

Hydraulic Booster Unit

Drastically Reduces Hydraulic Clamp Operating Time !



Model CJB

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In case hydraulic supply from application side is possible, clamping time can be drastically reduced by a hydraulic source of an application + an air hydraulic pump.

● Features

- **Drastically Reduces Hydraulic Clamp Operating Time!**

Reduces clamping time with a hybrid unit composed of IMM hydraulic source + air hydraulic pump.

- **Compact Application Possible!**

Application can be compact, because the hydraulic tank can be shared with IMM.

- **Centralized Control of Hydraulic Pressure Possible!**

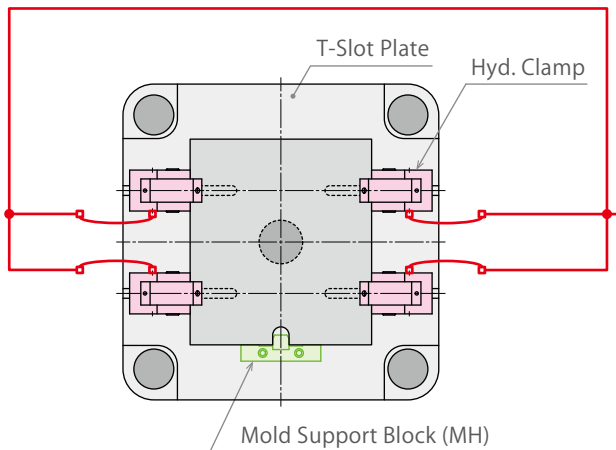
Enables centralized control of hydraulic pressure, because the hydraulic tank can be shared with IMM.

- **Setup Time Reduction Improves Machine Availability!**

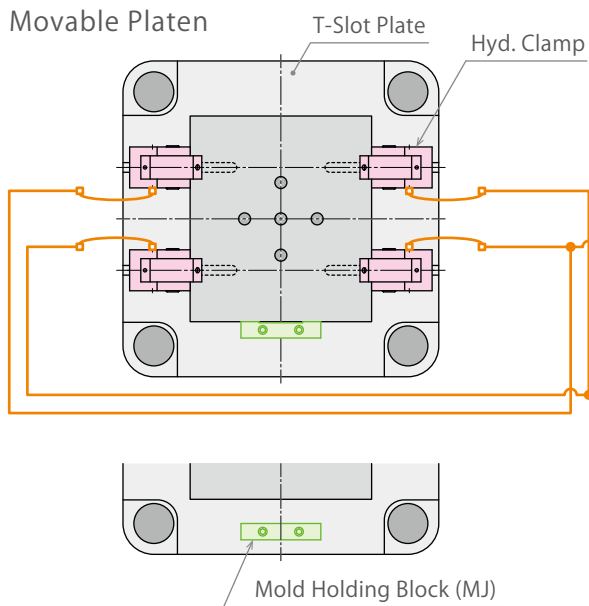
Shorter clamping time reduces setup time and improves machine availability !

● Circuit Example

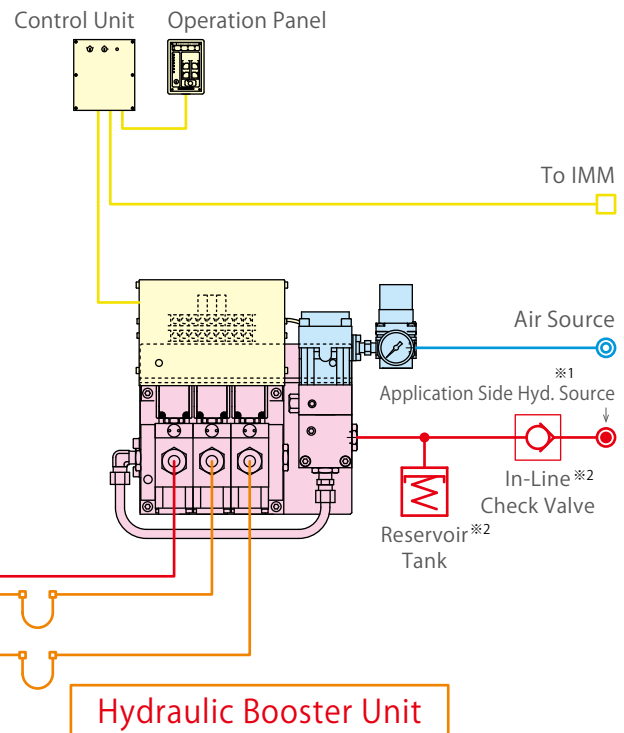
Stationary Platen



Movable Platen



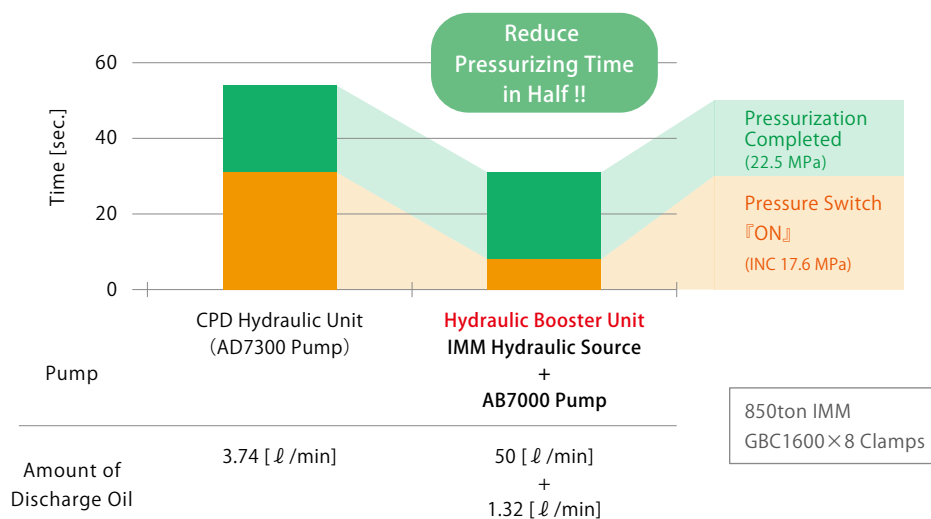
- Stationary Platen Hydraulic Circuit
- Movable Platen Hydraulic Circuit
- Air Circuit
- Electric Circuit



Notes :

- ※ 1. While hydraulic clamps are working, keep the application side hydraulic source in operation.
- ※ 2. Please refer to P.7 for the option : Reservoir Tank and P.8 for the option : In-line Check Valve.

● Clamping Time Comparison



Pump Pressurization Time Comparison

※ Calculated value by our own.

Model No. Indication

CJ B N 0 0 0 - 2UR - 5 A - D K1

1 2 3 4 5 6 7 8

1 Pump Model

B : AB Pump (Model No. AB7000-M□-Z0360□)

2 Pressure Code

N : Working Pressure 25MPa
 Pressure Switch Setting INC. 17.6MPa (Normal Pressure Rise Confirmation), INC. 28.4MPa (Abnormal High Pressure Confirmation)

3 Fluid Code

0 : General Hydraulic Oil
G : Water•Glycol
S : Silicon Oil
F : Fatty Acid Ester

4 Design No.

0 : Revision Number

5 Circuit Symbol (Indicate with the number of circuits and circuit symbol.)

U : For Clamp Double Solenoid

R : With Pressure Relief Valve (Normal Pressure Rise Confirmation)
S : With Pressure Relief Valve (Normal Pressure Rise Confirmation + Abnormal High Pressure Confirmation)

6 Voltage Code

1 : AC100V (50 / 60Hz)
2 : AC200V (50 / 60Hz)
3 : AC110V (50 / 60Hz)
4 : AC220V (50 / 60Hz)
5 : DC24V

7 Common (Only when selecting 6 Voltage Code 5:DC24V)

A : + Common (Standard)
B : - Common

8 Options ※1

Blank : No Option	L : With Pressure Switch Light
D : With Filter Regulator (Auto-Drain Type)	N : Piping Port NPT Thread
E : Without Filter Regulator	P : Pressure Gauge in both PSI/MPa
F : Manual-Drain Filter Regulator	
K0 : With Pressure Gauge for Each Circuit (Without Primary Pressure Gauge)	
K1 : With Color Displayed Pressure Gauge for Each Circuit (Without Primary Pressure Gauge)	

Notes :

※1. Please contact us for details of options and available combinations.

1. When using this unit, please select YM Control Unit with Pressure Switch / Pressure Source **2** "With Command Output for Increasing Hydraulic Pressure of Clamp / With Command Output for External Hydraulic Pump".

Specifications

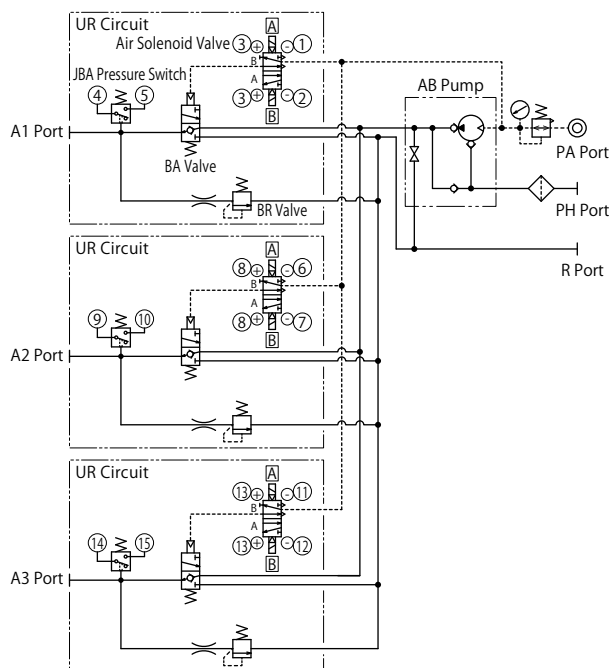
Model No.		CJBN0□0-□-□
Working Hydraulic Pressure	MPa	25
Withstanding Pressure	MPa	37
Air Pressure	MPa	0.41 or more
Incoming side Hydraulic Pressure	MPa	14.0 or less
Control Voltage	V	DC 24V
Operating Temperature	°C	0 ~ 70
Usable Fluid	Refer to Model No. Indication	
Use Frequency	Less than 20 Cycles / Day Pressure Rising Time : Less than 2.5 min. / Cycle	
Weight kg	2 Circuits	Approx. 19
	3 Circuits	Approx. 22
	4 Circuits	Approx. 25

Notes :

- If hydraulic viscosity is higher than specified, action time will be longer. Please use equivalent hydraulic oil to ISO-VG-32.
- If using it at low temperature, operation time will be longer because the viscosity of hydraulic oil becomes higher.
- When setting a pressure gauge to a hydraulic circuit, install a damper or use an oil-filled (glycerin) pressure gauge in order to prevent damage caused by pressure surging.
- Provide enough space at the top of the unit taking into consideration the maintenance of the pump.

Circuit Symbol

This shows the circuit symbol of CJBN0□0-3UR-5A.



Notes :

- in the diagram indicates the terminal number.
- in the diagram indicates the coil number.
- Hydraulic circuit of R port to the tank must be separated from others.
A hydraulic circuit shared with other actuators causes back pressure leading to damage of internal parts.

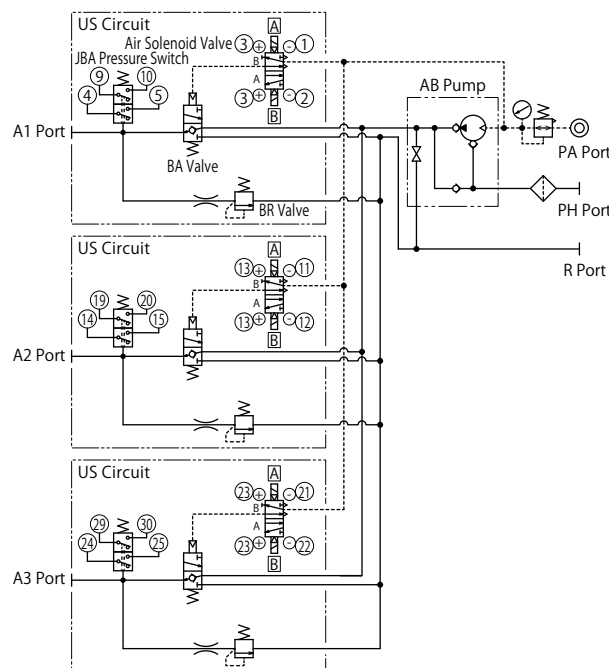
Main Components

AB Pump		
Model No.		AB7000-M□-Z0360□
Discharge Hydraulic Pressure	MPa	22.5
Set Air Pressure	MPa	0.41
Discharge Oil under No Load	ℓ /min	1.32
BA Valve		
Model No.		BA5R11-0-Z01802
BR Valve (Pressure Relief Valve)		
Model No.		BR5N11-0
Relief Pressure (Set Pressure)	MPa	25.0 ⁺² ₀
JBA Pressure Switch (R : Normal Pressure Rise Confirmation)		
Model No.		JBA2700-0G
Set Pressure (Normal Pressure Rise Confirmation)	MPa	INC. 17.6
JBA Pressure Switch (S : Abnormal High Pressure Confirmation)		
Model No.		JBA3800-0GD
Set Pressure (Normal Pressure Rise Confirmation)	MPa	INC. 17.6
Set Pressure (Abnormal Pressure Rise Confirmation)	MPa	INC. 28.4
Air Solenoid Valve (SMC made)		
Model No.		SYJ5240-5G

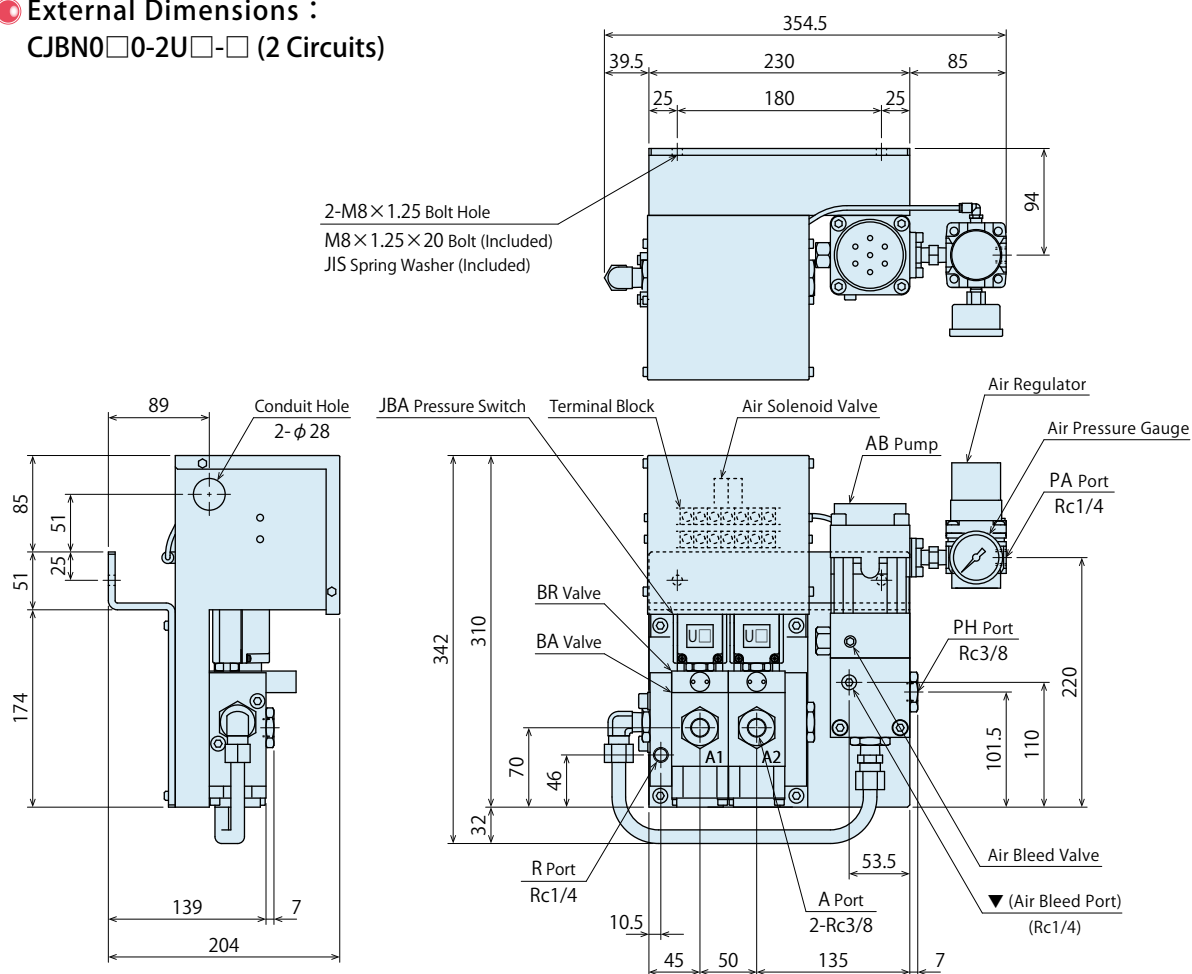
Note :

- The pump stops in balance at 22.5MPa in order to prevent abnormal continuous operation considering 25.0 MPa relief pressure of BR valve (pressure relief valve).

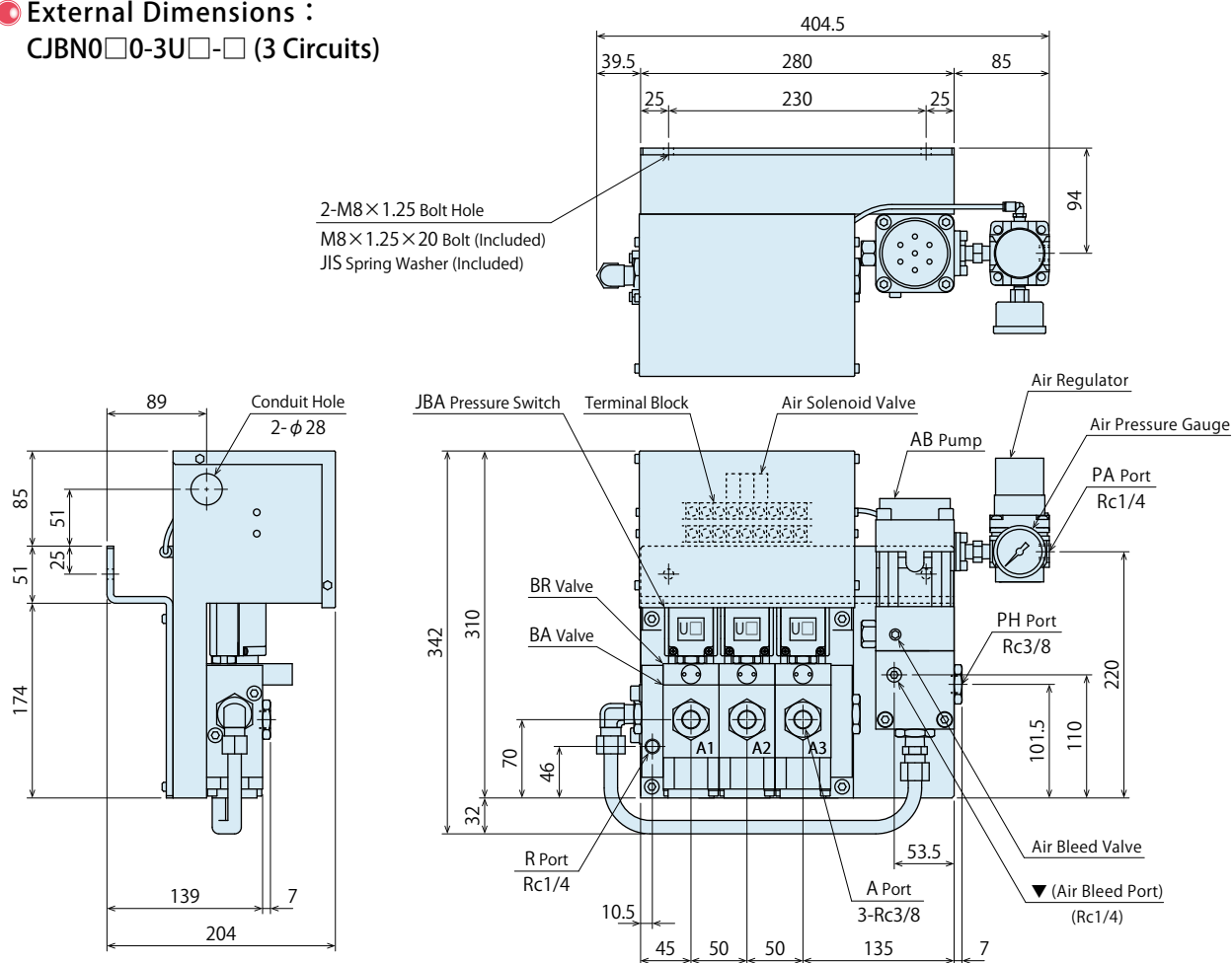
This shows the circuit symbol of CJBN0□0-3US-5A.



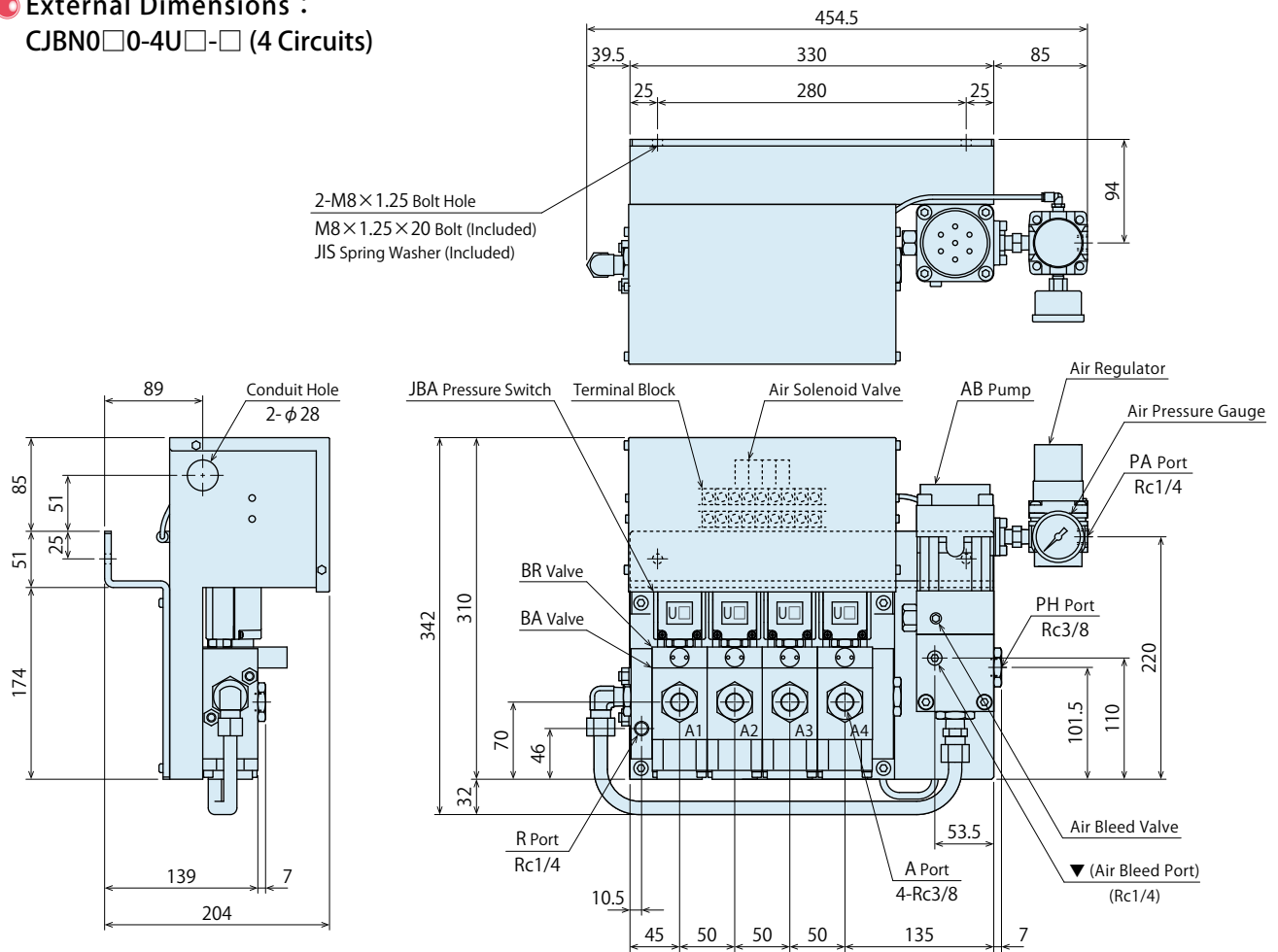
External Dimensions : CJBN0□0-2U□-□ (2 Circuits)



External Dimensions : CJBN0□0-3U□-□ (3 Circuits)



● **External Dimensions :**
CJBN0□0-4U□-□ (4 Circuits)



Note :

1. The port marked with ▼ in the diagram is fitted with a plug. Remove it during air bleeding, and install the plug after air bleeding.

Model No. Indication : Reservoir Tank

JPC0 4 0

1 2

1 Tank Capacity

- 4 : 40 cm³
- 6 : 60 cm³

2 Design No.

- 0 : Revision Number

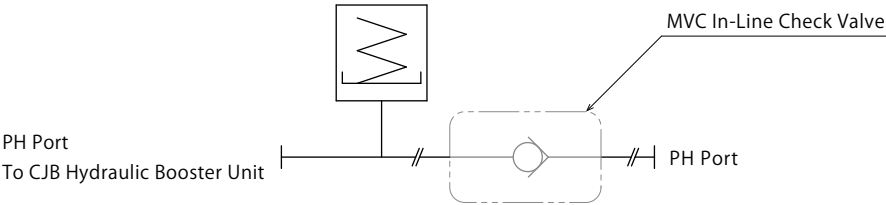
Specifications

Model No.		JPC040	JPC060
Max. Operating Hyd. Pressure	MPa	21	
Withstanding Pressure	MPa	32	
Tank Capacity	cm ³	40	60
Operating Temperature	°C	0 ~ 70	
Usable Fluid		General Hydraulic Oil	
Applicable Check Valve Model No.		MVC010	MVC030

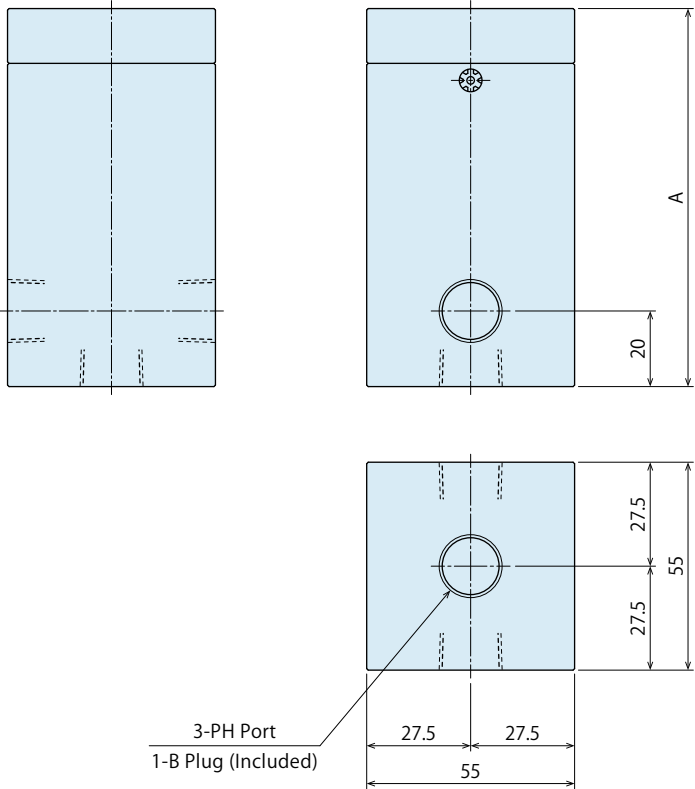
Note :

1. If a motor pump is also stopped when a machine is shut down for an extended period, the hydraulic pressure source will be cut off, potentially causing the AB pump to run dry. Adding the JPC Reservoir Tank ensures an adequate supply oil volume.

Circuit Symbol



External Dimensions



External Dimension List

Model	JPC040	JPC060
A	100	120
B	Rc3/8	Rc1/2

Model No. Indication : In-Line Check Valve

MVC0 1 0

1 2

Specifications

Model No.		MVC010	MVC030
Rated Flow Rate	ℓ /min	30	85
Max. Operating Hyd. Pressure	MPa	25	
Cracking Pressure	MPa	0.04	

1 Rated Flow Rate

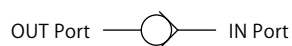
1 : 30 ℓ /min

3 : 85 ℓ /min

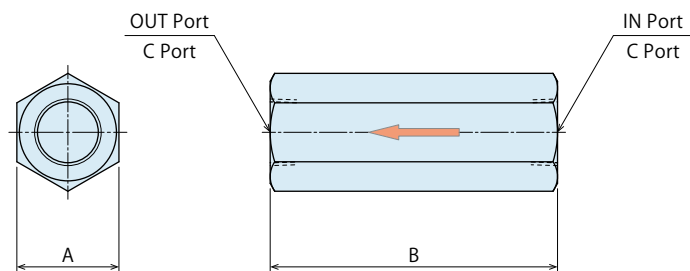
2 Design No.

0 : Revision Number

Circuit Symbol



External Dimensions



External Dimension List

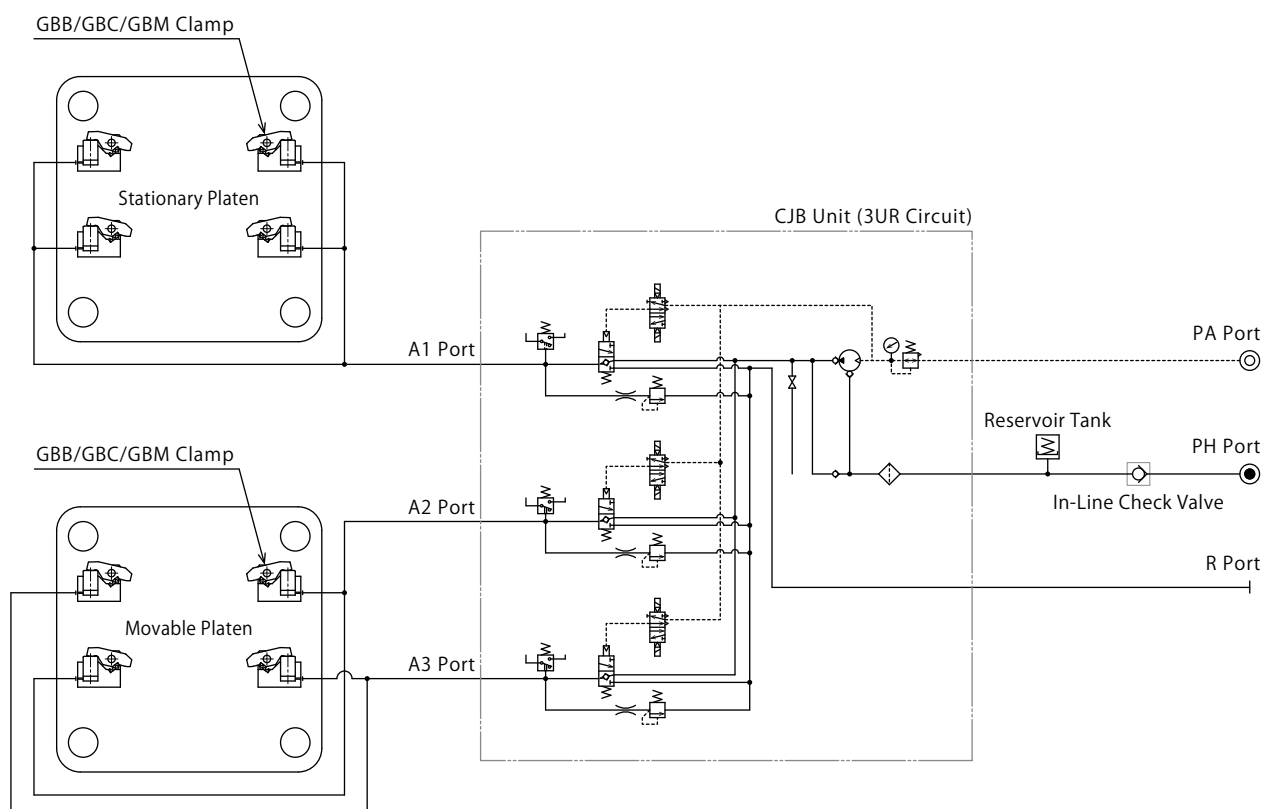
Model	MVC010	MVC030
A	27	41
B	76	95
C	Rc3/8	Rc3/4

Cautions

Notes for Design

- 1) Check Specifications
 - Please use each product according to its specifications.
- 2) Notes for Circuit Design
 - When designing the circuit, refer to the "System Circuit Diagram."
 - The unit is not suitable for continuous operation (circulation or open circuit).
Always use in a closed circuit. Continuous operation results in packing wear, adversely affecting the operational life of the pump.
 - When installing a hydraulic valve in the hydraulic circuit, use a non-leak valve manufactured by our company as a control valve. When installing a purchased hydraulic valve, the pump may not balance to stop due to internal leakage of the valve.
 - Hydraulic circuit of R-port to the tank must be separated from others.
Connecting to hydraulic circuit shared with other actuators may lead to damage in the internal part by back pressure.
 - Hydraulic pressure must be always supplied from hydraulic source.
If supplying hydraulic pressure is stopped, pump sucks air and pump will not stop.
 - Select the circuits of the unit in accordance with the specifications of the system and machines after referring to the circuit symbol diagram and the system circuit diagram.
Use of inappropriate circuits may lead to equipment damage.
 - In case of installing pressure gauge in the circuit, make the range of pressure gauge twice of the working hydraulic pressure.
Please use the vibration -pressure gauge of vibration proof.
- 3) Do not use with different power supply voltage from the specification.
 - Malfunction of the solenoid valve or damage to the solenoid valve may occur.
- 4) Be careful of the followings when selecting BR valve (Pressure Relief Valve).
 - The BR valve is designed to relieve the increase in oil pressure caused by a rise in oil temperature.
Do not use it for the purpose of reducing the supply pressure when it exceeds the relief set pressure. This will cause the pump and BR valve to operate continuously, shortening the operating life of the pump and the BR valve.
- 5) Please use air piping with an inner diameter of 6 mm or more.
 - If the supply air capacity is insufficient, fluctuations in air pressure may increase significantly, and the pump may not operate properly.

System Circuit Diagram



● Installation Notes

1) Check the Usable Fluid.

- Ensure to use mineral-based hydraulic oil as the usable fluid. The use of fluids such as fire-resistant hydraulic fluids will cause pump failure. Please use an appropriate hydraulic fluid as specified below.
 Viscosity : ISO VG 32
 Aniline Point : 100°C or higher
 When used in cold regions, please use low-viscosity hydraulic fluid.
 Recommended : ISO VG 22

2) Be careful of installation position.

- Please be sure to install the unit horizontally. Installing it at an angle may cause oil leakage.
- Do not block the air vent on the top surface of the pump.

3) Tightening of mounting bolt

- Tighten mounting bolts (M8) with a torque of 25 N·m.

4) Please use the clean air.

- If the compressed air contains synthetic oil which has chemical and organic solvent, or salinity, causticity gas, etc, it may cause the breakage and the defective operation of the pump. Please do not use such air.

5) Preparation for Piping

- The pipeline, piping connector and other oil passages should be cleaned and flushed thoroughly before use.
 (The port A is equipped with filter; however, please note that inadequate flushing may result in poor flow performance or malfunction due to clogging of the filter.

6) Applying Sealing Tape

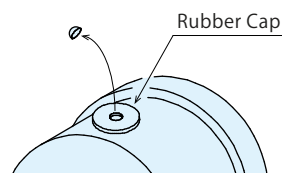
- When using sealing tape, wrap with it 1 to 2 times following the screwing direction.
 When piping, be careful that contaminant such as sealing tape does not enter in products.
 Pieces of the sealing tape can cause oil leaks and malfunction.

7) Installation of Fitting

- Screw fittings into the PA ports (Rc1/4) with a torque of 12-14 N·m.

8) Please cut out the rubber cap of the air pressure gauge upper part before use.

- It causes a decrease in the accuracy and the operational life of the pressure gauge by the atmosphere temperature change which leads to change the pressure inside the pressure gauge.

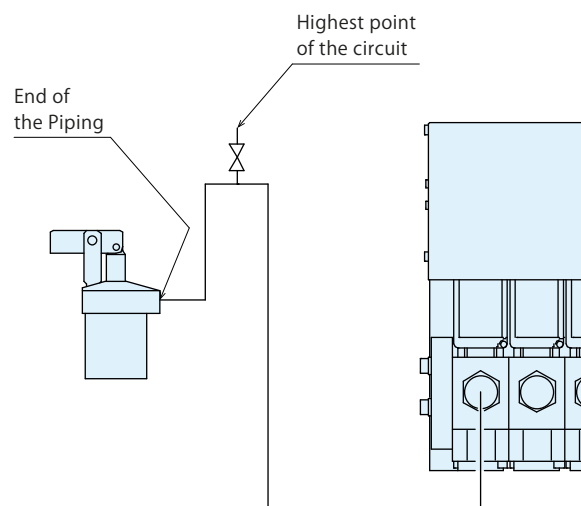


9) When using a DC power source, please note that the solenoid valve has polarity.

- Incorrect polarity will cause burnout of the solenoid valve coil. (For polarity, please refer to the terminal numbers in the circuit diagram provided in the outline drawing.)

10) Please bleed air from the hydraulic circuit.

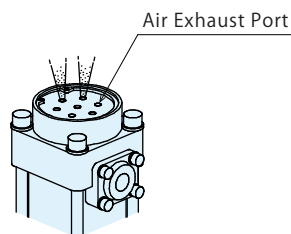
- After piping installation, bleed air from the end of the piping or from the highest point in the circuit.



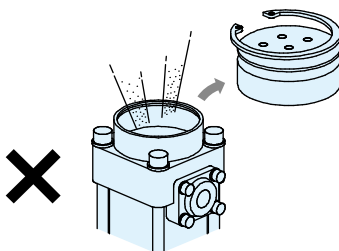
Cautions

● Notes on Handling

- 1) It should be operated by qualified personnel.
- Machines and devices with hydraulic products should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
 - ① Machines and devices can only be inspected or prepared when it is confirmed that the safety devices are in place.
 - ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the hydraulic circuits.
 - ③ After stopping the product, do not remove until the temperature drops.
 - ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting a machine or device.
- 3) Please use the product at the setting air pressure listed in the specifications.
 - Using this product at any air pressure other than the setting air pressure may cause damage to connected equipment or driven objects.
 - If the BR valve is used at a pressure higher than the specified air pressure, the pump will operate continuously, shortening the operating life of the pump and the BR valve.
- 4) Do not touch the pump during operation.
 - Compressed air is discharged from the air exhaust port. Keep your face, including your eyes and ears, away from the pump. Exhaust air may cause injury.
- 6) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.
- 7) Do not change the set pressure of BR valve or JBA pressure switch.
 - Changing the setting values may cause the unit to fail to operate properly. In addition, even within the warranty period, this will not be covered under the warranty.
- 8) Air Bleeding in Circuit
 - If a large amount of air enters the circuit for any reason, it is recommended to bleed the air at the pipe end or at the highest point in the circuit.
 - There is a possibility that the pump may draw in oil mixed with air, causing air entrainment.



- 5) Do not operate in a disassembled state.
 - Do not operate the product with the muffler (filter) removed from the air exhaust port. Exhaust noise and pressure may cause personal injury.



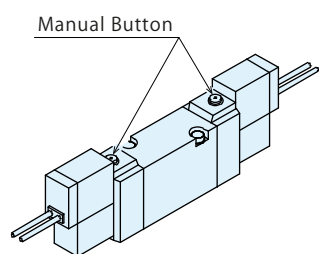
● Maintenance and Inspection

1) Removal of the Product

- Before the product is removed, make sure that safety devices and preventive devices are in place. Make sure there is no abnormality in the respective parts before restarting.

2) Maintenance Precautions

- When replacing pumps or valves, or performing maintenance and inspection of the hydraulic circuit, ensure that the internal circuit pressure is completely relieved according to the following procedure.
 - ① Implement measures to prevent the driven object from falling or from running out of control.
 - ② Shut off the power supply.
 - ③ Switch the solenoid valve to reduce the secondary circuit pressure to zero. When switching the solenoid valve manually, refer to the figure below for the position of the manual button.



Solenoid Valve Model No. : SYJ5□40

- ④ Shut off the air supply.
 - ⑤ Loosen the pump air bleed valve by one turn using a hex wrench (6 mm across flats) to release the residual pressure between the pump and the BA valve.
- 3) Please inspect the following items periodically.
- ① Please confirm whether the pressure setting of the air regulator is appropriate.
 - ② For models equipped with an air filter, remove the drain from the air filter and clean any clogging of the element.
 - ③ Check the oil level in the oil tank.
 - ④ Check for oil leakage within the hydraulic circuit.
 - ⑤ Regularly tighten pipes and mounting bolts to ensure proper use.
 - ⑥ Make sure the hydraulic fluid has not deteriorated.
 - ⑦ Make sure there is a smooth action without an irregular noise. (Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.)

- 4) The products should be stored in the cool and dark place without direct sunshine or moisture.

- 5) Please contact us for overhaul and repair.

● Warranty

1) Warranty Period

- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope

- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense. Defects or failures caused by the following are not covered.

- ① If the stipulated maintenance and inspection are not carried out.
- ② If the product is used while it is not suitable for use based on the operator's judgment, resulting in defect.
- ③ If it is used or operated in an inappropriate way by the operator. (Including damage caused by the misconduct of the third party.)
- ④ If the defect is caused by reasons other than our responsibility.
- ⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
- ⑥ Other caused by natural disasters or calamities not attributable to our company.
- ⑦ Parts or replacement expenses due to parts consumption and deterioration. (Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.

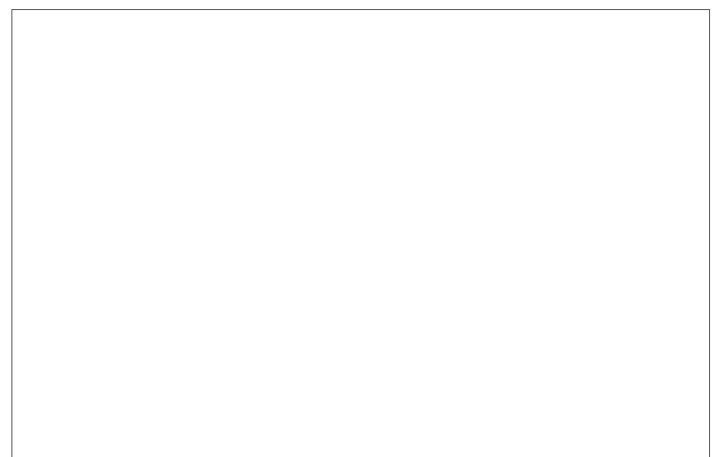


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- For Further Information on Unlisted Specifications and Sizes, Please call us.
- Specifications in this Leaflet are Subject to Change without Notice.

