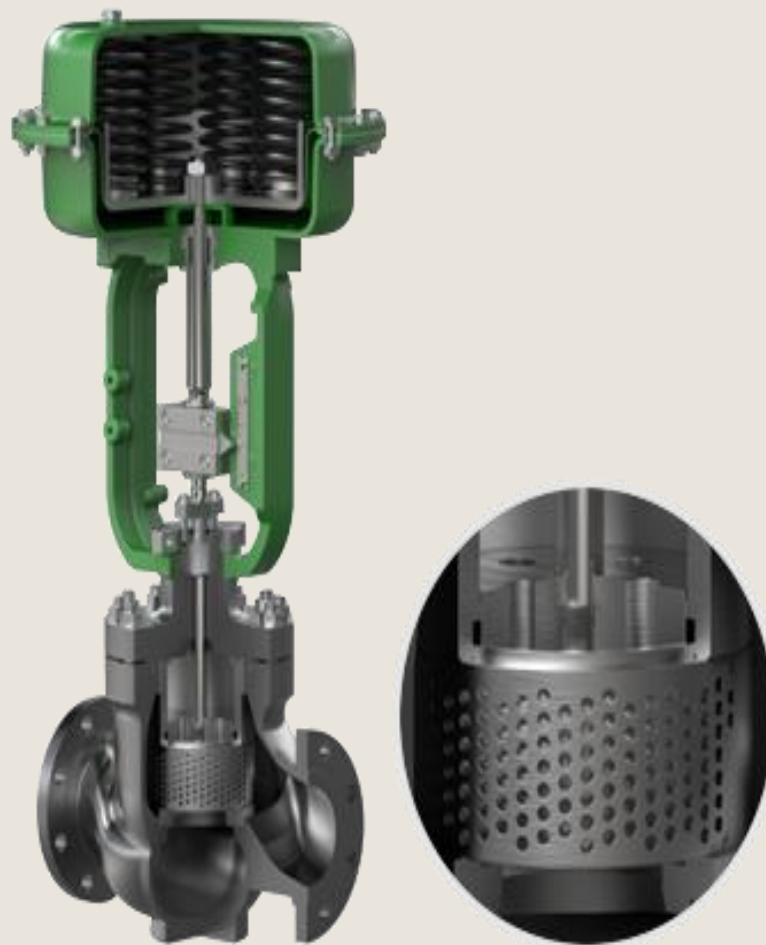


GLOBE CONTROL VALVE

**Pressure balanced cage type (KCV-102C),
Multi-Hole Low noise cage type (KCV-103M)**

MODEL: KCV-102C, KCV-103M Type



Pressure balanced cage type (KCV-102C), Multi-Hole Low noise cage type (KCV-103M) Control valve

Model: KCV-102C, KCV-103M

General

The model **KCV-102C** pressure-balanced cage type control valves are designed for heavy duty service. And The model **KCV103M** low-noise cage type control valves are designed to reduce acoustic noise in services of compressible fluids such as steam, air and natural gas.

The valve plug employs a pressure balance function to control high differential pressure fluid with small actuator force.

The **KCV102C, KCV-103M** realizes seat leakage performance as single seat valve by seal-ring structure.

In addition, the **KCV102C, KCV-103M** is equipped the cage plug with a balance seal prevent a malfunction caused by foreign object enter between the cage plug and the cage. The actuator is adopted a compact and powerful diaphragm motor.

The **KCV102C, KCV-103M** is widely applicable for reliable control of high or low temperature, high differential pressure process lines where dynamic stability, dynamic stability, low noise, anti-cavitation/flashing are required.

Model **KCV102C, KCV-103M** is compliant to Functional Safety Standard (IEC61508).



KCV-102C Pressure balanced Cage type **KCV-103M** Multi Hole Cage type

Standard specifications

Valve Model		KCV-102C (Pressure Balanced Cage type) KCV-103M (Multi Hole low noise cage type)
Valve Type		Diaphragm Or Cylinder Actuator Operated Globe control valve.
BODY	Valve Size	1-1/2" ~12" (40mm ~ 300mm)
	Pressure Rating	ANSI 150#~600# / JIS 10K~40K
	End Connection	Flange End: FF, RF, RTJ, etc. / Weld End: SW, BW
	Body Material	A216-WCB, A351-CF8, CF8M, CF3M
	Trim Material / Treatment	SUS316, SS410 etc. See "MATERIAL DATA" Page 3~4
	Guide	Cage Guide
	Balance ring +Back ring	R-TFE + SUS316, Grafoil
	Flow direction	FTC(Flow to Close)
	Gland Packing	Teflon carbon fiber, Grafoil (Graphite)
	Gasket	Grooved metal gasket (Spiral wound, Stainless or other alloy steel)
	Bonnet	Standard type: -17~230°C, Extension type: (-45~-17°C, +230~450°C)
PERFORMANCE	Control Mode	Throttling Control, On-off control
	Allowable Differential Press.	See "Allowable Pressure drops" page8~9
	Rated Cv Value	See "Cv valve and Stroke, reduce plug range" page 6
	Flow Characteristics	See "Flow Characteristics" page 7
	Rangeability	50 : 1
	Allowable Leakage Class	Metal Seat 0.01% of Rated CV (ANSI B16.104 CLASS IV)
		Soft Seat ANSI N16.104 Class VI (Bubble Tight)
	Hysteresis	Max 0.1% F.S. with positioner
	Linearity	Max $\pm 0.2\%$ F.S. with positioner

ACTUATOR	Model	KAL220, KAL270, KAL350, KAL450, KAL560 or Cylinder type					
	Actuator type	Multi spring type Diaphragm or Cylinder Actuator					
	Actuator Size	220	270	350	450	560	Cylinder type
	Max Stroke(mm)	20	30	40	80	100	Over 100mm
	Supply air pressure (MPa)	0.4, 0.35, 0.3					4.0 ~ 7.0
	Spring Range (MPa)	0.08~0.36, 0.14~0.35, 0.12~0.3, 0.1~0.3, 0.1~0.23, 0.08~0.24					-
	Action	Reverse Action (Air Fail Close), Direct Action (Air Fail Open)					
	Material	Diaphragm: EPDM, Yoke: A216-WCB					
	Air Connection	Rc 1/4" (Option: Rc3/8" ~ Rc1")					
	Ambient Temperature	-20°C ~ 70°C					
	Painting	Standard is Green color {Request other color}					

Material data

1. Combining the valve body, bonnet and trim material

Parts Name		Material		
Body, Bonnet		ASTM A216-WCB / SCPH2	ASTM A351-CF8 / SCS13A	ASTM A351-CF8M / SCS14A
Trim	Valve Plug	SUS316	SUS316	
	Seat Ring	SUS316+R.TFE / 410SS	SUS316	
	Cage	SCS14A	SCS14A	
	Valve Stem	SUS316 (H.cr plated)		
	Balance Seal	SUS316 (Back-Ring) + R.TFE, Grafoil		
Stud Bolt & Nut		SNB7 / S45C9H)	A193-B8 / A194-B8	
Note: * This Table shows typical combination of material. The combination may be subject to pressure-temperature and kind of fluid. * Trim material may be casting instead of bar materials in some cases. * Bonnet may be forged in some cases.				

2. Body material & operating pressure-temperature rating.

2-1 ANSI

[Unit: MPa]

Material Temp. (°C)	ANSI 150#			ANSI 300#		
	A216- WCB	A351- CF8	A351- CF8M	A216- WCB	A351- CF8	A351- CF8M
-45 ~ 38		1.95	1.95		5.00	5.00
-5 ~ 38	2.01	1.95	1.95	5.15	5.00	5.00
50	1.97	1.89	1.89	5.15	5.00	5.00
100	1.81	1.61	1.66	4.68	4.13	4.26
150	1.62	1.44	1.52	4.56	3.67	3.90
200	1.45	1.30	1.42	4.43	3.32	3.61
250	1.25	1.21	1.25	4.21	3.09	3.39
300	1.06	1.06	1.06	3.92	2.96	3.20
350	0.89	0.89	0.89	3.74	2.86	3.08
375	0.78	0.78	0.78	3.69	2.82	3.01
400	0.69	0.69	0.69	3.49	2.79	2.96
425	0.60	0.60	0.60	2.93	2.76	2.92
450	0.52	0.52	0.52	2.04	2.73	2.86

3. Trim Treatment / Material vs Operating pressure-temperature rating.

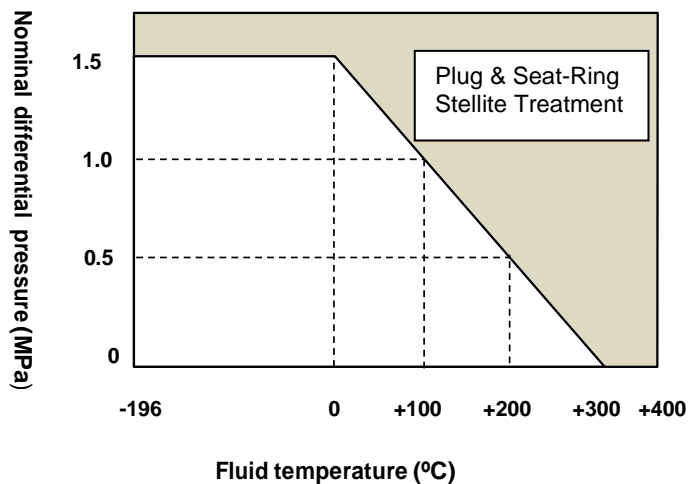


Fig.1 Temperature / nominal differential pressure ranges requiring STELLITE

Note: For cavitation / flashing service, oil-free service, and in a case where retention of valve shutoff

performance is required, STELLITE is recommended regardless of the temperature and differential pressure. For water in cavitation / flashing service and hot water exceeding 100 °C, SS410(grade 400) is recommended.

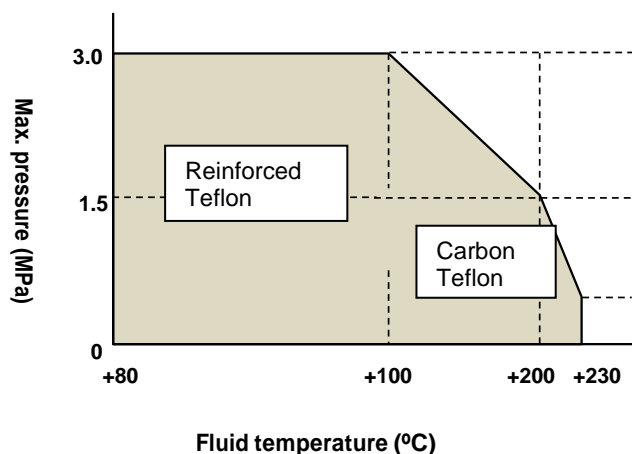
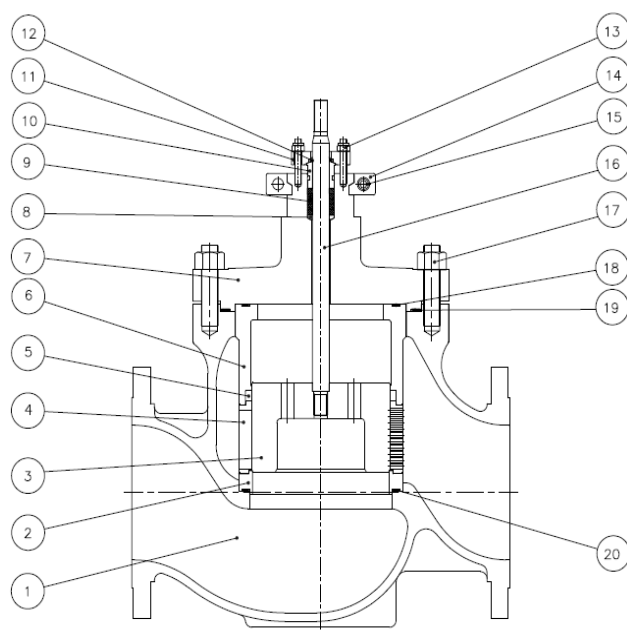


Fig.2 Operating temperature and maximum differential pressure range for soft seats

Note: Use a metal seat if erosion may occur or slurry may be produced due to saturated steam, hot water, etc.

4. Body / Trim Parts detail



NO	Parts name
1	BODY
2	SEAT RING
3	PORT(PLUG)
4	CAGE
5	BALANCE SEAL
6	BALANCE CYLINDER
7	BONNET
8	PACKING SEAT
9	GLAND PACKING
10	GLAND RING
11	GLAND FLANGE
12	WIPPER
13	GLAND STUD BOLT & NUT
14	YOKE CLAMP
15	YOKE CLAMP BOLT
16	STEM
17	BODY STUD BOLT & NUT
18	BALANCE GASKET
19	BONNET GASKET
20	SEAT GASKET

Fig. 3 Cage type structure (KCV-102C) / Multi Hole Low Noise Type structure (KCV-103M)

5. Bonnet structure

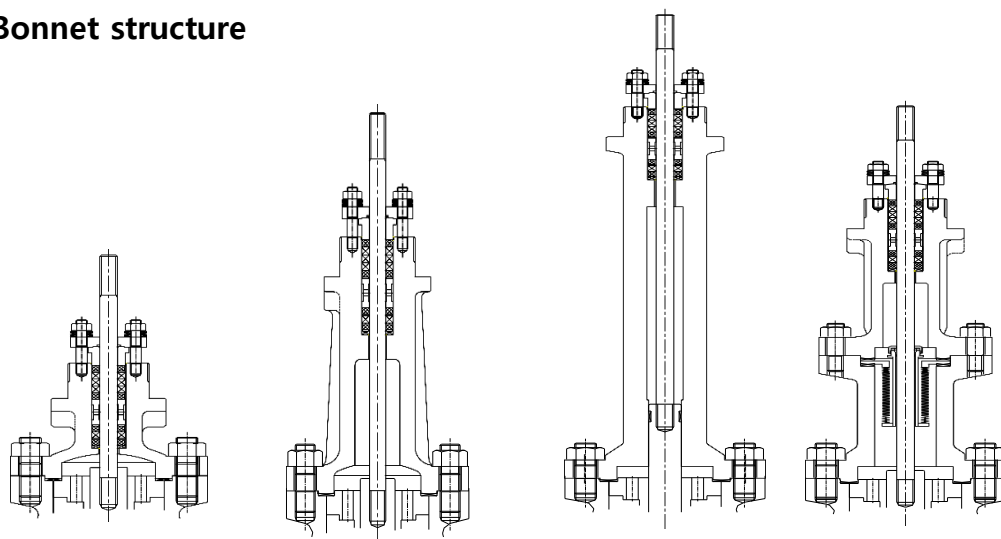


Fig. 4 Plain Bonnet

Extension Type

Cryogenic Type

Bellows Type

Table 1 Allowable Temperature

Bonnet Type	Plain Type	Extension Type	Cryogenic Type	Bellows Type
Allowable Temperature	-17°C ~ 230°C	230~450°C -17°C ~ -45°C	-45°C ~ -196°C	-196°C ~ Over 230°C

Flow characteristics.

1. Cv Value, Stroke (KCV-102C)

(1/2)

Body Size Inch	Plug size Inch(mm)	Cv Value		Stroke: mm
		EQ%	Linear	
1-1/2	1-1/2 (40)	36	40	30
2	1-1/2 (40)	36	40	30
	2 (50)	54	60	30
3	2-1/2 (65)	85	95	30
	3 (80)	115	150	40
4	3 (80)	115	150	40
	4 (100)	210	235	50
5	4 (100)	210	235	50
	5 (125)	310	345	60
6	5 (125)	310	345	60
	6 (150)	420	460	60

(2/2)

Body Size Inch	Plug size Inch	Cv Value		Stroke: mm
		EQ%	Linear	
8	6 (150)	420	460	60
	8 (200)	660	735	70
10	8 (200)	660	735	70
	10 (250)	1050	1200	100
12	10 (250)	1050	1200	100
	12 (300)	1350	1600	100
14	12 (300)	1350	1600	130
	14 (350)	1600	1900	130
16	14 (350)	1600	1900	130
	16 (400)	1800	2000	150
18	16 (400)	1800	2000	150
	18 (450)	2250	2450	150

2. Cv Value, Stroke (KCV-103M)

(1/1)

Body Size Inch	Plug size Inch(mm)	Cv Value		Stroke: mm
		Modified EQ%	Linear	
1-1/2	1 (25)	13	17	20
	1-1/2 (40)	27	34	30
2	1-1/2 (40)	31	43	30
	2 (50)	46	54	30
3	2 (50)	54	69	30
	3 (80)	92	120	40
4	3 (80)	100	130	40
	4 (100)	166	200	40
6	4 (100)	194	230	50
	6 (150)	300	390	60
8	6 (150)	320	405	60
	8 (200)	580	690	70
10	8 (200)	580	700	70
	10 (250)	725	910	100
12	10 (250)	744	930	100
	12 (300)	984	1230	100

3. Flow Characteristics

Inherent flow characteristic of a control valve is the relationship between the flow and the lift of the plug at constant pressure drop.

The characteristics normally available are shown on Figure 5.

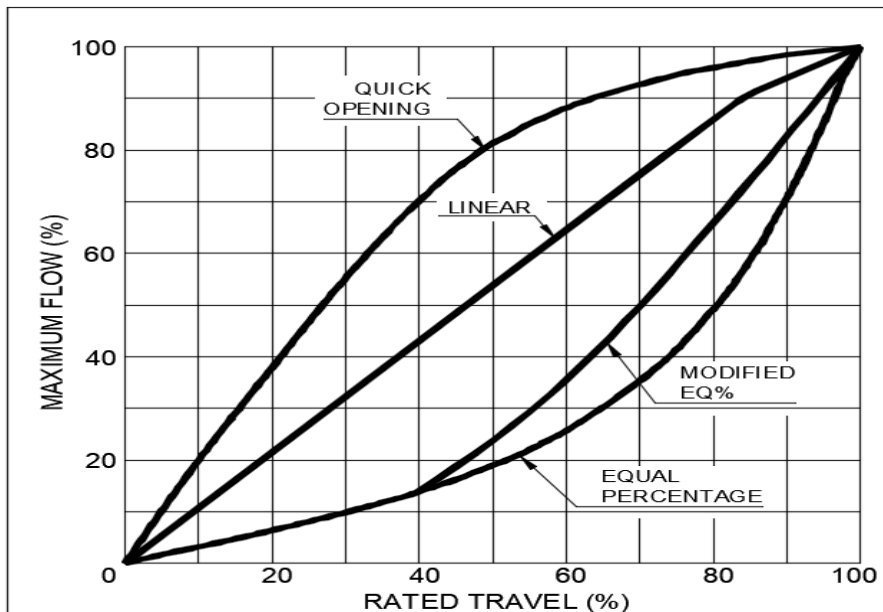


Fig. 5 Characteristic curves graph.

Definitions:

- **Linear**

Flow is directly proportional to valve lift.

- **Equal %**

Flow changes by a constant percentage of its instantaneous value for each unit of valve lift.

- **Quick Opening**

Flow increases rapidly with initial travel reaching near its maximum at a low lift.

- **Modified Equal %**

Provides fine throttling action at low valve lift and approximately a linear characteristic for upper portions of travel.

Additional specifications

- Special inspection
Flow characteristic inspection, Material certificate, non-destruction test, steam test. Low temperature test
- Steam jacket
- Oil / moisture removal treatment
- SUS304 for bolts and nuts exposed to the air
- Sand / dust proof
- Vacuum service
- Cold area proof
- Tropical area proof
- Non-standard painting

Allowable difference pressure

DIAPHRAGM ACTUATOR (Seat Leakage Class IV)

- KCV-102C, 103M Cage Type / Multi Hole Cage type plug / Gland packing: **TFE Carbon fiber**

Actuator	Air Supply Mpa	Spring Range Mpa	Differential pressure (by port size (inch)) Mpa									
			1-1/2	2	2-1/2	3	4	5	6	8	10	12
KAL220	0.4	0.08~0.36	-									
KAL270	0.4	0.14~0.35	9.89	9.89								
KAL350	0.35	0.12~0.3	9.89	9.89	5.33	5.33						
KAL450	0.35	0.1~0.23			9.89	9.89	9.89	9.89	8.61	5.37	-	-
KAL560	0.3	0.08~0.24	-	-		-	9.89	9.89	9.89	9.89	9.89	5.11

DIAPHRAGM ACTUATOR (Seat Leakage Class IV)

- KCV-102C, 103M Cage Type / Multi Hole Cage type plug / Gland packing: **Grafoil(Graphite)**

Actuator	Air Supply Mpa	Spring Range Mpa	Differential pressure (by port size (inch)) Mpa									
			1-1/2	2	2-1/2	3	4	5	6	8	10	12
KAL220	0.4	0.08~0.36	-									
KAL270	0.4	0.14~0.35	9.89	9.89								
KAL350	0.35	0.12~0.3	9.89	9.89	6.84	6.84						
KAL450	0.35	0.1~0.23		9.89		9.89	8.65	5.71	-	-	-	-
KAL560	0.3	0.08~0.24	-	-		-	9.89	9.89	6.63	2.11	-	-

● Diaphragm actuator range

Actuator	Spring range (MPa)	Air supply (MPa)	Stroke (mm)	Force (N)
KAL220	0.08-0.36	0.4	20	1,480
KAL270	0.14-0.28	0.4	20	3,155
	0.14-0.35	0.4	30	
KAL350	0.12-0.21	0.3	20	5,390
	0.12-0.26	0.3	30	
	0.12-0.30	0.35	40	
KAL450	0.1-0.23	0.3	50	8,486
	0.1-0.26	0.3	60	
	0.1-0.30	0.35	80	
KAL560	0.08-0.24	0.3	100	11,858

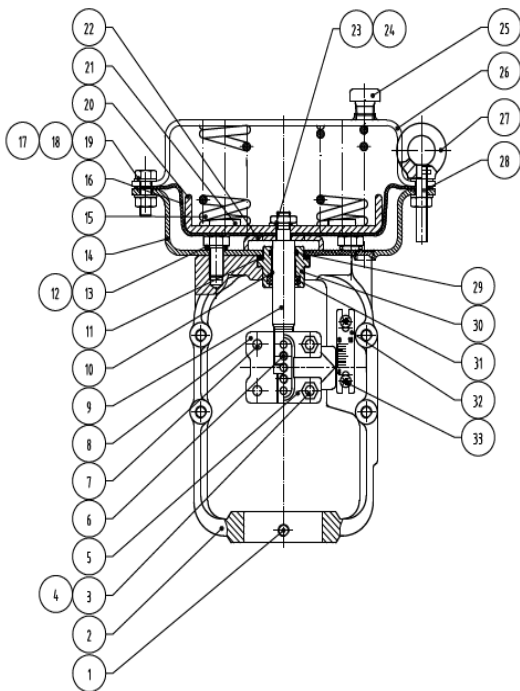


Fig. 6 Direct action (KALD Type)

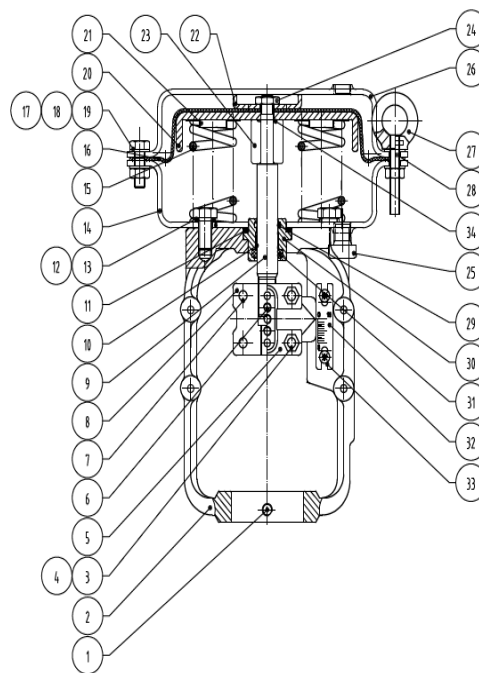


Fig. 7 Reverse Action (KALD)

(Please contact kocon sales for details)

Dimension

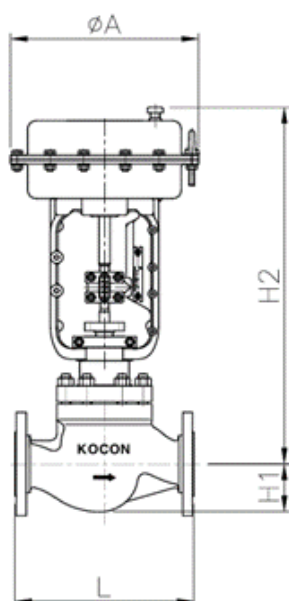


Fig. 8 KAL220~450

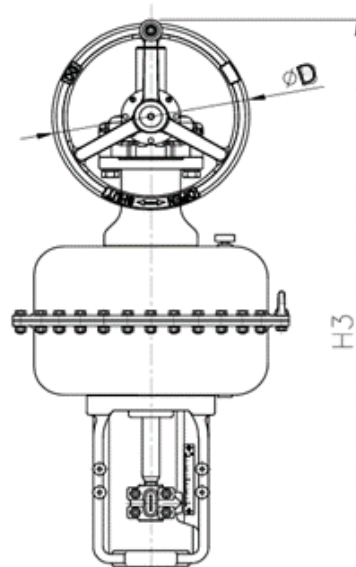
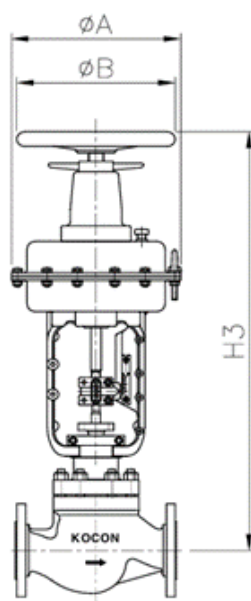


Fig.9 KAL560

● Detail dimension

[unit : mm]

Body Size	Face to Face L			H1	Standard Bonnet	Ext. Bonnet	Actuator				
	JIS10K / ANSI 150	JIS20K / ANSI 300	JIS40K / ANSI 600		H2	H2	SIZE		Manual handle		
							A	B	Standard Bonnet	Ext. Bonnet	D
									H3	H3	
1/2" (15A)	184	194	206	45	431	581	220	220	591	741	200
					493	643	270	267	675	825	250
					527	677	350	350	737	887	300
3/4" (20A)	184	184	206	47	431	581	220	220	591	741	200
					493	643	270	267	675	825	250
					527	677	350	350	737	887	300
1" (25A)	184	197	210	50	431	581	220	220	591	741	200
					512	662	270	267	694	844	250
					527	677	350	350	737	887	300
1-1/2" (40A)	222	235	251	72	453	603	220	220	613	763	200
					515	665	270	267	697	847	250
					549	699	350	350	759	909	300
2" (50A)	254	267	286	80	453	603	220	220	613	763	200
					515	665	270	267	697	847	250
					549	699	350	350	759	909	300
					699	849	450	450	969	1119	390

[unit : mm]

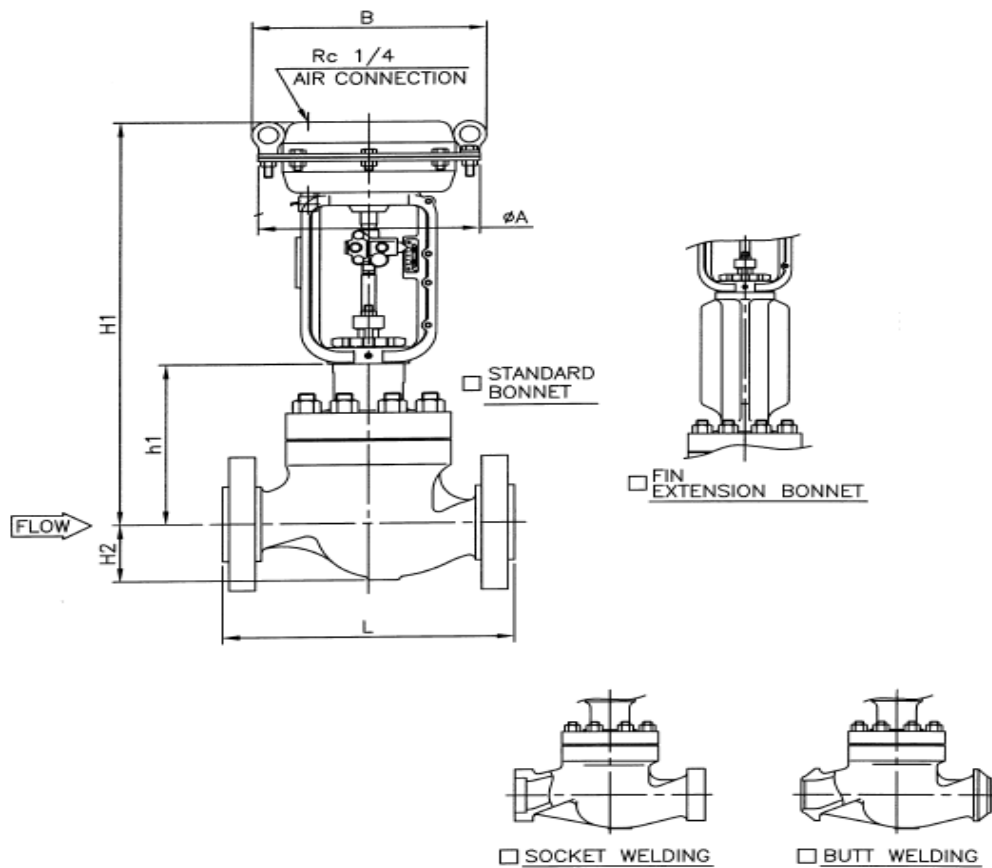
Body Size	Face to Face L			H1	Standard Bonnet	Ext. Bonnet	Actuator				
	JIS10K / ANSI 150	JIS20K / ANSI 300	JIS40K / ANSI 600		H2	H2	SIZE		Manual handle		
							A	B	Standard Bonnet	Ext. Bonnet	D
									H3	H3	
2-1/2" (65A)	276	292	311	90	545	695	270	267	727	877	250
					579	729	350	350	789	939	300
					729	879	450	450	999	1149	390
3" (80A)	298	317	337	100	545	695	270	267	727	877	250
					579	729	350	350	789	939	300
					729	879	450	450	999	1149	390
4" (100A)	352	368	394	120	689	789	350	350	849	999	300
					789	939	450	450	1059	1209	390
					932	1082	560	560	1487	1637	400
5" (125A)	403	425	460	130	844	994	450	450	1114	1264	390
					987	1137	560	560	1542	1692	400
6" (150A)	451	473	508	150	854	1004	450	450	1124	1274	390
					997	1147	560	560	1552	1702	400
8" (200A)	543	568	610	190	904	1054	450	450	1174	1324	390
					1047	1197	560	560	1602	1752	400
10" (250A)	673	708	752	220	1102	1252	560	560	1657	1807	400
12" (300A)	737	775	819	245	1264	1414	560	560	1819	1969	400

● Face-to-face length

[unit : mm]

Body size (Inch)	Face to face [L]				
	Flange type			Weld Type (SW, BW)	
	JIS 10K RF ANSI 150 RF	JIS 20K RF JIS 30K RF ANSI 300 RF	JIS 40K RF ANSI 600 RF	ANSI 300	ANSI 600
1/2	184	194	206	206	206
3/4	184	194	206	206	206
1	184	197	210	210	210
1-1/2	222	235	251	251	251
2	254	267	286	286	286
2-1/2	276	292	311	311	311
3	298	318	337	317	337
4	352	368	394	425	460
5	403	425	460	425	460
6	451	473	508	473	508
8	543	568	610	568	610

Globe valve / KCV-102C - Direct Action



Dimension

Unit : mm

Body size	Face to face : L					H2	□Standard Bonnet		□Fin Ext. Bonnet		Actuator	
	□ANSI 150# RF □JIS 10K RF	□ANSI 300# RF □JIS 20K RF	□ANSI 600# RF □JIS 40K RF	□ANSI 300# SW □ANSI 300# BW	□ANSI 600# SW □ANSI 600# BW		h1	H1	h1	H1	Size	B
□ 1-1/2" (40A)	222	235	251	251	251	60	175	475	325	625	□220	231
								570			□270	283
								605			□350	367
□ 2" (50A)	254	267	286	286	286	70	196	595	325	720	□270	283
								630			□350	367
								695			□450	472
□ 2-1/2" (65A)	276	292	311	311	311	83	200	595	350	745	□270	283
								630			□350	367
								695			□450	472
□ 3" (80A)	298	317	337	317	337	85	201	595	350	745	□270	283
								635			□350	367
								700			□450	472
□ 4" (100A)	352	368	394	368	394	113	275	910	425	1060	□450	472

- Flange is according to the standard which is described on specification sheet.

Note :

DRAWING No.

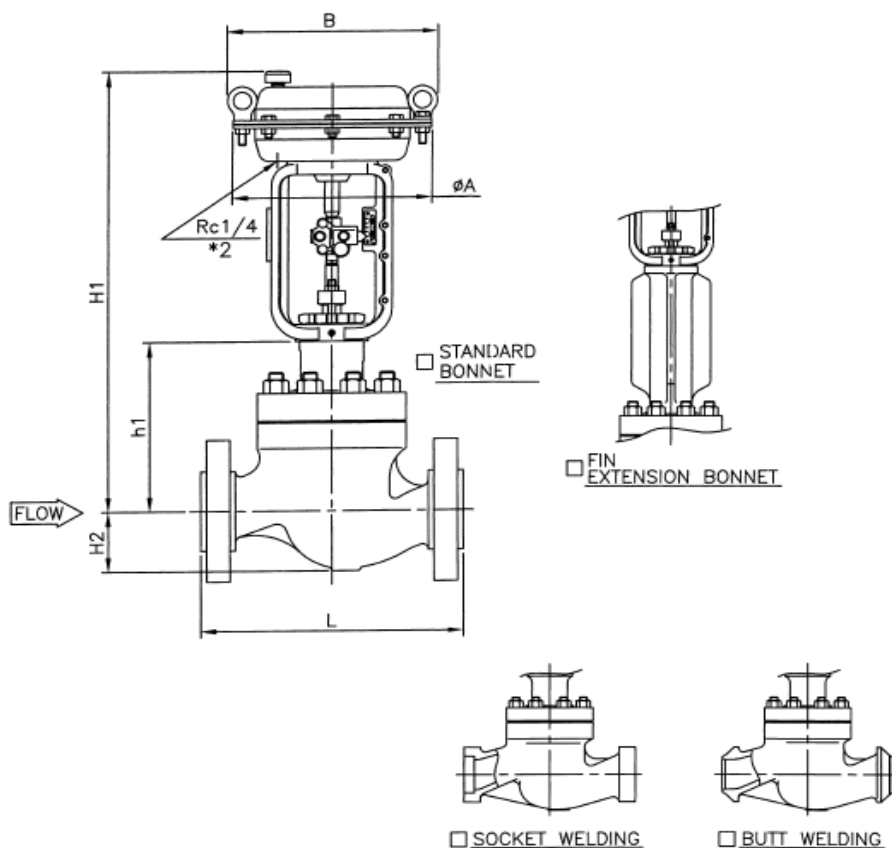
KCV-102C-D-N-01

REV.

A

KOCON

Globe valve / KCV-102C - Reverse Action



Dimension

Unit : mm

Body size	Face to face : L					H2	□Standard Bonnet		□Fin Ext. Bonnet		Actuator	
	□ANSI 150# RF □JIS 10K RF	□ANSI 300# RF □JIS 20K RF	□ANSI 600# RF □JIS 40K RF	□ANSI 300# SW □ANSI 300# BW	□ANSI 600# SW □ANSI 600# BW		h1	H1	h1	H1	Size	B
□ 1-1/2" (40A)	222	235	251	251	251	60	175	515	325	665	□270	231
								610			□350	283
								645			□450	367
□ 2" (50A)	254	267	286	286	286	70	196	610	346	785	□270	283
								645			□350	367
								710			□450	472
□ 2-1/2" (65A)	276	292	311	311	311	83	200	635	350	785	□270	283
								670			□350	367
								735			□450	472
□ 3" (80A)	298	317	337	317	337	98	200	640	351	785	□270	283
								675			□350	367
								740			□450	472
□ 4" (100A)	352	368	394	368	394	113	275	910	425	1060	□450	472

- Flange is according to the standard which is described on specification sheet.

Note :

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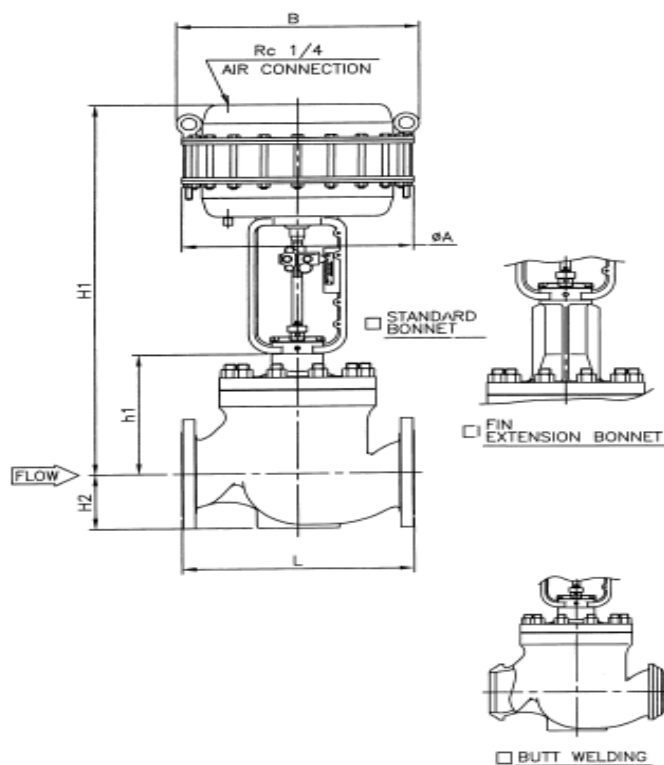
KCV-102C-R-N-01

REV.

A

KOCON

Globe valve / KCV-102C - Direct Action



Dimension

Unit : mm

Body size	Face to face : L					H2	Standard Bonnet		Fin Ext. Bonnet		Actuator	
	ANSI 150# RF JIS 10K RF	ANSI 300# RF JIS 20K RF	ANSI 600# RF JIS 40K RF	ANSI 300# BW	ANSI 600# BW		h1	H1	h1	H1	Size	B
6" (150A)	451	473	508	473	508	144	305	940	455	1090	450	472
8" (200A)	543	568	610	568	610	185	365	1020	515	1170	450	472
10" (250A)	673	708	752	708	752	225	420	1075	570	1225	450	472

- Flange is according to the standard which is described on specification sheet.

Note :

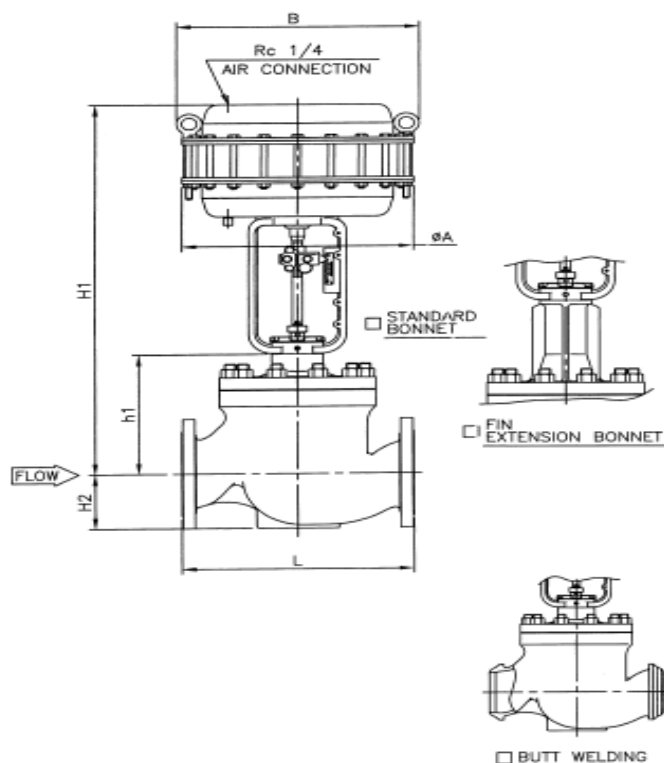
DRAWING No.
KCV-102C-D-N-02

REV.

A

KOCON

Globe valve / KCV-102C - Reverse Action



Dimension

Unit : mm

Body size	Face to face : L					H2	Standard Bonnet		Fin Ext. Bonnet		Actuator	
	ANSI 150# RF JIS 10K RF	ANSI 300# RF JIS 20K RF	ANSI 600# RF JIS 40K RF	ANSI 300# BW	ANSI 600# BW		h1	H1	h1	H1	Size	B
6" (150A)	451	473	508	473	508	144	305	980	455	1130	450	472
8" (200A)	543	568	610	568	610	185	365	1060	515	1210	450	472
10" (250A)	673	708	752	708	752	225	420	1115	570	1265	450	472

- Flange is according to the standard which is described on specification sheet.

Note :

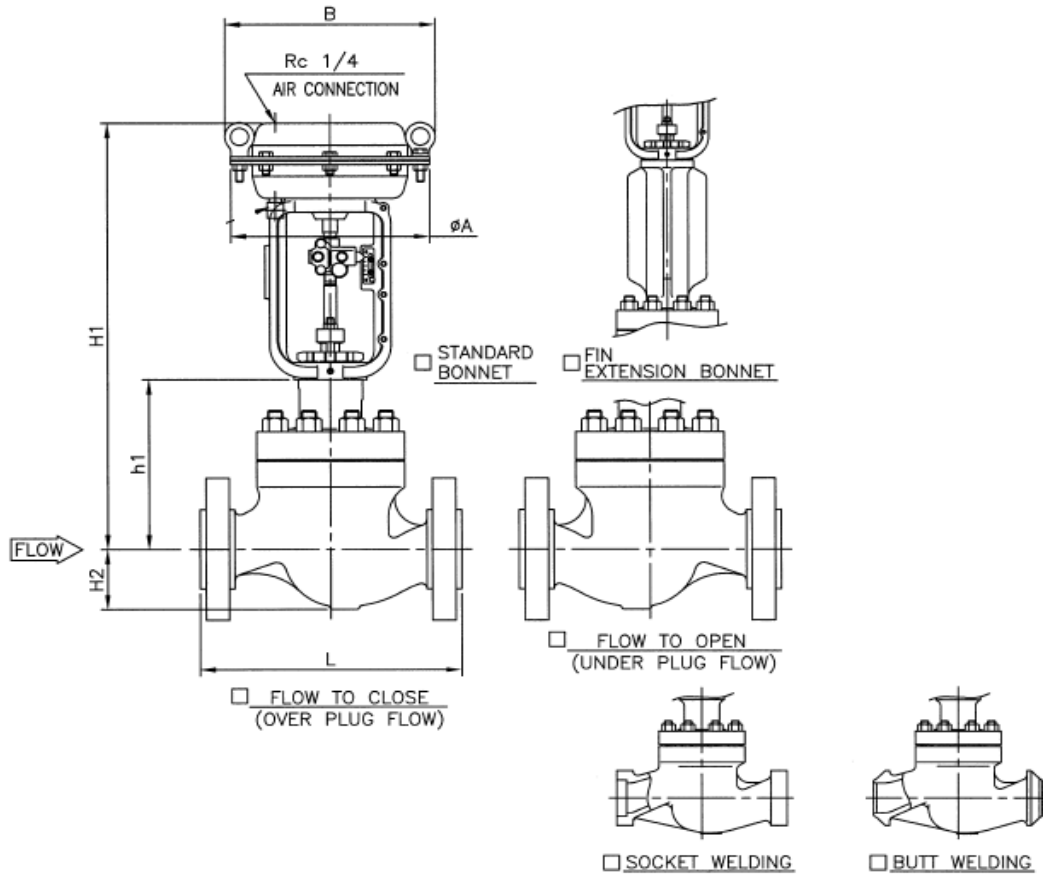
DRAWING No.
KCV-102C-R-N-02

REV.

A

KOCON

Globe valve / KCV-103M - Direct Action



Dimension

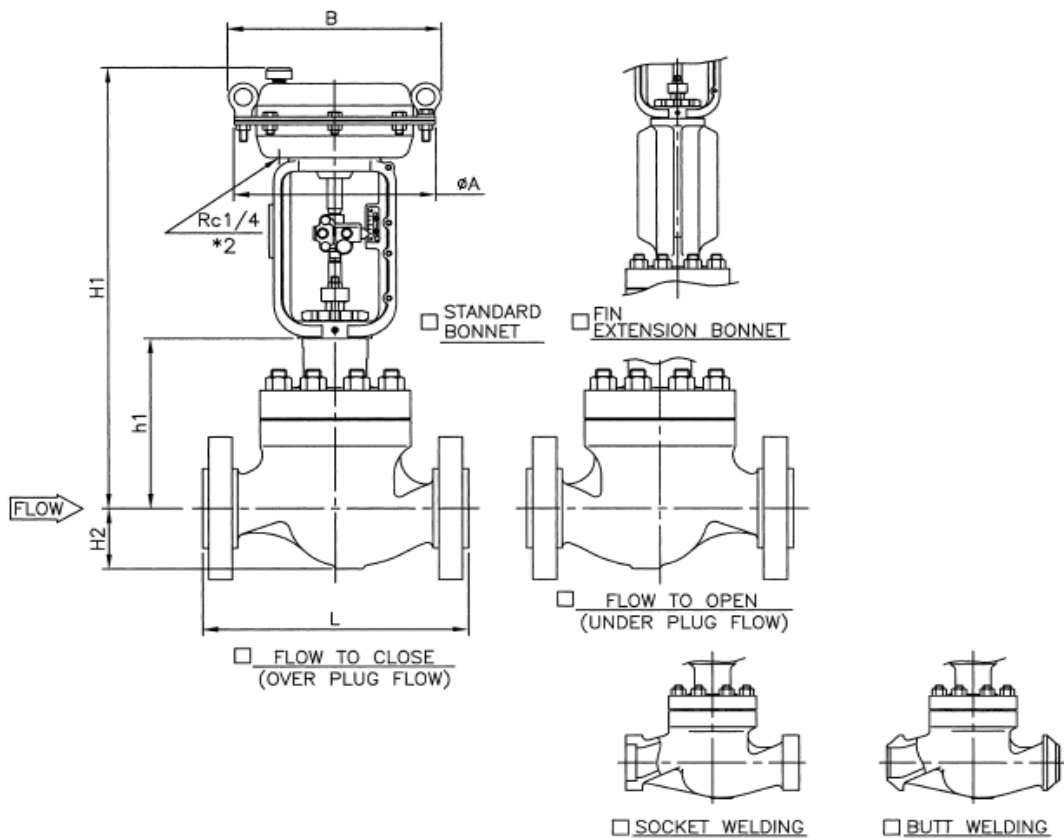
Unit : mm

Body size	Face to face : L					H2	Standard Bonnet		Fin Ext. Bonnet		Actuator	
	ANSI 150# RF JIS 10K RF	ANSI 300# RF JIS 20K RF	ANSI 600# RF JIS 40K RF	ANSI 300# SW ANSI 300# BW	ANSI 600# SW ANSI 600# BW		h1	H1	h1	H1	Size	B
1-1/2" (40A)	222	235	251	251	251	60	175	475	325	625	220	231
								570			270	283
								605			350	367
2" (50A)	254	267	286	286	286	70	196	595	346	745	270	283
								630			350	367
								695			450	472
2-1/2" (65A)	276	292	311	311	311	83	200	595	350	750	270	283
								630			350	367
								695			450	472
3" (80A)	298	317	337	317	337	98	201	600	351	750	270	283
								635			350	367
								700			450	472
4" (100A)	352	368	394	368	394	113	275	910	425	1060	450	472

- Flange is according to the standard which is described on specification sheet.

Note :	DRAWING No.	
	KCV-103M-D-N-01	
	REV.	KOCON
	A	

Globe valve / KCV-102C - Reverse Action



Dimension

Unit : mm

Body size	Face to face : L					H2	□ Standard Bonnet		□ Fin Ext. Bonnet		Actuator	
	□ ANSI 150# RF □ JIS 10K RF	□ ANSI 300# RF □ JIS 20K RF	□ ANSI 600# RF □ JIS 40K RF	□ ANSI 300# SW □ ANSI 300# BW	□ ANSI 600# SW □ ANSI 600# BW		h1	H1	h1	H1	Size	B
□ 1-1/2" (40A)	222	235	251	251	251	60	175	515	325	665	□220	231
								610			□270	283
								645			□350	367
□ 2" (50A)	254	267	286	286	286	70	196	635	346	785	□270	283
								670			□350	367
								735			□450	472
□ 2-1/2" (65A)	276	292	311	311	311	83	200	635	350	785	□270	283
								670			□350	367
								735			□450	472
□ 3" (80A)	298	317	337	317	337	98	201	790	351	785	□270	283
								825			□350	367
								890			□450	472
□ 4" (100A)	352	368	394	368	394	113	275	950	425	1100	□450	472

- Flange is according to the standard which is described on specification sheet.

Note :

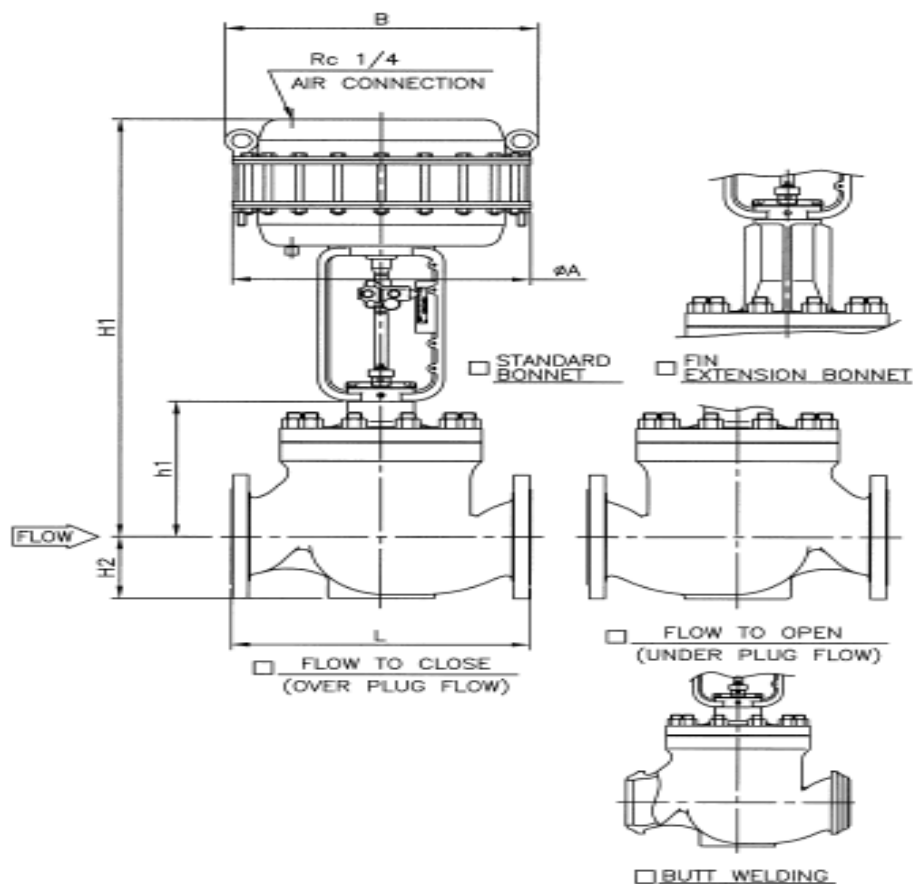
DRAWING No.
KCV-103M-R-N-01

REV.

A

KOCON

Globe valve / KCV-103M - Direct Action



Dimension

Unit : mm

Body size	Face to face : L					H2	Standard Bonnet		Fin Ext. Bonnet		Actuator	
	ANSI 150# RF JIS 10K RF	ANSI 300# RF JIS 20K RF	ANSI 600# RF JIS 40K RF	ANSI 300# BW	ANSI 600# BW		h1	H1	h1	H1	Size	B
6" (150A)	451	473	508	473	508	144	305	940	455	1090	450	472
8" (200A)	543	568	610	568	610	185	365	1020	515	1170	450	472
10" (250A)	673	708	752	708	752	225	420	1075	570	1225	450	472

- Flange is according to the standard which is described on specification sheet.

Note :

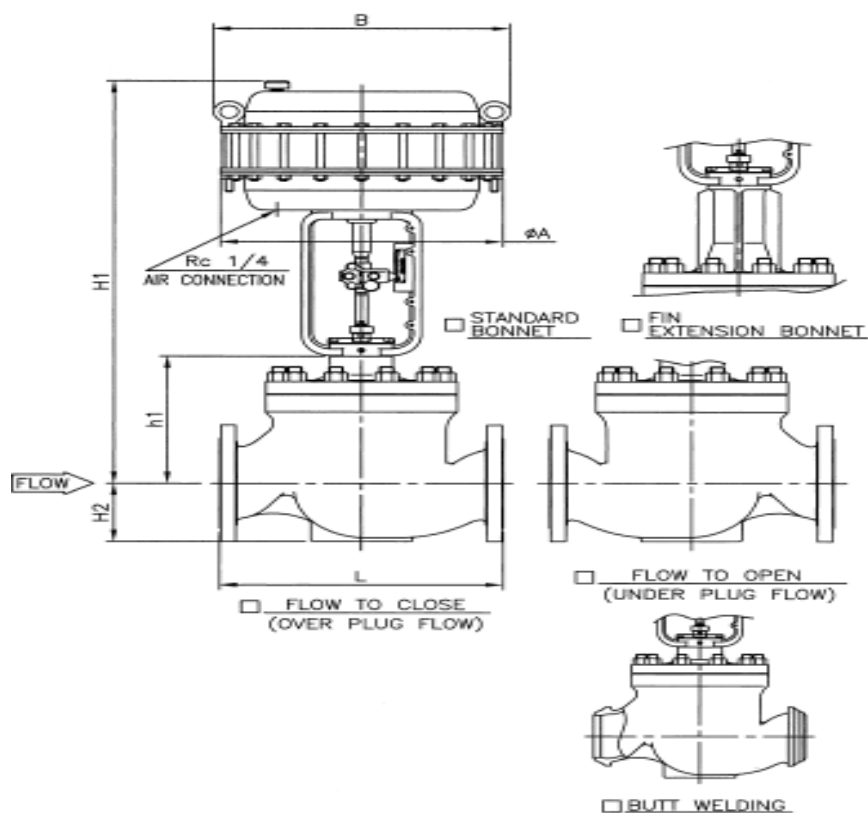
DRAWING No.
KCV-103M-D-N-02

REV.

A

KOCON

Globe valve / KCV-102C - Reverse Action



Dimension

Unit : mm

Body size	Face to face : L					H2	Standard Bonnet		Fin Ext. Bonnet		Actuator	
	ANSI 150# RF JIS 10K RF	ANSI 300# RF JIS 20K RF	ANSI 600# RF JIS 40K RF	ANSI 300# BW	ANSI 600# BW		h1	H1	h1	H1	Size	B
6" (150A)	451	473	508	473	508	144	305	980	455	1130	450	472
8" (200A)	543	568	610	568	610	185	365	1060	515	1210	450	472
10" (250A)	673	708	752	708	752	225	420	1115	570	1265	450	472

- Flange is according to the standard which is described on specification sheet.

Note :

DRAWING No.

KCV-103M-R-N-02

REV.

A

KOCON

KOCON Globe Valve Code Number

Globe Valve Basic Model

KCV-101S	Top Guide Screw Seated type
KCV-101Q	Quick Change trim type
KCV-102C	Cage type
KCV-103M	Multi hole cage type
KCV-104F	3-Way globe type

Basic Mode	-	(1)	(2)	(3)	(4)	(5)	-	(6)	(7)	(8)	(9)	-	(10)	(11)	(12)	(13)
KCV101S		01	1	R	C2	P	-	0	PE	S6	0	-	D	7	R	0

Ex) KCV101S - 011RC2P0 - PES60 - D7R0

(1) Body Size	
91	1/2(15A)
92	3/4(20A)
01	1(25A)
93	1-1/4(32A)
94	1-1/2(40A)
02	2(50A)
03	3(80A)
04	4(100A)
05	5(125A)
06	6(150A)
08	8(200A)
10	10(250A)
12	12(300A)
14	14(350A)
(1) Rating	
1	JIS 10K / ANSI150#
2	JIS20K / ANSI300#
3	JIS40K / ANSI600#
4	JIS63K / ANSI900#
Z	Other
(2) End Connection	
F	FF
R	RF
S	SW
B	BW
J	RTJ
S	Special (Other)
(3) Body Material	
L1	A352-LCB(SCPL1)
C2	A216-WCB(SCPH2)
S3	A351-CF8(SCS13A)
S4	A351-CF8M(SCS14A)
S9	A351-CF3(SCS19A)
S6	A351-CF3M(SCS16A)
Z0	Other (Special)

(5) Bonnet	
P	Plain
F	Fin Extension
E	Extension (Low)
B	Bellows
(6) Port Size	
0	Same as Body size
A	1 size reduce
B	2 size reduce
C	3 size reduce
D	4 size reduce
E	5 size reduce
F	6 size reduce
G	7 size reduce
(7) Trim Form	
PE	EQ%
PL	Linear
ME	Modify EQ%
QQ	Q-Port On-Off
MF	Micro flow
(8) Trim Material	
S4	SUS304
S4L	SUS304L
S6	SSU316
S6L	SUS316L
S4	SS410
T	Titanium
HB	Hastelloy B
HC	Hastelloy C
M	Monel
Z	Special (Other)
(9) Trim Treatment	
0	No Treatment
S	Stellite seat
F	Stellite Face
T	Soft seat
H	Heat Treatment

(10) Actuator Type	
D	Diaphragm
C	Cylinder
M	Motor operated
(11) Size	
2	220
7	270
3	350
4	450
5	560
6	650
Z	Other
(12) Valve Action	
R	Reverse
D	Direct
L	Lock
F	Free
Z	Other
(13) Manual handle	
0	Non
T	Top
S	Side

● APPENDIX

Pressure temperature Rating Table

Temp (°C)	ANSI 150#			ANSI 300#			ANSI 600#		
	A216-WCB	A351-CF8	A351-CF8M	A216-WCB	A351-CF8	A351-CF8M	A216-WCB	A351-CF8	A351-CF8M
-5~38	20	19	19	52	51	51	104	101	101
93	18	16	17	48	42	44	96	84	87
149	16	14	15	46	38	39	92	76	79
204	14	13	14	45	35	36	89	70	72
260	12	12	12	43	33	34	85	65	67
316	10	10	10	40	31	32	80	62	63
343	9	9	9	39	30	31	77	61	62
371	8	8	8	37	30	31	75	59	61
399	7	7	7	36	29	30	71	58	60
427	6	6	6	29	28	30	58	57	59
454	5	5	5	22	28	30	45	56	59
482	4	4	4	16	27	29	32	55	58
510	2	2	2	9	27	27	19	54	54
538	1	1	1	6	25	26	12	50	51
566		1	1		23	26	17	46	51
593		1	1		18	21		36	43
621		1	1		14	17		29	33
649		1	1		12	13		23	26
677		1	1		9	10		19	21
704		1	1		8	8		16	17
732		1	1		7	7		13	13
760		1	1		5	5		11	11
788		1	1		4	4		8	8
816		1	1		3	3		6	6

Allowable temperature range of Body material

Body material Trim Material	JIS ASTM	SCPL1	SCPH2	SCS13A	SCS14A	SCS16A
		A352-LCB	A216-WCB	A351-CF8	A351-CF8M	A351-CF3M
SUS316		-45~300°C	-5~300°C	-196~300°C	-196~300°C	-
SUS316L		-45~300°C	-5~300°C	-196~300°C	-196~300°C	-196~300°C
410SS		-	-5~425°C	-	-	-
SUS316 stellite		-45~350°C	-5~425°C	-196~550°C	-196~550°C	-
SUS316L stellite		-45~350°C	-5~425°C	-196~550°C	-196~450°C	-196~450°C
SUS316+Soft seat		-45~230°C	-5~230°C	-80~230°C	-80~230°C	-
SUS316+Soft seat		-45~230°C	-	-80~230°C	-80~230°C	-80~230°C

Allowable Seat Leakage Class

Applicable Code: ANSI B 104-1976 / ANSI/FCI 70-2-2006

Leakage Class Designation	Allowable max. Leakage	Test fluid	Test pressure
Class I	-	-	Not Specified
Class II	0.5% of rated capacity	Air or water	45-60 Psig or max. operating differential whichever is lower
Class III	0.1% of rated capacity	Air or water	45-60 Psig or max. operating differential whichever is lower
Class IV	0.01% of rated capacity	Air or water	45-60 Psig or max. operating differential whichever is lower
Class V	0.0005 ml per minute of water per inch of port diameter per psi differential	Water	Max service pressure drop across valve plug, not to exceed ANSI body rating.
	4.7 standard ml per minute of air per inch of orifice diameter	Air or N ₂	3.5BarG (50psi)
Class VI	Not to exceed amounts shown in following table based on port diameter.	Air or nitrogen	50 Psig or max rated differential pressure across valve plug whichever is lower.

Allowable Seat Leakage (Class VI)

Port Size (mm)	cc / min	Bubbles pre minute
1	0.15	1
1-1/2	0.30	2
2	0.45	3
1-1/2	0.60	4
3	0.90	6
4	1.70	11
6	4.00	27
8	6.75	45

Allowable Seat Leakage (Class IV)

Port Size(mm)	liter / min)	Port Size(mm)	liter / min)
1/2	0.61	2-1/2	9.22
3/4	1.10	3	12.90
1	1.84	4	22.13
1-1/4	2.70	5	34.42
1-1/2	3.44	6	50.40
2	5.53	8	79.91

- Test fluid: Air (Pressure 4kgf/cm2G)

MEMO :

KOCON

Specifications are subject to change without notice.

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