



# MANUAL

---

## RUSH BOOSTER



***HIROTAKA MFG. CO., LTD.***



## The notes for Using

Be sure to read this before handling



### CAUTION

#### 1. Piping

Before installing the piping, blow compressed air to prevent dirt from entering the piping. Select and use piping that can withstand the operating conditions. Release the air before use.

#### 2. Air Supply

Using the compression air with dry via filter.

#### 3. Hydraulic Fluid (ISO VG22 Standard mineral hydraulic fluid or VG32)

If the hydraulic fluid has drain or dirt mixed in with it, or if it has deteriorated or discolored, replace it with new hydraulic fluid. Also, use the same old and new hydraulic oil. Recommended to replace once a year.

#### 4. Quantity of hydraulic fluid

There is an oil level sticker on the side of the oil gauge, so replenish the hydraulic oil if the oil level drops. Also, the hydraulic oil may turn black at the beginning of use, but this is due to initial wear of the seals. There are no negative effects with continued use.

#### 5. Mounting direction

The standard mounting direction is horizontal. Even if the Rush Booster is mounted facing downward or upward, mount the oil gauge with the red cap facing upward.

#### 6. Return speed adjustment of Rush Booster

Adjust the return speed of the Rush Booster using the speed controller so that it is slower than the return speed of the actuator operated by the Rush Booster. This is to prevent the oil pressure in the hydraulic piping from becoming negative pressure and causing air bubbles to leak from the oil gauge or from insufficient pressure. Normal operation after air bleeding is when the Rush Booster moves forward or backward, and the oil level in the oil gauge repeats up and down movements of about 5 to 10 mm. If the return speed of the Rush Booster is fast and the pressure inside the hydraulic piping becomes negative, the oil in the oil gauge will decrease to the extent that it temporarily disappears after the Rush Booster returns, and then air bubbles will be generated and the oil may overflow from the red cap of the oil gauge. In that case, release the air, replenish the oil, and adjust the return speed of the Rush Booster to a slower value. When adjusting the return speed of the Rush Booster after air release, open the speed controller little by little, and do not open it any further if there is no change in the return speed of the actuator.

#### 7. Air release

When releasing the air, lower the air pressure to about 0.2MPa and operate the booster. Also, if there is an air release plug on the actuator side, do not loosen the plug too much. There is a risk of oil gushing out or the plug flying off. There is also a method to air release by supplying air into the oil gauge. (How to air release refer P3)

Using oil ----- Standard mineral hydraulic fluid (ISO VG22 or 32)

Operating pressure ----- 0.15MPa to 0.70MPa

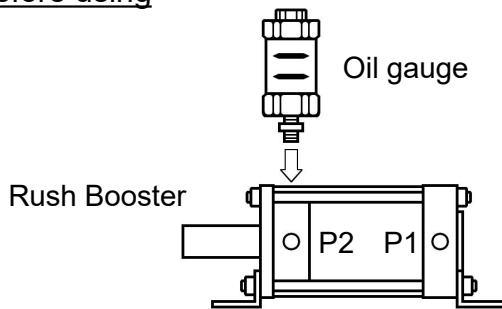
Amount of needing oil ----- Amount of discharged oil + about 100cm<sup>3</sup>  
(Excludes oil amount in hydraulic piping and actuator.)

Example : RB160 ×  $\frac{100}{100-65}$

└ Amount of discharged oil

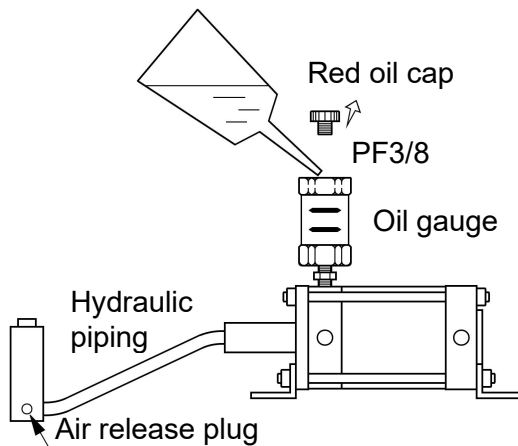
In the case of RB160 × 100—65, amount of needing oil is 200cm<sup>3</sup>.

### Before using



Before using the Rush Booster, attach the included oil gauge to the connecting port (figure position). After completing the air piping and hydraulic piping, very close the speed controller (P1 side) for adjusting the return speed of the Rush Booster to make the return speed of the Rush Booster considerably slower.

### How to add oil and air release

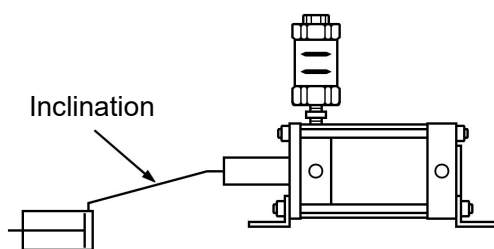


Return both the Rush Booster and actuator to return position, remove the red cap from the oil gauge, and add oil. If the actuator piping connection port is located below the Rush Booster as shown in the figure, and there is a plug on the actuator side, loosen the plug. If it do not have an air release plug, operate the Rush Booster until the air is completely removed.

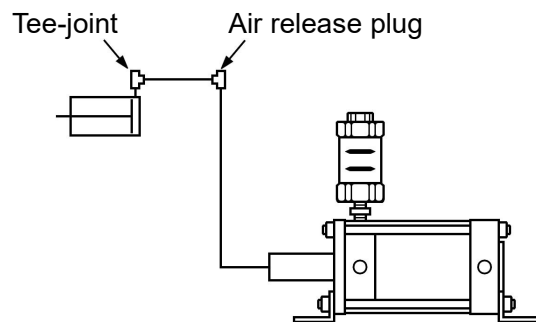
If the actuator piping connection port is located above the Rush Booster, use the PF3/8 screw on the top of the oil gauge to supply low pressure air (0.02 to 0.05MPa) into the oil gauge. Push the air in the hydraulic piping with low-pressure oil and loosen the air release plug on the actuator side to release the air. When the oil in the oil gauge decreases, close the air release plug, stop the air supply, and replenish the oil. Repeat this to release air, and finally add oil within oil level range. If the air is released correctly, the hydraulic pressure and actuator stroke will be normal.

### Hydraulic piping precautions

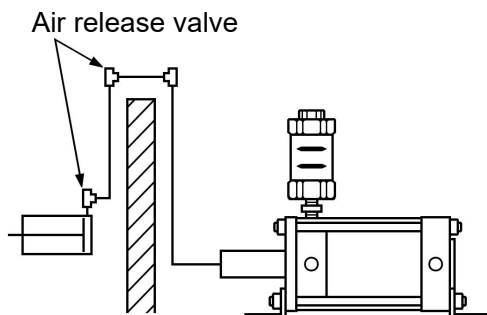
If air gets mixed into the oil in the hydraulic piping or actuator during use, it may prevent proper hydraulic pressure from being generated and the actuator from operating normally. install hydraulic piping with air bleeding in mind.



Rush Booster is located above the actuator.



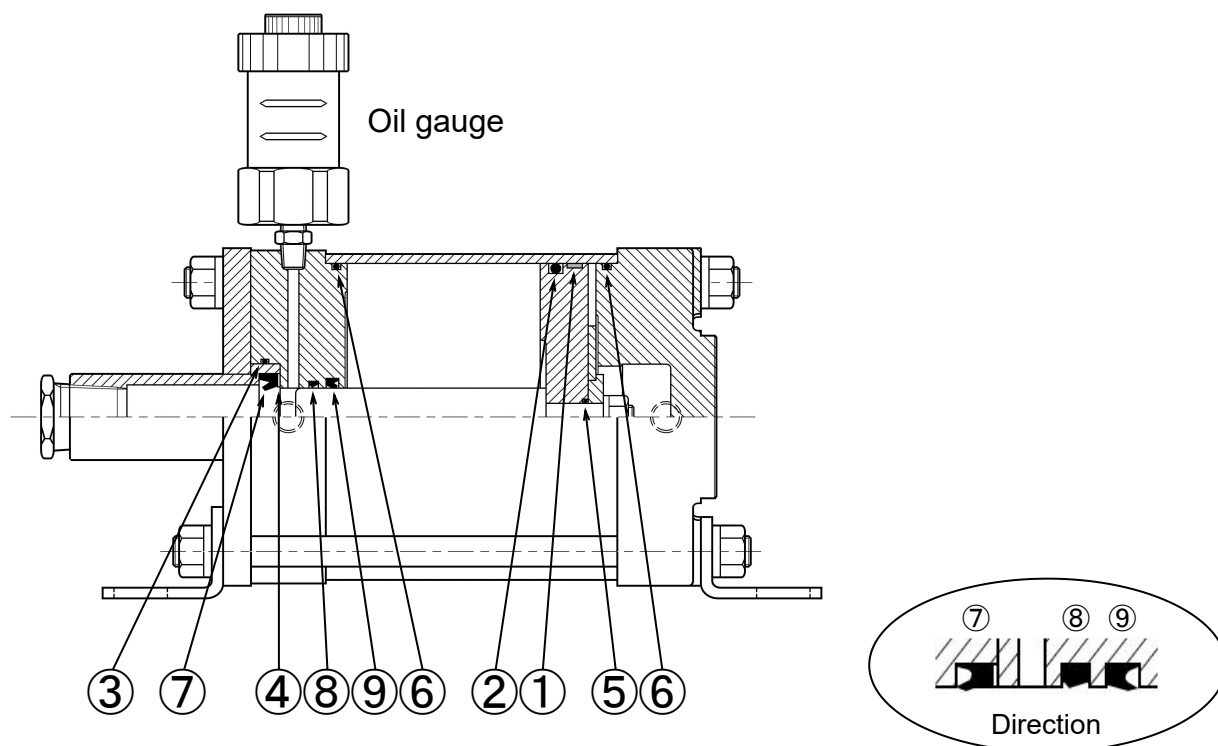
Rush Booster is located below the actuator.



Install an air release at a high position in the middle of the piping.

There is an obstruction between the Rush Booster and actuator.

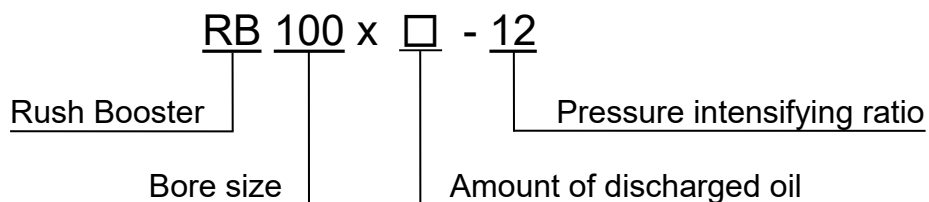
## Packing for RB series (Contact us for the RB300 series.)



| No.           | 1         | 2              | 3      | 4            | 5      | 6       | 7               | 8              | 9                |
|---------------|-----------|----------------|--------|--------------|--------|---------|-----------------|----------------|------------------|
| Model         | Wear ring | Piston packing | O ring | Back up ring | O ring | O ring  | Y packing       | Rod seal       | Rod seal         |
| RB100×□ - 5   | SWB100    | PPD100         | G65    | —            | P14    | G95     | ISI<br>45 55 6  | PS45           | ISI<br>45 55 6   |
| RB100×□ - 12  | SWB100    | PPD100         | G50    | —            | P14    | G95     | IDI<br>28 41 10 | PS28           | ISI<br>28 35.5 5 |
| RB160×□ - 5   |           | P150           | G90    | —            | P28    | 1517#36 | ISI<br>70 80 6  | ISI<br>70,80,6 | ISI<br>70 80 6   |
| RB160×□ - 16  | SWB160    | P150           | G75    | —            | P14    | 1517#36 | IDI<br>40 55 10 | PS40           | ISI<br>40 50 6   |
| RB160×□ - 28  | SWB160    | P150           | G55    | —            | P14    | 1517#36 | IDI<br>30 45 10 | PS30           | ISI<br>30 40 6   |
| RB160×□ - 65  | SWB160    | P150           | G55    | GN911001     | P14    | 1517#36 | IDI<br>20 33 10 | PS20           | ISI<br>20 28 5   |
| RB160×□ - 100 | —         | P150           | P42    | GN910501     | P12    | 1517#36 | IDI<br>16 26 8  | PS16           | IDI<br>16 24 5   |
| Q'ty          | 1         | 1              | 1      | 1            | 1      | 2       | 1               | 1              | 1                |

※How to order for seal kit : "Seal kit for RB-OO (part no.)" or "Seal kit for RB-OO (Bore size) OOt看mes".

Example for part number



**HIROTAKA MFG. CO., LTD.**

HEAD OFFICE

5-89, Ikoma-cho, Kita-ku, Nagoya City, Aichi 462-0832, Japan

Phone +81-52-991-6111 Fax +81-52-991-6115

<http://www.hirotaka.co.jp/eng>

2025a1