

New

Air Non-Leak Valve



Model BWQ



Air Non-Leak Valve

Air Double-Acting

model **BWQ**

Pilot Check Valve with Air Non-Leak* Function

A2 port (outgoing lock air) maintains air pressure even after disconnected from the air source unless air is provided to B1 port (release port).

※ "Air Non-Leak" means that the outgoing A2 port has pressure maintaining ability for more than 24 hours (under constant temperature).

World's First

※According to our research.

Non-leak, which could only be achieved with hydraulics, is now possible with air.

New release of **the valve** model BWQ that achieves **Air Non-Leak** ※



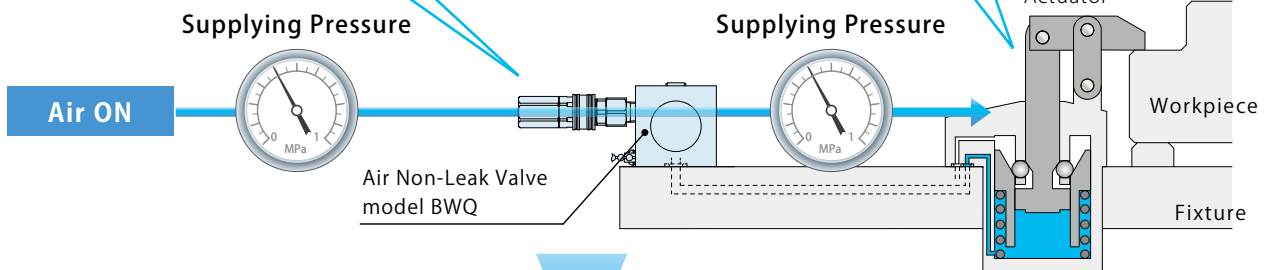
Easy to Connect



Best for the Use with High-Power Pneumatic Clamp !

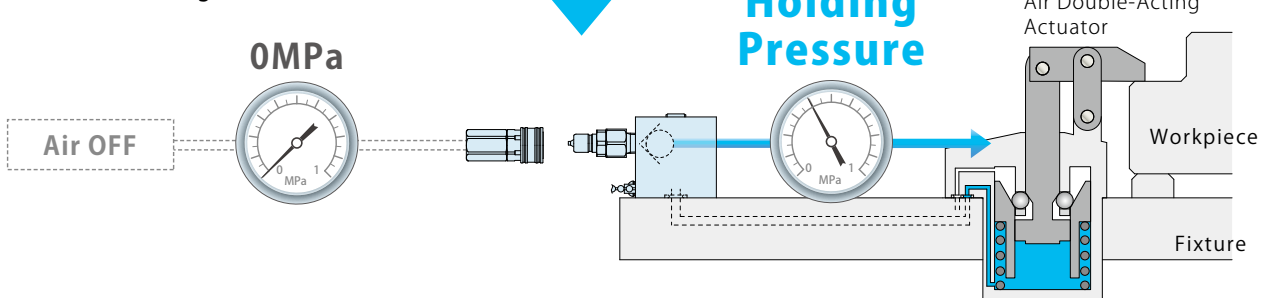
Equal machining force as hydraulic fixture.

[Connected State]



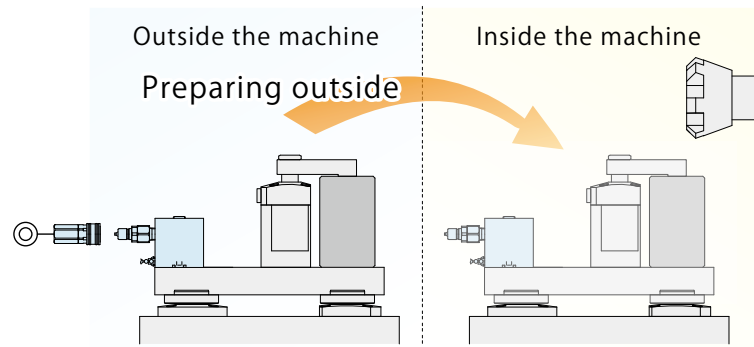
Holds the pressure even after the coupler is disconnected.

[Pressure Holding State (Disconnected)]



- **Setup Outside the Machine Improves Machine Up Time**

Air non-leak function allows to disconnect a fixture from an air source and to prepare the fixture outside machine. This reduces machine down time and set up time.

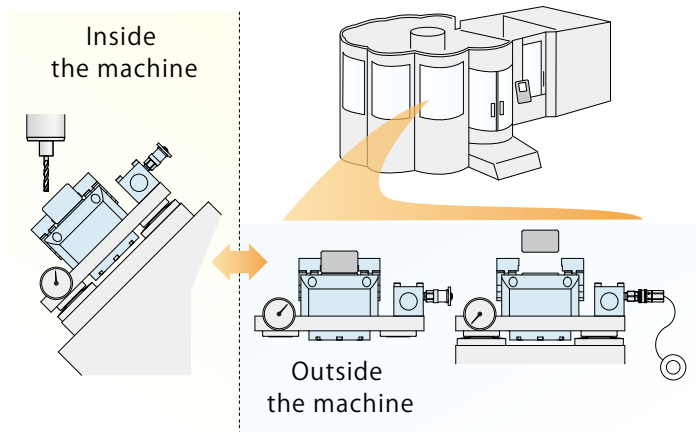


- **Reduce the Number of Circuits in the Machine**

By holding the air pressure, the number of circuits for fixture inside the machine can be minimized.

- **Outside Setup by Disconnecting Air of APC, Pallet Pooling, etc.**

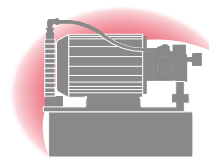
Because it is able to disconnect the fixture from the air source, it is suitable for pallet pooling. It allows to move pallets freely without concerns on handling of hoses, and it is also suitable for transferring with robot.



- **Energy-Saving with No Hydraulic Use**

The non-leak function which could only be achieved with hydraulics is now possible with air.

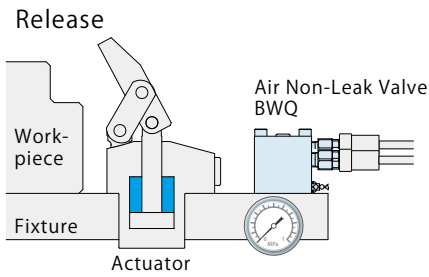
Also, the same level of machining as a hydraulic fixture is possible by using with high-power pneumatic clamp.



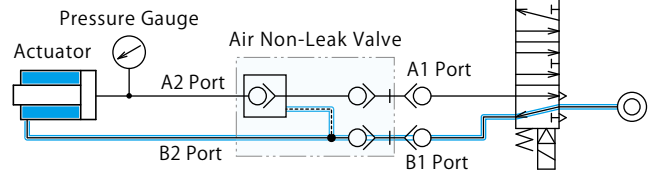
No Hydraulic Use

Action Description

Images



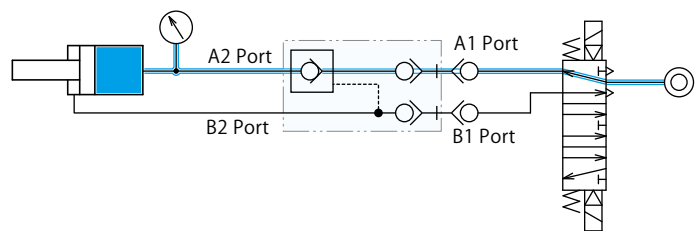
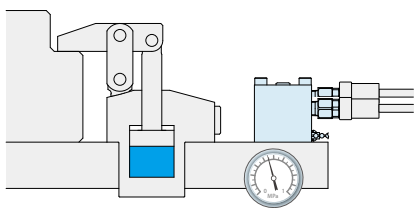
Circuit Example



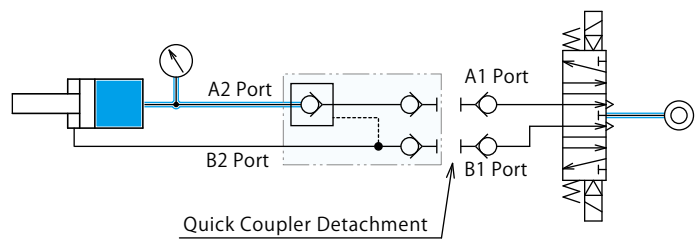
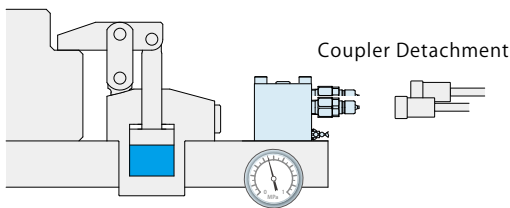
Air Solenoid Valve
(5-Port 3-Position
Exhaust Center)



Lock



Pressure Holding



Operating Procedure		Note
Lock	Air on the A1 port side is ON. (Air on the B1 port side is OFF.)	
	Air is supplied to the lock side (A2 port) to lock the actuator. (Lock pressure is maintained even if the air source is turned OFF.)	
	Air OFF (Shift the solenoid valve to the center position.)	
	Disconnect the coupler of the A1/B1 port and the air source.	
Machining and/or Transferring		
Release	Connect the coupler to the A1/B1 ports and the air source.	
	When air on the B1 port side is ON (air on the A1 port side is OFF), the pilot check valve is open and the air on the A2 port (lock side) is released.	
	Releasing operation is completed.	
Emergency	Air source is turned OFF due to power failure.	
	With the pilot check valve, the lock side (A2 port) pressure will be maintained as it was before the power failure.	The B2 port side cannot hold the pressure.

Model No. Indication

BWQ 010 0 - GB

1

2

1 Design No.

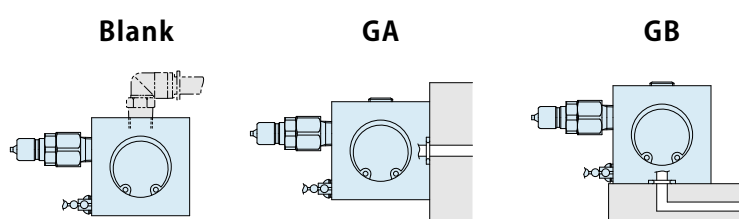
0 : Revision Number

2 Piping Method

Blank : Piping Option (Rc Thread)

GA : Backside Gasket Option

GB : Bottom Gasket Option

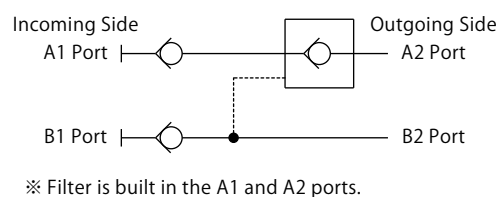


Specifications

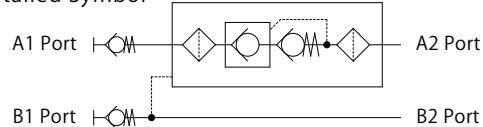
Model No.	BWQ0100-□
Operating Pressure Range MPa	0.2 ~ 1.0
Withstanding Pressure MPa	1.5
Cracking Pressure MPa	0.04
Pilot Pressure MPa	Holding Pressure × 0.45 + 0.1 or more
Min. Passage Area mm ²	8.8 (Coupler Part)
Operating Temperature °C	0 ~ 70
Usable Fluid	Air
Applicable Coupler / Socket Model ※1	C0-1SF-SUS-FKM
Weight kg	0.5

Note : ※1. It shows the socket model number of compact coupler manufactured by NITTO KOHKI.

Circuit Symbol



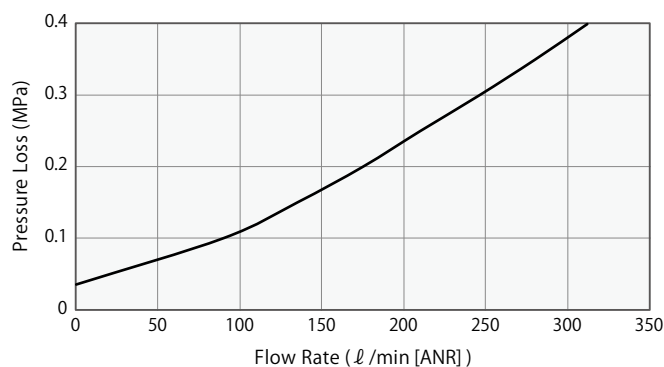
Detailed Symbol



Flow Rate — Pressure Loss Characteristic Graph

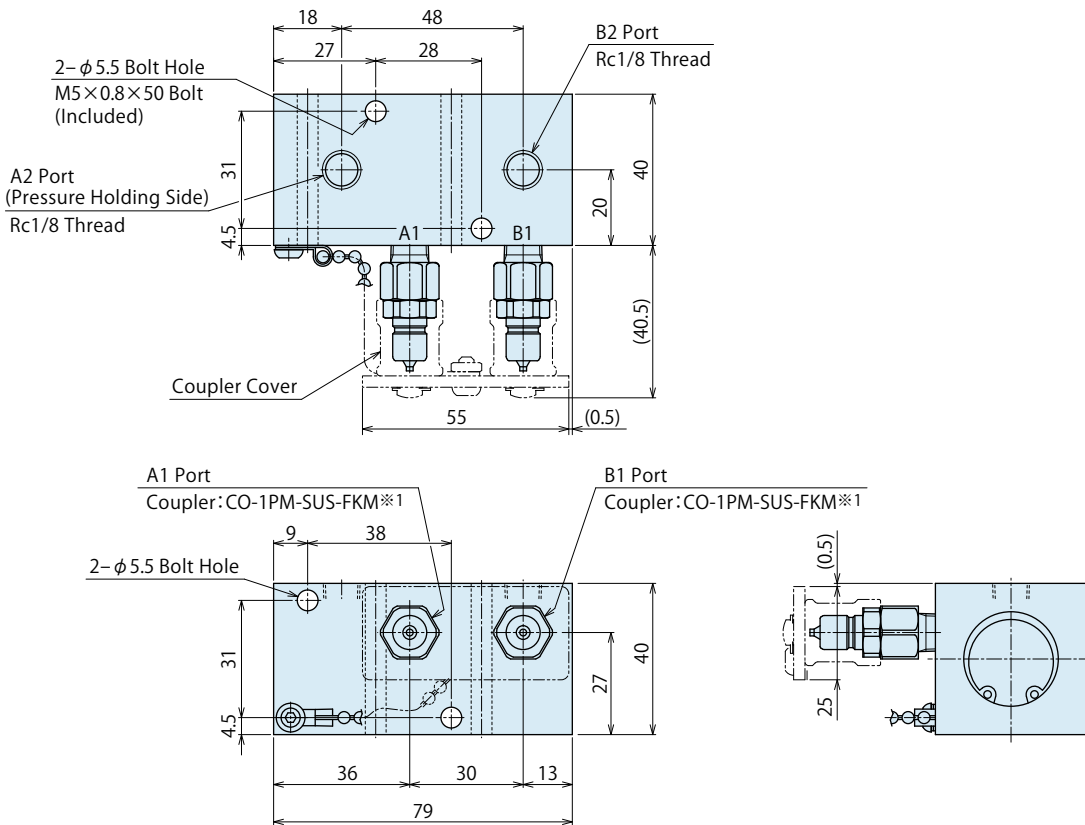
The fluid used on this data is air (25°C).

Pressure Loss (MPa)	Flow Rate (ℓ / min [ANR])
0	0
0.1	90
0.2	175
0.3	245
0.4	310



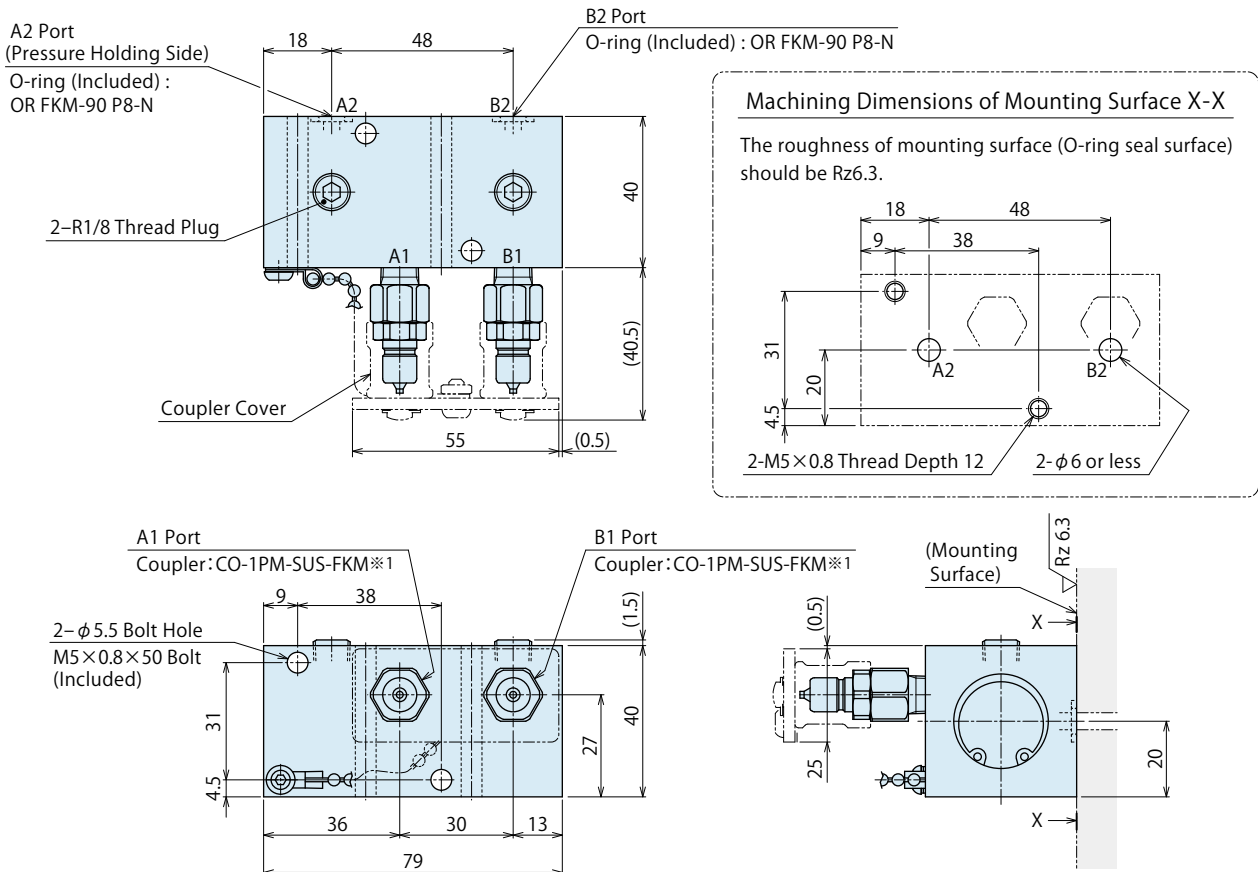
External Dimensions

BWQ0100 : Piping Option

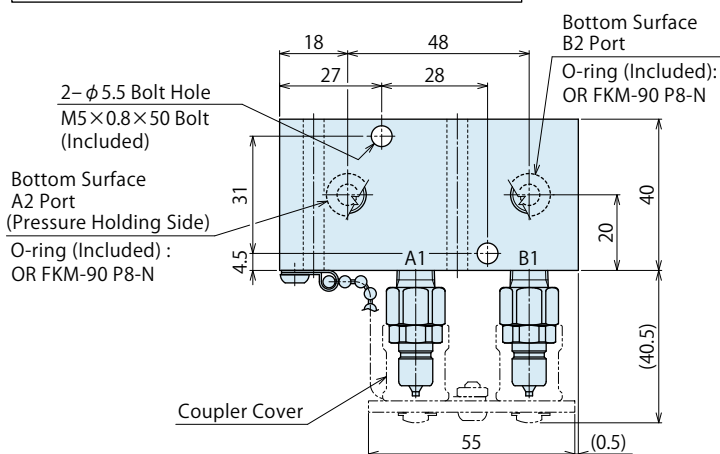


Note : ※1. It shows the plug model number of compact coupler manufactured by NITTO KOHKI.

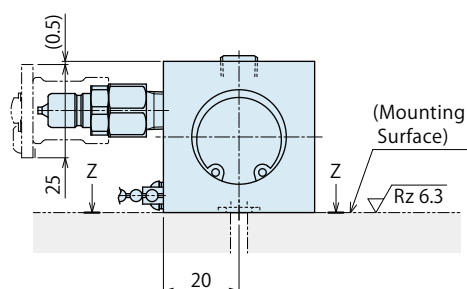
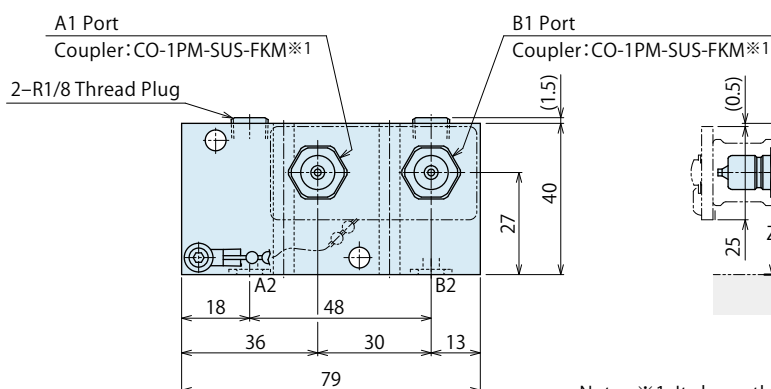
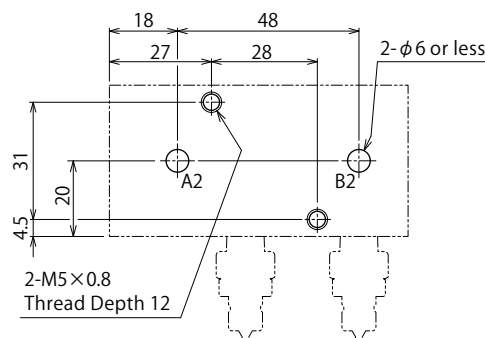
BWQ0100-GA : Backside Gasket Option



Note : ※1. It shows the plug model number of compact coupler manufactured by NITTO KOHKI.

BWQ0100-GB : Bottom Gasket Option

Machining Dimensions of Mounting Surface Z-Z

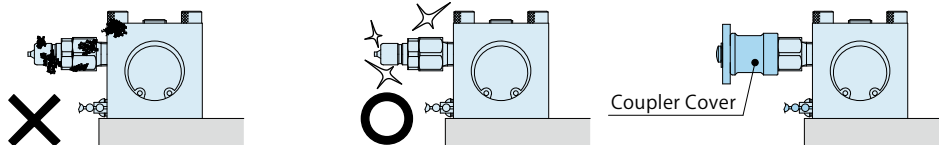
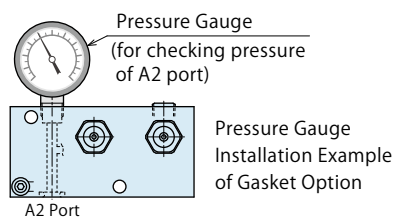
The roughness of mounting surface (O-ring seal surface) should be Rz6.3.



Note : ※1. It shows the plug model number of compact coupler manufactured by NITTO KOHKI.

Notes for Usage (BWQ)

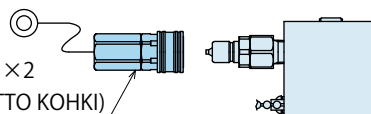
- "Air Non-Leak" means that a single BWQ unit (A2 port) has pressure maintaining ability for more than 24 hours (under constant temperature). This cannot be used in equipment that requires the leakage amount level that is confirmed by tracer gas leak testing using helium and hydrogen.
- After installing parts of pressure maintaining circuit, confirm pressure maintaining by testing leakage at each connecting part using leak checker, etc. (Please install a pressure gauge in the circuit.)
- When disconnecting the socket of the coupler, make the socket on the both circuits to pressure zero and in an opened state in order to maintain pressure with the check valve built in the body. (Control Valve Example : 5-port 3-position exhaust center)
- Before disconnecting/connecting the coupler, remove cutting chips and coolant with air blow, etc. Also, install the coupler cover except during disconnecting/connecting operation.



- Even though this product is equipped with filter, please note that inadequate flushing may result in poor flow performance or malfunction due to clogging of the built-in filter.

- The coupler (socket side) that needs to be prepared by customer is shown on the right.

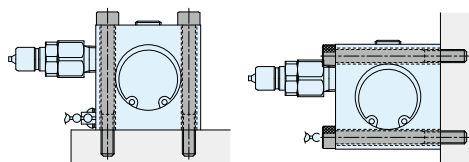
Prepared by Customer
 Compact Coupler (Socket Side) × 2
CO-1SF-SUS-FKM (made by NITTO KOHKI)



- Installation of the product

Use included hexagonal socket bolts as multiple bolt holes for mounting (with tensile strength of 12.9) and tighten them with the following torque.

Model No.	Mounting Bolt Size	Tightening Torque (N·m)
BWQ0100-□	M5×0.8	6.3



● Cautions

● Installation Notes

- 1) Check the Usable Fluid
 - Please supply filtered clean dry air.
 - Oil supply with a lubricator, etc. is unnecessary.
- 2) Preparation before Piping
 - The pipeline, piping connector and fixture fluid passage should be cleaned by thorough flushing.
The dust and cutting chips in the circuit may lead to air leakage and malfunction.
- 3) Applying Sealing Tape
 - Wrap with tape 1 to 2 times following the screw direction.
 - Pieces of sealing tape can lead to air leakage and malfunction.
 - Please implement piping construction in a clear environment to prevent anything getting in products.

● Notes on Handling

- 1) It should be operated by qualified personnel.
 - The hydraulic machine and air compressor should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
 - ① The machine and equipment 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 air and hydraulic circuits.
 - ③ After stopping the product, do not remove until the temperature drops.
 - ④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not disassemble or modify.
 - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

● Maintenance and Inspection

- 1) Removal of the Product and Shut-off of Pressure Source
 - Before the product is removed, make sure that safety devices and preventive devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air circuit.
 - Make sure there is no trouble/issue in the bolts and respective parts before restarting.
- 2) Regularly tighten pipes, mounting bolts and others to ensure proper use.
- 3) 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 product 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 Others 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.

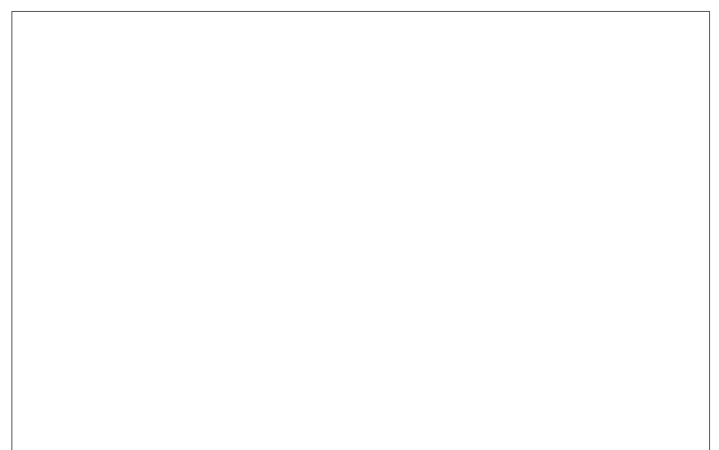


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- For Further Information on Unlisted Specifications and Sizes, Please call us.
- Specifications in this Leaflet are Subject to Change without Notice.



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