to 4"
Pressure rating	AGVB_ _ _ : ANSI/JPI 150, JIS10K AGVM_ _ _ : ANSI/JPI 300, JIS16K to 30K
End connection	Flanged : RF, FF Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	440CSS 316SS, 316SS with CoCr-A 316LSS, 316LSS with CoCr-A
Temperature range	-196 to 400°C
Leakage performance	Class IV, IV-S1, VI
Cv range	0.1 to 200
Range ability	20:1 to 50:1 (option 75:1)
Application	General-use process for petrochemical and chemical plant
Option	Low emission gland packing/ SIL3 capable
Specification sheet No.	SS2-AGV200-0001



Small-port single seated control valve

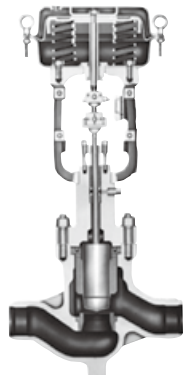
Valve type	HLS_ _ _ / HLC_ _ _
Model No.	
Size	1/2" to 1"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 30K
End connection	Flanged : RF, FF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	440CSS 316SS, 316SS with CoCr-A 316LSS, 316LSS with CoCr-A 329J1SS
Temperature range	-196 to 566°C
Leakage performance	Class IV, IV-S1, V, VI
Cv range	0.01 to 14
Range ability	20:1 to 50:1 (option 75:1)
Application	• General-use process for petrochemical and chemical plant • flushing service
Option	Bellow seal bonnet, steam jacket Low emission gland packing/ SIL3 capable
Specification sheet No.	SS2-8113-0200/0210

Structural drawing



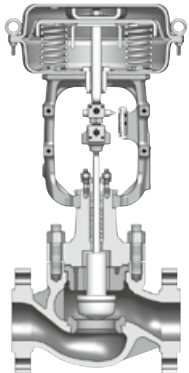
Top guided single seated control valve

Valve type	VST_ _ _
Model No.	
Size	5", 10", 12"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 30K
End connection	Flanged : RF, FF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	440CSS 316SS, 316SS with CoCr-A 316LSS, 316LSS with CoCr-A
Temperature range	-101 to 520°C
Leakage performance	Class IV, IV-S1, V, VI
Cv range	99 to 1440
Range ability	30:1
Application	General-use process for petrochemical and chemical plant
Option	—
Specification sheet No.	SS2-8110-0300



Top guided high pressure single seated control valve

Valve type	HPS_ _ _
Model No.	
Size	1" to 3"
Pressure rating	ANSI/JPI 900 to 2500 JIS63K
End connection	Flanged : RF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	440CSS 316SS, 316SS with CoCr-A
Temperature range	-5 to 566°C
Leakage performance	Class IV
Cv range	class 1500 or less: 0.25 to 110 class 2500: 0.25 to 75
Range ability	50:1 (option 75:1)
Application	High temperature and high pressure steam of boiler and turbine unit for power plant and private power generation
Option	SIL3 Capable
Specification sheet No.	SS2-8113-0400



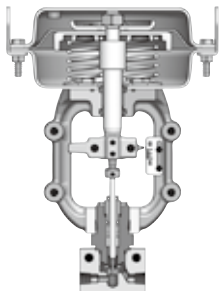
Top guided single seated control valve

Valve type	HTS_ _ _ / HSC_ _ _
Model No.	
Size	1-1/2" to 8"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 30K
End connection	Flanged : RF, FF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	440CSS 316SS, 316SS with CoCr-A 316LSS, 316LSS with CoCr-A 329J1SS
Temperature range	-196 to 566°C
Leakage performance	Class IV, IV-S1, V, VI
Cv range	10 to 700
Range ability	50:1 (option 75:1)
Application	• General-use process for petrochemical and chemical plant • flushing service
Option	Bellow seal bonnet, steam jacket Low emission gland packing/ SIL3 capable
Specification sheet No.	SS2-8113-0300/0310



High-pressure service top guided single seated control valve

Valve type	VST_ _ _
Model No.	
Size	4", 5", 6"
Pressure rating	ANSI/JPI 900 to 2500 JIS63K
End connection	Flanged : RF, RJ Welded : SW, BW
Body material	Carbon steel
Trim material	440CSS SUS304 with CoCr-A
Temperature range	0 to 520°C
Leakage performance	Class IV
Cv range	class 1500 or less : 56 to 315 class 2500 : 39 to 210
Range ability	30:1
Application	High temperature and high pressure steam of boiler and turbine unit for power plant and private power generation
Option	—
Specification sheet No.	SS2-8110-0400



Micro-flow control valve

Valve type	VSM_ _ _
Model No.	
Size	Threaded : NPT (Rc) 1/4", 1/2" Flanged : 1/2", 3/4", 1"
Pressure rating	ANSI/JPI 150 to 2500 JIS10K to 63K
End connection	Threaded : Rc, NPT Flanged : RF, RJ
Body material	Stainless steel
Trim material	Solid CoCr-A
Temperature range	-30 to 400°C
Leakage performance	Class IV
Cv range	0.001 to 0.63
Range ability	20:1 to 30:1
Application	• Needle type plug • Addition process of chemical and perfume
Option	—
Specification sheet No.	SS2-8110-0600

Single seated valves

Cage valves,  
Double seated  
valves,  
Low-noise  
valves

Rotary  
valves

Angle  
valves

3-way  
valves

Corrosion-  
resistant or  
abrasion-  
resistant  
valves

Motorized  
valves

Actuators

Accessories

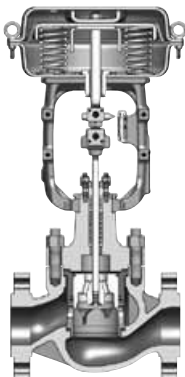
Special  
purpose  
valves

Structural drawing



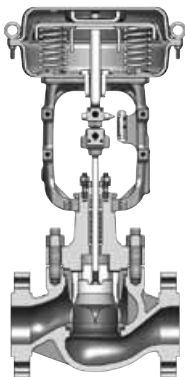
Low leakage pressure balanced cage type control valves

Valve type	AC2_ _ _
Model No.	
Size	6" to 24"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 30K
End connection	Flanged : RF, RJ Welded : BW
Body material	Carbon steel Stainless steel
Trim material	A351CF8M, SCS14A A351CF8M, SCS14A with CoCr-A SCS24
Temperature range	—
Leakage performance	Class V
Cv range	179 to 5920
Range ability	50:1
Application	• Flexible metal seat structure • high differential pressure process which needed low leakage performance
Option	Low emission gland packing/ SIL3 capable
Specification sheet No.	SS2-AC2001-0100



Pressure-balanced cage type control valve

Valve type	ACP_ _ _
Model No.	
Size	1-1/2" to 8"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 40K
End connection	Flanged : RF, FF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	A351CF8M A351CF8M with CoCr-A SCS24
Temperature range	-196 to 400°C
Leakage performance	Class IV
Cv range	10 to 795
Range ability	50:1 (option 75:1)
Application	General-use process for petrochemical and chemical plant
Option	Low emission gland packing/ SIL3 capable
Specification sheet No.	SS2-ACP110-0100



Pressure-balanced cage type control valve

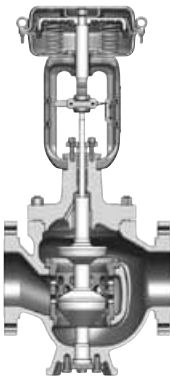
Valve type	HCB_ _ _
Model No.	
Size	1-1/2" to 8"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 40K
End connection	Flanged : RF, FF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	SCS24 SCS14A with CoCr-A or Atomloy treatment SCS16A, SCS16A with CoCr-A
Temperature range	-196 to 566°C
Leakage performance	Class II, III, VI
Cv range	11 to 850
Range ability	50:1 (option 75:1)
Application	General-use process for petrochemical and chemical plant
Option	Bellows type bonnet, steam jacket Low emission gland packing/ SIL3 capable
Specification sheet No.	SS2-8113-1100

Structural drawing



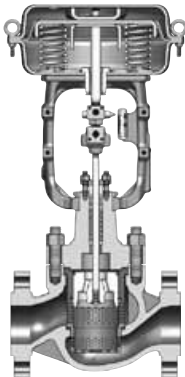
Cage type double seated control valve

Valve type	VDC_ _ _
Model No.	
Size	5", 10", 12"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 40K
End connection	Flanged : RF, FF, RJ
Body material	Carbon steel Stainless steel
Trim material	SCS24 SCS14A with Stellite or Atomloy treatment SCS16A, SCS16A with CoCr-A
Temperature range	-195 to 600°C
Leakage performance	Class II, VI
Cv range	99 to 1440
Range ability	30:1 (option 50:1)
Application	General-use process for petrochemical and chemical plant
Option	Bellows type bonnet, steam jacket SIL3 capable
Specification sheet No.	SS2-8110-1100



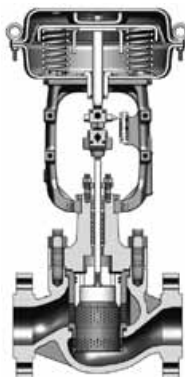
Top & bottom guided double seat control valve

Valve type	ADVB_ _ _ / ADVM_ _ _
Model No.	
Size	6" to 12"
Pressure rating	ADVB: ANSI/JPI 150, JIS10K ADVM: ANSI/JPI 300, JIS16K to 30K
End connection	Flanged : RF
Body material	Carbon steel Stainless steel
Trim material	316SS, 316SS with CoCr-A 630SS
Temperature range	-45 to 400°C
Leakage performance	Class IV
Cv range	215 to 1580
Range ability	50:1
Application	• Top & bottom guided double seat structure • Hydrocarbon process for refinery and petrochemical plant
Option	Low emission gland packing
Specification sheet No.	SS2-ADV100-0100



Low-noise cage type control valve

Valve type	ACN_ _ _
Model No.	
Size	1-1/2" to 8"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 40K
End connection	Flanged : RF, FF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	A351CF8M, A351CF8M with CoCr-A
Temperature range	-196 to 400°C
Leakage performance	Class IV
Cv range	11 to 580
Range ability	50:1
Application	• Multi-hole type 2-stage cage guided with seal ring • Noise reduction of compressed fluid (ex. steam, air, gases etc.)
Option	Low emission gland packing/ SIL3 capable
Specification sheet No.	SS2-ACN110-0100



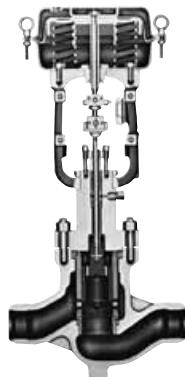
Low-noise cage type control valve

Valve type	HCN_ _ _
Model No.	
Size	1-1/2" to 8"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 40K
End connection	Flanged : RF, FF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	SCS24 SCS14A, SCS14A with CoCr-A SCS14A with Atomloy treatment
Temperature range	-196 to 566°C
Leakage performance	Class III
Cv range	11 to 580
Range ability	25:1
Application	• Multi-hole type 2-stage cage guided • Noise reduction of compressed fluid (ex. steam, air, gases etc.)
Option	Low emission gland packing/ SIL3 capable
Specification sheet No.	SS2-8113-1110



Large sized pressure balanced cage type control valve

Valve type	ALVB_ _ _ / ALVM_ _ _
Model No.	
Size	14" to 20"
Pressure rating	ALVB: ANSI/JPI 150, JIS10K ALVM: ANSI/JPI 300, JIS20K
End connection	Flanged : RF
Body material	Carbon steel Stainless steel
Trim material	SCS24
Temperature range	-5 to 200°C
Leakage performance	Class IV
Cv range	1440 to 3970
Range ability	50:1
Application	• Seal ring structure • General-use process for petrochemical and chemical plant
Option	—
Specification sheet No.	SS2-ALV100-0100



Pressure balanced high-pressure cage type control valves

Valve type	HPC_ _ _
Model No.	
Size	1-1/2" to 8"
Pressure rating	ANSI/JPI 900 to 2500 JIS63K
End connection	Flanged : RF, RJ Welded : SW, BW
Body material	Carbon steel
Trim material	SCS24 304SS with Atomloy treatment 304SS with Stellite and Atomloy treatment
Temperature range	-5 to 566°C
Leakage performance	Class III
Cv range	Class 1500 or less : 12 to 700 Class 2500 : 12 to 520
Range ability	50:1 (option 75:1)
Application	High temperature and high pressure steam of boiler and turbine unit for power plant and private power generation
Option	SIL3 capable
Specification sheet No.	SS2-8113-1200



High pressure service cage type double seated control vavles

Valve type	VDC_ _ _
Model No.	
Size	4", 5", 6"
Pressure rating	ANSI/JPI 900 to 2500 JIS63K
End connection	Flanged : RF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	SCS24 SCS14A, SCS14A with CoCr-A SCS14A with Atomloy treatment SCS16A, SCS16A with CoCr-A
Temperature range	0 to 520°C
Leakage performance	Class II, III
Cv range	Class 1500 or less : 56 to 315 Class 2500 : 39 to 210
Range ability	30:1 (option 50:1)
Application	High temperature and high pressure steam of boiler and turbine unit for power plant and private power generation
Option	SIL3 capable
Specification sheet No.	SS2-8110-1200



Low-noise cage type double seated control valve

Valve type	VDN_ _ _
Model No.	
Size	10", 12"
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 40K
End connection	Flanged : RF, FF, RJ
Body material	Carbon steel Stainless steel
Trim material	—
Temperature range	-195 to 600°C
Leakage performance	—
Cv range	600 to 860
Range ability	25:1
Application	• Multi-hole type 3-stage cage guided • Noise reduction of compressed fluid (ex. steam, air, gases etc.)
Option	—
Specification sheet No.	SS2-8110-1300



High pressure service low-noise cage type double seated control valve

Valve type	VDN_ _ _
Model No.	
Size	1-1/2" to 12"
Pressure rating	ANSI/JPI 900 to 2500 JIS63K
End connection	Flanged : RF, FF, RJ Welded : SW, BW
Body material	Carbon steel Stainless steel
Trim material	—
Temperature range	0 to 520°C
Leakage performance	—
Cv range	Class 1500 or less : 14 to 820 Class 2500 : 10 to 580
Range ability	30:1
Application	• Multi-hole type 3-stage cage guided • Noise reduction of compressed fluid (ex. steam, air, gases etc.)
Option	SIL3 capable
Specification sheet No.	SS2-8110-1400

Single seated valves

Cage valves, Double seated valves, Low-noise valves

Rotary valves

Angle valves

3-way valves

Corrosion-resistant or abrasion-resistant valves

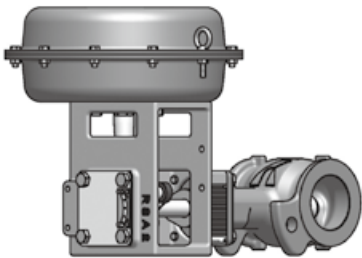
Motorized valves

Actuators

Accessories

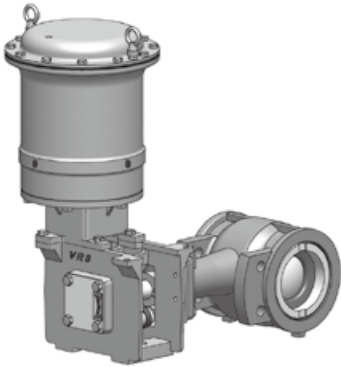
Special purpose valves

Structural drawing



Eccentric rotary control valve

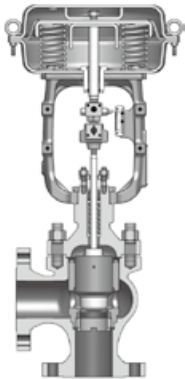
Valve type	VFR_ _ _	
Model No.	VFR_ _ _	
Size	1" to 4"	
Pressure rating	ANSI/JPI 150, 300, 600* JIS10K, 20K, 30K*, 40K*	
End connection	Wafer Flanged : RF	
Body material	Carbon steel Stainless steel	
Trim material	SCS24 SCS14, SCS14 with CoCr-A	
Temperature range	-60 to 350°C	
Leakage performance	Class IV	
Cv range	5.6 to 250	
Range ability	100:1	
Application	• High rangeability • powder or high viscosity service	
Option	Multi-hole plate for anti-cavitation and low noise	
Specification sheet No.	SS2-VFR100-0200	



Eccentric rotary control valve

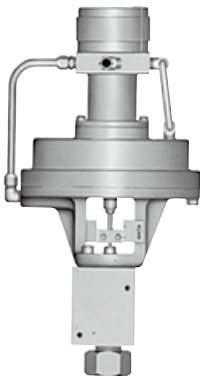
Valve type	VFR_ _ _	
Model No.	VFR_ _ _	
Size	6" to 12"	
Pressure rating	ANSI/JPI 150, 300 JIS10K, 20K	
End connection	Wafer Flanged : RF	
Body material	Carbon steel Stainless steel	
Trim material	SCS24 SCS14, SCS14 with CoCr-A	
Temperature range	-60 to 350°C	
Leakage performance	Class IV	
Cv range	240 to 1900	
Range ability	100:1	
Application	• High rangeability • Powder or high viscosity service • High differential pressure service	
Option	Multi-hole plate for anti-cavitation and low noise	
Specification sheet No.	SS2-VFR100-0100	

Structural drawing



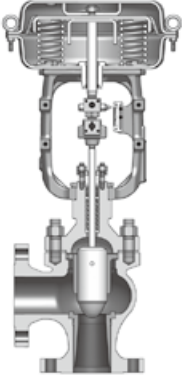
Ceramic trim angle control valve

Valve type	HAF_ _ _	
Model No.	HAF_ _ _	
Size	1" to 4"	
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 40K	
End connection	Flanged : RF, FF, RJ	
Body material	Carbon steel Stainless steel	
Trim material	Cyaron ceraic, silicon carbide ceramic	
Temperature range	0 to 425°C	
Leakage performance	Class IV	
Cv range	4 to 175	
Range ability	30:1	
Application	Hard slurry service	
Option	—	
Specification sheet No.	SS2-8113-2620	



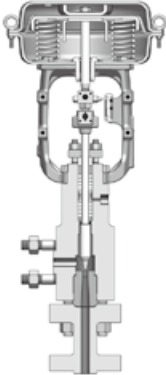
Super-high pressue angle control valve

Valve type	VAU_ _ _	
Model No.	VAU_ _ _	
Size	Please contact us	
Pressure rating	Max. pressure : 343MPa	
End connection	Please contact us	
Body material	Stainless steel	
Trim material	Solid CoCr-A	
Temperature range	0 to 100°C	
Leakage performance	Class IV	
Cv range	0.003 to 0.006 (ON-OFF 0.062)	
Range ability	—	
Application	Super high pressure and micro-flow control in Low density polyethylene plant	
Option	—	
Specification sheet No.	SS2-8110-2800	



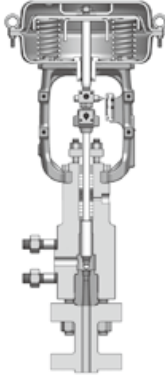
Venturi throat type anglecontrol valve

Valve type	HAV_ _ _	
Model No.	HAV_ _ _	
Size	1" to 6"	
Pressure rating	ANSI/JPI 150 to 600 JIS10K to 40K	
End connection	Flanged : RF, FF, RJ	
Body material	Carbon steel Stainless steel	
Trim material	440CSS 316SS, 316SS with CoCr-A 316LSS, 316LSS with CoCr-A	
Temperature range	-50 to 425°C	
Leakage performance	Class IV	
Cv range	1 to 395	
Range ability	50:1 (option 75:1)	
Application	Slurry, high viscosity, flushing service	
Option	Bellows type bonnet, steam jacket	
Specification sheet No.	SS2-8113-2600	



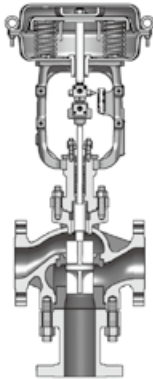
High pressure service angle control valve

Valve type	HAH_ _ _	
Model No.	HAH_ _ _	
Size	3/4" to 1-1/2"	
Pressure rating	ANSI 2500	
End connection	Flanged : RF, RJ	
Body material	Forged carbon steel Stainless steel	
Trim material	440CSS 316SS with CoCr-A	
Temperature range	0 to 425°C	
Leakage performance	Class IV	
Cv range	0.33 to 9	
Range ability	30:1 (option 50:1)	
Application	Abrasion service of high temperature and high pressure	
Option	—	
Specification sheet No.	SS2-HAH100-0100	



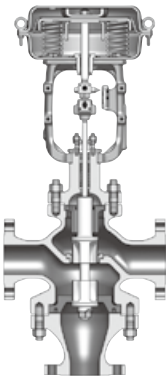
Labyrinth trim angle control valve

Valve type	HAL_ _ _	
Model No.	HAL_ _ _	
Size	3/4" to 1-1/2"	
Pressure rating	ANSI/JPI 900 to 2500	
End connection	Flanged : RF, RJ	
Body material	Forged carbon steel Stainless steel	
Trim material	440CSS	
Temperature range	0 to 425°C	
Leakage performance	Class IV	
Cv range	0.33 to 9	
Range ability	30:1 (option 50:1)	
Application	Labyrinth trim structure	
Option	Bellows type bonnet, steam jacket	
Specification sheet No.	SS2-8110-1100	



Three way control valve

Valve type	AMT_ _ _	
Model No.	AMT_ _ _	
Size	1" to 6"	
Pressure rating	ANSI/JPI 150, 300 JIS10K to 30K	
End connection	Flanged : RF, FF	
Body material	Carbon steel Stainless steel	
Trim material	316SS, 316SS with CoCr-A 316LSS, 316LSS with CoCr-A	
Temperature range	-17 to 350°C	
Leakage performance	Class IV	
Cv range	6.3 to 360	
Range ability	30:1	
Application	• Mixing of fluid • Diverting of low pressure fluid	
Option	—	
Specification sheet No.	SS2-AMT100-0100	



Three way control valve for diverting service

Valve type	HDT_ _ _	
Model No.	HDT_ _ _	
Size	3" to 6"	
Pressure rating	ANSI/JPI 150, 300 JIS10K, 20K	
End connection	Flanged : RF, FF	
Body material	Carbon steel Stainless steel	
Trim material	316SS, 316SS with CoCr-A 316LSS, 316LSS with CoCr-A	
Temperature range	0 to 425°C	
Leakage performance	Class IV	
Cv range	70 to 270	
Range ability	30:1	
Application	Diverting of fluid	
Option	—	
Specification sheet No.	SS2-HDT110-0100	

Single seated valves

Cage valves, Double seated valves, Low-noise valves

Rotary valves

Angle valves

3-way valves

Corrosion-resistant or abrasion-resistant valves

Motorized valves

Actuators

Accessories

Special purpose valves

Structural drawing

Valve type

Model No.

Size

Pressure rating

End connection

Body material

Trim material

Temperature range

Leakage performance

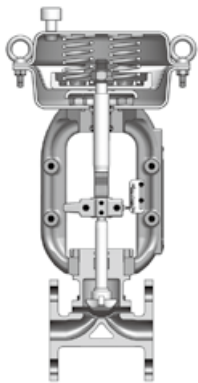
Cv range

Range ability

Application

Option

Specification sheet No.



Weir diaphragm control valve

VDD\_ \_ \_

1/2" to 4"

ANSI 150

JIS10K

Flanged : RF (equivalent), FF

Body : FC200, lining : hard natural rubber, chloroprene  
Body : FCD-S, lining : PFA, ETFE  
Body : SCS13

Diaphragm : natural rubber, chloroprene, PTFE, EPDM

-5 to 140°C

Class VI

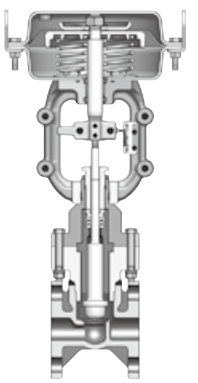
3 to 295

20:1

• corrosion service as acid and alkaline

—

SS2-8110-0530



Rigid PVC/polypropylene body single seated control valve

VNP\_ \_ \_

3/4" to 4"

ANSI/JPI 150

JIS5K to 10K

Flanged : FF (RF)

Rigid PVC, polypropylene

PTFE, glass-reinforced PTFE, rigid PVC, polypropylene

0 to 80°C

Class IV

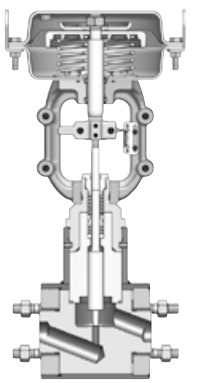
1 to 35

20:1 to 30:1

corrosion service as acid and alkaline

—

SS2-8190-0100



Corrosion-resistant PTFE body control valve

HIT\_ \_ \_

3/4" to 2"

ANSI 150

JIS10K

Stud bolts type

Body : PTFE  
Casing : 304SS

PTFE

0 to 140°C

Class IV

1 to 35

20:1 to 30:1

corrosion service as acid and alkaline

—

SS2-8193-0200

Structural drawing

Valve type

Model No.

Size

Pressure rating

End connection

Body material

Trim material

Temperature range

Leakage performance

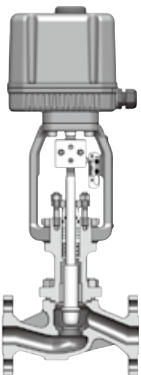
Cv range

Range ability

Application

Option

Specification sheet No.



Electric top guided single seated control valve

AGVB\_ \_ \_ / AGVM\_ \_ \_

1/2" to 2"

AGVB : ANSI/JPI 150, JIS10K

AGVM : ANSI/JPI 300, JIS16K to 30K

Flanged : RF, FF

Welded : SW, BW

Carbon steel

Stainless steel

440CSS

316SS, 316SS with CoCr-A

316LSS, 316LSS with CoCr-A

-196 to 400°C

Class IV, VI

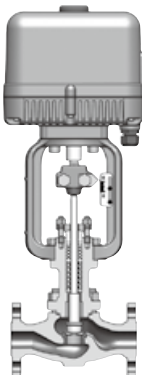
0.1 to 50

20:1 to 50:1 (option 75:1)

flow control of saturated vapor, cold and hot water, etc.

Low leakage gland packing system

SS2-AGV200-0300



Electric small-port single seated control valve

HLS\_ \_ \_

1/2" to 1"

ANSI/JPI 150 to 600

JIS10K to 30K

Flanged : RF, FF, RJ

Welded : SW, BW

Carbon steel

Stainless steel

440CSS

316SS, 316SS with CoCr-A

316LSS, 316LSS with CoCr-A

329J1SS

-196 to 566°C

Class IV, VI

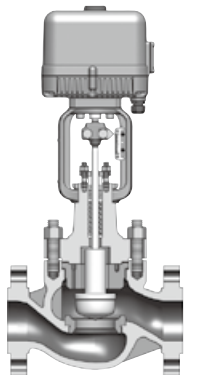
0.01 to 14

20:1 to 50:1 (option 75:1)

flow control of saturated vapor, cold and hot water, etc.

Explosion-proof motor (Please contact us.)

SS2-8114-0200



Electric top guided single seated control valve

HTS\_ \_ \_

1-1/2" to 8"

ANSI/JPI 150 to 600

JIS10K to 30K

Flanged : RF, FF, RJ

Welded : SW, BW

Carbon steel

Stainless steel

440CSS

316SS, 316SS with CoCr-A

316LSS, 316LSS with CoCr-A

329J1SS

-196 to 566°C

Class IV, VI

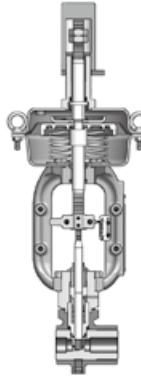
10 to 700

50:1 (option 75:1)

flow control of saturated vapor, cold and hot water, etc.

Explosion-proof motor (Please contact us.)

SS2-8114-0300



Corrosion-resistant type small size ceramic control valve

HMC\_ \_ \_

1"

Max. pressure : 1960kPa

Wafer

Body : 99% Aluminun ceramic, silicon carbide ceramic  
Casing : ductile cast iron, stainless steel

99% Aluminun ceramic, silicon carbide ceramic

0 to 200°C

Less than 2.0% of maximum valve capacity

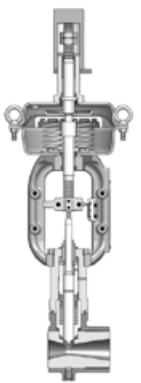
1 to 4

30:1

Hard slurry service as flue-gas desulfurization, drainage, dissolving pulp slurry, and alumina refining unit

—

SS2-8193-0310



Corrosion-/abrasion-resistant type ceramic control valve

HIC\_ \_ \_

1" to 3"

Max. pressure : 1960kPa

Wafer

Body : 99% Aluminun ceramic, silicon carbide ceramic  
Casing : ductile cast iron, stainless steel

99% Aluminun ceramic, silicon carbide ceramic

0 to 200°C

Less than 1.0 to 1.5% of maximum valve capacity

13 to 120

30:1

Hard slurry service as flue-gas desulfurization, drainage, dissolving pulp slurry, and alumina refining unit

—

SS2-8193-0300

BIOBATCH valve

VSB\_ \_ \_

20 to 100mm

JIS10K

Flanged : RF

Stainless steel

316SS

0 to 200°C

—

9 to 148

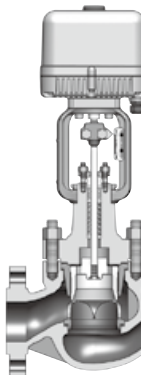
20:1 to 30:1

• Clean process as pharmaceuticals and semiconductor

• Batch control of fermentation process

—

SS2-8190-0500



Electric pressure-balanced cage type control Valve

HCB\_ \_ \_

1-1/2" to 8"

ANSI/JPI 150 to 600

JIS10K to 40K

Flanged : RF, FF, RJ

Welded : SW, BW

Carbon steel

Stainless steel

SCS24

SCS14A, SCS14A with CoCr-A

SCS14A with Atomloy treatment

-196 to 566°C

Class II, III, VI

11 to 850

50:1 (option 75:1)

flow control of saturated vapor, cold and hot water, etc.

Explosion-proof motor (Please contact us.)

SS2-8114-1100

Single seated valves

Cage valves, Double seated valves, Low-noise valves

Rotary valves

Angle valves

3-way valves

Corrosion-resistant or abrasion-resistant valves

Motorized valves

Actuators

Accessories

Special purpose valves

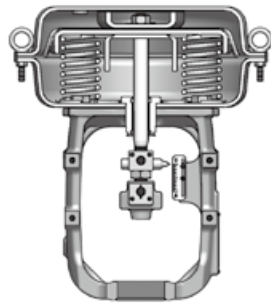


Structural drawing

Valve type  
Model No.

Action  
Stroke  
Manual operator  
Air supply  
Detailed data sheet

Features



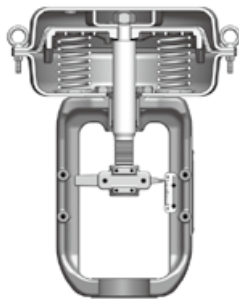
Multispring diaphragm motor

HA2\_ to HA4\_

Direct and reverse action  
25 to 75mm

Side mounted handwheel, top mounted handwheel  
140 to 390kPa {1.4 to 4.0kgf/cm<sup>2</sup>}  
No.SS2-8213-0500

- Single action
- Compact, lightweight



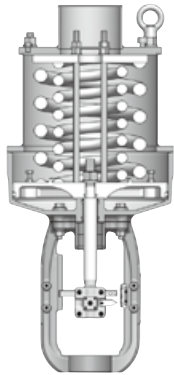
Multispring diaphragm motor

PSA2\_ to PSA4\_

Direct and reverse action  
14.3 to 38mm

Side mounted handwheel, top mounted handwheel  
140 to 390kPa {1.4 to 4.0kgf/cm<sup>2</sup>}  
No.SS2-PSA200-0100

- Single action
- Compact, lightweight



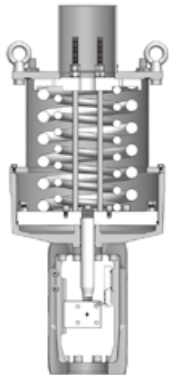
Spring piston cylinder

PSA6R

Reverse action  
20 to 100mm

Side mounted handwheel  
260 to 500kPa {2.6 to 5kgf/cm<sup>2</sup>}  
No.SS2-PSA100-0100

- Single action
- Compact, high power



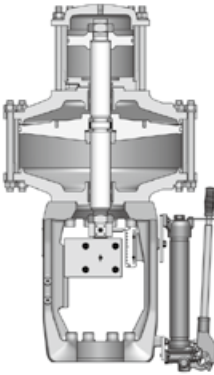
High power spring cylinder

PSA7R

Reverse action  
50 to 100mm

Side mounted handwheel  
400kPa {4kgf/cm<sup>2</sup>}  
No.SS2-PSA100-0100

- Single action
- High power, low supply pressure



Springless piston cylinder

DAP560, DAP1000, DAP1500

Direct and reverse action  
50 to 100mm

Hydraulic manual handle  
200 to 700kPa {2 to 7kgf/cm<sup>2</sup>}  
No.SS2-DAP100-0100

- Double action
- Compact, high power

Single seated valves

Cage valves,  
Double seated valves,  
Low-noise valves

Rotary valves

Angle valves

3-way valves

Corrosion-resistant or  
abrasion-resistant valves

Motorized valves

Actuators

Accessories

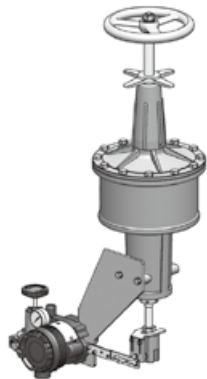
Special purpose valves

Structural drawing

Valve type  
Model No.

Action  
Stroke  
Manual operator  
Air supply  
Detailed data sheet

Features



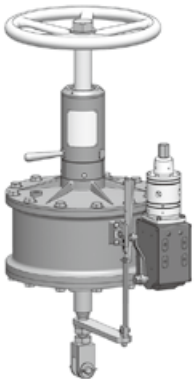
Spring piston cylinder

GOM83S to GOM124S

Direct action  
75 to 100mm

With manual handwheel  
140kPa {1.4kgf/cm<sup>2</sup>}  
No.SS2-8210-0200

- Single action
- Compact, long stroke



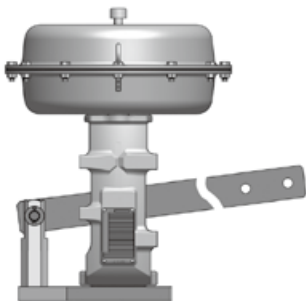
Springless piston cylinder

GOM64LM to 154LM

Direct and reverse action  
50, 100mm

With or without handwheel  
200kPa {2.0kgf/cm<sup>2</sup>}  
No.SS2-8210-0200

- Double action
- Compact, long stroke



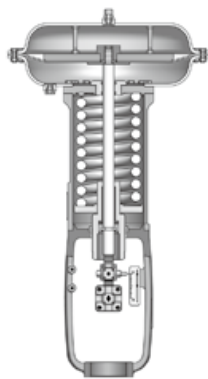
Multispring lever diaphragm motor

HL2\_ to HL4\_

Direct and reverse action  
—

140 to 390kPa {1.4 to 4.0kgf/cm<sup>2</sup>}  
No.SS2-8213-0510

- Single action
- Compact, lightweight



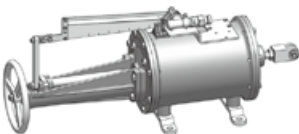
Spring diaphragm motor

VA5D, VA5R

Direct and reverse action  
100mm

Side mounted handwheel, top mounted handwheel  
140 to 270kPa {1.4 to 2.8kgf/cm<sup>2</sup>}  
No.SS2-8210-0100

- Single action



Springless piston cylinder

GOM44L to GOM1510L

Direct and reverse action  
100 to 250mm

With or without handwheel  
200kPa {2.0kgf/cm<sup>2</sup>}  
No.SS2-8210-0200

- Double action
- Compact, long stroke



Picture



Smart ESD Device 700 Series

AVP77\_ / AVP78\_ / AVP79\_

4 to 20mADC, 0 to 20mADC, 0/24VDC

10 to 100mm (Linear), to 90° (Rotary)

140 to 700kPa {1.4 to 7.0 kgf/cm<sup>2</sup>}

-40 to +80°C

No.SS2-AVP772-0100

- Single action/ Double action
- Partial Stroke Test (PST)
- Local User Interface (LUI) : Liquid crystal display and push buttons
- Certified for SIL (Safety Integrity Level) 3 Capable



Smart Valve Positioner 700 Series

AVP70\_

4 to 20mADC, FOUNDATION Fieldbus

10 to 100mm (Linear), to 90° (Rotary)

140 to 700kPa {1.4 to 7.0kgf/cm<sup>2</sup>}

-40 to +80°C

No.SS2-AVP702-0100/SS2-AVP703-0100

- Single action/Double action
- Valve signature and Stop Response Test
- Valve position transmitter function
- Communication : HART®7, FOUNDATION Fieldbus ITK6.1



Smart Valve Positioner 300 Series

AVP30\_

4 to 20mADC, split range setting available

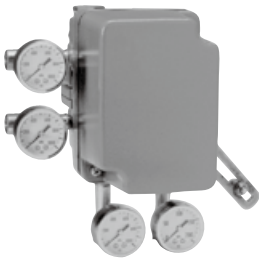
10 to 100mm (Linear), to 90° (Rotary)

140 to 700kPa {1.4 to 7.0kgf/cm<sup>2</sup>}

-40 to +80°C

No.SS2-AVP300-0100

- Single action/Double action
- Compact, high performance, multifunctional
- Valve position transmitter function
- Easy zero/span adjustments, wide applicability



Double action, pneumatic positioner

VPP02-\_ / VPP03-\_

20 to 98, 20 to 60, 60 to 98kPa

{0.2 to 1.0, 0.2 to 0.6, 0.6 to 1.0kgf/cm<sup>2</sup>}

14 to 100mm

200 to 690kPa {2.0 to 7.0kgf/cm<sup>2</sup>}

-30 to +80°C

No.SS2-8310-0300

- For use with high-pressure actuators



Smart Valve positioner for rotary valve

SVX10\_

4 to 20mADC, split range setting available

to 90° (Rotary)

140 to 700kPa {1.4 to 7kgf/cm<sup>2</sup>}

-40 to +80°C

No.SS2-SVX100-0100

- Single action/Double action
- Communication : HART®
- Easy zero/span adjustments



Pneumatic positioner

HTP-\_ \_

20 to 98, 20 to 60, 60 to 98kPa

{0.2 to 1.0, 0.2 to 0.6, 0.6 to 1.0kgf/cm<sup>2</sup>}

6 to 100mm

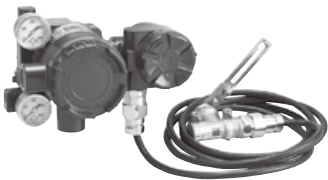
140 to 390kPa {1.4 to 4.0kgf/cm<sup>2</sup>}

-25 to +60°C

No.SS2-8310-0200

- Single action
- Multipurpose

Picture



Smart Valve Positioner 200 Series

AVP20\_

4 to 20mADC, split range setting available

10 to 100mm (Linear), to 90° (Rotary)

140 to 700kPa {1.4 to 7.0kgf/cm<sup>2</sup>}

-40 to +80°C

No.SS2-AVP200-0100

- Single action/Double action
- Anti-Vibration capabilities
- Valve position transmitter function
- Easy zero/span adjustments, wide applicability



Pneumatic positioner

VPR02-\_ / VPR03-\_

20 to 98, 20 to 60, 60 to 98kPa

{0.2 to 1.0, 0.2 to 0.6, 0.6 to 1.0kgf/cm<sup>2</sup>}

60°

340 to 490kPa {3.5 to 5.0kgf/cm<sup>2</sup>}

-20 to +70°C

No.SS2-8310-0500

- Single action
- For small actuators on FloWing valves



Pneumatic positioner

VPR08-\_

20 to 98, 20 to 60, 60 to 98kPa

{0.2 to 1.0, 0.2 to 0.6, 0.6 to 1.0kgf/cm<sup>2</sup>}

14 to 100mm

350 to 690kPa {3.6 to 7.0kgf/cm<sup>2</sup>}

-30 to +80°C

No.SS2-8310-0600

- Single action
- For use with high-pressure actuators



Pneumatic positioner

VPE04-\_ / VPE05-\_

20 to 98, 20 to 60, 60 to 98kPa

{0.2 to 1.0, 0.2 to 0.6, 0.6 to 1.0kgf/cm<sup>2</sup>}

6 to 25mm

140 to 390kPa {1.4 to 4.0kgf/cm<sup>2</sup>}

-20 to +70°C

No.SS2-8310-0400

- Single action
- Multipurpose for small actuators



Double action, pneumatic positioner

GOP-\_

20 to 98, 20 to 60, 60 to 98kPa

{0.2 to 1.0, 0.2 to 0.6, 0.6 to 1.0kgf/cm<sup>2</sup>}

19 to 50mm

200kPa {2.0kgf/cm<sup>2</sup>}

0 to +70°C

None

- For G-O-Motors



Air pressure regulator with filter

KZ03-\_ \_

Primary : Max.970kPa {9.9kgf/cm<sup>2</sup>}

Secondary : 12 to 390kPa {0.12 to 4.0kgf/cm<sup>2</sup>}

12 to 690kPa {0.12 to 7.0kgf/cm<sup>2</sup>}

(KZ03-2)

-30 to +80°C

No.SS2-5190-0700

- Supplies clean, dry air under constant pressure

Single seated valves

Cage valves, Double seated valves, Low-noise valves

Rotary valves

Angle valves

3-way valves

Corrosion-resistant or abrasion-resistant valves

Motorized valves

Actuators

Accessories

Special purpose valves

Structural  
drawing

Valve type

Model No.

Input signal  
Stroke range  
Air supply pressure  
Ambient temperature  
Detailed data sheet

Features



Limit switch

VCL-5001-\_\_\_ / VCX-7001-\_\_\_ / 1LX7001-\_\_\_ / VCX-8001-\_\_\_ / 1LX8001-\_\_\_

VCL5001 : Center-neutral limit switch  
Explosion-Proof Switches Compliant with IEC Standards (de II CT6)  
1LX7001-\_\_\_ : Vertical explosion-proof switches  
VCX7001-\_\_\_ : 2-point detection explosion-proof switches  
-10 to 60°C

VCL5001 : No.SS2-CVG900-0200  
1LX7001-\_\_\_ : No.SS2-CVG900-0400  
VCX7001-\_\_\_ : No.SS2-CVG900-0300

- Verifying the fully opened or fully closed position of control valve



Air lock relay

VF02

MAX.690kPa {7kgf/cm<sup>2</sup>}

20 to 200kPa {0.2 to 2.0kgf/cm<sup>2</sup>}

120 to 290kPa {1.2 to 3.0kgf/cm<sup>2</sup>}

-30 to +80°C

No.SS2-8310-0800

- In case of air pressure failures, relay maintains at the pre-failure level the air pressure to the actuator



Pneumatic relay (with manual reset)

VF03

490kPa {5kgf/cm<sup>2</sup>} or less

20 to 98kPa {0.2 to 1.0kgf/cm<sup>2</sup>} [MAX.250kPa {2.6kgf/cm<sup>2</sup>}]

40 to 80kPa {0.4 to 0.8kgf/cm<sup>2</sup>}

-30 to +80°C

No.SS2-8310-0800

- Combines compact 3-way on/off valve and diaphragm motor with reset mechanism
- For specialized on/off switching with both automatic and manual operations



Pneumatic relay

VF04

490kPa {5kgf/cm<sup>2</sup>} or less

20 to 98kPa {0.2 to 1.0kgf/cm<sup>2</sup>} [MAX.250kPa {2.6kgf/cm<sup>2</sup>}]

40 to 80kPa {0.4 to 0.8kgf/cm<sup>2</sup>}

-30 to +80°C

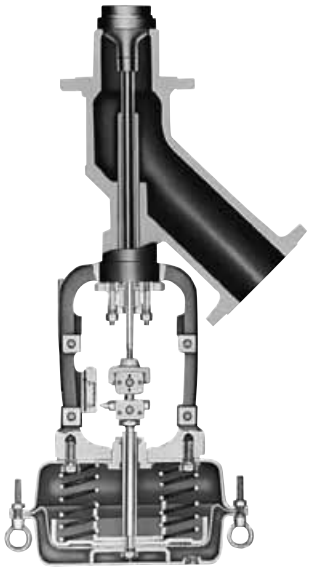
No.SS2-8310-0800

- Combines 3-way on/off valve used to switch signal air lines based on balance between supply pressure on upper diaphragm and force of preset spring



Cage Valve for LNG (20 in.)

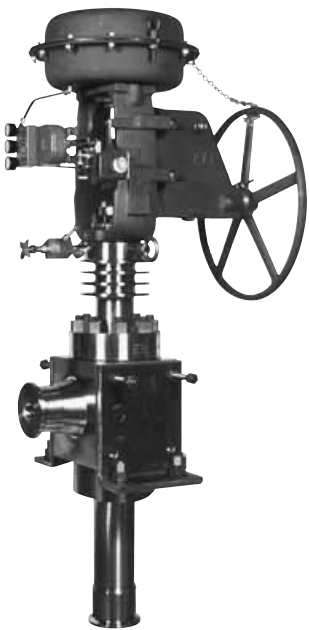
Model VDC\_ \_ \_



Bottom Plug Valve

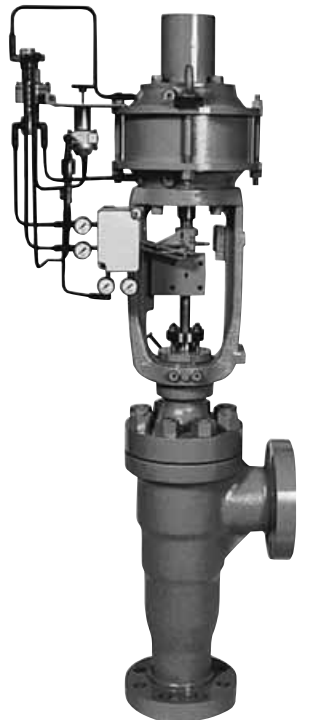


Super low-temperature Valve for Liquid Hydrogen



Let-down Valve for Coal Liquefaction

Model VAZ\_ \_ \_



Minimum Flow Valve for Pumps

Model EAVM\_ \_ \_

Single seated  
valves

Cage valves,  
Double seated  
valves,  
Low-noise  
valves

Rotary  
valves

Angle  
valves

3-way  
valves

Corrosion-  
resistant or  
abrasion-  
resistant  
valves

Motorized  
valves

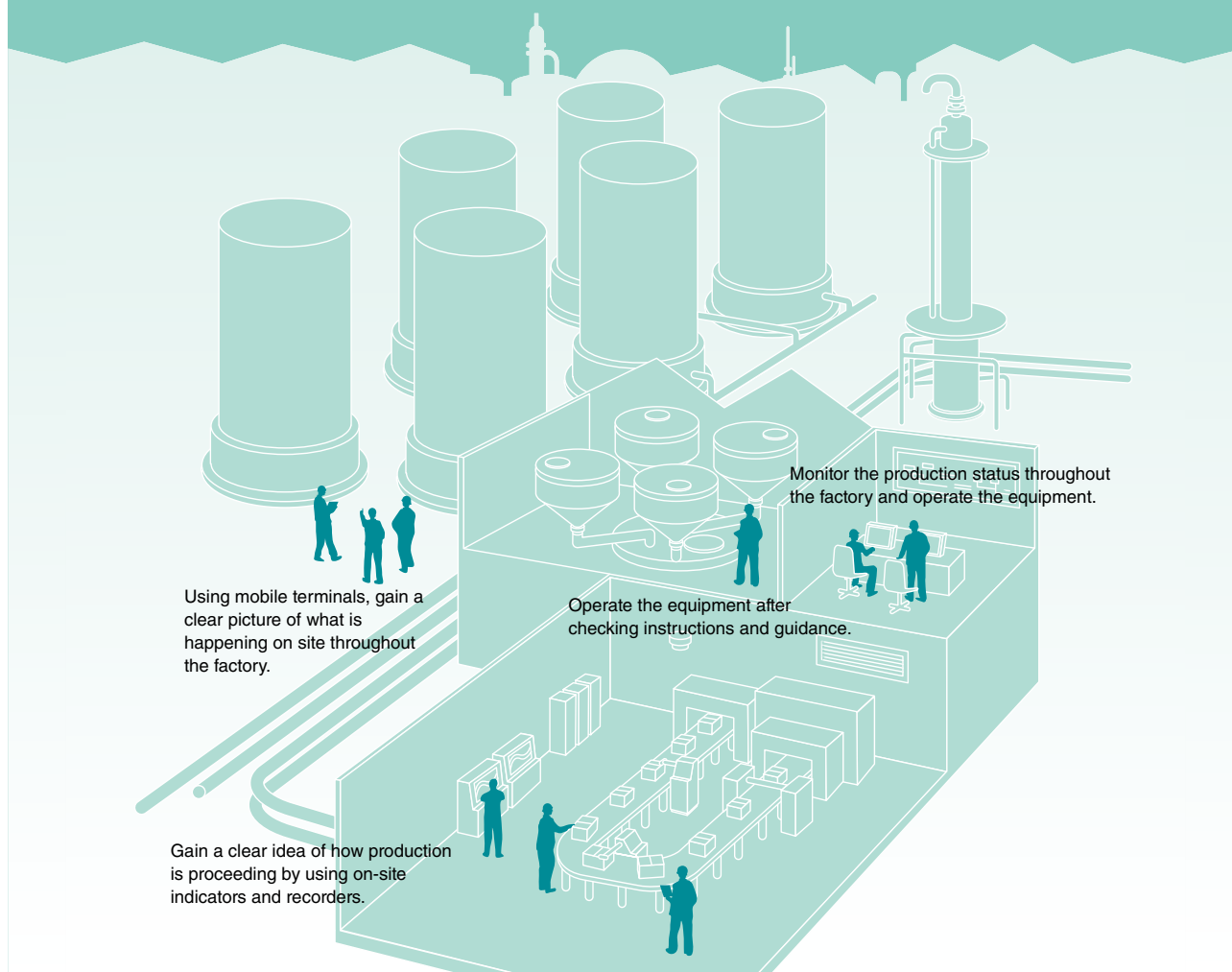
Actuators

Accessories

Special  
purpose  
valves

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## Azbil Corporation

Advanced Automation Company

*Yamatake Corporation changed its name to Azbil Corporation on April 1, 2012.*

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