

INFORMATION *New!*

Vane Type Rotary Actuator Series CRB1 New 63mm Bore Size

Series Variations



● Employs block unit construction

Auto switch units contained within the diameter of the actuator body can be easily retrofitted to a rotary actuator unit.



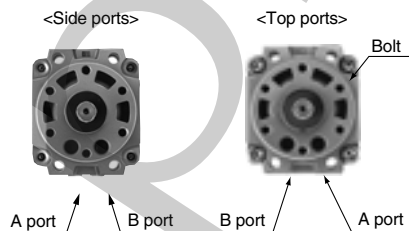
Basic type + Switch unit



Basic type + Foot (2 pcs.) + Switch unit
* Auto switch units can be retrofitted even when equipped with foot brackets

● Dual Porting Options: Top or Side Locations

Positions can be freely selected based on the application. Top ports can be used even with auto switches.



Body end surface on short shaft side

| Standard type | Fluid | | Air | | | | | |
|---------------------------|-------------------|------------------------------------|---------------------------------------|-----------|-----------------|-----------|---|---|
| | Size | | 63 | | | | | |
| | Vane type | Single vane (S) Double vane (D) | Single vane (S) | | Double vane (D) | | | |
| | Port position | Side ports (Nil) Top ports (E) | Side ports | Top ports | Side ports | Top ports | | |
| Rotation | | 90° | ● | ● | ● | ● | | |
| | | 180° | ● | ● | ● | ● | | |
| | | 270° | ● | ● | ● | ● | | |
| | Optional | | 100° | ● | ● | ● | ● | |
| | | | 190° | ● | ● | ● | ● | |
| | | | 280° | ● | ● | ● | ● | |
| Shaft type | Double shaft (W) | | ● | ● | ● | ● | | |
| Cushion | Rubber bumper | | ● | ● | ● | ● | | |
| Variations | Basic type | | ● | ● | ● | ● | | |
| | With auto switch | | ● | ● | ● | ● | | |
| | Copper free (20-) | | ● | ● | ● | ● | | |
| Option | Mounting | With foot brackets (L) | ● | ● | ● | ● | | |
| Order made specifications | Shaft type | Double shaft | Long side round/ Short side square | J | ● | ● | ● | ● |
| | | | Double side square | Z | ● | ● | ● | ● |
| | | | Double side key | Y | ● | ● | ● | ● |
| | | | Double side round | K | ● | ● | ● | ● |
| | | | Double side square | X | ● | ● | ● | ● |
| | Single shaft | Single side key | S | ● | ● | ● | ● | |
| | | Single side round | T | ● | ● | ● | ● | |
| | | Single side square | X | ● | ● | ● | ● | |
| | Vane | Shaft pattern | | ● | ● | ● | ● | |
| | | Rotation pattern | | ● | ● | ● | ● | |

Note) Consult P/A regarding order made specifications.

How to Order

Basic type CRB1 **B** **W** **63** — **90** **S**

With auto switch CDRB1 **B** **W** **63** — **90** **S** — **R73**

Mounting

| | |
|----------|------------|
| B | Basic type |
| L | Foot type |

Refer to Table 1 below when a separate foot bracket assembly only is required.

Table 1: Foot assembly no.

| Type | Unit part no. |
|-----------------|---------------|
| CRB1LW63 | P411030-5 |

Shaft type

| | |
|----------|--|
| W | Double shaft (long shaft key & square) |
|----------|--|

Size

Rotation

| Class | Symbol | Single vane | Double vane |
|----------|------------|-------------|-------------|
| Standard | 90 | 90° | 90° |
| | 180 | 180° | — |
| | 270 | 270° | — |
| Optional | 100 | 100° | 100° |
| | 190 | 190° | — |
| | 280 | 280° | — |

Vane type

| | |
|----------|-------------|
| S | Single vane |
| D | Double vane |

Number of auto switches

| | |
|------------|--------|
| S | 1 pc.* |
| Nil | 2 pcs. |

* For 1 piece, a right hand auto switch is installed.

Electrical entry/Lead wire length

| | |
|------------|------------------------------------|
| Nil | Grommet/lead wire 0.5m (~1.5 ft) |
| L | Grommet/lead wire 3m (~9 ft) |
| C | Connector/lead wire 0.5m (~1.5 ft) |
| CL | Connector/lead wire 3m (~9 ft) |
| CN | Without connector/lead wire |

* Available only with R73, R80 and T79 type connectors.
** Lead wire with connector part nos.
D-LC05: Lead wire 0.5m
D-LC30: Lead wire 3m

Type of auto switch

* Select applicable auto switches from the table below.

Port position

| | |
|------------|------------|
| Nil | Side ports |
| E | Top ports |

Applicable auto switches

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

* Lead wire length symbols 0.5m (~1.5 ft) Nil (Example) R73C
 3m (~9 ft) L (Example) R73CL
 None N (Example) R73CN

• Operating time – 1.2ms • Operating temperature range – 5 to 60°C ((41 to 140°F)
 • Impact resistance – 300m/s² (11.2 in/s²) (Reed), 1000m/s² (39 in/s²) (solid state)

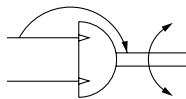


Basic type + Switch unit

Specifications

| Vane type | | Single vane (S) | Double vane (D) |
|--------------------------------|-----------------------|--|----------------------------------|
| Rotation | Standard | 90° ^{+4°} ₀ , 180° ^{+4°} ₀ , 270° ^{+4°} ₀ | 90° ^{+4°} ₀ |
| | Optional | 100° ^{+4°} ₀ , 190° ^{+4°} ₀ , 280° ^{+4°} ₀ | 100° ^{+4°} ₀ |
| Fluid | | Air (unlubricated) | |
| Proof pressure MPa | | 1.5 (217 psi) | |
| Ambient and fluid temperature | | 5 to 60°C (41 to 140°F) | |
| Max. operating pressure MPa | | 1.0 (145 psi) | |
| Min. operating pressure MPa | | 0.15 (22 psi) | |
| Speed adjustment range sec/90° | | 0.1 to 1.0 | |
| Allowable kinetic energy J | | 0.12 (0.09 ft•lb) | 0.16 (0.12 ft•lb) |
| Shaft load N | Allowable radial load | 390 (87.6 lbf) | |
| | Allowable thrust load | 340 (76.4 lbf) | |
| Bearing | | Bearings | |
| Port position | | Side ports, Top ports | |
| Size | Side ports | Rc 1/8 | |
| | Top ports | Rc 1/8 | |
| Mounting | | Basic type, Foot type | |

JIS symbol



Internal volume

cm³ (in³)

| Class | Rotation | Single vane (S) | Double vane (D) |
|----------|----------|-----------------|-----------------|
| Standard | 90° | 70 (4.3) | 98 (5.0) |
| | 180° | 94 (5.7) | — |
| | 270° | 118 (7.2) | — |
| Optional | 100° | 73 (4.4) | 104 (6.3) |
| | 190° | 97 (5.9) | — |
| | 280° | 121 (7.4) | — |

Weights

g (lb)

| Description | Rotation | Single vane (S) | Double vane (D) |
|---------------------------------------|----------|-----------------|-----------------|
| Body | 90° | 1365 (3.0) | 1410 (3.1) |
| | 180° | 1330 (2.9) | — |
| | 270° | 1290 (2.8) | — |
| | 100° | 1360 (3.0) | 1400 (3.1) |
| | 190° | 1325 (2.9) | — |
| | 280° | 1285 (2.8) | — |
| Auto switch unit + Auto switch 2 pcs. | | 85 (2.0) | |
| Foot bracket assembly | | 785 (1.7) | |

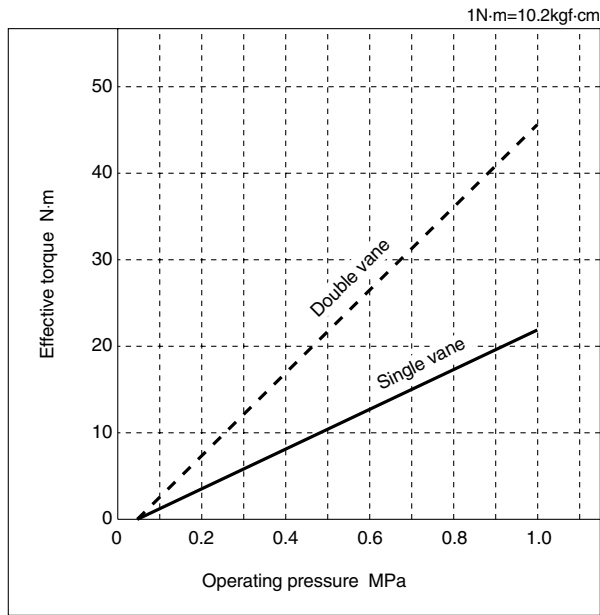
Unit part numbers

Refer to page 5 for details.

| Auto switch unit part no. | | P411030-1 |
|---------------------------------|------------|-----------|
| Auto switch block unit part no. | Right hand | P411040-8 |
| | Left hand | P411040-9 |

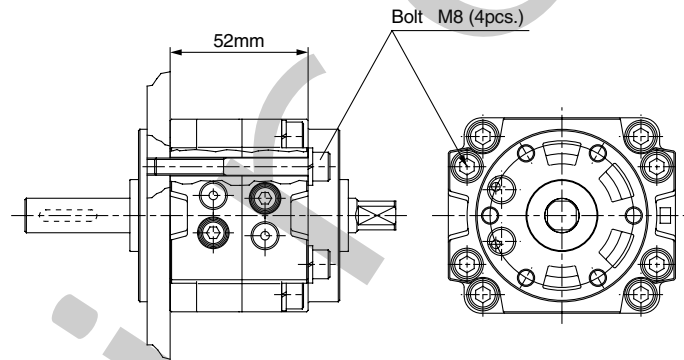
Effective Output

CRB1BW63



1MPa = 145 psi
1N·m = 0.7375 ft·lb

Direct Mounting of Rotary Actuator



Key Position and Rotation Range

(Viewed from long shaft side) Keys in the drawings indicate an intermediate position when the A port or B port is pressurized.

| | Single vane type | | | Double vane type |
|----------|------------------|----------|----------|------------------|
| Standard | 90° | 180° | 270° | 90° |
| | Optional | 100° | 190° | 280° |

With Auto Switches



Applicable auto switches

| Auto switch model | | Electrical entry | Indicator light (lights when ON) |
|-------------------|--------|------------------------------------|----------------------------------|
| Reed | D-R73 | Grommet/2 wire Connector/2 wire | Yes |
| | D-R80 | | No |
| Solid state | D-S79* | Grommet/3 wire (NPN) | Yes |
| | D-S7P* | Grommet/3 wire (PNP) | |
| | D-T79 | Grommet/2 wire, Connector/2 wire | |

* A connector type is not available for solid state 3 wire switches.

Auto switch direction classes

Right hand type
D-□□□1

Left hand type
D-□□□2



1 pc. each right hand and left hand switch

Auto switch rotation and actuation ranges

| Size | Rotation range | Actuation range |
|------|----------------|-----------------|
| 63 | 38° | 7° |

Grommet electrical entry
direction: Side



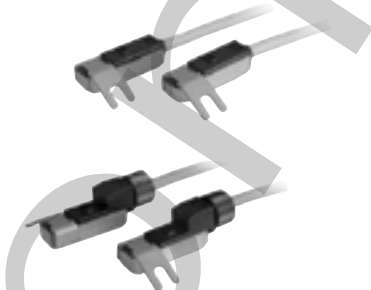
D-R73□, D-R80□

Connector electrical entry
direction: Side



D-R73□C, D-R80□C

Grommet, connector electrical
entry direction: Side

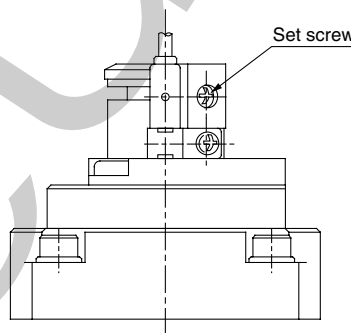


D-S79□, D-S7P□

D-T79□, D-79□C

Moving auto switch detection positions

To set the detection position, loosen the set screw slightly, move the switch to the desired position, and retighten the screw. Over tightening will damage the screw and make it impossible to secure the switch. Use a tightening torque of about 0.5Nm.



Auto switch units

Auto switch block unit part numbers

| Type | For right hand | For left hand |
|-----------|----------------|---------------|
| CDRB1BW63 | P411040-8 | P411040-09 |

One piece each of right hand and left hand switch block units are installed on auto switch units.

Auto switch unit part numbers

| Type | Unit part no. |
|-----------|---------------|
| CDRB1BW63 | P411030-1 |

Order examples {CRB1BW63}

(Selection of side port position and single vane type)

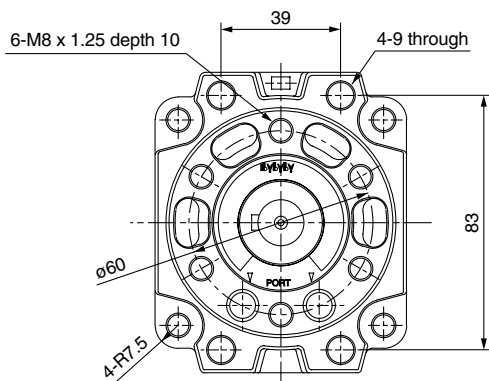
- Standard type (without auto switches), rotation 90°
CDRB1BW63-90S
- With switch unit (without auto switches), rotation 180°
CDRB1BW63-180S
- With switch unit + auto switch R73, rotation 270°
CDRB1BW63-270S-R73

Rotary Actuator/Dimensions (mm)

Standard type

1 in = 25.4mm

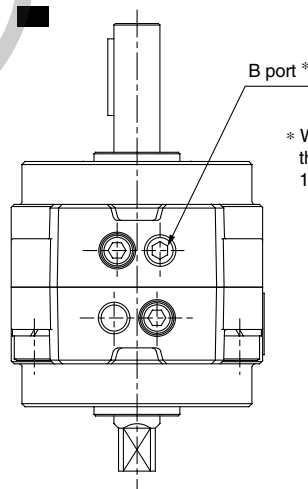
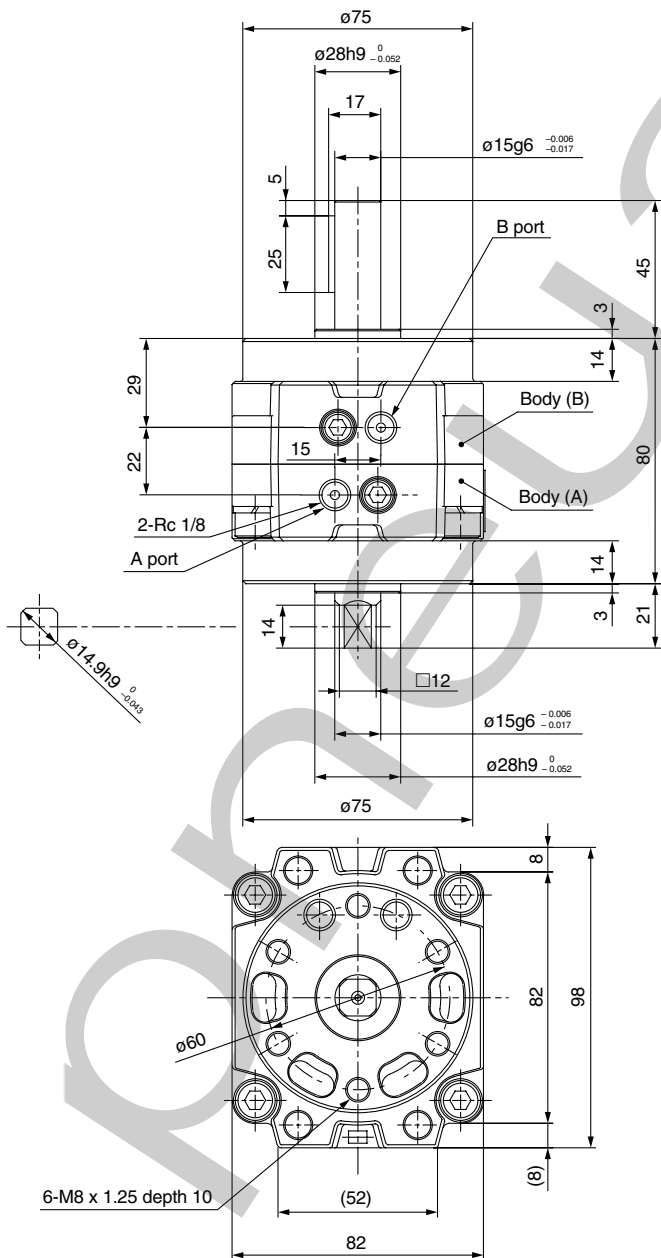
Side ports (port position): CRB1BW63-□S, CRB1BW63-□D



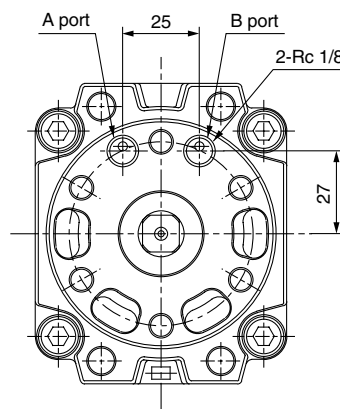
Key dimensions

| Key dimensions | | | |
|----------------|----------------------------------|----------------------------------|----|
| Model | b (h9) | h (h9) | l |
| CRB1BW63-□□□ | 5 ⁰ _{-0.030} | 5 ⁰ _{-0.030} | 25 |

Top ports (port position): CRB1BW63-□SE, CRB1BW63-□DE



* When the B port of body (B) is threaded, it is closed with a Rc 1/8 plug.



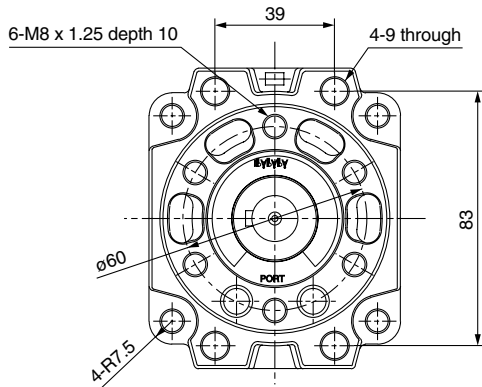
Note) Single vane type/The drawings indicate 180° type with B port pressurized.

Rotary Actuator/Dimensions (mm)

With Auto Switch

1 in = 25.4mm

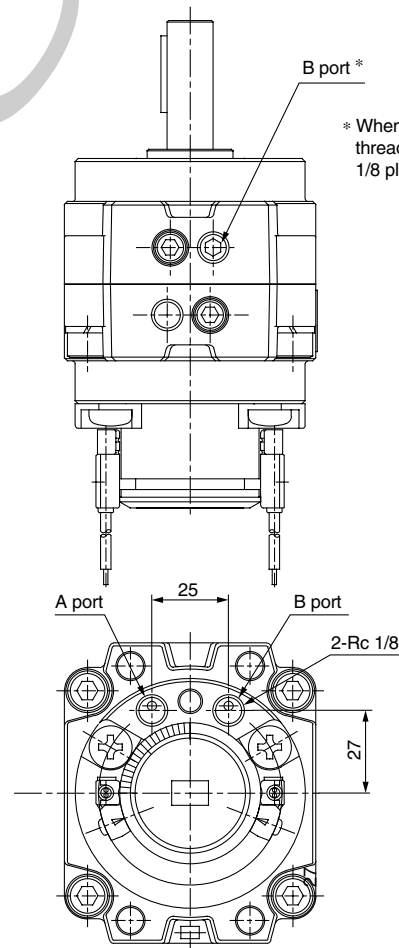
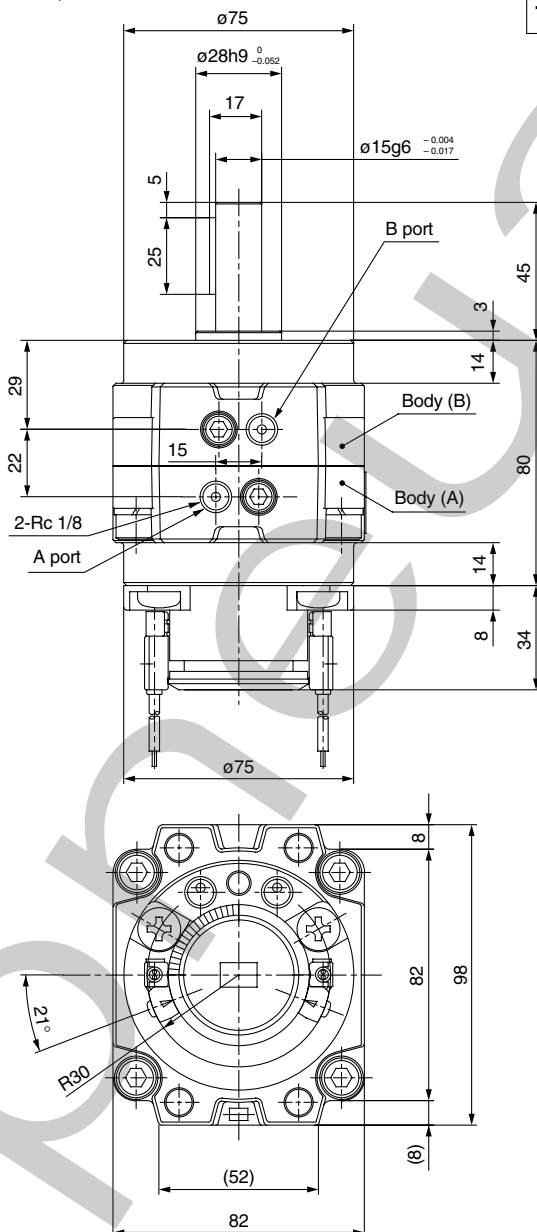
Side ports (port position): CDRB1BW63-□S, CDRB1BW63-□D



Key dimensions

| Key dimensions | | | |
|----------------|----------------------------------|----------------------------------|----|
| Model | b (h9) | h (h9) | l |
| CDRB1BW63-□□□ | 5 ⁰ _{-0.030} | 5 ⁰ _{-0.030} | 25 |

Top ports (port position): CDRB1BW63-□SE, CDRB1BW63-□DE



Note) Single vane type/The drawings indicate 180° type with B port pressurized.

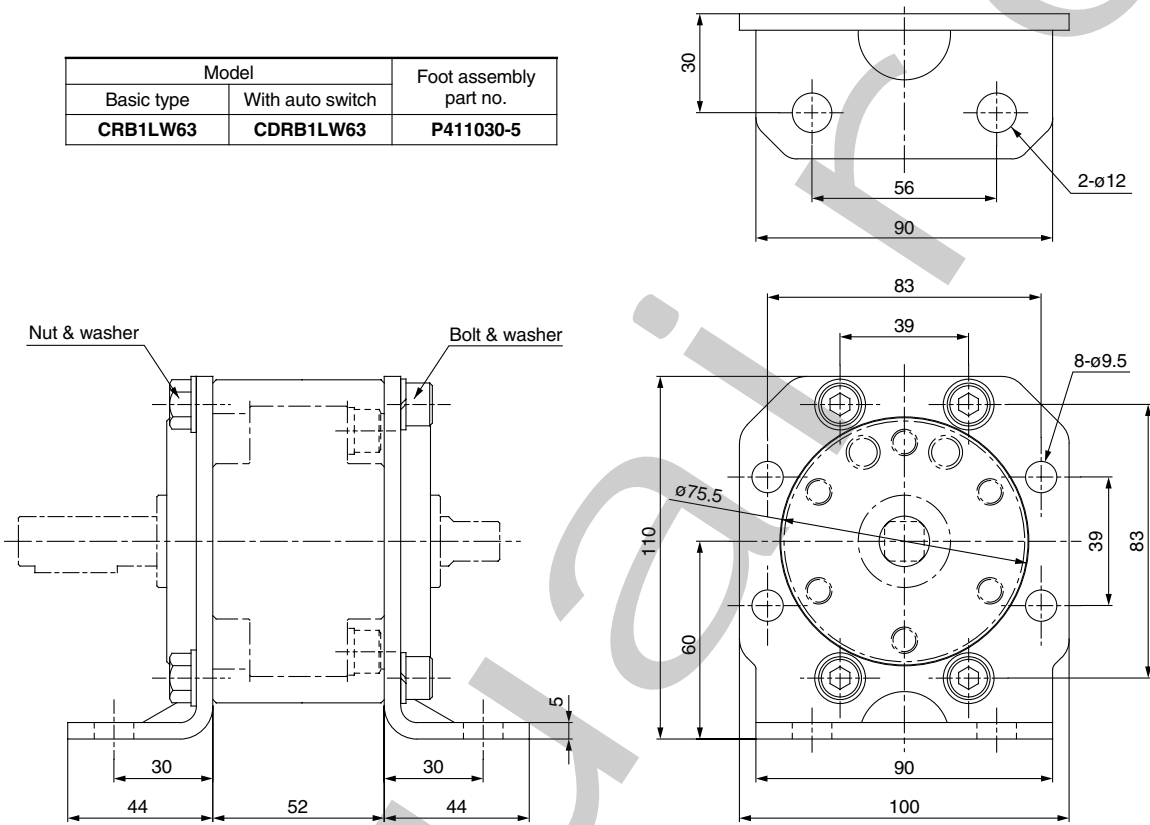


Dimensions (mm)

Option/Foot bracket

1 in = 25.4mm

| Model | | Foot assembly part no. |
|------------|------------------|------------------------|
| Basic type | With auto switch | |
| CRB1LW63 | CDRB1LW63 | P411030-5 |



POWER
AIRE

