

KOSMEK

SPECIAL PRODUCTS vol.2



Transfer Hole Clamp



Push Swing Clamp



High-Power Side Clamp



Guide Cylinder



Push Support



Centering Pallet Clamp



Air Sensing Pin

Clamps and Grips the Workpiece Hole!

Transfer Hole Clamp



- **Durable for High-Speed Operations and Vibrations!**

Internal wedge structure allows for powerful gripping force. This ensures the workpiece and/or plate does not fall off under high-speed operations or vibrations.

- **Excellent Safety Functions!**

Securely holds workpieces by internal spring without air pressure supply.

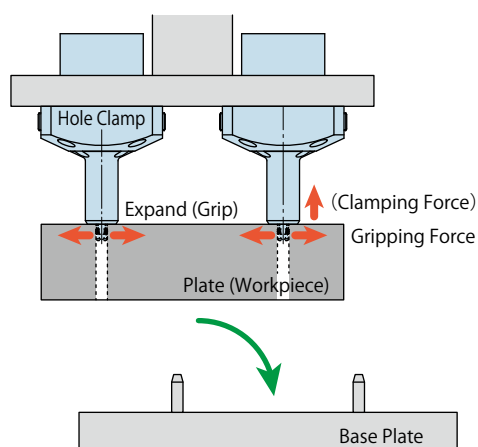
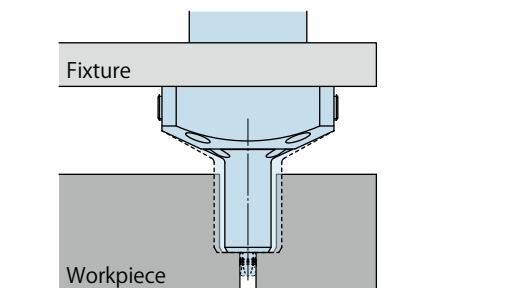
- **Designed for Use Under Severe Conditions!**

Equipped with Kosmek exclusive scraper and air blow function.

- **Slim Neck for Interference Prevention**

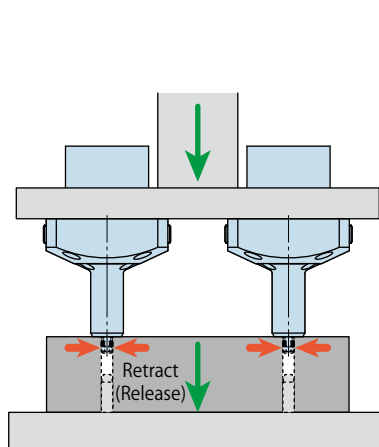
Thinner seating diameter allows for interference prevention.

- **Application Examples**

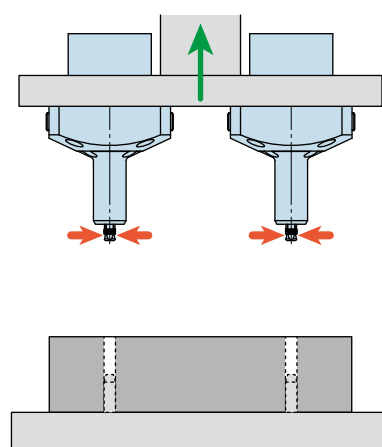


The grippers of the hole clamp powerfully grip the plate (workpiece) and transfer to the indicated spot.

- With Floating Function for the Gripper Part
- With Air Blow Function



The grippers retract at the designated area and release the plate (workpiece).



The retraction of the grippers allows for smooth and secure loading and unloading of the plate (workpiece).

EXAMPLE SPECIFICATION:

Please contact us for dimensions not listed in this leaflet.

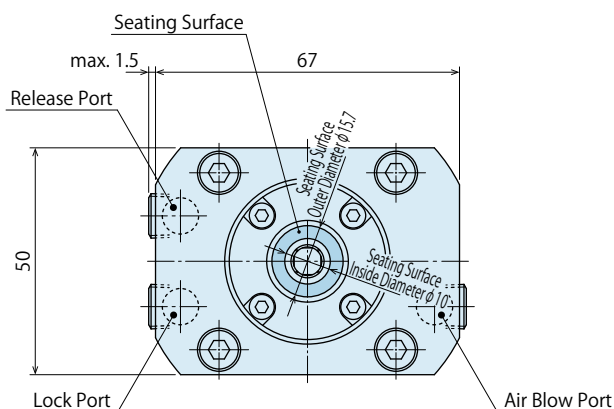
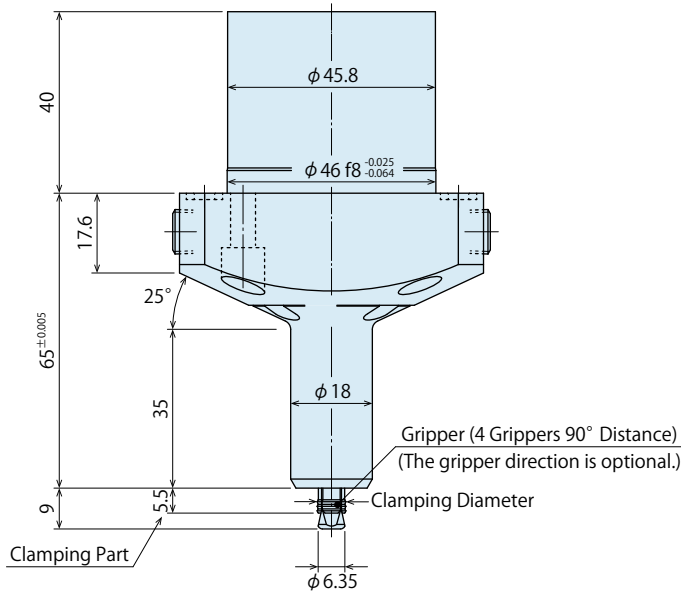
Specifications

Model No.	SWE1000-N-066-H65-Z01600	
Workpiece	Hole Diam. mm	6.6 ±0.1
	Hardness	HB250 or less
Clamp	At Release	6.3
	At Idle	7.1
Diameter mm		
Allowable Offset (Floating Range of Expanding Area) mm	±0.5	
Full Stroke mm	2.0	
Workpiece Pulling Stroke mm	1.0	
Gripping Force ^{※1} (Clamping Force) kN	At 0MPa	0.4 (0.15)
	At 0.5MPa	4.3 (1.5)
Cylinder Capacity (At Idle) cm ³	Release	8.3
	Lock	7.6
Max. Operating Air Pressure MPa	0.5	
Min. Operating Air Pressure MPa	0.2	
Withstanding Pressure MPa	0.75	
Air Blow Pressure MPa	0.4 ~ 0.5	
Operating Temperature °C	0 ~ 70	
Pressurizing Agent	Dry Air	

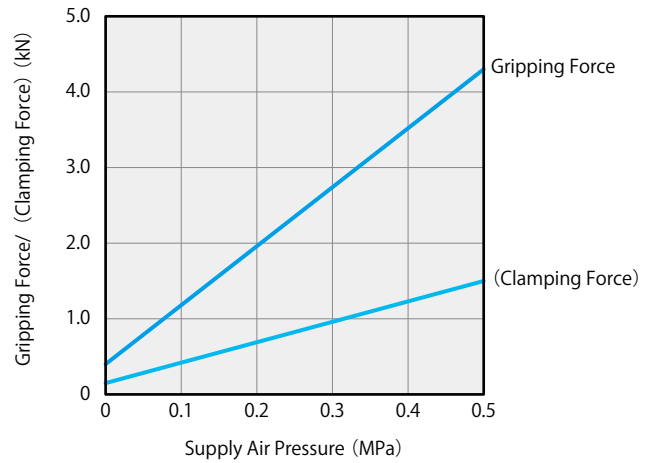
※1. Gripping force shows the calculated value when the friction coefficient of expanding area is $\mu 0.15$.

External Dimensions

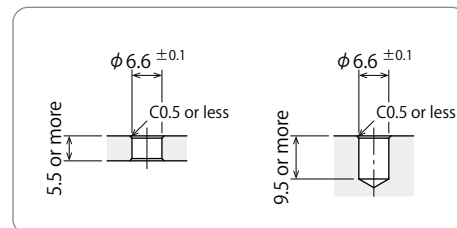
- This drawing shows the released state of SWE1000-N-066-Z01600.
- The clamp will align with the workpiece hole via the floating function.



Gripping Force Curve



Workpiece Hole Machining Dimensions



90° Swing Enables Easy Loading and Unloading!

Push Swing Clamp



- **Various Ways of Installation!**

Allows for various installation methods and options.

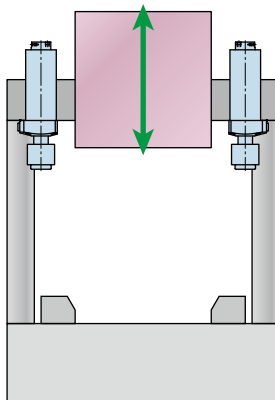
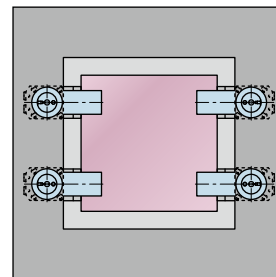
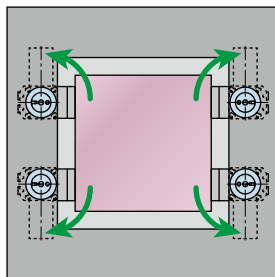
- **Longer Stroke!**

60mm vertical stroke enables to clamp at various heights.

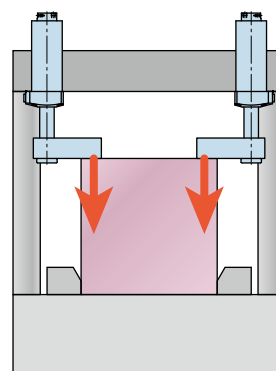
- **Detection Function!**

Air sensors enable release confirmation.

- **Application Examples**



The clamp levers are completely retracted when loading/unloading workpieces. This allows for easy loading/unloading.



When there is no space to install clamps on the base plate, install the clamps on the upper side and press down the workpiece from the top.

EXAMPLE SPECIFICATION:
Please contact us for dimensions not listed in this leaflet.

● Specifications : Clamp Main Body

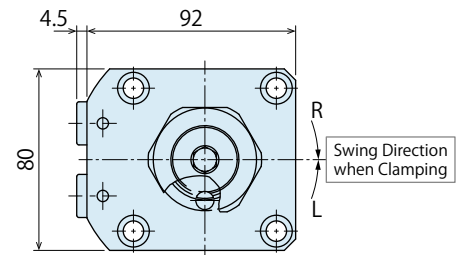
Model No.	LHY0800-C□	
Cylinder Area	cm ²	30.191
Full Stroke	mm	74
Swing Stroke (90°)	mm	14
Lock Stroke	mm	60
Cylinder	Lock	223.4
	Release	150.2
Capacity	cm ³	150.2
Swing Angle Accuracy		90° ±3°
Swing Complete Position Repeatability		±0.5°
Max. Operating Hydraulic Pressure	MPa	5.0
Min. Operating Hydraulic Pressure	MPa	1.5
Withstanding Pressure	MPa	7.5
Operating Temperature	°C	0 ~ 70

● Specifications : Air Sensor

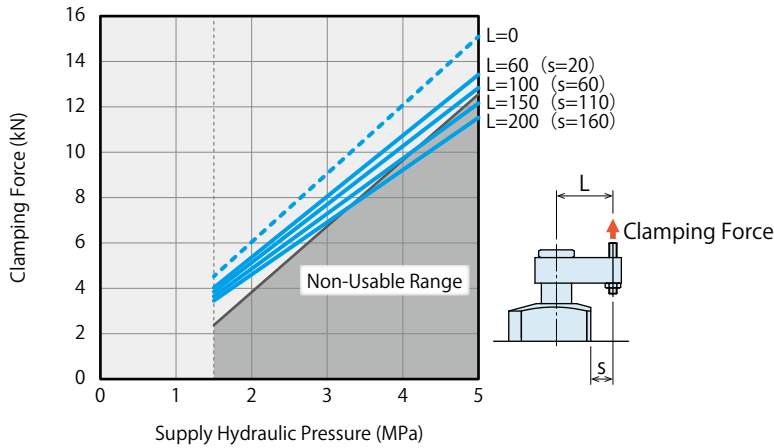
Air Catch Sensor	ISA3-F / ISA3-G / ISA2-G (SMC)
	GPS2-05-15 (CKD)
Operating Air Pressure	MPa 0.1 ~ 0.2

● External Dimensions

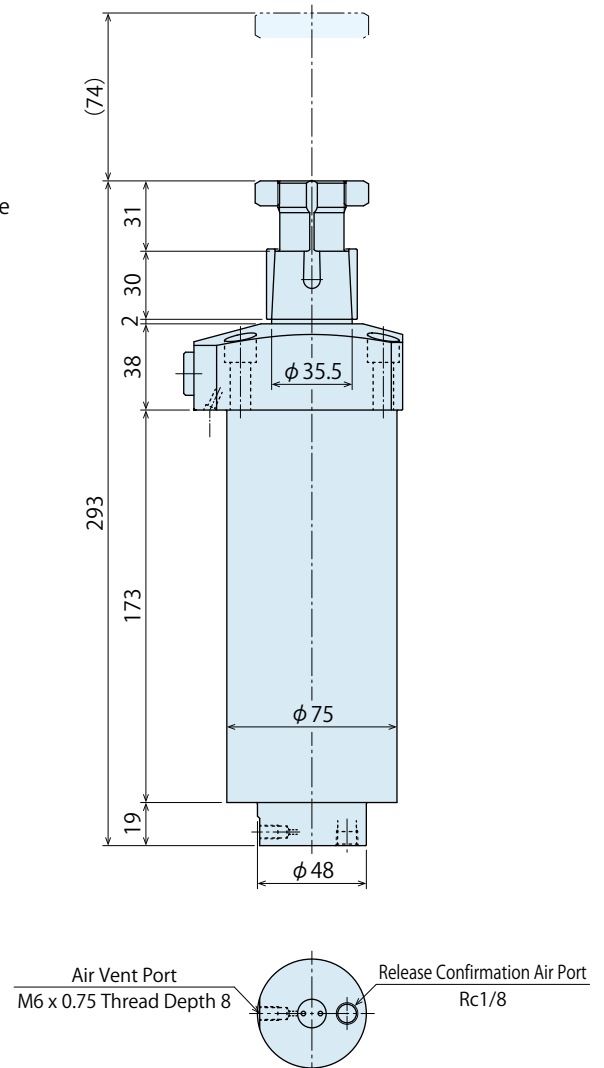
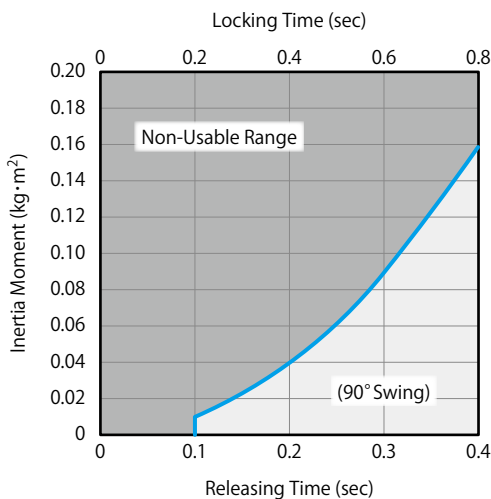
Note: 1. This drawing shows the released state of LHY0800-CR.



● Clamping Force Curve

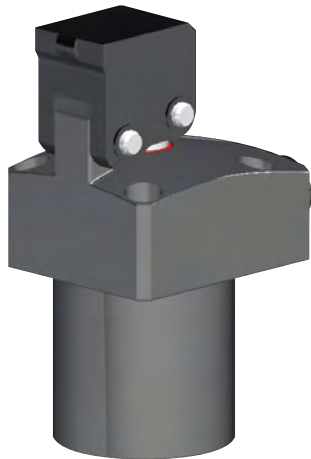


● Action Time Graph



Durable for Reaction Force by Holding Force!!

High-Power Side Clamp



- **Suitable for Thin Parts!**

This clamping method of pushing from the side is suitable for thin parts.

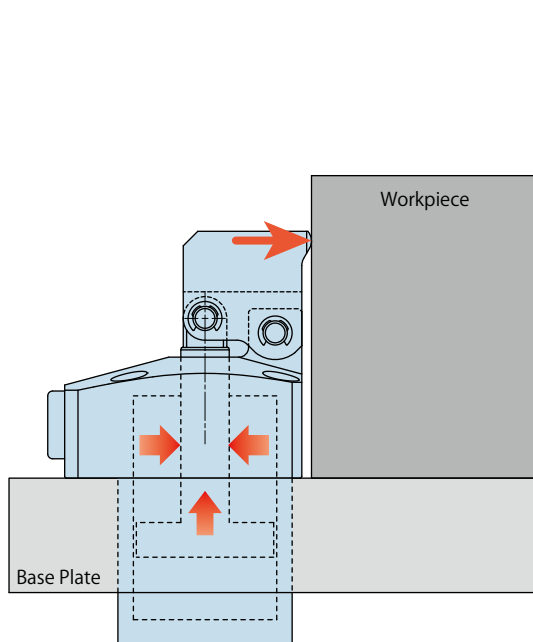
- **No Top Side Interference!**

There is no interference on the top surface by clamping thin workpieces from the side.

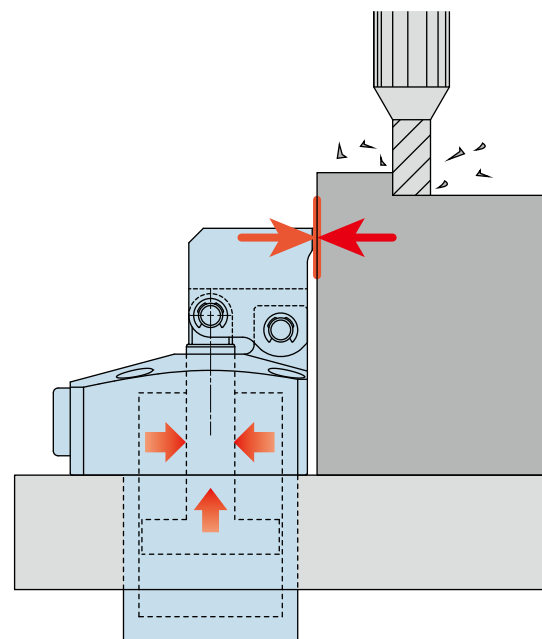
- **Easy to Load/Unload Parts!**

The lever is completely retracted when released, so it is easy to load/unload parts.

- **Application Examples**



Clamp the workpiece/plate by pushing from the side.



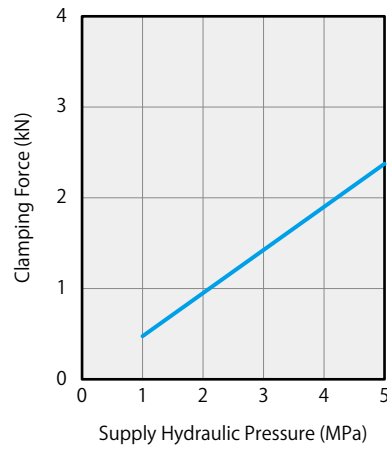
Built-in wedge function withstands high reaction force. There is no chattering during machining, improving the machining quality.

EXAMPLE SPECIFICATION:
Please contact us for dimensions not listed in this leaflet.

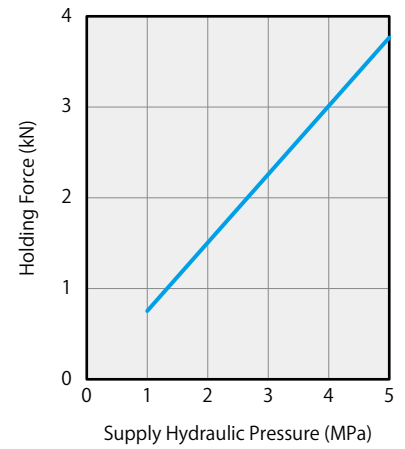
● Specifications

Model No.	LKEY	
Cylinder Thrust (at 5MPa)	kN	3.5
Full Stroke	mm	3
Lock Stroke	mm	1.5
Extra Stroke	mm	1.5
Cylinder Capacity	Lock	3.38
	Release	3.48
Max. Operating Hydraulic Pressure	MPa	5.0
Min. Operating Hydraulic Pressure	MPa	1.0
Withstanding Pressure	MPa	7.5
Operating Temperature	°C	0 ~ 70

● Clamping Force Curve

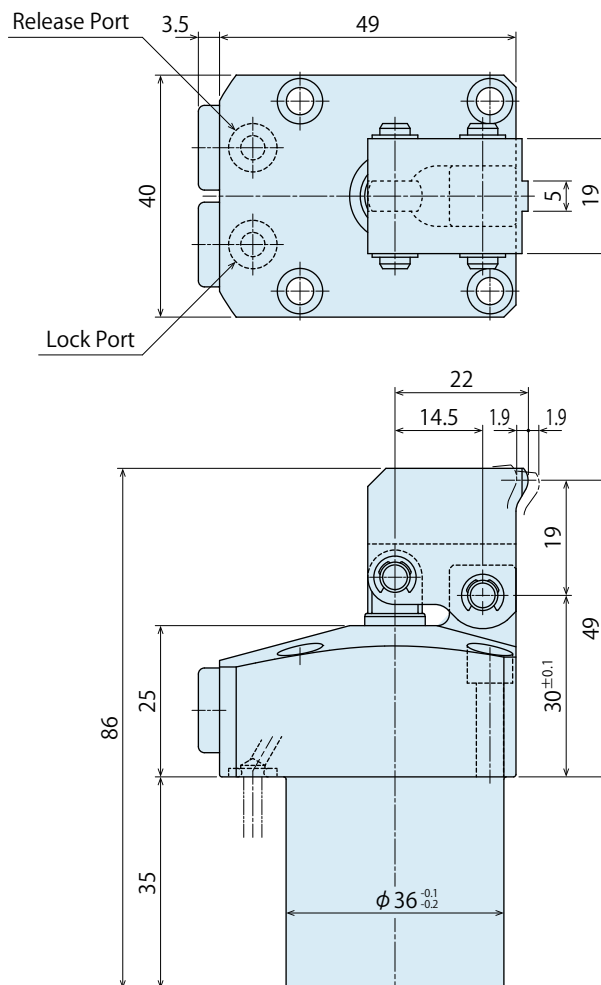


● Holding Force Curve



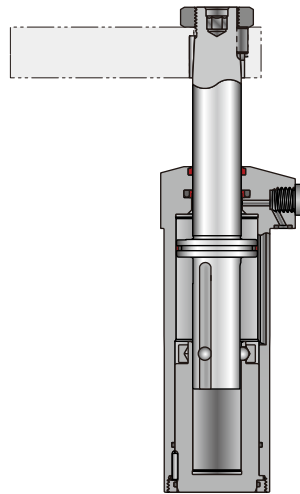
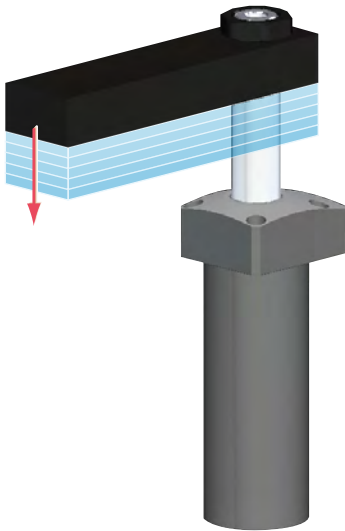
● External Dimensions

- This drawing shows the clamped state of LKEY-CC.
(The lever mounting direction of LKEY-CL / -CR is different.)



Longer Stroke with Internal Guide!

Built-In Guide Cylinder



- **Built-In Guide Function (Stopper)!**

A guide function is built in the cylinder.
It is not required to install an external guide.

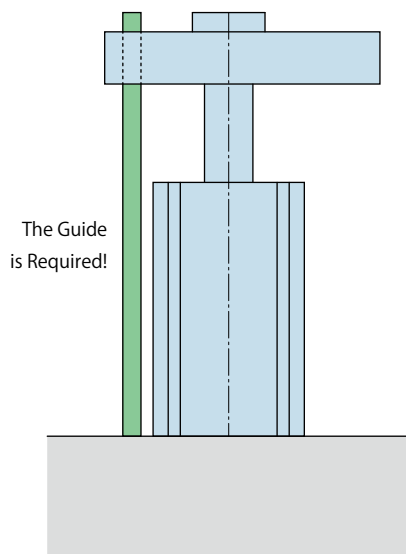
- **Longer Stroke!**

The stroke is longer even though the guide function is built in.

- **Compact yet Powerful!**

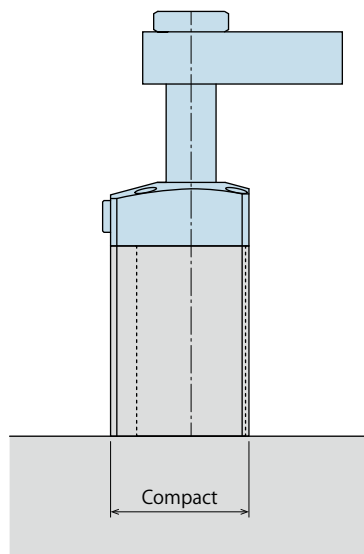
It is compact, yet exerts powerful force.
The gasket structure will simplify the fixture design.

- **Features**



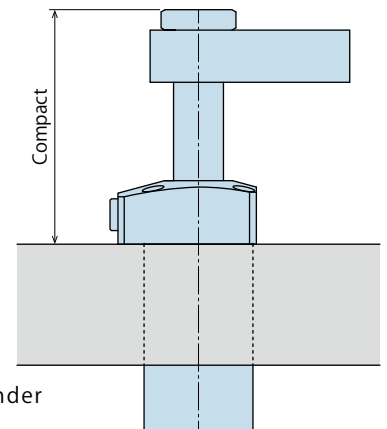
General Cylinder

Guide Required
Larger Footprint



Guide Cylinder

Guide is not required, allowing
smaller footprint.



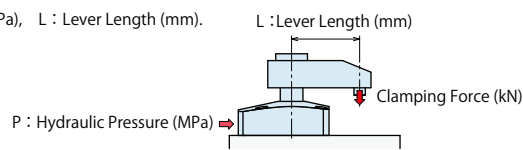
Smaller footprint can be designed
by embedding the cylinder body.

EXAMPLE SPECIFICATION:
Please contact us for dimensions not listed in this leaflet.

● Specifications

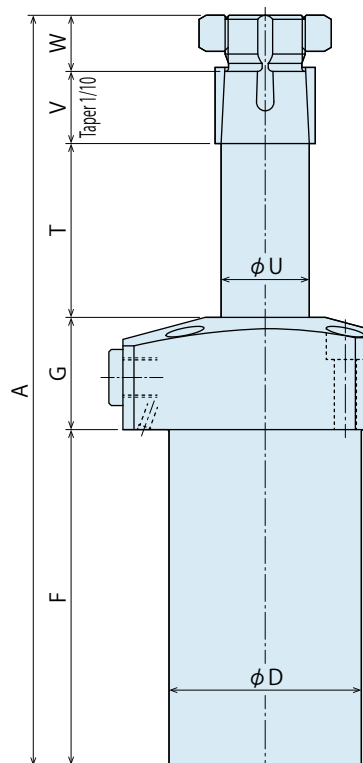
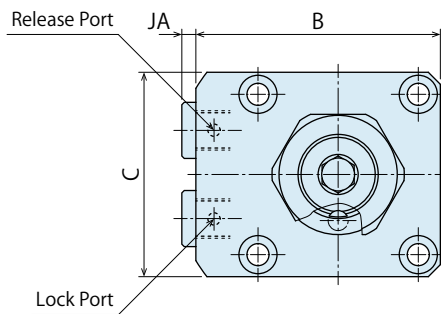
Cylinder Body Outer Diameter		φ 40	φ 48	φ 55	φ 65	φ 75
Cylinder Area	cm ²	5.00	6.95	10.3	13.4	20.3
Clamping Force Calculation Formula ^{*1}	kN	$P(1-0.0016L) / (2.0920+0.0040L)$	$P(1-0.0009L) / (1.4892+0.0018L)$	$P(1-0.0011L) / (1.0039+0.0011L)$	$P(1-0.0009L) / (0.7822+0.0010L)$	$P(1-0.0007L) / (0.5175+0.0006L)$
Full Stroke	mm	49.5	51	62	65	65
Capacity	Lock	24.8	35.5	63.9	87.1	131.9
	Release	37.4	54.8	94.3	132.7	196.2
Max. Operating Pressure	MPa	7.0				
Min. Operating Pressure	MPa	1.5				
Withstanding Pressure	MPa	10.5				
Operating Temperature	°C	0 ~ 70				

*1. P : Operating Hydraulic Pressure (MPa), L : Lever Length (mm).



● External Dimensions

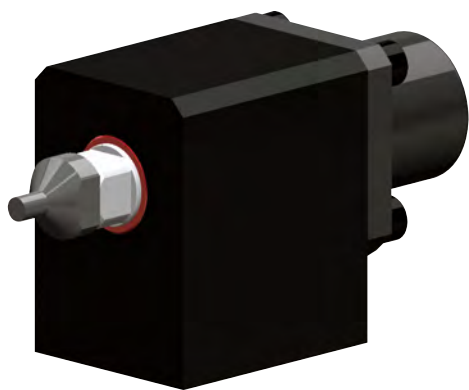
1. This drawing shows the released state of LHY.



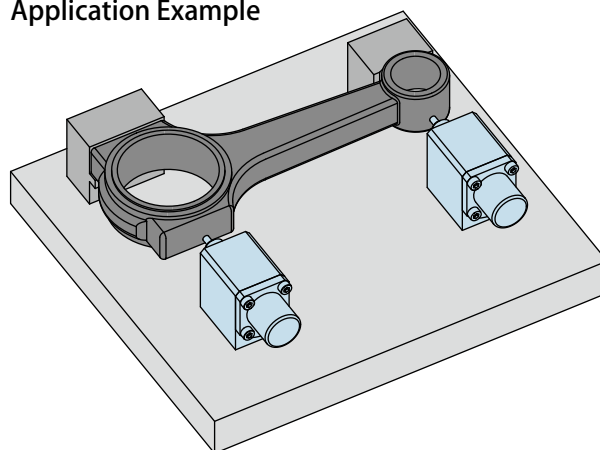
	(mm)				
Cylinder Body Outer Diam.	φ 40	φ 48	φ 55	φ 65	φ 75
Full Stroke	49.5	51	62	65	65
A	220	235	276	291	304
B	54	61	69	81	92
C	45	51	60	70	80
D	40	48	55	65	75
F	116.5	122	146	153	153
G	25	28	30	31	38
T	51.5	53	64	67	67
U	18	22	25	30	35.5
V	15	18	21	24	30
W	12	14	15	16	16
JA	3.5	3.5	3.5	4.5	4.5

Pushes from the side, powerfully supports!

Push Support



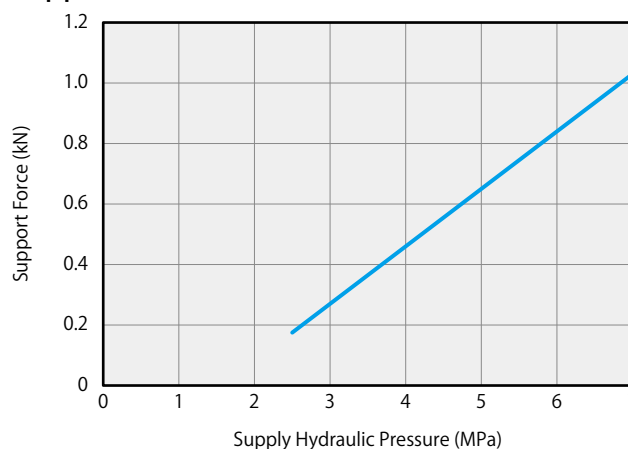
● Application Example



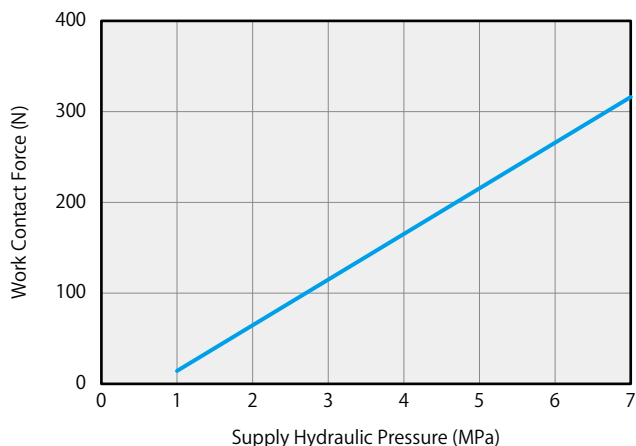
● Specifications

Model No.	LDY0011	
Support Force (at 7MPa)	kN	1.0
Plunger Stroke	mm	5
Cylinder Capacity	Lock Port	0.1
	Advance Port	0.3
Operating Pressure Range	Lock Port	2.5~7
	Advance Port	1~7
Withstanding Force	MPa	10.5
Operating Temperature	°C	0~70

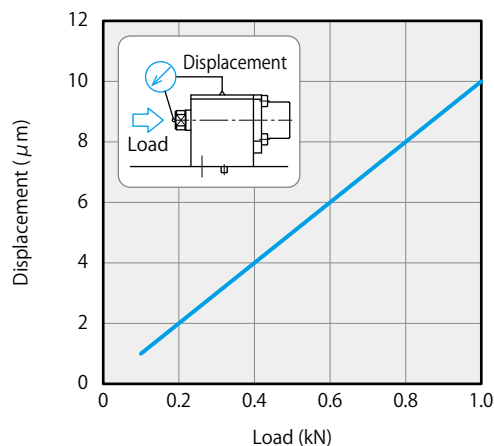
● Support Force Curve



● Work Contact Force Curve



● Load/Displacement Graph

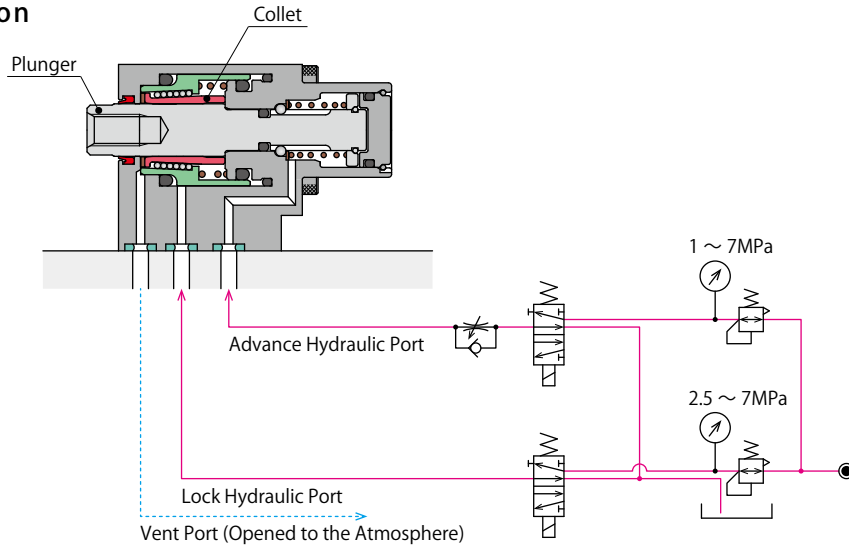


Note:

1. When using with clamps or cylinders facing to the support, the support force must be more than 1.5 times the clamping force.

EXAMPLE SPECIFICATION:
Please contact us for dimensions not listed in this leaflet.

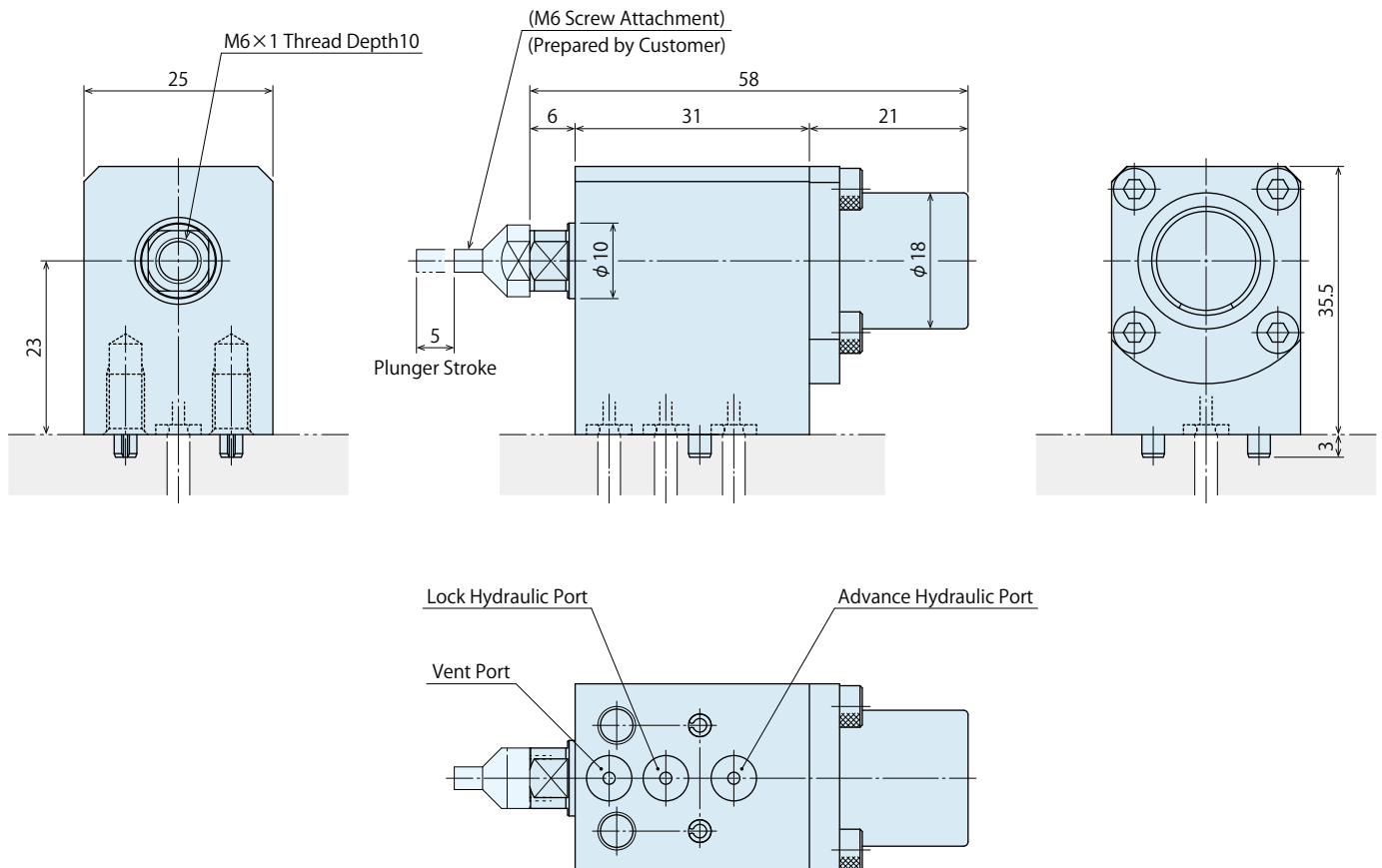
● Action Description



1. Make sure to follow the procedure below. Stop supplying the advance hydraulic pressure at locking completed state.
 Advance Hydraulic Pressure ON → Contact Workpiece (Fixing Completed) → Lock Hydraulic Pressure ON →
 Advance Hydraulic Pressure OFF → (Lock Completed).
 When lock action is completed, do not retain hydraulic advance pressure supplied. Otherwise, if the workpiece is dislocated, the plunger advance force will be applied on the collet, and internal parts may be damaged due to the wedge function.

● External Dimensions

1. This drawing shows the released state of LDY0011.



All-In-One High Precision Locating and Powerful Clamping!

Centering Pallet Clamp



- **3 μm Repeated Locating Accuracy**

Just one datum clamp enables both X and Y locating and clamping. The clamp includes seating surfaces, built-in seat check valves and air blow capabilities. **[Locating Repeatability : 3 μm]**

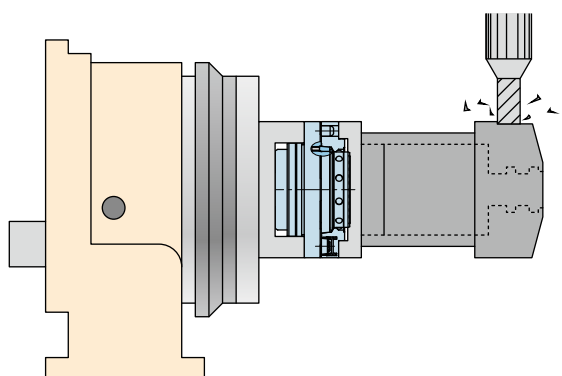
- **Clamping Function**

Spring clamp and hydraulic release.

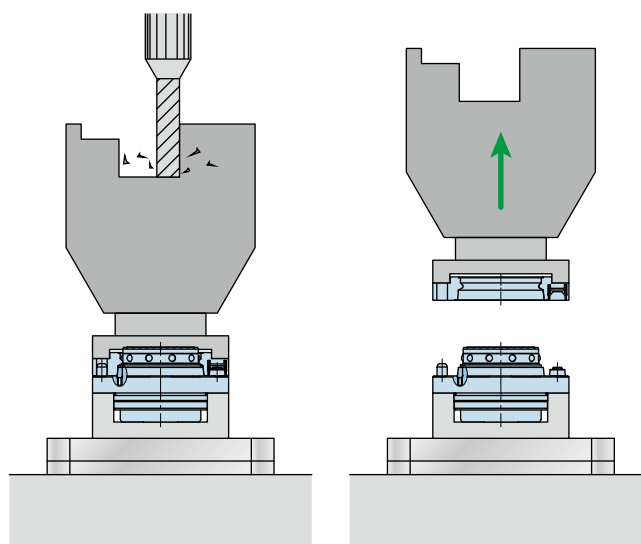
- **Self Absorbing Taper Sleeve**

Marginal error absorbed by the taper sleeve. The clearance between the clamp, taper sleeve and female block is eliminated. This enables the repeated locating accuracy and stabilized clamping force.

- **Application Examples**



For Index Tables



For Machining Centers

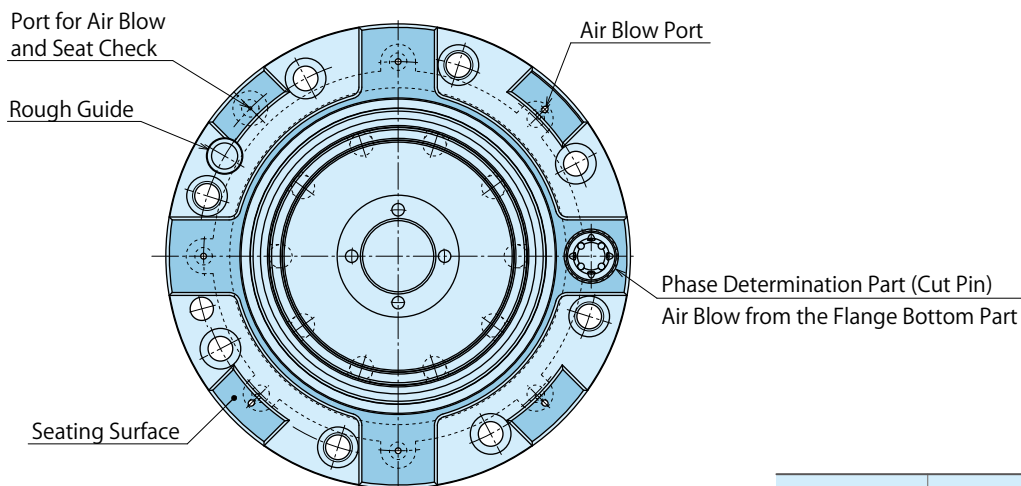
EXAMPLE SPECIFICATION:
Please contact us for dimensions not listed in this leaflet.

● Specifications

Clamping Force	kN	10	16	25	
Locating Repeatability	mm	0.003			
Full Stroke	mm	3.4	4	4.7	
Lifting Up Stroke	mm	1.0			
Allowable Offset when fixture loading	mm	1.2	1.5		
Lifting Up Force	kN	At 7.0MPa	11.0	17.7	27.7
		At 5.0MPa	5.4	8.8	13.5
		At 3.5MPa	1.2	2.2	2.9
Max. Loading Weight	kg	1000	1600	2500	
Cylinder Capacity	cm ³	9.6	17.7	33.3	
Releasing Hyd. Pressure	MPa	Max. Operating Pressure	7.0		
		Min. Operating Pressure	3.5		
		Withstanding Pressure	10.5		
Operating Air Pressure (Air Blow Use)	MPa	0.4 ~ 0.5			
Operating Temperature	°C	0 ~ 70			
Pressurizing Agent		General Hydraulic Oil Equivalent to ISO-VG-32			

● External Dimensions

1. This drawing shows the released state of VY.



(mm)

Clamping Force	10kN	16kN	25kN
A	56.5	70	84.5
B	4	4.5	5
C	100	125	160
D	74	89	110
E	60	75	95
F	21	26	29.5
G	12	15	20
H	22	27.5	33.5
Y	59	72	89

Please contact us for dimension of the block.

Automatic Fixture Detector

Air Sensing Pin



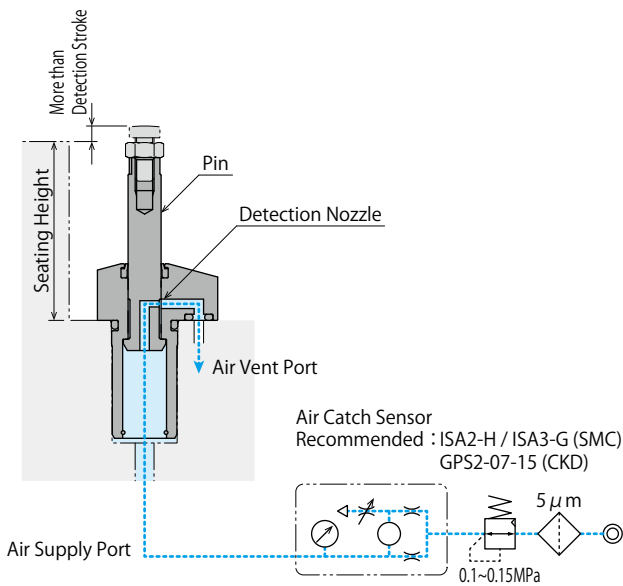
- Automatically Distinguish different fixture Plates!

Air sensing pin automatically distinguishes the fixture models with the air catch sensor to avoid human errors.

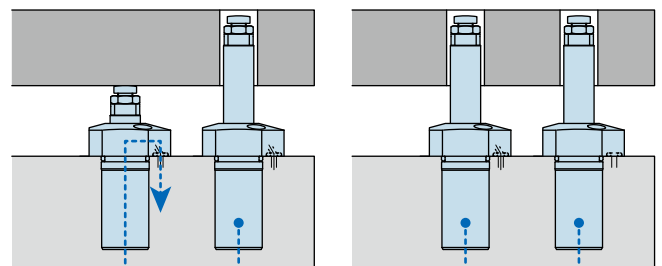
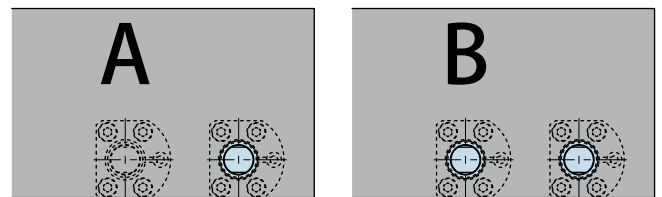
- Simple Fixture and Circuit Design!

Single air circuit with basic and simple circuit structure allows for easy installation and machining.

- Internal Structure • Circuit Example

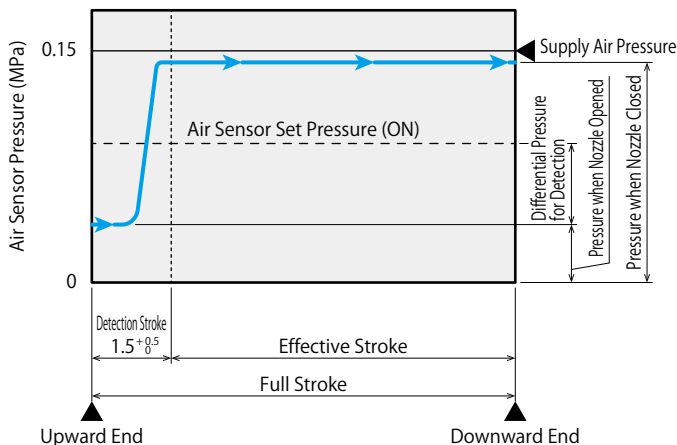


- Application Examples



Sensor ① ON, Sensor ② OFF : Distinguish the Fixture A.
Sensor ① OFF, Sensor ② OFF : Distinguish the Fixture B.

- Air Sensing Chart Number Directly Connected to Cylinder: 1



EXAMPLE SPECIFICATION:
Please contact us for dimensions not listed in this leaflet.

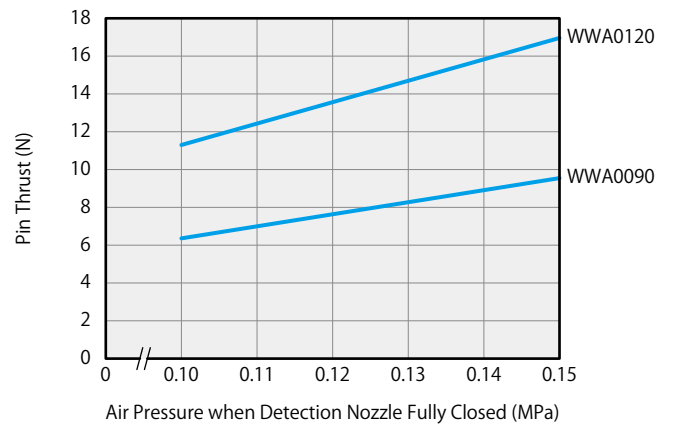
● Specifications

Model No.	WWA0090-35	WWA0120-35
Full Stroke	mm	35
Detection Stroke	mm	1.5
Effective Stroke	mm	33.5
Max. Operating Air Pressure	MPa	0.15
Min. Operating Air Pressure	MPa	0.10
Pressurizing Agent		Dry Air
Operating Temperature	°C	0 ~ 70

Notes:

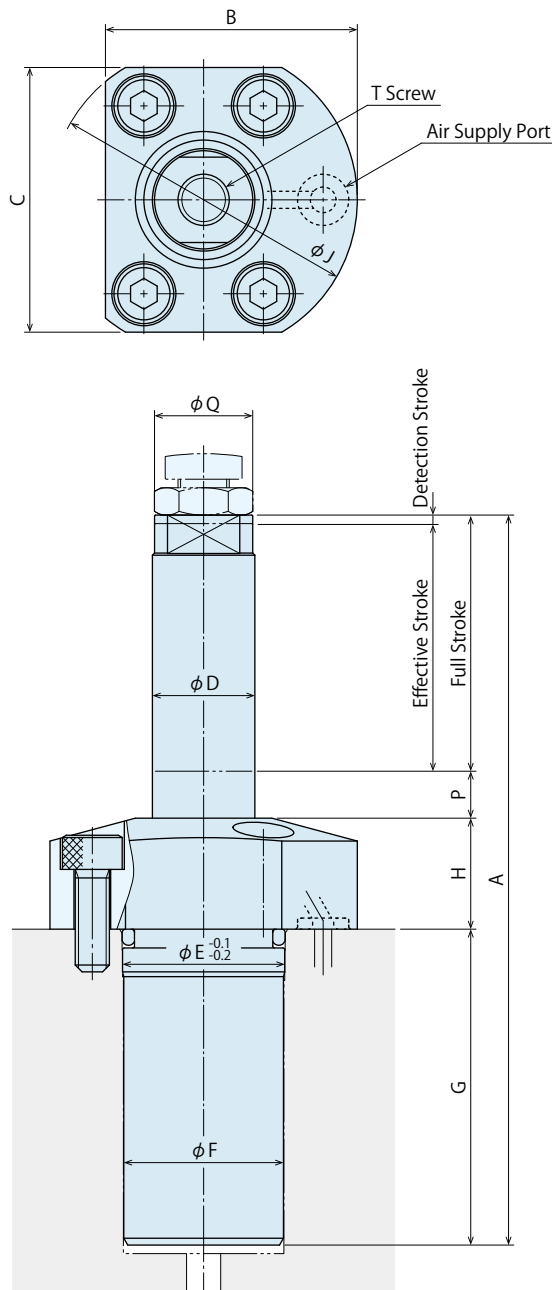
1. Air vent hole must be open to the atmosphere. Prevent the invasion of the coolant and chips.
2. The performance curve shows the theoretical thrust within the effective stroke range (when the detection nozzle is closed.) The thrust in the detection stroke range is lower than the theoretical thrust.

● Pin Thrust Performance Curve



● External Dimensions

1. This drawing shows the pin ascended state of WWA.



Model No.	WWA0090-35	WWA0120-35
Full Stroke	35	35
Detection Stroke	1.5	1.5
Effective Stroke	33.5	33.5
A	95.5	97
B	27.5	29.5
C	29	31
D	9	12
E	16	19
F	15.7	18.7
G	42	42
H	13	14
J	33	36
P	5.5	6
Q	8.5	11.5
T (Nominal × Pitch × Depth)	M5 × 0.8 × 8	M6 × 1 × 11

KOSMEK

Harmony in Innovation

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- FOR FURTHER INFORMATION ON UNLISTED SPECIFICATIONS AND SIZES, PLEASE CALL US.
- SPECIFICATIONS IN THIS LEAFLET ARE SUBJECT TO CHANGE WITHOUT NOTICE.



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