



ISO 9001 / ISO 14001

# AGE

## Pressure Regulating Valves



| AGECT-PRV-2015 |

**AGE**  
AGEVALVE Co., Ltd.  
Control & Manual valve



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# AGE311 SERIES 1st PRESSURE REGULATING VALVE

## MODEL No. : AGE3110 series

Unique & uncomplicated pneumatic 1st pressure regulating valve provides the solution of upstream pressure control problems. AGE31 series can be used not only globe valve body but also specific quarter turn valves like HP butterfly designed with anti-blowout seat construction. This feature provides extremely low cost in large size services, desirable pump pressure control and convenient selecting/sizing procedure.

### SPECIFICATIONS

#### BODY

Type 1	2-way cast globe valve (AGE3110-□□□G) Size : 15A(1/2") ~ 400A(16")
Type 2	HP butterfly valve (AGE3110-□□□B) Size : 25A(1") ~ 1800A(72")
Pressure rating	JIS 10K~63K, ANSI 150#~900#, PN10~25, etc.
End connection	FF, RF, BW, SW, Wafer, Lug, Flange, etc.
Materials	Ductile iron, Cast steel, Stainless steel, etc.
Bonnet	Plain bonnet : -17℃~230℃ Extended bonnet : -45℃~-17℃, 230℃~566℃
Gland type	Bolted gland
Packing	Concave PTFE packing with stainless steel back up ring Graphite with stainless steel back up ring



#### TRIM

Trim type	Cage guided contoured type (globe) Standard (HP butterfly)
Flow characteristics	Globe valve - EQ % Butterfly valve - Standard butterfly
Seat leakage	Globe - Metal seat : ANSI Class IV - Soft seat : ANSI Class VI Butterfly - Soft seat : ANSI Class VI
Material	Plug : Hard faced SUS304/316/410, etc. Seat : Metal - Hard faced SUS304/316/410, etc. Soft - Filled TFE, etc. Stem : SUS304/316/410/630, etc.

#### ACTUATOR

Actuator type	Multi-spring cylinder actuator
Operating type	Air-to-close : Direct action
Cylinder	AC4C-T6, Die-cast Aluminum
Piston	AC4C-T6
Piston ring	NBR lip ring (commercially available)
Air supply	5~7kg/cm <sup>2</sup>
Air connection	Rc1/4", Rc3/8"
Ambient temperature	-20 ~ 80℃
Accessories	Pressure regulator with filter



# AGE313 SERIES 2nd PRESSURE REDUCING VALVE

## MODEL No. : AGE313C series

AGE313 Series pressure reducing valve provides stability, accuracy and convenience of selecting/sizing in pressure reducing service.

Specific HP butterfly valve body presents low cost in large size service.

### SPECIFICATIONS

#### BODY

Type 1	2-way cast globe valve (AGE313C-□□□G) Size : 15A(1/2") ~ 400A(16")
Type 2	HP butterfly valve (AGE313C-□□□B) Size : 25A(1") ~ 1800A(72")
Pressure rating	JIS 10K~63K, ANSI 150#~900#, PN10~25, etc.
End connection	FF, RF, BW, SW, Wafer, Lug, Flange, etc.
Materials	Ductile iron, Cast steel, Stainless steel, etc.
Bonnet	Plain bonnet : -17℃~230℃ Extended bonnet : -45℃~-17℃, 230℃~566℃
Gland type	Bolted gland
Packing	Concave PTFE packing with stainless steel back up ring Graphite with stainless steel back up ring



#### TRIM

Trim type	Cage guided contoured type (globe) Standard (HP butterfly)
Flow characteristics	Globe valve - EQ % Butterfly valve - Standard butterfly
Seat leakage	Globe - Metal seat : ANSI Class IV - Soft seat : ANSI Class VI Butterfly - Soft seat : ANSI Class VI
Material	Plug : Hard faced SUS304/316/410, etc. Seat : Metal - Hard faced SUS304/316/410, etc. Soft - Filled TFE, etc. Stem : SUS304/316/410/630, etc.

#### ACTUATOR

Actuator type	Multi-spring cylinder actuator
Operating type	Air-to-open: Reverse action
Cylinder	AC4C-T6, Die-cast Aluminum
Piston	AC4C-T6
Piston ring	NBR lip ring (commercially available)
Air supply	5~7kg/cm <sup>2</sup>
Air connection	Rc1/4", Rc3/8"
Ambient temperature	-20 ~ 80℃
Accessories	Pressure regulator with filter







# PRESSURE REGULATING GLOBE VALVE

## PERFORMANCE

- SEAT LEAKAGE : ANSI Class IV (Metal seated)
- HYSTERESIS with 31 CONTROLLER : within 2% of Set Pressure
- RANGEABILITY : 30 : 1 (60:1 and the higher is made by user's order.)

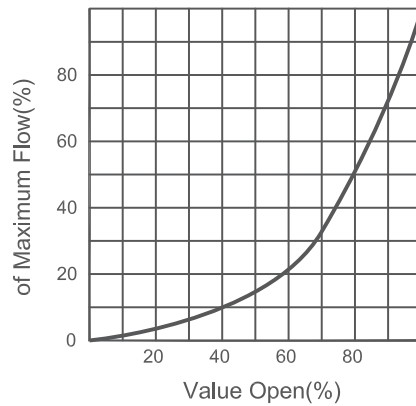
## Cv VALUE and STROKE

Contoured Type Plug

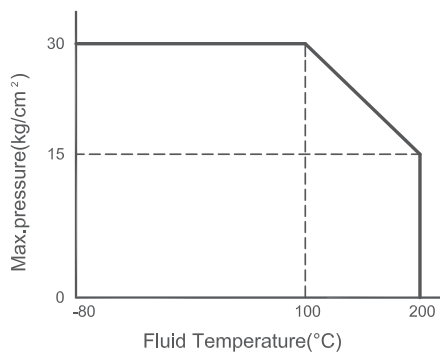
Cv	2.2	3	4.1	6.8	11	15	23	34	45	53	75	120	210	290	400	620	1200
Seat dia	8	10	12	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Valve size(mm)			15		20	25	32	40	50	65	80	100	125	150	200	250	300
Diff.Pressure (kg/cm <sup>2</sup> )	40				24		19	16		10		6					

## FLOW CHARACTERISTICS

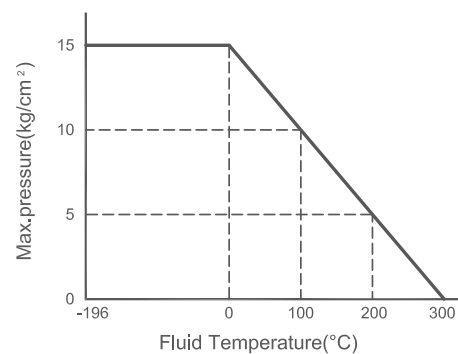
< EQ% - METAL SEATED GLOBE VALVE >



## OPERATING TEMPERATURE and PRESSURE DROP(Soft Seat)



## TEMPERATURE/constant DIFFERENTIAL PRESSURE RANGE (Stellite Faced)

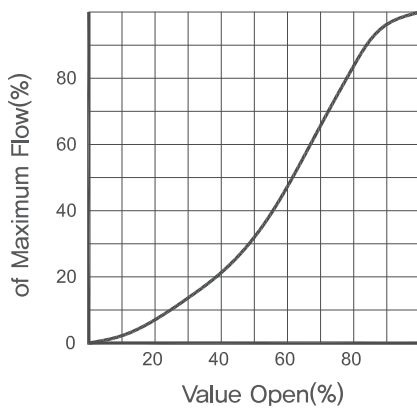


# PRESSURE REGULATING HP BUTTERFLY VALVE

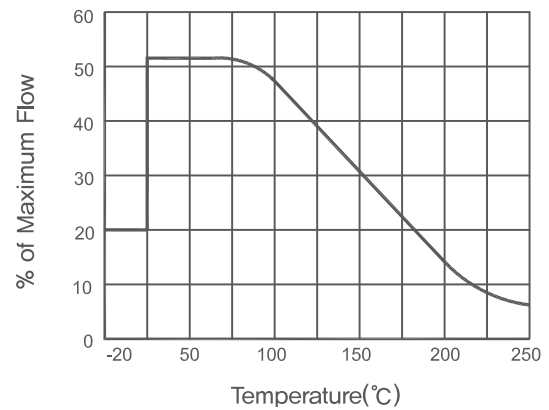
## PERFORMANCE

- SEAT LEAKAGE : ANSI Class VI (Soft seated)
- HYSTERESIS with 31 CONTROLLER : within 4% of Set Pressure
- RANGEABILITY : 15 : 1 (30:1, 100:1 and the higher is made by user's order.)

### FLOW CHARACTERISTICS



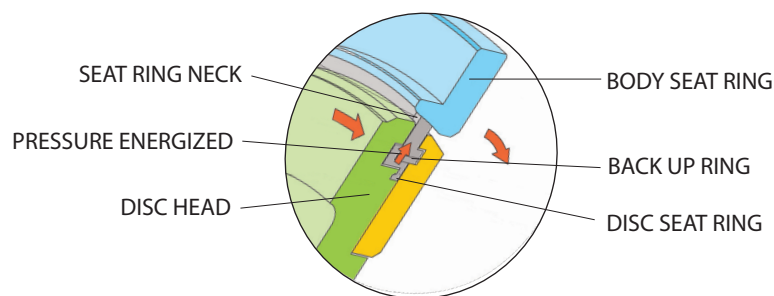
### PRESSURE / TEMPERATURE RATING CURVE



### Cv VALUE

Opening \ Size(mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600
20%	7	13	21	38	62	90	169	268	384	552	720	944	955	998	1040
30%	12	22	36	67	108	158	295	470	670	966	1260	1650	1800	2050	2200
40%	19	35	57	105	169	248	464	737	1060	1520	1980	2600	2800	3200	3700
50%	29	54	88	161	262	383	717	1140	1630	2350	3060	4012	4300	5000	5700
60%	41	77	125	228	370	540	1012	1610	2300	3312	4320	5660	5870	6200	7500
100%	85	160	260	475	770	1125	2110	3350	4800	6900	9000	11800	14600	17300	23000

### SELF-ENERGIZING FLEXIBLE & ANTI-BLOWOUT SEAT RING



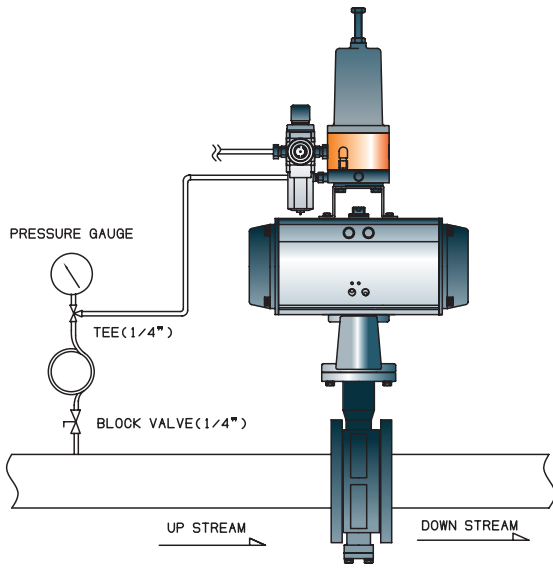
Unique design of AGE31 series allows butterfly valve to substitute for globe valve and gate valve on medium low pressure saturated steam line. Soft seat with self-energizing feature provides time-proven tight shut-off.



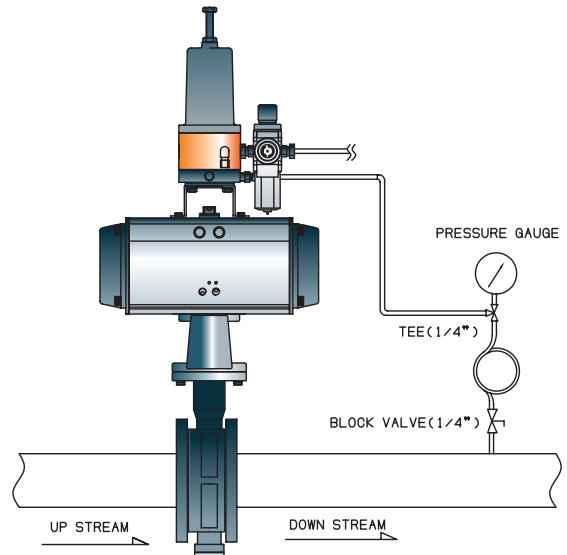


# INSTALLATION AND HOOK-UP

## ○ HP BUTTERFLY VALVE

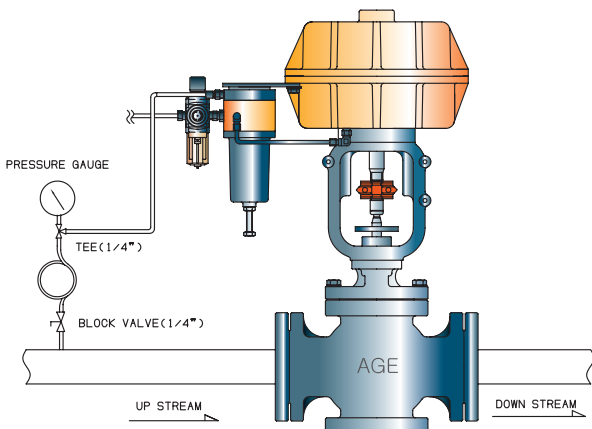


**AGE3110 Series**  
1ST PRESSURE REGULATING VALVE

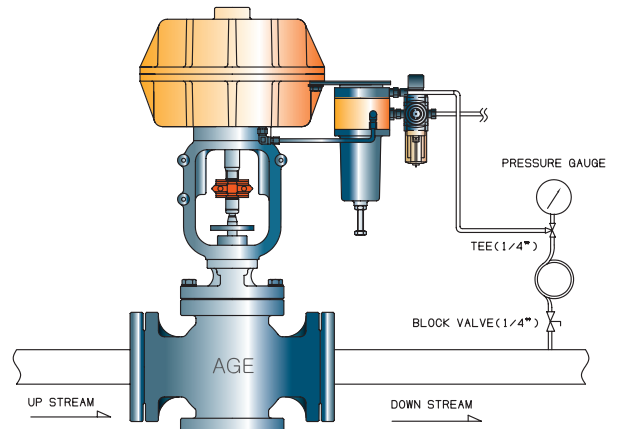


**AGE313C Series**  
2ND PRESSURE REDUCING VALVE

## ○ GLOBE VALVE



**AGE3110 Series**  
1ST PRESSURE REGULATING VALVE

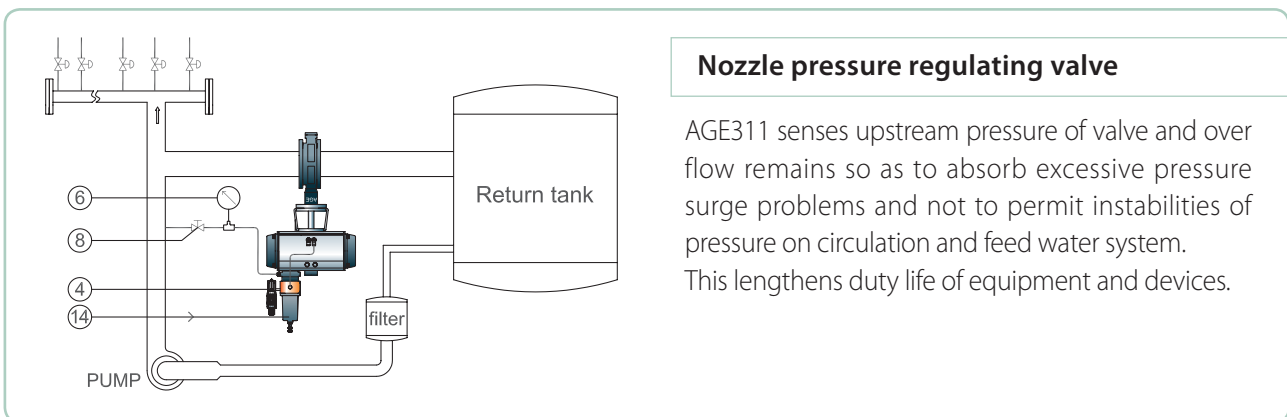
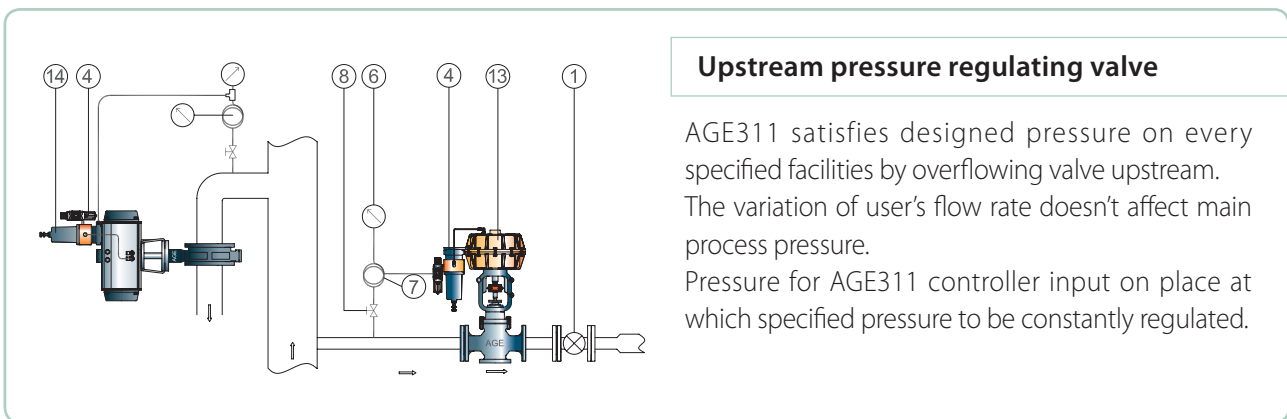
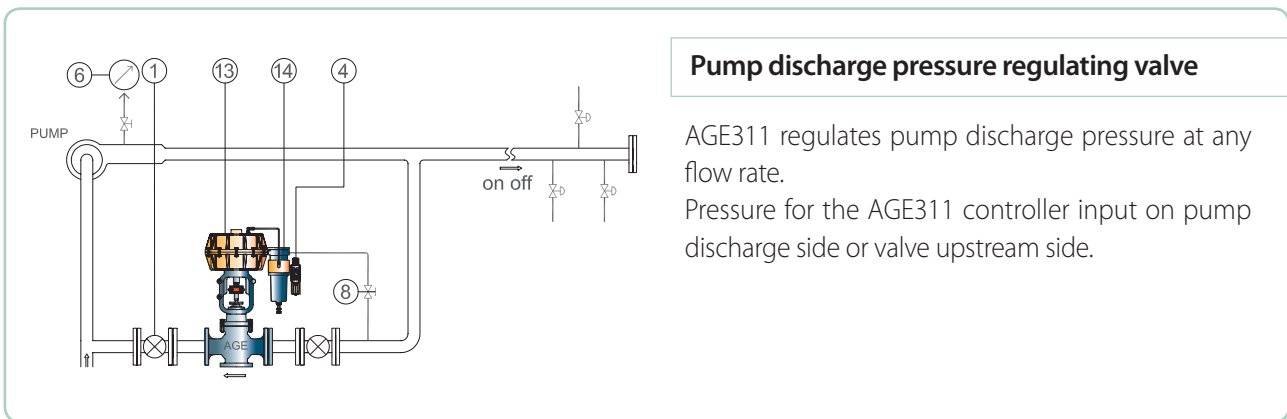


**AGE313C Series**  
2ND PRESSURE REDUCING VALVE

# INSTALLATION AND HOOK-UP (1ST PRV)

## ○ EXAMPLE OF INSTALLATION (AGE311 series Upstream Pressure regulating valve)

1	Shut off valve	5	Impulse tubing	9	Condensate pot	13	Control valve (R/A)
2	Control valve	6	Pressure indicator	10	Safety valve	14	Controller (311)
3	Controller(313)	7	Syphon tube	11	Controller	15	dP Indicator
4	Air supply(5~7kg/cm <sup>2</sup> )	8	Block valve	12	Solenoid valve	16	Orifice flange

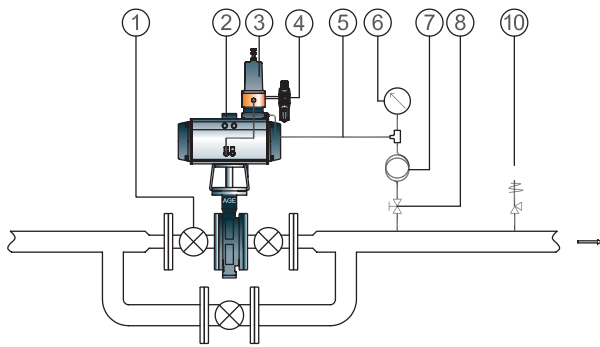




# INSTALLATION AND HOOK-UP (2ND PRV)

## EXAMPLE OF INSTALLATION (AGE313 series Pressure reducing valve)

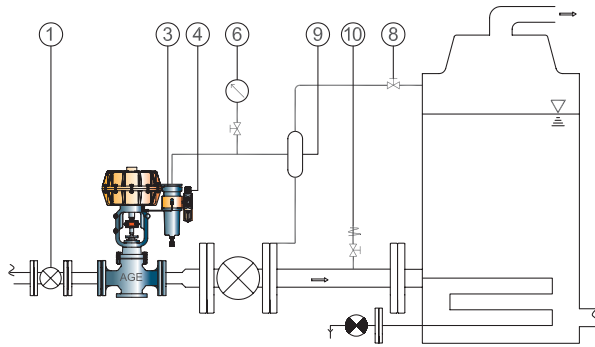
1	Shut off valve	5	Impulse tubing	9	Condensate pot	13	Control valve (R/A)
2	Control valve	6	Pressure indicator	10	Safety valve	14	Controller (311)
3	Controller(313)	7	Syphon tube	11	Controller	15	dP Indicator
4	Air supply(5~7kg/cm <sup>2</sup> )	8	Block valve	12	Solenoid valve	16	Orifice flange



### Simple pressure reducing service

AGE313C Series regulate down stream pressure with the independence upon up and downstream fluctuations.

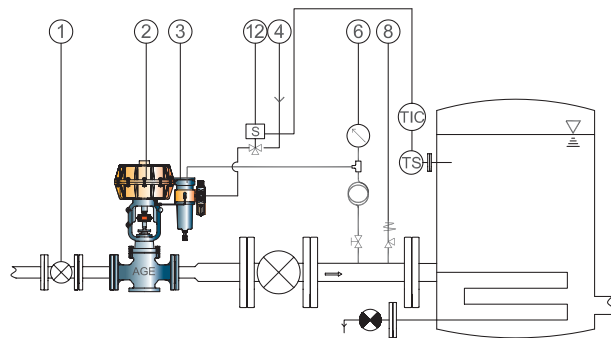
Pressure for controller input on downstream side with condensate pot or syphon tube on hot fluid service.



### Pressure regulating on vaporizer (Indirect local temperature control)

AGE313C Series PRV regulates steam flow for heating vaporizer.

Pressure for the controller input on vaporizer through condensate pot.



### Pressure reducing & PWM PID local temperature control (Manufacturer package supplied)

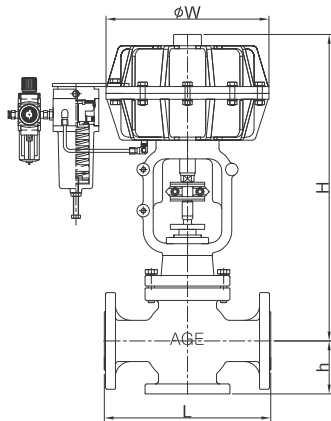
AGE313C Series control temperature by pulse width PID modulating on off signal from TIC with pressure regulating function.

Temperature sensor for TIC input on heat exchanger and for controller input on downstream piping.

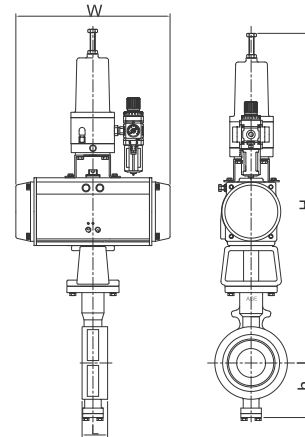
# DIMENSION & ORDERING INFORMATION

## DIMENSION

<Globe valve >



<HP butterfly valve >



(Unit: mm)

SIZE		L		h	H	W	kg
mm	inch	10k	20k				
15	½"	180(156)	190(160)	70	476	262	24
20	¾"	180(160)	190(164)	70	476	262	24
25	1"	184(160)	197(164)	70	476	262	25
32	1¼"	222	235	88	496	262	35
40	1½"	222	235	88	496	262	35
50	2"	254	267	88	496	262	48
65	2½"	276	292	100	577	320	57
80	3"	298	317	111	608	320	64
100	4"	352	368	123	718	420	105
125	5"	403	425	156	739	420	135
150	6"	451	473	161	746	420	150
200	8"	543	568	175	853	480	225
250	10"	673	708	214	912	480	330
300	12"	737	775	257	924	480	500

(Unit: mm)

SIZE		L		h	H	W	kg
mm	inch	FCD	SC*				
50	2"	44	44	71	530	204	10
60	2½"	44	44	82	541	262	20
80	3"	46	46	84	567	268	20
100	4"	52	52	96	630	301	20
125	5"	62	56	144	679	390	30
150	6"	62	56	164	692	390	40
200	8"	84	64	201	792	458	60
250	10"	91	68	240	875	525	80
300	12"	101	78	275	957	532	110
350	14"	114	78	300	1034	602	160
400	16"	114	102	310	1067	722	210
450	18"	114	114	361	1116	722	230
500	20"	127	127	392	1126	722	320
550	22"	154	154	415	1135	722	410
600	24"	154	154	445	1350	800	470

Dimensions and design are subject to change without notice. Request certified drawings for use in preparing piping layouts.

## ORDERING INFORMATION

**AGE31** 1 2 — 3 4 5 6

1	Acting	2	Action	3	Body mat'l	4	Seat mat'l	5	Ratings	6	Body type
1	1st pressure	C	Fail close	2	Cast Iron	3	Rubber	1	JIS 10K, ANSI 150#	B	Butterfly
3	2nd pressure	O	Fail open	3	Stainless Stl	4	Stainless Stl	2	JIS 20K, ANSI 300#	G	2-way globe
				4	Ductile Iron	5	Filled TFE	3	JIS 30K, ANSI 300#	M	3-way mixing
				5	Cast steel	6	Option	4	JIS 40K, ANSI 600#	T	3-way divert
				6	Aluminum			5	Option	S	Ball
				7	Option					H	High Rangeability Bfv