# Compact
# Pneumatic Location Clamp

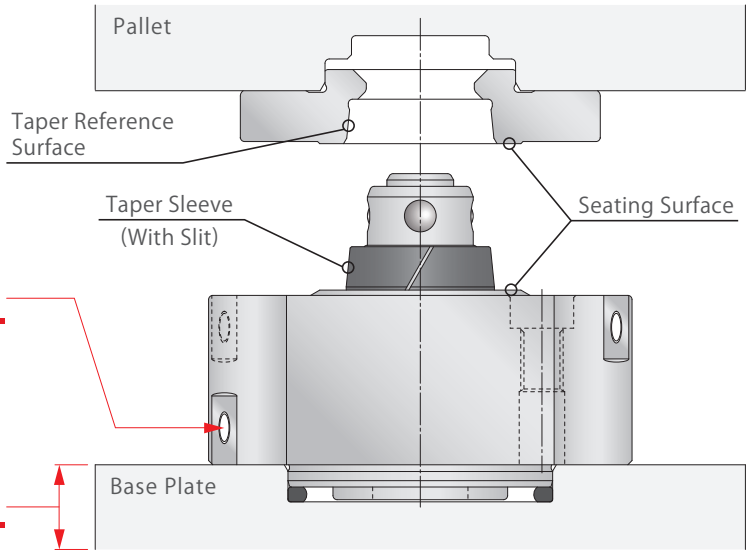
Model **SWQ**


## Locates and Clamps Simultaneously

**Locating Repeatability : 3 μm  All Stainless Steel**

**PAT.**

More compact and lighter than the current pneumatic location clamp.
Suitable for setup of compact pallets and light fixtures.




### Simple Air Piping with External Piping Joint

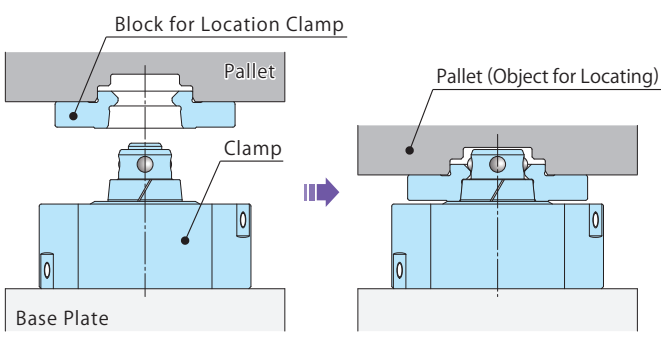
External piping joint with air piping makes equipment design more simple compared to the gasket piping of the current model.

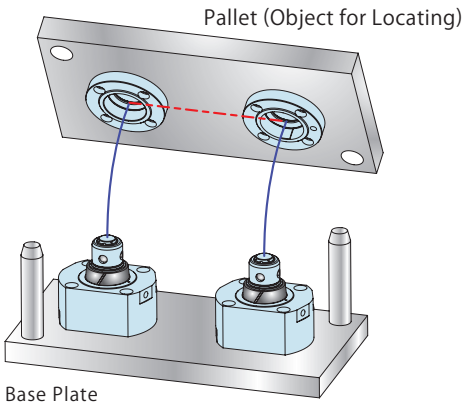
### Able to Install in a Thinner Plate

Required hole machining depth is 3.5mm.
It is able to install in a thinner base plate.

## Action Description

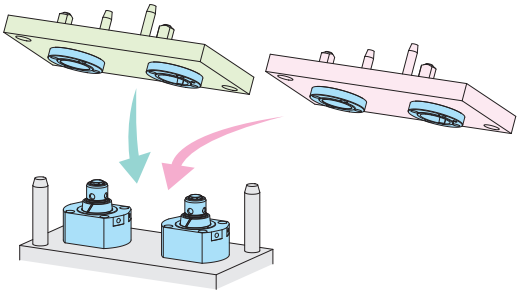
※ Refer to P.127 for detailed action description.



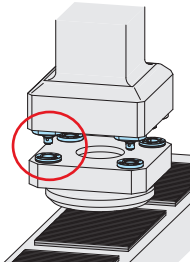



# Setup Improvement Enhances Productivity

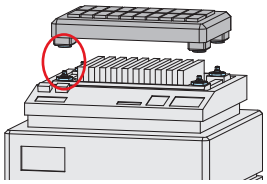
Pneumatic locating clamp locates with high accuracy and clamps simultaneously. (Fixture alignment and inspection are eliminated.) Fixture changeover becomes faster and easier, thus by eliminating alignment inspection for accuracy which is done in many different ways. Suitable for automatic pallet setup.



<Assembly • Inspection Device>



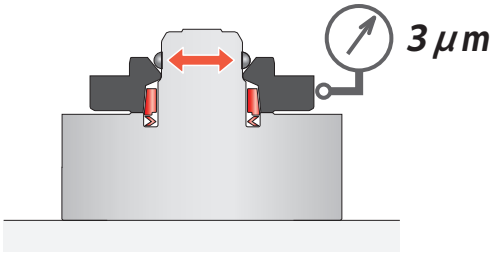
<Production Line of LCD Panels>



<Semiconductor Inspection Device>

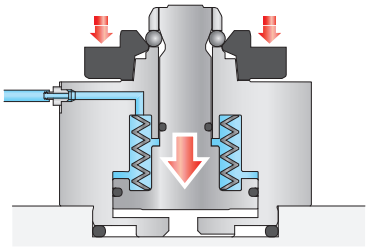
## ● Repetitive Locating with High Accuracy

Locating Repeatability : 3 μm
Used with a combination of the clamp and block.
Mount the block on the object for locating.




## ● Clamping Function

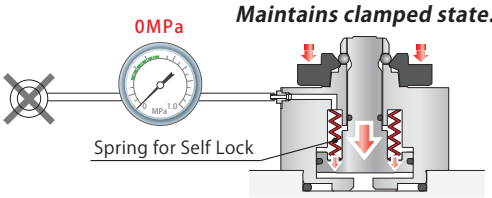
Clamping force is ranged from 0.25kN~1.1kN.
Clamps with air pressure and spring for self locking.
Clamping force is selectable for your needs.



## ● Self-Locking (Safety) Function (Maintains Clamping at Zero Air Pressure)

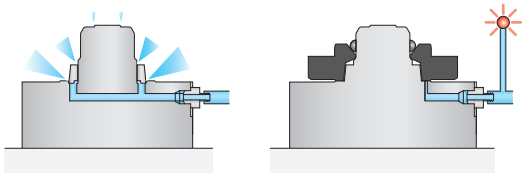
Even if air pressure is at zero, it will stay locked with self-locking spring.
(Refer to Holding Force at 0MPa for detail.)

※ More than the minimum operating air pressure is required for locating.




## ● Air Blow and Seat Check

Contaminants are removed by air blow.
Seating surface is provided with the air hole, and seating confirmation is available with a gap sensor.



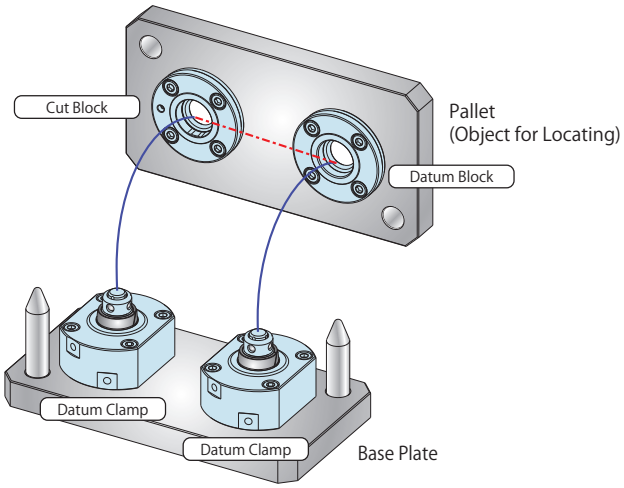
***Air Blow*** ***Seat Check***

## Products

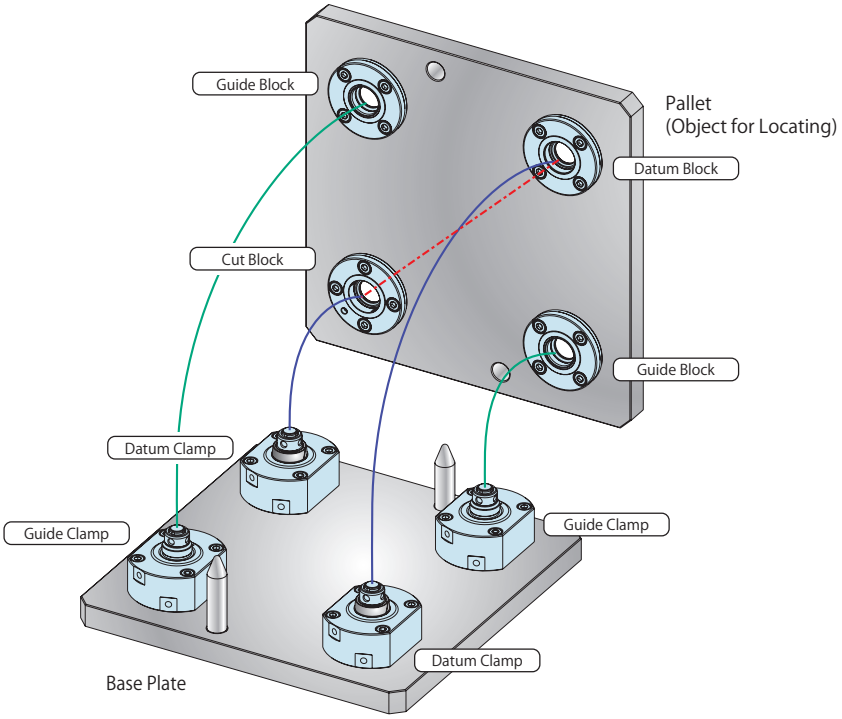
| |  Model SWQ → P.133 |  Model SWQJ → P.135 |
|---|---|---|
| Classification | Double Action Air Lock / Air Release | Flange Shaped Block |
| Operating Pressure Range | 0.35 ~ 1MPa | – |

## System References

### When Using 2 Location Clamps



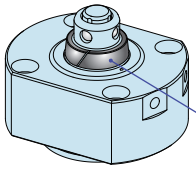

### When Using 4 Location Clamps



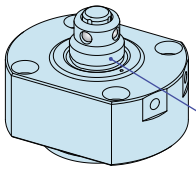

## Products and Functions

※ For the combination of clamps and blocks, please refer to the P.131.

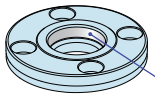
### Datum Clamp



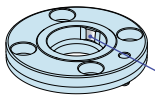

### Guide Clamp




### Datum Block

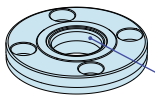



### Cut Block



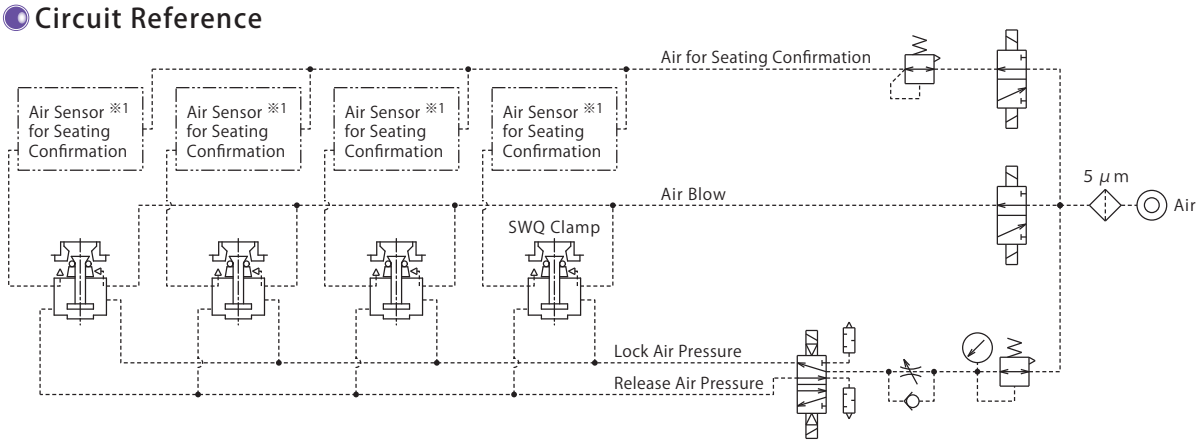

※ Only cut block requires attention in the mounting phase. For detail, please refer to the phase of SWQJ-C (P.136).

### Guide Block




※ Free block has no guide function.

## Circuit Reference



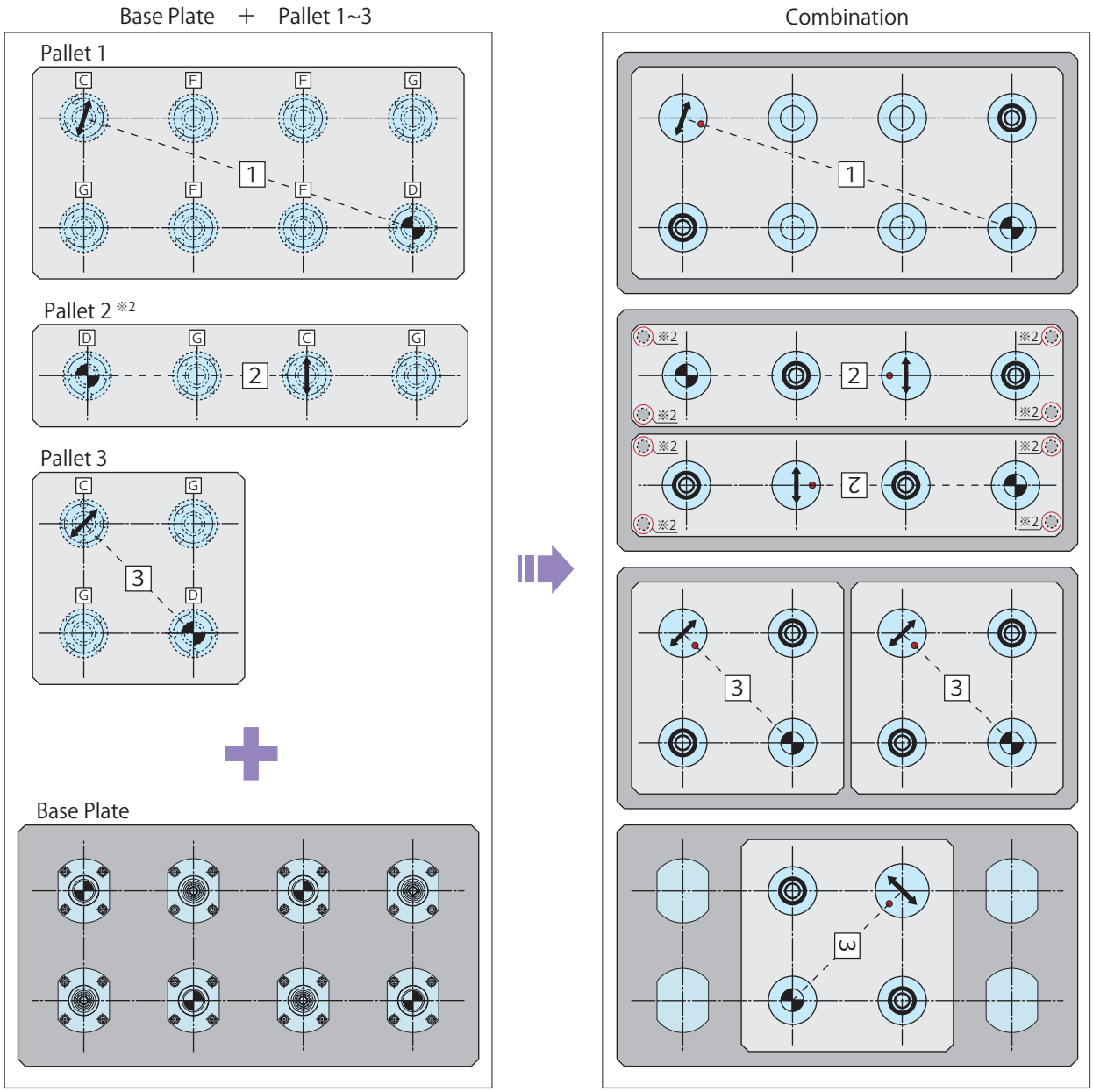

Notes : 1. Air blow passage should be $\phi$6 or more for an effective air blow. Please supply filtered clean dry air.

※1. Please refer to the list on the right for recommended air sensors for seating confirmation.

| Maker | SMC | CKD |
|---|---|---|
| Name | Air Catch Sensor | Gap Switch |
| Model No. | ISA3-G | GPS3-E |

## Configuration Sample of Pallets with Different Sizes

In case there are a variety of pallets with different sizes for the base plate, the clamp and block can be combined for use.




## Combination of Clamp and Block

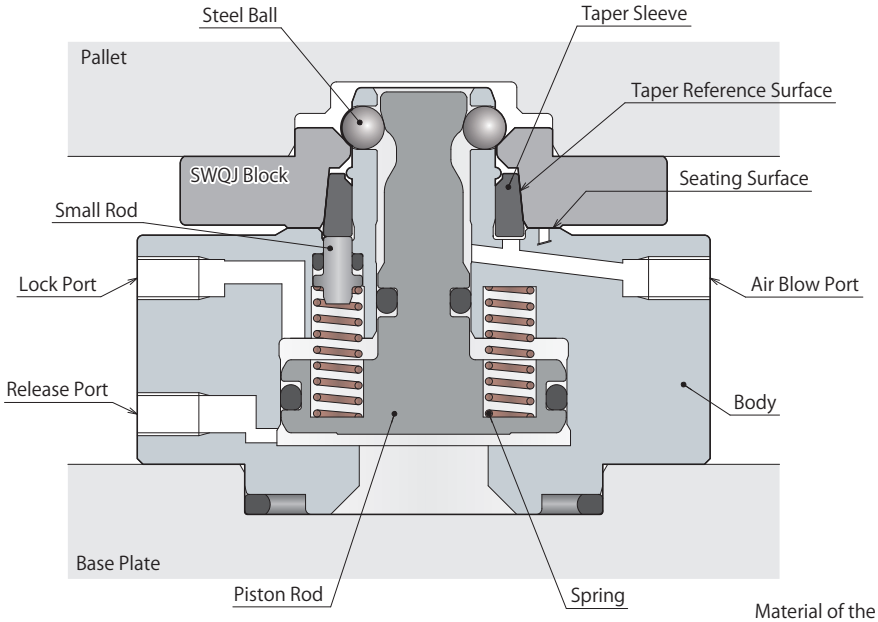
| Clamp Installed on the Base Plate | | Block Installed on the Pallet | | Function when Combined |
|---|---|---|---|---|
| Datum Clamp | + | Datum Block | → | Clamping Function + Locating Function (Reference Point) |
| Datum Clamp | + | Cut Block ※3 | → | Clamping Function + Locating Function (One Direction) |
| Guide Clamp | + | Guide Block | → | Clamping Function + Guide Function |
| Datum Clamp or Guide Clamp | + | Free Block | → | Clamping Function |

Notes :

※2. In case the clamp/block configuration is linear, it is recommended to provide additional supports for stability.

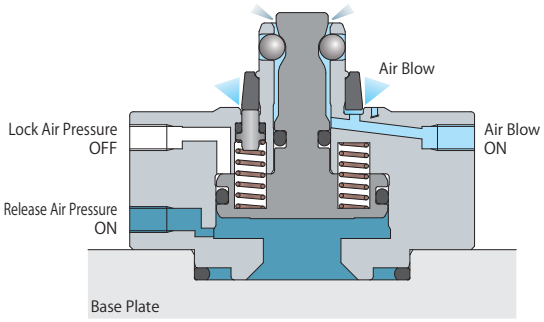
※3. The spring pin position is indicated. With the datum block as reference, unidirectional positioning is done via the cut block.
The cut block positioning plane must be tangent to the datum block.
(The spring pin is positioned on the line connecting the centers of the datum block and cut block. )

## Cross Section




Material of the Product：
Stainless Steel (Except for Packing)

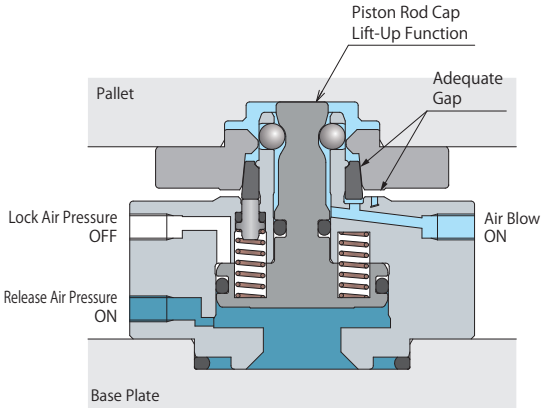
## Action Description




**Before Loading the Pallet**

・Air blow prevents debris contamination.

**After Unloading the Pallet**




**When Loading the Pallet**

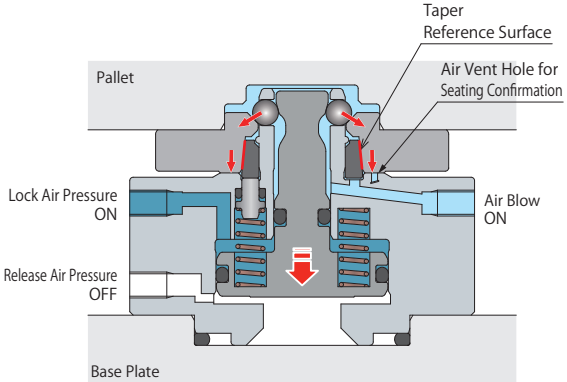
When loading the pallet,

・The pallet is set on the raised piston rod cap.
At this time, the lift-up function makes an adequate gap between the taper reference surface and the seating surface. This allows to remove cutting chips and fluid effectively, and prevent damage on the clamp during pallet loading.

When unloading the pallet,

・The lift-up force releases the close contact of the taper seating surface and the seating surface.

**When Unloading the Pallet**



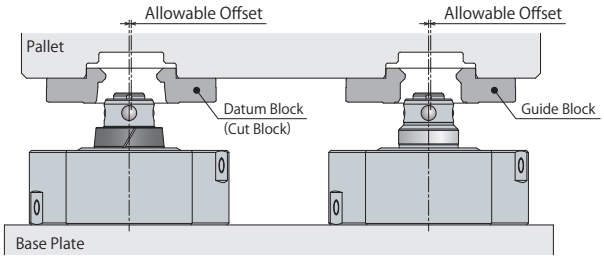

**When Clamped**

・When release air pressure is OFF and lock air pressure is ON, the air pressure and the spring force lower the piston rod and the steel balls engage the block bringing it to the seating surface.
・The pallet is positioned with high accuracy via the taper sleeve as it contacts the taper surface of the block.
・The seating surface includes an air vent for seating confirmation (via air catch sensor).

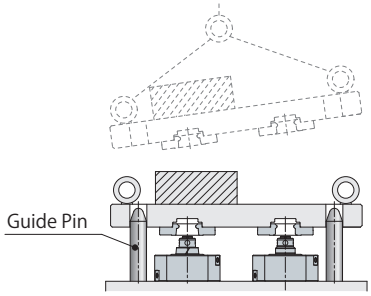
**When Clamped**

## Action Description during Loading/Unloading

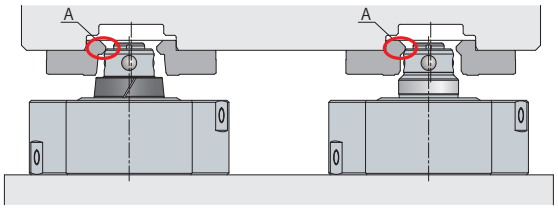
1. With air pressure released, load the pallet within the allowable offset.
   Air pressure must be continuously supplied to the air blow port.



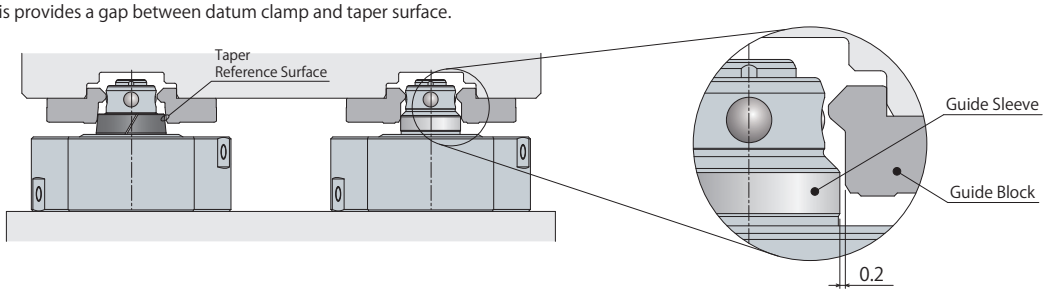

The fixture pallet must be level when lowering or lifting from the pallet clamps. If necessary, provide guide pins (rough guide) to keep the pallet level during loading and unloading.



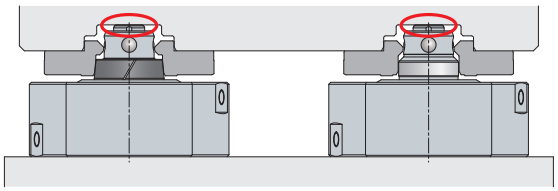

2. When lowering the pallet, it should be positioned so the blocks contact the rod as shown on A.

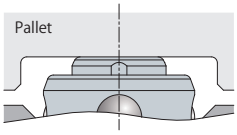



3. As the pallet is further lowered, it is positioned within 0.2mm of the reference axis via the guide sleeve and guide block.
   This provides a gap between datum clamp and taper surface.



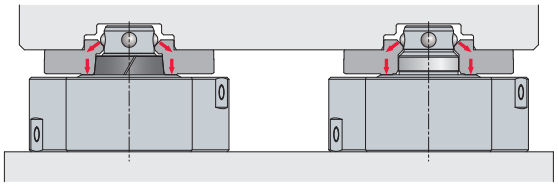

4. Loading is finished when pallet is resting on piston rod. At this time, the appropriate clearance between seating surface and taper reference is created by lift up function, which makes it thus more effective that the cutting chips is removed by air blow.





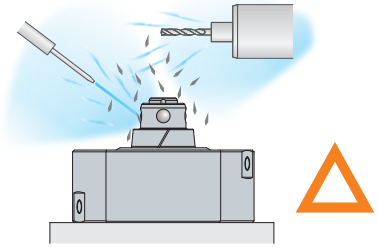

Clamp Top End during Pallet Setting

5. When release air pressure is OFF and lock air pressure is ON, the block is pressed onto the seating surface with air pressure and spring force. As the block is pressed, the taper reference surface is contacted for locating.



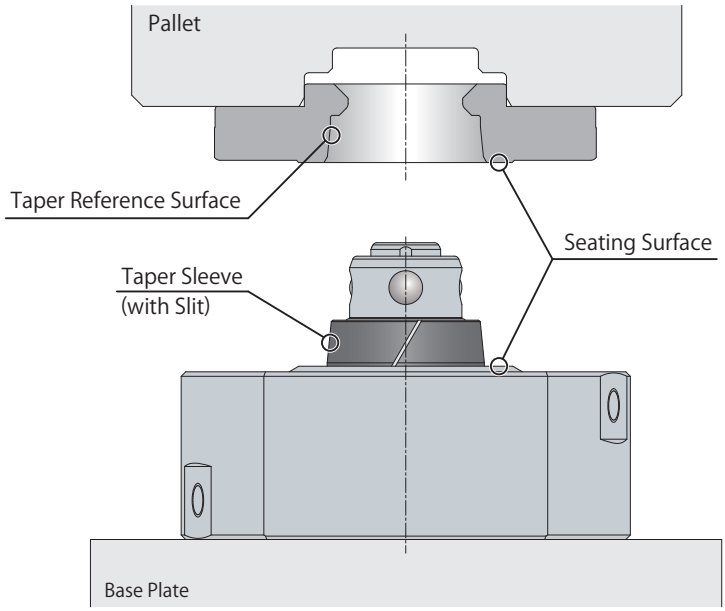
【Caution】
For the use under the environment with coolant and cutting chips, it is recommended to use model SWT / model WVS.

This product (model SWQ) has no dust seal, but only air blow function that prevents contamination.



## Description of Movable Taper Sleeve

Locating Method：Dual Surface with Movable Taper Sleeve




### The Benefits of Movable Taper Sleeve

With marginal error absorbed by the moveable taper sleeve, the clearance between the clamp unit, taper sleeve and block is eliminated enabling the repetitive location accuracy and stabilized clamping force.

① Absorbs tolerance variations in each location clamp and block.

② Absorbs wear of locating part due to long time use.

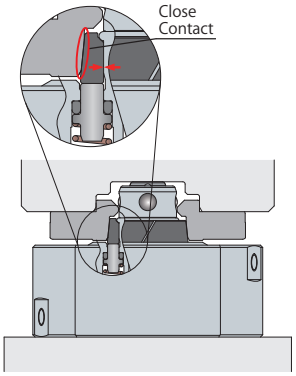
③ Absorbs space variations of mounting holes.

④ Absorbs space variations due to temperature change.

## Movement and Error Absorbed by the Movable Taper Sleeve (①/②)

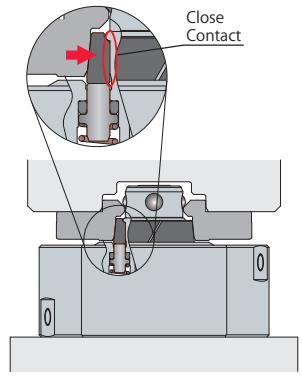
### Starting of Action for Locating

There is almost zero clearance as the moving parts come in contact with the taper reference surface.



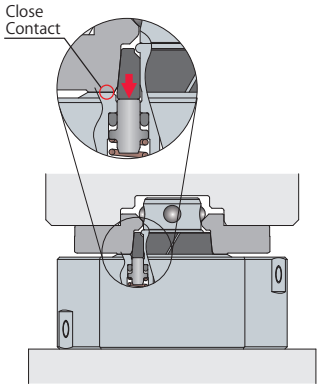

### XY Locating

Clearance between the taper sleeve and the body is completely zero.




### XYZ Locating

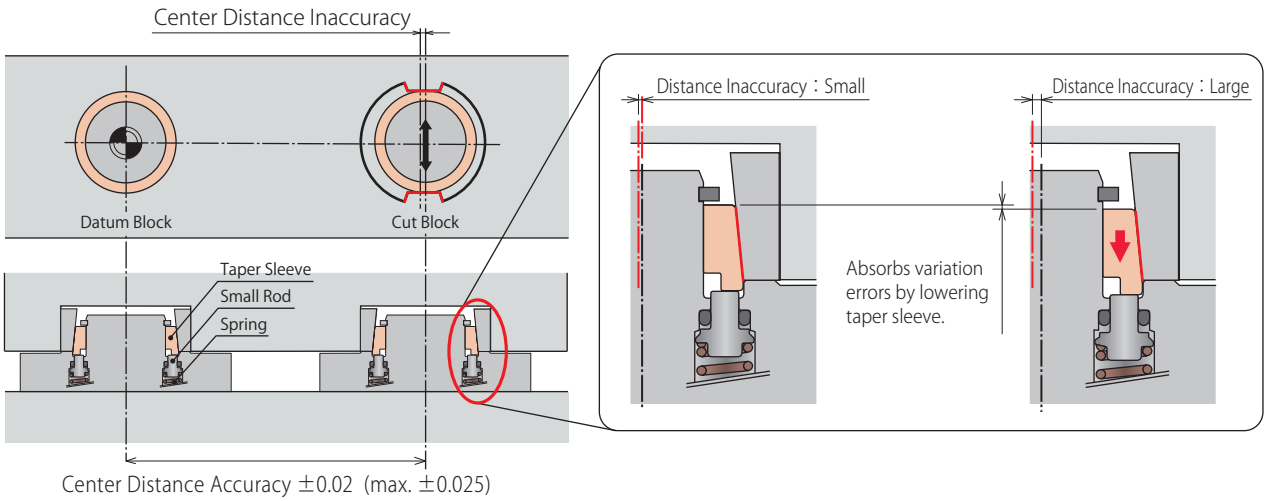
Absorbs errors by lowering the taper sleeve, and seating surfaces come in contact.




## Movable taper sleeve absorbs distance error. (③/④)

Absorbs distance variations minimizing the wear of locating parts and prevents deformation of clamp/block.

※The precision assurance function is absolutely necessary especially when plates are transported or multiple fixture changeovers are needed.



## Model No. Indication (Clamp)

SWQ 0 **03** **0** - S **D**

1 2 3

### 1 Clamping Force

**03** : Clamping Force 0.3kN (At Air Pressure 0.5MPa)

**07** : Clamping Force 0.6kN (At Air Pressure 0.5MPa)

※ Refer to P.132 for detailed specifications.

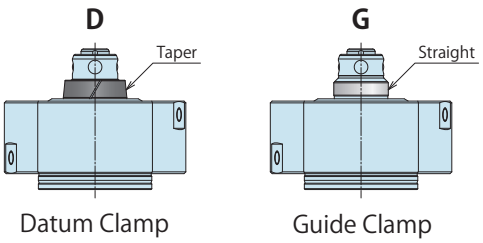
### 2 Design No.

**0** : Revision Number

### 3 Functions

**D** : Datum Clamp (Especially Used for Locating)

**G** : Guide Clamp (Especially Used for Guide)




Datum Clamp Guide Clamp

## Model No. Indication (Block)

SWQJ **03** **0** - **D**

1 2 3

### 1 Applicable SWQ Clamp Model

**03** : SWQ0030

**07** : SWQ0070

### 2 Design No.

**0** : Revision Number

### 3 Functions

**D** : Datum Block (Especially Used for Reference Locating)

**C** : Cut Block (Especially Used for One Direction Locating)

**G** : Guide Block (Especially Used for Guide)

**F** : Free Block (Shared by Multiple Pallets with Different Sizes)

## Combination of Clamp and Block

| Clamp model | Block model | Function |
|---|---|---|
| SWQ□-SD (Datum Clamp) | SWQJ□-D (Datum Block) | Clamping + Locating at a Reference Point |
| SWQ□-SD (Datum Clamp) | SWQJ□-C (Cut Block) | Clamping + One Direction Locating |
| SWQ□-SG (Guide Clamp) | SWQJ□-G (Guide Block) | Clamping + Guide |
| SWQ□-S□ (Datum / Guide Clamp) | SWQJ□-F (Free Block) | Clamping |

## Specifications

| Model | | | SWQ0030-S□ | SWQ0070-S□ |
|---|---|---|---|---|
| Locating Repeatability | | mm | 0.003 | |
| Full Stroke | | mm | 2.3 | 2.8 |
| Lift Up Stroke | | mm | 0.8 | |
| Allowable Offset when a pallet is set※2 | | mm | 0.8 | |
| Max. Loading Weight※3 | | kg | 50 | 100 |
| Cylinder Capacity※1 cm³ | Lock | | 0.64 | 1.50 |
| | Release | | 0.72 | 1.72 |
| Holding Force at 0 MPa※1 ※4 | | kN | 0.12 | 0.15 |
| Max. Operating Pressure | | MPa | 1.0 | |
| Min. Operating Pressure | | MPa | 0.4 | 0.35 |
| Withstanding Pressure | | MPa | 1.5 | |
| Air Blow Pressure | | MPa | 0.4 ~ 0.5 | |
| Operating Temperature | | ℃ | 0 ~ 70 | |
| Usable Fluid | | | Dry Air | |
| Weight | | | Refer to External Dimensions | |

Notes :

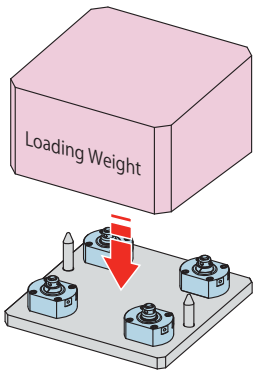
※1. The specification indicates the value of one device.

※2. In case of using datum cylinder(s) only, please refer to the notes for design "6) Use a guide when not using the guide block" on P.138.

※3. It indicates the weight of pallet in horizontal position (placed flat) that SWQ can locate regardless of number of clamps.
Release air pressure is determined with the loading weight (fixture).
(Loading weight should be less than 80% of the lift-up force (Number of Clamps×Lift-Up Force)).
When using pallet in vertical direction, please refer to P.137.

※4. It indicates holding force when air pressure is at 0MPa and may not satisfy the specifications.

## Loading Weight

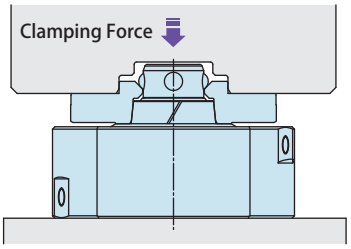


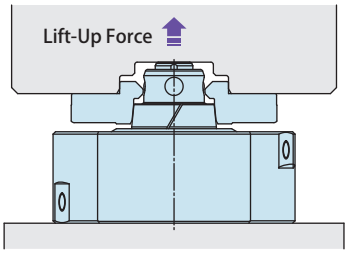

Pallet in Horizontal Position (Placed Flat)※3

Standard loading weight is

Lift-Up Force×Number of Clamps×0.8 and should be less than the maximum loading weight (shown in specifications).

## Clamping Force / Lift-Up Force



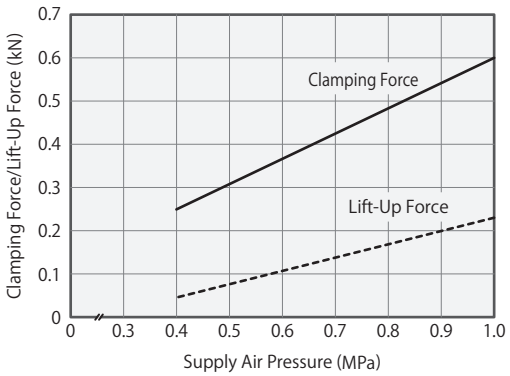




Notes :

1. This graph shows the value for single clamp.
2. This graph shows the relationship between Supply Air Pressure and Clamping Force (solid line) / Lift-Up Force (dotted line).

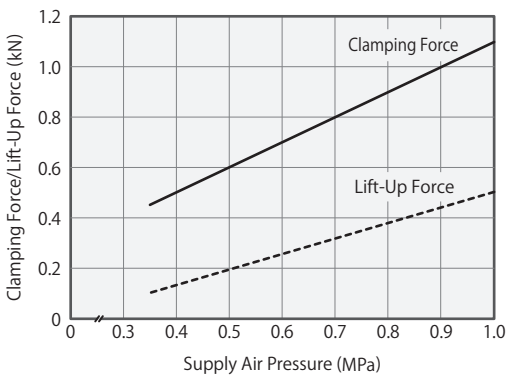
### SWQ0030-S□

| Supply Air Pressure (MPa) | Clamping Force (kN) | Lift-Up Force (kN) |
|---|---|---|
| 1.0 | 0.60 | 0.23 |
| 0.9 | 0.54 | 0.20 |
| 0.8 | 0.48 | 0.17 |
| 0.7 | 0.42 | 0.14 |
| 0.6 | 0.37 | 0.11 |
| 0.5 | 0.31 | 0.08 |
| 0.4 | 0.25 | 0.05 |
| Holding Force at 0 MPa※4 | 0.12 | – |
| Operating Pressure Range (MPa) | 0.4 ~ 1.0 | |



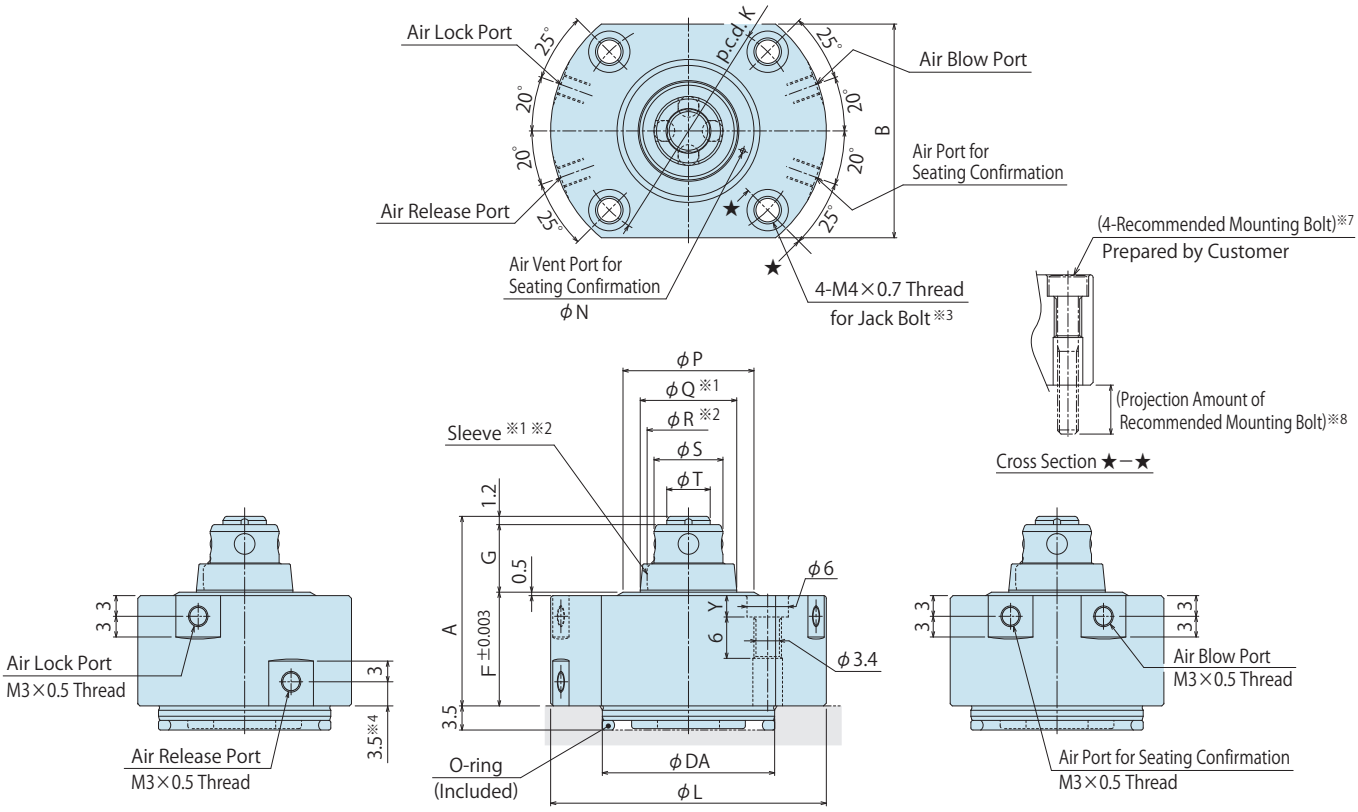

### SWQ0070-S□

| Supply Air Pressure (MPa) | Clamping Force (kN) | Lift-Up Force (kN) |
|---|---|---|
| 1.0 | 1.1 | 0.50 |
| 0.9 | 1.0 | 0.44 |
| 0.8 | 0.90 | 0.38 |
| 0.7 | 0.80 | 0.32 |
| 0.6 | 0.70 | 0.26 |
| 0.5 | 0.60 | 0.20 |
| 0.4 | 0.50 | 0.13 |
| Holding Force at 0 MPa※4 | 0.15 | – |
| Operating Pressure Range (MPa) | 0.35 ~ 1.0 | |



## External Dimensions

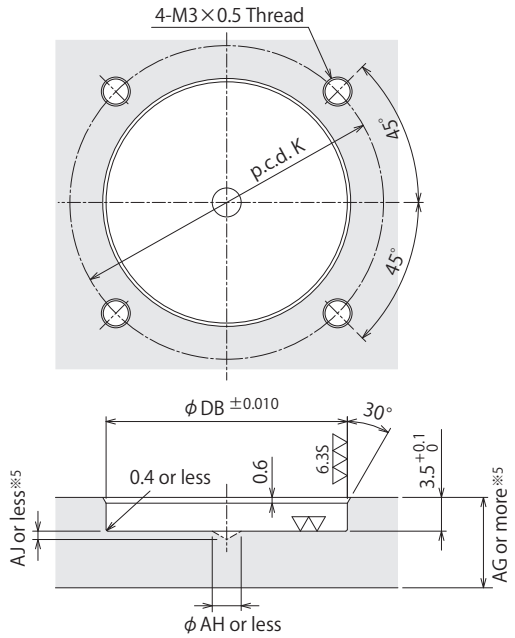
※ This drawing shows the released state of SWQ (when supplying release air pressure).




Notes :

※1. φQ shows the dimensions of sleeve (taper) of datum clamp (SWQ-SD).
※2. φR shows the dimensions of sleeve (straight) of guide clamp (SWQ-SG).
※3. The thread for jack bolt is used when removing the clamp. (Refer to P.138 for usage.)
※4. When selecting a joint, check dimensions not to interfere with a base plate. (Refer to P.138 for recommended joints.)

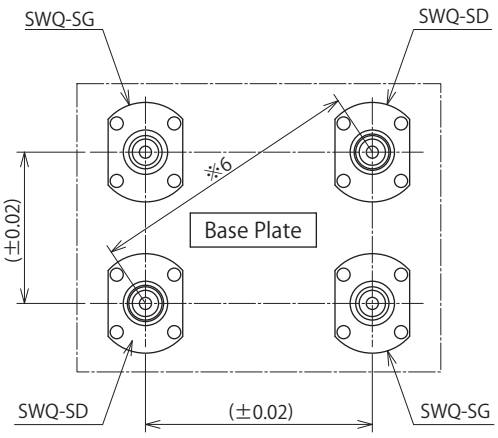
## Machining Dimensions of Mounting Area




Note :

※5. The base thickness (AG) and remaining depth after boring (AJ) are reference values when the base material is S50C.

## Distance Accuracy of Each Clamp




Note :

※6. Please make sure the distance accuracy of each datum clamp is below ±0.025mm between the clamps with the longest distance.

## External Dimensions and Machining Dimensions for Mounting

(mm)

| Model No. | | SWQ0030-S□ | SWQ0070-S□ |
|---|---|---|---|
| A | | 27.5 | 36.9 |
| B | | 31 | 36 |
| DA | SWQ-S**D** | $25^{+0.024}_{+0.011}$ | $32.5^{+0.027}_{+0.011}$ |
| | SWQ-S**G** | $25^{0}_{-0.02}$ | $32.5^{0}_{-0.02}$ |
| DB | | 25 | 32.5 |
| F | | 16.5 | 22.5 |
| G | | 9.8 | 13.2 |
| K | | 32.5 | 40 |
| L | | 40 | 48 |
| N | | 0.7 | 1 |
| P | | 19 | 26 |
| Q | | 14 | 20 |
| R | | 12 | 18 |
| S | | 10 | 15 |
| T | | 6.3 | 10 |
| Y | | 3.1 | 3.5 |
| O-ring | | AS568-020(90°) | AS568-025(90°) |
| (Recommended Mounting Bolt)※7 | | M3×0.5×20 | M3×0.5×25 |
| (Projection Amount of Recommended Mounting Bolt)※8 | | 6.6 | 6 |
| AG | | 6 | 6 |
| AH | | 3 | 3 |
| AJ | | 0.9 | 0.9 |
| Weight | | 140 g | 240 g |

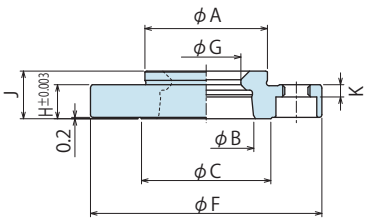
Notes :

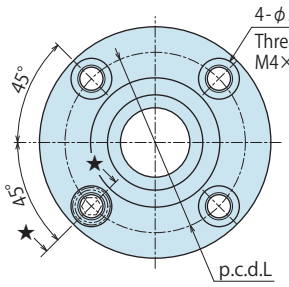
※ 7. Mounting bolt is not included. Please prepare it separately.

※ 8. Tapping depth of the mounting bolt should be decided according to the mounting bolt.

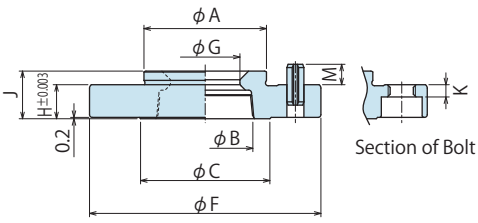
## External Dimensions

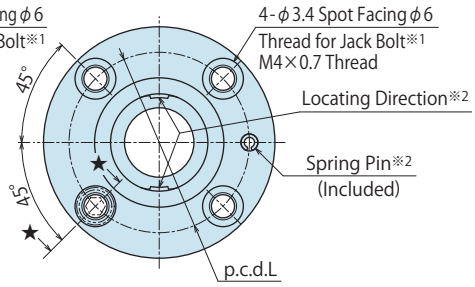
**SWQJ030/070-D**



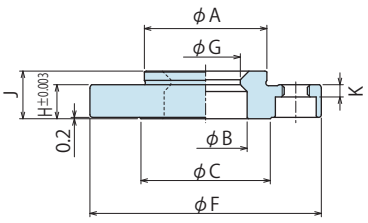



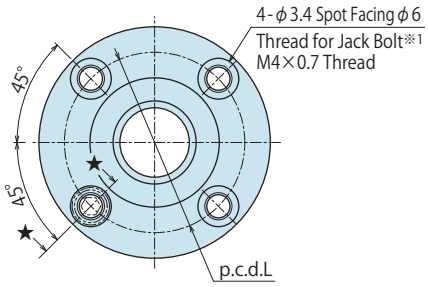

**SWQJ030/070-C**

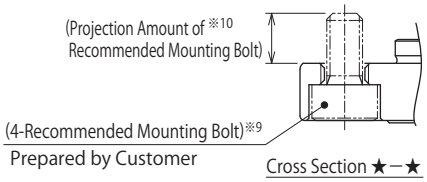



**SWQJ030/070-G**
**SWQJ030/070-F**

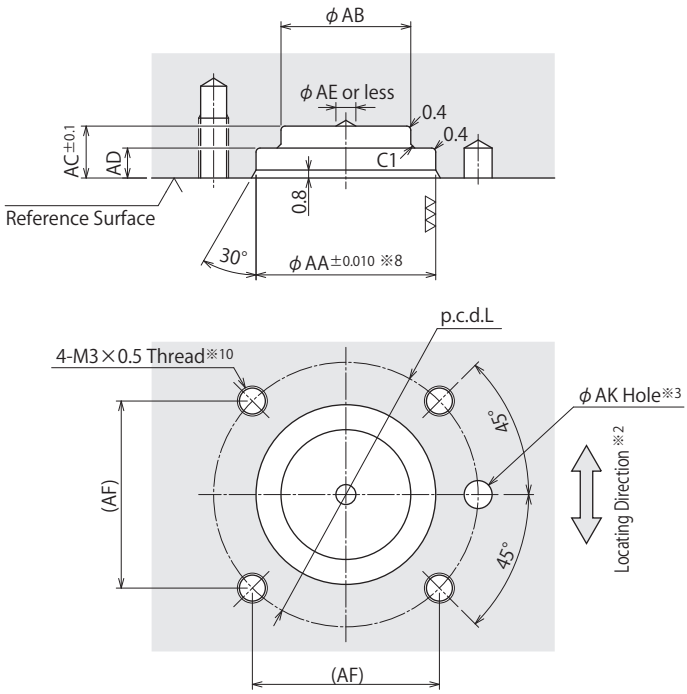


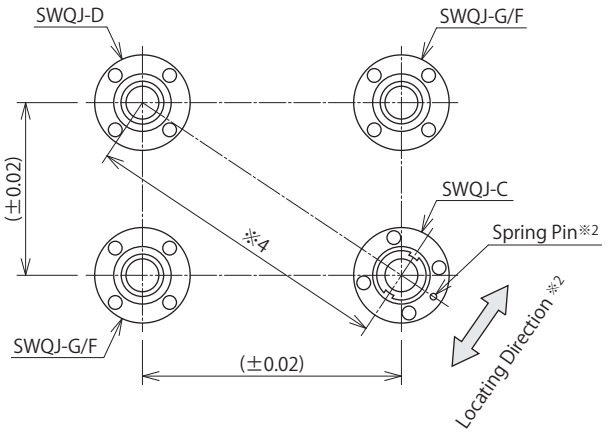

Notes :
※1. The thread for jack bolt is used when removing SWQJ block.
※2. The spring pin is used for phasing of SWQJ-C locating direction.

## Machining Dimensions of Mounting Area

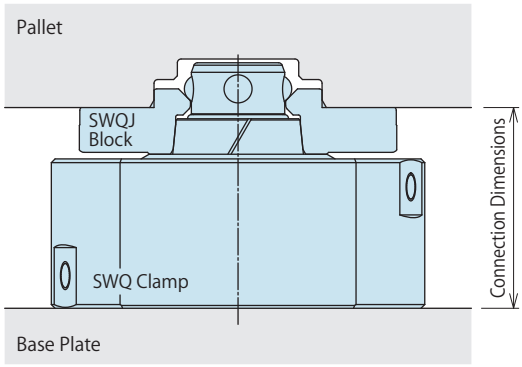



Note :
※3. ϕAK hole is used for phasing of SWQJ-C positioning direction.
Please make sure ϕAK hole is at the line connecting the centers of SWQJ-D and SWQJ-C. This machining is only necessary for SWQJ-C.

## Mounting Distance Accuracy and SWQJ-C Phase




## Connection Dimensions




Note :
※4. Please make sure the distance accuracy of block is below ±0.025mm between the clamps with the longest distance.

## External Dimensions and Machining Dimensions for Mounting

(mm)

| Model No. | | SWQJ030-D SWQJ030-C | SWQJ030-G SWQJ030-F | SWQJ070-D SWQJ070-C | SWQJ070-G SWQJ070-F |
|---|---|---|---|---|---|
| A | | 18 $^{+0.022}_{+0.011}$ | 18g7 $^{-0.006}_{-0.024}$ | 25 $^{+0.024}_{+0.011}$ | 25g7 $^{-0.007}_{-0.028}$ |
| B | | 14 | 12.2 (14.5)※5 | 20 | 18.2 (20.5)※5 |
| C | | 19 | | 26 | |
| F | | 34 | | 40 | |
| G | | 10.2 | | 15.25 | |
| H | | 5 | | 6 | |
| J | | 7 | | 9.5 | |
| K | | 1.8 | | 2.8 | |
| L | | 26.5 | | 32 | |
| M | | 3 | | 5 | |
| AA※8 | | 18 | | 25 | |
| AB | | 13 | | 16 | |
| AC | | 5.2 | | 7.6 | |
| AD | | 3 | | 4.5 | |
| AE | | 2 | | 3 | |
| (AF) | | 18.74 | | 22.63 | |
| AK | | ϕ2.8 Depth 3 | - | ϕ3.4 Depth 5 | - |
| (Recommended Mounting Bolt)※9 | | M3×0.5×6 | | M3×0.5×8 | |
| (Projection Amount of Recommended Mounting Bolt)※10 | | 4.2 | | 5.2 | |
| Spring Pin※6 | | ϕ2.5×6 | – | ϕ3×10 | – |
| Weight | | 30g | | 50g | |
| Applicable Clamp | | SWQ0030-SD | SWQ0030-SG ※7 SWQ0030-SD | SWQ0070-SD | SWQ0070-SG ※7 SWQ0070-SD |
| Connection Dimensions | Lock | 21.5 | | 28.5 | |
| | Release | 22.3 | | 29.3 | |

Notes :
1. Material of SWQJ Block：Stainless Steel
※5. The dimensions in ( ) display that of SWQJ-F.
※6. The spring pin is included only in SWQJ-C.
※7. The guide block (SWQJ-G) is used only for guide clamp (SWQ□-SG) and the free block (SWQJ-F) can be used for both datum clamp (SWQ□-SD) and guide clamp (SWQ □-SG).
※8. Pallet with low rigidity (thin pallet or pallet made of aluminum etc.) may be deformed when mounting SWQJ block. In this case, tolerance of mounting hole machining dimension AA±0.010 should be close to +0.010 (the upper limit of the tolerance).
※9. Mounting bolt is not included. Please prepare it separately.
※10. Tapping depth of the mounting bolt should be decided according to the mounting bolt.

## Cautions

### Notes for Design

1) Check Specifications

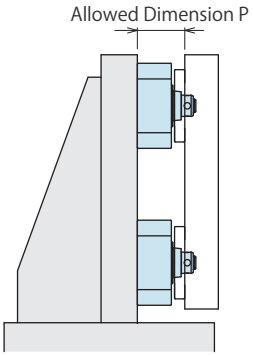
- Please use each product according to the specifications.

2) Notes for Circuit Design

- Ensure there is no possibility of supplying air pressure to the lock port and the release port simultaneously. Improper circuit design may lead to malfunctions and damages.
- Air blow passage should be $\phi$6mm or more.

3) When Using a Pallet in Vertical Position

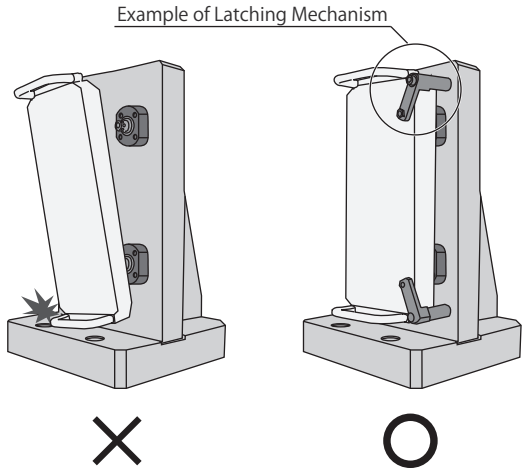
- When setting a workpiece or a fixture plate, make sure it is in proper proximity and square to the clamps.
  If it is locked out of position, the clamps may be damaged.




(mm)

| Model No. | SWQ0030 | SWQ0070 |
|---|---|---|
| Allowed Dimension P | 22.8 | 29.8 |

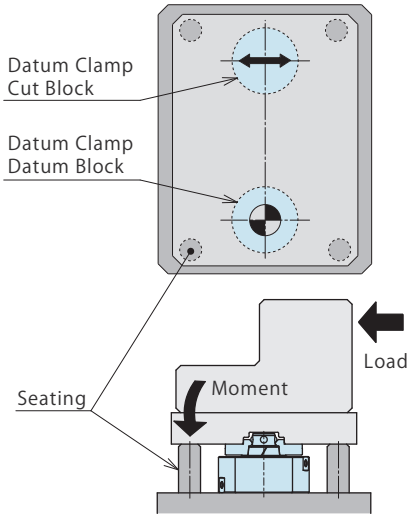
- As the workpiece fixture plate may fall down when releasing, it is recommended to set up the latching mechanism to prevent a fall.
- When the pallet is used in vertical position (hanging on the wall), the internal moving parts tend to be worn out. Please check the locating accuracy on a regular basis, and replace the product in case the locating accuracy exceeds the allowable range.




- When the pallet is in horizontal position, make sure the weight of the workpiece fixture is less than the lifting force of the clamps and maximum load of the machine.
- When the pallet is in vertical position, make sure the weight of the workpiece fixture pallet is 10% of the clamping force.
- Please contact us in case the pallet is in other position.

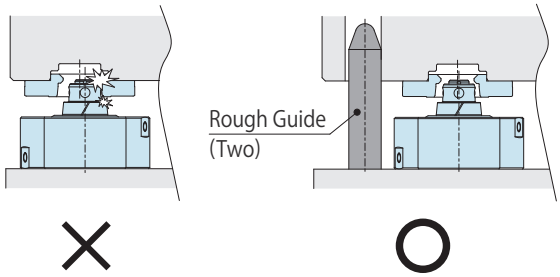
4) Seat Setting

- In case the clamp/block configuration is linear, it is recommended to provide additional supports for stability.

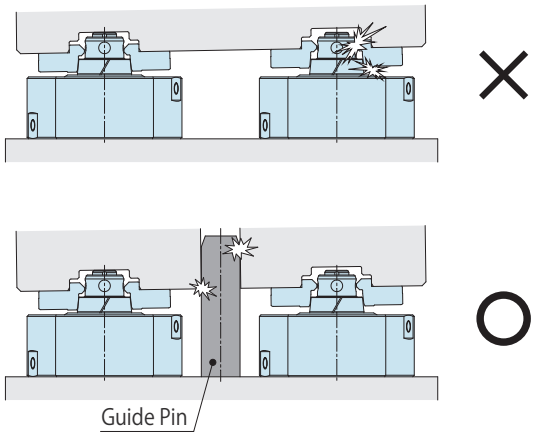



5) Setting of Rough Guide

- If the position of the pallet (fixture) during loading is outside the clamp allowable offset, the clamp may prematurely contact the seating/taper surface of the block (SWQJ-D) causing damage affecting locating precision. It is recommended to use rough guides to contain the pallet within the allowable offset.



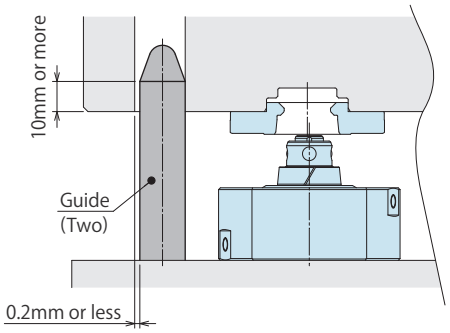

- The pallet must be level when lowering or lifting from the location clamps. If necessary, provide guide pins to keep the pallet level during loading and unloading.



6) Use a guide when not using the guide block (SWQJ-G)

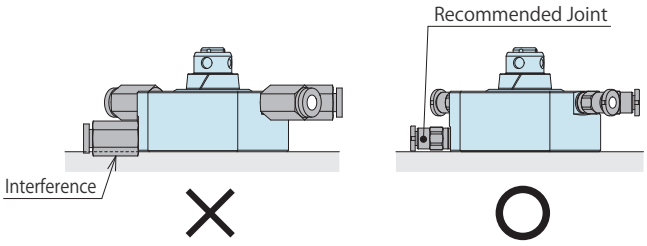
- The combination of the guide clamp (SWQ-SG) and the guide block (SWQJ-G) ensures the protective function of the datum clamp. Please set a guide in the following cases of not using the guide block.

| |
|---|
| In case of using the combination of two datum clamps, a datum block (SWQJ-D), and a cut block (SWQJ-C) only. |
| In case of using the combination of a datum clamp and a free block (SWQJ-F) only in order to rotate a fixture plate. |




7) Make sure a joint does not interfere with a base plate.

- Depending on the air piping joint, it might interfere with a base plate when mounting. Select a joint that does not interfere.




【Recommended Joints】

| Maker | Model No.※1 | Applicable Tube Outer Diameter※2 | Joint Shape | | Max. Operating Pressure※3 |
|---|---|---|---|---|---|
| SMC | M-3AU-4 | φ4 | Barb | Straight | 1.0 |
| | M-3ALU-4 | φ4 | Barb | Elbow | 1.0 |
| | KQ2S23-M3G1 | φ3.2 | One-Touch Fitting | Straight | 1.0 |
| CKD | FTS4-M3 | φ3.2, φ4 | Barb | Straight | 0.7 |
| | FTL4-M3 | φ3.2, φ4 | Barb | Elbow | 0.7 |
| | GWS3-M3-S | φ3.2 | One-Touch Fitting | Straight | 1.0 |
| Nihon Pisco | LC-0425-M3 | φ4 | Barb | Straight | 0.5 |
| | LH-0425-M3 | φ4 | Barb | Elbow | 0.5 |
| | LCN-0320-M3 | φ3 | Compression | Straight | 1.0 |
| | PC3-M3M□ | φ3 | One-Touch Fitting | Straight | 1.0 |
| | PL3-M3M□ | φ3 | One-Touch Fitting | Elbow | 1.0 |
| KOGANEI | BF4-M3 / BF4BU-M3 | φ4 | Barb | Straight | 0.9 |
| | UEF4-M3 / UEF4BU-M3 | φ4 | Barb | Elbow | 0.9 |
| | TS3-M3M | φ3 | One-Touch Fitting | Straight | 0.9 |
| | TL3-M3M | φ3 | One-Touch Fitting | Elbow | 0.9 |
| Nitta | AC3-M3-M | φ3 | One-Touch Fitting | Straight | 1.0 |
| | AC3-M3A-M | φ3 | One-Touch Fitting | Straight | 1.0 |
| | AL3-M3-M | φ3 | One-Touch Fitting | Elbow | 1.0 |

Notes : ※1. Information as of February, 2017. Please refer to each maker's specifications for detailed specifications and other joint shapes.
※2. Please refer to each maker's specifications for inner diameters and applicable tubes.
※3. Maximum operating pressure depends on air tubes. Please refer to each maker's specifications.

## Installation Notes

1) Check the fluid to use.

- Please supply filtered clean dry air.
- Oil supply with a lubricator etc. is unnecessary.

2) Preparation for Piping

- The pipeline, piping connector and fixture circuits should be cleaned and flushed thoroughly. The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
- There is no filter provided with this product for prevention of contaminants in the air circuit.

3) Applying Sealing Tape

- Wrap with tape 1 to 2 times following the screwing direction. Wrapping in the wrong direction will cause leaks and malfunction.
- Pieces of the sealing tape can lead to air leaks and malfunction.
- When piping, be careful that contaminant such as sealing tape does not enter in products.

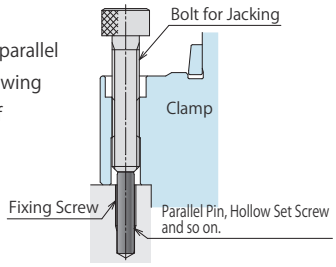
4) Mounting the body

- When mounting the product use four hexagonal socket bolts M3×0.5 (with tensile strength of 12.9) and tighten them with the torque shown in the table below. Tighten them evenly to prevent twisting or jamming.

| Clamp Model SWQ | Block Model SWQJ | Thread Size | Tightening Torque (N·m) |
|---|---|---|---|
| SWQ0030<br>SWQ0070 | SWQJ030<br>SWQJ070 | M3×0.5 | 1.3 |

5) Removal of the Product

- Remove mounting bolts. Insert jack bolts and tighten them evenly to lift the clamp.
- Protect the thread part with parallel pins, etc. as shown in the drawing not to damage the surface of mounting bolts.




※ Please refer to P.715 for common cautions. • Notes on Handling • Maintenance/Inspection • Warranty

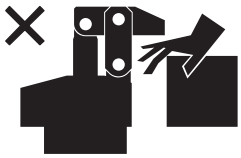
## Cautions

### 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 trouble/issue in the bolts and respective parts before restarting the machine or equipment.

3) Do not touch a clamp (cylinder) while it is working.
Otherwise, your hands may be injured.

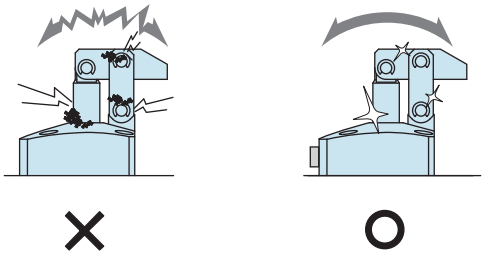


4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

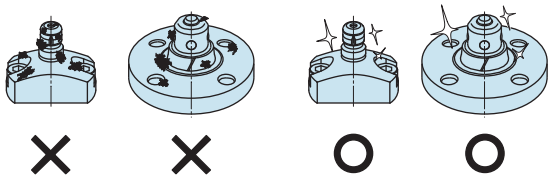
### Maintenance and Inspection

1) Removal of the Machine and Shut-off of Pressure Source
- Before removing the product, make sure that the safety devices are in place. Shut off the pressure and power source and make sure no pressure exists in the air and hydraulic circuits.
- Make sure there is no trouble/issue in the bolts and respective parts before restarting.

2) Regularly clean the area around the piston rod and plunger.
- If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage.



3) Regularly clean the reference surfaces (taper reference surface and seating surface) of locating products (SWT/SWQ/SWP/VRA/VRC/VX/VXE/VXF/WVS/VWH/VWM/VWK).
- Locating products (except VRA/VRC/VX/VXE/VXF and SWR without air blow port) can remove contaminants with the cleaning function. When installing a workpiece or a pallet, make sure there are no contaminants such as thick sludge.
- Continuous use with dirt on components will lead to locating failure, fluid leakage and malfunction.



4) Regularly tighten pipe, mounting bolt, nut, snap ring, cylinder and others to ensure proper use.

5) Make sure the hydraulic fluid has not deteriorated.

6) 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.

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

8) 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 Failure caused by the use of the non-confirming state at the user's discretion.
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.

# Sales Offices

## Sales Offices across the World

| | | |
|---|---|---|
| JAPAN<br>HEAD OFFICE<br>Overseas Sales | **TEL. +81-78-991-5162** | FAX. +81-78-991-8787<br>KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241<br>〒651-2241　兵庫県神戸市西区室谷2丁目1番5号 |
| United States of America<br>SUBSIDIARY<br>KOSMEK (USA) LTD. | **TEL. +1-630-620-7650** | FAX. +1-630-620-9015<br>650 Springer Drive, Lombard, IL 60148 USA |
| MEXICO<br>REPRESENTATIVE OFFICE<br>KOSMEK USA Mexico Office | **TEL. +52-442-161-2347** | Av. Santa Fe #103 int 59 Col. Santa Fe Juriquilla C.P. 76230 Queretaro, Qro Mexico |
| EUROPE<br>SUBSIDIARY<br>KOSMEK EUROPE GmbH | **TEL. +43-463-287587** | FAX. +43-463-287587-20<br>Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria |
| CHINA<br>KOSMEK (CHINA) LTD.<br>考世美(上海)貿易有限公司 | **TEL. +86-21-54253000** | FAX. +86-21-54253709<br>Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China<br>中国上海市浦东新区浦三路21弄55号银亿滨江中心601室 200125 |
| INDIA<br>BRANCH OFFICE<br>KOSMEK LTD - INDIA | **TEL. +91-9880561695** | F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India |
| THAILAND<br>REPRESENTATIVE OFFICE<br>KOSMEK Thailand Representation Office | **TEL. +66-2-300-5132** | FAX. +66-2-300-5133<br>67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand |
| TAIWAN<br>(Taiwan Exclusive Distributor)<br>Full Life Trading Co., Ltd.<br>盈生貿易有限公司 | **TEL. +886-2-82261860** | FAX. +886-2-82261890<br>16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511<br>台湾新北市中和區建八路2號 16F－4（遠東世紀廣場） |
| PHILIPPINES<br>(Philippines Exclusive Distributor)<br>G.E.T. Inc, Phil. | **TEL. +63-2-310-7286** | FAX. +63-2-310-7286<br>Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427 |
| INDONESIA<br>(Indonesia Exclusive Distributor)<br>PT. Yamata Machinery | **TEL. +62-21-29628607** | FAX. +62-21-29628608<br>Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti, Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia |

## Sales Offices in Japan

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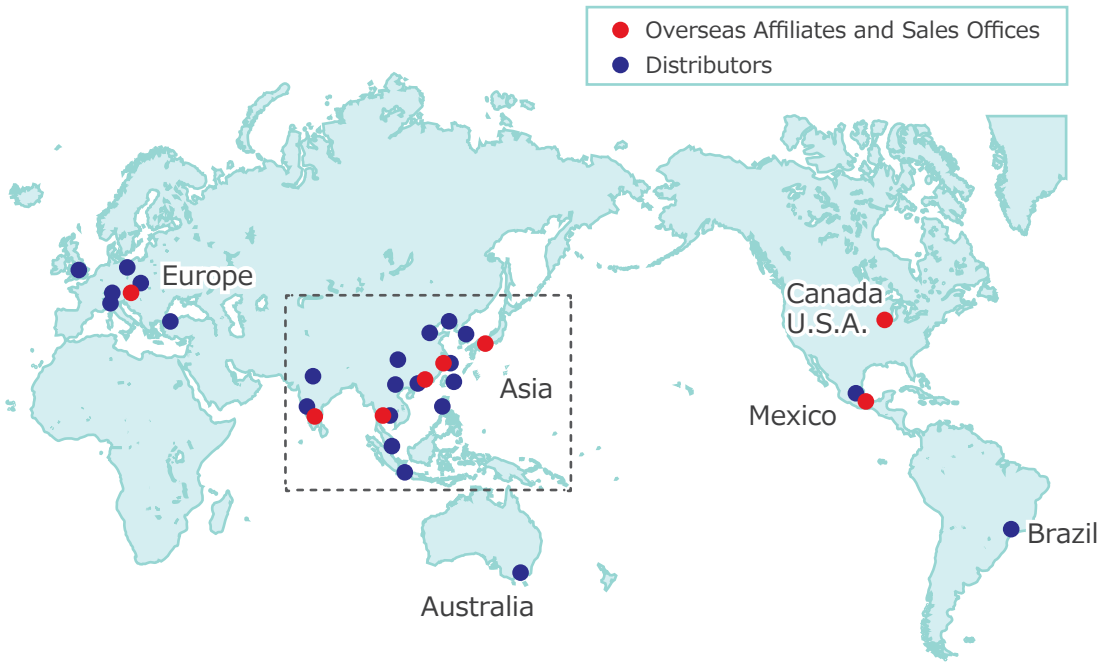
|---|---|---|
| Head Office<br>Osaka Sales Office<br>Overseas Sales | **TEL. 078-991-5162** | FAX. 078-991-8787<br>〒651-2241　兵庫県神戸市西区室谷2丁目1番5号 |
| Tokyo Sales Office | **TEL. 048-652-8839** | FAX. 048-652-8828<br>〒331-0815　埼玉県さいたま市北区大成町4丁目81番地 |
| Nagoya Sales Office | **TEL. 0566-74-8778** | FAX. 0566-74-8808<br>〒446-0076　愛知県安城市美園町2丁目10番地1 |
| Fukuoka Sales Office | **TEL. 092-433-0424** | FAX. 092-433-0426<br>〒812-0006　福岡県福岡市博多区上牟田1丁目8-10-101 |

# Global Network




Asia Detailed Map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