

Rotary Actuator Vane Style

Series *CRB2*

Size: 10, 15, 20, 30, 40

How to Order

Without auto switch
CRB2 **B** **W** **180** **S** **E**

**With auto switch
Size: 10, 15**
CDRB2 **F** **W** **180** **S** **90** **L**

**With auto switch
Size: 20, 30, 40**
CDRB2 **B** **W** **180** **S** **R73** **L**

Mounting style

B	Basic style
F	Flange style

* F: Except size 40

Shaft type

W	Double shaft with single flat (Size 10 to 30) Long shaft key, Short shaft with single flat (Size 40)
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Rotating angle

Vane type	Symbol	Rotating angle
Single vane	90	90°
	180	180°
	270	270°
Double vane	90	90°
	100	100°

Connecting port location

Nil	Side ported
E	Axial ported

Number of auto switches

S	1 pc. *
Nil	2 pcs.

* Right-hand auto switch will be used for actuators with 1 auto switch.

Electrical entry/Lead wire length

Nil	Grommet/Lead wire 0.5 m
L	Grommet/Lead wire: 3 m
C	Grommet/lead wire 0.5 m
CL	Grommet/Lead wire: 3 m
CN	Grommet/Without lead wire

* Connectors are available only for auto switch types D-R73, D-R80, D-T79.
** Lead wire with connector part nos.
D-LC05: Lead wire 0.5 m
D-LC30: Lead wire 3 m
D-LC50: Lead wire 5 m

Auto switch

Nil	Without auto switch
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* For the applicable auto switch model, refer to the table below.

Applicable Auto Switch/Refer to page 11-1-1 for further information on auto switches.

Applicable size	Type	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model	Lead wire type	Lead wire length (m) *				Applicable load
					DC	AC			0.5 (Nil)	3 (L)	5 (Z)	None (N)	
For 10 and 15	Reed switch	Grommet	No	2-wire	24 V	5 V, 12 V, 24 V	90	Parallel cord	●	●	●	—	IC circuit
						5 V, 12 V, 100 V	90A	Heavy-duty cord	●	●	●	—	
						—	97	Parallel cord	●	●	●	—	
						100 V	93A	Heavy-duty cord	●	●	●	—	
						12 V	T99	Heavy-duty cord	●	●	—	—	
						—	T99V	Heavy-duty cord	●	●	—	—	
	Solid state switch	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	S99	Heavy-duty cord	●	●	—	—	IC circuit
						—	S99V	Heavy-duty cord	●	●	—	—	
						—	S9P	Heavy-duty cord	●	●	—	—	
						—	S9PV	Heavy-duty cord	●	●	—	—	
						—	R73	Heavy-duty cord	●	●	—	—	
						—	R73C	Heavy-duty cord	●	●	●	●	
For 20, 30 and 40	Reed switch	Grommet	Yes	2-wire	24 V	—	R80	Heavy-duty cord	●	●	—	—	IC circuit
		Connector				48 V, 100 V	R80C	Heavy-duty cord	●	●	●	●	
		Grommet				12 V	T79	Heavy-duty cord	●	●	—	—	
		Connector				—	T79C	Heavy-duty cord	●	●	●	●	
		Grommet				—	S79	Heavy-duty cord	●	●	—	—	
	Solid state switch	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	S79	Heavy-duty cord	●	●	—	—	IC circuit
						—	S7P	Heavy-duty cord	●	●	—	—	
						—	—	Heavy-duty cord	●	●	—	—	
						—	—	Heavy-duty cord	●	●	—	—	
						—	—	Heavy-duty cord	●	●	—	—	

* Lead wire length symbols: 0.5 m ... Nil (Example) R73C
3 m ... L (Example) R73CL
5 m ... Z (Example) R73CZ
None ... N (Example) R73CN

Flange Assembly Part No.



(For details, refer to page 11-2-10.)

Model	Assembly part no.
CRB2FW10	P211070-2
CRB2FW15	P211090-2
CRB2FW20	P211060-2
CRB2FW30	P211080-2

Single Vane Specifications



Model (Size)		CRB2BW10-□S		CRB2BW15-□S		CRB2BW20-□S		CRB2BW30-□S		CRB2BW40-□S		
Vane type		Single vane										
Rotating angle		90°,180°		270°		90°,180°		270°		90°,180°, 270°		
Fluid		Air (Non-lube)										
Proof pressure (MPa)		1.05						1.5				
Ambient and fluid temperature		5 to 60°C										
Max. operating pressure (MPa)		0.7						1.0				
Min. operating pressure (sec/90°)		0.2		0.15								
Speed adjustable range (sec/90°) ⁽¹⁾		0.03 to 0.3						0.04 to 0.3		0.07 to 0.5		
Allowable kinetic energy (J) ⁽²⁾		0.00015		0.001		0.003		0.02		0.04		
				0.00025		0.0004		0.015		0.03		
Shaft load (N)	Allowable radial load	15		15		25		30		60		
	Allowable thrust load	10		10		20		25		40		
Bearing type		Bearing										
Port location		Side ported or Axial ported										
Size	Side ported	M5 x 0.8		M3 x 0.5		M5 x 0.8		M3 x 0.5		M5 x 0.8		
	Axial ported	M3 x 0.5						M5 x 0.8				
Shaft type		Double shaft (Double shaft with single flat on both shafts)									Double shaft (Long shaft key & single flat)	
Angle adjustable range ⁽³⁾		0 to 230°		0 to 240°								0 to 230°
Mounting		Basic style, Flange style									Basic	
Auto switch		Mountable (Side ported only)										

Note 3) Adjustment range in the table is for 270°. For 90° and 180°, refer to page 11-2-9.

Double Vane Specifications

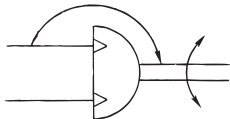
Model (Size)	CRB2BW10-□D	CRB2BW15-□D	CRB2BW20-□D	CRB2BW30-□D	CRB2BW40-□D
Vane type	Double vane				
Rotating angle	90°, 100°				
Fluid	Air (Non-lube)				
Proof pressure (MPa)	1.05			1.5	
Ambient and fluid temperature	5 to 60°C				
Max. operating pressure (MPa)	0.7			1.0	
Min. operating pressure (MPa)	0.2	0.15			
Speed adjustable range (sec/90°) ⁽¹⁾	0.03 to 0.3			0.04 to 0.3	0.07 to 0.5
Allowable kinetic energy (J) ⁽²⁾	0.0003	0.0012	0.0033	0.02	0.04
Shaft load (N)	Allowable radial load	15	15	25	30
	Allowable thrust load	10	10	20	25
Bearing type	Bearing				
Port location	Side ported or Axial ported				
Port size (Side ported, Axial ported)	M3 x 0.5		M5 x 0.8		
Shaft type	Double shaft (Double shaft with single flat on both shafts)				
Angle adjustable range ⁽³⁾	0 to 90°				
Mounting	Basic style, Flange style				
Auto switch	Mountable (Side ported only)				

Note 1) Make sure to operate within the speed regulation range. Exceeding the maximum speed (0.3 sec/90°) can cause the unit to stick or not operate.

Note 2) The upper numbers in this section in the table indicate the energy factor when the rubber bumper is used (at the end of the rotation), and the lower numbers indicate the energy factor when the rubber bumper is not used.

Note 3) Adjustment range in the table is for 100°. For 90°, refer to page 11-2-9. (cm³)

JIS Symbol



Volume

Vane type	Single vane															Double vane									
Model	CRB2BW10-□S	CRB2BW15-□S	CRB2BW20-□S	CRB2BW30-□S	CRB2BW40-□S	CRB2BW10-□D	CRB2BW15-□D	CRB2BW20-□D	CRB2BW30-□D	CRB2BW40-□D	CRB2BW10-□D	CRB2BW15-□D	CRB2BW20-□D	CRB2BW30-□D	CRB2BW40-□D	CRB2BW10-□D	CRB2BW15-□D	CRB2BW20-□D	CRB2BW30-□D	CRB2BW40-□D	CRB2BW10-□D	CRB2BW15-□D	CRB2BW20-□D	CRB2BW30-□D	CRB2BW40-□D
Rotation	90°	180°	270°	90°	180°	270°	90°	180°	270°	90°	180°	270°	90°	180°	270°	90°	100°	90°	100°	90°	100°	90°	100°	90°	100°
Volume	1 (0.6)	1.2	1.5	1.5 (1.0)	2.9	3.7	4.8 (3.6)	6.1	7.9	11.3 (8.5)	15	20.2	25 (18.7)	31.5	41	1.0	1.1	2.6	2.7	5.6	5.7	14.4	14.5	33	34

* Values inside () are volume of the supply side when A port is pressurized.

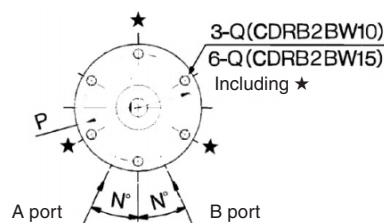
Weight

Vane type	Single vane															Double vane											
Model	CRB2BW10-□S			CRB2BW15-□S			CRB2BW20-□S			CRB2BW30-□S			CRB2BW40-□S			CRB2BW10-□D		CRB2BW15-□D		CRB2BW20-□D		CRB2BW30-□D		CRB2BW40-□D			
Rotating angle	90°	180°	270°	90°	180°	270°	90°	180°	270°	90°	180°	270°	90°	180°	270°	90°	100°	90°	100°	90°	100°	90°	100°	90°	100°	90°	100°
Body of rotary actuator	26.3	26.0	25.7	50	49	48	106	105	103	203	198	193	387	376	365	42	43	57	60	121	144	223	243	400	446		
Flange assembly	9			10			19			25			—			9		10		19		25		—			
Auto switch unit + 2 switches	30			30			50			60			46.5			30		30		50		60		46.5			
Angle adjuster	30			47			90			150			203			30		47		90		150		203			

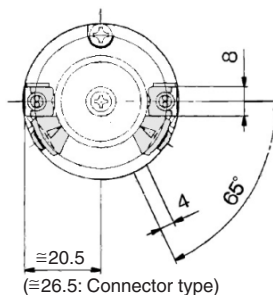
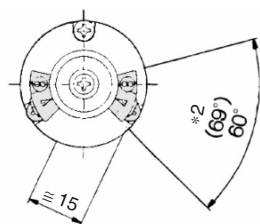
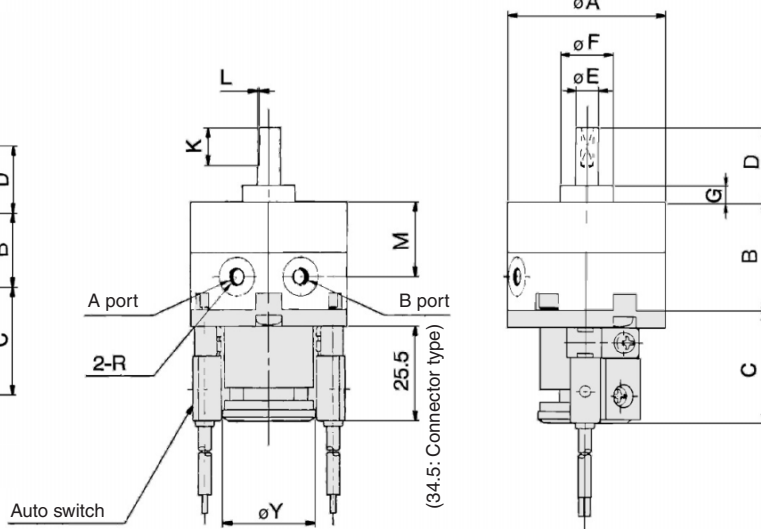
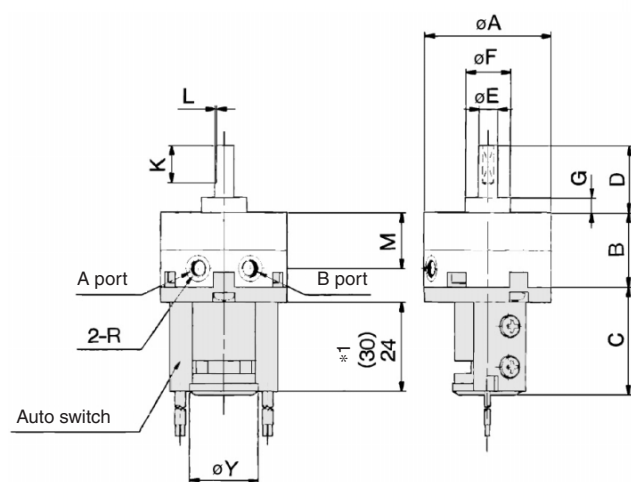
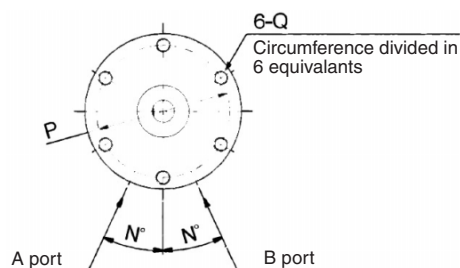
Dimensions: 10, 15, 20, 30 (With auto switch unit)

Single vane type • Following illustrations show actuators for 90° and 180° when B port is pressurized.

CDRB2BW10/15-□S



CDRB2BW20/30-□S



- * 1 The length is 24 when any of the following auto switches are used: D-90, D-90A, D-S99(V), D-T99(V), and D-S9P(V).
The length is 30 when any of the following auto switches are used: D-97 and D-93A.
- * 2 The angle is 60° when any of the following auto switches are used: D-90, D-90A, D-97, and D-93A.
The angle is 69° when any of the following auto switches are used: D-S99(V), D-T99(V), and D-S9P(V).
(Note) For rotary actuators with auto switch unit, connection ports are side ports only.
- * The above exterior view drawings illustrate rotary actuators with one right-hand and one left-hand switch.

The above exterior view drawings illustrate rotary detectors with one right hand and one left hand switch. (mm)

Model	A	B	C	D	E (g6)	F (h9)	G	K	L	M	N	P	Q	R			Y
														90°	180°	270°	
CDRB2BW10-□S	29	15	29	14	4	9	3	9	0.5	10	25	24	M3 x 0.5 depth 5	M5 x 0.8	M3 x 0.5	18.5	
CDRB2BW15-□S	34	20	29	18	5	12	4	10	0.5	15	25	29	M3 x 0.5 depth 5	M5 x 0.8	M3 x 0.5	18.5	
CDRB2BW20-□S	42	29	30	20	6	14	4.5	10	0.5	20	25	36	M4 x 0.7 depth 7	M5 x 0.8		25	
CDRB2BW30-□S	50	40	31	22	8	16	5	12	1	30	25	43	M5 x 0.8 depth 10	M5 x 0.8		25	