



CONTROL VALVE STANDARD SPECIFICATION

ON-OFF 2,3-WAY GLOBE VALVE

PROVAL



YAD-2A/B Series



YAC-31231 Series



YAC-31281 Series



<http://www.proval.co.kr>

PROVAL PROVAL Co., Ltd.

PNEUMATIC ON-OFF 2, 3-WAY GLOBE VALVE

GENERAL

The **PROVAL** single soft seat control valves are designed for compact and leakage zero (Metal seat : ANSI Class IV std. tight shut off : V). The valve simple construction having low pressure loss, high accuracy flow characteristics.

The flow shut-off performance complies with the JIS standards. Standards combined actuators are Cylinder & Diaphragm actuator is standard application.

FEATURES

- **Light and compact**
 - Easy to handle
 - Ideal for packing of equipment
- **Easy maintenance**
 - Construction is simple, and dismantling and checking are easy.
- **High reliability and safety action**
 - Assurance for emergent safety action due to actuator of spring returns type or double acting type.
- **Most suitable for simple instrumentation control at small and medium plants**
 - Suitable for on-off control of 10K or less



STANDARD SPECIFICATION

Model No.		Cylinder Act.	YAC-31211(Single Seat), YAC-31231(Cage Quick change type), YAC-31281(3-Way Type)									
		Diaphragm Act.	YAD-112Q1 / 11231(R.A), YAD-212Q1 / 21231(D.A)									
Valve Type		Pneumatic diaphragm or cylinder operated on-off globe valve.										
BODY	Valve Size	(mm)	25	32	40	50	65	80	100	125	150	
		(inch)	1	1¼	1½	2	2½	3	4	5	6	
	Pressure Rating		ANSI 150#~4500# / JIS 10K ~ 63K									
	End Connections		Flanged end: FF, RF									
	Body Materials		FC20, A216-WCB, A351-CF8, A351-CF8M									
	Operating Temperature		-15°C ~ +170°C ※ Metal touch: -15°C ~ 230°C									
	Guide		Top guide , Top & Bottom guide Guide									
	Gland Packing		V-PTFE, PTFE yarn, Graphite yarn									
	Gasket		Asbestos (#T1500), SUS316+Graphite spiral wound									
	Painting Color		Standard is silver. In the case of stainless steel, flange is not painted.									
	Plug Characteristics		Quick opening (※ P-Port)									
	Trim Materials		Soft : RTFE, Metal : SUS304(Stellited), SUS316(Stellited)									
PERFORMANCE	Rated Cv Value		See "Cv VALUES" page 4									
	Allowable Differential Press.		See "ALLOWABLE PRESSURE DROP" page 4									
	Allowable Seat Leakage Ratio	Standard (Soft)	Leakage zero (ANSI B16. 104 Class VI)									
Metal		ANSI B16. 104 Class IV ※ Tight shut off: ANSI B16. 104 Class V										
ACTUATOR	Actuator Type		Multi-spring diaphragm actuator				Double Action Cylinder actuator					
	Model		A-220M, A-270MS				C-100 - C-500					
	Actuator Size (Dia. Size)		Ø220		Ø270MS		Ø100 ~ Ø485					
	Max. Stroke (mm)		20		25		20 ~ 60					
	Supply Air Pressure kPa (kgf/cm ² G)		320 (3.2)		350 (3.5)		300 (3.0) ~ 700 (7.0)					
	Spring Range kPa(kgf/cm ² G)		80~40(0.8~2.4)		120~280 (1.2~2.8)		-					
	Materials		Diaphragm : EPDM, Case : Al-Alloy Cylinder: STKM, Cover: SS41, Shaft & Stud-Bolt : SUS304									
	Air Connection		Rc 1/4				Rc 1/4 ~ Rc 1/2					
	Ambient Temperature		-20°C ~ +70°C (※ -50°C ~ -20°C, +70°C ~ +100°C)				-20°C ~ +70°C (※ 0°C ~ +100°C)					
Painting Color		Standard is red. (Request other color)				Standard is silver. (Request other color)						

[Notes] (1) Valve performance is represented under the condition of standard packing (V-PTFE).

(2) ※ : Manufactured and attached as according to customer's order.

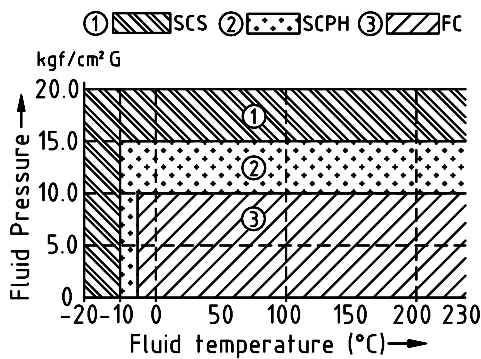
MATERIAL DATA

1. Combining the valve body, bonnet and trim material.

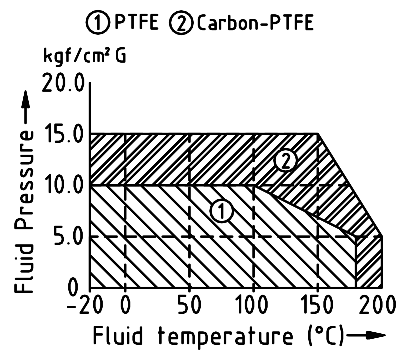
Parts Name			Materials			
Body, Bonnet			Gray iron cast. (FC20)	SCPH2 (ASTM A216-WCB)	SCS13A (ASTM A351-CF8)	SCS14A (ASTM A351-CF8M)
Trim	Plug	Soft	SUS304 / PTFE, RTFE			SUS316 / PTFE
		Metal	SUS304 (Stellite)			SUS 316 (Stellite)
	Seat ring	Metal	SUS304, SUS304 (Stellite), SCS24(H.T)			SUS316 (Stellite)(H.cr)
	Cage		SUS316 (H.cr)			
Packing nut & Ring			BsBM & SUS304	SUS304		
Stud Bolt & Nut			SNB7/S45C(H)		SUS304	

[Notes] (1) This table shows typical combination of materials. The combination may be subject to pressure-temperature and kind of fluid.
 (2) Trim materials may be casting in stead of bar materials in some cases.

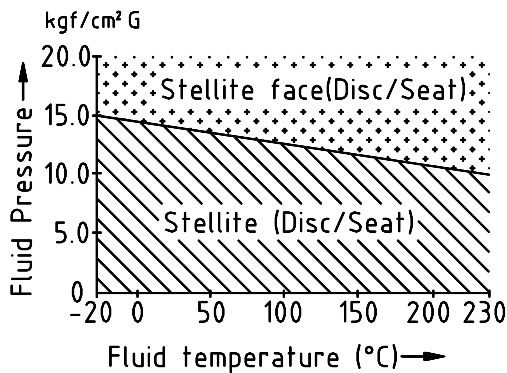
2. Body material & operating pressure-temperature rating.



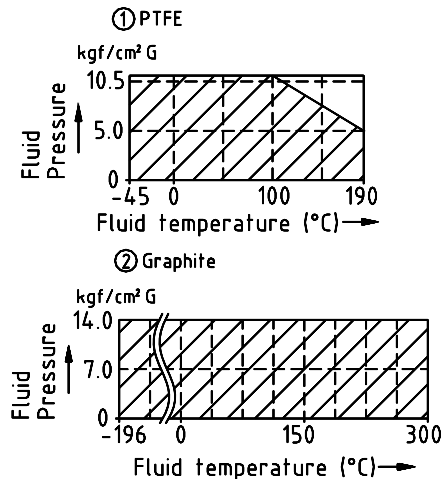
3. Soft seat operating pressure-temperature rating.



4. Metal trim stellite rating.



5. Gland packing operating pressure-temperature rating.



Cv VALUES

[Unit: gal/min]

Port size	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A
	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"
Cv Value	4.7	8	16	19.5	30	46	75	125	187	280	420

MAX. ALLOWABLE PRESSURE DROP

1. Diaphragm Actuator: Single seat. Reverse Action (RA, Air to Open)

Shaded zone represents standard application.

[Unit: Kg/cm²G]

Actuator Model	Air Supply (Kg/cm ² G)	Spring Range (Kg/cm ² G)	Port Size							
			15A (½")	20A (¾")	25A (1")	32A (1¼")	40A (1½")	50A (2")	65A (2½")	80A (3")
A-220M	3.2	0.8 ~ 2.4	26	26	21	13	7	4		
	3.5	1.2 ~ 2.8				19	10	7		
A-270MS	3.5	1.2 ~ 2.8						15	10	7

2. Diaphragm Actuator: Single seat. Direct Action (DA, Air to Close)

Shaded zone represents standard application.

[Unit: Kg/cm²G]

Actuator Model	Air Supply (Kg/cm ² G)	Spring Range (Kg/cm ² G)	Port Size							
			15A (½")	20A (¾")	25A (1")	32A (1¼")	40A (1½")	50A (2")	65A (2½")	80A (3")
A-220M	3.0	0.2 ~ 1.0	34	34	26	17	13	8.5		
A-270MS	3.0	0.2 ~ 1.0							13	10

3. Cage Quick Change 2-way(balance Type)

Shaded zone represents standard application.

[Unit: Kg/cm²G]

Actuator Model	Air Supply (Kg/cm ² G)	Valve Size					
		50A (2")	65A (2 1/2")	80A (3")	100A (4")	125A (5")	150A (6")
C160	3.0 (4.0)	45(60)	15(20)				
C200	3.0 (4.0)	70(85)	30(40)	21(28)			
C250	3.0 (4.0)		40(55)	30(42)	27(36)	22(30)	
C300	3.0 (4.0)			45(65)	35(50)	30(40)	21(30)

4. Single Seat 2, 3-way(Unbalance Type)

Shaded zone represents standard application.

[Unit: Kg/cm²G]

Actuator Model	Air Supply (Kg/cm ² G)	Valve Size								
		25A (1")	32A (1 1/4")	40A (1 1/2")	50A (2")	65A (2 1/2")	80A (3")	100A (4")	125A (5")	150A (6")
C100	3.0 (4.0)	30(40)	20(25)	10(15)						
C150	3.0 (4.0)	70(90)	40(50)	20(30)	15(20)	10(15)				
C160	3.0 (4.0)		50(65)	30(40)	20(25)	12(18)				
C200	3.0 (4.0)			50(65)	30(40)	18(32)	10(15)			
C250	3.0 (4.0)				50(65)	30(40)	22(30)	13(18)		
C300	3.0 (4.0)					45(60)	30(41)	21(27)	12(17)	
C350	3.0 (4.0)						40(55)	25(35)	15(21)	11(14)
C400	3.0 (4.0)							35(45)	21(30)	14(20)
C500	3.0 (4.0)								35(45)	24(32)

WEIGHT

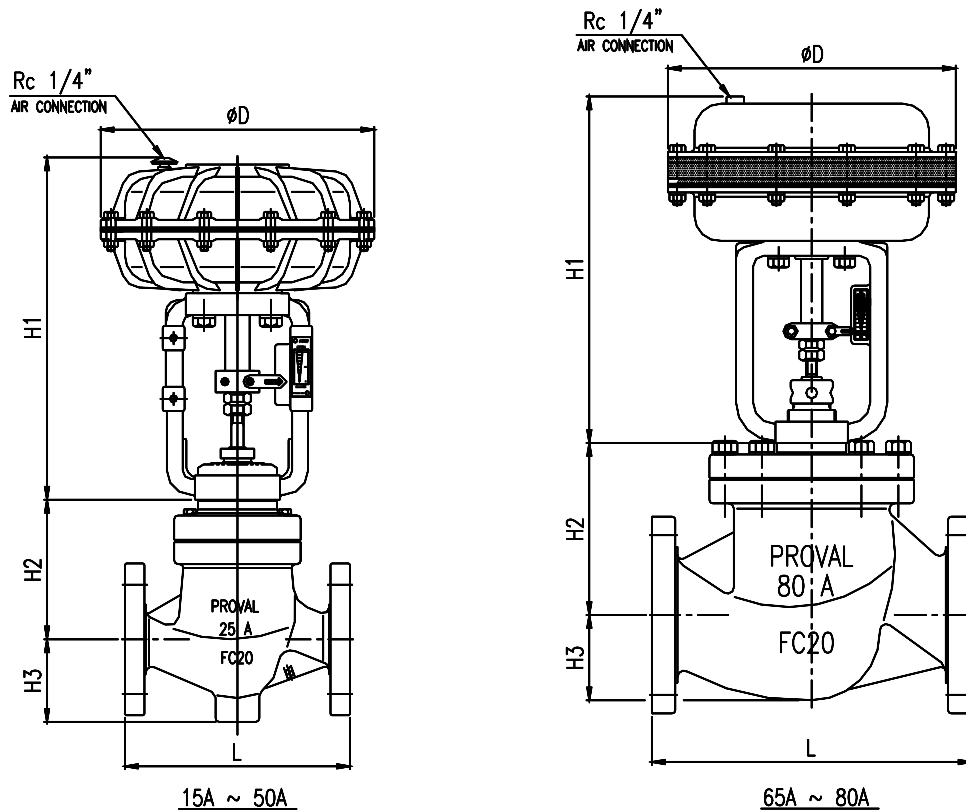
※ Only standard types are represented. Weight of accessories, a hand wheel and the like are not included.

[Unit: kg]

Size	15A (1/2")	20A (3/4")	25A (1")	32A (1 1/4")	40A (1 1/2")	50A (2")	65A (2 1/2")	80A (3")	100A (4")	125A (5")	150A (6")
Actuator Model / Rating	JIS10K, ANSI 150#	JIS10K, ANSI 150#	JIS10K, ANSI 150# JIS 40K(CYL. ACT.)	JIS10K, ANSI 150# JIS 40K(CYL. ACT.)	JIS10K, ANSI 150# JIS 40K(CYL. ACT.)	JIS10K, ANSI 150# JIS 40K(CYL. ACT.)	JIS10K, ANSI 150#	JIS10K, ANSI 150#	JIS10K, ANSI 150#	JIS10K, ANSI 150#	JIS10K, ANSI 150#
A-220M	28	29	30	31.5	32	34					
A-270MS						48	78	85			
C100			40	45	50						
C150			45	51	55	66	80				
C160				54	60	70	86				
C200					68	79	93	110			
C250						85	100	123	138		
C300							120	140	155	170	
C350								153	163	180	190
C400									170	190	200
C500										210	230

DIMENSION DRAWING

ACTUATOR : A-220M, A-270MS



DIMENSIONS

[Unit: mm]

Valve Size		Face to Face : L JIS 10K, ANSI 150# JPI 150#, DN 6~10Bar	H3	H2	Actuator size (ØD)	H1
mm	inch					
15	½	185	68	115	225	280
20	¾	185	68	115	225	280
25	1	185	68	115	225	280
32	1¼	223	85	131	225	280
40	1½	223	85	131	225	280
50	2	256	90	127	225	280
65	2½	283	80	159	270	335
80	3	300	80	159	270	335

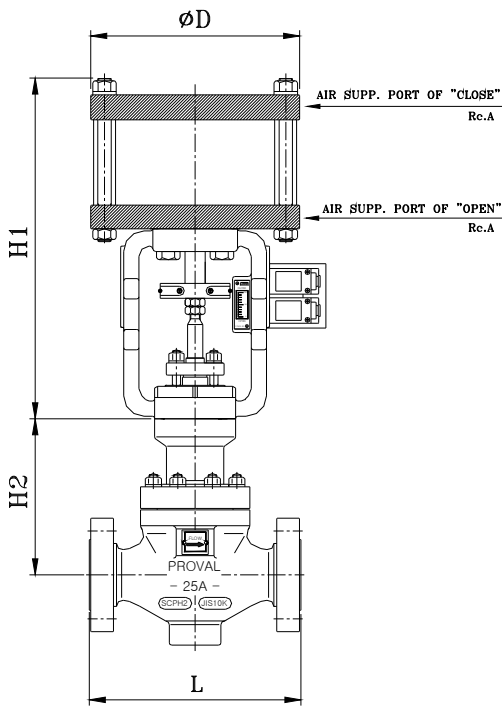
MODEL	YAD-112Q1 / 11231(R.A), YAD-212Q1 / 21231(D.A)	SIZE	15A - 80A
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WEIGHT : 2-WAY GLOBE

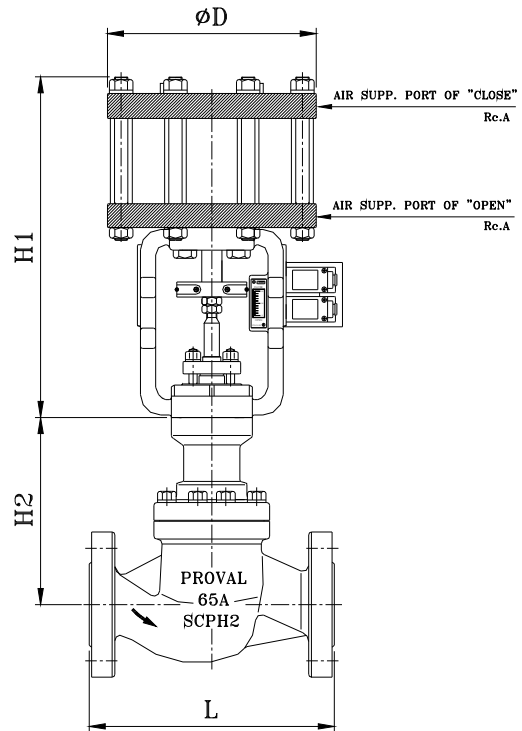
DIMENSION DRAWING

SINGLE SEAT 2-WAY (UNBLANCE TYPE)

MODEL NO. : YAC-31211(10K)



SIZE : 25A~50A



SIZE : 65A~150A

DIMENSIONS

[Unit: mm]

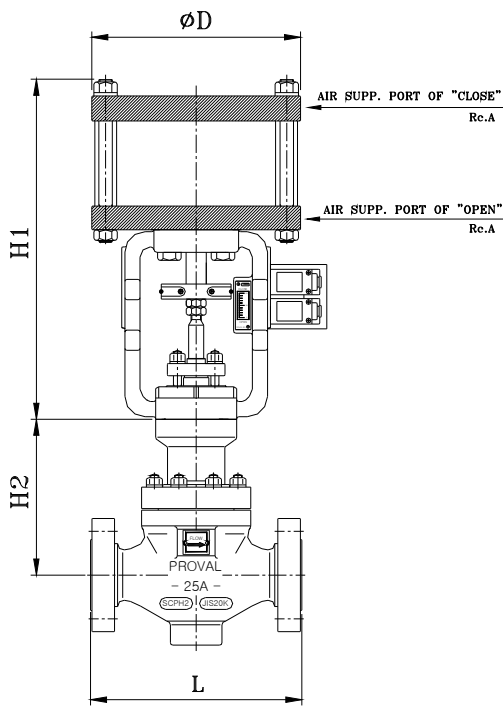
Valve Size		Face to Face : L JIS 10K	Actuator model	Actuator size (ØD)	H1	H2	Rc. A	Remark
mm	inch							
25	1"	185	C-100	150	320	145	1/4"	
32	1¼"	223	C-100	150	320	150	1/4"	
40	1½"	223	C-150	215	380	150	1/4"	
50	2"	256	C-150	215	380	160	1/4"	
65	2½"	283	C-160	225	390	180	1/4"	
80	3"	300	C-200	280	410	210	1/4"	
100	4"	358	C-250	340	470	220	1/4"	
125	5"	400	C-300	390	480	280	3/8"	
150	6"	462	C-350	430	510	300	3/8"	

MODEL	YAC-31211(10K)	SIZE	25A ~ 150A
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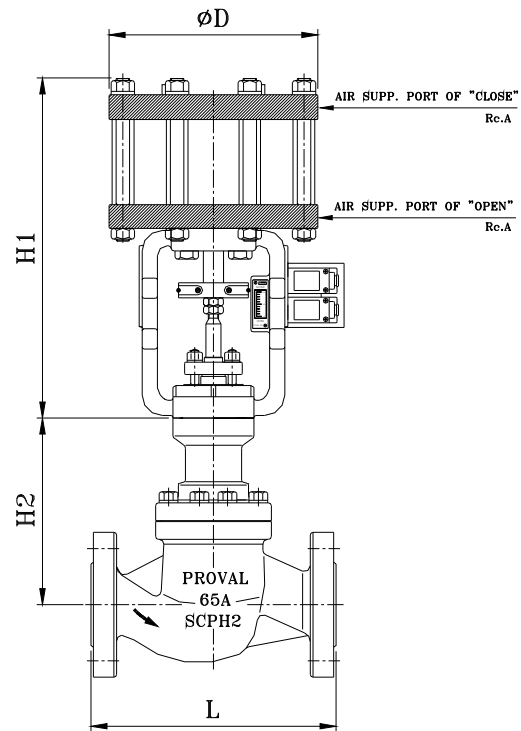
DIMENSION DRAWING

SINGLE SEAT 2-WAY (UNBLANCE TYPE)

MODEL NO. : YAC-31211(20K)



SIZE : 25A~50A



SIZE : 65A~150A

DIMENSIONS

[Unit: mm]

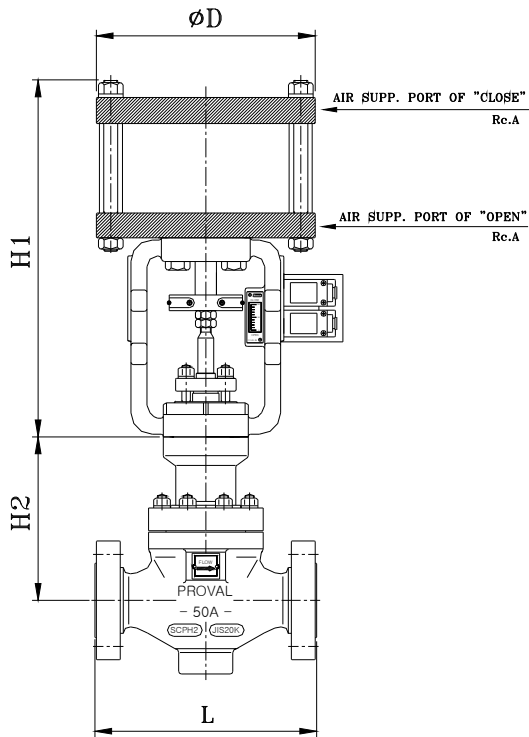
Valve Size		Face to Face : L JIS 20K	Actuator model	Actuator size (ϕD)	H1	H2	Rc. A	Remark
mm	inch							
25	1"	185	C-100	150	320	145	1/4"	
32	1 1/4"	223	C-150	150	380	150	1/4"	
40	1 1/2"	223	C-160	225	390	150	1/4"	
50	2"	256	C-160	225	390	160	1/4"	
65	2 1/2"	283	C-200	225	410	180	1/4"	
80	3"	300	C-250	280	470	210	1/4"	
100	4"	358	C-300	340	480	220	1/4"	
125	5"	400	C-400	510	600	280	3/8"	
150	6"	462	C-500	640	680	300	3/8"	

MODEL	YAC-31211(10K)	SIZE	25A ~ 150A
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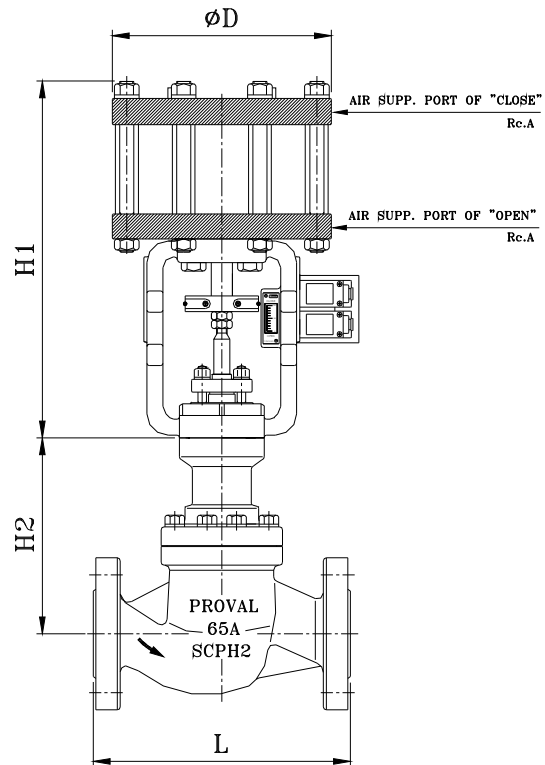
DIMENSION DRAWING

CAGE QUICK CHANGE 2-WAY (BALANCE TYPE)

MODEL NO. : YAC-31231(20K)



SIZE : 50A



SIZE : 65A~150A

DIMENSIONS

[Unit: mm]

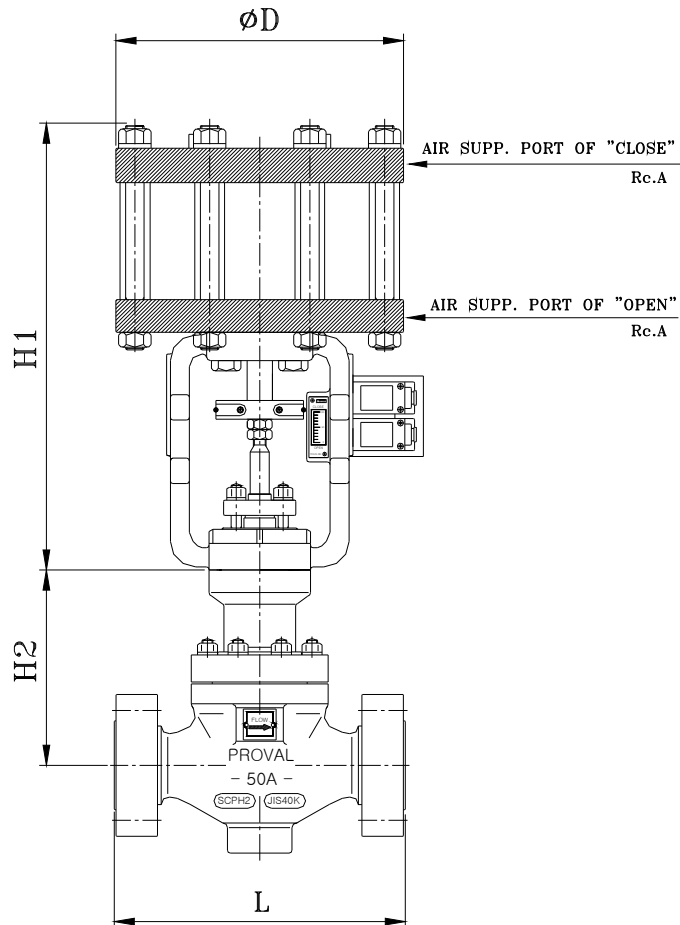
Valve Size		Face to Face : L		Actuator model	Actuator size (øD)	H1	H2	Rc. A	Remark
mm	inch	JIS 20K							
50	2"	256		C-160	225	390	160	1/4"	
65	2½"	283		C-200	280	410	180	1/4"	
80	3"	300		C-200	280	410	210	1/4"	
100	4"	358		C-250	340	470	220	1/4"	
125	5"	400		C-250	340	470	280	3/8"	
150	6"	462		C-300	390	480	300	3/8"	

MODEL	YAC-31231(20K)	SIZE	50A ~ 150A
PROVAL Co., Ltd.			

DIMENSION DRAWING

CAGE GUIDE QUICK CHANGE

MODEL NO. : YAC-31231(40K)



DIMENSIONS

[Unit: mm]

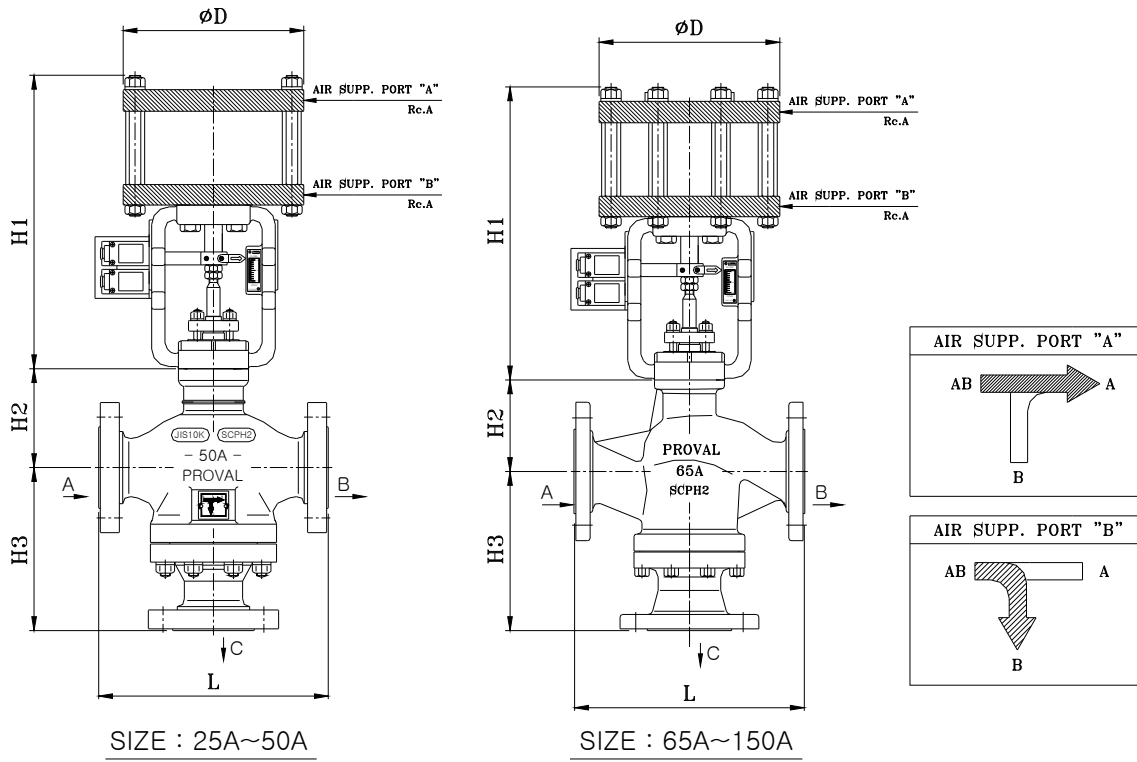
Valve Size		Face to Face : L		Actuator model	Actuator size (ØD)	H1	H2	Rc. A	Remark
mm	inch	JIS 40K							
25	1"	197		C-150	215	320	195	1/4"	
32	1¼"	240		C-150	215	320	200	1/4"	
40	1½"	240		C-200	280	410	200	1/4"	
50	2"	274		C-250	280	410	200	1/4"	

MODEL	YAC-31231(40K)	SIZE	25A - 50A
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DIMENSION DRAWING

3-WAY

MODEL NO. : YAC-31281(10K)



DIMENSIONS

[Unit: mm]

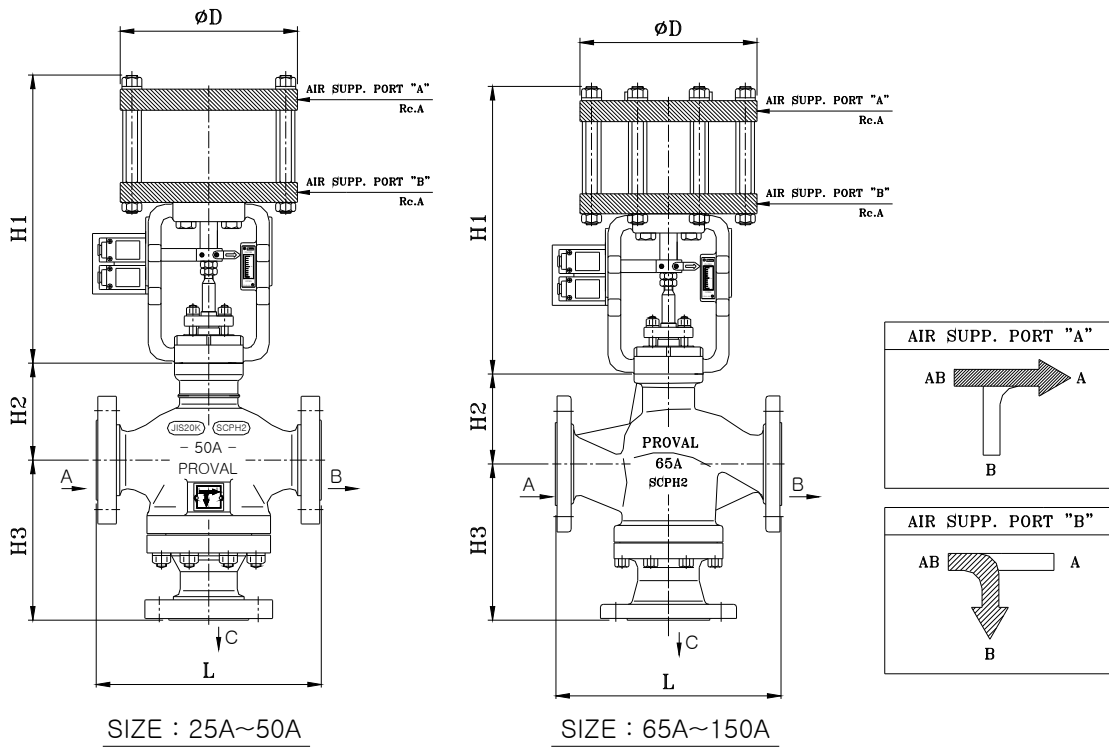
Valve Size		Face to Face : L JIS 10K	Actuator model	Actuator size (ØD)	H1	H2	H3	Rc. A
mm	inch							
25	1"	185	C-100	150	320	125	135	1/4"
32	1 1/4"	223	C-100	150	320	130	163	1/4"
40	1 1/2"	223	C-150	215	380	130	163	1/4"
50	2"	256	C-150	215	380	135	178	1/4"
65	2 1/2"	283	C-160	225	390	140	197	1/4"
80	3"	300	C-200	280	410	155	247	1/4"
100	4"	358	C-250	340	470	165	280	1/4"
125	5"	400	C-300	390	480	180	300	3/8"
150	6"	462	C-350	430	510	230	370	3/8"

MODEL	YAC-31281(10K)	SIZE	25A ~ 150A
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DIMENSION DRAWING

3-WAY

MODEL NO. : YAC-31281(20K)



DIMENSIONS

[Unit: mm]

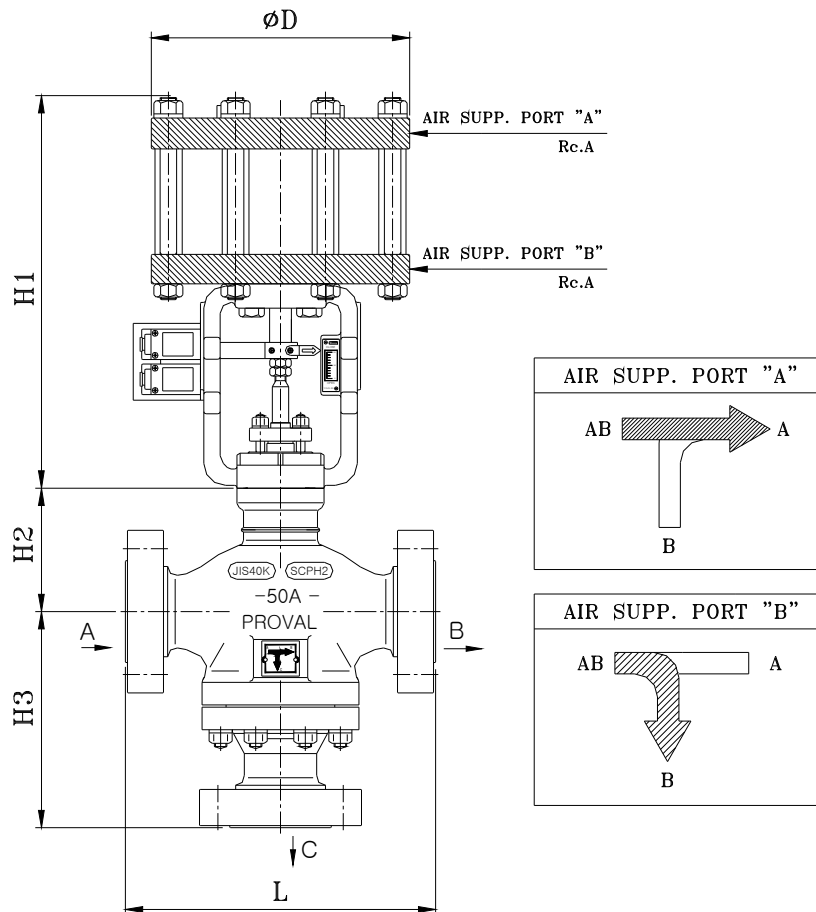
Valve Size		Face to Face : L JIS 20K	Actuator model	Actuator size (øD)	H1	H2	H3	Rc. A
mm	inch							
25	1"	185	C-100	150	320	125	135	1/4"
32	1¼"	223	C-150	150	380	130	163	1/4"
40	1½"	223	C-160	215	390	130	163	1/4"
50	2"	256	C-160	215	390	135	178	1/4"
65	2½"	283	C-200	225	410	140	197	1/4"
80	3"	300	C-250	280	470	155	247	1/4"
100	4"	358	C-300	340	480	165	280	1/4"
125	5"	400	C-400	510	600	180	300	3/8"
150	6"	462	C-500	640	680	230	370	3/8"

MODEL	YAC-31281(20K)	SIZE	25A - 150A
PROVAL Co., Ltd.			

DIMENSION DRAWING

3-WAY

MODEL NO. : YAC-31281(40K)



DIMENSIONS

[Unit: mm]

Valve Size		Face to Face : L JIS 40K	Actuator model	Actuator size (ϕD)	H1	H2	H3	Rc. A
mm	inch							
25	1"	197	C-150	215	320	135	165	1/4"
32	1 1/4"	240	C-150	215	320	145	180	1/4"
40	1 1/2"	240	C-200	280	410	145	180	1/4"
50	2"	274	C-250	280	410	150	195	1/4"

MODEL	YAC-31281(40K)	SIZE	25A - 50A
PROVAL Co., Ltd.			