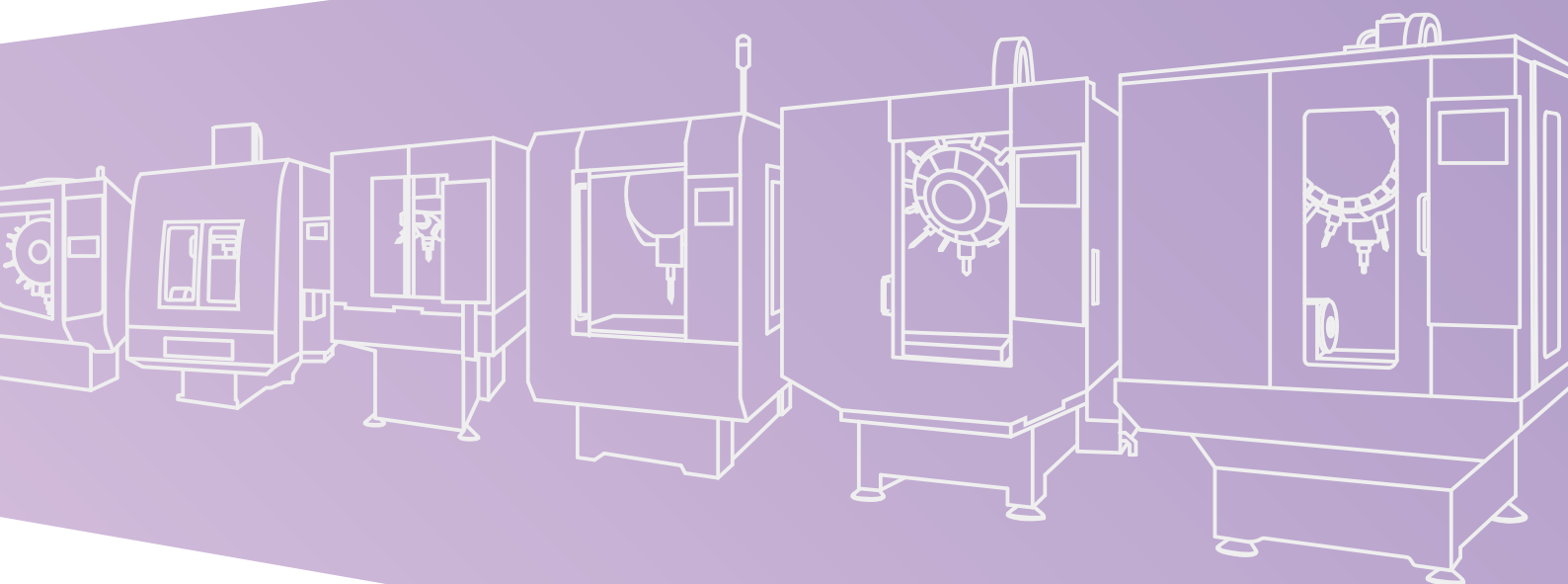


HIGH-POWER
Series



High-Power Series *Application Examples*

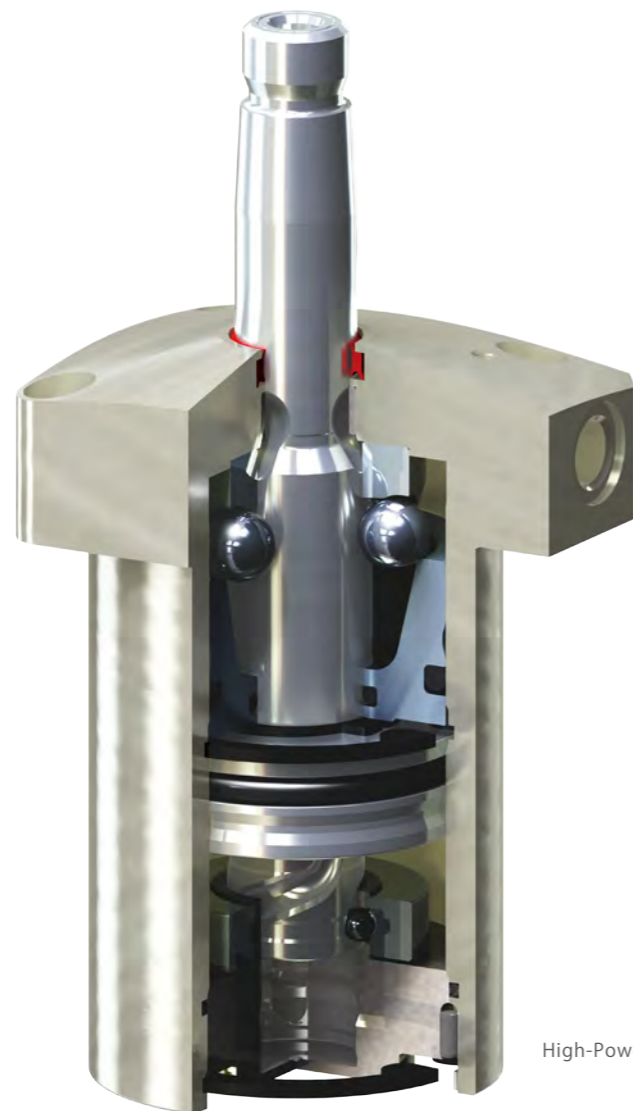


Over **60,000** units sold!!



KOSMEK Exclusive

HYBRID System using Wedge Mechanical Lock and Air Oil Pneumatic / Hydraulic Pressure



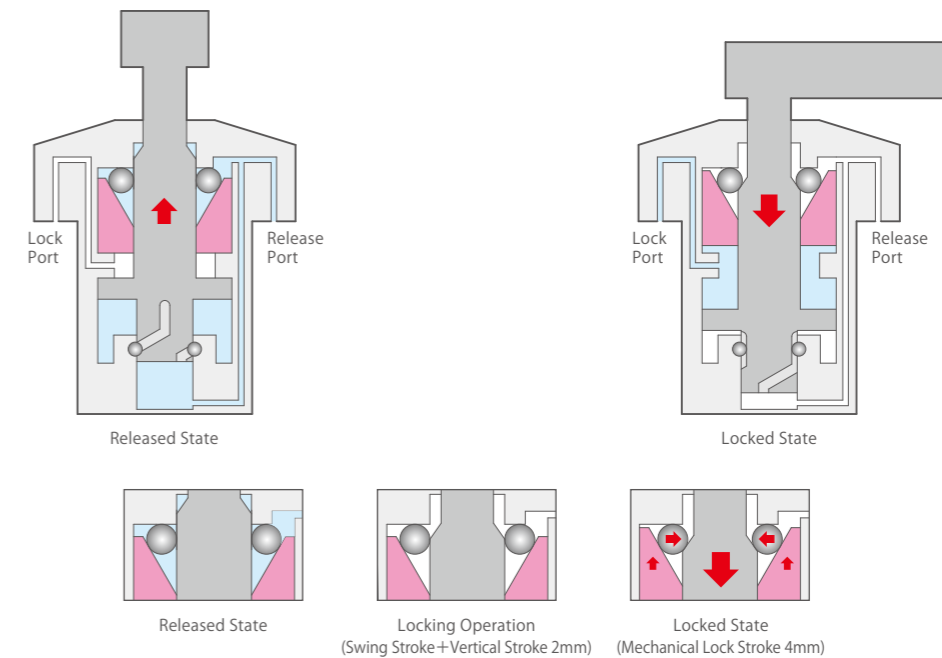
High-Power Pneumatic Swing Clamp
model WHE

High-Power Clamp



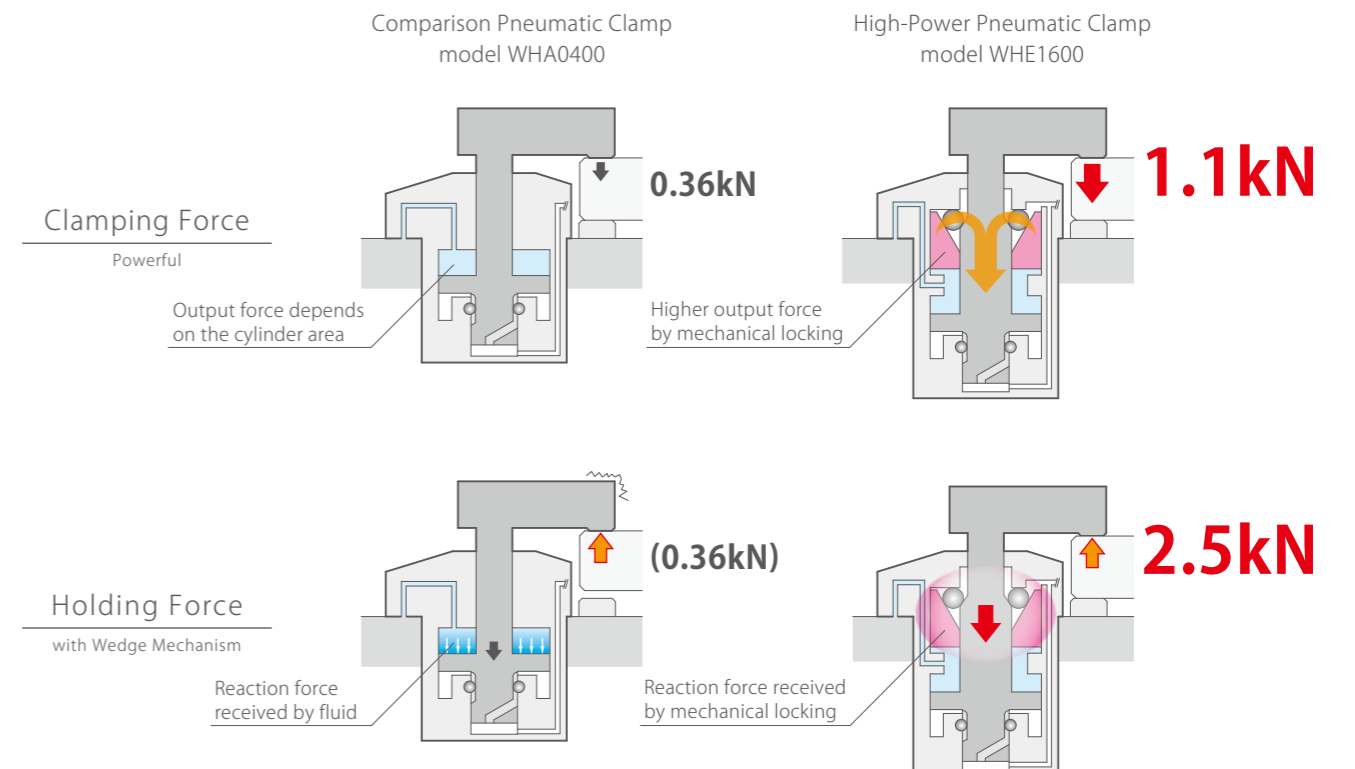
High-Power Clamp with Mechanical Locking System

※ 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)





Advantages of

High-Power Clamp

Smaller Footprint

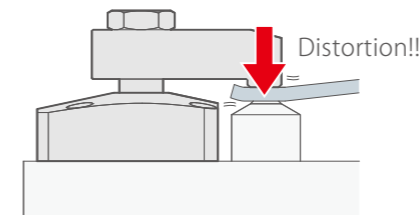
Smaller cylinders allow for more compact fixtures. Exerts approximately 3 times higher clamping force than the same size comparison cylinder.



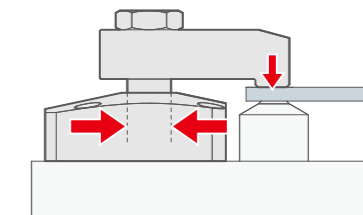
The downsized clamp exerts the equivalent force to the general clamp.

High 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.

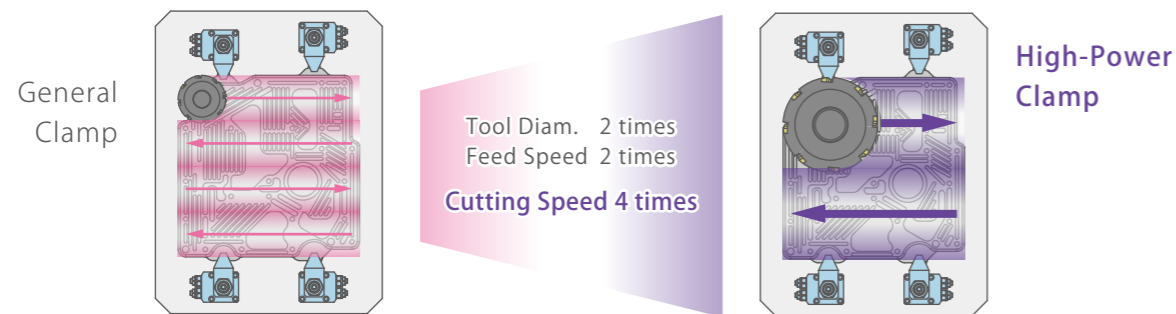


High-Power Clamp :
Clamping force is lowered, yet the workpiece is supported by holding force.

High Speed

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

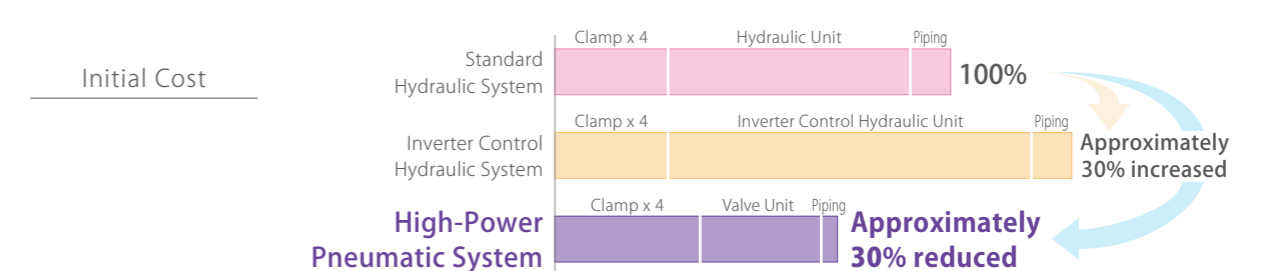
※ Calculated value by our own.



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.

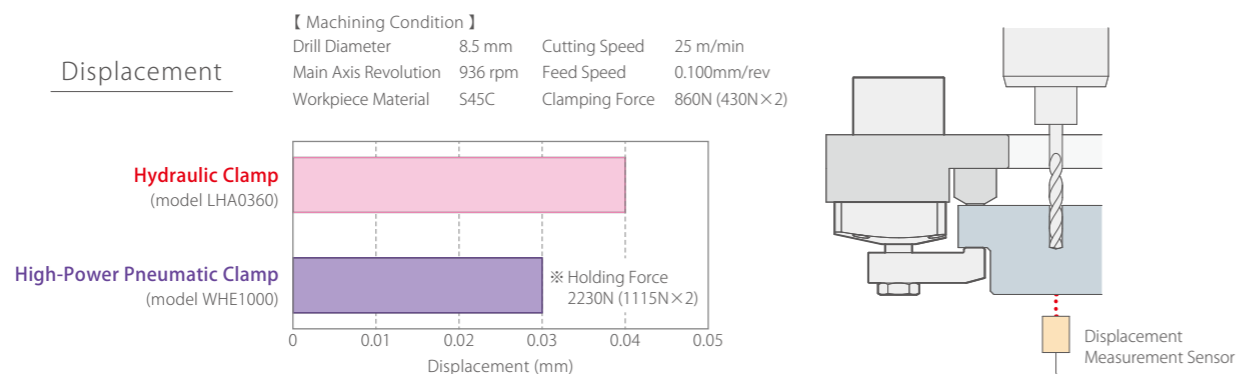
※ Calculated value by our own.



Backside Machining

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

※ Machining results by our own.

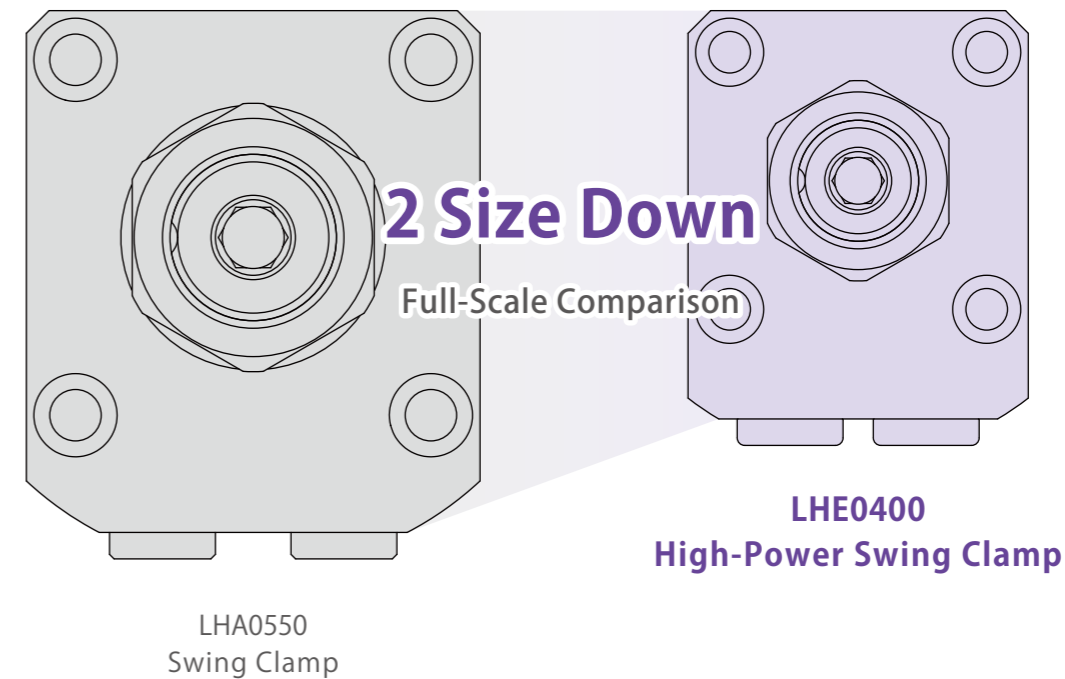
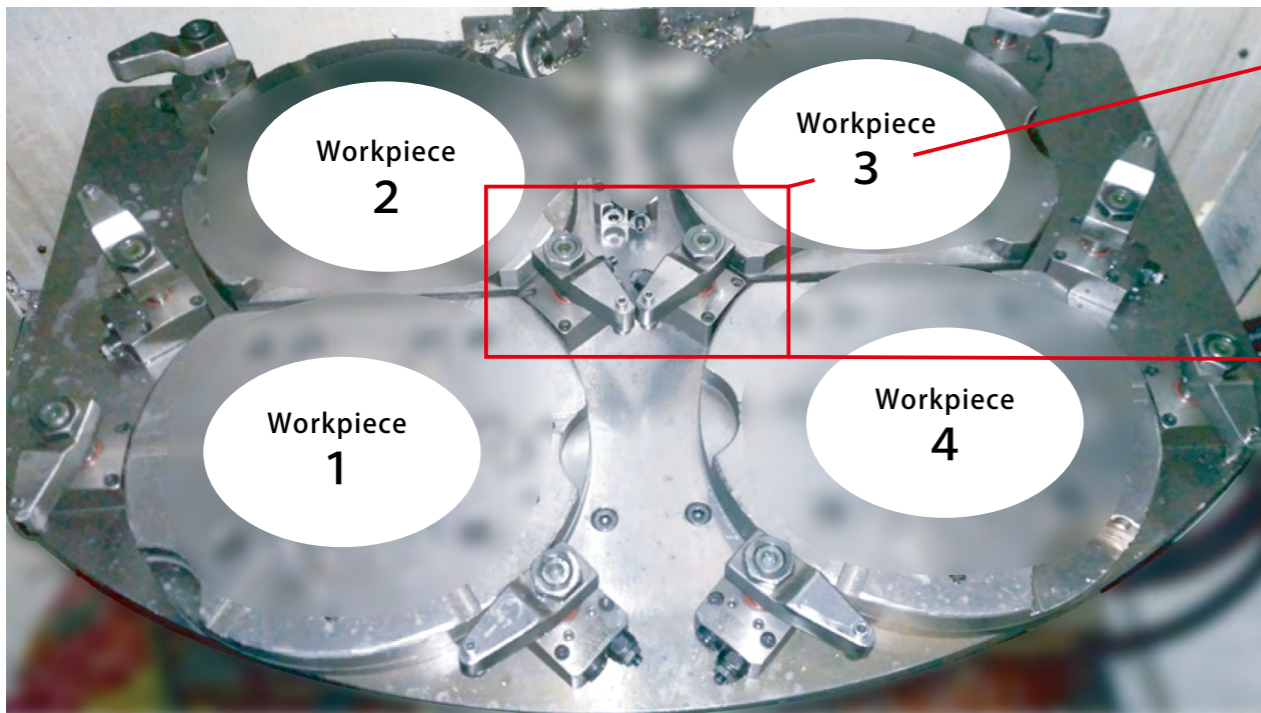




High-Power Clamp enables and Multiple Workpieces

Space-Saving on One Fixture!

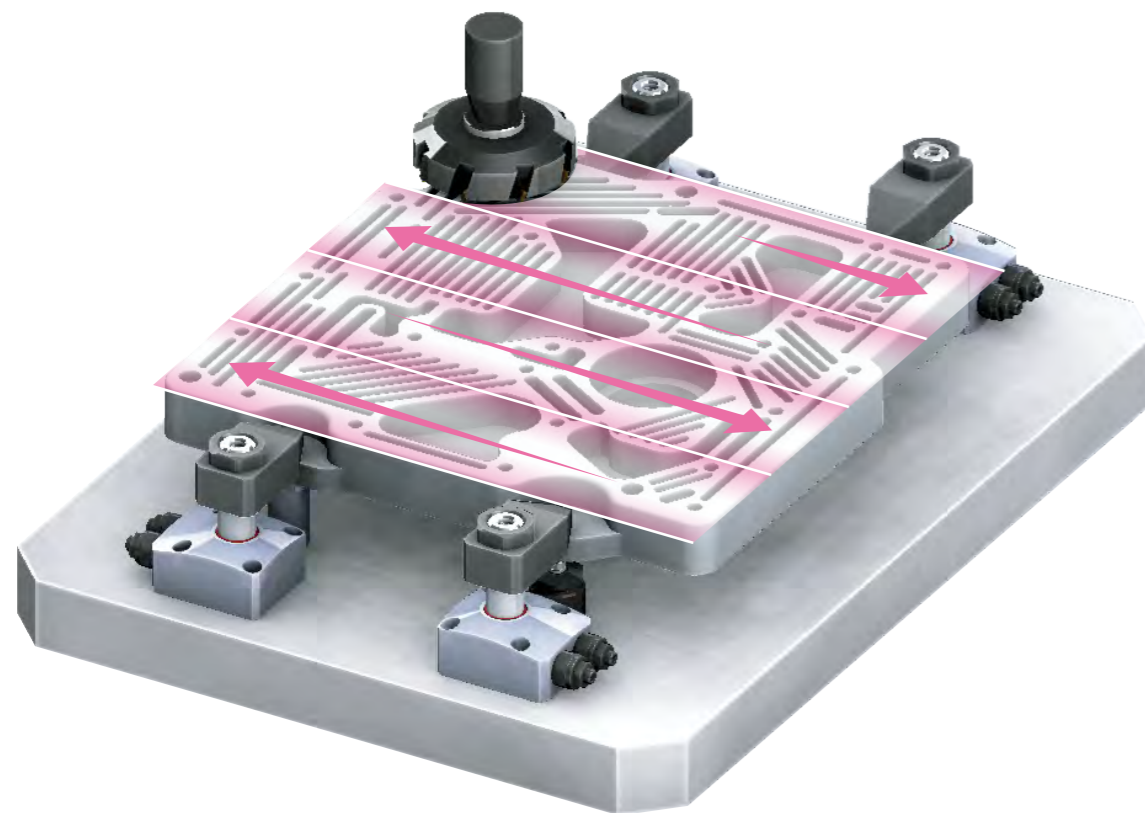
High-Power Clamp Fixture



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!

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

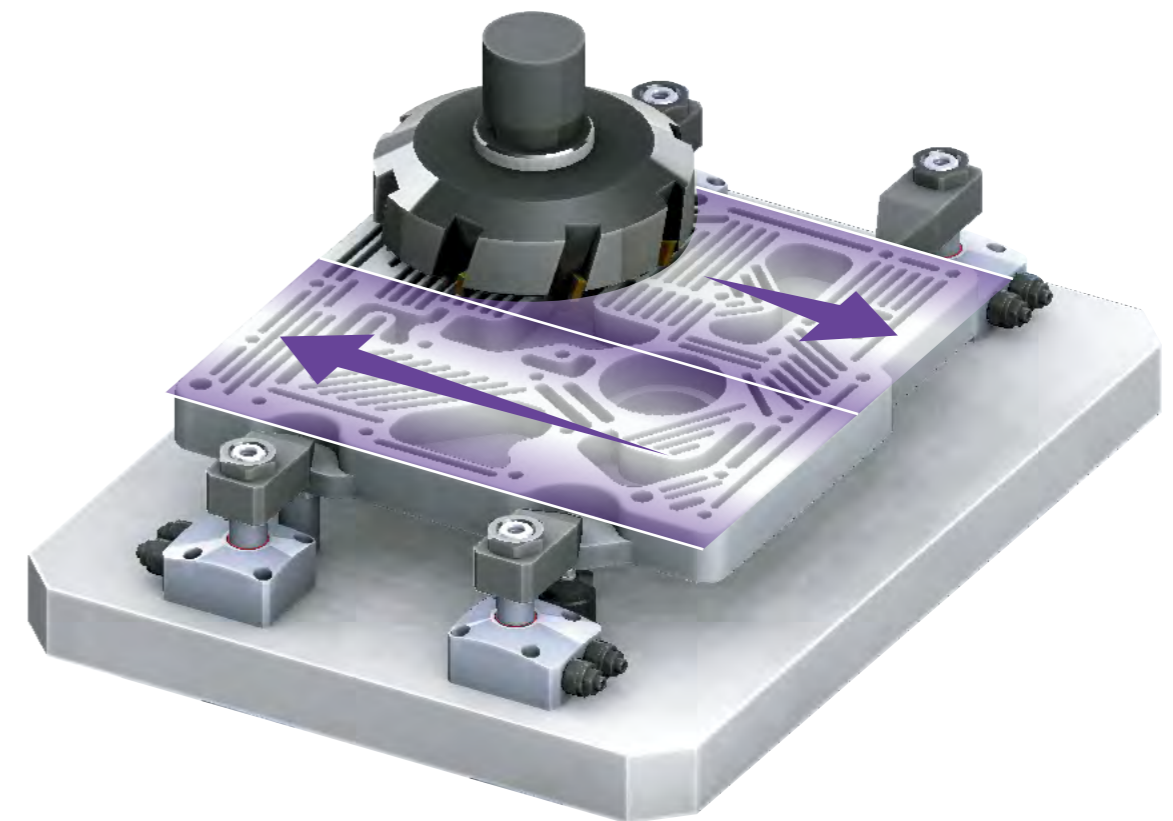
Tool Diameter	Feed Speed
63 mm	600 mm/min

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

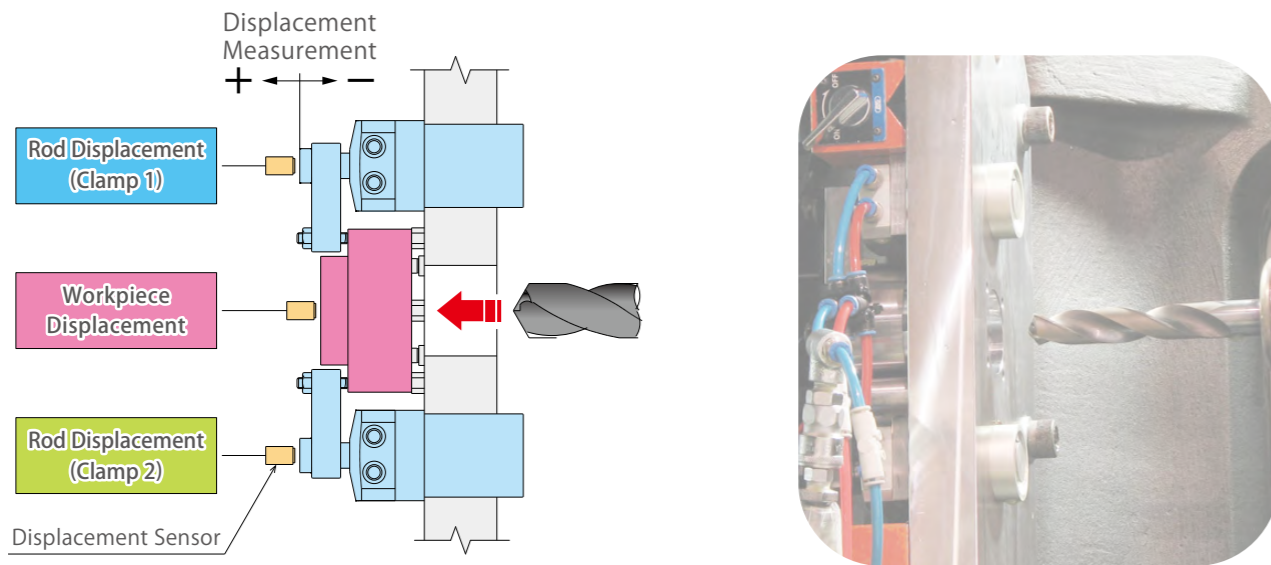
Tool Diameter	Feed Speed
125 mm	1,200 mm/min





High-Power Clamp enables

Backside Machining!



Clamping Conditions

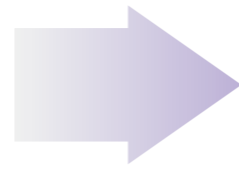
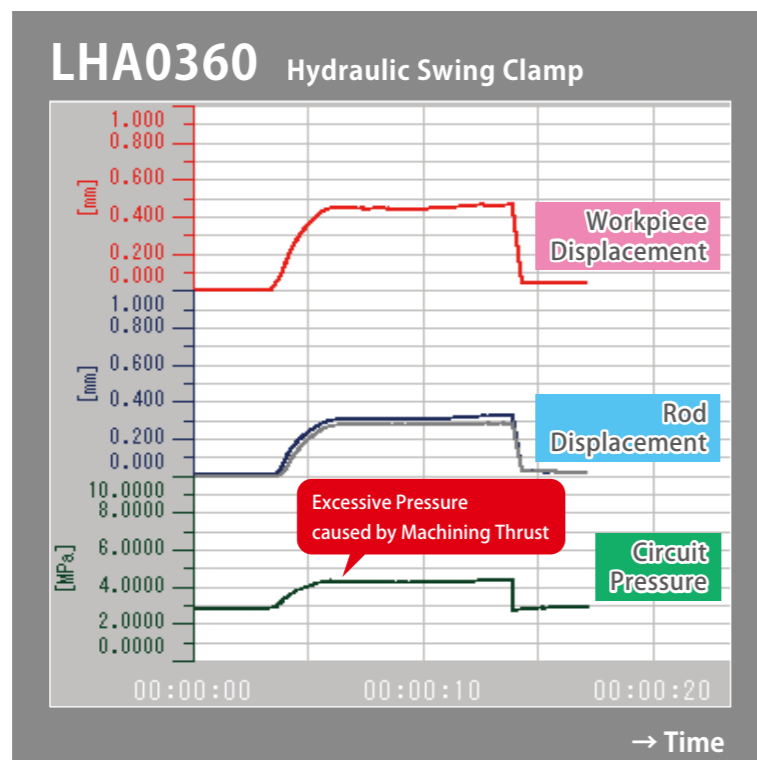
Model No. / Product Name	Clamping Force	Holding Force	Supply Pressure	Lever Length
WHE1000 High-Power Pneumatic Swing Clamp	870 N	2,227 N	0.5MPa	40mm
LHA0360 Hydraulic Swing Clamp		-	3.0 MPa	

Machining Conditions

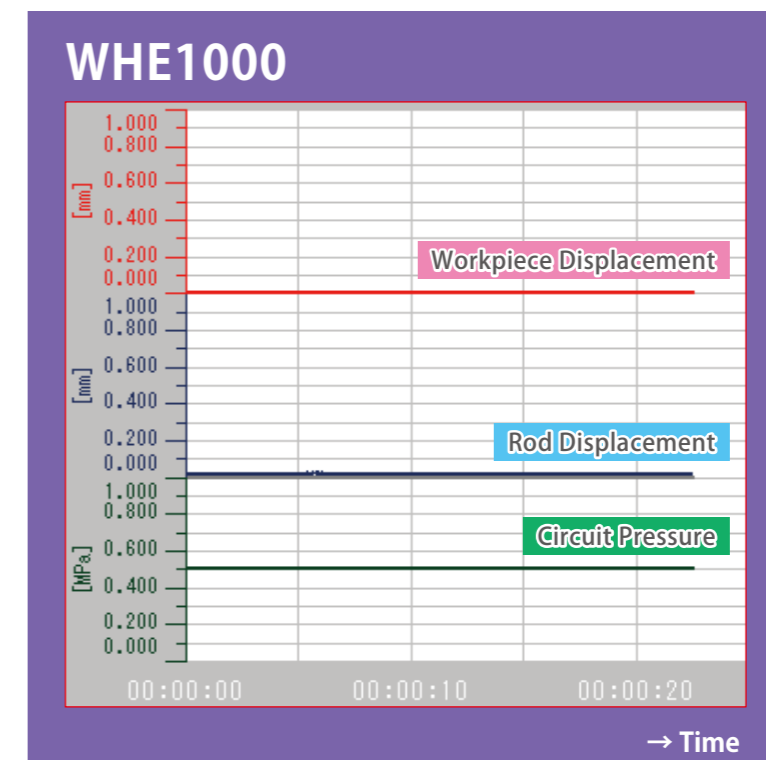
Drill Diameter	Workpiece Material	Machining Hole Depth	Coolant	Feed Speed
22mm (High-Speed Steel)	S45C	20mm	Yes (Water Soluble)	0.3mm/rev

※ Machining results by our own.

Hydraulic Swing Clamp



High-Power Pneumatic Swing Clamp





No Chattering on Aluminum

Great Difference Shown by the Actual Machining Tests

Results of testing by our own.

Workpiece with High-Power Clamp



Unable to Machine with General Swing Clamp



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



Machining Fixture

Clamping Conditions

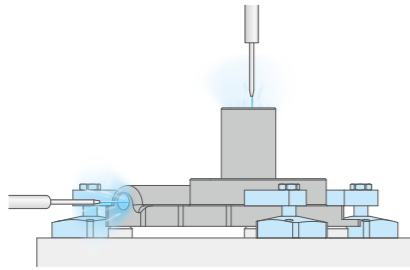
Model No. / Product Name	Clamping Force	Holding Force	Supply Pressure
WHE0600 × 4 High-Power Pneumatic Swing Clamp	1,190 N	3,670 N	0.29MPa
WHA0400 × 4 Pneumatic Swing Clamp		-	0.32 MPa

Machining Conditions

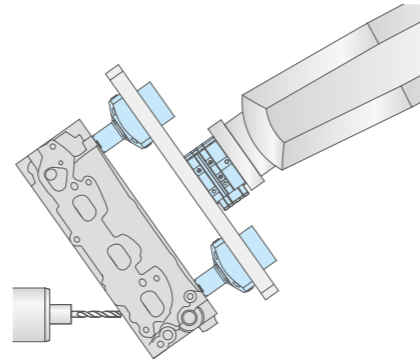
Tool Diameter	Workpiece Material	Infeed (Depth)	Coolant	Feed Speed
80mm	Aluminum (A5052)	3mm	Yes (Water Soluble)	896mm/rev

Application Examples for Non-Machining Equipment

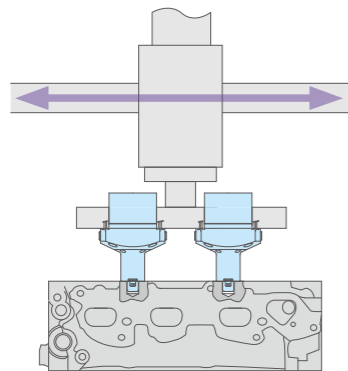
High-Power Pneumatic Series is used not only for machining equipment, but also for various production equipment.



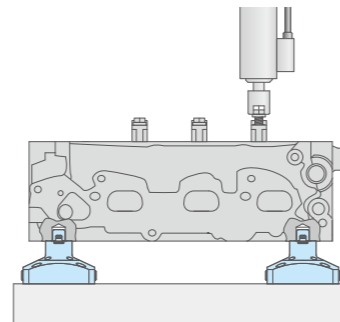
Washers



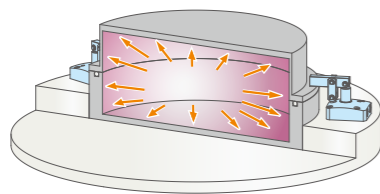
Deburring with Robots



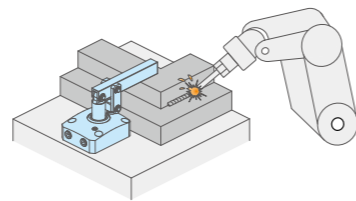
Transfer



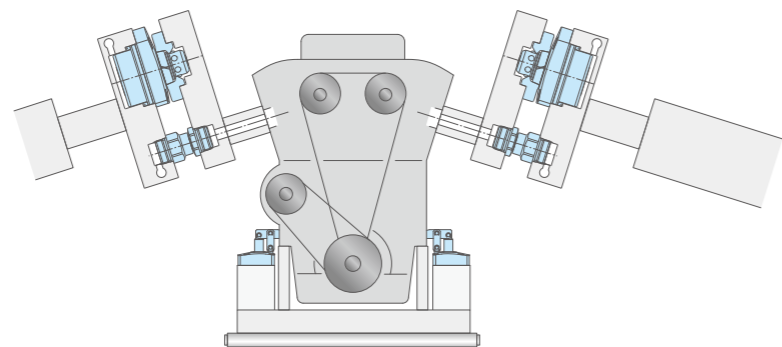
Assembling Equipment



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	φ40	0.23 ~ 0.57 kN	0.2 ~ 0.5MPa
WHE1000	φ46	0.39 ~ 0.98 kN	
WHE1600	φ54	0.63 ~ 1.57 kN	
WHE2500	φ64	0.98 ~ 2.44 kN	
WHE4000	φ77	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	φ40	0.28 ~ 0.59 kN	0.2 ~ 0.5MPa
WCE1002	φ46	0.45 ~ 0.94 kN	
WCE1602	φ54	0.77 ~ 1.59 kN	
WCE2502	φ64	1.20 ~ 2.46 kN	
WCE4002	φ77	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	φ46	0.7 ~ 1.5 kN	6.0 ^{+0.7} _{-0.3} ~ 9.0 ^{+0.7} _{-0.3}	0.2 ~ 0.5MPa
SWE2000	φ54	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	φ45	2.4 ~ 4.0 kN	0.003mm	0.2 ~ 0.5MPa
WVS0060	φ55	3.9 ~ 6.3 kN		
WVS0100	φ69	5.8 ~ 9.9 kN		
WVS0160	φ87.5	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	



KOSMEK LTD.

▶ <http://www.kosmek.com/>

HEAD OFFICE 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241
TEL.+81-78-991-5162 FAX.+81-78-991-8787

United States of America SUBSIDIARY	KOSMEK (USA) LTD. 650 Springer Drive, Lombard, IL 60148 USA TEL. +1-630-620-7650 FAX. +1-630-620-9015
MEXICO REPRESENTATIVE OFFICE	KOSMEK USA Mexico Office Av. Santa Fe #103 int 59 Col. Santa Fe Juriquilla C.P. 76230 Queretaro, Qro Mexico TEL. +52-442-161-2347
EUROPE SUBSIDIARY	KOSMEK EUROPE GmbH Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria TEL. +43-463-287587 FAX. +43-463-287587-20
CHINA SUBSIDIARY	KOSMEK (CHINA) LTD. Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China TEL. +86-21-54253000
INDIA BRANCH OFFICE	KOSMEK LTD. - INDIA F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India TEL.+91-9880561695
THAILAND REPRESENTATIVE OFFICE	KOSMEK Thailand Representation Office 67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand TEL. +66-2-300-5132 FAX. +66-2-300-5133



WAHLTEC GmbH
Ravensburger Str. 14
88361 Altshausen
T: +49 (7584) 9238883
F: +49 (7584) 9238887

www.wahltec.de

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



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2019/9 2nd 2Ry