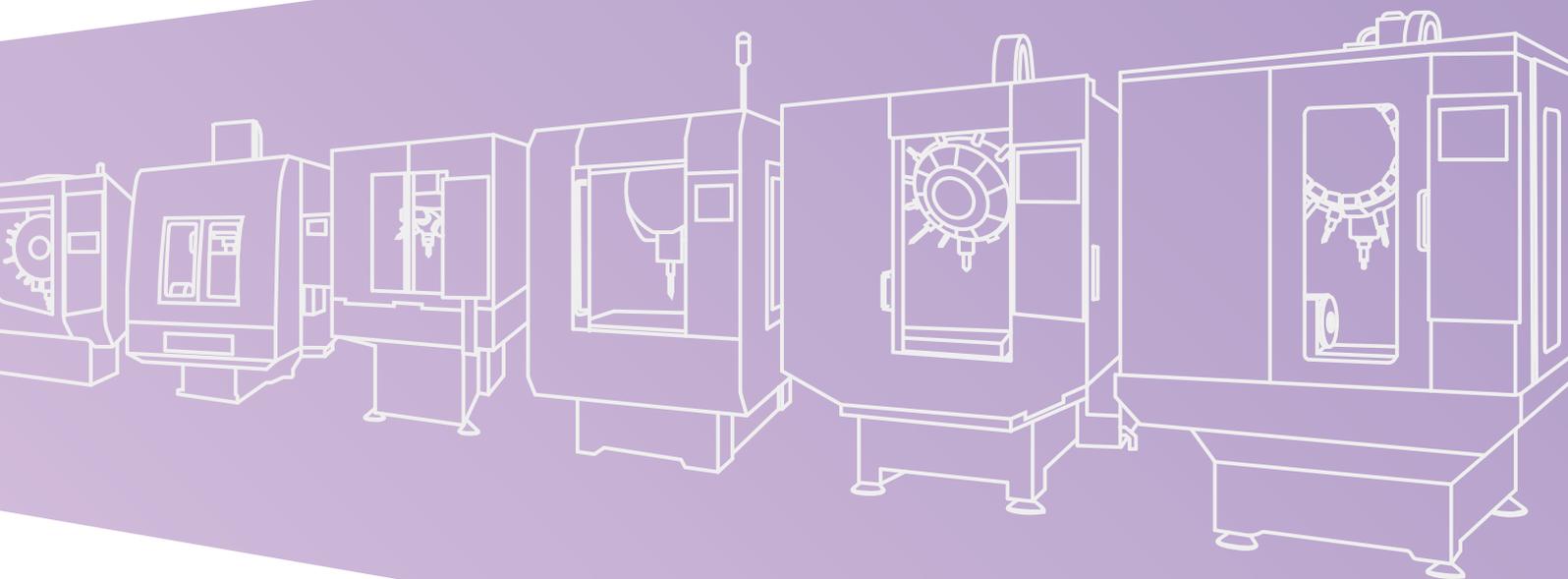


HIGH-POWER
Series

High-Power Series *Application Examples*



Over **60,000** units sold!!

KOSMEK Exclusive

HYBRID System using

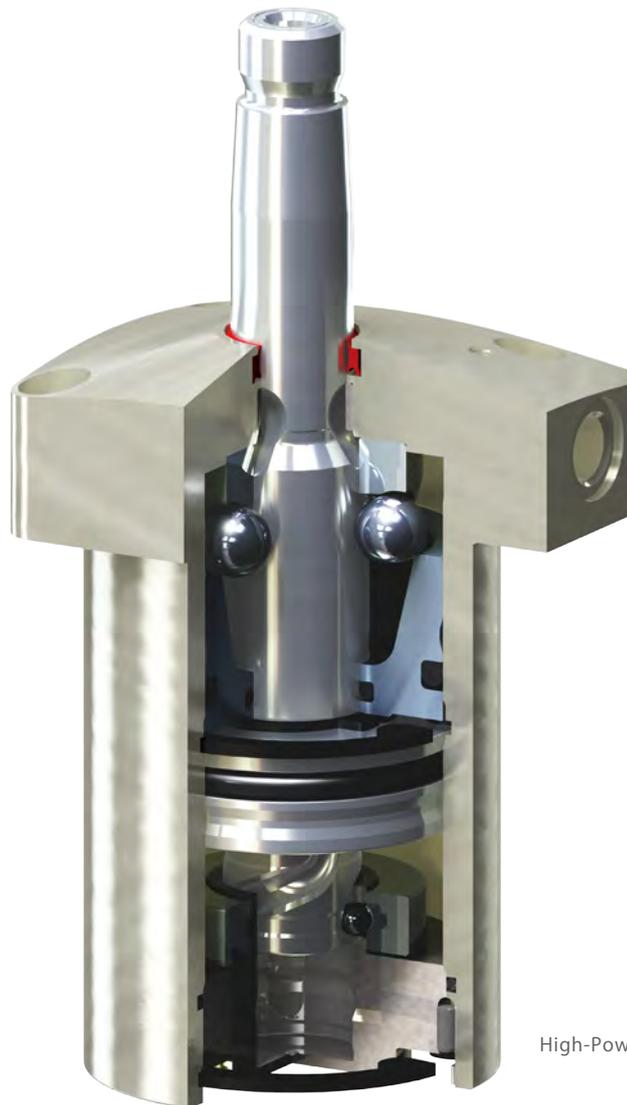
Wedge

Mechanical Lock and

Air

Oil

Pneumatic / Hydraulic Pressure



High-Power Pneumatic Swing Clamp
model WHE



Model WHE



Model WCE



Model LHE



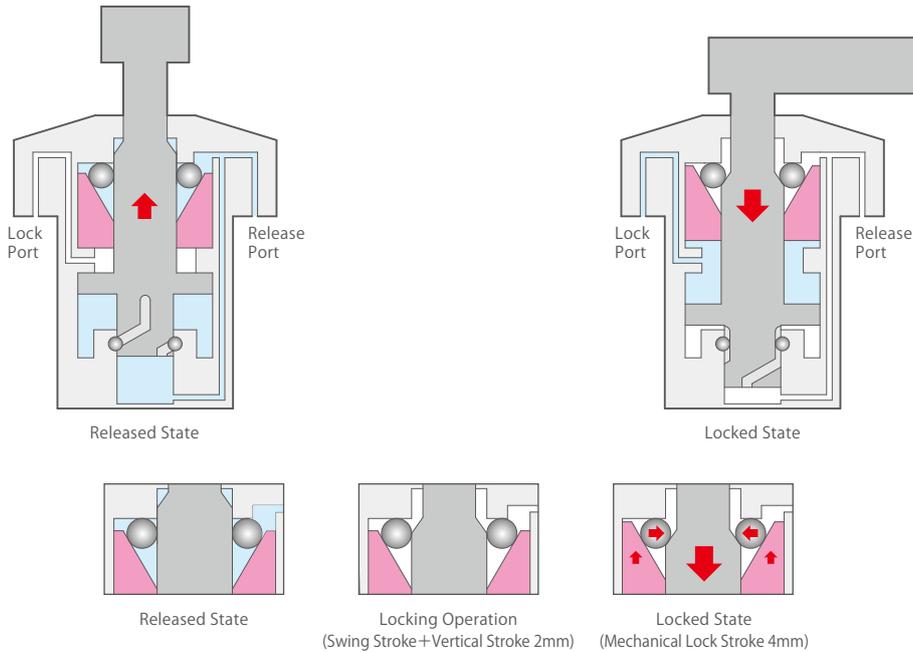
Model LKE

PAT.

High-Power Clamp

High-Power Clamp with Mechanical Locking System

※ The drawings show the high-power pneumatic swing clamp.

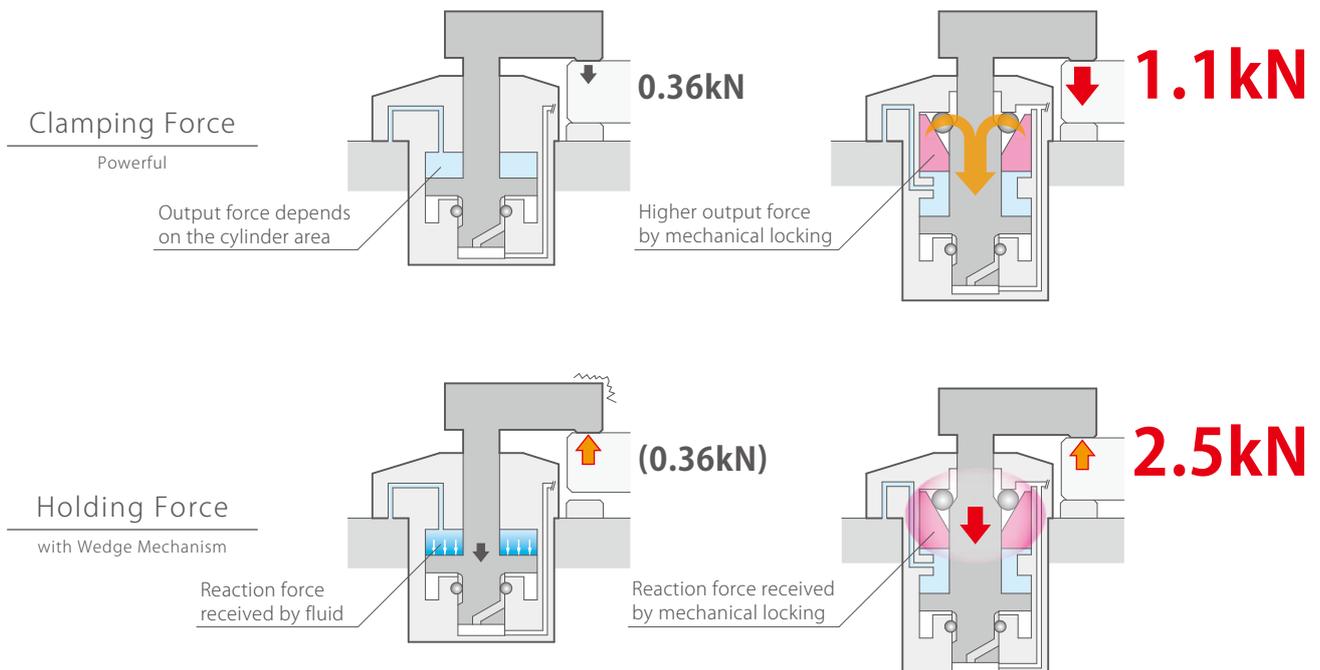


Two Main Features of High-Power Clamp

Reference comparison of cylinders with piston diameter $\phi 40$ (Air Pressure 0.4MPa, Lever Length 60mm)

Comparison Pneumatic Clamp
model WHA0400

High-Power Pneumatic Clamp
model WHE1600



Advantages of

Smaller Footprint

Smaller cylinders allow for more compact fixtures.
Exerts approximately 3 times higher clamping force than the same size comparison cylinder.

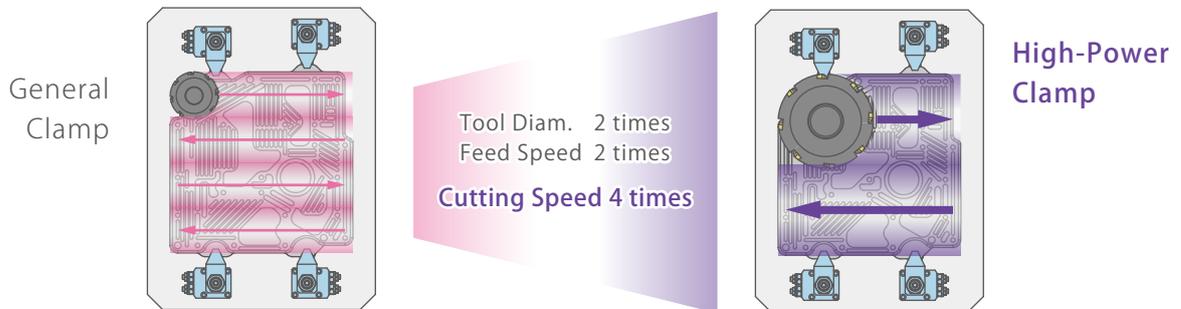


The downsized clamp exerts the equivalent force to the general clamp.

High Speed

※ Calculated value by our own.

Holding force with mechanical locking (wedge) function enables high speed machining and improves machining conditions.



Backside Machining

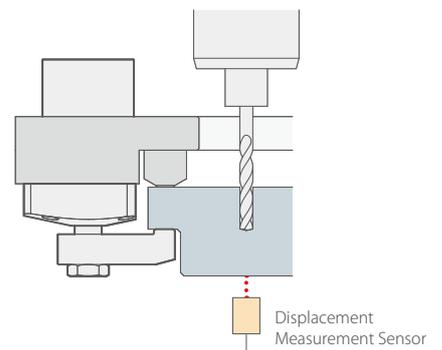
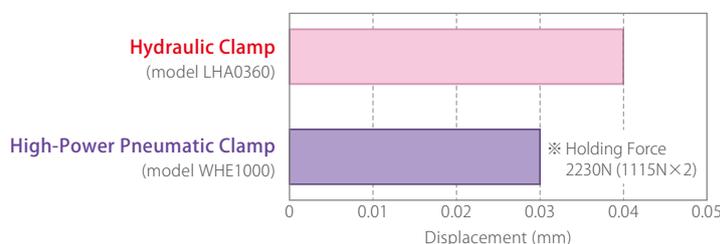
※ Machining results by our own.

Holding force, more powerful than clamping force, enables backside machining with high speed.

Displacement

【 Machining Condition 】

Drill Diameter	8.5 mm	Cutting Speed	25 m/min
Main Axis Revolution	936 rpm	Feed Speed	0.100mm/rev
Workpiece Material	S45C	Clamping Force	860N (430N×2)

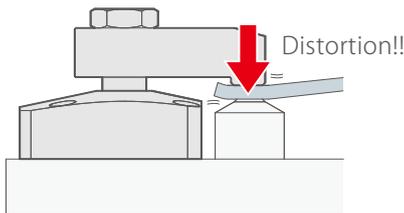




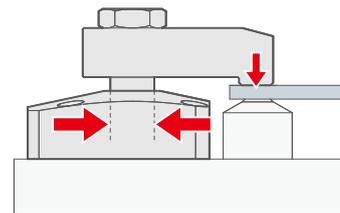
High-Power Clamp

High Quality

Optimum clamping force does not distort workpiece and holding force is strong enough to withstand machining loads, allowing for high quality machining.



General Clamp :
The workpiece is distorted due to strong clamping force.

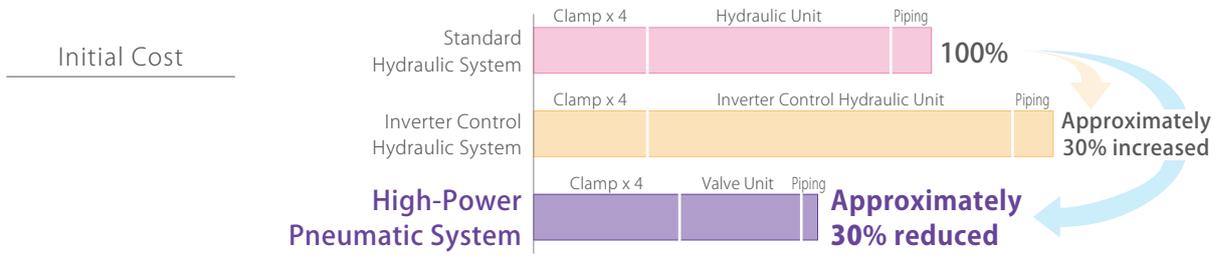


High-Power Clamp :
Clamping force is lowered, yet the workpiece is supported by holding force.

Cost Reduction

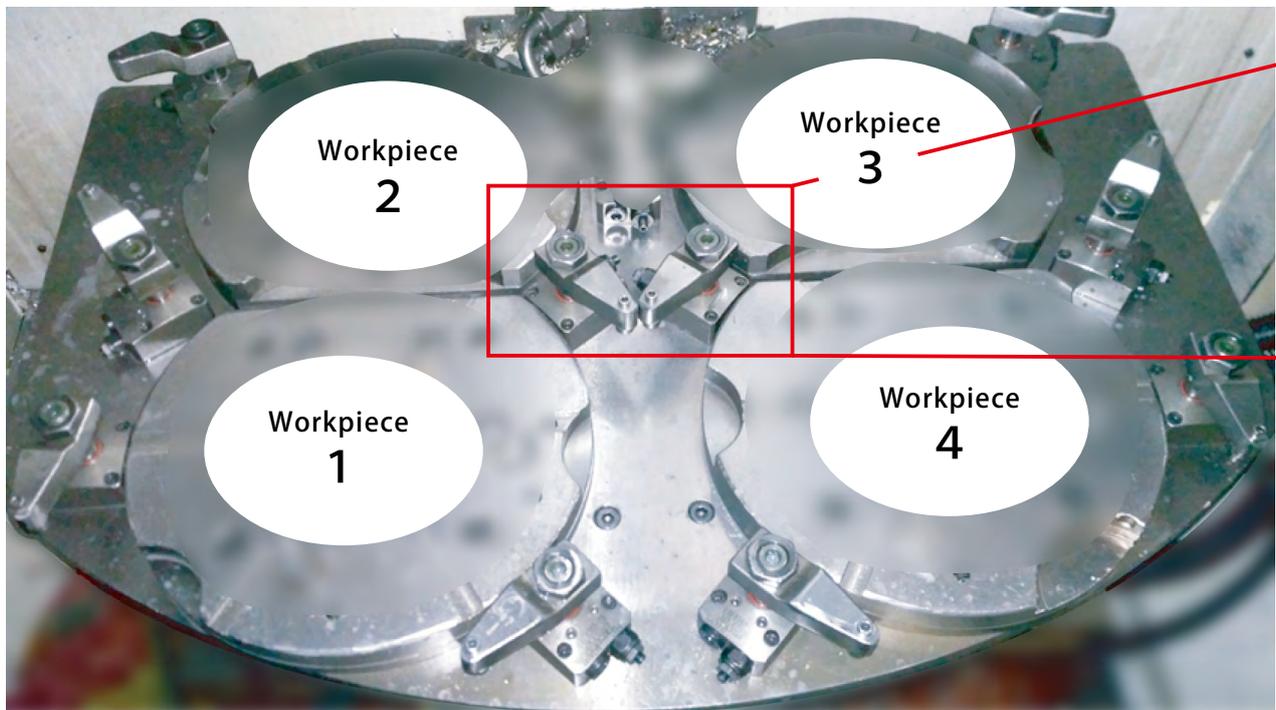
The initial cost of high-power pneumatic system is much less than that of hydraulic system.
The running cost is also reduced with less maintenance.

※ Calculated value by our own.



High-Power Clamp enables and Multiple Workpieces

High-Power Clamp Fixture



Downsized clamp allows for space-saving!

The compact clamps can be placed close to one another,
thus multiple workpieces can be placed on one fixture!



Model WHE



Model WCE

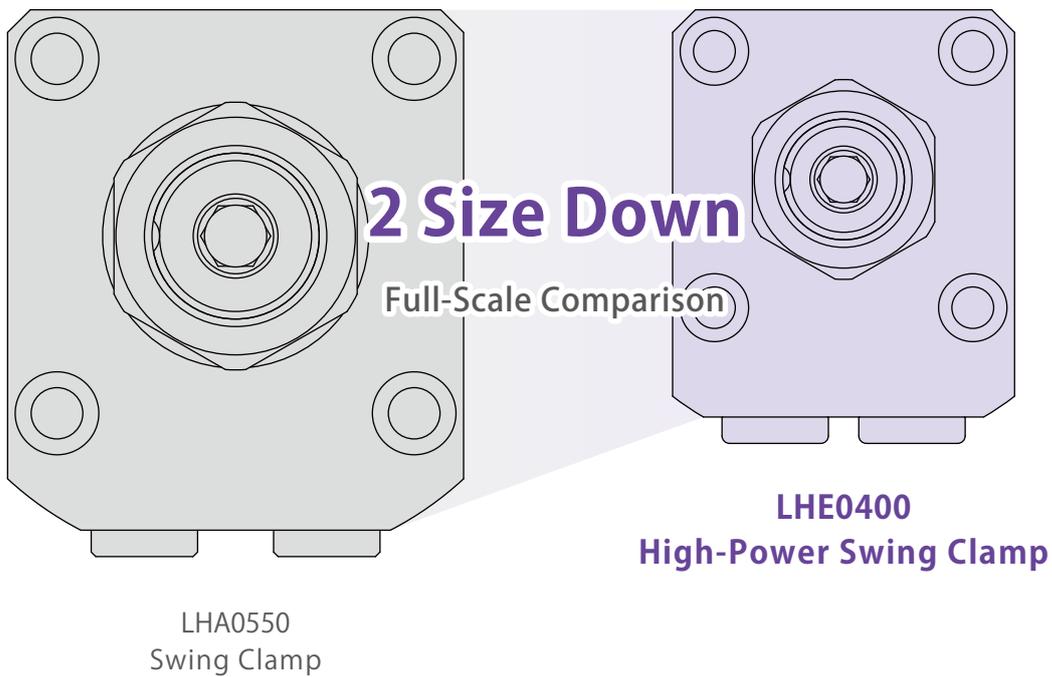


Model LHE

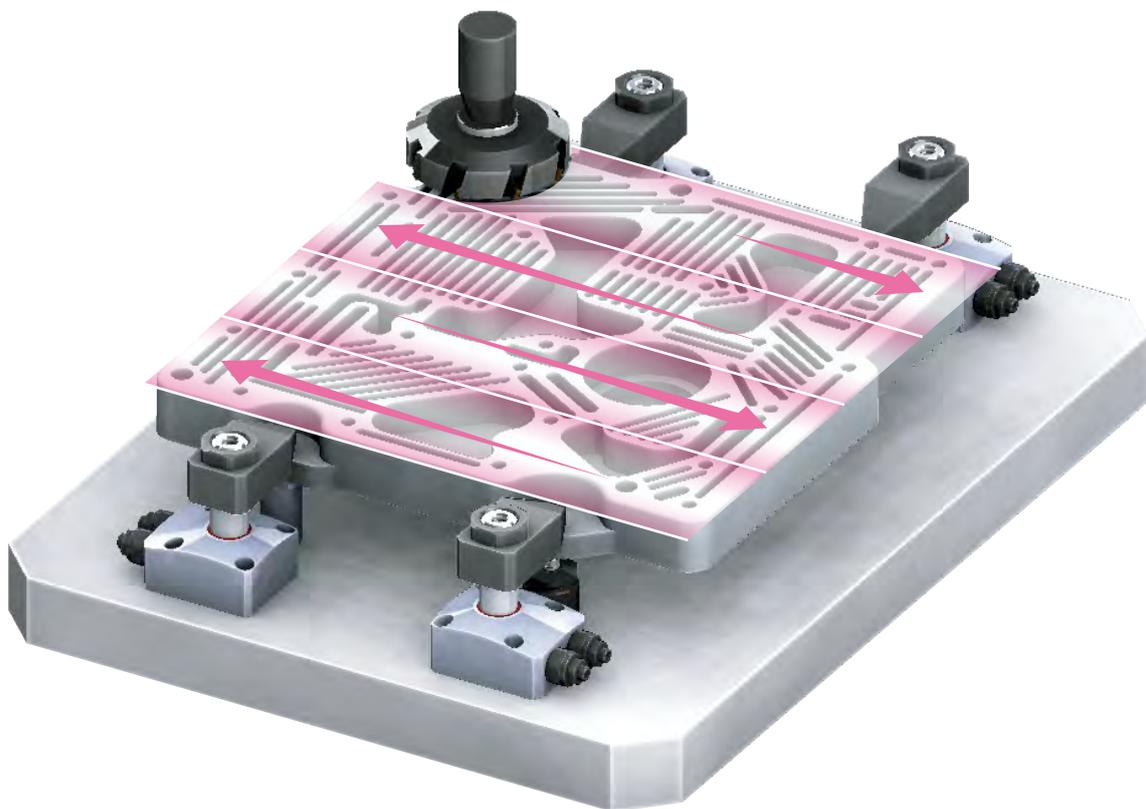


Model LKE

Space-Saving on One Fixture!



High-Power Clamp improves General Clamp Fixture



Clamping Conditions

Model No. / Product Name	Clamping Force	Holding Force	Supply Pressure	Lever Length
LHA0400 Hydraulic Swing Clamp	2,100 N	-	5MPa	40mm

Machining Conditions

Tool Diameter	Feed Speed
63 mm	600 mm/min



Model WHE



Model WCE



Model LHE



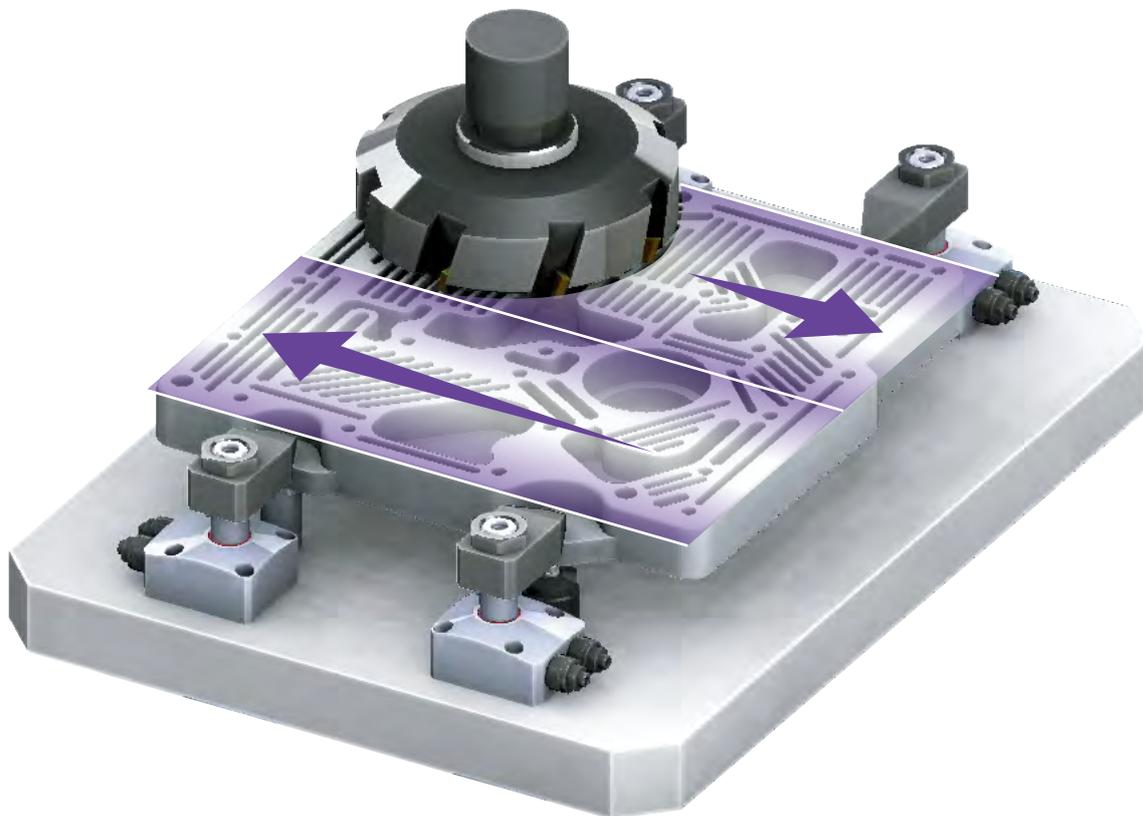
Model LKE

Machining Conditions!

High-Power Clamp Fixture

Tool Diameter : 2 times larger / Feed Speed : 2 times faster

Machining Speed becomes **4 times faster !**



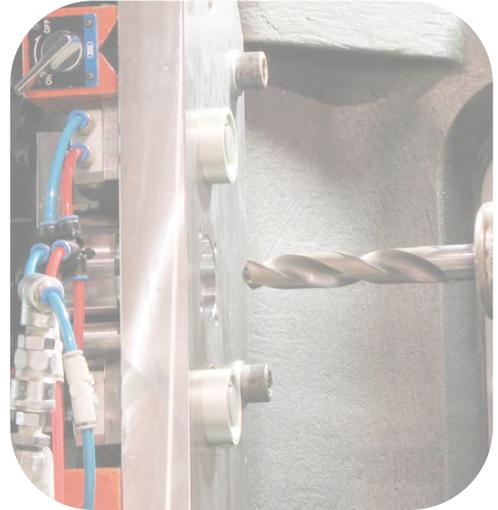
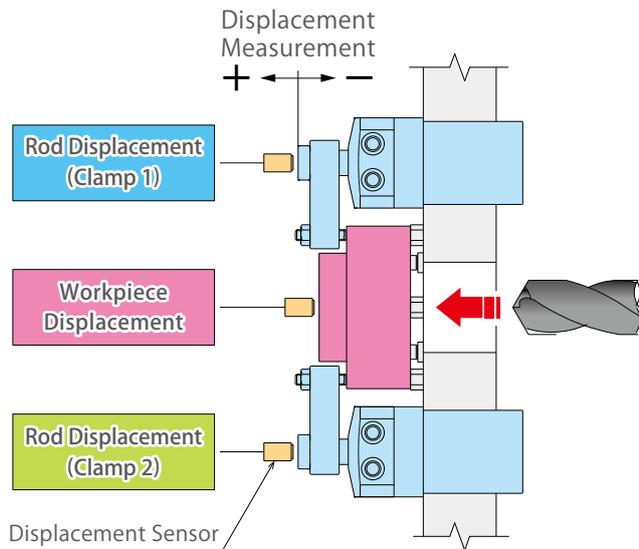
Clamping Conditions

Model No. / Product Name	Clamping Force	Holding Force	Supply Pressure	Lever Length
LHE0400 High-Power Hydraulic Swing Clamp	4,000 N	6,900 N	5MPa	40mm

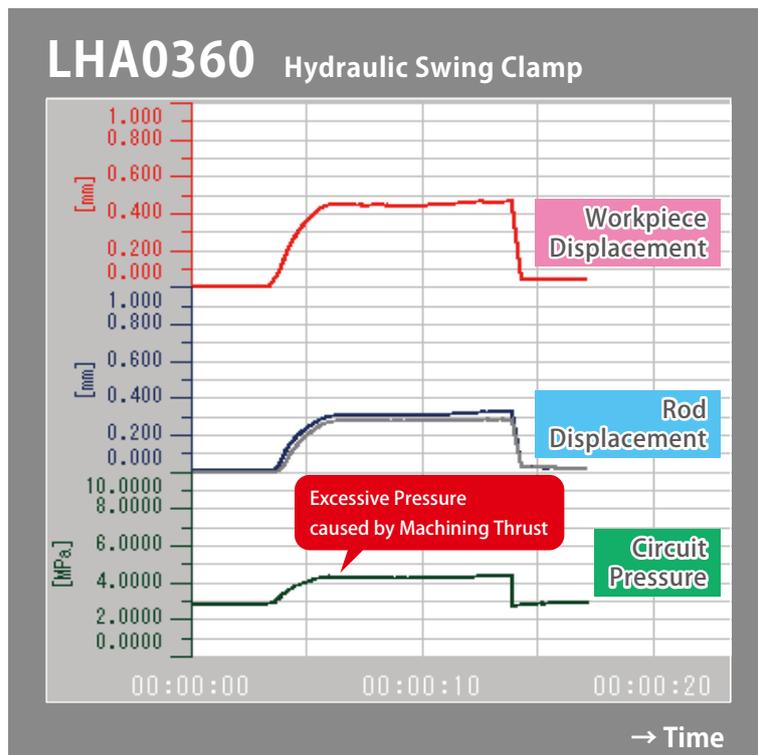
Machining Conditions

Tool Diameter	Feed Speed
125 mm	1,200 mm/min

High-Power Clamp enables



Hydraulic Swing Clamp





Model WHE

Model WCE



Model LHE

Model LKE

Backside Machining!

Clamping Conditions

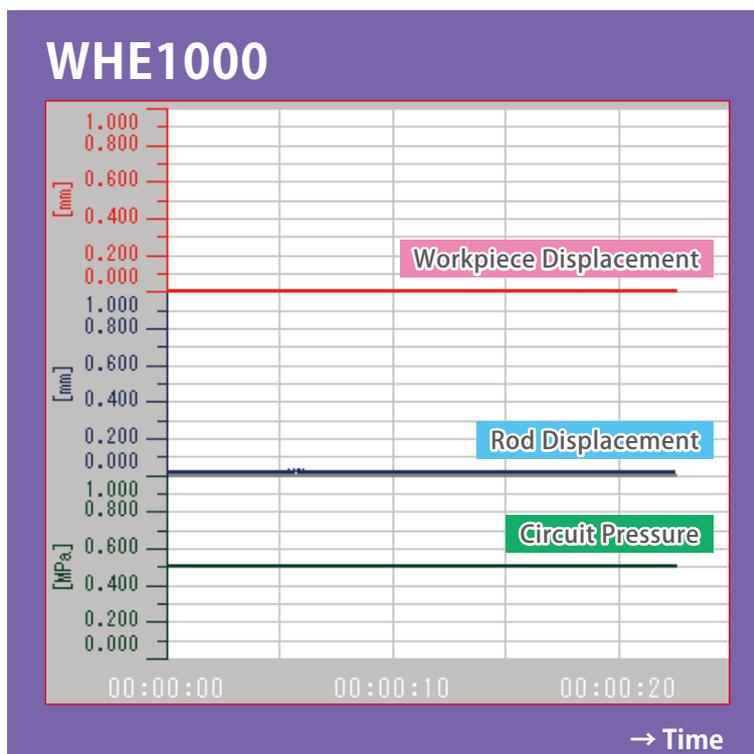
Model No. / Product Name	Clamping Force	Holding Force	Supply Pressure	Lever Length
WHE1000 High-Power Pneumatic Swing Clamp	870 N	2,227 N	0.5MPa	40mm
LHA0360 Hydraulic Swing Clamp		-	3.0 MPa	

Machining Conditions

Drill Diameter	Workpiece Material	Machining Hole Depth	Coolant	Feed Speed
22mm (High-Speed Steel)	S45C	20mm	Yes (Water Soluble)	0.3mm/rev

※ Machining results by our own.

High-Power Pneumatic Swing Clamp



No Chattering on Aluminum

Great Difference Shown by the Actual Machining Tests

Results of testing by our own.

Unable to Machine
due to Chattering



Unable to Machine with
General Swing Clamp





Model WHE



Model WCE



Model LHE



Model LKE

Workpiece with High-Power Clamp

Properly Machined with No Chattering



Able to Machine with **High-Power** Swing Clamp

Clamping Conditions

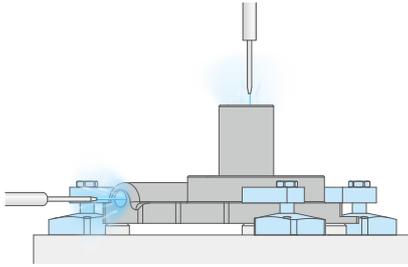
Model No. / Product Name	Clamping Force	Holding Force	Supply Pressure
WHE0600 × 4 High-Power Pneumatic Swing Clamp	1,190 N	3,670 N	0.29MPa
WHA0400 × 4 Pneumatic Swing Clamp		-	0.32 MPa

Machining Conditions

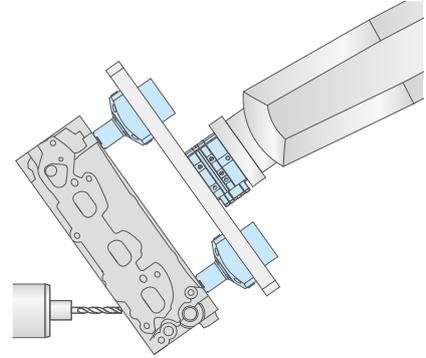
Tool Diameter	Workpiece Material	Infeed (Depth)	Coolant	Feed Speed
80mm	Aluminum (A5052)	3mm	Yes (Water Soluble)	896mm/rev

Application Examples for Non-Machining Equipment

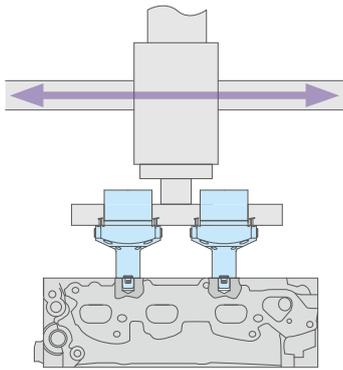
High-Power Pneumatic Series is used not only for machining equipment, but also for various production equipment.



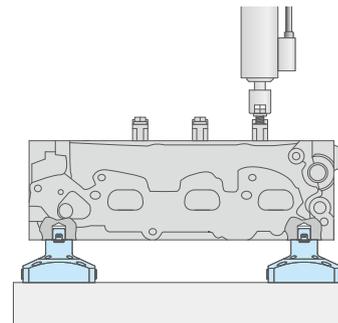
Washers



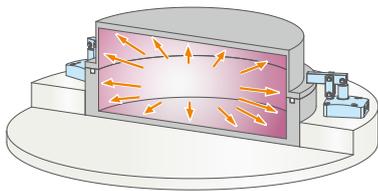
Deburring with Robots



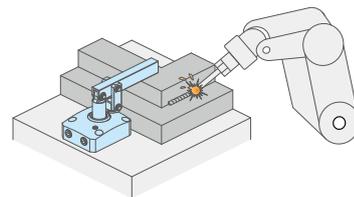
Transfer



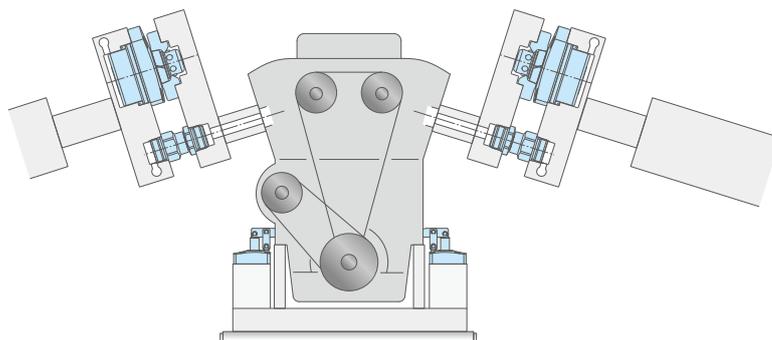
Assembling Equipment



Fixing Pressure Vessel



Welding ※ Please contact us when spatter measure is required.



Testing Equipment

Specifications of High-Power Pneumatic Series ※ Refer to our website or catalogs for further information.

High-Power Pneumatic Swing Clamp
model **WHE**



Model No.	Cylinder Outer Diameter	Cylinder Output Force	Operating Pressure Range
WHE0600	φ 40	0.23 ~ 0.57 kN	0.2 ~ 0.5MPa
WHE1000	φ 46	0.39 ~ 0.98 kN	
WHE1600	φ 54	0.63 ~ 1.57 kN	
WHE2500	φ 64	0.98 ~ 2.44 kN	
WHE4000	φ 77	1.54 ~ 3.86 kN	

※ Cylinder output force differs from clamping force and holding force.

High-Power Pneumatic Link Clamp
model **WCE**



Model No.	Cylinder Outer Diameter	Cylinder Output Force	Operating Pressure Range
WCE0602	φ 40	0.28 ~ 0.59 kN	0.2 ~ 0.5MPa
WCE1002	φ 46	0.45 ~ 0.94 kN	
WCE1602	φ 54	0.77 ~ 1.59 kN	
WCE2502	φ 64	1.20 ~ 2.46 kN	
WCE4002	φ 77	1.92 ~ 3.92 kN	

※ Cylinder output force differs from clamping force and holding force.

High-Power Pneumatic Hole Clamp
model **SWE**



Model No.	Cylinder Outer Diameter	Clamping Force	Workpiece Hole Diameter	Operating Pressure Range
SWE1000	φ 46	0.7 ~ 1.5 kN	6.0 ^{+0.7} _{-0.3} ~ 9.0 ^{+0.7} _{-0.3}	0.2 ~ 0.5MPa
SWE2000	φ 54	1.0 ~ 2.2 kN	9.0 ^{+0.7} _{-0.3} ~ 13.0 ^{+0.7} _{-0.3}	

※ Workpiece hole diameter should be specified in 0.5mm increments.
※ Workpiece Hardness : Less than HB250

High-Power Pneumatic Work Support
model **WNC**



Model No.	Outer Diameter Thread Size	Supporting Force	Operating Pressure Range
WNC0350	M22×1.5	0.03 ~ 0.59 kN	0.25 ~ 0.7MPa
WNC0600	M26×1.5	0.1 ~ 1.0 kN	
WNC1000	M30×1.5	0.2 ~ 1.7 kN	
WNC1600	M36×1.5	0.3 ~ 2.5 kN	
WNC3000	M45×1.5	0.7 ~ 4.8 kN	
WNC6000	M60×2	1.6 ~ 9.0 kN	

High-Power Pneumatic Pallet Clamp
model **WVS**



Model No.	Cylinder Outer Diameter	Clamping Force	Locating Repeatability	Operating Pressure Range
WVS0040	φ 45	2.4 ~ 4.0 kN	0.003mm	0.2 ~ 0.5MPa
WVS0060	φ 55	3.9 ~ 6.3 kN		
WVS0100	φ 69	5.8 ~ 9.9 kN		
WVS0160	φ 87.5	9.0 ~ 15.7 kN		

Specifications of High-Power Hydraulic Clamps

※ Refer to our website or catalogs for further information.

High-Power Hydraulic Swing Clamp
model **LHE**



Model No.	Cylinder Outer Diameter	Cylinder Output Force	Operating Pressure Range
LHE0300	φ 30	0.7 ~ 2.7 kN	1.5 ~ 6.0MPa
LHE0360	φ 36	1.0 ~ 4.2 kN	
LHE0400	φ 40	1.5 ~ 6.2 kN	
LHE0480	φ 48	2.0 ~ 8.0 kN	
LHE0550	φ 55	3.1 ~ 12.4 kN	

※ Cylinder output force differs from clamping force and holding force.

High-Power Hydraulic Link Clamp
model **LKE**



Model No.	Cylinder Outer Diameter	Cylinder Output Force	Operating Pressure Range
LKE0300	φ 30	0.3 ~ 3.1 kN	0.5 ~ 6.0MPa
LKE0360	φ 36	0.4 ~ 4.2 kN	
LKE0400	φ 40	0.5 ~ 5.8 kN	
LKE0480	φ 48	0.8 ~ 9.2 kN	
LKE0550	φ 55	1.2 ~ 14.0 kN	

※ Cylinder output force differs from clamping force and holding force.

Work Support
model **LD**



Model No.	Outer Diameter Thread Size	Supporting Force	Operating Pressure Range
LD0222	M22×1.5	0.3 ~ 2.0 kN	2.5 ~ 7.0MPa
LD0262	M26×1.5	0.6 ~ 3.0 kN	
LD0302	M30×1.5	0.8 ~ 4.0 kN	
LD0362	M36×1.5	1.2 ~ 5.5 kN	
LD0452	M45×1.5	2.1 ~ 10.0 kN	

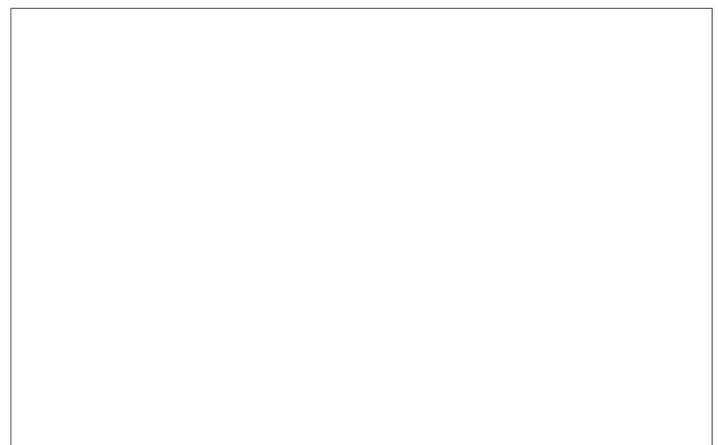


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- For Further Information on Unlisted Specifications and Sizes, Please call us.
- Specifications in this Leaflet are Subject to Change without Notice.

