

Rotary Actuator Vane Style

Series *CRB1*

Size: 50, 63, 80, 100

How to Order

Without auto switch

CRB1 **B** **W** 80 - 90 **S**

With auto switch

CDRB1 **B** **W** 80 - 90 **S** - **T79** **L** -

With auto switch (With auto switch unit and built-in magnet)
* Refer to page 141 when the auto switch unit is needed separately.

Mounting style

B	Basic style
L	Flange style

Refer to Table (1) below if only foot assembly is required separately.

Table (1): Foot Assembly Part No.

Model	Unit part no.
CRB1LW 50	P411020-5
CRB1LW 63	P411030-5
CRB1LW 80	P411040-5
CRB1LW100	P411050-5

Shaft type

W	Double shaft (Long shaft key & Four chamfers)
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Pattern

Nil	Option
P	Simple Specials/Made to Order

* For details, refer to pages 129 to 131, 138 and 139.

Rotating angle

Classification	Symbol	Single vane	Double vane
Standard	90	90°	90°
	180	180°	—
	270	270°	—
Option	100	100°	100°
	190	190°	—
	280	280°	—

Size

50
63
80
100

Made to Order or Port thread type
Refer to pages 129 to 131, 138 and 139 for the details of Made to Order specifications.

Nil	Rc
-XF *	G
-XN *	NPT

* Combination with Made to Order is not available.

Number of auto switches

S	1 pc. *
Nil	2 pcs. **

* S (1 auto switch) is shipped with a right-hand auto switch.
** Nil (2 auto switches) is shipped with a right-hand and a left-hand switch.

Electrical entry/Lead wire length

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

* Connectors are available only for auto switch types R73, R80 and 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 (built-in magnet)
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* For the applicable auto switch model, refer to the table below.

Connection port location

Nil	Side ported
E	Axial ported

Vane type

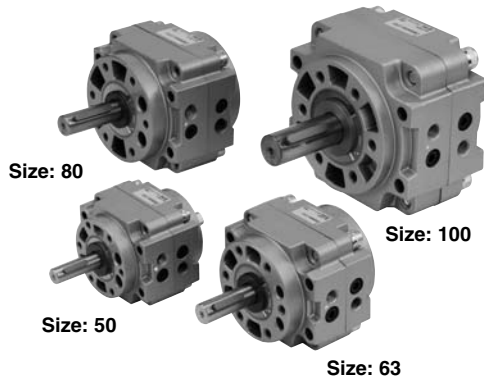
S	Single vane
D	Double vane

Applicable Auto Switches/Refer to pages 761 to 809 for further information on auto switches.

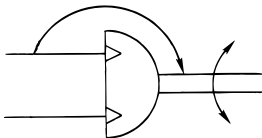
Type	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model	Lead wire length (m) *				Applicable load					
				DC			AC	0.5 (Nil)	3 (L)	5 (Z)			None (N)			
Solid state switch	Grommet	Yes	2-wire	24 V	12 V	—	T79	●	●	—	—	—	Relay, PLC			
	Connector						T79C	●	●	●	●					
	Grommet						3-wire (NPN)	5 V, 12 V	S79	●	●			—	—	IC circuit
							3-wire (PNP)		S7P	●	●			—	—	
Reed switch	Grommet	No	2-wire	24 V	—	100 V	R73	●	●	—	—	—	Relay, PLC			
	Connector				—	R73C	●	●	●	●						
	Grommet	Yes			48 V, 100 V	100 V or less	R80	●	●	—	—	IC circuit				
	Connector				—	24 V or less	R80C	●	●	●	●			—		

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

- Excellent reliability and durability
The use of bearings to support thrust and radial loads improves reliability and durability.
- The body of the rotary actuator can be mounted directly.
- Two different port locations (side and axial) are available.



JIS Symbol



Made to Order

(Refer to pages 129 to 131, 138 and 139 for details.)

Symbol	Specifications/Description
XA1 to XA24	Shaft type pattern
XC 1	Add connection port
XC 4	Change of rotation
XC 5	Change of rotation
XC 6	Change of rotation
XC 7	Reversed shaft
XC26	Change of rotation
XC27	Change of rotation range and direction
XC30	Fluorine grease

Specifications

Size		CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100	CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100
Vane type		Single vane (S)				Double vane (D)			
Rotating angle	Standard	90 ⁰⁺⁴ ₀ , 180 ⁰⁺⁴ ₀ , 270 ⁰⁺⁴ ₀				90 ⁰⁺⁴ ₀			
	Option	100 ⁰⁺⁴ ₀ , 190 ⁰⁺⁴ ₀ , 280 ⁰⁺⁴ ₀				100 ⁰⁺⁴ ₀			
Fluid		Air (Non-lube)							
Proof pressure		1.5 MPa							
Ambient and fluid temperature		5 to 60°C							
Max. operating pressure		1.0 MPa							
Min. operating pressure		0.15 MPa							
Rotation time adjustment range		0.1 to 1s/90°							
Allowable kinetic energy		0.082J	0.12J	0.398J	0.6J	0.112J	0.16J	0.54J	0.811J
Shaft load	Allowable radial load	245N	390N	490N	588N	245N	390N	490N	588N
	Allowable thrust load	196N	340N	490N	539N	196N	340N	490N	539N
Bearing		Bearing							
Port location		Side ported or Axial ported							
Port size	Side ported	1/8		1/4		1/8		1/4	
	Axial ported	1/8		1/4		1/8		1/4	
Mounting		Basic style, Foot style							

Volume

Classification	Rotating angle	Single vane (S)				Double vane (D)			
		CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100	CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100
Standard	90°	30	70	88	186	48	98	136	272
	180°	49	94	138	281	—	—	—	—
	270°	66	118	188	376	—	—	—	—
Option	100°	32	73	93	197	52	104	146	294
	190°	51	97	143	292	—	—	—	—
	280°	68	121	193	387	—	—	—	—

Mass

Model	Rotating angle	Single vane (S)				Double vane (D)			
		CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100	CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100
Main body	90°	810	1365	2070	3990	830	1410	2120	4150
	180°	790	1330	2010	3880	—	—	—	—
	270°	770	1290	1950	3760	—	—	—	—
	100°	808	1360	2065	3980	822	1400	2100	4100
	190°	788	1325	2005	3870	—	—	—	—
	280°	766	1285	1940	3735	—	—	—	—
Auto switch unit + 2 switches		65	85	95	165	65	85	95	165
Foot bracket assembly		384	785	993	1722	384	785	993	1722

CRB2

CRBU2

CRB1

MSU

CRJ

CRA1

CRQ2

MSQ

MSZ

CRQ2X

MSQX

MRQ

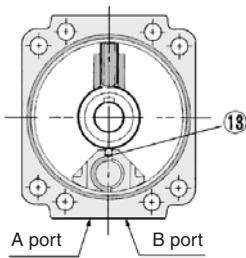
D-□

Series CRB1

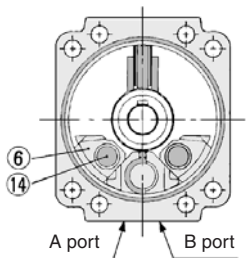
Construction

Standard (Keys in the figures below show the intermediate rotation position.)

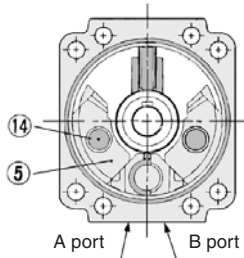
For 270° (Top view
from long shaft side)
Single vane



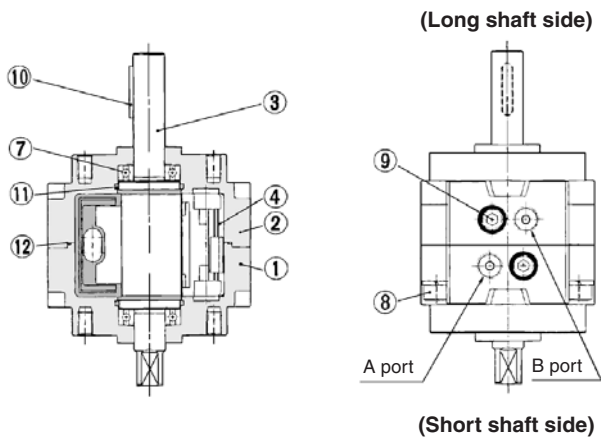
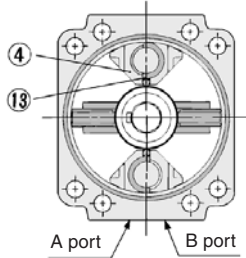
For 180° (Top view
from long shaft side)
Single vane



For 90° (Top view
from long shaft side)
Single vane



For 90° (Top view
from long shaft side)
Double vane

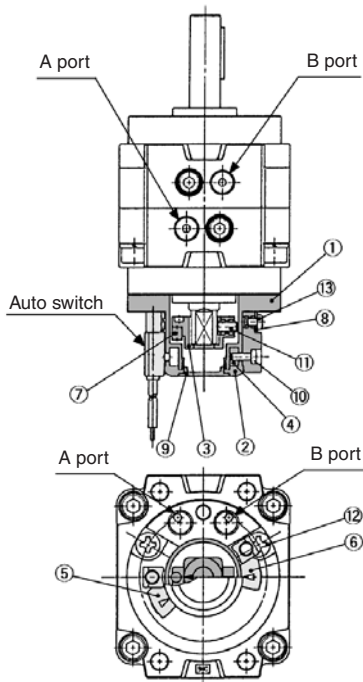


Component Parts

No.	Description	Material	Note
1	Body (A)	Aluminum	Painted
2	Body (B)	Aluminum	Painted
3	Vane shaft	Carbon steel	
4	Stopper	Aluminum	
5	Stopper	Resin	For 90°
6	Stopper	Resin	For 180°
7	Bearing	High carbon chrome bearing steel	
8	Hexagon socket (with washer)	Carbon steel	
9	Fuji lock bolt	Carbon steel	
10	Parallel key	Carbon steel	
11	O-ring	NBR	
12	O-ring	NBR	Special O-ring
13	Stopper seal	NBR	Special seal
14	Holding rubber	NBR	

With auto switch

(Keys in the figures below show the actuator for 180° when A port is pressurized.)



Component Parts

No.	Description	Material	Note
1	Cover (A)	Resin	
2	Cover (B)	Resin	
3	Magnet lever	Resin	
4	Holding block	Aluminum alloy	Anodized
5	Switch block (A)	Resin	
6	Switch block (B)	Resin	
7	Magnet	—	
8	Arm	Stainless steel	
9	Rubber cap	NBR	
10	Round head Phillips screw	Stainless steel	
11	Hexagon socket head set screw	Stainless steel	
12	Round head Phillips screw	Carbon steel	For CDRB1BW50/63/80
	Hexagon socket head cap screw	Carbon steel	For CDRB1BW100
13	Round head Phillips screw	Stainless steel	