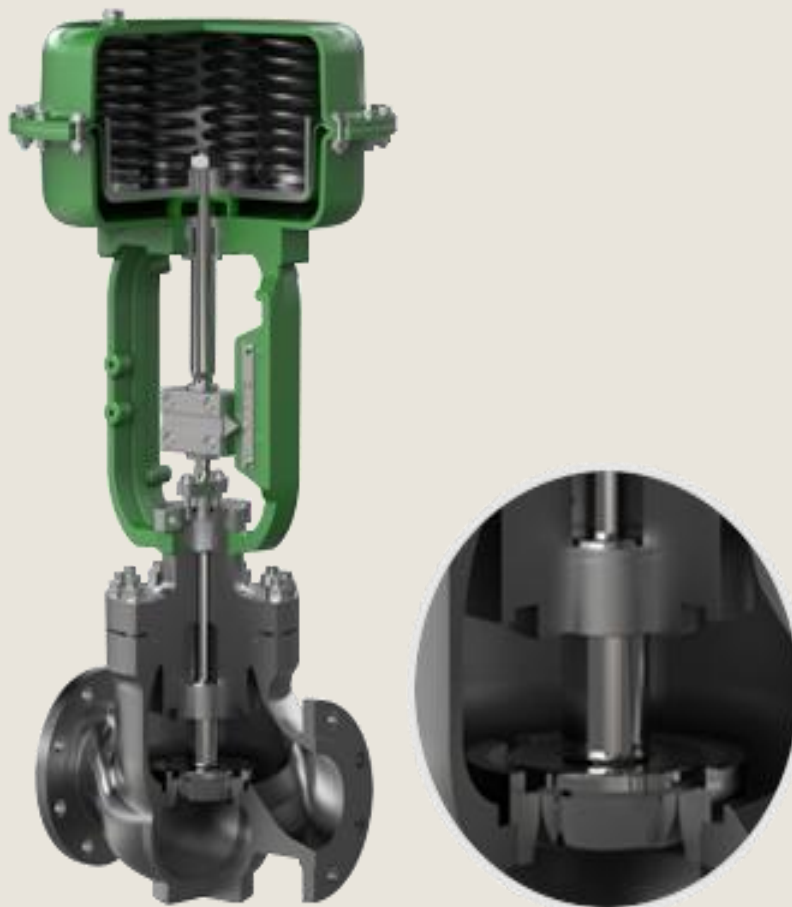


GLOBE VALVE

TOP GUIDE UNBALANCED TYPE CONTROL VALVES

MODEL: KCV-101S (Screw seat type)

KCV-101Q Type (Quick change type)



Top guide unbalanced type Control valve

Model: KCV-101S, KCV-101Q

General

Top-guided Single-seat Control Valve features a compact valve body with excellent flow control and minimal pressure loss.

Model **KCV-101S**, **KCV-101Q** have large Cv values, high range ability, and accurate flow control performance.

When securely held in place by a top-guided stem with a long stroke, the valve plug is highly resistant against vibration and provides flow shutoff performance that fully satisfies IEC standards.

The valve also features a compact but powerful multi-spring actuator.

Model **KCV-101S**, **KCV-101Q** control valves are especially suitable for process control applications where high reliability.

Model **KCV-101S**, **KCV-101Q** is compliant to Functional Safety Standard (IEC61508).



KCV-101S Screw seat Top Guided Trim



KCV-101Q Quick change Trim



Standard specifications

Valve Model			KCV-101S (Screw Seat Type Trim) KCV-101Q (Quick change Type Trim)					
Valve Type			Diaphragm Or Cylinder Actuator Operated Globe control valve.					
BODY	Valve Size		1/2" ~4" (15mm ~ 100mm)					
	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					
	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 (Plug size: Below 1/4", 30 :1)					
	Allowable Leakage Class	Metal Seat	0.01% of Rated CV (ANSI B16.104 CLASS IV) * Option: ANSI N16.104 Class V					
		Soft Seat	ANSI N16.104 Class VI (Bubble Tight)					
	Hysteresis		Max 0.1% F.S. with positioner					
	Linearity		Max ±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 / 410SS	SUS316	
	Seat	SUS316 / 410SS	SUS316	
	Seat Treatment	Stellite Seat, Stellite Face, Heat Treatment, Soft seat (R.TFE)		
	Valve Stem	SUS316 (H.cr plated)		
	Guide Holder	SUS316		
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.

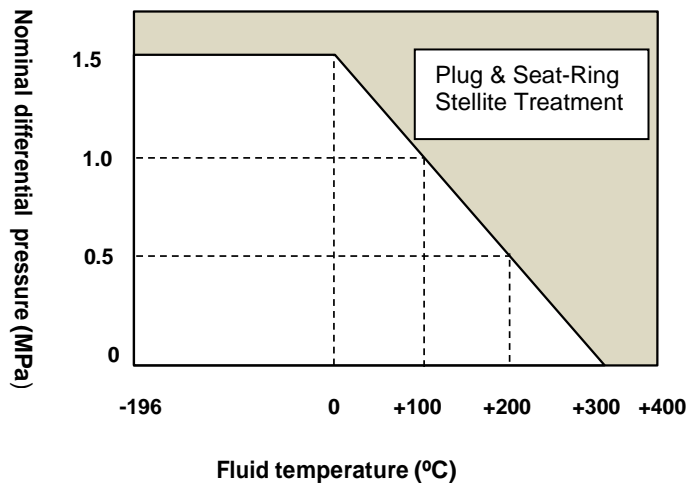


Fig.1 Temperature / nominal differential pressure ranges requiring STELLITE

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.

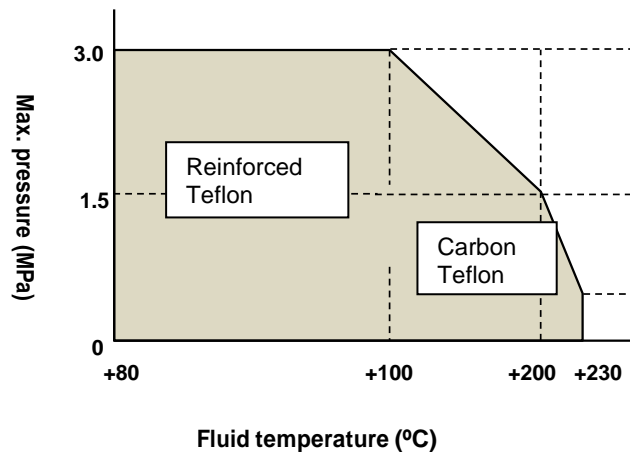


Fig.2 Operating temperature and maximum differential pressure range for soft seats

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

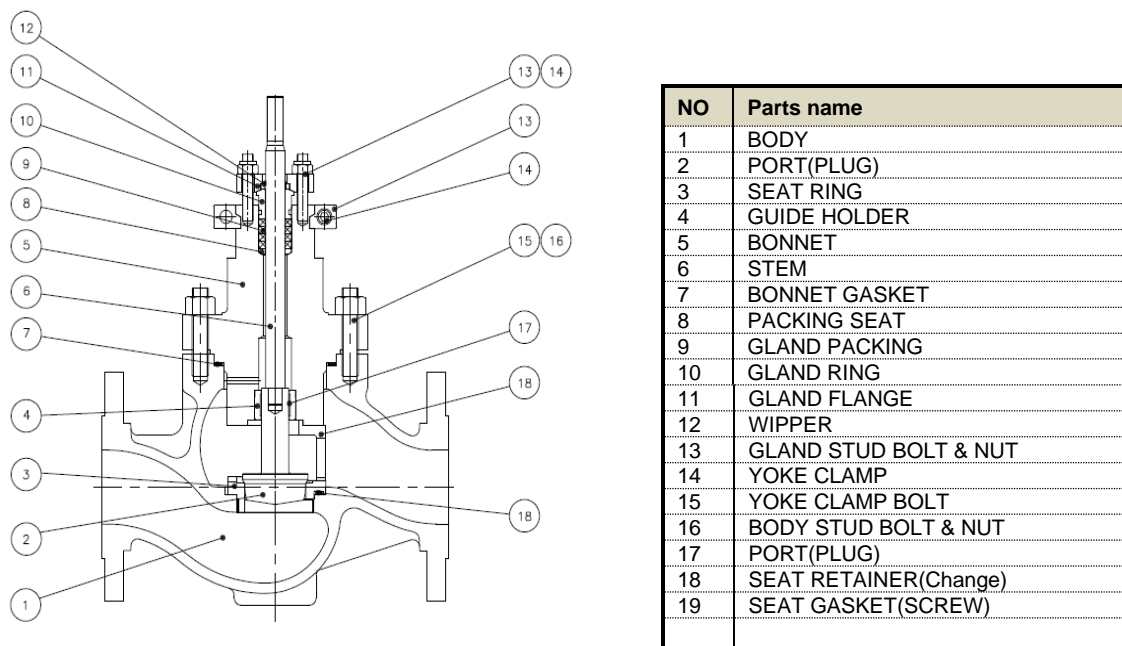


Fig. 3 Screw type structure (**KCV-101S**) / Quick change structure (**KCV-101Q**)

5. Bonnet structure

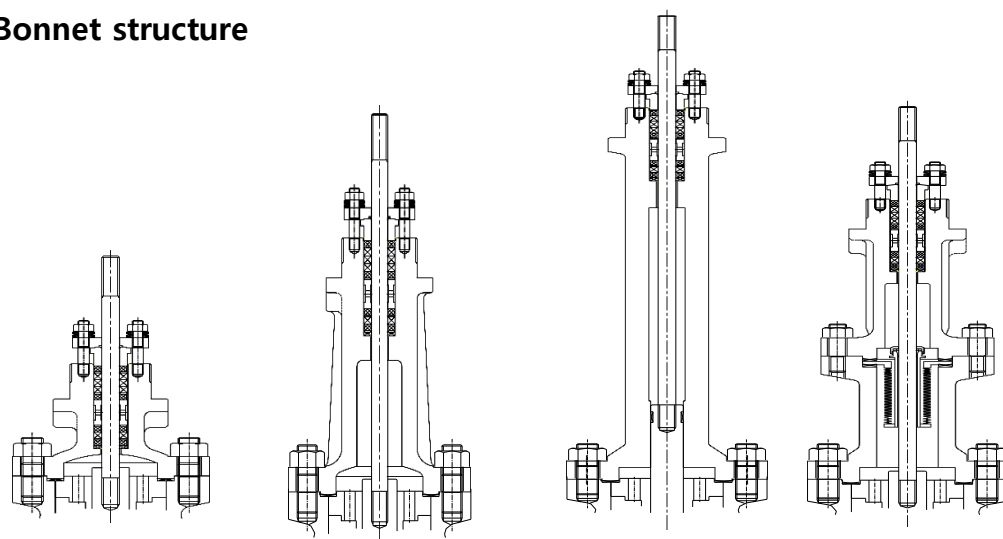


Fig. 4 Plain Bonnet Extension Type Cryogenic Type Bellows Type

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 and reduced plug manufacturing range(KCV-101S, Q)

Body Size Inch (mm)	Plug size Inch(mm)	Cv Value			Stroke: mm	
		EQ% Linear	Large CV EQ% Linear	Q-Port On-Off	Unbalanced (P-Port)	Q-Port
1/2 (15)	1/8 (6)	0.3	-	-	12	-
	3/16 (7)	0.65	-	-	12	-
	1/4 (8)	1	-	-	12	-
	5/16 (9)	1.8	-	-	20	-
	3/8 (10)	3	-	-	20	-
	1/2 (15)	5	-	7	20	20
3/4 (20)	1/8 (6)	0.3	-	-	12	-
	3/16 (7)	0.65	-	-	12	-
	1/4 (8)	1	-	-	12	-
	5/16 (9)	1.8	-	-	20	-
	3/8 (10)	3	-	-	20	-
	1/2 (15)	5	-	7	20	-
	3/4 (20)	9	-	10	20	20
1 (25)	1/8 (6)	0.3	-	-	12	-
	3/16 (7)	0.65	-	-	12	-
	1/4 (8)	1	-	-	12	-
	5/16 (9)	1.8	-	-	20	-
	3/8 (10)	3	-	-	20	-
	1/2 (15)	5	-	-	20	-
	3/4 (20)	9	-	-	20	-
	1 (25)	15	-	15	20	20
1-1/2 (40)	1 (25)	15	-	-	20	-
	1-1/4 (32)	22	-	-	20	-
	1-1/2 (40)	28	35	35	20	20
2 (50)	1-1/4 (32)	22	-	-	20	-
	1-1/2 (40)	28	-	-	20	-
	2 (50)	45	52	55	20	20
2-1/2 (65)	1-1/2 (40)	28	-	-	20	-
	2 (50)	45	-	-	20	-
	2-1/2 (65)	75	85	95	30	30
3 (80)	2 (50)	45	-	-	20	-
	2-1/2 (65)	75	-	-	30	-
	3 (80)	105	130	135	30	30
4 (100)	2-1/2 (65)	75	-	-	30	-
	3 (80)	105	-	-	30	-
	4 (100)	180	210	220	40	40

2. 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.

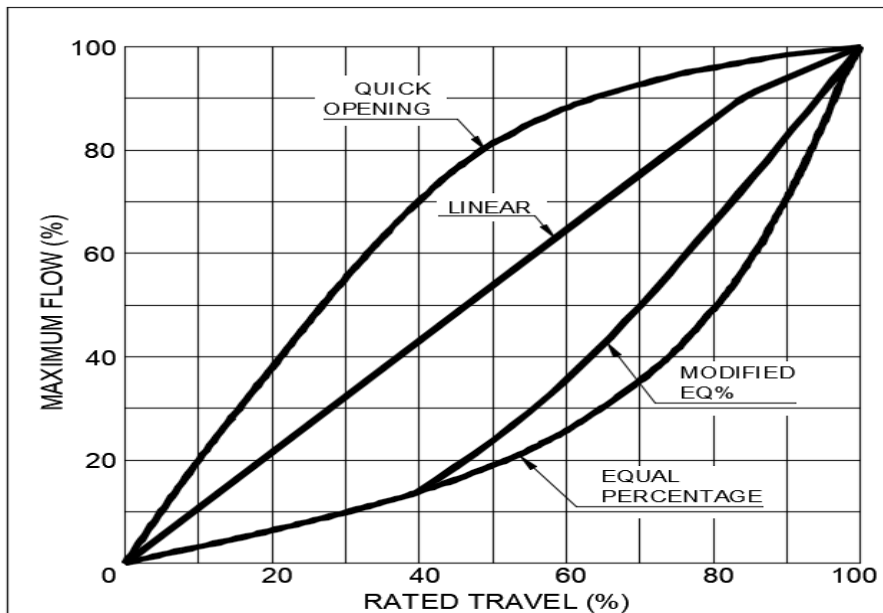


Fig. 5 Characteristic curves graph.

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-101S, 101Q Unbalanced type plug / Gland packing: TFE Carbon fiber

Valve Size (inch)	Actuator	Air Supply Mpa	Spring Range Mpa	Differential pressure (by port size (inch)) Mpa									
				1/8~3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
1/2	KAL220	0.4	0.08~0.36	9.89	4.85	-	-	-	-	-	-	-	-
3/4	KAL220	0.4	0.08~0.36	9.89	4.85	2.43	-	-	-	-	-	-	-
	KAL270	0.4	0.14~0.35	9.89	9.89	7.77	-	-	-	-	-	-	-
1	KAL220	0.4	0.08~0.36	9.89	4.85	2.43	1.37	-	-	-	-	-	-
	KAL270	0.4	0.14~0.35	9.89	9.89	7.77	4.78	-	-	-	-	-	-
1-1/2	KAL220	0.4	0.08~0.36	-	4.85	2.43	1.37	1.0	0.51	-	-	-	-
	KAL270	0.4	0.14~0.35	-	-	7.77	4.78	3.72	2.25	-	-	-	-
	KAL350	0.35	0.12~0.3	-	-	-	9.33	7.35	4.57	-	-	-	-
2	KAL270	0.4	0.14~0.35	-	-	-	4.78	3.72	2.25	1.24	-	-	-
	KAL350	0.35	0.12~0.3	-	-	-	9.33	7.35	4.57	2.65	-	-	-
	KAL450	0.35	0.1~0.3	-	-	-	-	-	-	4.59	-	-	-
2-1/2	KAL270	0.4	0.14~0.35	-	-	-	-	3.72	2.25	1.24	0.72	-	-
	KAL350	0.35	0.12~0.3	-	-	-	-	-	4.57	2.65	1.63	-	-
	KAL450	0.35	0.1~0.3	-	-	-	-	-	-	4.59	2.88	-	-
3	KAL270	0.4	0.14~0.35	-	-	-	-	-	2.25	1.24	0.72	0.44	-
	KAL350	0.35	0.12~0.3	-	-	-	-	-	4.57	2.65	1.63	1.08	-
	KAL450	0.35	0.1~0.3	-	-	-	-	-	-	4.59	2.88	1.96	-
4	KAL350	0.35	0.12~0.3	-	-	-	-	-	-	2.65	1.63	1.08	0.62
	KAL450	0.35	0.1~0.3	-	-	-	-	-	-	4.59	2.88	1.96	1.13

● KCV-101S, 101Q Balance type plug / Gland packing: TFE Carbon fiber

Valve Size (inch)	Actuator	Air Supply Mpa	Spring Range Mpa	Differential pressure (by port size (inch)) Mpa			
				1-1/2	2	2-1/2	3
1-1/2	KAL220	0.4	0.08~0.36	2.91	-	-	-
2	KAL270	0.4	0.14~0.35	9.89	2.48		
	KAL270	0.4	0.14~0.35	9.89	2.48		
2-1/2	KAL270	0.4	0.14~0.35	9.89	2.48	2.56	
	KAL350	0.35	0.12~0.3	9.89	5.33	5.98	
3	KAL270	0.4	0.14~0.35	9.89	2.48	2.56	0.86
	KAL350	0.35	0.12~0.3	9.89	5.33	5.98	2.16
	KAL450	0.35	0.1~0.3	9.89	9.29	9.89	3.96

● **KCV-101S, 101Q** Unbalanced type plug / Gland packing: **Grafoil(Graphite)**

Valve Size (inch)	Actuator	Air Supply Mpa	Spring Range Mpa	Differential pressure (by port size (inch)) Mpa									
				1/8~3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
1/2	KAL220	0.4	0.08~0.36	7.96	3.01	-	-	-	-	-	-	-	-
3/4	KAL220	0.4	0.08~0.36	7.96	3.01	1.4	-	-	-	-	-	-	-
	KAL270	0.4	0.14~0.35	9.89	9.89	6.73	-	-	-	-	-	-	-
1	KAL220	0.4	0.08~0.36	7.96	3.01	1.4	0.7	-	-	-	-	-	-
	KAL270	0.4	0.14~0.35	9.89	9.89	6.73	4.12	-	-	-	-	-	-
1-1/2	KAL220	0.4	0.08~0.36	-	9.89	6.73	4.12	3.19	-	-	-	-	-
	KAL270	0.4	0.14~0.35	-	-	6.73	4.12	3.19	1.91	-	-	-	-
	KAL350	0.35	0.12~0.3	-	-	-	8.67	6.82	4.23	-	-	-	-
2	KAL270	0.4	0.14~0.35	-	-	-	4.12	3.19	1.91	1.03	-	-	-
	KAL350	0.35	0.12~0.3	-	-	-	8.67	6.82	4.23	2.44	-	-	-
	KAL450	0.35	0.1~0.3	-	-	-	-	-	-	4.09	-	-	-
2-1/2	KAL270	0.4	0.14~0.35	-	-	-	-	3.19	1.91	1.03	0.58	-	-
	KAL350	0.35	0.12~0.3	-	-	-	-	-	4.23	2.44	1.49	-	-
	KAL450	0.35	0.1~0.3	-	-	-	-	-	4.09	2.55	4.09	-	-
3	KAL270	0.4	0.14~0.35	-	-	-	-	-	1.91	1.03	0.58	0.35	-
	KAL350	0.35	0.12~0.3	-	-	-	-	-	4.23	2.44	1.49	0.98	-
	KAL450	0.35	0.1~0.3	-	-	-	-	-	-	4.09	2.55	1.72	-
4	KAL350	0.35	0.12~0.3	-	-	-	-	-	-	2.44	1.49	0.98	0.51
	KAL450	0.35	0.1~0.3	-	-	-	-	-	-	4.09	2.55	1.72	0.93

● **KCV-101S, 101Q** Balance type plug / Gland packing: **Grafoil(Graphite)**

Valve Size (inch)	Actuator	Air Supply Mpa	Spring Range Mpa	Differential pressure (by port size (inch)) Mpa			
				1-1/2	2	2-1/2	3
1-1/2	KAL270	0.4	0.14~0.35	7.3	-	-	-
2	KAL270	0.4	0.14~0.35	7.3	1.2		
	KAL350	0.35	0.12~0.3	9.89	4.06		
2-1/2	KAL270	0.4	0.14~0.35	7.3	1.2	0.66	
	KAL350	0.35	0.12~0.3	9.89	4.06	4.08	
3	KAL270	0.4	0.14~0.35	9.89	1.2	0.66	
	KAL350	0.35	0.12~0.3	9.89	4.06	4.08	1.43
	KAL450	0.35	0.1~0.3	9.89	8.01	8.81	3.24

● 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

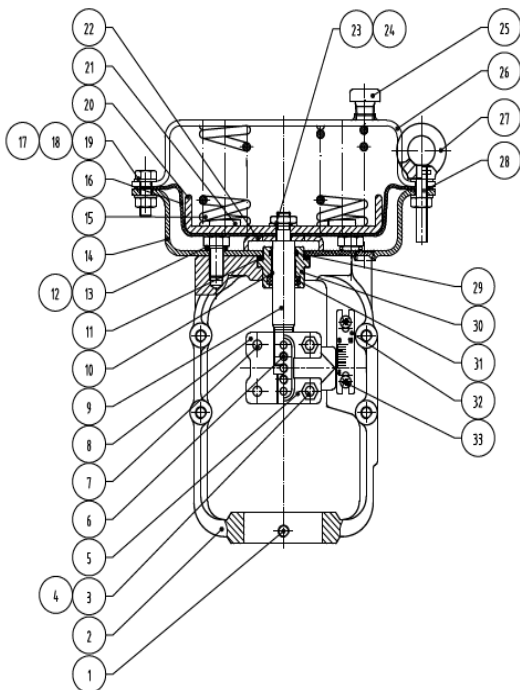


Fig. 6 Direct action (KALD Type)

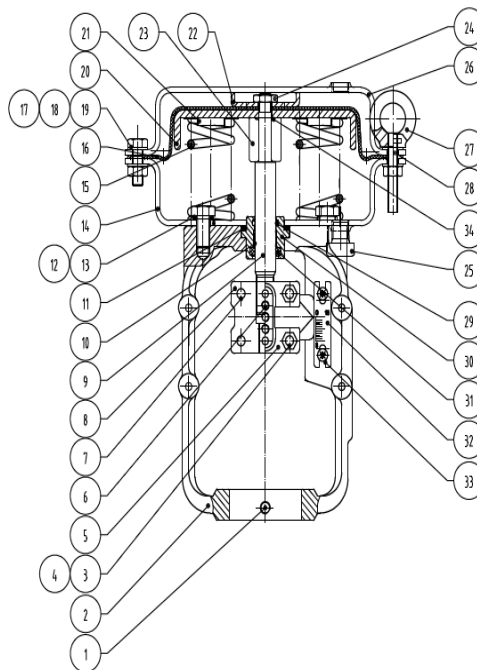


Fig. 7 Reverse Action (KALR)

(Please contact kocon sales for details)

Dimension

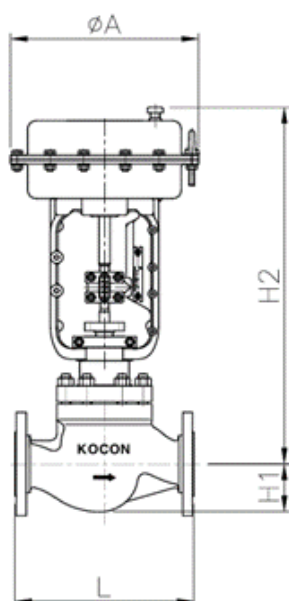


Fig. 8 KAL220~450

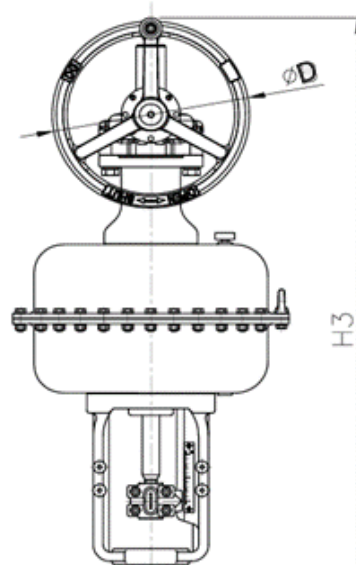
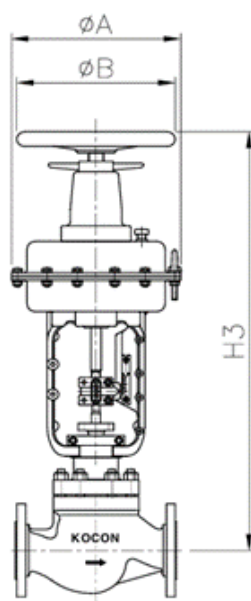


Fig.9 KAL560

● 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]

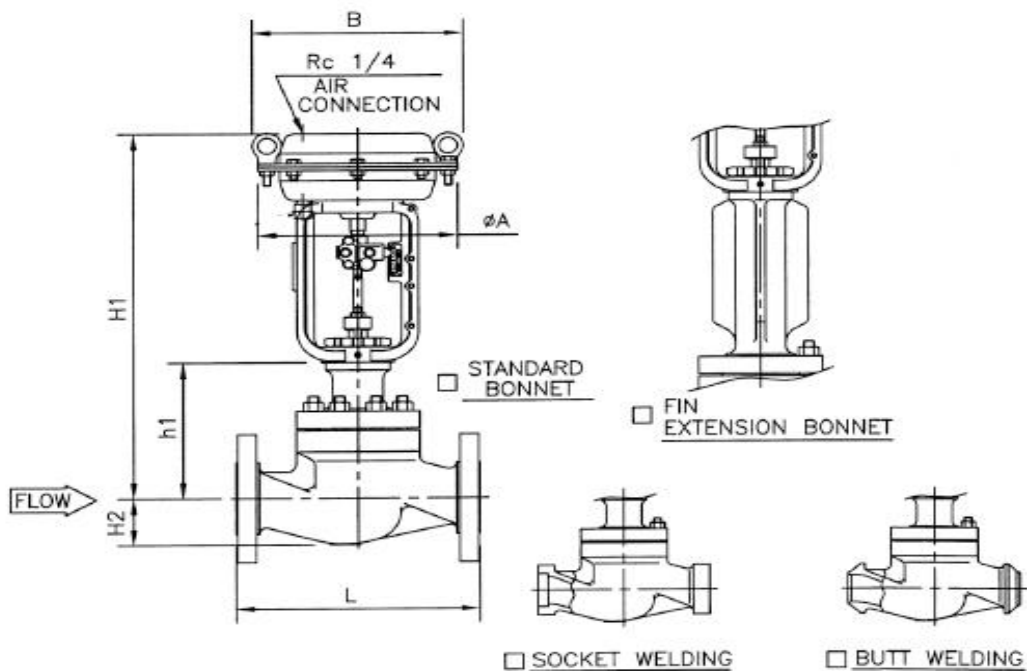
Body Size	Face to Face L			H1	Standard Bonnet	Ext. Bonnet	Actuator				
	JIS10K / ANSI 150	JIS20K / ANSI 300	JIS40K / ANSI 600		H2	H2	SIZE		Manual handle		
							A	B	Standard Bonnet	Ext. Bonnet	D
									H3	H3	
2-1/2" (65A)	276	292	311	90	545	695	270	267	727	877	250
					579	729	350	350	789	939	300
					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-101S, Q - 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
□ 1/2" (15A)	184	194	206	206	206	32	129	430 525	229	530 625	□220 □270	231 283
□ 3/4" (20A)	184	194	206	206	206	32	129	430 525	229	530 625	□220 □270	231 283
□ 1" (50A)	184	197	210	210	210	36	129	430 525 560	229	530 625 660	□220 □270 □350	231 283 367
□ 1-1/2" (40A)	222	235	251	251	251	58	175	475 570 605	325	625 720 755	□220 □270 □350	231 283 367
□ 2" (50A)	254	267	286	286	286	62	175	570 605 670	325	720 755 820	□270 □350 □450	283 367 472
□ 2-1/2" (65A)	276	292	311	311	311	75	200	595 630 695	350	745 780 845	□270 □350 □450	283 367 472
□ 3" (80A)	298	317	337	317	337	85	200	595 630 695	350	745 780 845	□270 □350 □450	283 367 472
□ 4" (100A)	352	368	394	368	394	105	245	675 740	395	825 890	□350 □450	367 472

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

Note :

DRAWING No.

KCV-101SQ-D-N-

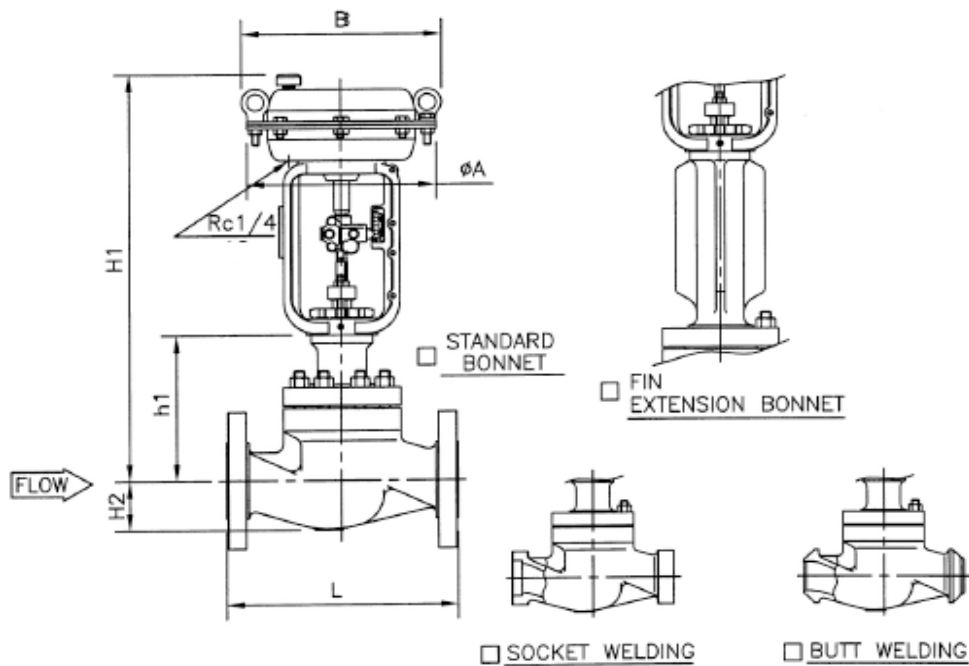
REV.

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KOCON

Globe valve / KCV-101S, Q - 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
1/2" (15A)	184	194	206	206	206	32	129	470 565	229	570 665	220 270	231 283
3/4" (20A)	184	194	206	206	206	32	129	470 565	229	570 665	220 270	231 283
1" (50A)	184	197	210	210	210	36	129	470 565 600	229	570 665 700	220 270 350	231 283 367
1-1/2" (40A)	222	235	251	251	251	58	175	515 610 645	325	665 760 795	220 270 350	231 283 367
2" (50A)	254	267	286	286	286	62	175	610 645 710	325	760 795 860	270 350 450	283 367 472
2-1/2" (65A)	276	292	311	311	311	75	200	635 670 735	350	785 820 885	270 350 450	283 367 472
3" (80A)	298	317	337	317	337	85	200	635 670 735	350	785 820 885	270 350 450	283 367 472
4" (100A)	352	368	394	368	394	105	245	710 780	395	865 930	350 450	367 472

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

Note :

DRAWING No.

KCV-101SQ-R-N-01

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	SCPL1	SCPH2	SCS13A	SCS14A	SCS16A
	ASTM	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

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.
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.

KOCON Co.,Ltd

(113B-4L) Namdongseo-ro 83beon-gil, Namdong-gu,
Inchon, Republic of Korea
Homepage: www.kocon.kr

KOCON Co.,Ltd

본사 / 공장

(113B-4L)70, Namdongseo-ro 83beon-gil, Namdong-gu,
Incheon, Republic of Korea

Tel : +82-32-322-5100 Fax : +82-32-431-5060

E-mail : kocon@kocon.kr

Website : www.kocon.kr

Tel : +82-32-322-5100

E-mail : kocon@kocon.kr

Website : www.kocon.kr