

# Rotary Actuator Vane Style Series CRB2

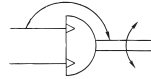
Size: 10, 15, 20, 30, 40



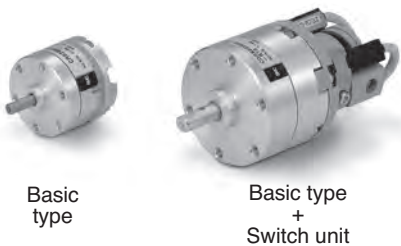
## Features

- Compact design.
- Double vane option for higher torque.
- Having a round external shape, it is extremely compact without any outward protrusion.
- Can be mounted directly.
- Autoswitches and angle adjuster available.

## Symbol



## How to Order: basic type



Without auto switch unit: **CRB2B W 20 180 S**

With auto switch unit: **CDRB2B W 20 180 S**

With switch unit for autoswitches

Shaft type

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

Size

10
15
20
30
40

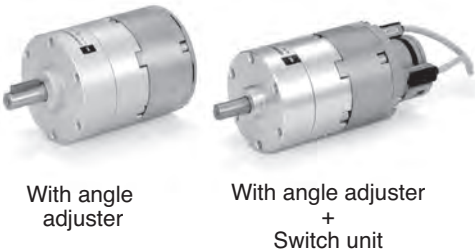
Vane type

S	Single vane
D	Double vane

Rotating angle

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

## How to Order: with angle adjuster



Without auto switch unit: **CRB2B WU 10 180 S**

With auto switch unit: **CDRB2B WU 20 180 S**

With switch unit for autoswitches

With angle adjuster

Size

10
15
20
30
40

Vane type

S	Single vane
D	Double vane

Rotating angle

Applicable	Symbol	Rotating angle
Single vane	90	90°
	180	180°
	270	270°
Double vane	90	90°
	100	100°

## Product Recommendation



Stocked items for fast delivery

CDRB2BW10-90S	CDRB2BW30-90S	CRB2BW10-90S	CRB2BW20-180S	CRB2BW40-270S	CRB2BWU10-270S
CDRB2BW10-180S	CDRB2BW30-180S	CRB2BW10-180S	CRB2BW20-270S	CDRB2BWU10-270S	CRB2BWU15-180S
CDRB2BW10-270S	CDRB2BW30-270S	CRB2BW10-270S	CRB2BW30-90D	CDRB2BWU20-90S	CRB2BWU15-270S
CDRB2BW15-90S	CDRB2BW30-180S	CRB2BW15-90D	CRB2BW30-90S	CDRB2BWU20-180S	CRB2BWU20-270S
CDRB2BW15-270S	CDRB2BW30-270S	CRB2BW15-90S	CRB2BW30-180S	CDRB2BWU20-270S	CDRB2BWU30-90D
CDRB2BW20-90S	CDRB2BW40-90D	CRB2BW15-180S	CRB2BW30-270S	CDRB2BWU30-90S	CDRB2BWU30-90S
CDRB2BW20-180S	CDRB2BW40-90S	CDRB2BW15-270S	CRB2BW40-90D	CDRB2BWU30-180S	CDRB2BWU30-180S
CDRB2BW20-270S	CDRB2BW40-180S	CRB2BW20-90D	CRB2BW40-90S	CDRB2BWU30-270S	CDRB2BWU30-270S
CDRB2BW30-90D	CDRB2BW40-270S	CRB2BW20-90S	CRB2BW40-180S	CDRB2BWU40-180S	



## Auto Switches

- D-S9P1L (PNP right hand mounting)
- D-S991L (NPN right hand mounting)
- D-S7P1L (PNP right hand mounting)
- D-S791L (NPN right hand mounting)
- D-S9P2L (PNP left hand mounting)
- D-S992L (NPN left hand mounting)
- D-S7P2L (PNP left hand mounting)
- D-S792L (NPN left hand mounting)

Note) For more options see the Auto Switch section, page XXX



## Related Products

- Series AS - Speed Controllers - page 1238
- Series SY - Valves - page 65, 101, 417
- Series SV - Valves - page 20
- Series VQC - Valves - page 193, 211
- Series AC - Air Preparation - page 1076
- Series IDK - Moisture Control Tube - page 1149
- Series TU - Tubing - page 1223
- Series KQ2 - Fittings - page 1184

### 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 [MPa]	0.2		0.15			
Speed adjustable range (sec/90°) <sup>(1)</sup>	0.03 to 0.3			0.04 to 0.3	0.07 to 0.5	
Allowable kinetic energy [J] <sup>(2)</sup>	0.00015	0.001	0.003	0.02	0.04	
		0.00025	0.0004	0.015	0.03	
Shaft load	Allowable radial load	15	15	25	30	60
[N]	Allowable thrust load	10	10	20	25	40
Bearing type	Bearing					
Port location	Side ported					
Size	Side ported	M5	M3	M5	M3	M5
	Axial ported	M3			M5	
Shaft type	Double shaft (Double shaft with single flat on both shafts)				Double shaft (Long shaft key & single flat)	
Angle adjustable range <sup>(3)</sup>	0 to 230°		0 to 240°		0 to 230°	
Mounting	Basic style					
Auto switch	Mountable (Side ported only)					

### 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°) <sup>(1)</sup>	0.03 to 0.3			0.04 to 0.3	0.07 to 0.5	
Allowable kinetic energy [J] <sup>(2)</sup>	0.0003	0.0012	0.0033	0.02	0.04	
Shaft load	Allowable radial load	15	15	25	30	60
[N]	Allowable thrust load	10	10	20	25	40
Bearing type	Bearing					
Port location	Side ported					
Port size (Side ported, Axial ported)	M3			M5		
Shaft type	Double shaft (Double shaft with single flat on both shafts)					
Angle adjustable range <sup>(3)</sup>	0 to 90°					
Mounting	Basic 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) Angle adjustment range refers to 270 type.



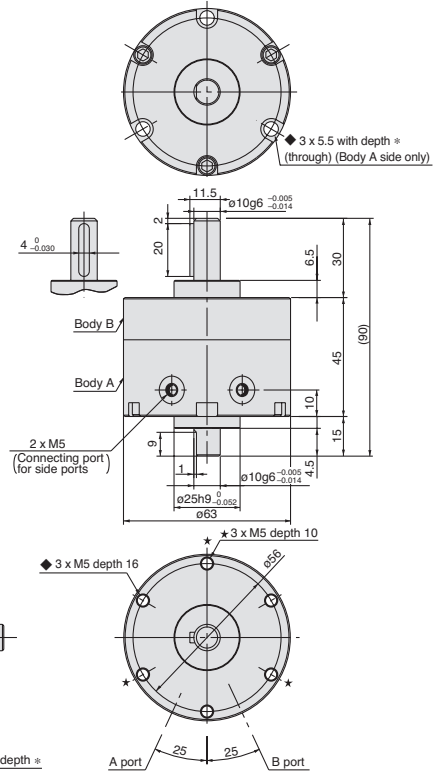


**Dimensions 40**

 CRB2BW40-□S, D  
 <Port position: Side ports>

Single vane/Double vane type

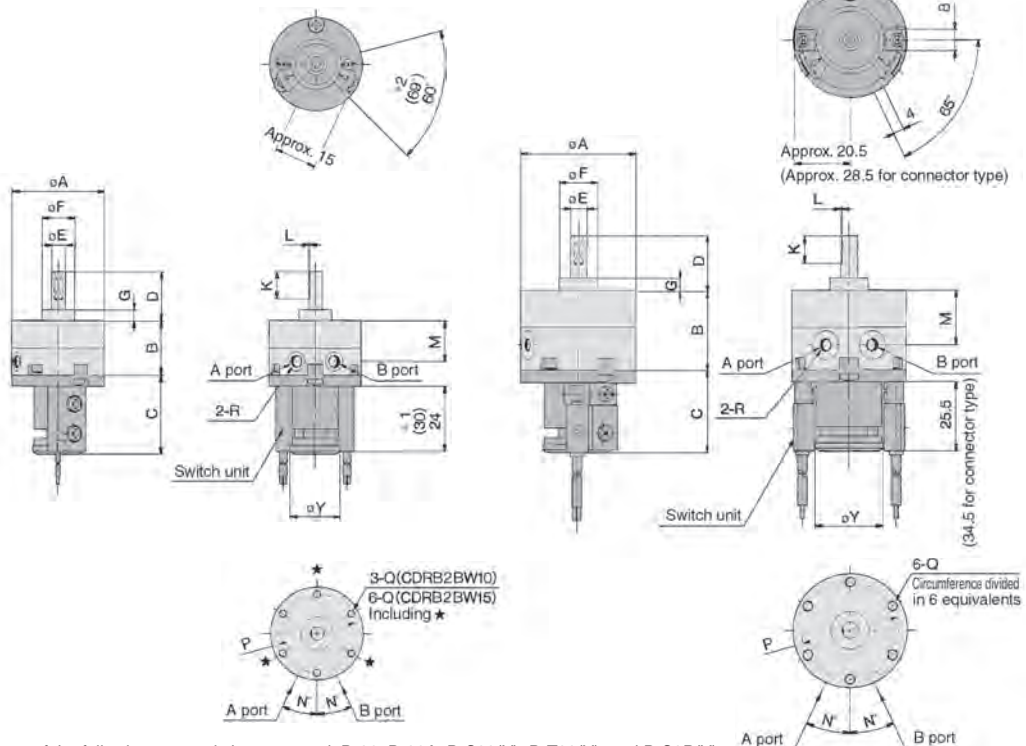
Keyway dimensions		
Model	b (h9)	h (h9)
CRB2BW40-□□□	4 <sup>0</sup> <sub>-0.030</sub>	4 <sup>0</sup> <sub>-0.030</sub>


**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, connecting ports are side ports only.

• The above exterior view drawings illustrate rotary actuators with one right-hand and one left-hand switches.

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 depth 5	M5	M3	18.5	
CDRB2BW15-□S	34	20	29	18	5	12	4	10	0.5	15	25	29	M3 depth 5	M5	M3	18.5	
CDRB2BW20-□S	42	29	30	20	6	14	4.5	10	0.5	20	25	36	M4 depth 7	M5		25	
CDRB2BW30-□S	50	40	31	22	8	16	5	12	1	30	25	43	M5 depth 10	M5		25	

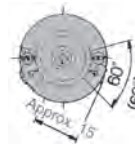


For more product options and details see our specific catalogues or on-line information.

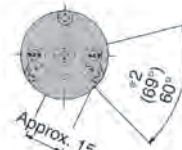
Dimensions 10, 15, 20, 30 (with Auto Switch Unit)

Double vane type • Following illustrations show the intermediate rotation position when A or B port is pressurized.

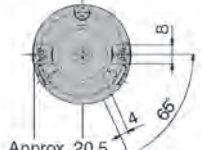
CDRB2BW10-□D



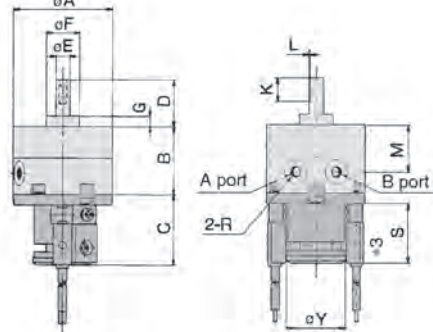
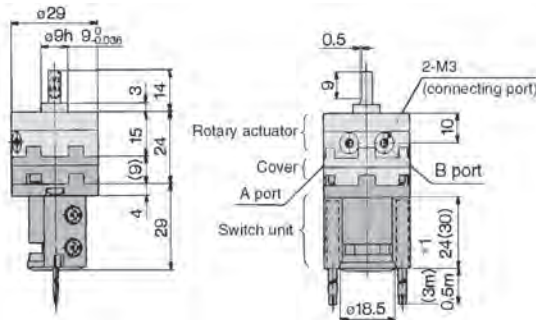
CDRB2BW15-□D



CDRB2BW20, 30-□D

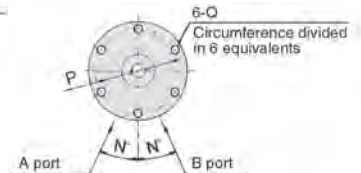
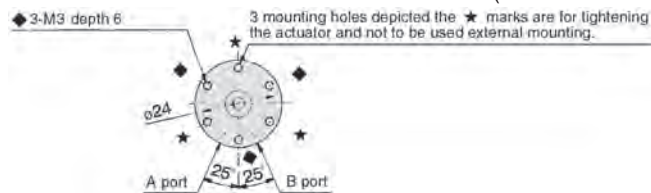


(Approx. 26.5 for connector type)



CRB2BW15, 20, 30-□D

(Dimensions are the same as the single vane type.)



\*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)

\*3 The length (Dimension S) is 25.5 when any of the following grommet type auto switches are used: D-R73, D-R80, D-S79, D-T79, and D-S7P  
The length (Dimension S) is 34.5 when any of the following connector type auto switches are used: D-R73, D-R80, and D-T79

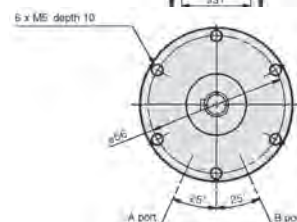
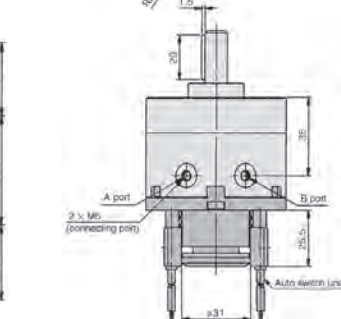
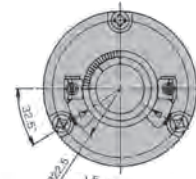
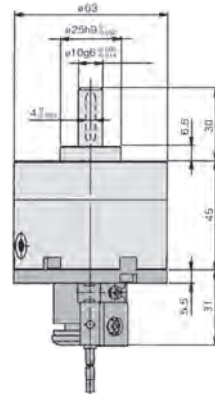
Model	A	B	C	D	E (g6)	F (h9)	G	K	L	M	N	P	Q	R		S	Y
														90	100		
CDRB2BW15-□D	34	20	29	18	5	12	4	10	0.5	15	25	29	M3 with depth 5	M3	24 <sup>*1</sup>	30 <sup>*1</sup>	18.5
CDRB2BW20-□D	42	29	30	20	6	14	4.5	10	0.5	20	25	36	M4 with depth 7	M5	25.5 <sup>*3</sup>	34.5 <sup>*3</sup>	25
CDRB2BW30-□D	50	40	31	22	8	16	5	12	1	30	25	43	M5 with depth 10	M5			25

Dimensions 40 (with Auto Switch Unit)

Single vane/Double vane type

CDRB2BW40-□S, D

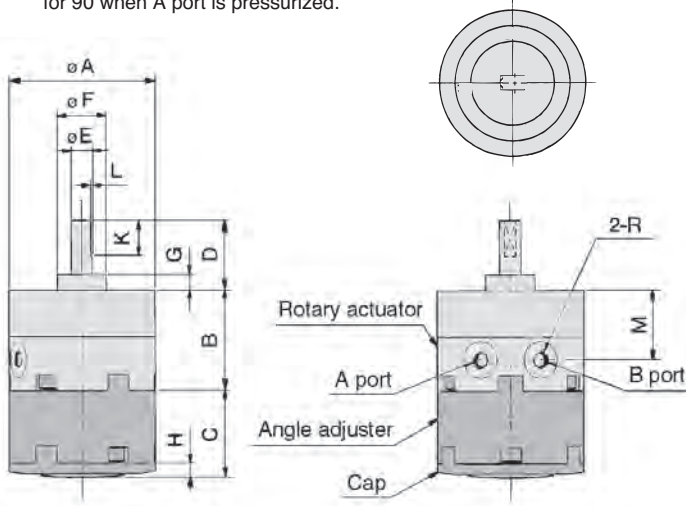
Keyway dimensions	Keyway dimensions	
	b	L
Model	b (h9)	L
CDRB2BW40-□□□	4 <sup>0</sup> <sub>-0.030</sub>	20



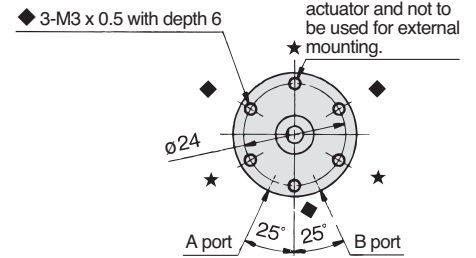
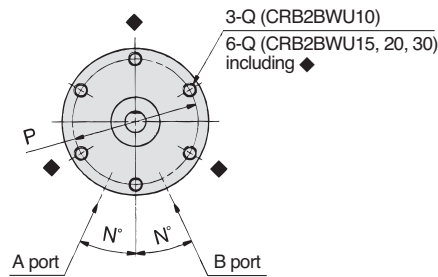
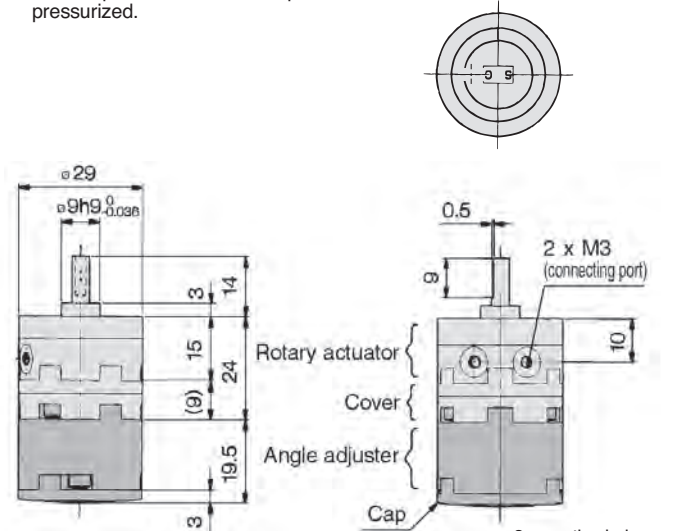
## Dimensions 10, 15, 20, 30 (with Angle Adjuster)

 Single vane type  
 CRB2BWU10, 15, 20, 30-□S

- Following illustrations show actuator for 90° when A port is pressurized.


 Double vane type  
 CRB2BWU10-□D

- Following illustrations show the intermediate rotation position when A or B port is pressurized.



3 mounting holes depicted with the ★ marks are for tightening the actuator and not to be used for external mounting.

 Double vane type  
 CRB2BWU15, 20, 30-□D

Dimensions for double vane type sizes 15, 20, and 30 are the same as those of single type.

Model	A	B	C	D	E (g6)	F (h9)	G	H	K	L	M	N	P	Q
CRB2BWU10-□S	29	15	19.5	14	4	9	3	3	9	0.5	10	25	24	M3 depth 6
CRB2BWU15-□S	34	20	21.2	18	5	12	4	3.2	10	0.5	15	25	29	M3 depth 5
CRB2BWU15-□D														
CRB2BWU20-□S	42	29	25	20	6	14	4.5	4	10	0.5	20	25	36	M4 depth 7
CRB2BWU20-□D														
CRB2BWU30-□S	50	40	29	22	8	16	5	4.5	12	1	30	25	43	M5 depth 10
CRB2BWU30-□D														

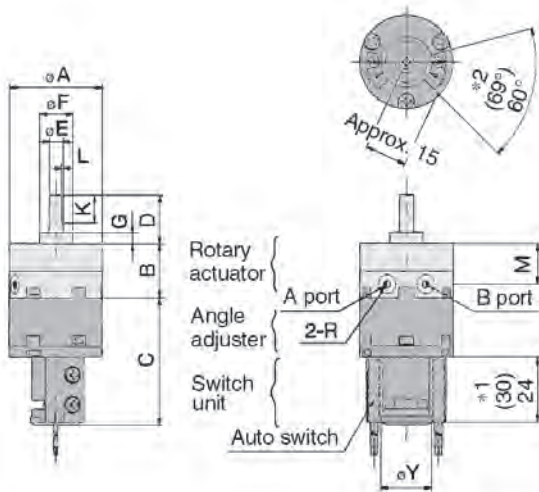
Model	R			
	90	100	180	270
CRB2BWU10-□S	M5	—	M5	M3
CRB2BWU10-□D	M3		—	
CRB2BWU15-□S	M5	—	M5	M3
CRB2BWU15-□D	M3		—	
CRB2BWU20-□S	M5	—	M5	
CRB2BWU20-□D	M5		—	
CRB2BWU30-□S	M5	—	M5	
CRB2BWU30-□D	M5		—	



Dimensions 10, 15, 20, 30 (with Angle Adjuster and Auto Switch Unit)

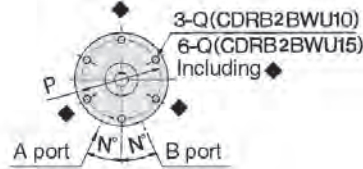
Single vane type  
CDRB2BWU10, 15-□S

• Following illustrations show actuator for 90 when A port is pressurized.



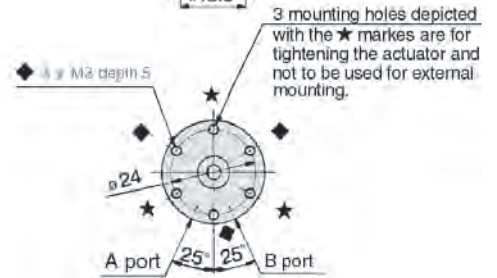
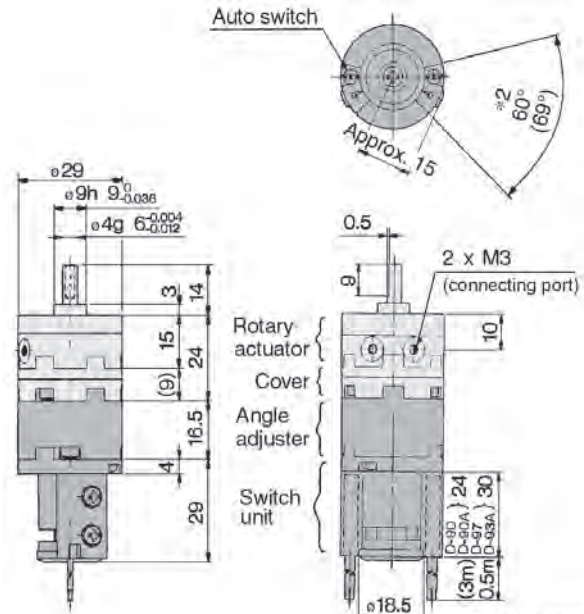
\*1. The length is 24 when any of the following auto switches are used: D-90, D90A, D-S99(V), D-T99(V), and D-S9P(V). The length is 30 when any of the following auto switches are used: D-97 and D-93A.

\*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).

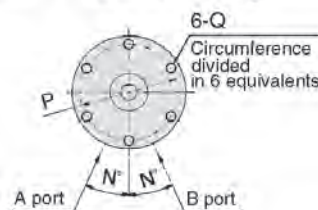
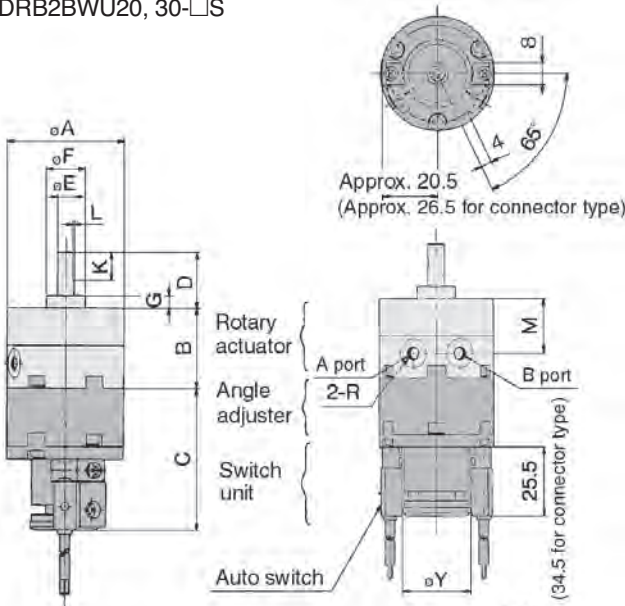


Double vane type  
CDRB2BWU10-□D

• Following illustrations show the intermediate rotation position when A or B port is pressurized.



Single vane type  
CDRB2BWU20, 30-□S



Double vane type  
CDRB2BWU15, 20, 30-□D

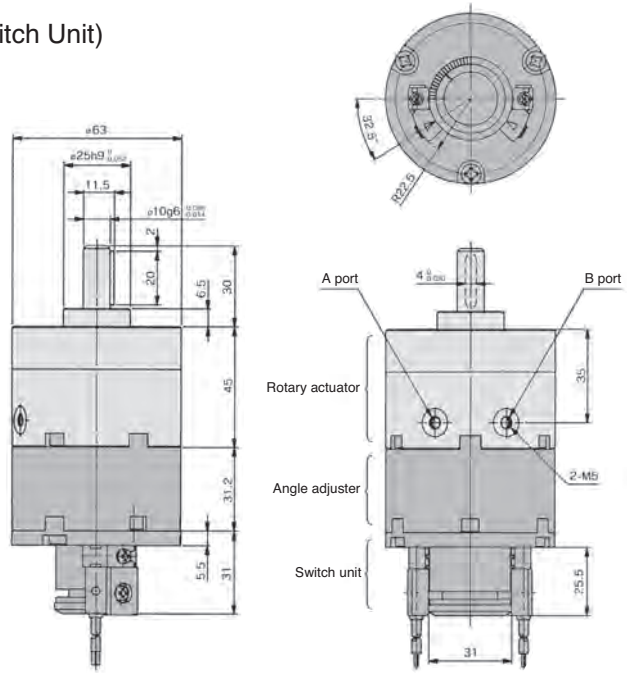
Dimensions for double vane type sizes 15, 20, and 30 are the same as those of single type.

Model	A	B	C	D	E (g6)	F (h9)	G	K	L	M
CDRB2BWU10-□S	29	15	45.5	14	4	9	3	9	0.5	10
CDRB2BWU15-□S	34	20	47	18	5	12	4	10	0.5	15
CDRB2BWU15-□D										
CDRB2BWU20-□S	42	29	51	20	6	14	4.5	10	0.5	20
CDRB2BWU20-□D										
CDRB2BWU30-□S	50	40	55.5	22	8	16	5	12	1	30
CDRB2BWU30-□D										

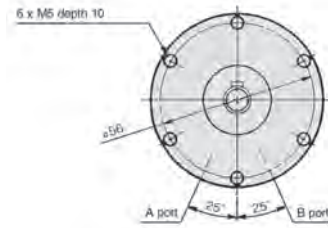
Model	N	P	Y	Q	R			
					90	100	180	270
CDRB2BWU10-□S	25	24	18.5	M3 depth 5	M5	—	M5	M3
M3					—			
CDRB2BWU15-□S	25	29	18.5	M3 depth 5	M5	—	M5	M3
M3					—			
CDRB2BWU20-□S	25	36	25	M4 depth 7	M5	—	M5	—
M5					—			
CDRB2BWU30-□S	25	43	25	M5 depth 10	M5	—	M5	—
M5					—			

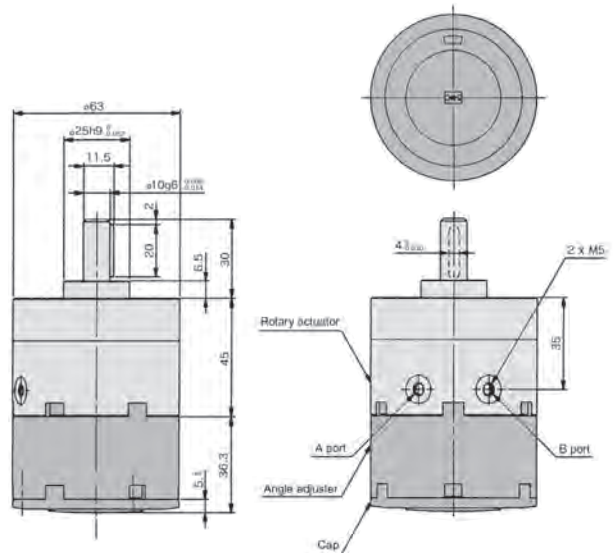
Notes) • For rotary actuators with angle adjuster and auto switch unit, connecting ports are side ports only.  
• The above exterior view drawings illustrate the rotary actuator equipped with one right-hand and one left-hand switches.

**Dimensions 40 (with Angle Adjuster and Auto Switch Unit)**

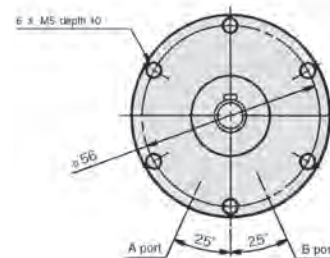
 Single vane/Double vane type  
 CDRB2BWU40-□□, D


Keyway dimensions			
	b (h9)	h (h9)	L
Model	b (h9)	h (h9)	L
CDRB2BWU40-□□□□	4 <sup>0</sup> / <sub>-0.030</sub>	4 <sup>0</sup> / <sub>-0.030</sub>	20


**Dimensions 40 (with Angle Adjuster)**

 Single vane/Double vane type  
 CRB2BWU40-□□, S, D


Keyway dimensions			
	b (h9)	h (h9)	L
Model	b (h9)	h (h9)	L
CRB2BWU40-□□□□	4 <sup>0</sup> / <sub>-0.030</sub>	4 <sup>0</sup> / <sub>-0.030</sub>	20



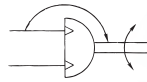


# Rotary Actuator Vane Style Series CRB1 Size: 50, 63, 80, 100

## Features

- 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.
- Autoswitch units can be specified.
- Simple robust construction.

## Symbol



## How to Order

Without auto switch unit: CRB1B W 80 90 S [ ] XF

With auto switch unit: CDRB1B W 80 90 S [ ] XF

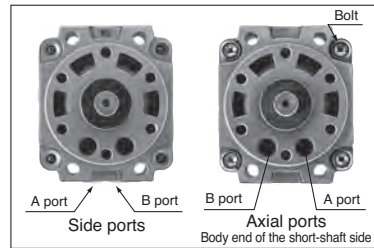
With switch unit for autoswitches

Shaft type: W (Double shaft (long shaft key & four chamfers))

Size: 50, 63, 80, 100

Rotation: 90, 180, 270

Classification	Symbol	Single vane	Double vane
Standard	90	90	90
	180	180	—
	270	270	—



- Thread Port: XF, G(PF)
- Connecting port position:
 

—	Side ports (standard type)
E	Axial ports (also available, please consult SMC)
- Vane type:
 

S	Single vane
D	Double vane

## Product Recommendation



Stocked items for fast delivery

CDRB1BW50-90S-XF	CDRB1BW63-270S-XF	CDRB1BW100-180S-XF	CRB1BW63-90D-XF	CRB1BW80-180S-XF	CRB1BW100-270SE-XF
CDRB1BW50-180S-XF	CDRB1BW80-90D-XF	CDRB1BW100-270S-XF	CRB1BW63-90S-XF	CRB1BW80-270SE-XF	CRB1BW100-270S-XF
CDRB1BW50-270S-XF	CDRB1BW80-90S-XF	CRB1BW50-90D-XF	CRB1BW63-180S-XF	CRB1BW80-270S-XF	
CDRB1BW63-90D-XF	CDRB1BW80-180S-XF	CRB1BW50-90S-XF	CRB1BW63-270S-XF	CRB1BW100-90D-XF	
CDRB1BW63-90S-XF	CDRB1BW80-270S-XF	CRB1BW50-180S-XF	CRB1BW80-90D-XF	CRB1BW100-90S-XF	
CDRB1BW63-180S-XF	CDRB1BW100-90S-XF	CRB1BW50-270S-XF	CRB1BW80-90S-XF	CRB1BW100-180S-XF	

## Specifications

Model (Size)	CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100	CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100	
Vane type	Single vane (S)				Double vane (D)				
Rotation	Standard	90° <sup>+4</sup> <sub>0</sub> , 180° <sup>+4</sup> <sub>0</sub> , 270° <sup>+4</sup> <sub>0</sub>			90° <sup>+4</sup> <sub>0</sub>				
	Optional	100° <sup>+4</sup> <sub>0</sub> , 190° <sup>+4</sup> <sub>0</sub> , 280° <sup>+4</sup> <sub>0</sub>			100° <sup>+4</sup> <sub>0</sub>				
Fluid	Air (non-lube)								
Proof pressure [MPa]	1.5 MPa								
Ambient and fluid temperature	5 to 60°C								
Max. operating pressure [MPa]	1.0 MPa								
Min. operating pressure [MPa]	0.15 MPa								
Speed regulation range [sec/90°]	0.1 to 1								
Allowable kinetic energy [J]	0.082	0.12	0.398	0.6	0.112	0.16	0.54	0.811	
Shaft load	Allowable radial load [N]	245	390	490	588	245	390	490	588
	Allowable thrust load [N]	196	340	490	539	196	340	490	539
Bearing type	Ball bearing								
Port position	Side ports or axial ports								
Size	Side ports	1/8	1/4	1/8	1/4	1/8	1/4	1/4	
	Axial ports	1/8	1/4	1/8	1/4	1/8	1/4	1/4	
Mounting	Basic, Foot								



## Auto Switches

- D-S7P1L (PNP right hand mounting)
- D-S791L (NPN right hand mounting)
- D-S7P2L (PNP left hand mounting)
- D-S792L (NPN left hand mounting)

Note) For more options see the Auto Switch section, page XXX

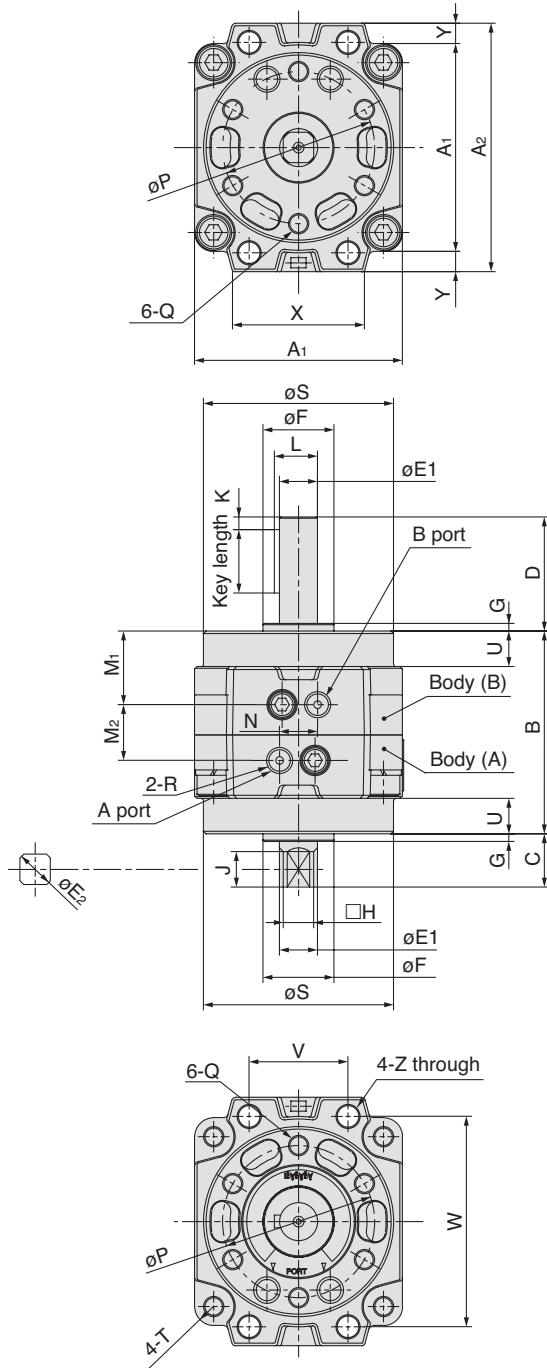


## Related Products

- Series AS - Speed Controllers - page 1238
- Series SY - Valves - page 65, 101, 417
- Series SV - Valves - page 20
- Series VQC - Valves - page 193, 211
- Series AC - Air Preparation - page 1076
- Series IDK - Moisture Control Tube - page 1149
- Series TU - Tubing - page 1223
- Series KQ2 - Fittings - page 1184

**Dimensions 50, 63, 80, 100**

Single vane/Double vane type  
 CRB1BW□-□S, D  
 <Port position: Side ports>



Keyway dimensions			
	b (h9)	h (h9)	L
Model			
CRB1BW 50-□□□	4 <sup>0</sup> <sub>-0.030</sub>	4 <sup>0</sup> <sub>-0.030</sub>	20
CRB1BW 63-□□□	5 <sup>0</sup> <sub>-0.030</sub>	5 <sup>0</sup> <sub>-0.030</sub>	25
CRB1BW 80-□□□	5 <sup>0</sup> <sub>-0.030</sub>	5 <sup>0</sup> <sub>-0.030</sub>	36
CRB1BW100-□□□	7 <sup>0</sup> <sub>-0.036</sub>	7 <sup>0</sup> <sub>-0.036</sub>	40

[mm]

Model	A1	A2	B	C	D	E1 (g6)	E2 (h9)	F (h9)	G	H	J	K	L	M1	M2	N	P	Q	R	S	T	U	V	W	X	Y	Z
CRB1BW 50-□□□	67	78	70	19.5	39.5	12 <sup>-0.008</sup> <sub>-0.017</sub>	11.9 <sup>0</sup> <sub>-0.043</sub>	25 <sup>0</sup> <sub>-0.052</sub>	3	10	13	5	13.5	26	18	14	50	M6 depth 9	1/8	60	R6	11	34	66	46	5.5	6.5
CRB1BW 50-□□□E														21	—	18											
CRB1BW 63-□□□	82	98	80	21	45	15 <sup>-0.006</sup> <sub>-0.017</sub>	14.9 <sup>0</sup> <sub>-0.043</sub>	28 <sup>0</sup> <sub>-0.052</sub>	3	12	14	5	17	29	22	15	60	M8 depth 10	1/8	75	R7.5	14	39	83	52	8	9
CRB1BW 63-□□□E														27	—	25											
CRB1BW 80-□□□	95	110	90	23.5	53.5	17 <sup>-0.006</sup> <sub>-0.017</sub>	16.9 <sup>0</sup> <sub>-0.043</sub>	30 <sup>0</sup> <sub>-0.052</sub>	3	13	16	5	19	30	30	20	70	M8 depth 12	1/4	88	R8	15	48	94	63	7.5	9
CRB1BW 80-□□□E														29	—	30											
CRB1BW 100-□□□	125	140	103	30	65	25 <sup>-0.007</sup> <sub>-0.020</sub>	24.9 <sup>0</sup> <sub>-0.052</sub>	45 <sup>0</sup> <sub>-0.062</sub>	4	19	22	5	28	35.5	32	24	80	M10 depth 13	1/4	108	R11	11.5	60	120	78	7.5	11
CRB1BW 100-□□□E														38	—	38											

\* For single vane: Above illustrations show actuators for 180 when B port is pressurized.



For more product options and details see our specific catalogues or on-line information.



## Rotary Actuator Rack and Pinion Style Series CRA1

Size: 30, 50, 63, 80, 100

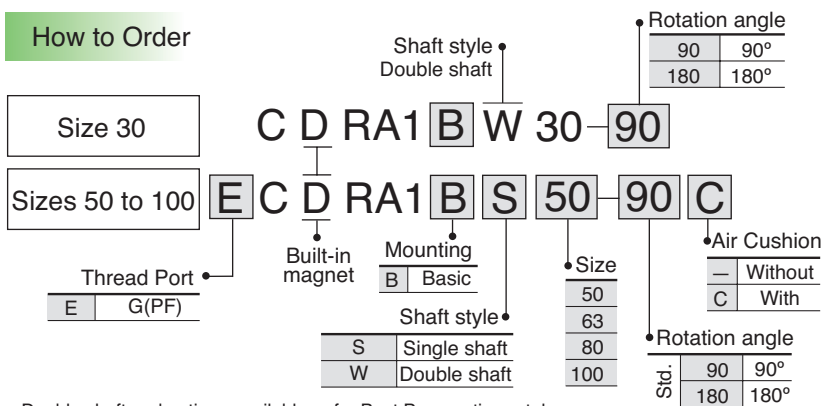
### Features

- Due to the adoption of a piston system that is similar to the air cylinder, the amount of internal/external air leakage is extremely small.
- Can be used at relatively slower speeds, compared with the vane type.
- Single or dual shaft construction.

### Symbol



### How to Order



\* Double shaft and options available, refer Best Pneumatics catalogue.

### Foot Brackets Part No.



Size	Foot bracket
30	CRA1L30-Y-1
50	CRA1L50-Y-1
63	CRA1L63-Y-1
80	CRA1L80-Y-1
100	CRA1L100-Y-1

### Product Recommendation



#### Stocked items for fast delivery

CDRA1BW30-90	ECDRA1BS63-180C	ECDRA1BW50-180C	ECDRA1BW80-180C	ECRA1BS80-180
CDRA1BW30-180	ECDRA1BS80-180	ECDRA1BW63-90	ECDRA1BW100-90	ECRA1BS100-180
ECDRA1BS50-90	ECDRA1BS100-90	ECDRA1BW63-90C	ECDRA1BW100-90C	ECRA1BW50-90
ECDRA1BS50-90C	ECDRA1BS100-180	ECDRA1BW63-180	ECDRA1BW100-180	ECRA1BW50-180
ECDRA1BS50-180	ECDRA1BS100-180C	ECDRA1BW63-180C	ECDRA1BW100-180C	ECRA1BW63-90
ECDRA1BS50-180C	ECDRA1BW50-90	ECDRA1BW80-90	ECRA1BS50-90	ECRA1BW63-180
ECDRA1BS63-90	ECDRA1BW50-90C	ECDRA1BW80-90C	ECRA1BS50-180	ECRA1BW80-90
ECDRA1BS63-180	ECDRA1BW50-180	ECDRA1BW80-180	ECRA1BS63-180	ECRA1BW80-180
				ECRA1BW80-180C

### Specifications

Style	Pneumatic				
	Size	30	50	63	80
Fluid	Air (Non-lube)				
Max. operating pressure	1MPa				
Min. operating pressure	0.1MPa				
Ambient and fluid temperature	0° to 60°C (No freezing)				
Cushion	None	With or without air cushion			
Output <sup>(1)</sup> [Nm]	1.9	9.3	17	32	74
Backlash	(2)	Within 1°			
Tolerance in rotating angle	—	+4° 0			

- Note 1) Output under the operating pressure of 0.5MPa.  
 Note 2) Since CRA1□30 has a stopper installed, there is no backlash produced under pressure.



### Auto Switches

D-F7PWL (PNP 2-colour indication)  
 D-F79WL (NPN 2-colour indication)  
 D-F5PWL (PNP 2-colour indication)  
 D-F59WL (NPN 2-colour indication)

Note) For more options see the Auto Switch section, page XXX



### Related Products

**Series AS** - Speed Controllers - page 1238  
**Series SY** - Valves - page 65, 101, 417  
**Series SV** - Valves - page 20  
**Series VQC** - Valves - page 193, 211  
**Series AC** - Air Preparation - page 1076  
**Series TU** - Tubing - page 1223  
**Series KQ2** - Fittings - page 1184

### Allowable Kinetic Energy/Safe Range of Rotation Time

Model	Allowable kinetic energy			Safe range of rotation time
	Allowable kinetic energy [J]		Cushion angle	
	Without cushion	With cushion <sup>(1)</sup>		Rotation time [s/90°]
CRA1□W30	0.01	—	—	0.2 to 1
CRA1□□50	0.05	0.98	35°	0.2 to 2
CRA1□□63	0.12	1.5	35°	0.2 to 3
CRA1□□80	0.16	2.0	35°	0.2 to 4
CRA1□□100	0.54	2.9	35°	0.2 to 5

- Note 1) Allowable kinetic energy of the bumpers equipped model  
 The maximum absorbed energy under proper adjustment of the cushion needle.



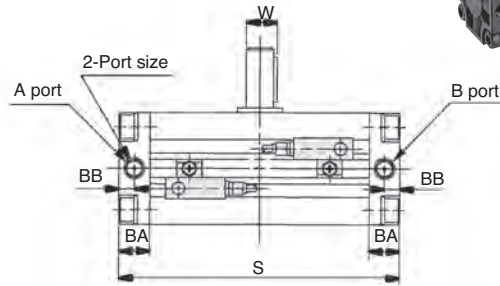
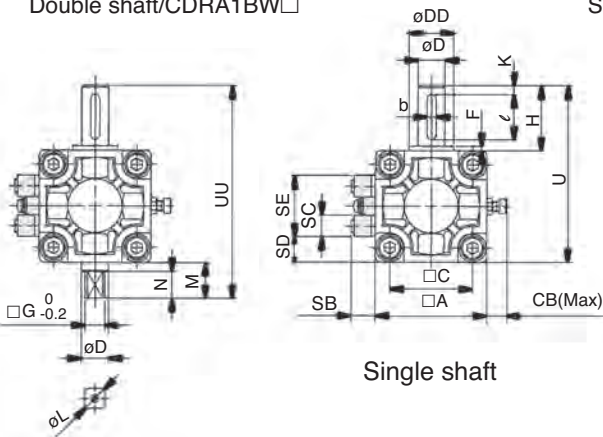
For more product options and details see our specific catalogues or on-line information.



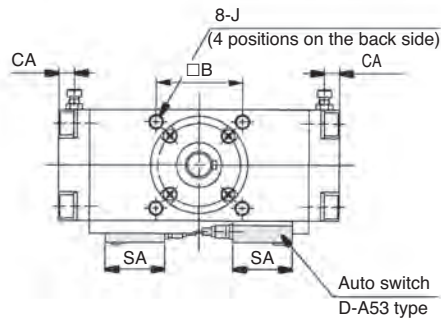
Dimensions: Size 50, 63, 80, 100/Standard with auto switch: CDRA1B□

Double shaft/CDRA1BW□

Single shaft style/CDRA1BS



Single shaft



Double shaft

Model	D(g6)	G	M	N	UU	L
CDRA1BW50	15	11	20	15	118	14
CDRA1BW63	17	13	22	17	139	16
CDRA1BW80	20	15	25	20	167	19
CDRA1BW100	25	19	30	25	202	24

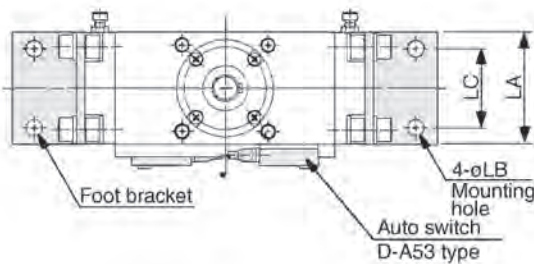
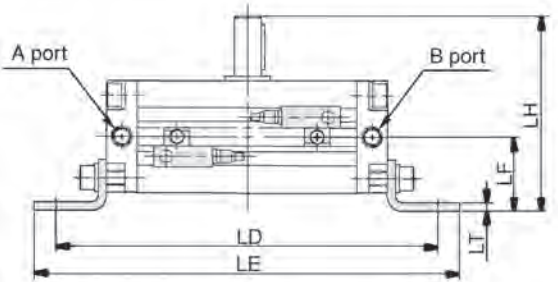
\*The dimensions below show pressurization to B port.

\*( ) are the dimensions for rotation of 180°.

Single shaft

Model	Port size	A	B	C	D (g6)	DD (h9)	F	H	J	K	S	U	W	BA	BB	CA	CB	SA	SB	SC	SD	SE	Key dimensions	
																							b	ℓ
CDRA1BS50	G 1/8	62	48	46	15	25	2.5	36	M8 X 8	5	156(189)	98	17	17	8.5	8.5	13	33	13.5	12	14	34	5 <sup>0</sup> <sub>-0.030</sub>	25
CDRA1BS63	G 1/8	76	60	57	17	30	2.5	41	M10 X 12	5	175(213.5)	117	19.5	20	10	10	14	33	14.5	12	21	34	6 <sup>0</sup> <sub>-0.030</sub>	30
CDRA1BS80	G 1/4	92	72	70	20	35	3	50	M12 X 13	5	199(243)	142	22.5	23.5	12	12	18	33	15.5	12	29	34	6 <sup>0</sup> <sub>-0.030</sub>	40
CDRA1BS100	G 3/8	112	85	85	25	40	4	60	M12 X 14	5	259(325)	172	28	25	12.5	12.5	18	33	16	12	39	34	8 <sup>0</sup> <sub>-0.036</sub>	45

Dimensions: With foot brackets/CDRA1B□□+CRA1L□-Y-1



\*Dimensions above show pressurization to B port.

\*( ) are the dimensions for rotation of 180°.

Model	LA	LB	LC	LD	LE	LF	LH	LT
CDRA1B□50 +CRA1L□50-Y-1	62	9	44	212 (245)	236 (269)	41	108	4.5
CDRA1B□63 +CRA1L□63-Y-1	76	11	55	247 (285.5)	275 (313.5)	48	127	5
CDRA1B□80 +CRA1L□80-Y-1	92	13	67	287 (331)	329 (373)	58	154	6
CDRA1B□100 +CRA1L□100-Y-1	112	13	87	347 (413)	389 (455)	73.5	189.5	6



## Rotary Table: Basic Type Rack and Pinion Style Series MSQ

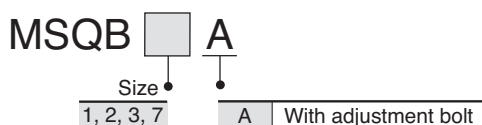
Size: 1, 2, 3, 7

### Features

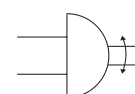
- A thin rotary table unit with a low table top height.
- No backlash.
- The angle can be adjusted as desired.  
(Between 0° and 190°).
- The body can be centered easily during installation.
- A load can be mounted directly.



### How to Order



### Symbol



\* High precision type series MSQA□ also available. Please refer Best Pneumatics catalogue.



High precision type/MSQA□

### Product Recommendation



Stocked items for fast delivery

MSQB1A

MSQB2A

MSQB3A

MSQB7A



### Auto Switches

- D-M9PWL (PNP 2-colour indication)
- D-M9NWL (NPN 2-colour indication)

Note) For more options see the Auto Switch section, page XXX



### Related Products

- Series AS - Speed Controllers - page 1238
- Series SY - Valves - page 65, 101, 417
- Series VQC - Valves - page 193, 211
- Series AC - Air Preparation - page 1076
- Series IDK - Moisture Control Tube - page 1149
- Series TU - Tubing - page 1223
- Series KQ2 - Fittings - page 1184

### Technical Specifications

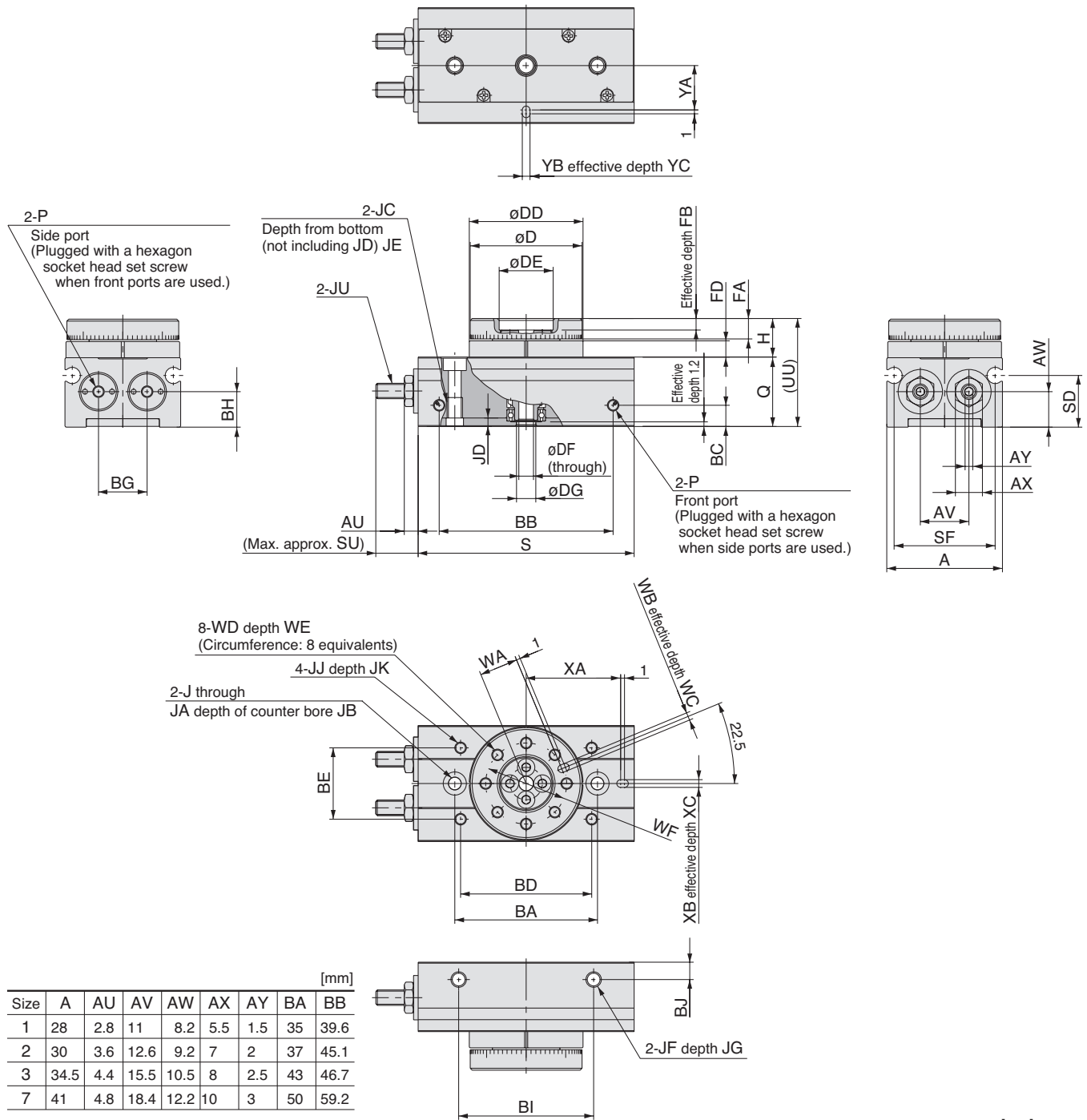
Size	1	2	3	7
Fluid	Air (non-lube)			
Maximum operating pressure	0.7 MPa			
Minimum operating pressure	0.1 MPa			
Ambient and fluid temperature	0 to 60°C (with no freezing)			
Cushion	None		Rubber bumper	
Angle adjustment range	0 to 190°			
Maximum rotation	190°			
Cylinder bore size	ø6	ø8	ø10	ø12
Port size	M3			M5

### Allowable Kinetic Energy and Rotation Time Adjustment Range

Size	Allowable kinetic energy [mJ]	Rotation time adjustment range for suitable operation (s/90°)
1	1	0.2 to 0.7
2	1.5	
3	2	
7	6	0.2 to 1.0

## Dimensions / Size 1, 2, 3, 7

Basic type/MSQB□A



	[mm]							
Size	A	AU	AV	AW	AX	AY	BA	BB
1	28	2.8	11	8.2	5.5	1.5	35	39.6
2	30	3.6	12.6	9.2	7	2	37	45.1
3	34.5	4.4	15.5	10.5	8	2.5	43	46.7
7	41	4.8	18.4	12.2	10	3	50	59.2

	[mm]																											
Size	BC	BD	BE	BG	BH	BI	BJ	D	DD	DE	DF	DG	FA	FB	FD	H	J	JA	JB	JC	JD	JE	JF	JG				
1	4.5	32	17	11	8.2	30	4.5	27h9	27.5h9	14H9	3.5	4.5H9	4.8	2	3.7	9	3.3	6	3.5	M4	2.2	5.3	M4	4				
2	5.5	34	18.5	12.6	9.2	35	4.5	29h9	29.5h9	14H9	3.8	5 H9	5.3	2.5	4.2	10	3.3	6	3.5	M4	2.2	5.3	M4	4				
3	5.5	38	23	15.5	10.5	40	4.5	33h9	34 h9	17H9	5	6 H9	5.3	2.5	4.2	10	4.2	7.5	4.5	M5	2.5	6	M4	4				
7	5.5	45	30	18.4	12.2	50	5	39h9	40 h9	20H9	6	7 H9	6.5	2.5	4.5	11.5	4.2	7.5	4.5	M5	2.5	6	M5	5				

	[mm]																					
Size	JJ	JK	JU	P	Q	S	SD	SF	SU	UU	WA	WB	WC	WD	WE	WF	XA	XB	XC	YA	YB	YC
1	M3	3.5	M3	M3	16	50.5	10.8	24.4	9.4	25	9.5	2H9	2	M3	4.8	20	22.5	2H9	2	11	2H9	2
2	M3	3.5	M4	M3	18	56	13.4	26.2	11.3	28	10	2H9	2	M3	5.3	21	24.5	2H9	2	11.5	2H9	2
3	M3	3.5	M5	M3	20.5	60	15.2	31	11.8	30.5	12	2H9	2	M3	5.3	25	27	2H9	2	13.5	2H9	2
7	M4	4.5	M6	M5	23	73.5	15.4	37.4	14.9	34.5	14	3H9	3	M4	6.5	29	32.5	3H9	3	15.5	3H9	3





## Rotary Table: Basic Type Rack and Pinion Style Series MSQ

Size: 10, 20, 30, 50, 70, 100, 200

### Features

- A thin rotary table unit with a low table top height.
- No backlash.
- The angle can be adjusted as desired.  
(Between 0° and 190°).
- Choose from adjustment bolts or internal shock absorbers.
- The body can be centered easily during installation.
- A load can be mounted directly.

### How to Order

<b>E</b>	<b>MSQB</b>	<b>50</b>	<b>A</b>	<b>A</b>	With adjustment bolt	<b>R</b>	With internal shock absorber
Thread port type		Size					
— M5 10, 20		10, 20, 30, 50, 70, 100, 200					
E G(PF) 30 to 200							

### Product Recommendation



Stocked items for fast delivery

MSQB10A	MSQB20R	EMSQB50A	EMSQB70R	EMSQB200A
MSQB10R	EMSQB30A	EMSQB50	EMSQB100A	EMSQB200R
MSQB20A	EMSQB30R	EMSQB70A	EMSQB100R	

### Technical Specifications

Size	10	20	30	50	70	100	200
Fluid	Air (non-lube)						
Maximum operating pressure	With adjustment bolt	1 MPa					
	With internal shock absorber	0.6 MPa <sup>Note 1)</sup>					
Minimum operating pressure	Basic type	0.1 MPa					
	High precision type	0.2 MPa	0.1 MPa		—		
Ambient and fluid temperature	0 to 60°C (with no freezing)						
Cushion	With adjustment bolt	Rubber bumper					
	With internal shock absorber	Shock absorber					
		Shock absorber model	RBA0805-X692	RBA1006-X692	RBA1411-X692	RBA2015-X821	RBA2725-X821
Angle adjustment range	0 to 190° <sup>Note 2)</sup>						
Maximum rotation	190°						
Cylinder bore size	ø15	ø18	ø21	ø25	ø28	ø32	ø40
Port size	End ports	M5		1/8			
	Side ports	M5					

Note 1) The maximum operating pressure of the actuator is restricted by the maximum allowable thrust of the shock absorber.  
Note 2) Be careful if the rotation angle of a type with internal shock absorber is set below the value in the table below, the piston stroke will be smaller than the shock absorber's effective stroke, resulting in decreased energy absorption ability.

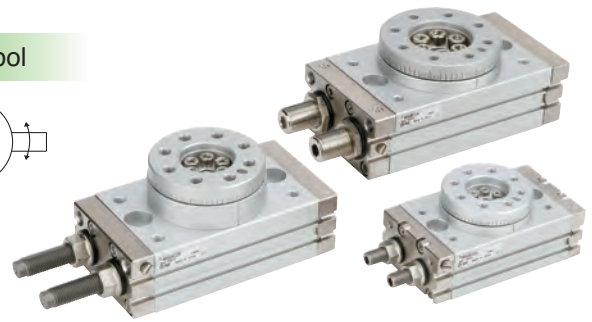
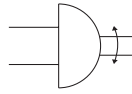
Size	10	20	30	50	70	100	200
Critical angle	52	43	40	60	71	62	82

### Allowable Kinetic Energy and Rotation Time Adjustment Range

Size	Allowable kinetic energy [mJ]		Rotation time adjustment range for stable operation (s/90°)	
	With adjustment bolt	With internal shock absorber	With adjustment bolt	With <sup>Note 1)</sup> internal shock absorber
10	7	39	0.2 to 1.0	0.2 to 0.7
20	25	116		
30	48	116		
50	81	294		
70	240	1100	0.2 to 1.5	0.2 to 1.0
100	320	1600	0.2 to 2.0	
200	560	2900	0.2 to 2.5	

Note 1) Be careful if a type with internal absorber is used below the minimum speed, the energy absorption ability will decrease drastically.

### Symbol



### Auto Switches

- D-M9PWL (PNP 2-colour indication)
- D-M9NWL (NPN 2-colour indication)

Note) For more options see the Auto Switch section, page XXX

### Related Products

- Series AS - Speed Controllers - page 1238
- Series SY - Valves - page 65, 101, 417
- Series VQC - Valves - page 193, 211
- Series AC - Air Preparation - page 1076
- Series IDK - Moisture Control Tube - page 1149
- Series TU - Tubing - page 1223
- Series KQ2 - Fittings - page 1184

\* High precision type series MSQA□ also available. Please refer Best Pneumatics catalogue.



High precision type/MSQA□





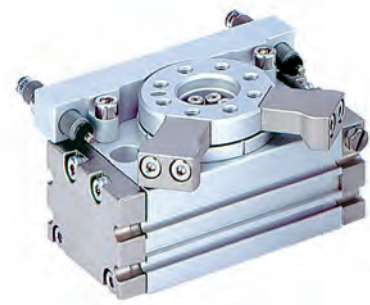
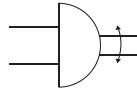
## Rotary Table: With External Shock Absorber Rack and Pinion Style Series MSQ

Size: 10, 20, 30, 50

### Features

- External shock absorber types: 4 to 10 times more allowable Kinetic energy.
- Shock absorbers can be replaced.
- Autoswitches can be added.

### Symbol



### How to Order

**E MSQB 30 H 2**

Size: 10, 20, 30, 50

Rotation Angle: 2 (Standard type \*), 3 (180°, 90°)

\* Symmetric type also available. Please refer Best Pneumatics catalogue.

Thread port type: - (M5, 10, 20), E (G(PF), 30, 50)

Shock Absorber: H (High energy), L (Low energy)

\* High precision type series MSQA□ also available.

### Technical Specifications

Size	10	20	30	50
Fluid	Air (non-lube)			
Maximum operating pressure	1 MPa			
Minimum operating pressure	0.2 MPa			
Ambient and fluid temperature	0 to 60°C (with no freezing)			
Cushion	Shock absorber			
Shock absorber type	For low energy	RB0805	RB1006	RB1411
	For high energy	RB0806	RB1007	RB1412
Rotation	90°, 180°			
Angle adjusting range	Each rotation end ±3°			
Cylinder bore size	ø15	ø18	ø21	ø25
Port size	End ports	M5		1/8
	Side ports	M5		

### Allowable Kinetic Energy and Rotation Time Adjustment Range

Size	Allowable kinetic energy [mJ]		Rotation time adjustment range for stable operation (s/90°)
	Shock absorber for low energy	Shock absorber for high energy	
10	161	231	0.2 to 1.0 <sup>Note)</sup>
20	574	1060	
30	805	1210	
50	1310	1820	

Note) Values above indicate the time between the start of rotation and the deceleration caused by the shock absorber. Although the time required by the rotary table to reach the rotation end after deceleration differs depending on the operating conditions (inertial moment of the load, rotation speed and operating pressure), approximately 0.2 to 2 seconds are required.

### Product Recommendation



Stocked items for fast delivery

MSQB10A	MSQB20R	EMSQB50
MSQB10R	EMSQB30A	EMSQB50A
MSQB20A	EMSQB30R	EMSQB70A



### Auto Switches

- D-M9PWL (PNP 2-colour indication)
- D-M9NWL (NPN 2-colour indication)

Note) For more options see the Auto Switch section, page XXX



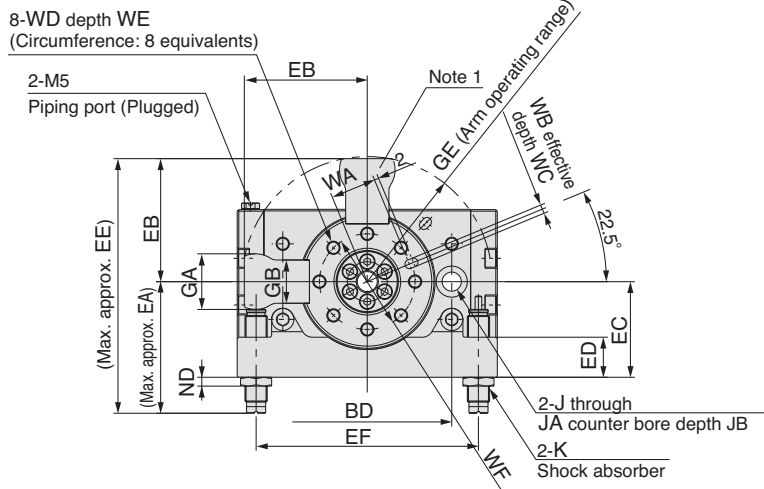
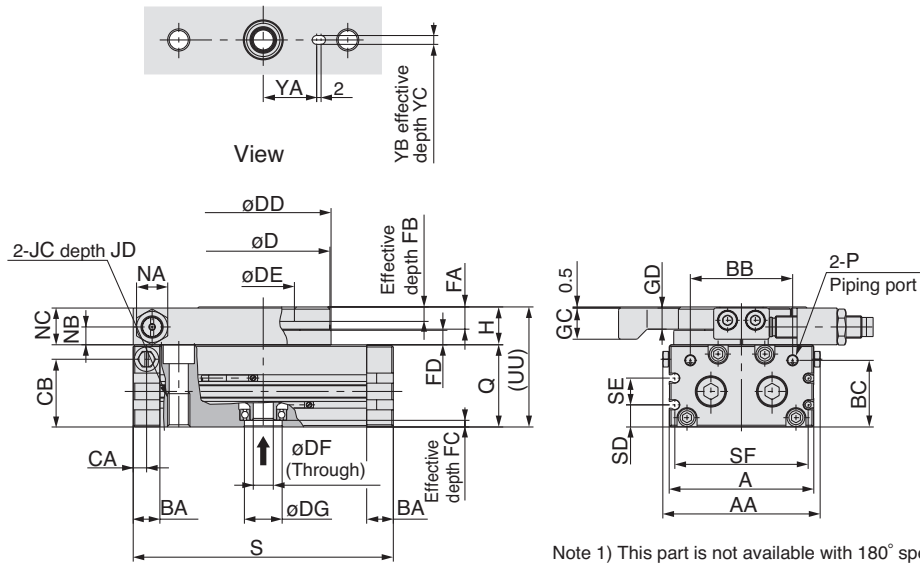
### Related Products

- Series AS** - Speed Controllers - page 1238
- Series SY** - Valves - page 65, 101, 417
- Series SV** - Valves - page 20
- Series VQ** - Valves - page 241
- Series AC** - Air Preparation - page 1076
- Series IDK** - Moisture Control Tube - page 1149
- Series TU** - Tubing - page 1223
- Series KQ2** - Fittings - page 1184



Dimensions / With External Shock Absorber Size: 10, 20, 30, 50

Basic type/MSQB□<sub>H</sub>□



Size	AA	A	BA	BB	BC	BD	CA	CB	D	DD	DE	DF	DG	EA	EB	EC	ED	EE	EF	FA	FB	FC	FD	GA	GB	GC	GD	GE	H
10	55.4	50	9.5	34.5	27.8	60	4.5	28.5	45	46	20H9	6	15H9	52.9	44.3	33.5	14	97.2	80	8	4	3	4.5	20	15.6	11	7.5	45.2	13
20	70.8	65	12	46	30	76	6	30.5	60	61	28H9	9	17H9	61.8	55.3	43	18	117.1	100	10	6	2.5	6.5	25	19.5	14	9.5	56.4	17
30	75.4	70	12	50	32	84	6.5	33.5	65	67	32H9	12	22H9	63.1	60.3	46	19.5	123.4	110	10	4.5	3	6.5	27	21.5	14	9.5	61.5	17
50	85.4	80	15.5	63	37.5	100	10	37.5	75	77	35H9	13	26H9	86.7	71.4	56	22	158.1	130	12	5	3	7.5	32	28	18	11.5	72.9	20

Size	J	JA	JB	JC	JD	K	NA	NB	NC	ND	P	Q	S	SD	SE	SF	UU	WA	WB	WC	WD	WE	WF	YA	YB	YC
10	6.8	11	6.5	M8	12	M8 x 1	10	5.5	12.5	4	M5	34	92	9	13	45	47	15	3H9	3.5	M5	8	32	19	3H9	3.5
20	8.6	14	8.5	M10	15	M10 x 1	14	8	16.5	4	M5	37	117	10	12	60	54	20.5	4H9	4.5	M6	10	43	24	4H9	4.5
30	8.6	14	8.5	M10	15	M10 x 1	14	8	16.5	4	1/8	40	127	11.5	14	65	57	23	4H9	4.5	M6	10	48	28	4H9	4.5
50	10.5	18	10.5	M12	18	M14 x 1.5	19	8.5	19.5	6	1/8	46	152	14.5	15	75	66	26.5	5H9	5.5	M8	12	55	33	5H9	5.5