

Product Line-up

KOSMEK WORK CLAMPING SYSTEMS



Swing Clamp



Link Clamp



Pallet Clamp



Hole Clamp



Work Support



High Accuracy Locating



Linear Cylinder



Centering Vise



Auto Coupler



Non-Leak Coupler



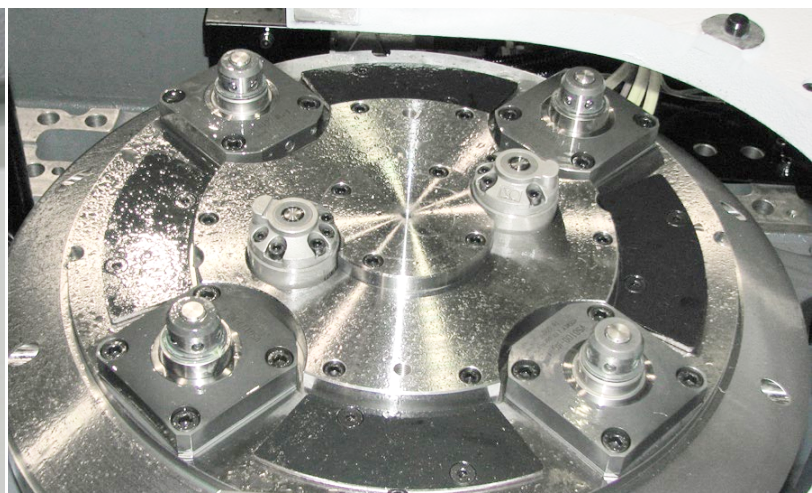
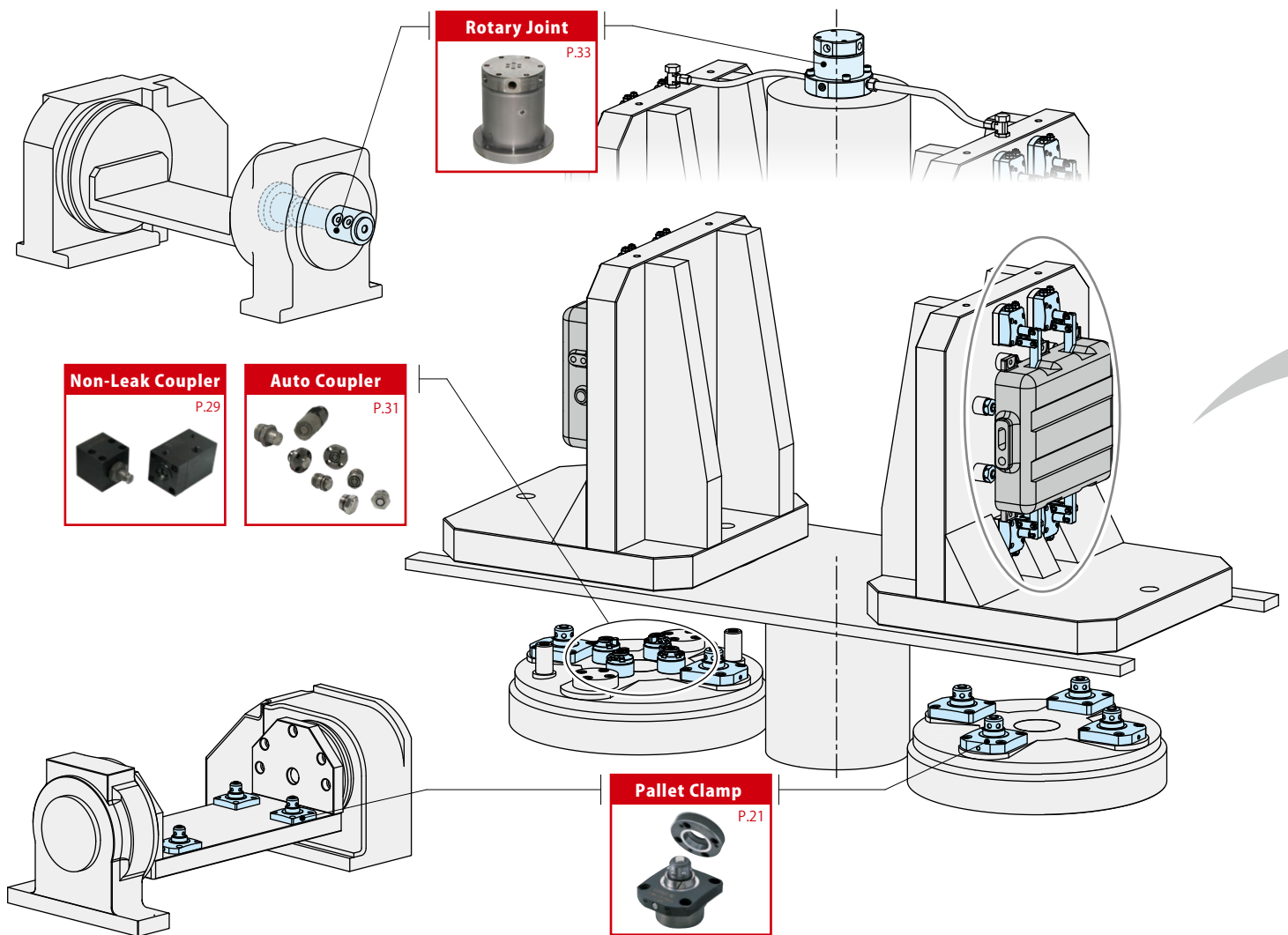
Control Valve

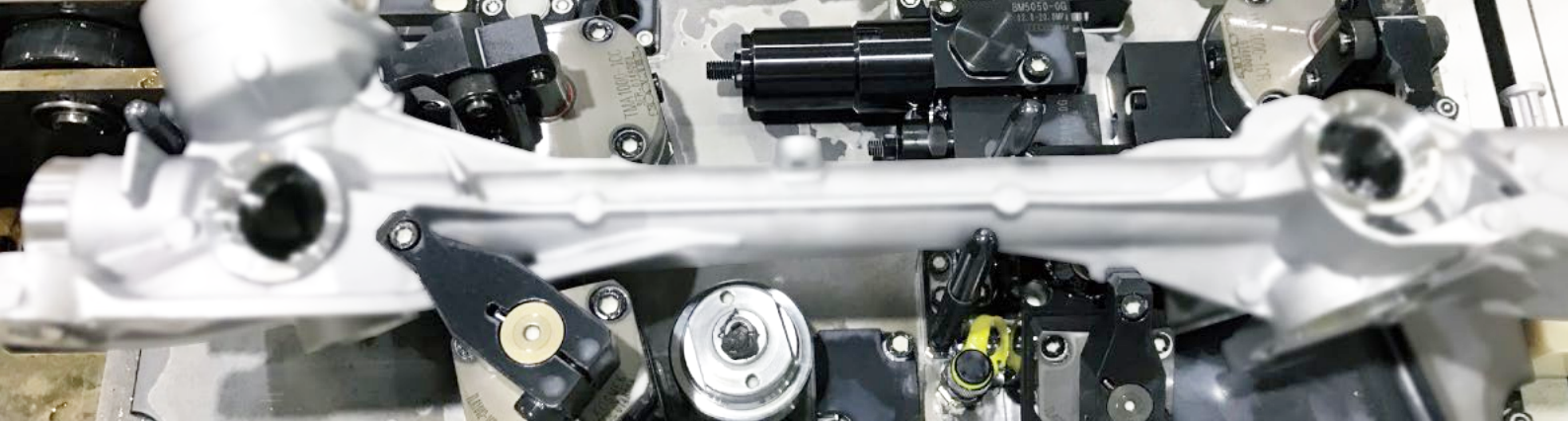


Rotary Joint

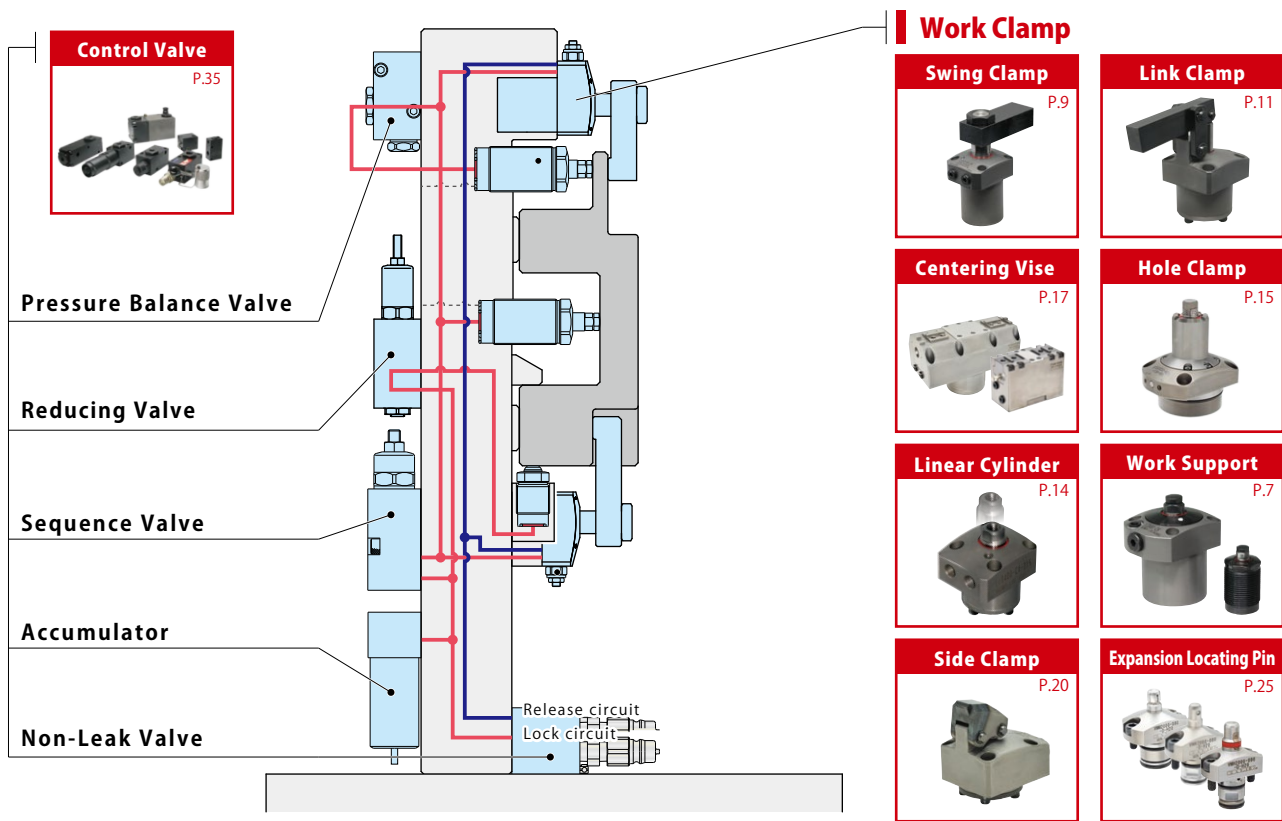
KOSMEK Work Clamping Systems

STANDARDIZATION

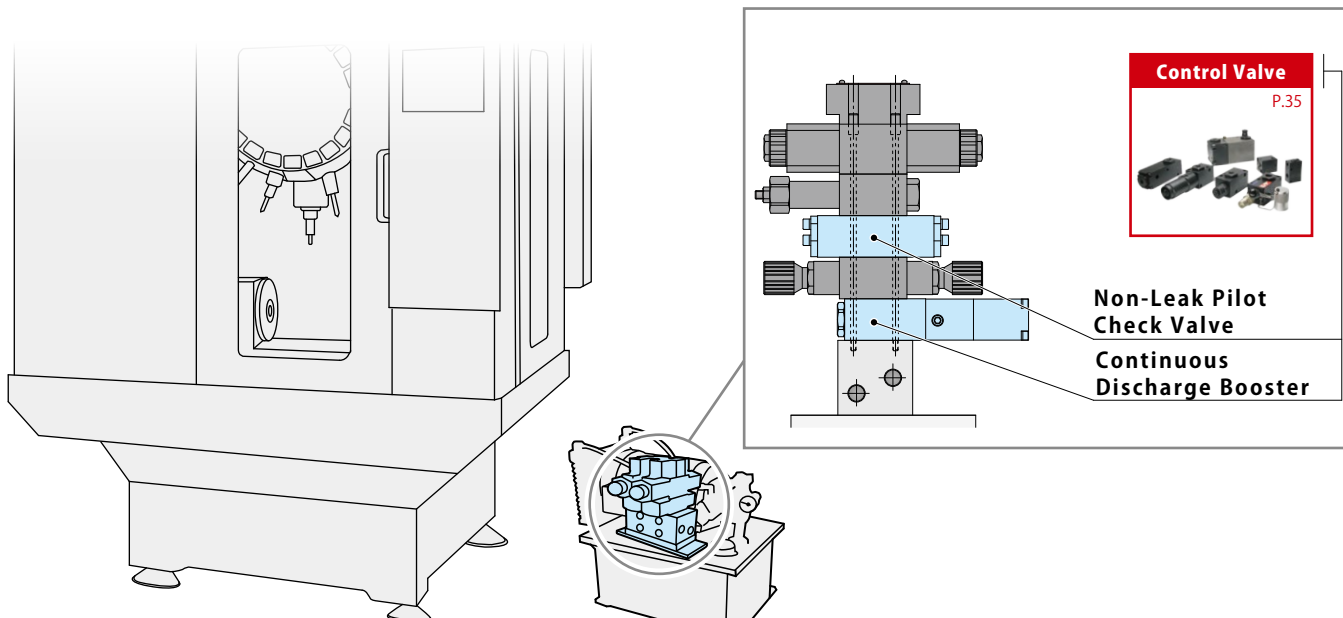




WORKHOLDING & AUTOMATION



EQUIPMENT UPGRADES



NEW

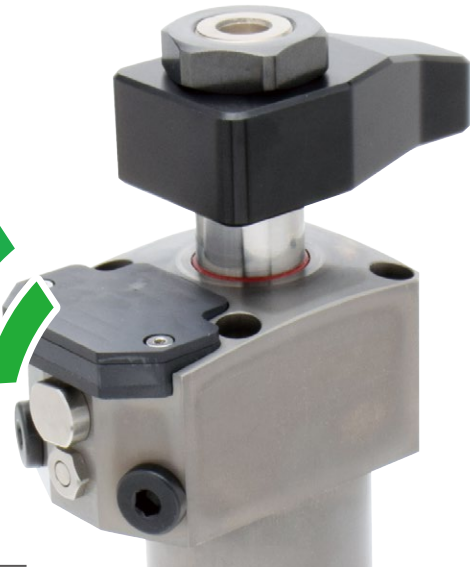
Wireless Sensing Clamp



Receiver model YWA



Clamp



Wirelessly Detect Unclamp Position

No External Power Supply Required for Sensor

Air Lock / Air Release

**High-Power
Pneumatic Model**



Swing Clamp
model WHP

Link Clamp
model WCP

Hyd. Lock / Spring Release

**Single-Acting
Hydraulic Model**



Swing Clamp
model LGM

Link Clamp
model LJM

Hyd. Lock / Hyd. Release

**Double-Acting
Hydraulic Model**



Swing Clamp
model LHM

Link Clamp
model LKM

Linear Cylinder
model LLM

Detects unclamp position wirelessly

Receiver model YWA

Position : Outside Machine



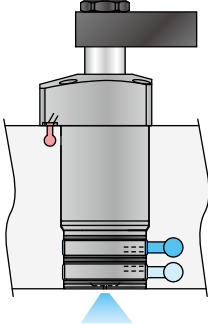
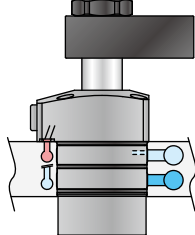
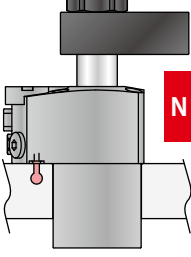
Clamp

Position : Fixture



Transmit unclamp signal by radio wave

Changes in Sensing Clamps

Model	Air Sensor Model	Air Sensing Valve Model	Wireless Sensing Model
	Conventional	Conventional	NEW
			
Detection Method	Air (Gap sensor)		Direct
Air Consumption	High	Low	Zero
Cylinder Length	Long (High Interference)	Short	Short
			No Air Port

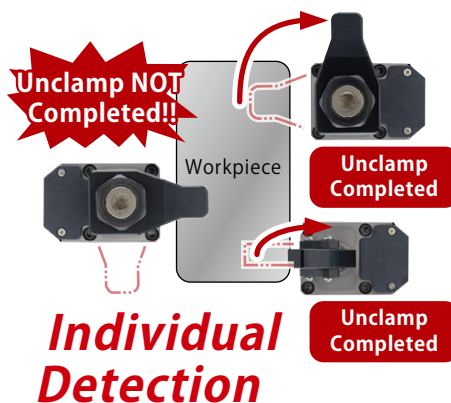


Response Time

0.1sec.

Quick Response※

※ Compared with our conventional air sensing clamps.



Individual Detection

Separate unclamp detection is possible for each clamp.



Clamp in a Processing Machine

Waterproof Rating

Equivalent to IPX7

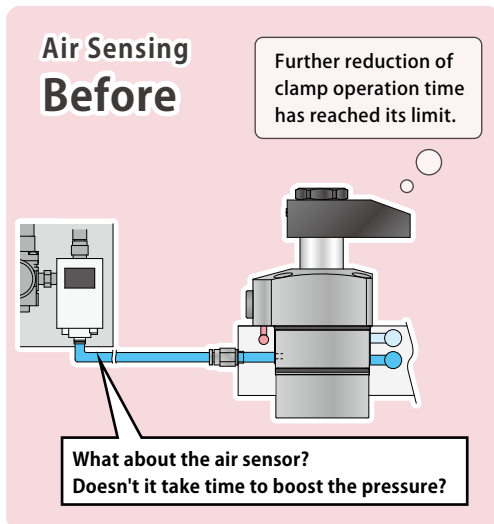
※ Shows the protection level of the sensor.

See Next Page for Key Advantages of Wireless Sensing Clamp

Wireless Sensing

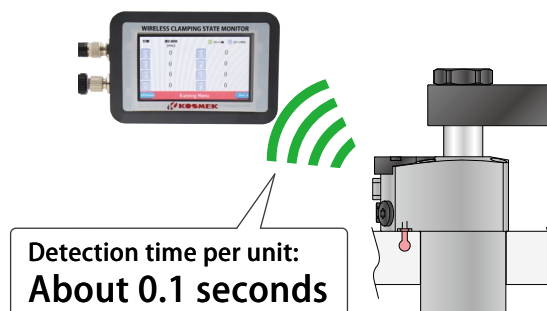
Productivity Improvement

Reduction of detection time to shorten cycle time



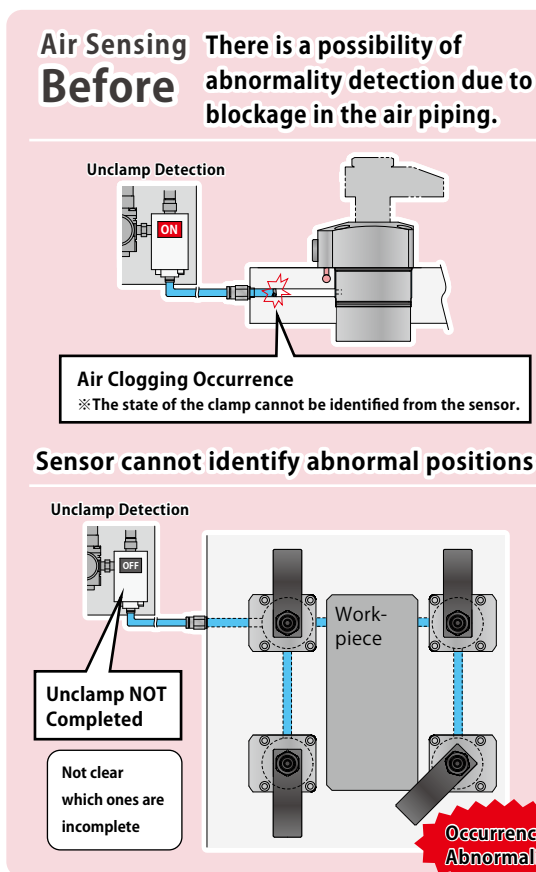
Wireless Sensing
After

Faster
Detection Time



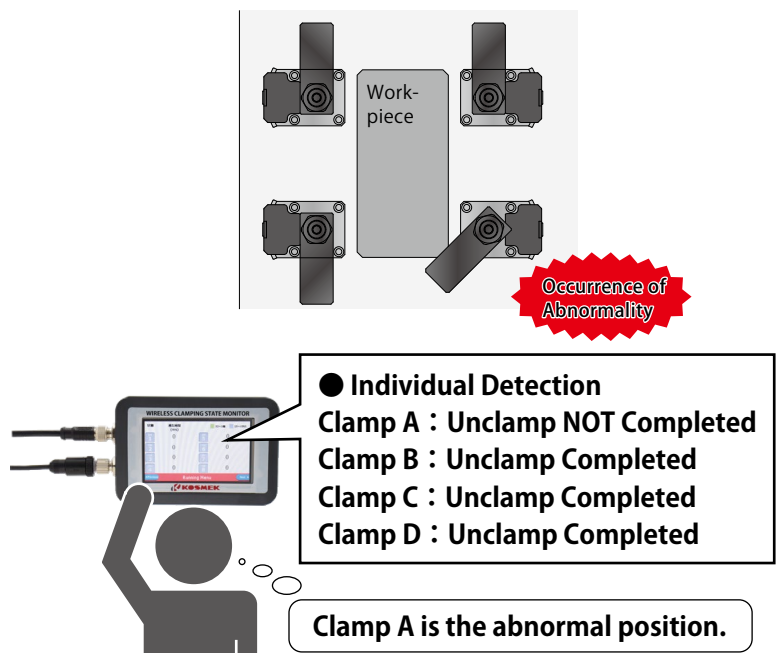
Improved Maintainability

Individual detection immediately identifies abnormal position



Wireless Sensing
After

No trouble around piping.
Abnormal positions are easily identified by individual detection.



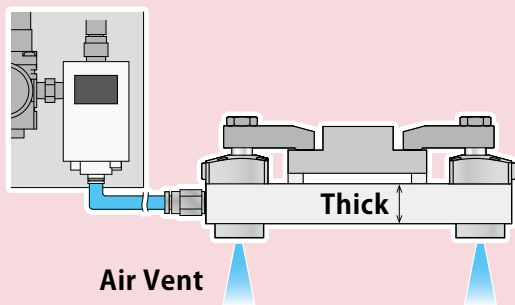
Up to 8 units can be individually detected per one receiver!

Four Key Advantages

Energy-Saving

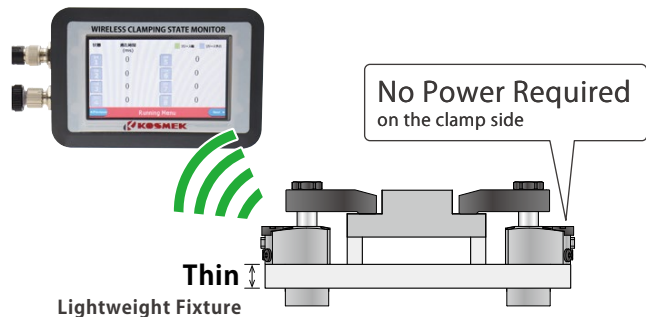
Achieve carbon neutrality with zero air consumption

Air Sensing Before **Air is required**



Wireless Sensing After

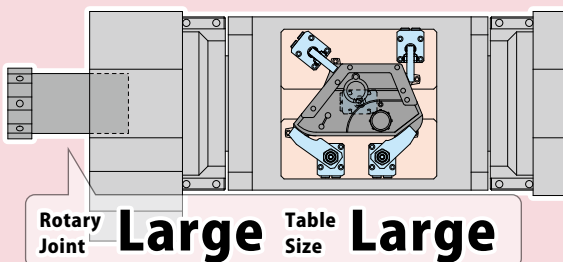
Air Consumption 0



Minimized Number of Ports

Air port for operation detection is not required

Air Sensing Before **The fixture needs to be large due to the number of ports.**



When using clamp, work support, lifter, and seating air sensor.

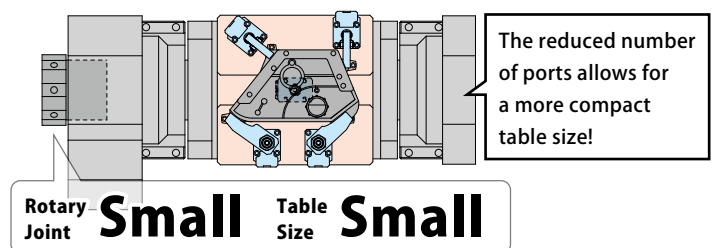
Required number of ports

Total 8 ports

- ① Op. hyd. pressure : Clamp
- ② Op. hyd. pressure : Unclamp
- ③ Op. hyd. pressure : Work Support
- ④ Op. hyd. pressure : Lifter Up
- ⑤ Op. hyd. pressure : Lifter Down
- ⑥ Detection Air : Seat Check × 3
- ⑦ Detection Air : Unclamp Check
- ⑧ Detection Air : Lifter Up Check

Due to insufficient number of ports, sensors are combined into a single port.

Wireless Sensing After **Wireless sensing reduce the number of ports.**



With wireless detection, detection air is not necessary.

2 ports reduced

Required number of ports

Total 6 ports

- ① Op. hyd. pressure : Clamp
- ② Op. hyd. pressure : Unclamp
- ③ Op. hyd. pressure : Work Support
- ④ Op. hyd. pressure : Lifter Up
- ⑤ Op. hyd. pressure : Lifter Down
- ⑥ Detection Air : Seat Check × 3

The size remains the same, and the freed port is assigned to another detection.

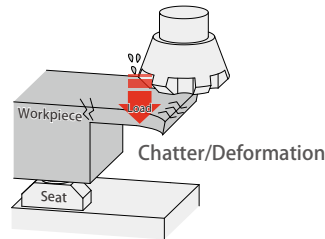
- ⑥ Detection Air : Seat Check
- ⑦ Detection Air : Seat Check
- ⑧ Detection Air : Seat Check

➔ **Also for quality improvement!**

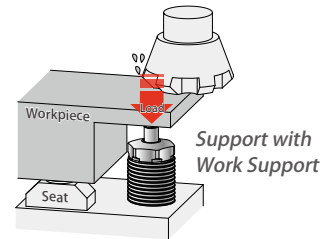
Less Chattering, Higher Accuracy

Work Support

Strong support from opposite side when load is applied.



< No Work Support >

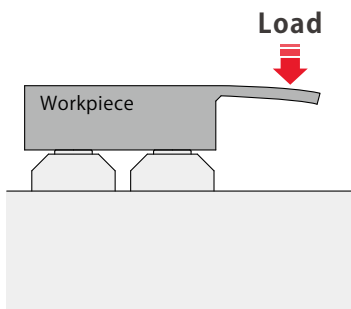


< With Work Support >

Work support prevents chattering and deformation caused by pressing load during workpiece machining.

Before

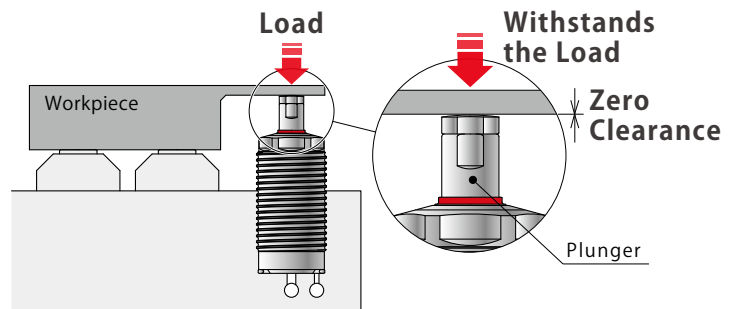
No Work Support



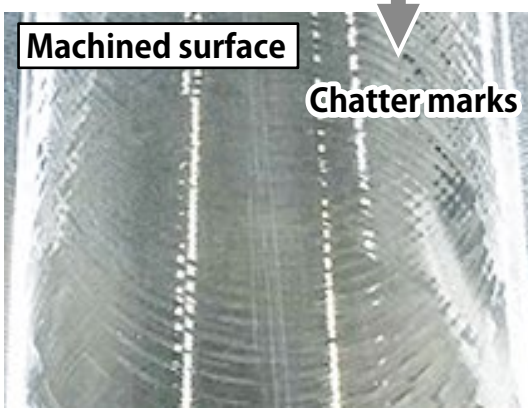
Chattering • Deformation

After

With Work Support

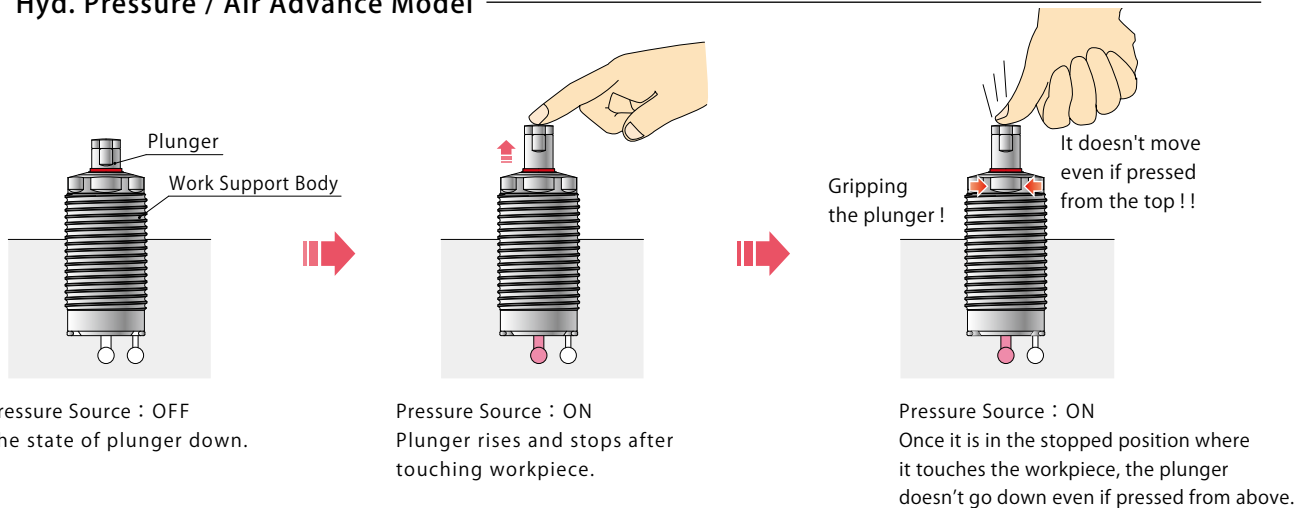


Prevents Chattering • Deformation

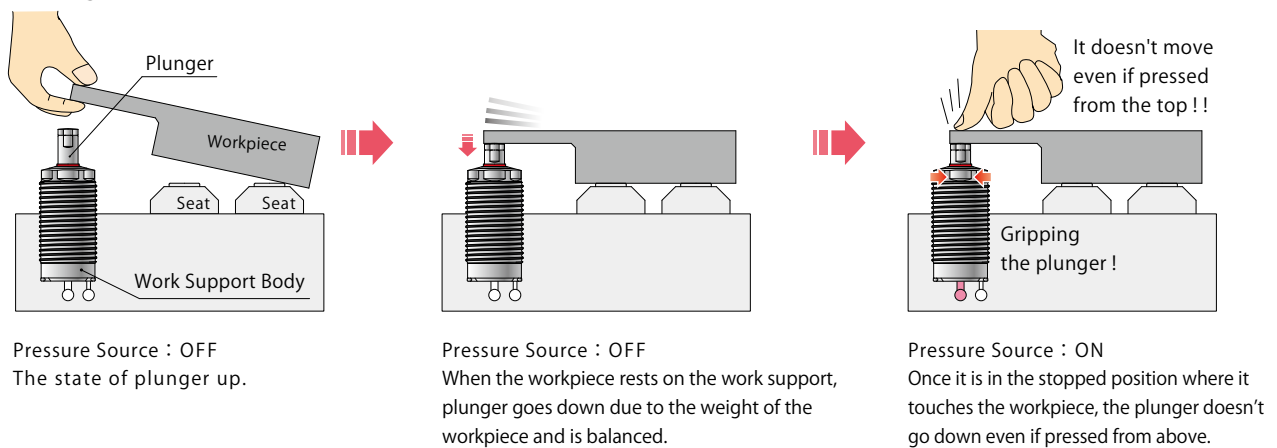


● Action Description

Hyd. Pressure / Air Advance Model

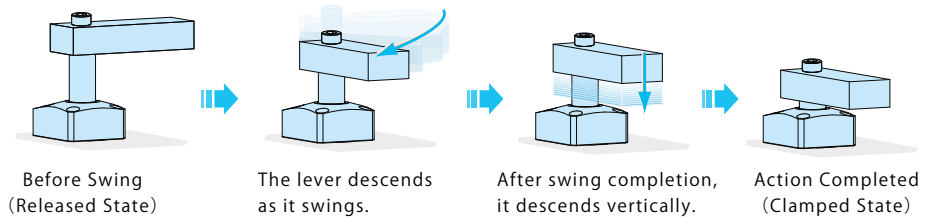


Spring Advance Model



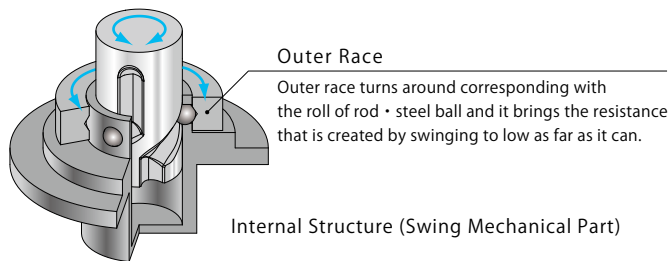
WNC High-Power Pneumatic Work Support  Air Lock / Spring Release Air 0.25 ~ 0.7MPa High Power Threaded	WNA Pneumatic Work Support Rodless Hollow  Air Lock / Spring Release Air 0.25 ~ 0.7MPa Rodless Hollow Flanged	LD Work Support  Hyd. Lock / Spring Release Hyd. Low Pressure 2.5 ~ 7MPa Standard Threaded	LC Work Support  Hyd. Lock / Spring Release Hyd. Low Pressure 2.5 ~ 7MPa Standard Flanged	LCW Air Sensing Work Support  Hyd. Lock / Spring Release Hyd. Low Pressure 2.5 ~ 7MPa Air Sensing Flanged
LDD Double Acting Work Support  Hyd. Lock / Hyd. Release Hyd. Low Pressure 2.5 ~ 7MPa Double Action Threaded	TC Work Support  Hyd. Lock / Spring Release Hyd. High Pressure 7 ~ 25MPa Standard Flanged	TNE Work Support  Hyd. Lock / Spring Release Hyd. High Pressure 7 ~ 35MPa Standard Threaded	TNF Work Support  Hyd. Lock / Spring Release Hyd. High Pressure 1000 ~ 5000 PSI Inch Product Threaded	TND Work Support  Hyd. Lock / Hyd. Release Hyd. High Pressure 7 ~ 35MPa Double Action Threaded

Lever Swings to Clamp Swing Clamp



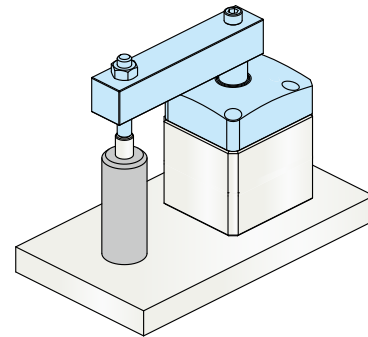
Ball Type Swing Mechanism with Outer Race

Our powerful mechanism of hydraulic clamp is used for pneumatic clamp!
Makes it faster with three lines of lead groove + outer race.
(High Rigidity makes it possible to use a long lever.)



Lock Angle Repeatability with High Accuracy

Since the swing complete position repeatability is $\pm 0.5^\circ$, it securely clamps even on a very small area.



Wireless Sensing

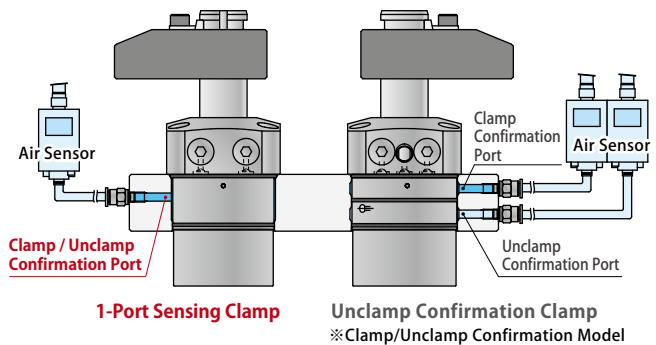
Wirelessly detects unclamp position. No external power supply is required for sensor. Unlike our conventional air sensing clamps, air for action confirmation is not required. Solution to fixture port shortage.

※Please refer to P.3 for details.



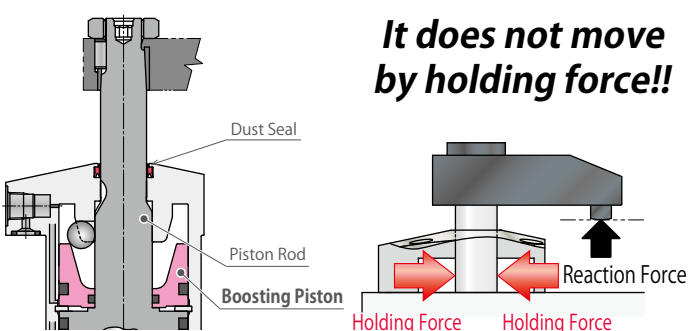
Air Sensing

Clamp-unclamp confirmation with built-in air catch sensor for smaller footprint fixtures.



High Power

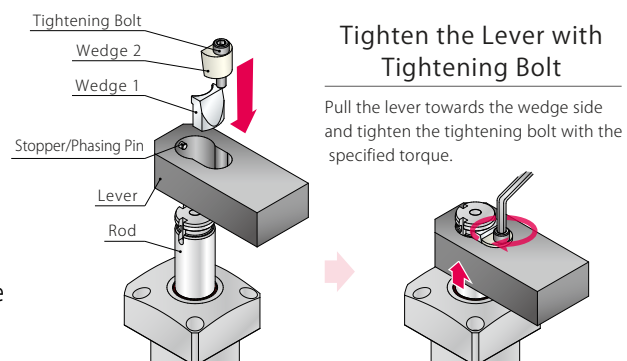
High clamping force with mechanical lock system.
Stronger holding force with mechanical lock clamping force.



OPTION

Quick Change Lever

Quickest lever setup time possible by one bolt exchange.
Quick change lever for high-variety and low-volume manufacturing.



WHP

Wireless Sensing High-Power Pneumatic Swing Clamp



Air Lock / Air Release

Air
0.2 ~ 0.5MPa

High Power / Wireless Sensing

WHE

High-Power Pneumatic Swing Clamp



Air Lock / Air Release

Air
0.2 ~ 0.5MPa

High Power

WHA

Pneumatic Swing Clamp



Air Lock / Air Release

Air
0.1 ~ 1MPa

Standard

WHD

Double Piston Pneumatic Swing Clamp



Air Lock / Air Release

Air
0.2 ~ 0.5MPa

Double Piston

WHC

Pneumatic Swing Clamp



Air Lock / Air Release

Air
0.1 ~ 1MPa

Compact

LHE

High-Power Swing Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 6MPa

High Power

LGM

Wireless Sensing Single-Acting Swing Clamp



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7MPa

Wireless Sensing

LHM

Wireless Sensing Swing Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Wireless Sensing

LGV

Swing Clamp with Action Confirmation



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7MPa

Air Sensing

LHV

1-Port Sensing Swing Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Air Sensing

LHW

Double Action Swing Clamp Built-In Sensing Valve



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Air Sensing

LHA

Double Action Swing Clamp



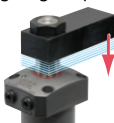
Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Standard

LHA-Y0

Double Action Swing Clamp 0° Swing Angle Option



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

0° Swing Angle

LHC

Double Action Swing Clamp Compact Model



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Compact

LHS

Double Action Parallel Swing Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Parallel Swing

LHD

Double Piston Hydraulic Swing Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 6MPa

Double Piston

LT

Single Action Swing Clamp Body Material : Aluminum Alloy



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7MPa

Body Material : Aluminum Alloy

LG

Single Action Swing Clamp Body Material : Steel



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7MPa

Body Material : Steel

TLV-2

Swing Clamp with Action Confirmation



Hyd. Lock / Hyd. Release

Hyd. High Pressure
7 ~ 35MPa

Air Sensing

TLA-2

Double Action Swing Clamp Top Flange



Hyd. Lock / Hyd. Release

Hyd. High Pressure
7 ~ 35MPa

Top Flange

TLB-2

Double Action Swing Clamp Bottom Flange



Hyd. Lock / Hyd. Release

Hyd. High Pressure
7 ~ 35MPa

Bottom Flange

TLA-1

Single Action Swing Clamp Top Flange



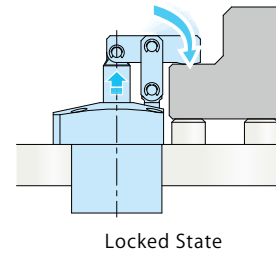
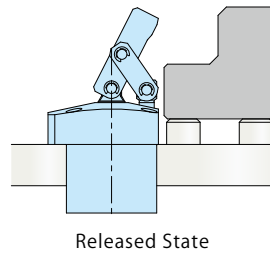
Hyd. Lock / Spring Release

Hyd. High Pressure
7 ~ 35MPa

Top Flange

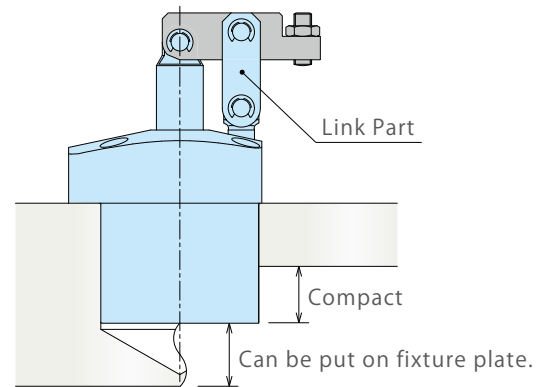
Clamps with Link Mechanism

Link Clamp



Compact and Easy to Use

Since the link part is built in clamp body, it is not necessary to design link part separately. It eliminates design and manufacturing precise link mechanism. (Only clamp arm needs to be manufactured.)



Wireless Sensing

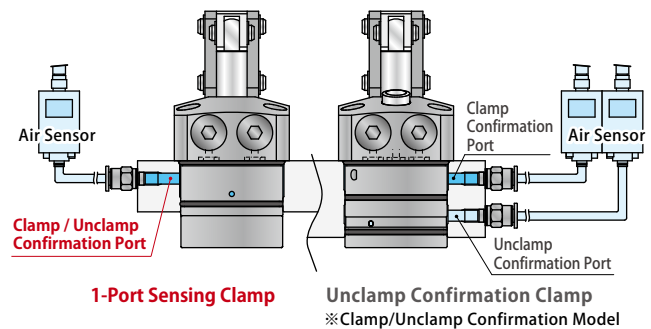
Wirelessly detects unclamp position. No external power supply is required for sensor. Unlike our conventional air sensing clamps, air for action confirmation is not required. Solution to fixture port shortage.

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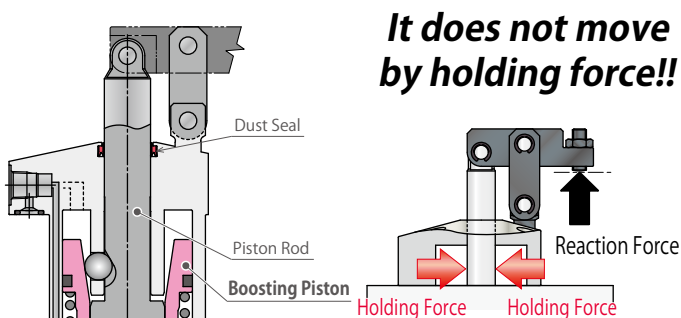
Air Sensing

Clamp-unclamp confirmation with built-in air catch sensor for smaller footprint fixtures.



High Power

High clamping force with pneumatic and mechanical lock system. Stronger holding force with mechanical lock clamping force.

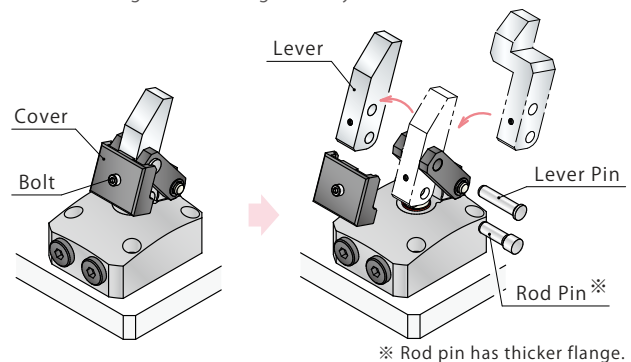


OPTION

Quick Change Lever

Quickest lever setup time possible by one bolt exchange.

Quick change lever for high-variety and low-volume manufacturing.



WCP

Wireless Sensing High-Power
Pneumatic Link Clamp



Air Lock / Air Release

Air
0.2 ~ 0.5MPa

High Power / Wireless Sensing

WCE

High-Power
Pneumatic Link Clamp



Air Lock / Air Release

Air
0.2 ~ 0.5MPa

High Power

WCA

Pneumatic Link Clamp



Air Lock / Air Release

Air
0.1 ~ 1MPa

Standard

WCC

Pneumatic Link Clamp



Air Lock / Air Release

Air
0.1 ~ 1MPa

Compact

LKE

High-Power Link Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 6MPa

High Power

LJM

Wireless Sensing
Single Action Link Clamp



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7MPa

Wireless Sensing

LKM

Wireless Sensing
Link Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1 ~ 7MPa

Wireless Sensing

LJV

Link Clamp with
Action Confirmation



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7MPa

Air Sensing

LKK

Universal Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

360° Rotatable Lever

LKV

1-Port Sensing
Link Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1 ~ 7MPa

Air Sensing

LKW

Air Sensing
Link Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

Air Sensing

LKA

Double Action Link Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

Standard

LKC

Double Action Link Clamp
Compact Model



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

Compact

LM

Single Action Link Clamp
Body Material : Aluminum Alloy



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7MPa

Body Material : Aluminum Alloy

LJ

Single Action Link Clamp
Body Material : Steel



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7MPa

Body Material : Steel

TMV-2

Link Clamp with
Action Confirmation



Hyd. Lock / Hyd. Release

Hyd. High Pressure
3.5 ~ 35MPa

Air Sensing

TMA-2

Double Action Link Clamp



Hyd. Lock / Hyd. Release

Hyd. High Pressure
3.5 ~ 35MPa

Standard

TMA-1

Single Action Link Clamp



Hyd. Lock / Spring Release

Hyd. High Pressure
3.5 ~ 35MPa

Standard

TQA

Medium-Pressure Link Clamp



Hyd. Lock / Hyd. Release

Hyd. Low - Medium Pressure
2 ~ 21MPa

Compact

— Lever Retracts to Avoid Interference —

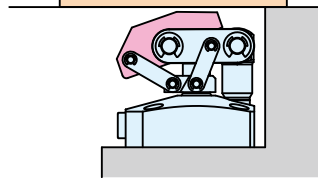


Link Clamp -Retracting Model-

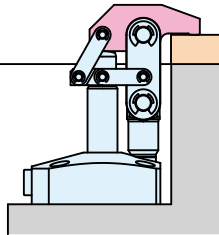
Largely retracted lever avoids interference during workpiece loading/unloading.
The compact lever-operating range enables to clamp difficult clamping points.

Largely retracted lever avoids interference during workpiece loading/unloading.

→ → → **Avoid Interference during Transfer**



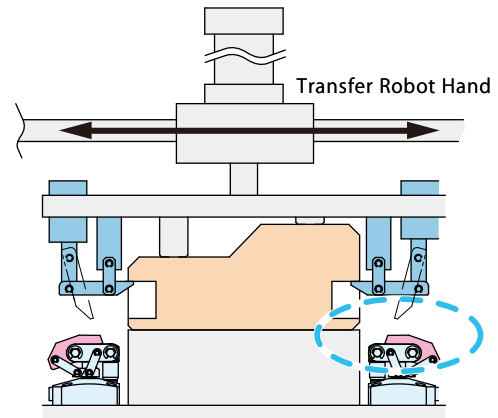
Released
(Loading)



Clamped

Avoid interference with a workpiece when loading and unloading

Large lever retraction allows for wide angle of loading and unloading workpieces between operations.



For Robot Hands

The largely retracted lever minimises robot retraction.

WFE

High-Power Pneumatic Link Clamp Retracting Model



Air Lock / Air Release

Air
0.2 ~ 0.5MPa

High Power

WFC

Pneumatic Link Clamp Retracting Model



Air Lock / Air Release

Air
0.1 ~ 1MPa

Compact

LFW

Link Clamp Retracting Model



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1 ~ 7MPa

Air Sensing

LFA

Link Clamp Retracting Model



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1 ~ 7MPa

Standard

Compact and Simple Linear Cylinder



Linear Cylinder

Maximum Stroke with Minimum Space.

Linear motion compact cylinder with

1 mm stroke increments and variety of styles.

WLA

Pneumatic Lift Cylinder



Air Lock / Air Release

Air
0.1 ~ 1MPa

Standard

Flanged

LLM

Wireless Sensing
Linear Cylinder



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Wireless Sensing

Flanged

LLV

1-Port Sensing
Lift Cylinder



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1 ~ 7MPa

Air Sensing

Flanged

LLW

Air Sensing
Lift Cylinder



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

Air Sensing

Flanged

LL

Linear Cylinder
Top Flange



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

Top Flange

Flanged

LLP

Linear Cylinder
Cushioning Model



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1 ~ 7MPa

Cushioning Model

Flanged

LLR

Linear Cylinder
Bottom Flange



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

Bottom Flange

Flanged

LLU

Compact Cylinder



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

Compact

Flanged

TTA

Linear Cylinder



Hyd. Lock / Hyd. Release

Hyd. Low - High Pressure
1.5 ~ 25MPa

Standard

Flanged

DBA

Block Cylinder



Hyd. Lock / Hyd. Release

Hyd. Low - High Pressure
1 ~ 35MPa

Bolt Up Mounting

Block

DBC

Block Cylinder



Hyd. Lock / Hyd. Release

Hyd. Low - High Pressure
1 ~ 35MPa

Side Mounting

Block

DP

Single Action Push Cylinder



Hyd. Lock / Spring Release

Hyd. Low - High Pressure
0.8 ~ 25MPa

Standard

Threaded

DR

Single Action Pull Cylinder



Hyd. Lock / Spring Release

Hyd. Low - High Pressure
1 ~ 25MPa

Standard

Threaded

DS

Single Action Pull Cylinder



Hyd. Lock / Spring Release

Hyd. Low - High Pressure
1 ~ 25MPa

Bolt Up Mounting

Threaded

DT

Single Action Hollow Cylinder



Hyd. Lock / Spring Release

Hyd. Low - High Pressure
1 ~ 25MPa

Bolt Up Mounting

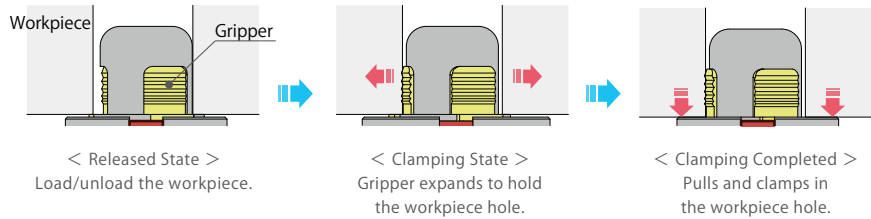
Threaded

Grips and Clamps the Workpiece Hole

Hole Clamp



- Grips the workpiece hole and pulls on to seating surface Z-axis.
- Possible to process 5 faces except clamping face.
- Zero interference provides better machining process and simple tool path.
- Compact integrated clamping function and seating surface Z-axis provides easy design and simple fixture.

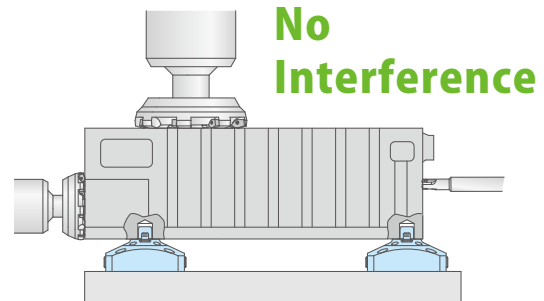
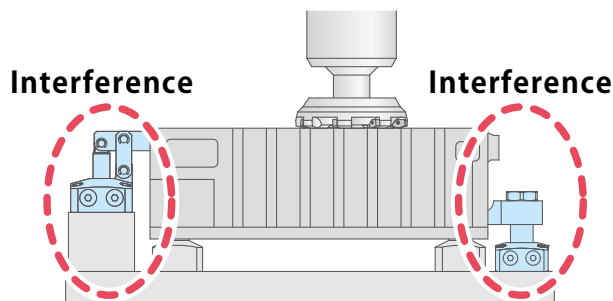


Simpler Fixtures, More Compact Equipment

Perimeter Clamp



Hole Clamp



Perimeter Clamping

Hole Clamp

Integrated Operation

Number of machinable faces without interference

3

5

Simplicity

Simplified Fixture Design

Large Number of Components

Minimum Components

Accessibility

Accessibility of Cutting Tools

Not All Areas Accessible

All Areas Accessible

Space Efficient

Table Size, Equipment Dimensions

Large

Compact

Energy Saving

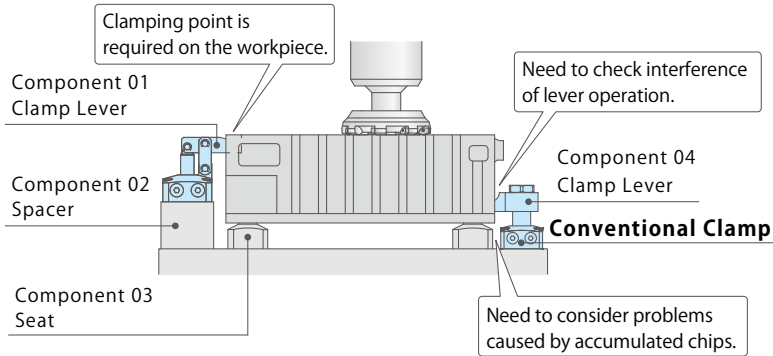
Cylinder Capacity

Large Capacity

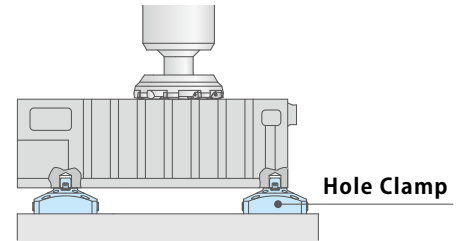
Reduced Capacity

Simplified Fixture

Conventional Clamp



Hole Clamp

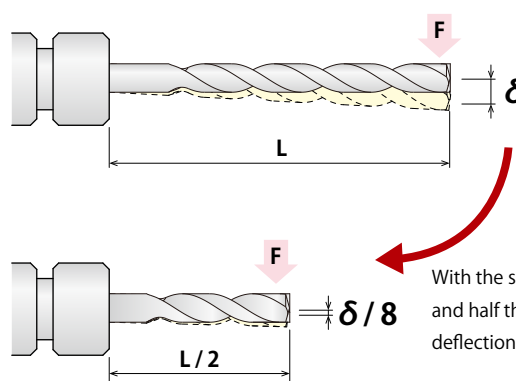
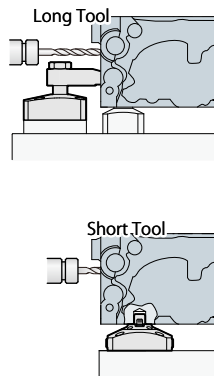


Hole clamp reduces fixture components needed compared to conventional clamping systems. In return, reduces design labor required.

More Accessible Tools

No interference of a cutting tool and a clamp means closer access of the cutting tool to a workpiece, and shorter projecting length.

This enables the cutting tool to minimize fluctuation, machine with higher accuracy and improve machining quality. Plus, wear-out of the cutting tool can be reduced, allowing for stable machining accuracy for a long time.



$$\delta = \frac{C \times L^3}{D^4}$$

delta : Deflection
C : Constant
L : Tool Length
D : Tool Shaft Diam.

With the same shaft diameter and half the tool length, deflection amount is 1/8.

High Power

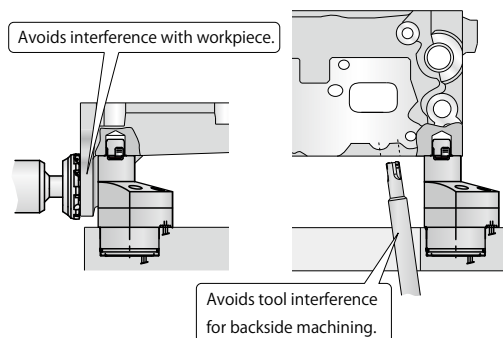
Mechanical lock function allows for powerful clamping force equivalent to hydraulic clamp.

Air Pressure at **0.45 MPa**



Offset

Offset hole clamp is able to avoid various kinds of interference.



SWE

High-Power Pneumatic Hole Clamp



Air Lock / Air Release

Air
0.2 ~ 0.5 MPa

High Power

Workpiece Hole Diam. : phi 6 ~ phi 13

SWA

Pneumatic Hole Clamp



Air Lock / Air Release

Air
0.25 ~ 0.7 MPa

Standard

Workpiece Hole Diam. : phi 6 ~ phi 13

SFB

Double Action Hole Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7 MPa

Standard

Workpiece Hole Diam. : phi 6 ~ phi 16

SFG

Single Action Hole Clamp



Hyd. Lock / Spring Release

Hyd. Low Pressure
2.5 ~ 7 MPa

Standard

Workpiece Hole Diam. : phi 6 ~ phi 16

SFC

Double Action Hole Clamp Offset Model



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7 MPa

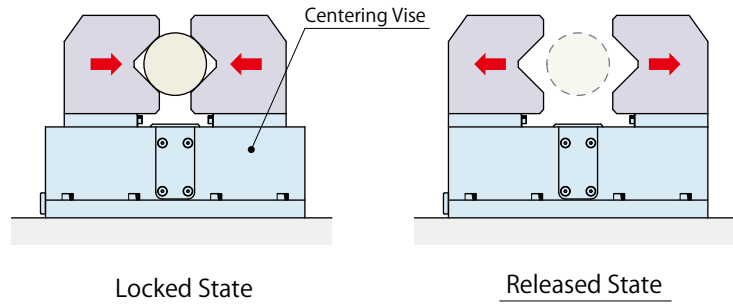
Offset

Workpiece Hole Diam. : phi 6 ~ phi 16

※Hole diameters can be specified in 0.5mm increments. (phi 6, phi 6.5, phi 7...)

— For Gripping and Locating Workpieces —

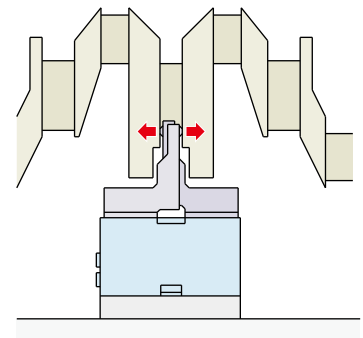
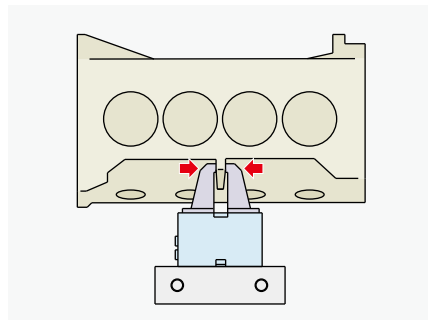
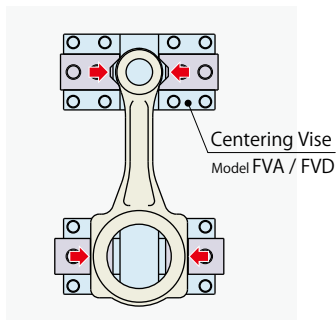
Centering Vise



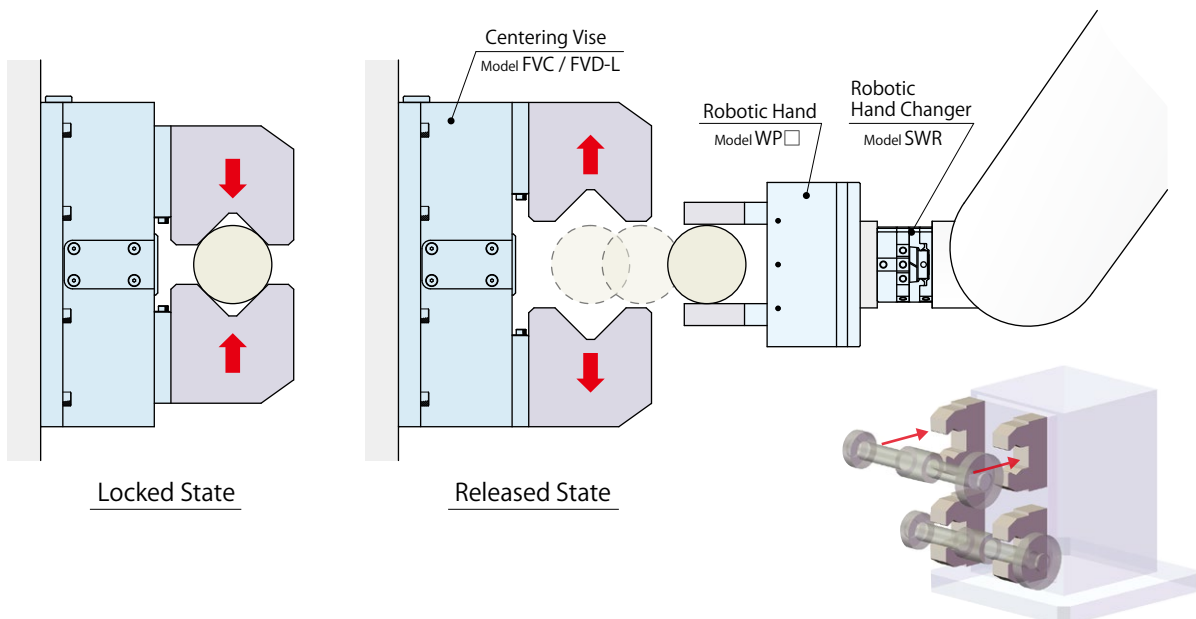
High Accuracy, High Power, Long Stroke

For Gripping Cylindrical Workpiece, and Workpiece Transfer Hand

- High Accuracy Model for Locating Workpiece



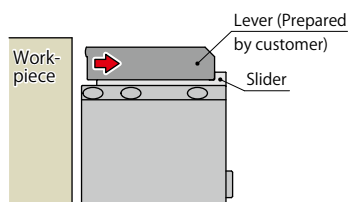
- Long Stroke Model for Automatic Transfer with Robot



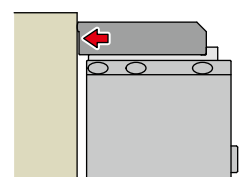
FWD	FVA	FVD	FVD-L	FVC
Pneumatic Centering Vise	Centering Vise	Centering Vise	Centering Vise	Centering Vise
				
Air Lock / Air Release	Hyd. Lock / Hyd. Release	Hyd. Lock / Hyd. Release	Hyd. Lock / Hyd. Release	Hyd. Lock / Hyd. Release
Air 0.2 ~ 1MPa	Hyd. Low Pressure 1.5 ~ 7MPa	Hyd. Low Pressure 1.5 ~ 7MPa	Hyd. Low Pressure 1.5 ~ 7MPa	Hyd. Low Pressure 1.5 ~ 7MPa
Standard	Compact	High Power	Long Stroke	Long Stroke
Repeatability : $\pm 0.01\text{mm}$	Repeatability : $\pm 0.01\text{mm}$	Repeatability : $\pm 0.01\text{mm}$	Repeatability : $\pm 0.01\text{mm}$	Repeatability : $\pm 0.03\text{mm}$
Slider Stroke (One Side) : 2.5mm/7mm	Slider Stroke (One Side) : 5mm	Slider Stroke (One Side) : 6 ~ 8mm	Slider Stroke (One Side) : 12 ~ 16mm	Slider Stroke (One Side) : 10 ~ 20mm

Follow the Workpiece Position

Di-Vise



Released State

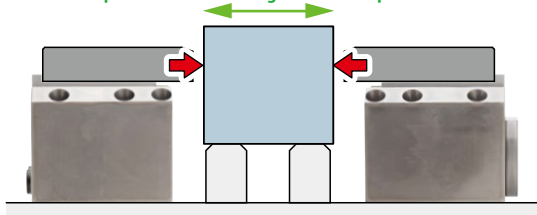


Locked State

Two-Piece Design to Allow for Flexible Placement

No restrictions to jaw opening width.

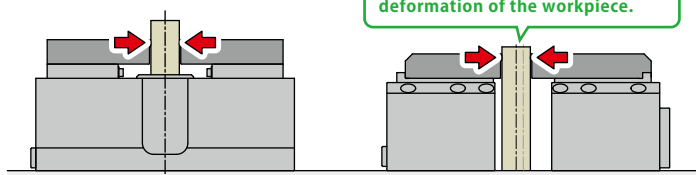
Vise placement according to the workpiece width



Follow the Workpiece Position

For stable clamping without affecting workpiece position.

Can be clamped off center without deformation of the workpiece.



Centering Vise

Di-Vise

Center Positioning and Clamping

Clamping at the Workpiece Position (Floating)

FVP

Di-Vise

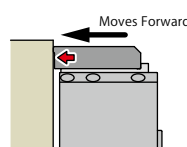


Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Pushing Model

Slider Stroke : 8mm



FVH

Di-Vise

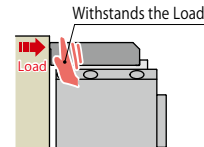


Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

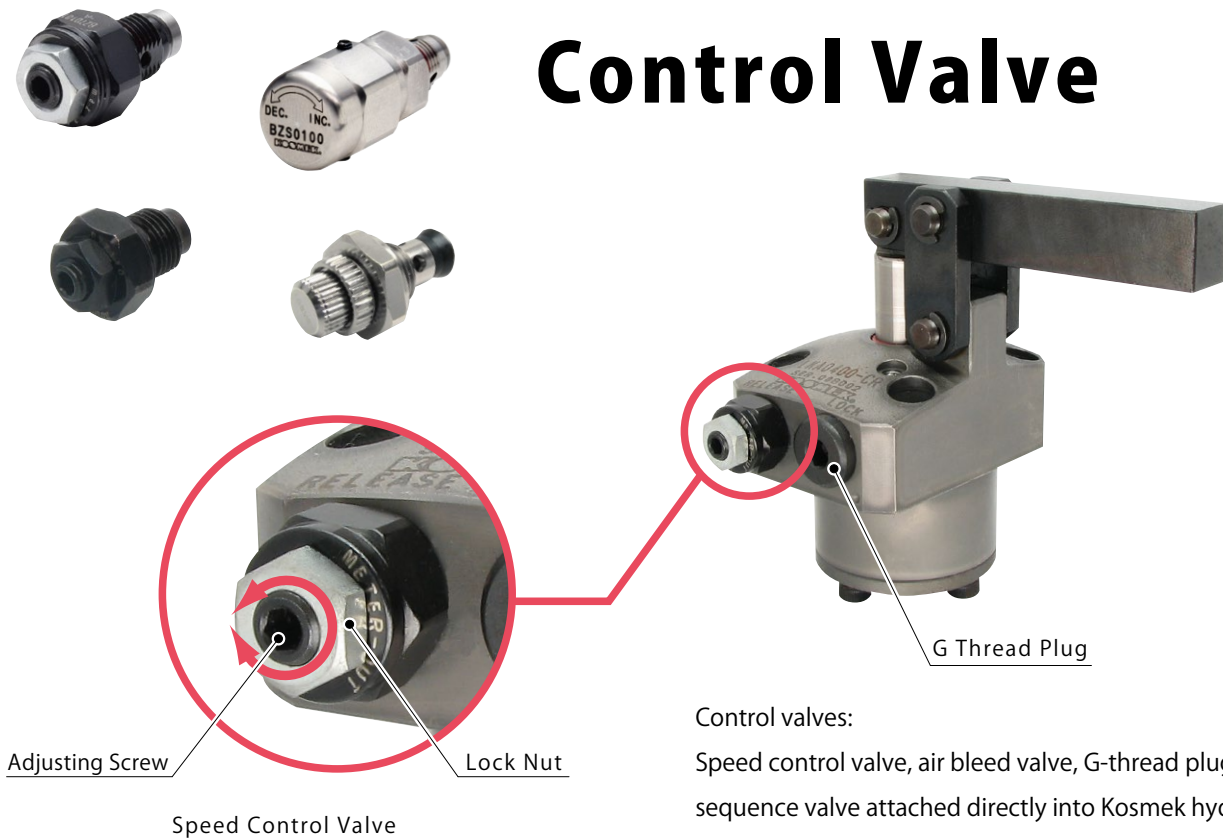
Holding Model

Slider Stroke : 8mm



— Directly Mounted to Clamps —

Control Valve



Control valves:

Speed control valve, air bleed valve, G-thread plug and sequence valve attached directly into Kosmek hydraulic clamp G-thread piping option.

BZW

Air Flow
Control Valve



Air
0.1 ~ 1MPa

BZL

Speed
Control Valve



Hyd. Low Pressure
0 ~ 7MPa

BZT

Speed
Control Valve



Hyd. Low-High Pressure
0 ~ 35MPa

BZS

Direct-Mount
Sequence Valve



Hyd. Low Pressure
2 ~ 7MPa

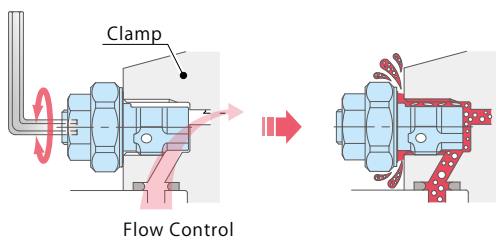
BZX

Air Bleed Valve



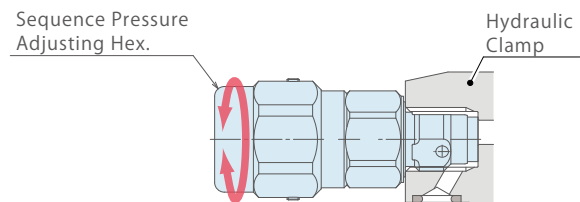
Hyd. Low-High Pressure
0 ~ 25MPa

Speed Control Valve



Adjust the flow rate with a wrench.
Able to adjust the clamping speed individually.
Air bleeding in the circuit is possible by loosening the speed control valve.

Direct-Mount Sequence Valve



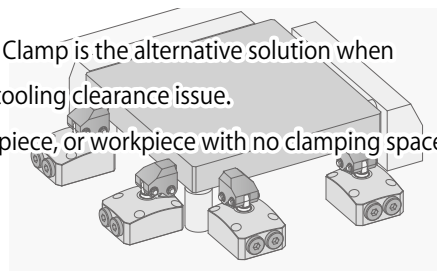
Adjusts the sequence operating pressure.
Able to adjust operating sequence of each actuator.

Clamps from the Workpiece Side

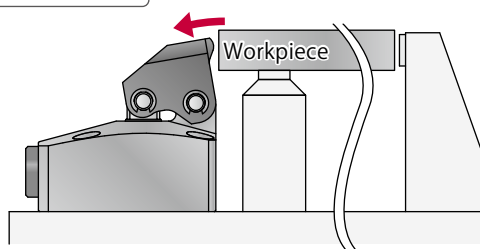
Side Clamp



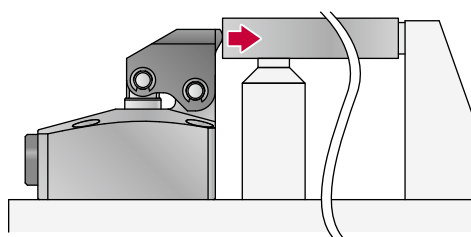
Specialized for side push, Side Clamp is the alternative solution when a traditional clamp is causing tooling clearance issue.
For Clamping the side of workpiece, or workpiece with no clamping space.



Released State

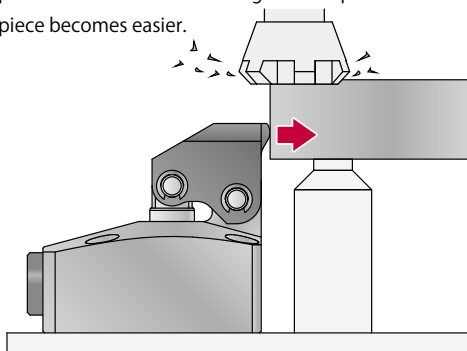


Locked State



• Zero Top Side Interference

There are no interfering objects on the top surface by clamping the workpiece from the side. Machining of the top surface of the workpiece becomes easier.



LSA

Side Clamp



Hyd. Lock / Hyd. Release

Hyd. Low Pressure
0.5 ~ 7MPa

Standard

LSE

High-Power Side Clamp



Hyd. Lock / Hyd. Release

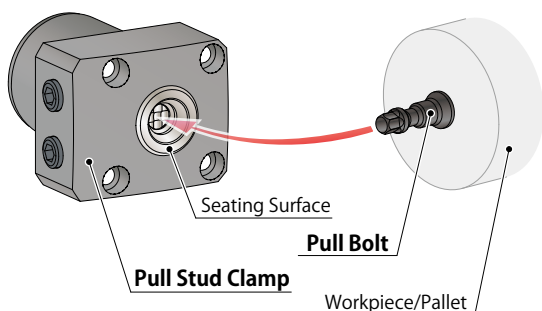
Hyd. Low Pressure
0.5 ~ 6MPa

High Power

Clamps with the Pull Bolt

Pull Stud Clamp

Pulling clamp using pull-bolt for workpiece through hole or screw hole.



FP

Pull Stud Clamp



Hyd. Lock / Spring Release

Hyd. Low Pressure
1 ~ 7MPa

FQ

Pull Stud Clamp



Hyd. Lock / Spring Release

Hyd. Low-High Pressure
1 ~ 25MPa

LZ-FP1

Pull Bolt

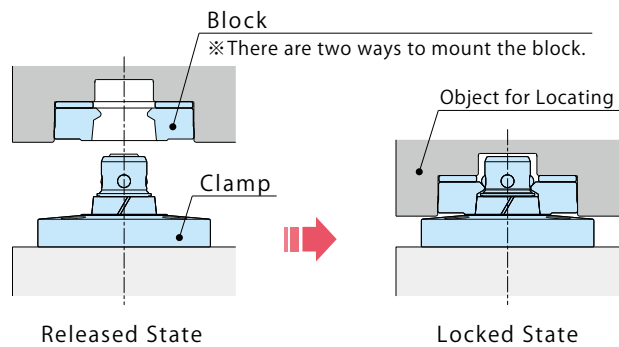


Accessories

For FP / FQ

—— Locates and Clamps at Once ——

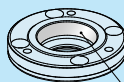
Pallet Clamp



KOSMEK Pallet Clamping Systems

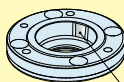


Datum Block



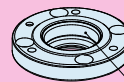
For Reference Locating
Taper Reference Surface (360°)

Cut Block



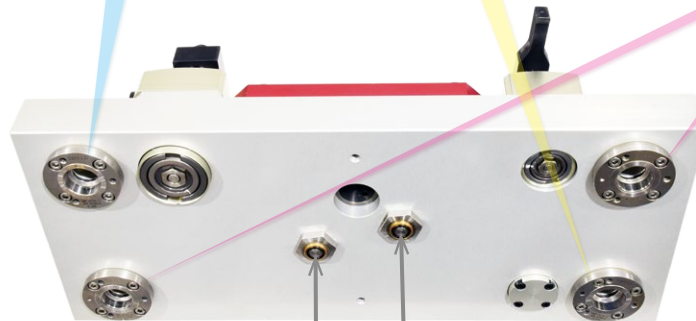
For One Direction Locating
Taper Reference Surface (a part)

Guide Block



For Guide
Guide Part (Straight)

Fixture



Machine Base

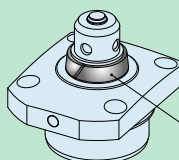


Auto Coupler



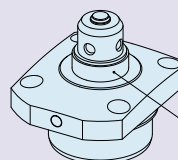
Model JVC/JVD

Datum Clamp



With Locating Function
Movable Taper Sleeve

Guide Clamp



No Locating Function
Guide Part (Straight)



Model VS

KOSMEK Exclusive Non-Backlash Mechanism

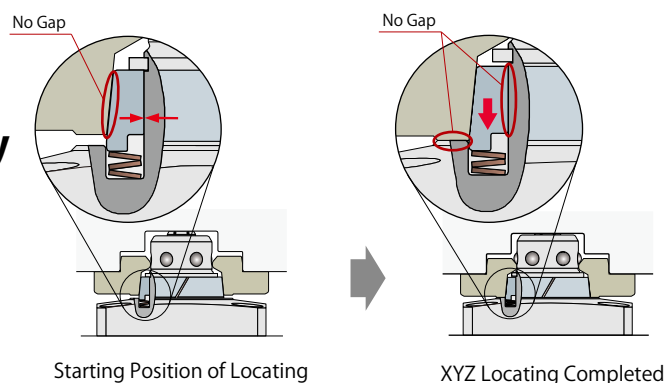


KOSMEK Pallet Clamp has 3 μm Locating Repeatability

Kosmek Pallet Clamp enables a fixture to be located within 3 μm accuracy as the last time the fixture was located. Machining a workpiece can be started as soon as its program is activated, resulting in drastic setup time reduction.

Dual Contact Enables High Rigidity + High Accuracy

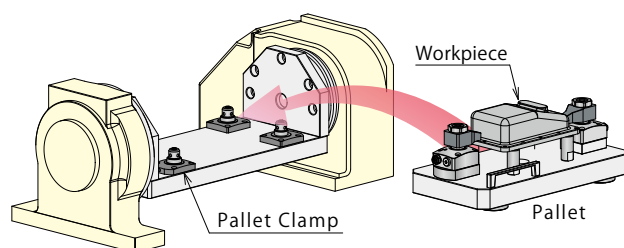
KOSMEK Pallet Clamp enables anyone, even robots, to switch fixtures at once. KOSMEK exclusive locating function allows for high accuracy locating with 3 μm repeatability and clamping simultaneously.



- Setting fixture outside allows less machine idle time

Since the fixture setting is outside, the machine idle time is reduced.

Pallet sharing system is very efficient for many variants with small batch production requirements.



Manual Pallet Change

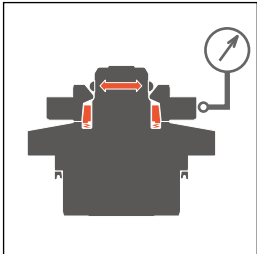
Pallet alignment is

Instant

Features of Pallet Clamp

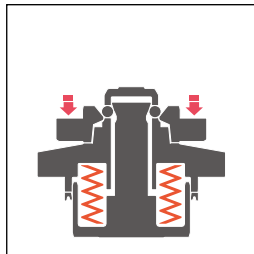
• High Accuracy Locating

Locating Repeatability : 3 μ m
No need to inspect the fixture alignment inside the machine.



• Clamping Function

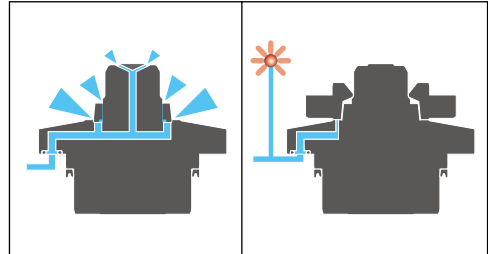
Possible to select clamping force depending on purpose.



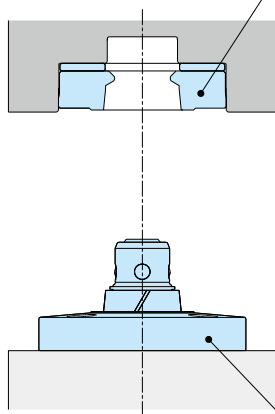
※ This drawing shows model VS

• Air-Blow and Seat Check

Contaminants are removed by air blow.
Seating surface is provided with the air hole, seat check is possible by using a gap sensor.



Block



VSJ

Flanged Block



SWTJ

Flanged Block



VSB

Embedded Block



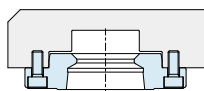
SWTB

Embedded Block



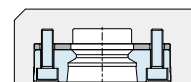
Flanged

• Simple Mounting



Embedded

• Enables to put pallets directly on the floor



Clamp

WVS

High-Power
Pneumatic Pallet Clamp



Air Lock / Air Release

Air
0.25 ~ 0.5MPa

High Power

SWT

Air Location Clamp



Air Lock / Air Release

Air
0.35 ~ 1MPa

Standard

VS

Pallet Clamp
[Spring Clamp]



Spring Lock / Hyd. Release

Hyd. Low Pressure
3.5 ~ 7MPa

Standard

VT

Pallet Clamp
[Hyd. Double Action Clamp]



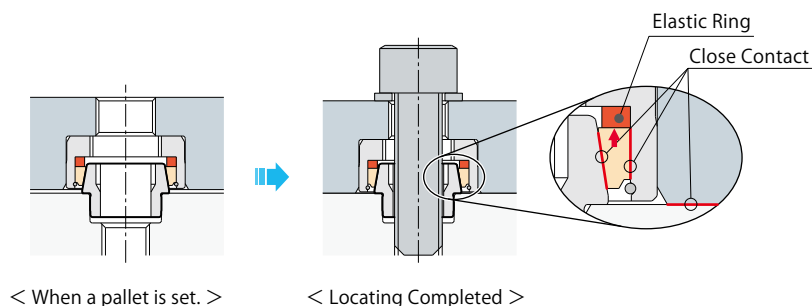
Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Standard

Simple High-Accuracy Locating by Hand

Screw Locator

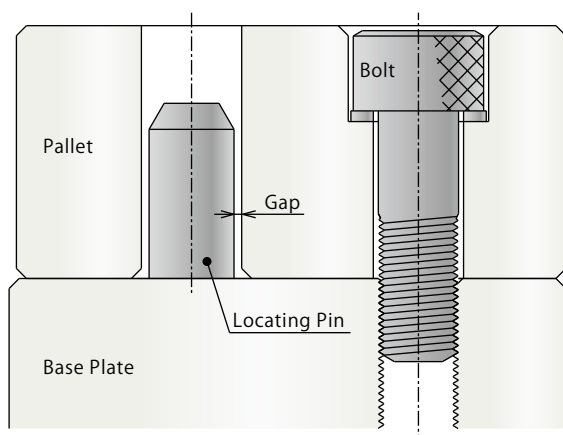


The "Screw Locator" performs high-precision locating by simply tightening the bolts.



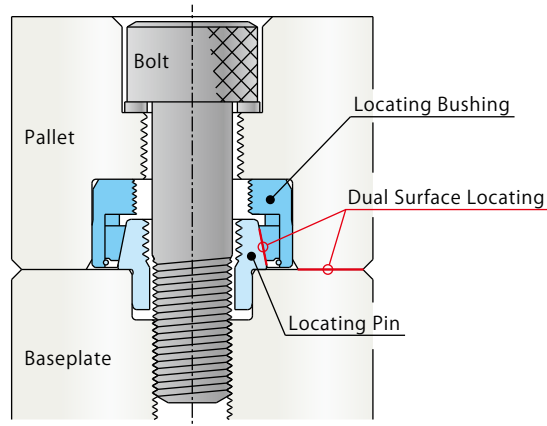
General locating pin has a gap and poor locating repeatability.

Backlash • Low Accuracy • Space Required



Screw Locator with Dual Surface Tightening
Locating Repeatability $3\mu\text{m}$ (VXE : $5\mu\text{m}$)

High accuracy allows for high quality and less defective parts.
Compact body saves valuable space.



VXF

Screw Locator



Manual Lock / Manual Release

High Accuracy

Repeatability : $3\mu\text{m}$

VXE

Screw Locator



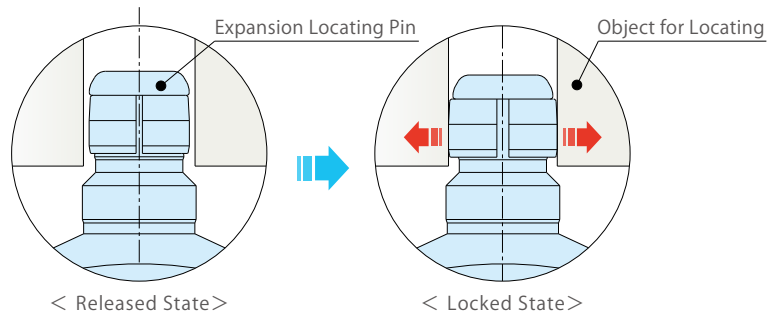
Manual Lock / Manual Release

Compact

Repeatability : $5\mu\text{m}$

Easy Setup, High Accuracy Locating

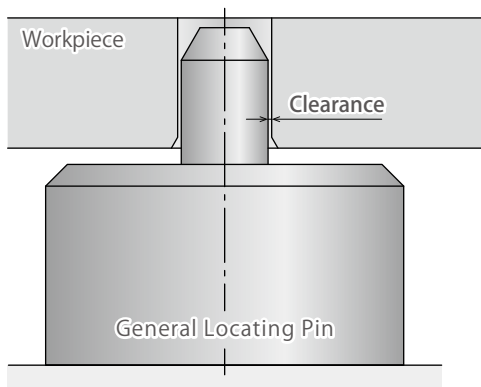
Expansion Locating Pin



What is Expansion Locating Pin ?

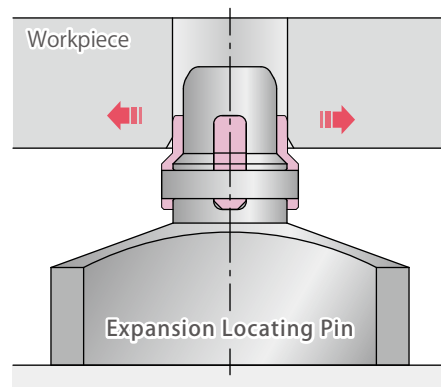
High-Accuracy Locating Pin that locates a workpiece
by **expanding its pin diameter** .

The general locating pin has some clearance
between pin and workpiece hole.

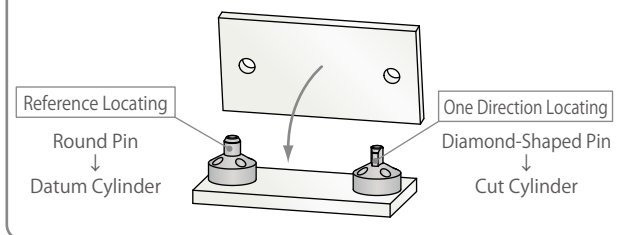


Expansion locating pin has **zero clearance!!**

High Accuracy • Setup Time Reduction • Cost Reduction



Two types of locating pins (Cylindrical and Diamond shaped pins).
Expansion Locating Pin consisting of Datum-D and Cut-C cylinder



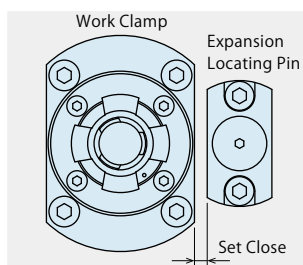
The World's First Locating Mechanism

When expanded : Clearance between the pin and
reference hole becomes zero to
locate with high accuracy.

When released : Easy to load/unload workpieces
with enough clearance.

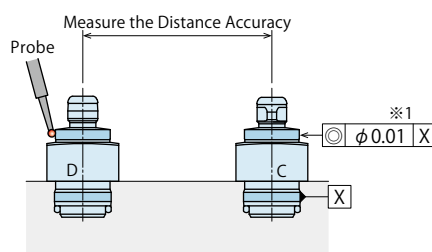
• Simple Arrangement

The compact body can be installed
close to the clamp, so fixture design
is more simple.



• Easy to Check the Accuracy

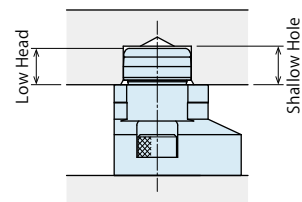
The same core part with X on the flange
top allows to determine the origin and
measure the distance accuracy.



※1. It is $\phi 0.02$ for casting material models.

• For Shallow Workpiece Hole

The low head pin can be used for
shallow workpiece hole.

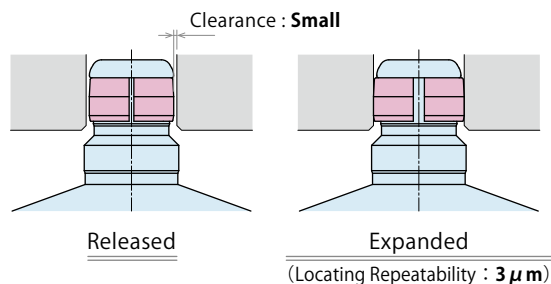


VWM Pneumatic Expansion Locating Pin  Air Lock / Air Release Air 0.35 ~ 0.7MPa High Accuracy Workpiece hole diam.: φ 8 ~ φ 30 Repeatability : 3 μm	VWH Pneumatic Large Expansion Locating Pin  Air Lock / Air Release Air 0.35 ~ 0.7MPa Multi-Purpose Workpiece hole diam.: φ 5 ~ φ 15 Repeatability : 10 μm	VWK Pneumatic Expansion Locating Pin  Air Lock / Air Release Air 0.35 ~ 0.7MPa Casting Material Workpiece hole diam.: φ 5.7 ~ φ 16.2 Repeatability : 10 μm	VX Manual Expansion Locating Pin  Manual Lock / Manual Release Manual Manual Workpiece hole diam.: φ 8 ~ φ 20 Repeatability : 5 μm	
VFL Hydraulic Expansion Locating Pin  Spring Lock / Hyd. Release Hyd. Low Pressure 2.5 ~ 7MPa High Accuracy Workpiece hole diam.: φ 8 ~ φ 30 Repeatability : 3 μm	VFM Hydraulic Expansion Locating Pin  Hyd. Lock / Hyd. Release Hyd. Low Pressure 2.5 ~ 7MPa Multi-Purpose Workpiece hole diam.: φ 5 ~ φ 15 Repeatability : 10 μm	VFH Hydraulic Large Expansion Locating Pin  Hyd. Lock / Hyd. Release Hyd. Low Pressure 1.5 ~ 7MPa Multi-Purpose Workpiece hole diam.: φ 5 ~ φ 15 Repeatability : 10 μm	VFJ Hydraulic Expansion Locating Pin  Hyd. Lock / Spring Release Hyd. Low Pressure 2.5 ~ 7MPa Casting Material Workpiece hole diam.: φ 7.6 ~ φ 16.2 Repeatability : 10 μm	VFK Hydraulic Expansion Locating Pin  Hyd. Lock / Hyd. Release Hyd. Low Pressure 1.5 ~ 7MPa Casting Material Workpiece hole diam.: φ 5.7 ~ φ 16.2 Repeatability : 10 μm

High Accuracy Model



High Accuracy Model has small clearance, but has high accuracy of 3 μm locating repeatability.

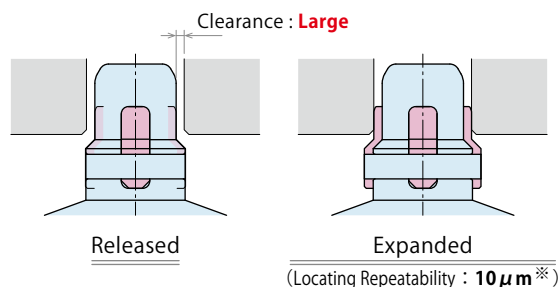


Multi-Purpose Model



Large Expansion Model has large clearance when released, suitable for automation such as transfer robot application. (Locating Repeatability : 10 μm ※)

※When selecting VFH1000, locating repeatability is 30 μm .

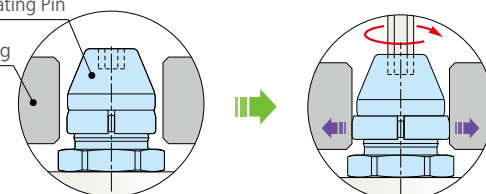


Manual Expansion Locating Pin



Manual Expansion Locating Pin

Object for Locating



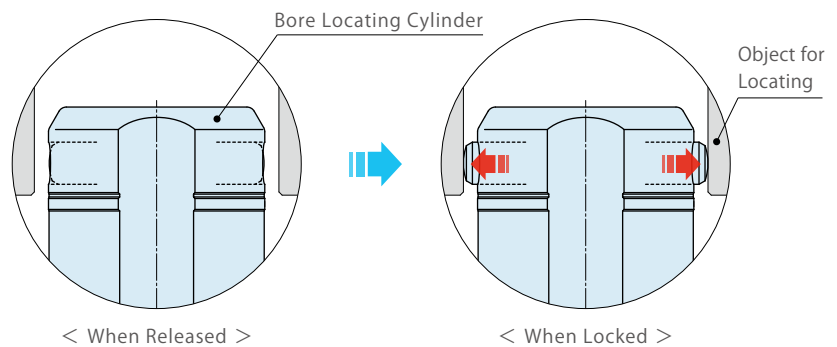
High accurate manual locating pin.

The repetitive location accuracy is 5 μm with a wrench.

—— Large Expansion + Zero Clearance ——

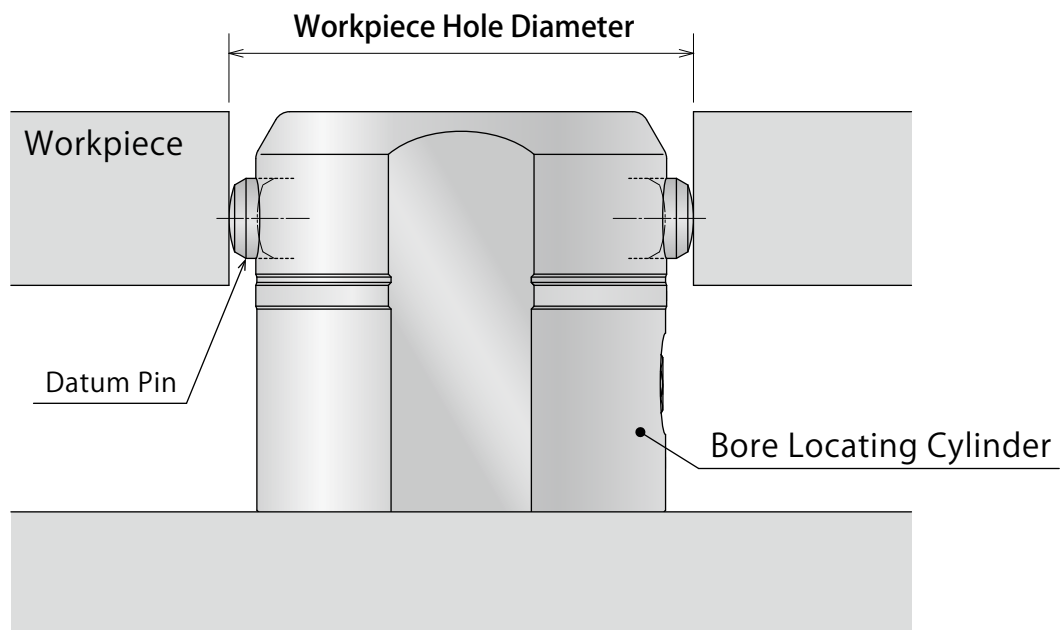


Bore Locating Cylinder



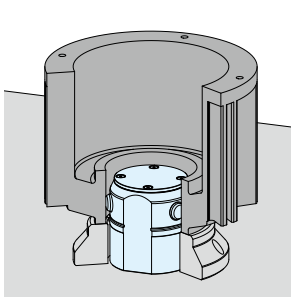
Max. Applicable Workpiece Hole : $\phi 129$

Line-up of 13 body sizes according to workpiece hole diameters.

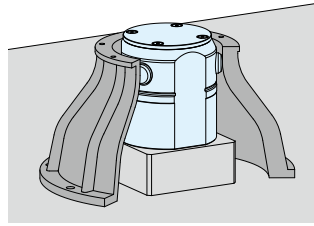


Model No.	VFP 0300	VFP 0320	VFP 0360	VFP 0400	VFP 0450	VFP 0500	VFP 0600	VFP 0700	VFP 0800	VFP 0900	VFP 1000	VFP 1100	VFP 1200
Workpiece Hole Diam. mm	$\phi 30 \sim \phi 32$	$\phi 33 \sim \phi 35$	$\phi 36 \sim \phi 39$	$\phi 40 \sim \phi 44$	$\phi 45 \sim \phi 49$	$\phi 50 \sim \phi 54$	$\phi 60 \sim \phi 65$	$\phi 70 \sim \phi 75$	$\phi 80 \sim \phi 86$	$\phi 90 \sim \phi 96$	$\phi 100 \sim \phi 107$	$\phi 110 \sim \phi 117$	$\phi 120 \sim \phi 129$
Locating Repeatability mm	0.02										0.03		

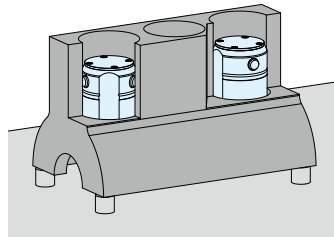
Centering and Locating of Large-Diameter Hole



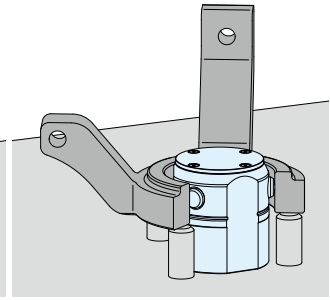
Centering of
Motor Housing



Centering of
Transmission Case



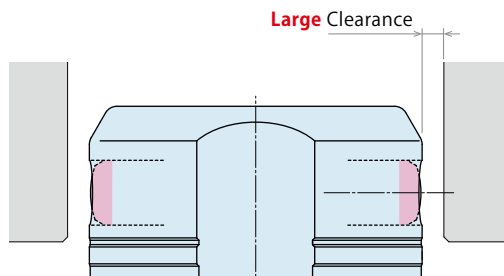
Positioning of
Cylinder Block



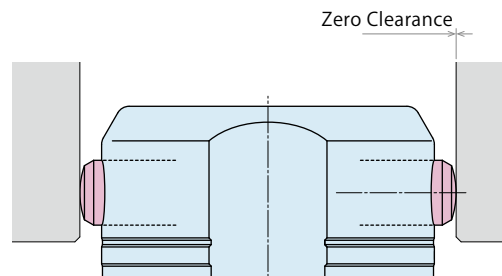
Centering of
Knuckle

• Excellent Workpiece Loading and Unloading

Long stroke of the pin allows for large clearance when released, simplifying loading and unloading the workpiece.



When Released

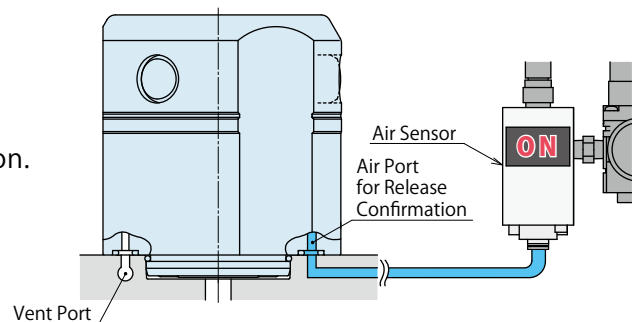


When Locked

OPTION

• Release Confirmation

An air sensor enables release action confirmation.



VFP

Bore Locating Cylinder

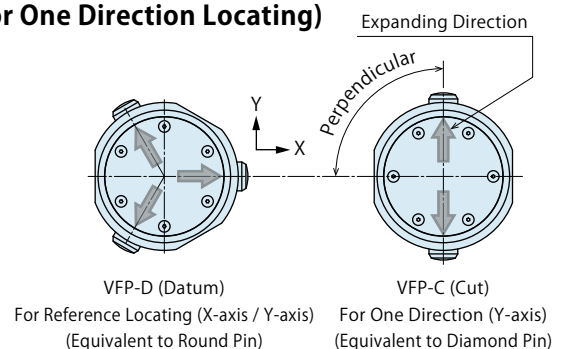


Hyd. Lock / Hyd. Release

Hyd. Low Pressure
1.5 ~ 7MPa

Mounting Phase of VFP-C (Cut : for One Direction Locating)

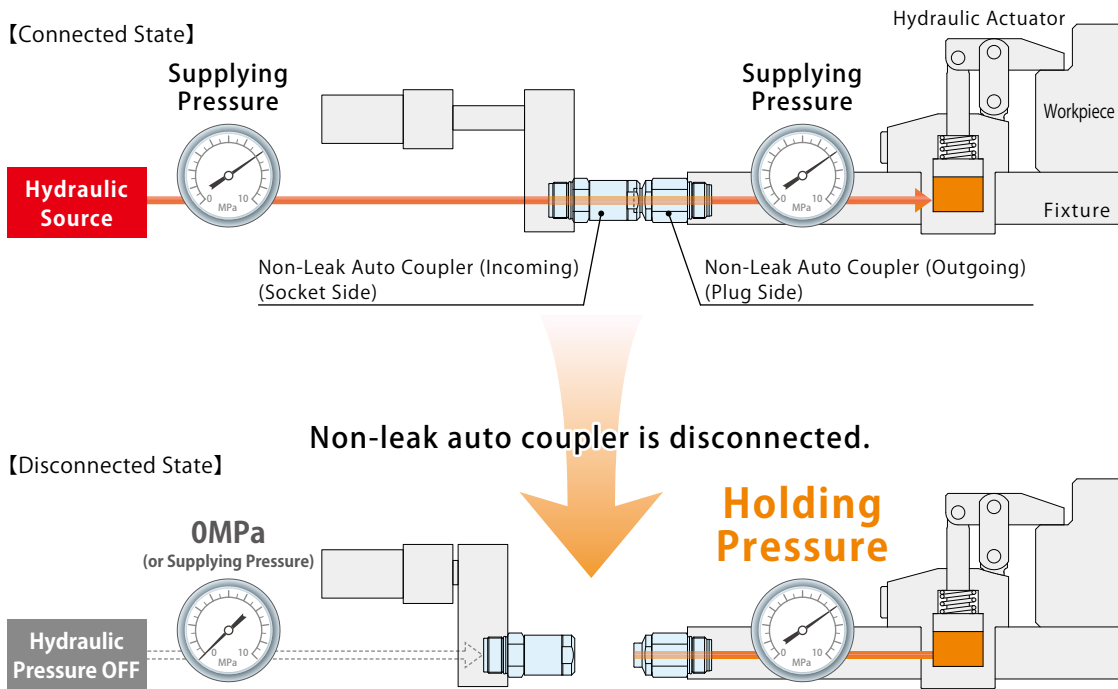
- Reference position (origin) is determined by VFP-D (Datum : for reference locating).
- VFP-C (Cut : for one direction locating) locates in one direction (Y-axis), so phasing is necessary.



Reliable Pressure Holding Non-Leak Coupler



After supplying pressure and disconnecting the coupler, it maintains the pressure on the fixture side. Non-leak function completely maintains the pressure on the fixture side.



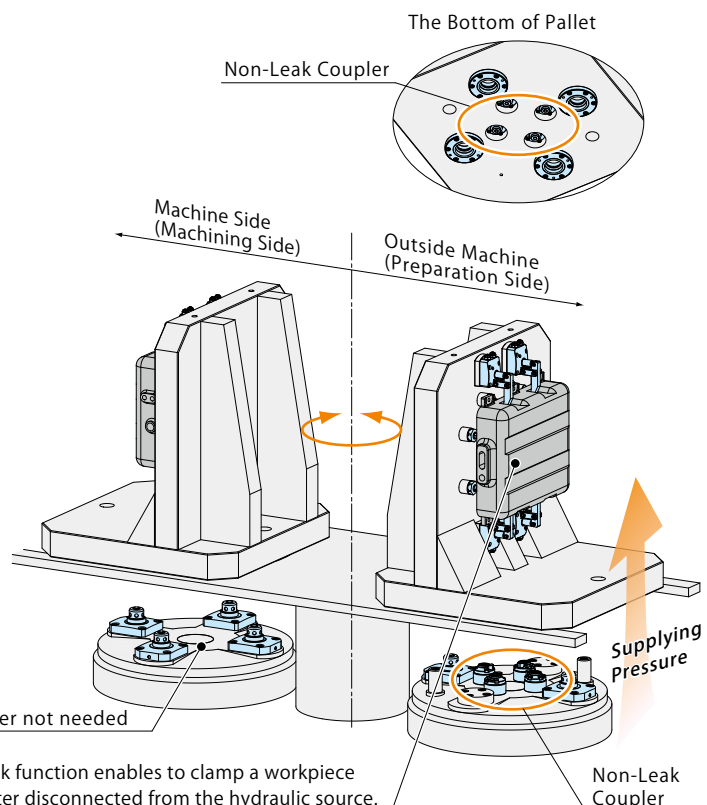
※Supplying/Not Supplying of hydraulic pressure to the socket side of the coupler during connected or disconnected condition depends on the model of Auto Coupler.

Cut Off Unwanted Circuit Loops

The installation of rotary joint for work clamp circuit or coupler at the side of machinery is unnecessary because it is operated with aligning mechanism.

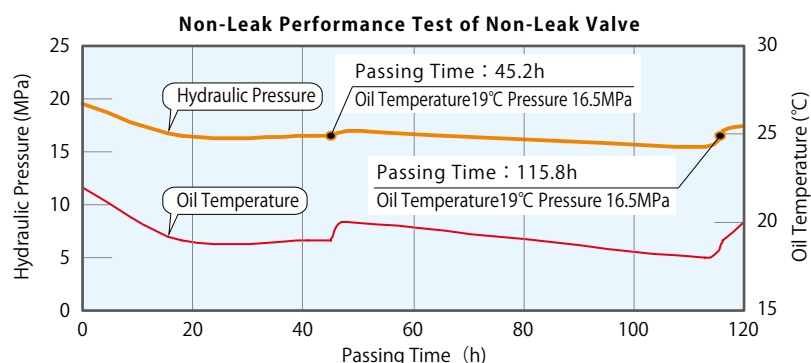
Energy Saving

Hydraulic pressure is required only when exchanging workpieces. Hydraulic source can be shut off after disconnection.



• The Reliability of Non-Leak Function

The following graph shows the data analysis of the oil temperature, the amount of time and the change in pressure while hydraulic pressure is disconnected from power source. Due to temperature change, maintained pressure changes but not due to leakage. You can set the hydraulic circuit more stable when combined with the accumulator.



• Pilot Check Valve

Non-leak function and pilot check valve of the pilot check valve models maintains pressure on the fixture side and enables a smooth connection and disconnection with no reaction force even when the pressure supply is stopped in the coupler connected state.

BGA/BGB	BGE/BGF	BGC/BGD	BGP/BGS	BBP/BBS
Non-Leak Coupler with Pilot Check Valve	Auto Coupler with Pilot Check Valve	Non-Leak Coupler with Pilot Check Valve	Non-Leak Coupler with Pilot Check Valve	Non-Leak Coupler with Pilot Check Valve
				
<u>Hyd. Low Pressure</u> 1 ~ 7MPa	<u>Hyd. Low Pressure</u> 1 ~ 7MPa	<u>Hyd. Low - High Pressure</u> 1 ~ 25MPa	<u>Hyd. Low Pressure</u> 1 ~ 7MPa	<u>Hyd. High Pressure</u> 5 ~ 25MPa
Standard	For APC	with Air Blow Function	Standard	with Air Blow Function
Screw Mounted		Bolt Mounted		
Low Pressing Force (with Pilot Check Valve)				

• Disconnectable under Pressure

Pressurization separated non-leak coupler is equipped with non-leak function and can be disconnected even under pressurization. With non-leak function, the pressure on the fixture side can be completely maintained. The coupler can be disconnected from a hydraulic source, holding pressure in an actuator.

BWA/BWB	BNP/BNS	BJP/BJS	BFP/BFS
Air Non-Leak Coupler	Non-Leak Coupler	Non-Leak Coupler	Non-Leak Coupler
			
Air 0 ~ 1MPa	Hyd. Low – High Pressure 1 ~ 25MPa	Hyd. Low – High Pressure 1 ~ 30MPa	Hyd. Low Pressure 1 ~ 7MPa
Standard	Standard	with Air Blow Function	Standard
Screw Mounted		Bolt Mounted	
Disconnectable under Pressure			

—— Most Suitable for Auto-Connection ——

Auto Coupler

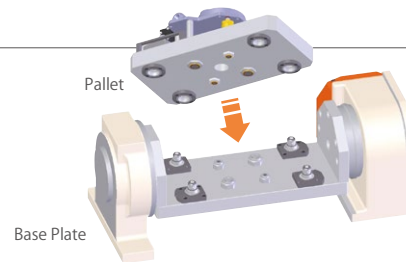


Auto coupler, designed to connect a variety of flow circuits, is suitable for automation and fits in small spaces. Offering based on your requirement.

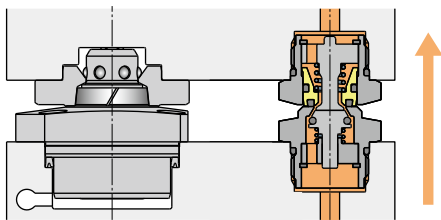
※ Auto coupler does not have non-leak mechanism. In case of you need non-leak function, please refer to “Non-Leak Coupler” (P.29).

Connecting from the Pallet Bottom

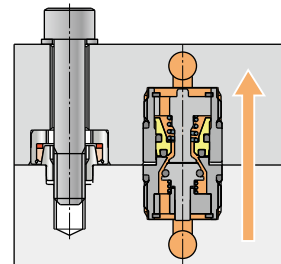
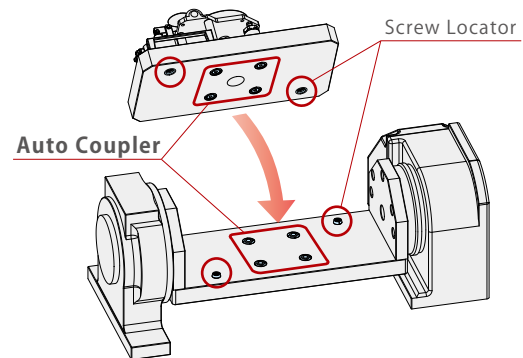
Fluid Supply to the Pallet Side



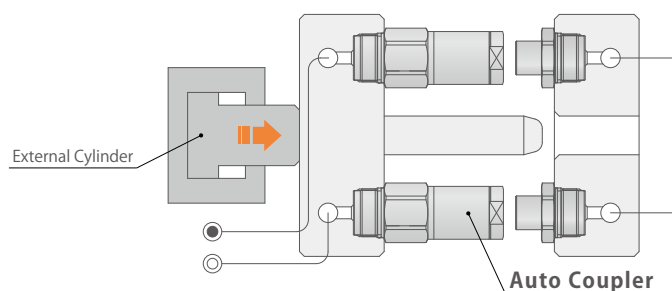
Using with Pallet Clamp

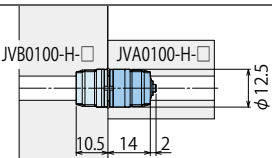
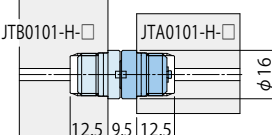
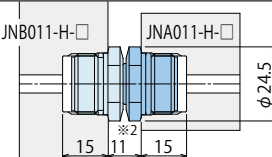
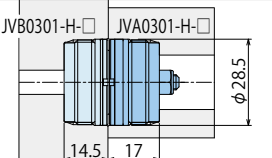
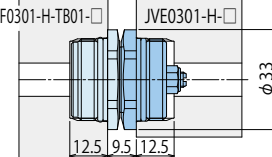
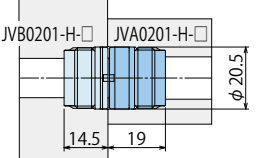
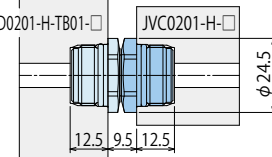
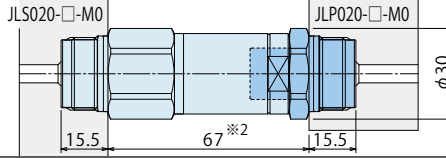
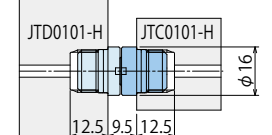
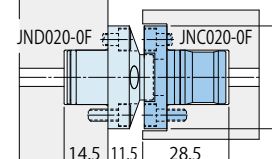
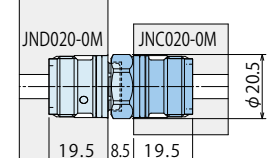


Using with Screw Locator



Connecting from Outside



Model No.	Operating Pressure Range	Usable Fluid	Comparison of Auto Coupler Connected Dimension ※ The shortest dimension combination of each coupler model.
 Model JVA0100/JVB0100	1 MPa or less	Positive air pressure / Negative air pressure	 Min. Passage Area : 8mm ²
 Model JTA/JTB	1 MPa or less		 Min. Passage Area : 5mm ²
 Model JNA/JNB	1 MPa or less		 Min. Passage Area : 8.8mm ² (At Eccentricity : 7.4mm ²)
 Model JVA0301/JVB0301	1 MPa or less	Coolant	 Min. Passage Area : 29.0mm ²
 Model JVE/JVF	1 MPa or less		 Min. Passage Area : 29.0mm ² (In case of JVF0301-H-□-QJ□) Min. Passage Area : 21.8mm ²
 Model JVA0201/JVB0201	7 MPa or less		 Min. Passage Area : 12.6mm ²
 Model JVC/JVD	7 MPa or less	General Hyd. Oil	 Min. Passage Area : 12.6mm ² (In case of JVD0201-H-□-QJ□) Min. Passage Area : 10mm ²
 Model JLP/JLS	25MPa or less ※ Depends on the material of the product.		 Min. Passage Area : 5mm ²
 Model JTC/JTD	7 MPa or less		 Min. Passage Area : 5mm ²
 Model JNC/JND	25MPa or less	Positive air pressure	 Min. Passage Area : 10.3mm ²
			 Min. Passage Area : 10.3mm ²

※ 1. Minimum passage of JLP/JLS area differs depending on size.
 ※ 2. It shows the connecting dimension on multiple connection.

Long Operational Life • Compact • Low Torque

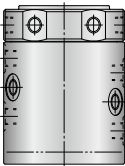
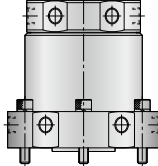
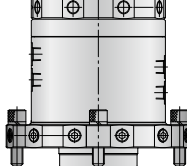
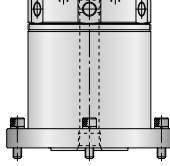


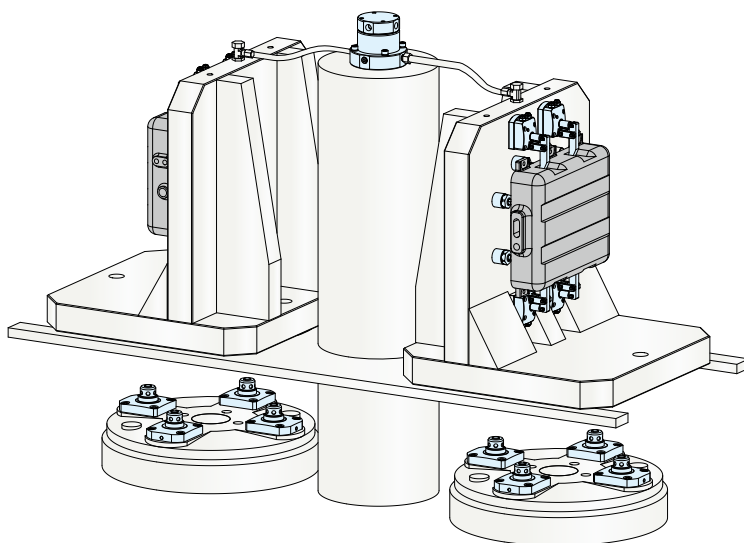
Rotary Joint

JR□ Rotary Joint is low rotary torque and compact.

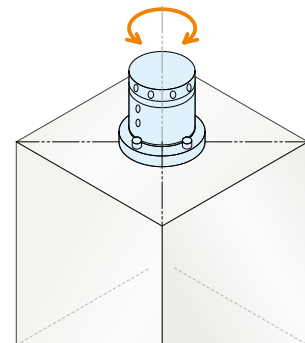
Center through port ※1 is applicable for not only hydraulic/pneumatic pressure but also high volume coolant. Each part is highly durable, and sealing provided by Kosmek has a low torque, highly durable and high capacity design that allows for a longer life of the component.

※1. JRB is the only model with the center through port designed for a large amount of coolant.

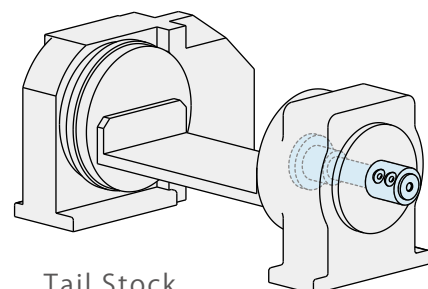
	JRA	JRC	JRD	JRB
				
Center Through Port	No Center Through Port			One Center Through Port
The Number of Ports	2/4/6/8		12/16	2/4/6/8 + Center Through Port
Features	Low Rotary Torque • Compact		Dual Structure • Compact	Large Flow Rate
Flange	No Flange	With Flange		
Usable Fluid	General Hydraulic Oil : 25MPa or less			
	Air : 1MPa or less			
				Coolant : 1MPa or less (Available only for Center Through Port)



Turntable



Angle Plate Fixture



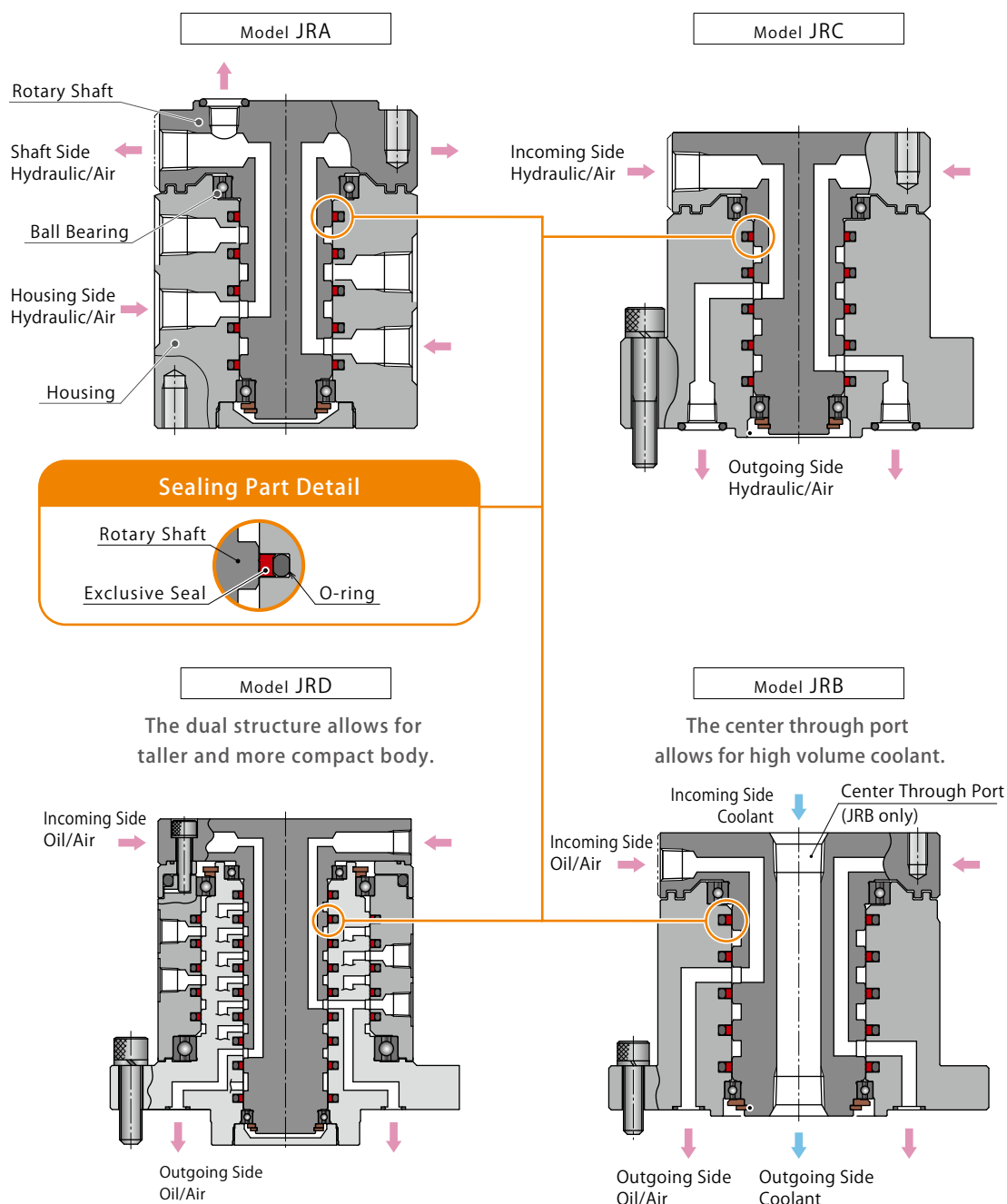
Tail Stock

Applicable for Hydraulic • Pneumatic • High Volume Coolant^{※1}

It adopts the original developed low friction seal and low torque enables smooth rotation. Each part of this rotary joint is highly durable and each seal provided by KOSMEK has low torque, highly durable and high capacity design that allows for a longer life of the component.

You can choose the number of ports from 2, 4, 6, 8, 12, 16 along with the center through port.

※1. JRB is the only model with the center through port designed for a large amount of coolant.
(When using the center through port, install a swivel joint, etc.)



Make the outgoing side pressure higher with low torque. (Reference)

Using a booster (model AU/BU) after rotary joint allows low rotating torque and the use of high pressure for actuators.

Pressure Source Low Pressure With Low Pressure Low Torque With Booster Outgoing Side High Pressure



Control Valves

Non-Leak Valve (Holding Pressure)

Kosmek valves with non-leak function maintains pressurized condition even when power source is cutoff to the fixture.

Model **BK**
Single Action Model



Model **BEQ**
Double Action Model



Sequence Valve

In-line valve that easily controls sequence action.

Model **BLV**
Vertical Gasket Model
NEW



Model **BLS**
Pipe/Gasket Model



Model **BLG**
Compact Gasket Model



Pressure Reducing Valve

Non-leak reducing valve to partially reduce hydraulic circuit pressure of a fixture by pipe model reducing valve that doesn't need a drain port.

Model **BMV**
Vertical Gasket Model
NEW



Model **BMA**
Pipe/Gasket Model



Model **BMG**
Compact Gasket Model



Accumulator

Spring accumulator absorbs pressure fluctuation caused by temperature change in the fixture circuit when disconnected from the pressure source.

Model **JSS**
For Low Pressure
(Max.7MPa)



Model **JSA/JSB**
For High Pressure
(Max.25MPa)



Non-Leak Pilot Check Valve

It holds pressure even after the hydraulic supply is cutoff. The mounting surface of modular model is ISO4401-03.

Model **BEP**
Piping Model



Model **BSP**
Modular Model



Booster (Continuous Discharge Booster/One Shot Booster)

One shot booster and continuous discharge booster are available. In case of using continuous discharge booster, there are no restrictions on the outgoing side circuit capacity due to continuous discharge.

Model **AU**
Continuous Discharge Booster



Model **BU**
One Shot Booster



Automatic Air Bleed Valve (Automatic Air Bleed Valve)

Placed on the top of the piping, this valve bleeds air automatically during repetition of the hydraulic pressure ON and OFF.

Model **BX**



Air Sequence Valve

BWD is a sequence valve that can activate multiple actuators in sequence. It controls air flow and initiate a time difference for air pressure supplied from primary side to secondary side.

Model **BWD**



Pressure Indicator (Pressure Switch)

Detects circuit pressure of the fixture disconnected from the hydraulic pressure source by using a limit switch together.

Model **JKA/JKB**



Pressure Balance Valve

This valve prevents deformation of the workpiece during unclamping sequence. This will be useful when using work support and clamp actuator in opposite position.

Model **BLB**



Pilot Reducing Valve/Reservoir

Pressure of a fixture circuit disconnected from the hydraulic power source, can be reduced to the set pressure only by pilot operation.

Model **BP**
Pilot Reducing Valve



Model **JPB**
Reservoir



Non-Leak Stop Valve (Manual Switching Valve)

It is a manual switching valve that can hold the pressure without power source.

Model **BT**



Non-Leak Valve Unit (Holding Pressure)

This is non-leak valve that operates both electrically and manually.

Model **BH**
Manual Operation Model



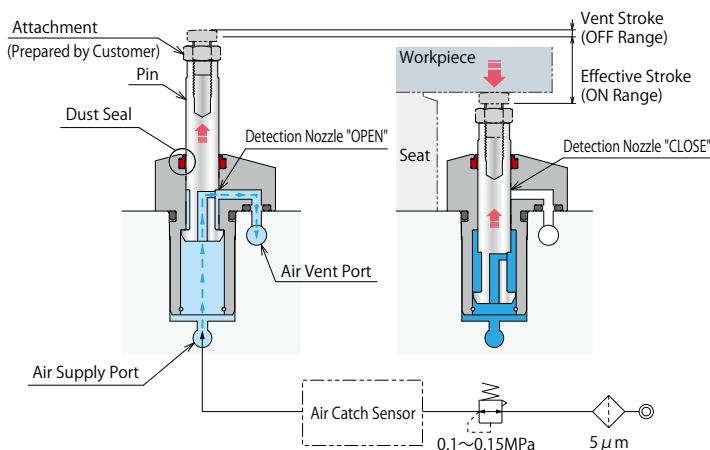
Model **BC**
Electrical
Control Model



Pneumatic Sensor Pin

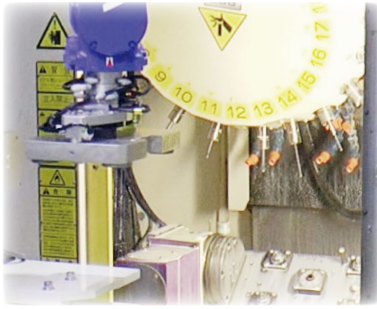
Detects workpieces within wide stroke range.
Detects and distinguishes different fixture plates with an air catch sensor.

Model **WWA**



■ Product Line-up

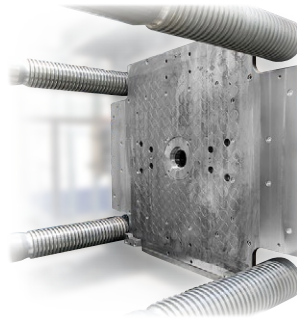
We have various types of hydraulic and pneumatic products. Please let us know your requirements, and we will make it happen.



FA • Robotic Automation

FA • INDUSTRIAL ROBOT RELATED PRODUCTS

Robotic Hand Changer, Robotic Hand, Locating Equipment and other products improve automation, precision and setup of transfer, assembly, deburring, testing and various other processes.



QUICK MOLD CHANGE SYSTEMS

FOR INJECTION MOLDING MACHINES

Automatic clamping systems have reduced mold change times and increased production efficiency for plastics manufacturers in a multitude of industries.

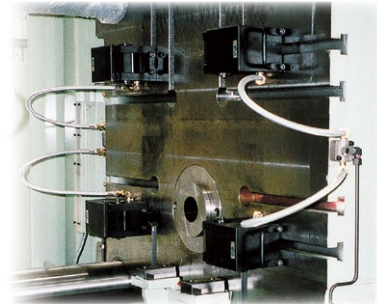
We offer a variety of clamping options including hydraulically powered clamps, pneumatic clamps with a force multiplying mechanism, and magnetic clamping systems.



QUICK DIE CHANGE SYSTEMS

FOR PRESS MACHINES

Kosmek Quick Die Change Systems are a cost effective way to improve the working environment, allow diversified and small-lot production, and reduce press down time. Available for a wide range of machines from large size transfer-presses to smaller high speed presses.



DIECAST CLAMPING SYSTEMS

FOR DIECAST MACHINES

Kosmek Diecast Clamping Systems (KDCS) enable stable die clamping for die casting and magnesium molding machines that are subjected to severe conditions caused by exposure to mold release agents and high temperature.



KOSMEK LTD.

► <https://www.kosmek.com/>

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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.

