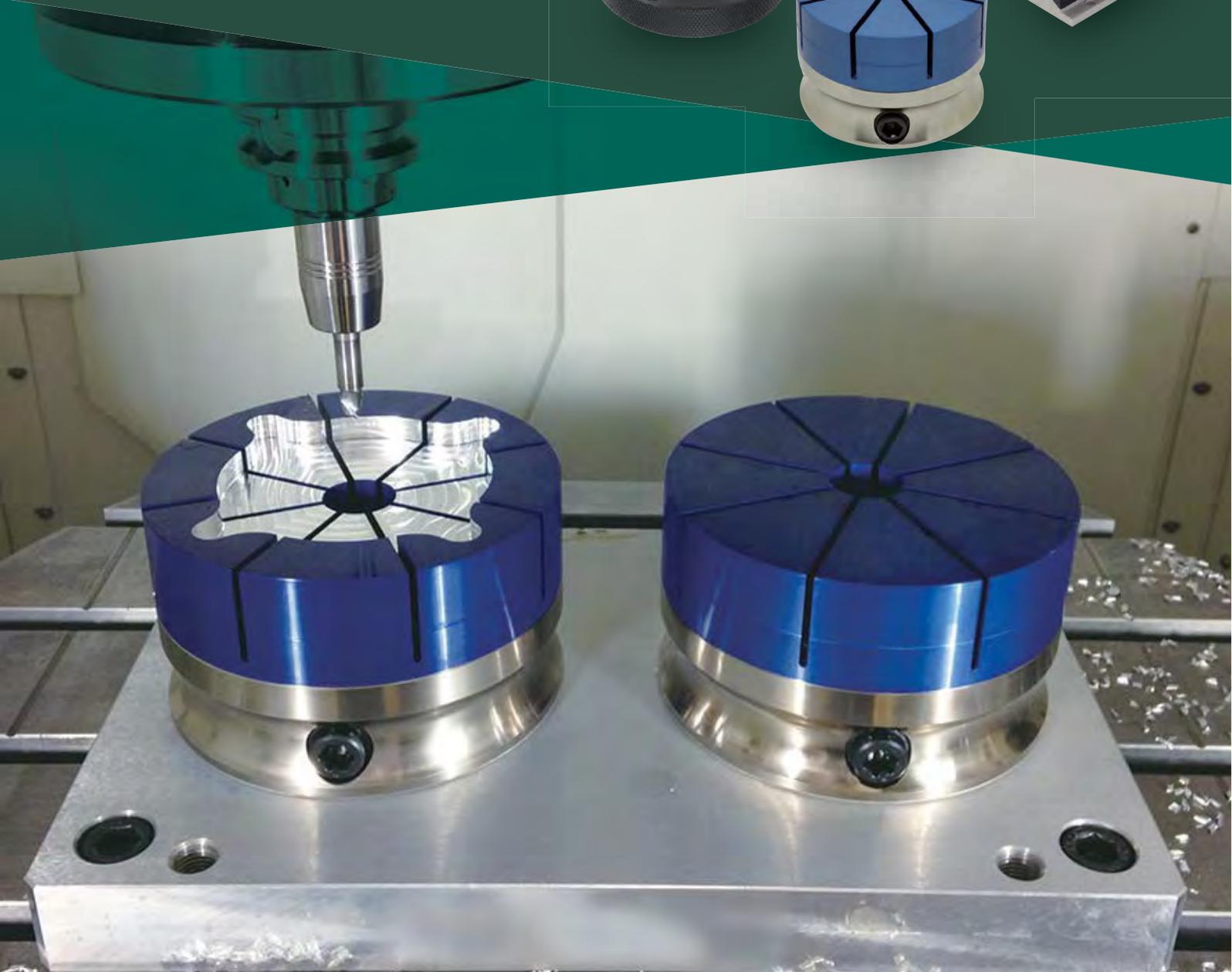
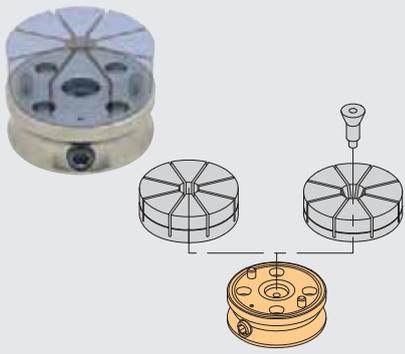


 IMAO[®] fixtureworks[®]

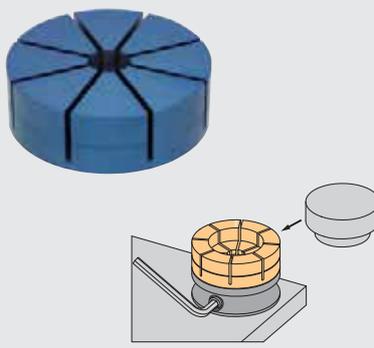
Machinable Collet Clamps





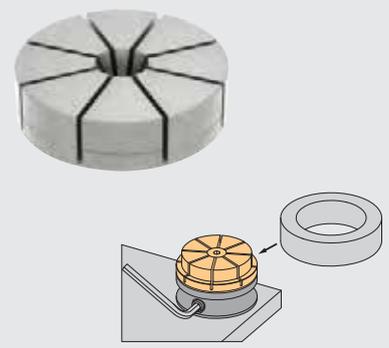
FORM HOLDING CLAMPS

Part No. CP125



JAWS FOR EXTERNAL FORM HOLDING

Part No. CP126



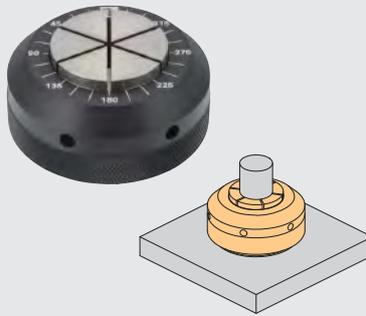
JAWS FOR INTERNAL FORM HOLDING

Part No. CP127



TAPERED SCREWS FOR INTERNAL FORM HOLDING

Part No. CP127-B



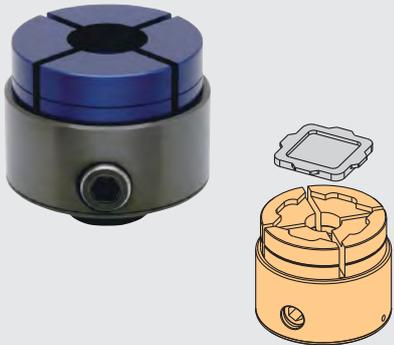
CONCENTRIC OD CLAMPS

Part No. MBOD



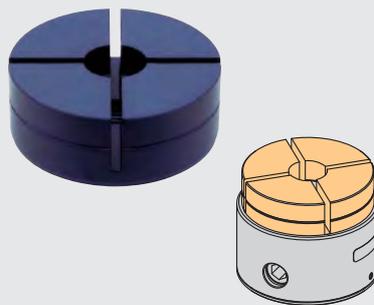
JAWS

Part No. MBOD-01



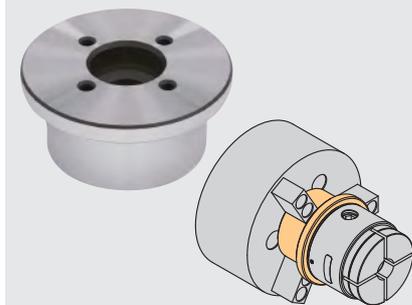
OD HOLDING CLAMPS

Part No. CP120



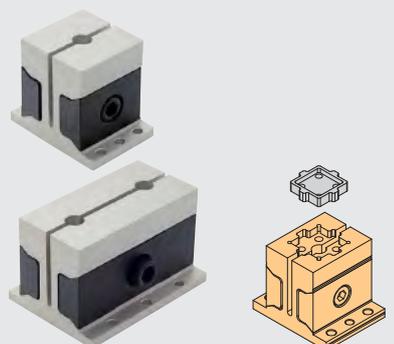
JAWS

Part No. CP121



MOUNTING-ON-LATHE ADAPTERS

Part No. CP122



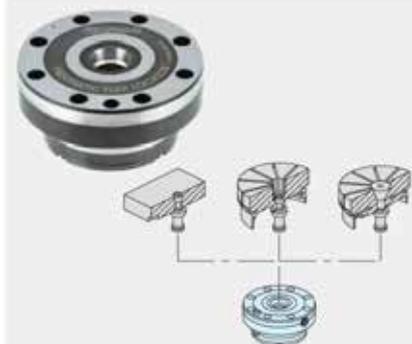
OD HOLDING CLAMPS (Wedge Style/Square)

Part No. CP124



OD HOLDING CLAMPS (Wedge Style/Round)

Part No. CP123



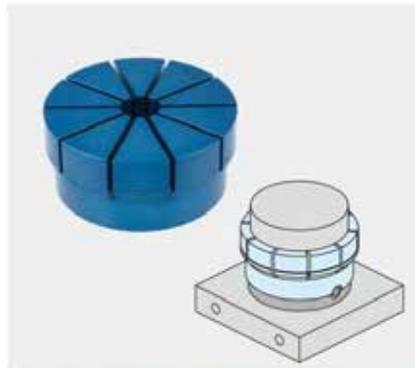
PNEUMATIC CLAMPING MODULES

Part No. AMWFH-WP



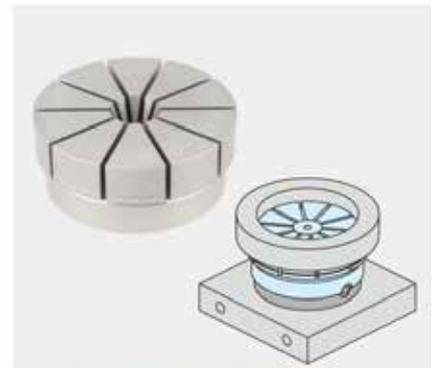
CLAMPING PINS

Part No. AMWFH-M



JAWS FOR EXTERNAL
FORM HOLDING

Part No. AMWFH-O



JAWS FOR INTERNAL
FORM HOLDING

Part No. AMWFH-I



TAPERED SCREWS FOR
INTERNAL FORM HOLDING

Part No. AMWFH-IB



PNEUMATIC OD HOLDING
CLAMPS

Part No. AMCH-W



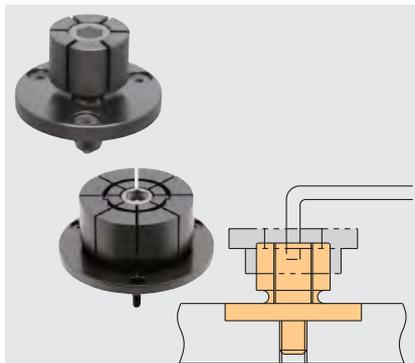
COMPACT ID HOLDING
CLAMPS

Part No. CP131



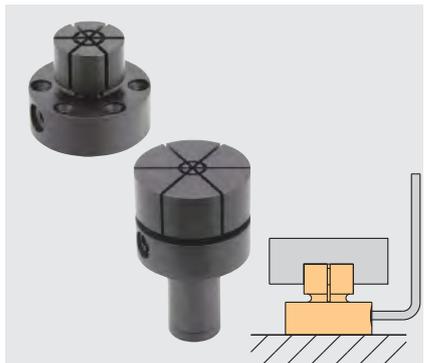
ID HOLDING CLAMPS

Part No. CP130



SIDE LOCK ID HOLDING
CLAMPS

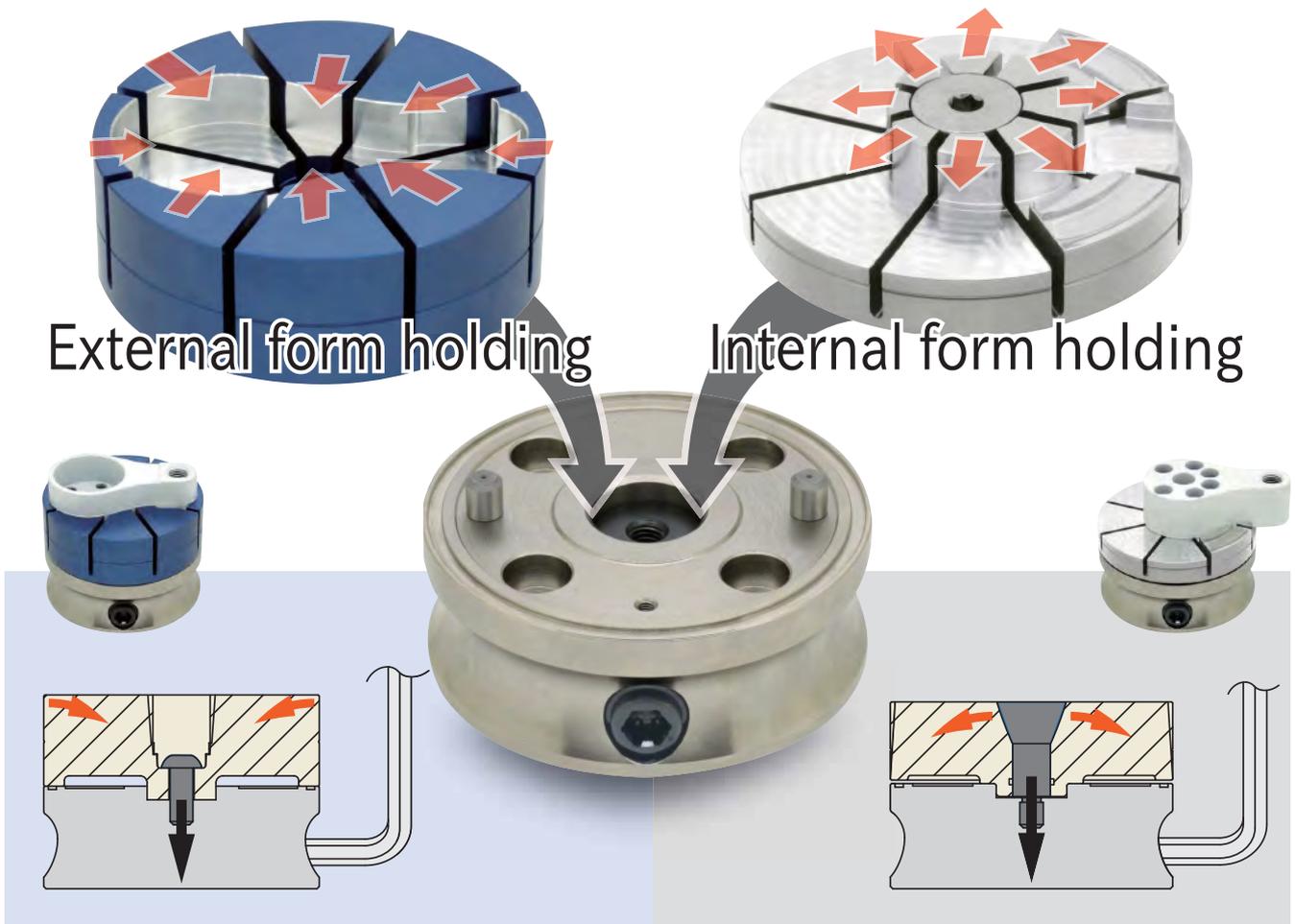
Part No. MBSID



ID HOLDING CLAMPS

Part No. MBID

FORM HOLDING CLAMPS

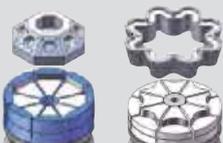


Clamp any shape! Hold on external / internal form!

FORM HOLDING CLAMPS

Form Holding Clamps with a machinable jaw are perfect for irregular-shaped workpieces. Simple workholding on external/internal form eliminates the need for custom fixtures.

Secure clamping for
odd shaped workpieces



Versatile workholding
by changing jaw



Quick clamping by
tightening cam cylinder



1 Prepare jaw

2 Machine jaw

3 Mount workpiece

4 Tighten cam cylinder

External

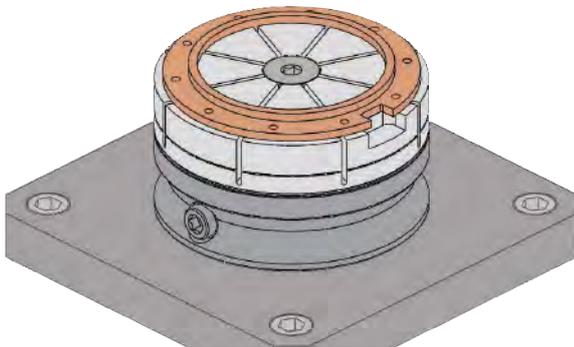


Internal



Application Example

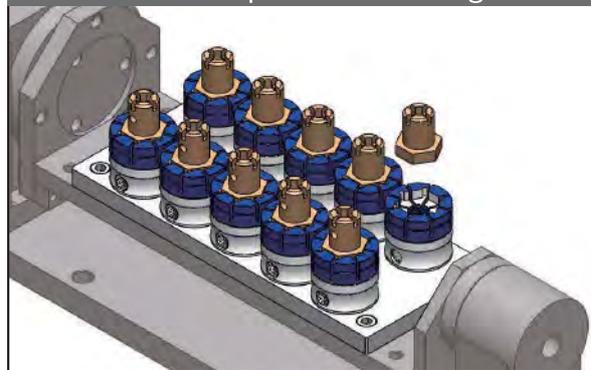
Clamping Low Profile Workpiece



8 jaw sections distribute clamping force to workpiece for deformation prevention.

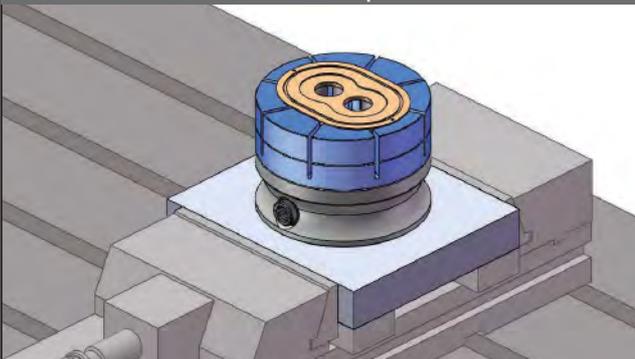
Note to control the tightening torque using adequate tools in reference to the data provided by the performance curve.

Multiple Workholding



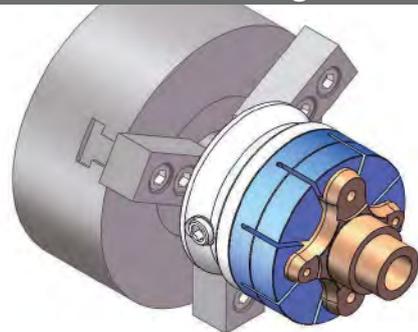
Small cylindrical body allows the multi-piece clamping in limited space.

Fixture for Temporal Job



Can be mounted on the existing vise by attaching the clamp on plate.

Fixture for Turning Lathe



Can clamp odd shape that a chuck does not clamp.

CP122 Mounting-on-lathe Adapter is available.

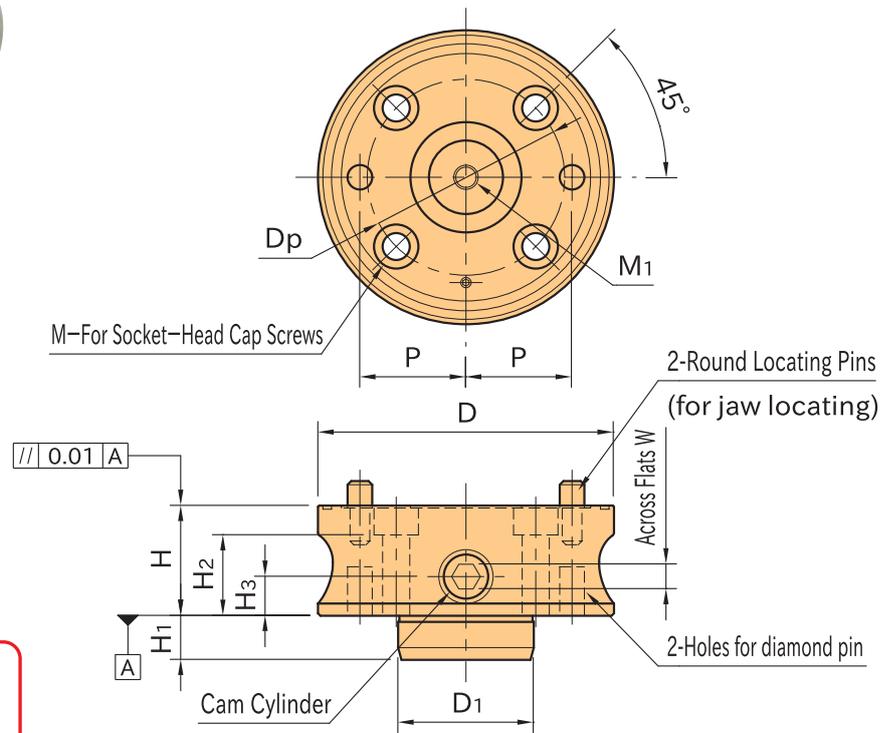
CP125

FORM HOLDING CLAMPS



Note: Jaw is not included.

Body	Pull Cylinder	Cam Cylinder
S45C steel Electroless nickel plated	SCM415 steel Carburized-hardened Black oxide finish	SCM435 steel Quenched & tempered Black oxide finish



★Key Point

Can hold on external/
internal form.

Part Number	D	H (±0.01)	D ₁ (g6)	H ₁	M	H ₂	D _p	P (±0.02)	W	H ₃	M ₁
CP125-06501	65	35	28	12	M 6	27	42	22	8	12	M 8×1.25
CP125-09001	90	40	42	14	M 8	30	60	30		14	M10×1.5
CP125-12001	120	45	55	18	M10	33	80	43	10	16	
CP125-16001	160	50	63	24	M12	36	110	60		18	

Part Number	Allowable Screw Torque(N·m)	Weight (kg)	Proper Jaws						
			For External Form Holding			For Internal Form Holding			
			Part Number	Clamping Force(kN)	Clamping Stroke	Part Number	Clamping Force(kN)	Clamping Stroke	
CP125-06501	15	0.8	CP126-06501	4.5	φ 0.3	10	CP127-06501	4.5	φ 0.3
CP125-09001	25	1.7	CP126-09001	7			CP127-09001	7	
CP125-12001	40	3.5	CP126-12001	10			CP127-12001	10	
CP125-16001		7.1	CP126-16001	12			CP127-16001		

Technical Information

- Part locating repeatability: ±0.03
- Jaw locating repeatability: ±0.02

Note

Do not tighten the cam cylinder without the workpiece set to prevent damage and deformation. Tightening with the torque beyond the allowable screw torque will lower the durability of the jaw.

Supplied With

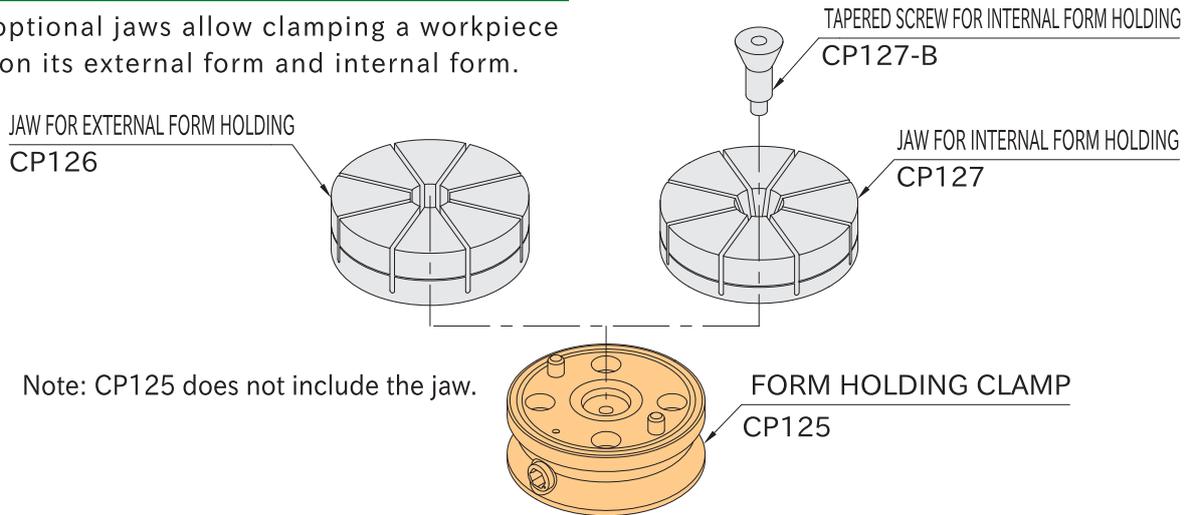
- CP125-06501 : 1 pc. of Diamond Locating Pin (BJ722-06001)
- CP125-09001 : 1 pc. of Diamond Locating Pin (BJ722-08001)
- CP125-12001 : 1 pc. of Diamond Locating Pin (BJ722-10001)
- CP125-16001 : 1 pc. of Diamond Locating Pin (BJ722-12001)

Related Product

- CP126 Jaws for External Form Holding
- CP127 Jaws for Internal Form Holding
- BJ722 Diamond Locating Pin
- CP122 Mounting-on-lathe Adapters

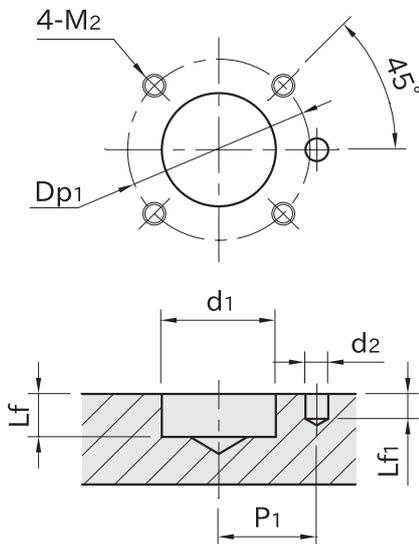
Feature

Two optional jaws allow clamping a workpiece both on its external form and internal form.



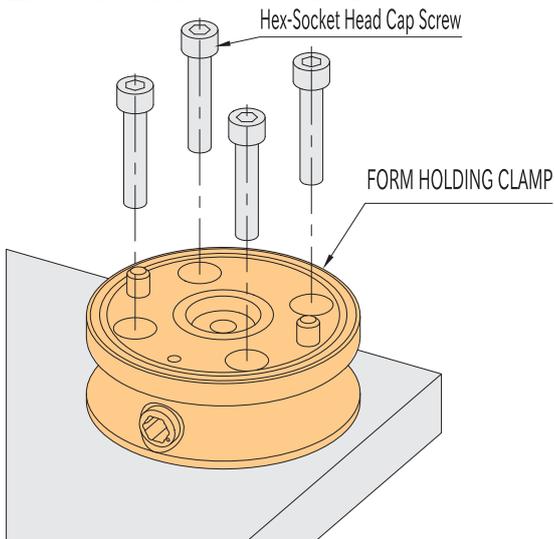
How To Use

Mounting Hole Dimension



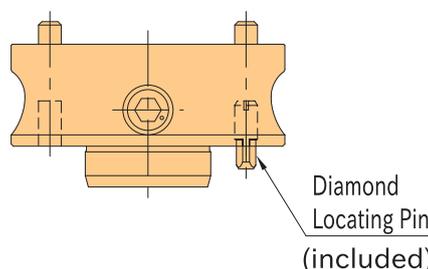
Part Number	d ₁ (H7)	L _f	d ₂ (G7)	L _{f1}	P ₁ (±0.02)	M ₂	Dp ₁
CP125-06501	28	13	6	6	22	M 6×1	42
CP125-09001	42	15	8	8	30	M 8×1.25	60
CP125-12001	55	19	10	11	43	M10×1.5	80
CP125-16001	63	25	12	13	60	M12×1.75	110

Installation Instruction



Insert an included diamond pin into the body for locating and secure the body to the fixture plate with 4 socket-head cap screws.

Note: Use either of the holes for diamond locating pin for your application.



Dimension of Diamond Locating Pin

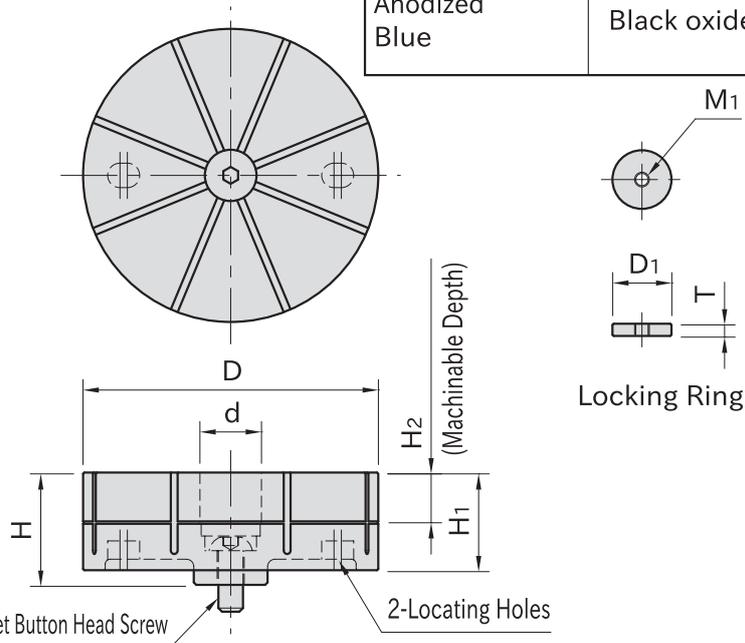
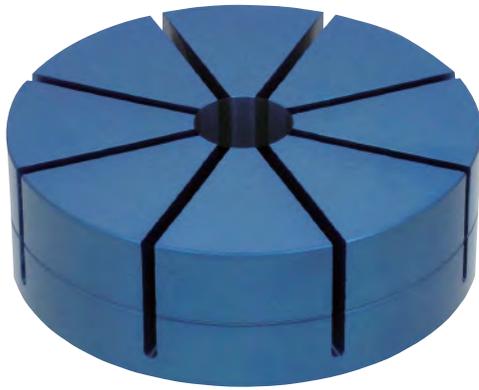
Part Number	Diameter
CP125-06501	φ 6h6
CP125-09001	φ 8h6
CP125-12001	φ 10h6
CP125-16001	φ 12h6

CP126

JAWS FOR EXTERNAL FORM HOLDING



Jaw	Locking Ring
A7075 aluminum Anodized Blue	S45C steel Black oxide finish

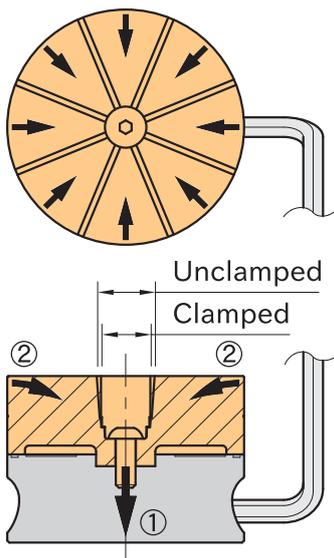


Part Number	D	d	H ₁	H ₂	M	H	M ₁	D ₁	T	Weight (kg)	Proper CP125 Clamps
CP126-06501	65	21	25	10	M 8X20L Across Flats 5	29	M5X0.8	20	4	0.2	CP125-06501
CP126-09001	90	25	35	15	M10X25L Across Flats 6	40	M6X1	24	5	0.5	CP125-09001
CP126-12001	120	25	40	20		46				1.1	CP125-12001
CP126-16001	160	29	45	25	M12X25L Across Flats 8	52	M8X1.25	28	6	2.2	CP125-16001

Supplied With

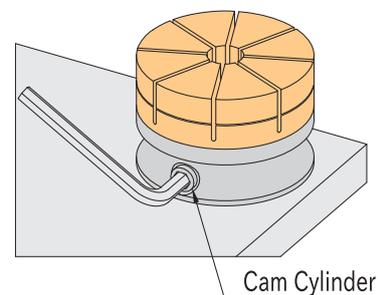
- 1 pc. of O-ring
- 1 pc. of Locking Ring
- 1 pc. of Hex Socket Button Head Screw

Feature



- The diaphragm clamping mechanism allows securely clamping a part with 8 jaw sections.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.

- ① When the cam cylinder is tightened, the central bottom part of the jaw is pulled down.
- ② At the same time the 8 jaw sections tilt toward the center to clamp the external form of workpiece.

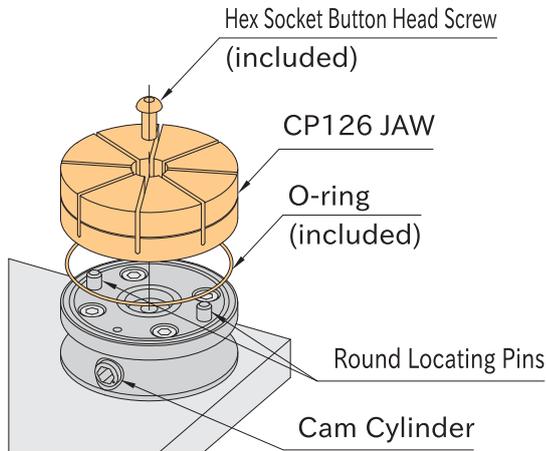


How To Use

1. Jaw Mounting

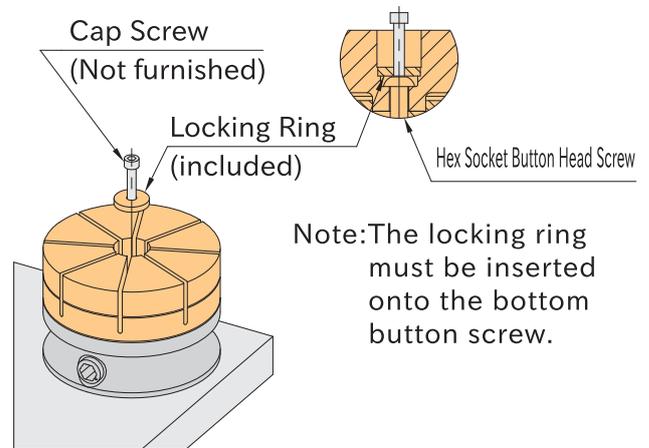
- Insert an O-ring to the groove on top surface of the Form Holding Clamp.
- Set a Jaw putting its locating holes onto the round locating pins and fix it with a hex socket button head screw.

Note: At jaw installation, ensure the cam cylinder is fully loosened by turning counterclockwise until it stops.

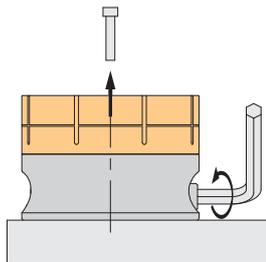


2. Jaw Machining

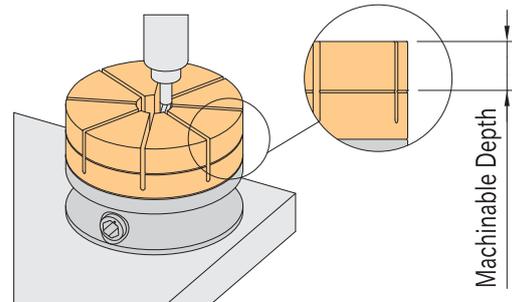
- 2-1. Set the locking ring in the jaw.
(Using a screw facilitates setting.)



- 2-2. • Tighten the cam cylinder to clamp the locking ring. (Recommended Tightening Torque: 15N·m)
• After clamping the screw should be removed from the locking ring.

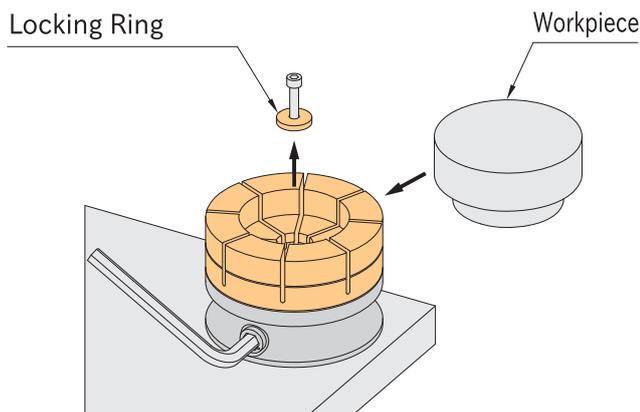


- 2-3. Machine the jaw to the contours of workpiece.
(Do not machine the jaws beyond the machinable depth.)

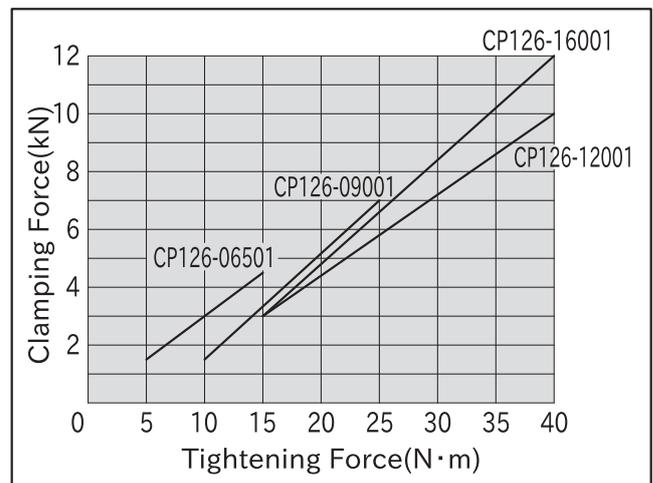


3. Workpiece Loading

- Loosen the cap screw to remove the locking ring.
- Load the workpiece and tighten the cam cylinder for clamping.



Performance Curve

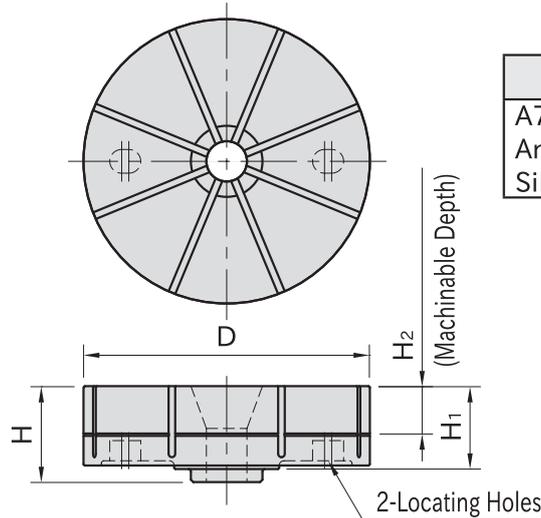


Note

Do not tighten the cam cylinder without the workpiece set to prevent damage and deformation. Tightening with the torque beyond the allowable screw torque will lower the durability of the jaw.

CP127

JAWS FOR INTERNAL FORM HOLDING



Jaw
A7075 aluminum Anodized Silver

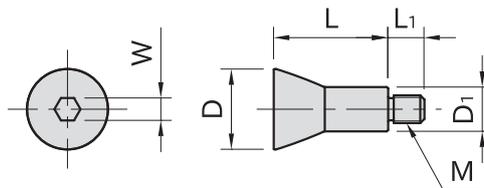
Part Number	D	H ₁	H ₂	H	Weight (kg)	Proper CP125 Clamps	Proper CP127-B Screws
CP127-06501	65	25	10	28.5	0.2	CP125-06501	CP127-06501B
CP127-09001	90	30	15	34.5	0.4	CP125-09001	CP127-09001B
CP127-12001	120	35	20	40.5	0.9	CP125-12001	CP127-12001B
CP127-16001	160	40	25	46.5	1.9	CP125-16001	CP127-16001B

Supplied With

1 pc. of O-ring

CP127-B

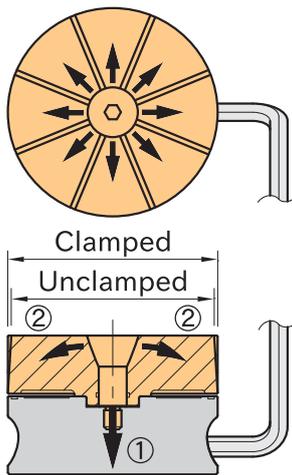
TAPERED SCREWS FOR INTERNAL FORM HOLDING



Body
SCM435 steel Quenched and tempered Electroless nickel plated

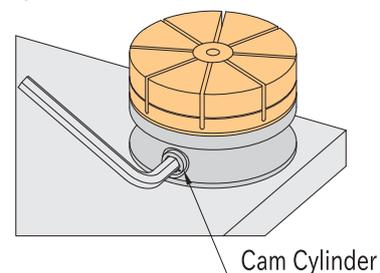
Part Number	D	L	M	L ₁	D ₁	W	Weight (g)	Proper CP127 Jaws
CP127-06501B	22.5	29	M 8x1.25	10	13.2	6	50	CP127-06501
CP127-09001B	27	35	M10x1.5	11	16	8	80	CP127-09001
CP127-12001B	29	41		13			100	CP127-12001
CP127-16001B	33	47	M12x1.75	14	18	10	150	CP127-16001

Feature



- The tapered screw expands the jaws towards eight directions to hold different irregularly-shaped workpieces securely.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.

- ① When the cam cylinder is tightened, the tapered screw is pulled down.
- ② At the same time the 8 jaw sections expand to clamp the internal form of workpiece.



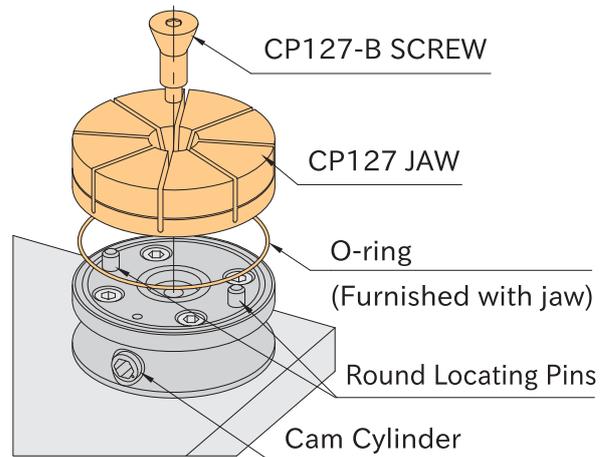
Cam Cylinder

How To Use

1. Jaw Mounting

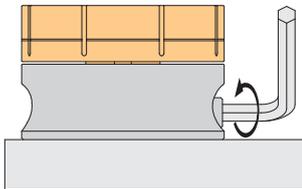
- Insert an O-ring to the groove on top surface of the Form Holding Clamp.
- Set a Jaw putting its locating holes onto the round locating pins and fix it with a tapered screw.

Note: At jaw installation, ensure the cam cylinder is fully loosened by turning counterclockwise until it stops.

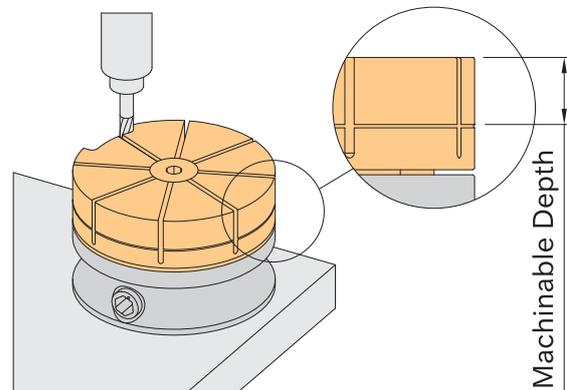


2. Jaw Machining

- 2-1. Loosen the cam cylinder fully and measure the dimension of the jaw for machining. Then tighten the cam cylinder until each jaw section expands 0.15mm.

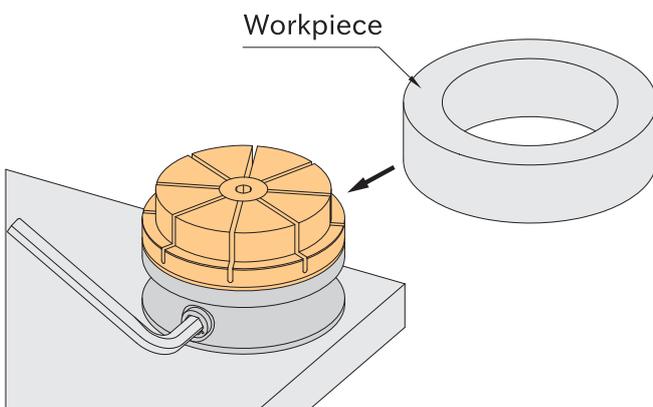


- 2-2. Machine the jaw to the contours of workpiece. (Do not machine the jaws beyond the machinable depth.)

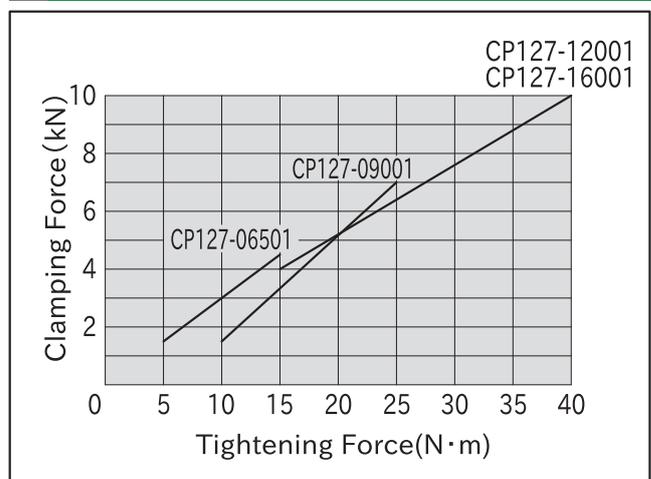


3. Workpiece Loading

After machining loosen the cam cylinder to set workpiece and tighten the cam cylinder again for clamping.



Performance Curve



Note

Do not tighten the cam cylinder without the workpiece set to prevent damage and deformation. Tightening with the torque beyond the allowable screw torque will lower the durability of the jaw.



(Jaw)



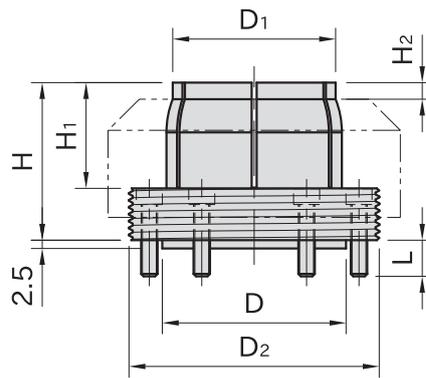
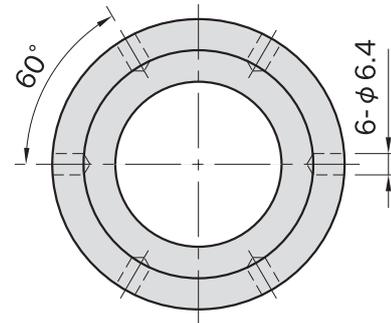
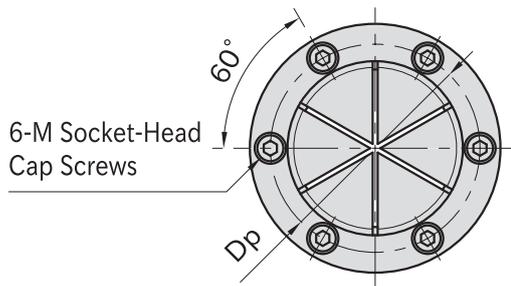
(Cap)



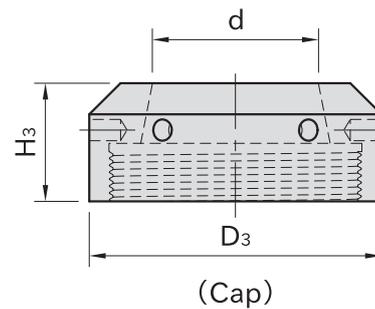
★Key Point

Compact design with high clamping force
Applicable to small workpieces of $\phi 2.5\text{mm}$
and long workpieces

Jaw	Cap
S17C Steel Fluoroplastic coated	A6061 aluminum Hard anodized



(Jaw)



(Cap)

Part Number	Adaptable Workpiece Dia. *)	D ₁	H ₁	H	H ₂	D ₀ (_{-0.05})	D ₂	M	L	D _p	D ₃	H ₃	d
MBOD-1	$\phi 2.5 - \phi 15.9$	19.1	22.9	35.6	4.6	23.9	38.1	M3×0.5-16L	6.8	29	50.8	25.4	20.1
MBOD-2	$\phi 5.1 - \phi 45.7$	49.5	32.4	48.3	5.1	55.9	76.2	M5×0.8-22L	11.1	63.8	88.9	36.2	50.5

*)Machine the jaw to the workpiece diameter with attention to the Recommended Jaw Compression.

Part Number	Clamping Force (kN)	Allowable Tightening Torque (N·m)	Recommended Jaw Compression	Allowable Jaw Compression	Weight (g)
MBOD-1	17.3	81.5	0.07	0.38	200
MBOD-2	17.8	135.5	0.1	0.64	960

Related Product

Jaws can be ordered separately.

·[MBOD-01] Jaws

Feature

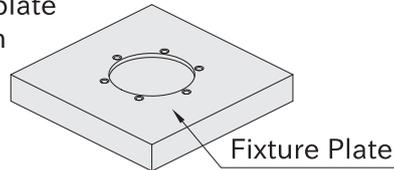
- Collet-shaped jaws generate high clamping force.
- The machinable jaw can clamp any shape of workpieces and hold long workpieces with a wide clamping area by machining completely through.

Note

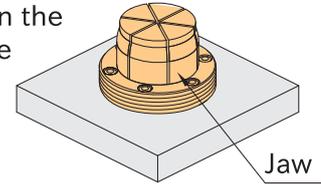
Do not tighten the cap without the workpiece to prevent damage and deformation.

How To Use

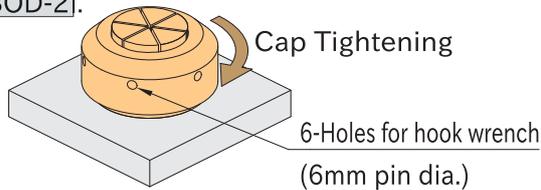
- ① Prepare a pocket on the plate according to D dimension of the jaw and drill 6 tapped holes.



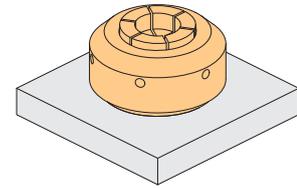
- ② Fix the jaw on the plate with the supplied screws.



- ③ Tighten the cap until the compression reaches the Recommended Jaw Compression. Each 15° of rotation compresses 0.025mm for jaw of MBOD-1 and 0.05mm for MBOD-2.



- ④ Machine the jaw to nominal size of the workpiece.



Technical Information

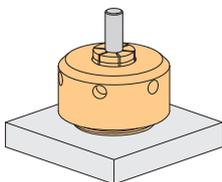
Indicators on the cap are guides to read the rotation degree for torque control without a torque wrench.

Tightening Torque (N·m)	MBOD-1		MBOD-2	
	Rotation Degree **)	Clamping Force (kN)	Rotation Degree **)	Clamping Force (kN)
13.5	43°	2.9	20°	1.8
27	66°	5.8	31°	3.6
40.5	88°	8.7	37°	5.3
54	111°	11.6	44°	7.1
68	133°	14.5	49°	8.9
81.5	165°	17.3	53°	10.7
95	-	-	56°	12.5
108.5	-	-	60°	14.2
122	-	-	65°	16
135.5	-	-	67°	17.8

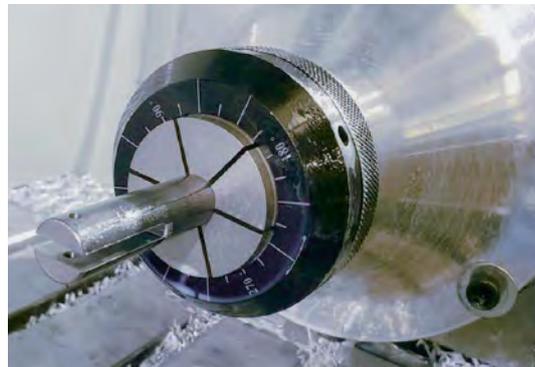
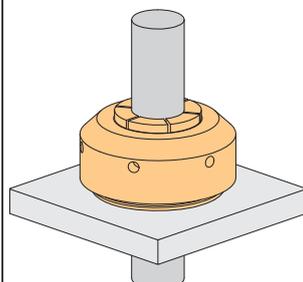
**) 0° is when the clamp first contacts the workpiece.

Application Example

■ Small round workpiece



■ Long workpiece



MBOD-01

JAWS



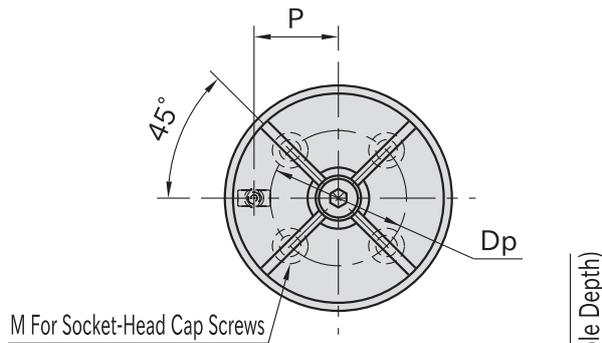
Reference

Replaceable jaws for **MBOD** Concentric OD Clamps

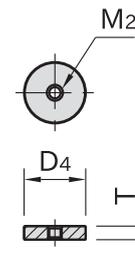
Part Number	Weight (g)	Proper MBOD Clamps
MBOD-1-01	130	MBOD-1
MBOD-2-01	740	MBOD-2

CP120

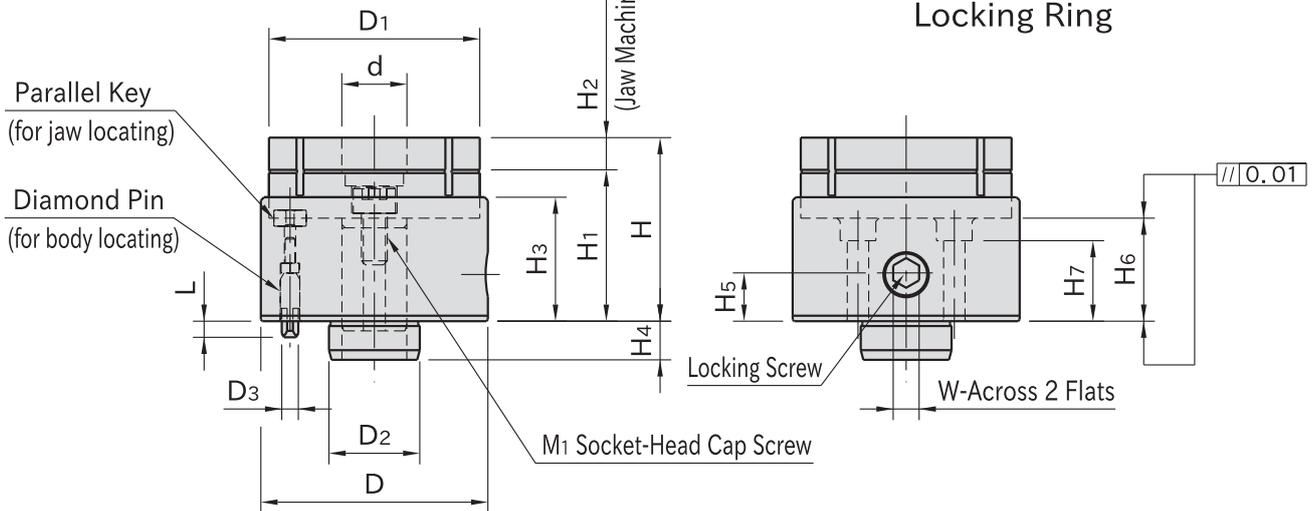
OD HOLDING CLAMPS



Body	Jaw
S45C steel Black oxide finish	A7075 alluminum Anodized Blue
Shaft / Locking Screw	Housing / Locking Ring
SCM435 steel Black oxide finish Quenched and tempered	S45C steel Black oxide finish



Locking Ring



Part Number	D ₁	d	H	H ₂	D	H ₁	H ₃	H ₆ (±0.01)	D ₂ (g6)	H ₄	M	H ₇	D _p	D ₃ (h6)	L	P (±0.02)
CP120-06501	65	19	57	10	70	47	39	32	28	12	M6	25	42	6	5	26
CP120-09001	90	23	72	15	95	57	46	38	42	14	M8	28	60	8	7	36

Part Number	W	H ₅	M ₁	M ₂	D ₄	T	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)
CP120-06501	8	15	M 8X1.25-15L	M4X0.7	18	4	4	60	1.1
CP120-09001	10	17	M10X1.5 -20L	M5X0.8	22	6	6	100	2.6

Technical Information

- Part locating repeatability: ±0.03
- Jaw locating repeatability: ±0.02

Supplied With

- 1 of locking ring
- 1 of diamond pin
- 1 of socket-head cap screw

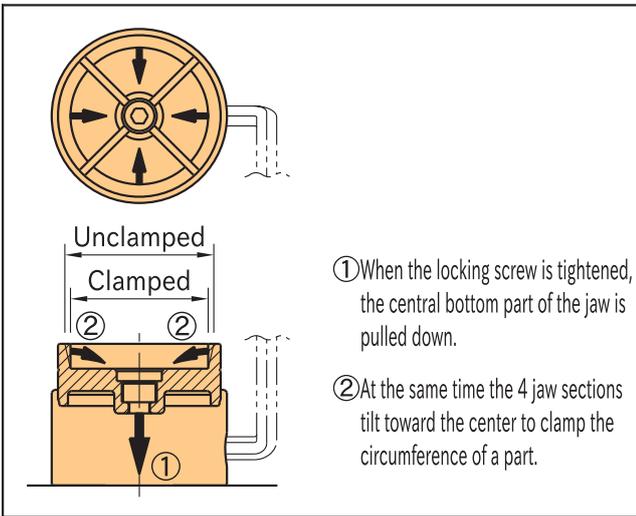
Note

- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- Do not machine the jaw beyond the machinable depth.

Related Product

- [CP121](#) Jaws
- [CP122](#) Mounting-on-lathe Adapters

Feature

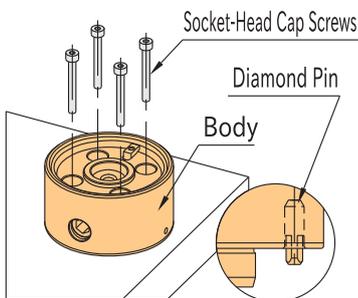


- ① When the locking screw is tightened, the central bottom part of the jaw is pulled down.
- ② At the same time the 4 jaw sections tilt toward the center to clamp the circumference of a part.

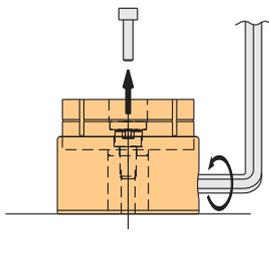
- The diaphragm clamping mechanism allows securely clamping a part with 4 jaw sections.
- Different irregularly-shaped parts can be clamped.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.

How To Use

1. Body Mounting

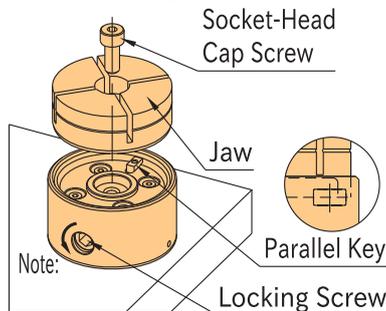


Insert an included diamond pin into the body for locating, and then secure the body to the fixture plate with 4 socket-head cap screws.

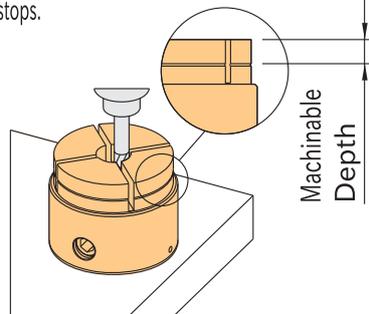


- (2) Tighten the locking screw to clamp the locking ring. (Tighten with half of the allowable screw torque or more.) After clamping the screw, remove the screw from the locking ring.

2. Jaw Setting

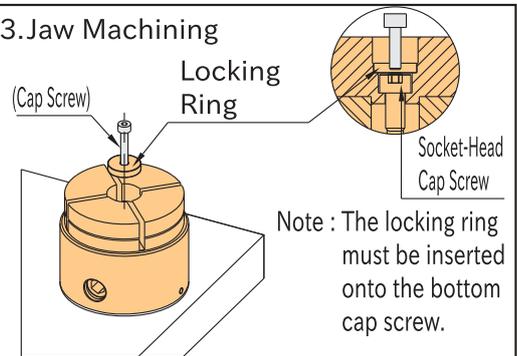


Engage the keyway on the bottom of the jaw with the parallel key on the top of the body, and then secure the jaw with an included cap screw.
 Note: At jaw installation, ensure the locking screw is fully loosened by turning it counterclockwise until it stops.



- (3) Machine the jaw to the contours of workpiece.

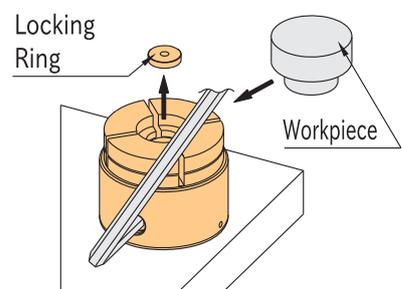
3. Jaw Machining



Note: The locking ring must be inserted onto the bottom cap screw.

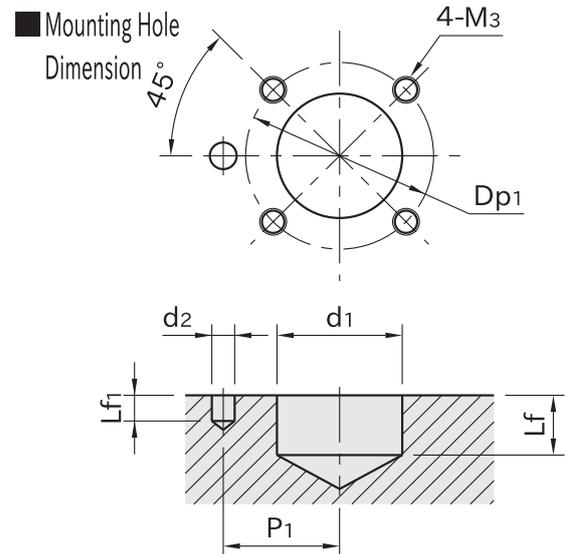
- (1) Set the locking ring in the jaw. (using a cap screw facilitates setting)

4. Workpiece Loading

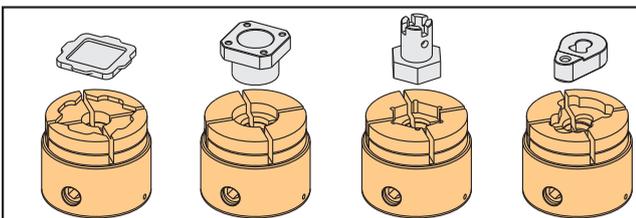


- Loosen the cap screw to remove the locking ring.
- Load the workpiece and tighten the clamping screw for clamping.

How To Install



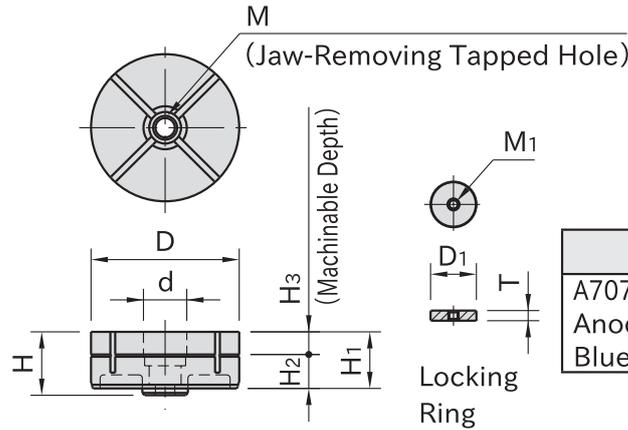
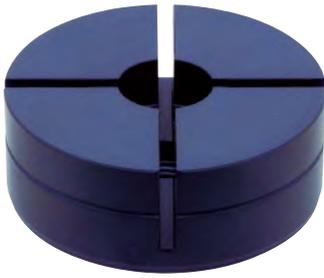
Part Number	d ₁ (H7)	L _f	d ₂ (G7)	L _{f1}	P ₁ (±0.02)	M ₃	Dp ₁
CP120-06501	28	13	6	6	26	M6×1	42
CP120-09001	42	15	8	8	36	M8×1.25	60



- Tightening the locking screw on the side of the body allows holding a part on its circumference.
- Machinable jaws allow clamping parts of various shapes.
- Ideal way to hold parts for machining on small-size machining centers, tapping centers, small-size 5-axis machines, CNC rotary tables, etc.

CP121

JAWS



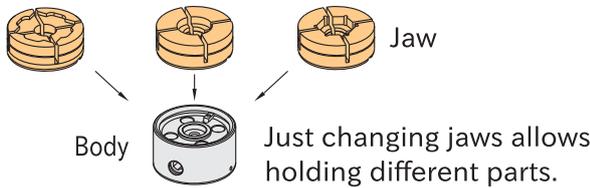
Jaw	Locking Ring
A7075 aluminum Anodized Blue	S45C steel Black oxide finish

Part Number	D	d	H ₁	H ₃	M	H	H ₂	M ₁	D ₁	T	Weight (g)	OD Holding Clamps	
CP121-06501	65	19	25	10	M10×1.5 (Prepared hole φ 8.5)	28	15	M4×0.7	18	4	170	CP120-06501	AMCH080-5W
CP121-09001	90	23	34	15	M12×1.75(Prepared hole φ 10.2)	39	19	M5×0.8	22	6	470	CP120-09001	AMCH100-5W

Note

Jaw has lifecycle.

Feature

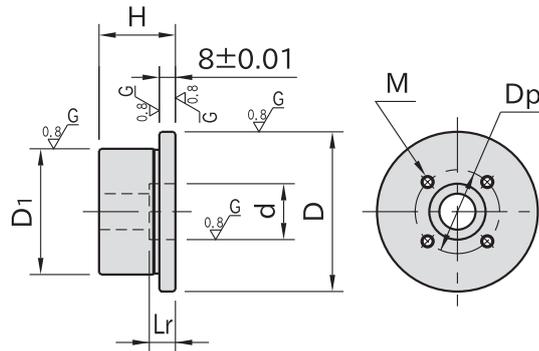


How to Remove Jaw

When it is hard to remove the jaw by hand, screw a bolt into the jaw-removing tapped hole to push it against the body, for easier removal.

CP122

MOUNTING-ON-LATHE ADAPTERS



Body
SCM415 steel Black oxide finish Carburized-hardened

Part Number	d (H7)	Lr	D ₁ (±0.01)	H	D	M	Dp	Weight (g)	Form Holding Clamps	OD Holding Clamps
CP122-06501	28	13	63	38	80	M6×1 Depth 12	42	910	CP125-06501	CP120-06501
CP122-09001	42	15	80	43	100	M8×1.25Depth 16	60	1600	CP125-09001	CP120-09001

How To Use

Note : A diamond pin included in an OD Holding Clamp is NOT REQUIRED in this combination use.

CP124

OD HOLDING CLAMPS (Wedge Style/Square)

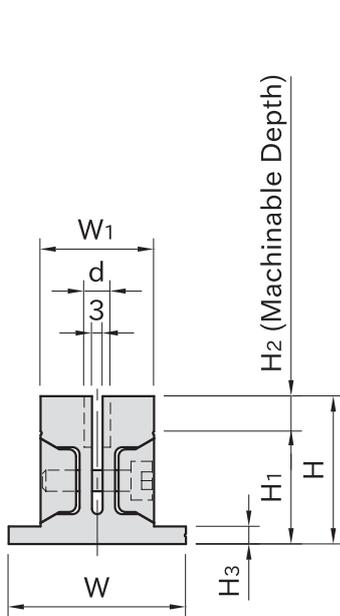


CP124-***01

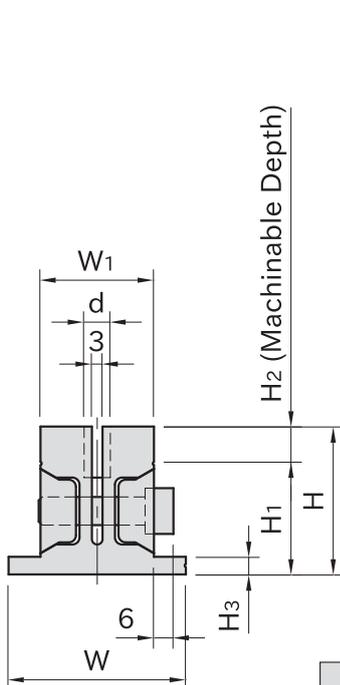
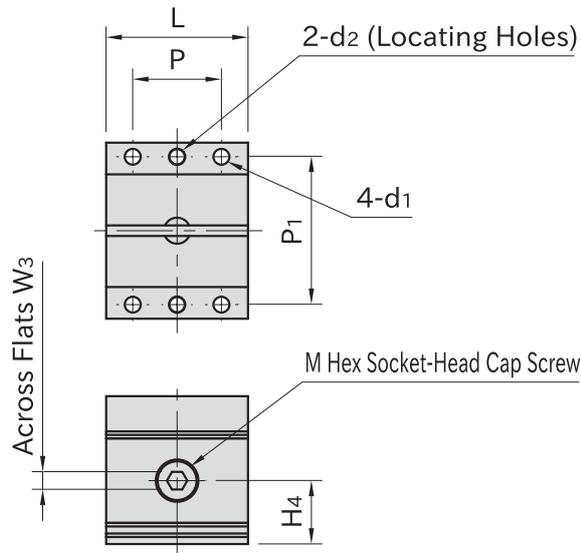


CP124-***02

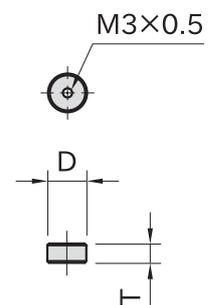
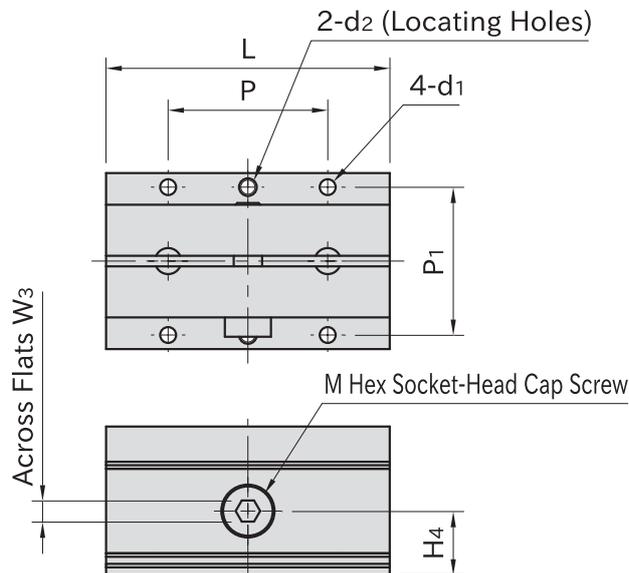
Body	Wedge
A6N01 aluminum Anodized Silver	SCM440 steel Black oxide finished Quenched & tempered



CP124-***01



CP124-***02



Locking Button

Part Number	W ₁	d	L	H	H ₂	W	H ₃	H ₁	d ₂ (H7)	d ₁	P	P ₁	M
CP124-03201	32	7.4	40	42	10	50	5	32	5	4.5	25	42	M 6×1 -25L
CP124-03202			80										M 8×1.25-30L
CP124-05001	50	11.4	50	63	15	72	7	48	6	5.5	30	62	M10×1.5 -40L
CP124-05002			100										M12×1.75-45L

Part Number	W ₃	H ₄	D	T	Clamping Force (kN)	Allowable Screw torque (N·m)	Weight (kg)
CP124-03201	5	18	7	3.5	2.5	7.5	0.22
CP124-03202	6					14	0.42
CP124-05001	8	27	11	5.5	5.5	26	0.62
CP124-05002	10					46	1.29

Technical Information

Locating Repeatability : ±0.08

Supplied With

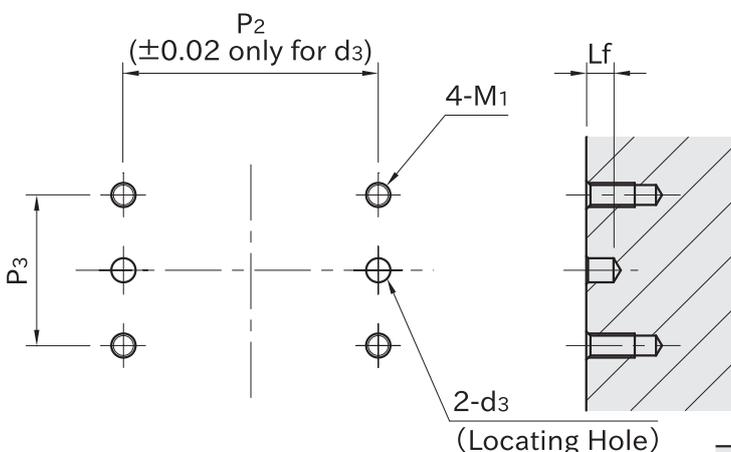
- 1 of locking button for CP124-***01
- 2 of locking button for CP124-***02
- 2 of parallel pin(m6 tolerance)
- φ5×10L for CP124-***01
- φ6×15L for CP124-***02

Feature

- When the clamp screw is tightened, both jaws tilt toward the center to clamp the circumference of the workpiece.
- The clamping stroke is 0.5mm.
- Cutting the machinable jaw to the contour of workpiece allows holding different shapes.
- Simple and compact design permits multiple-parts holding arrangement.

How To Use

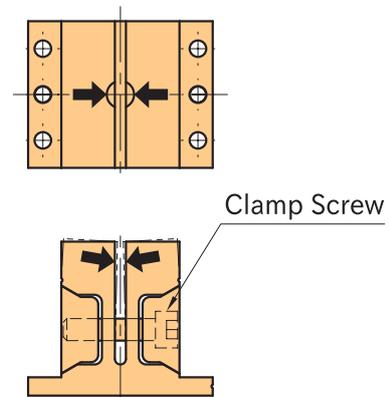
Mounting-Hole Dimension



Use the included parallel pin for locating.

Note

- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- Do not machine the jaws beyond the machinable depth



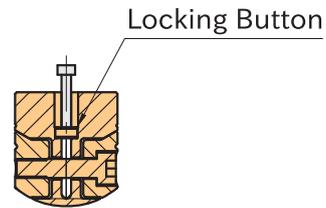
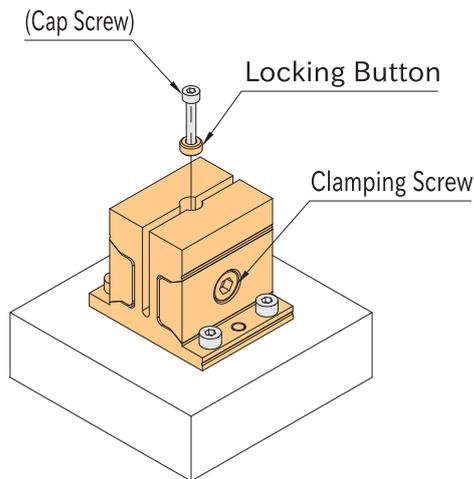
Part Number	d ₃ (H7)	Lf	M ₁	P ₂	P ₃
CP124-03201	5	5	M4×0.7	42	25
CP124-03202					45
CP124-05001	6	8	M5×0.8	62	30
CP124-05002					58

Continuing to next page

■ How to Machine Jaw

1. Setting the locking button

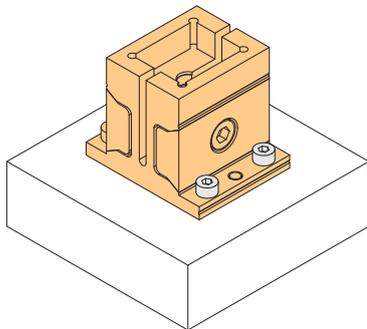
Insert the locking button into the jaw, and then tighten the clamp screw to fasten the locking button.
(Using a cap screw facilitates setting)



Note: The locking button must be inserted onto the bottom.

2. Machining the jaw

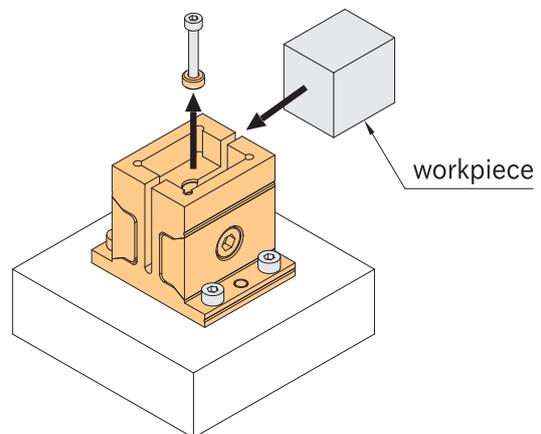
Cut the jaw to the contours of the workpiece.



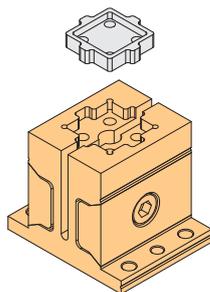
Note: Do not cut beyond the machinable depth.

3. Workpiece Loading

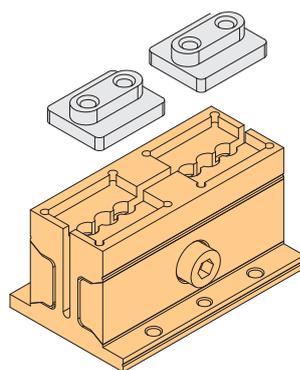
Loosen the clamp screw to remove the locking button. Load the workpiece and tighten the clamp screw for clamping.



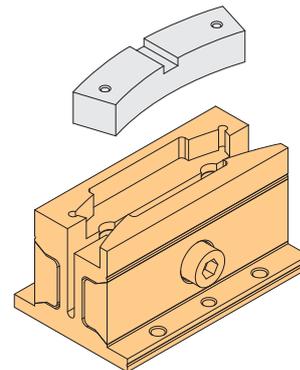
■ Application Example



Single-station mode
on the short-type clamp



Dual-station mode
on the long-type clamp



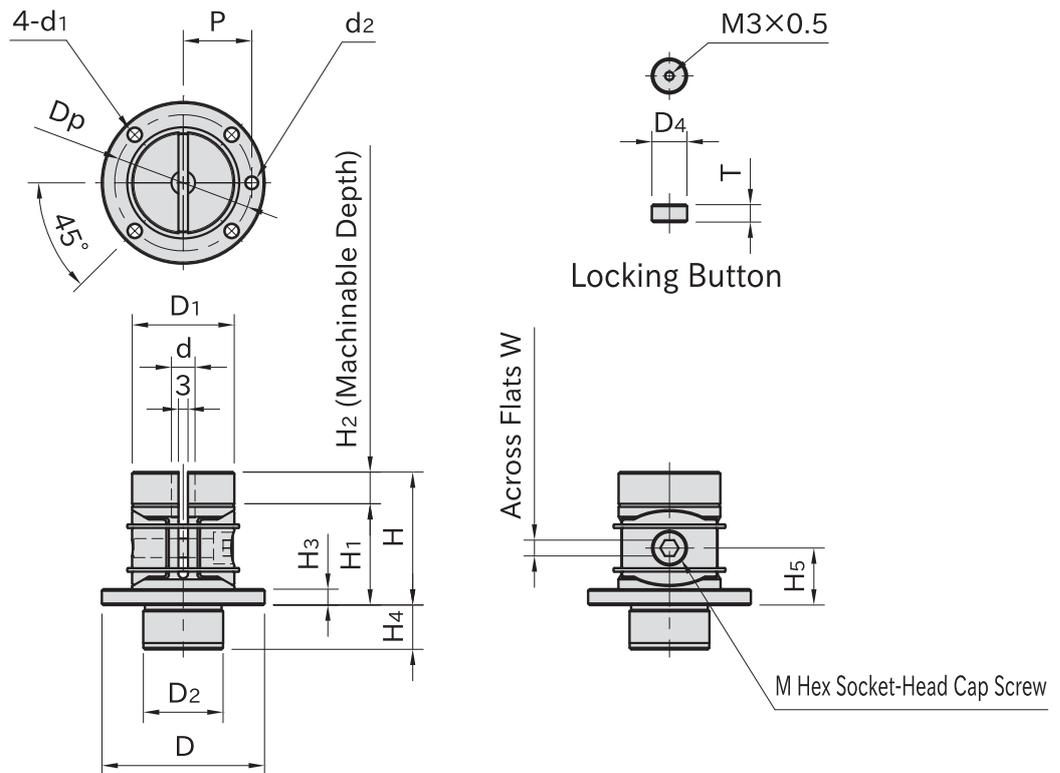
Single-station mode
on the long-type clamp

CP123

OD HOLDING CLAMPS (Wedge Style/Round)



Body	Wedge
S45C steel Black oxide finished	S45C steel Black oxide finished Quenched & tempered



Part Number	D ₁	d	H	H ₂	D	H ₁	H ₃	D ₂ (g7)	H ₄	d ₁	D _p	d ₂	P
CP123-03201	32	7.4	42	10	51	32	5	25	14	4.5	43	5	21.5
CP123-05001	50	11.4	63	15	75	48	7	40	19	5.5	65	6	32.5

Part Number	M	W	H ₅	D ₄	T	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)
CP123-03201	M 6X1 -25L	5	18	7	3.5	3	9	0.33
CP123-05001	M10X1.5-35L	8	27	11	5.5	7	42	1.2

Technical Information

Part Locating Repeatability ± 0.08

Supplied With

- 1 of locking button
- Spring pin
($\phi 5 \times 10L$ for CP123-03201)
($\phi 6 \times 14L$ for CP123-05001)

Note

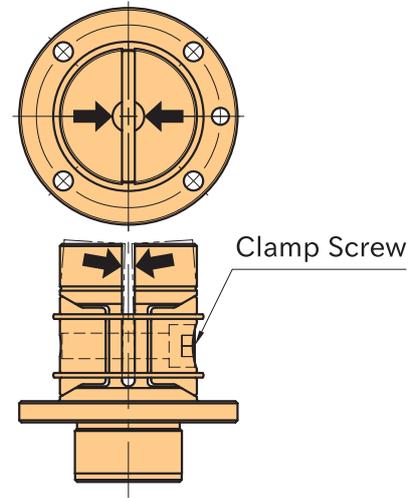
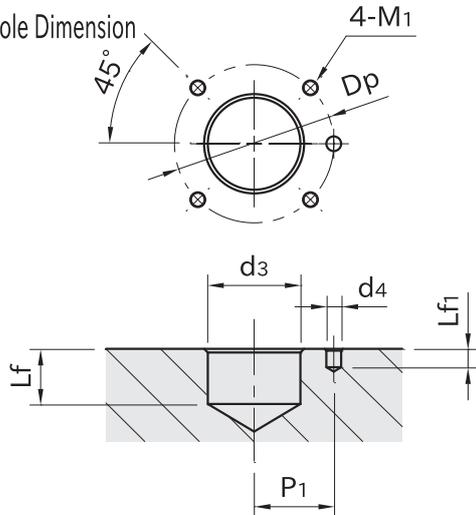
- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- Do not machine the jaws beyond the machinable depth.

Feature

- When the clamp screw is tightened, both jaws tilt toward the center to clamp the circumference of the workpiece.
- The clamping stroke is 0.5mm.
- Cutting the machinable jaw to the contour of workpiece allows holding different shapes.
- Simple and compact design permits multiple-parts holding arrangement.

How To Use

■ Mouting-Hole Dimension

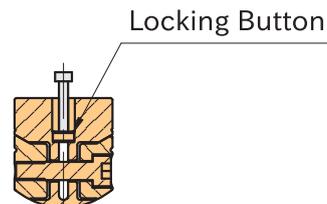
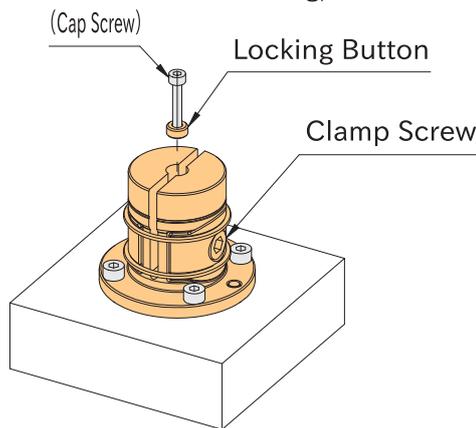


Part Number	d ₃ (H7)	Lf	d ₄ (^{+0.12} / ₀)	Lf ₁	P ₁ (±0.05)	M ₁	Dp
CP123-03201	25	15	5	5	21.5	M4×0.7	43
CP123-05001	40	20	6	7	32.5	M5×0.8	65

■ How to Machine Jaw

1. Setting the locking button

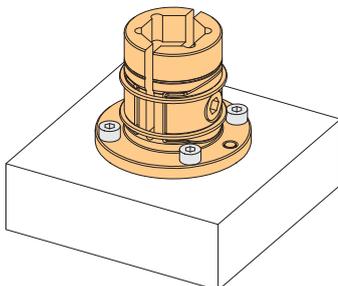
Insert the locking button into the jaw, and then tighten the clamp screw to fasten the locking button.
(Using a cap screw facilitates setting)



Note: The locking button must be inserted onto the bottom.

2. Machining the jaw

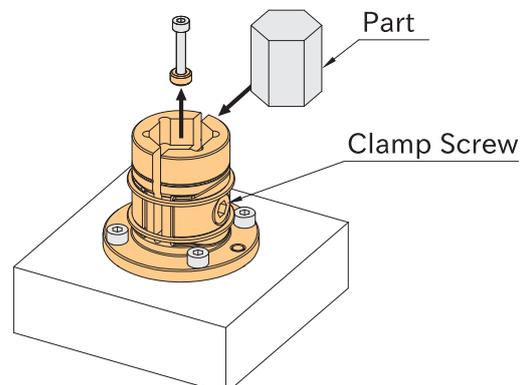
Cut the jaw to the contours of the part.



Note: Do not cut beyond the machinable depth.

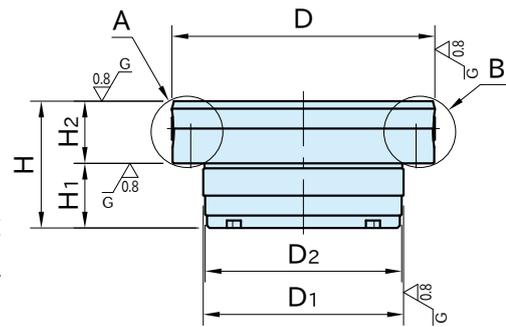
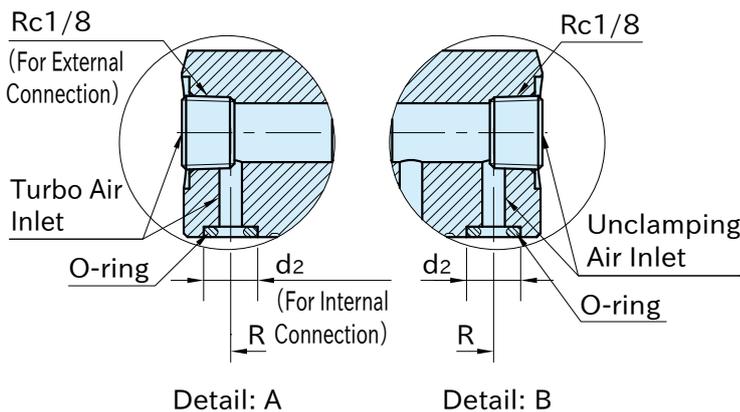
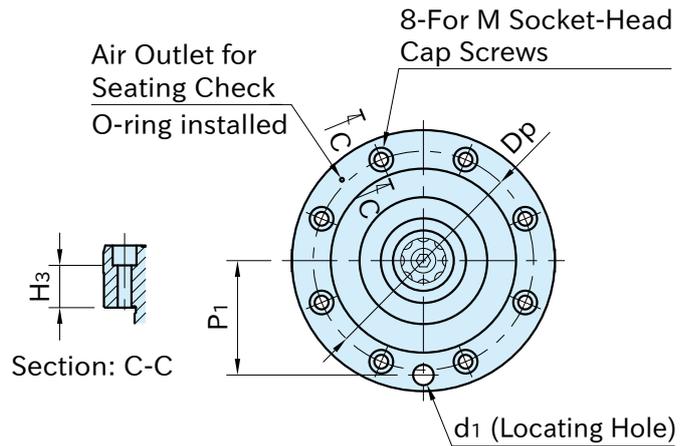
3. Loading the part

Loosen the clamp screw to remove the locking button. Load the part and tighten the clamp screw for clamping.



AMWFH-WP

PNEUMATIC CLAMPING MODULES



★ **Key Point** —
 Single-acting clamping module.
 Work as quick change & form holding system.

Body	Ball	Spring
S55C steel Black oxide finish HRC50-60	SUS440C stainless steel	Equivalent to SWOSC-V steel

Part Number	D (h7)	D ₁ (h6)	D ₂	H	H ₁	H ₂ (±0.005)	M	H ₃	D _p	P ₁ (±0.02)	R	d ₁ (G6)	d ₂	O-ring
AMWFH105-WP	105	80	79.5	51	26	25	M5	17	88	46	46	8	7.2	P4
AMWFH140-WP	140	110	109.5	65	33	32	M6	23	120	62	62	10	8.2	P5

Part Number	Clamping Force (kN)		Operating Air Pressure (MPa)	Weight (kg)
	w/o Turbo	w/ Turbo		
AMWFH105-WP	4	9-12	0.6-1.0	2.2
AMWFH140-WP	8.5	19-26		4.8

Note

- Do not plug the turbo port as it functions as an air vent even when not using turbo function. Mounting a filter prevents contamination.
- If seating confirmation by monitoring air flow is required, internal air supply must be provided. The detection switch and related components should be prepared by the customer.
- Use clean air by removing moisture and debris with an air dryer and air filter.
- Impurities in the compressed air can cause malfunction.

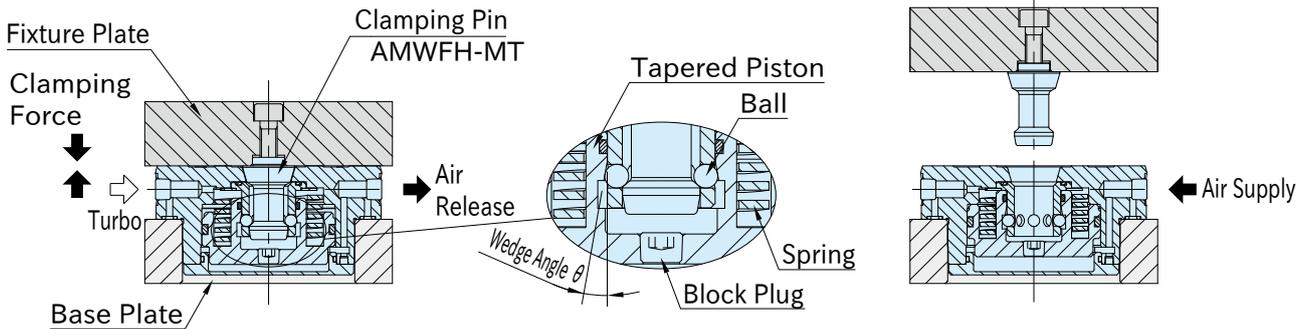
Supplied With

- **AMWFH105-WP**: 1 of diamond pin BJ722-08001
- **AMWFH140-WP**: 1 of diamond pin BJ722-10001
- 1 of locating pin
- 1 of orifice plug
- 8 of plastic mounting hole caps
- 1 of plastic locating hole cap

Feature

Clamping Mechanism

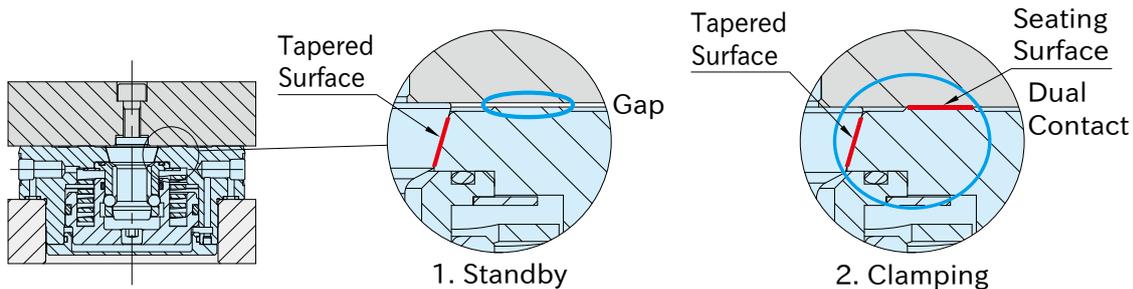
- This module clamps the plate with spring force, and can be boosted by supplying air to the turbo port. Supplying air to the unclamping port opens the module, and releasing air allows the spring to hold the clamping pin for clamping.
- Available with either external threaded connection or internal connection.



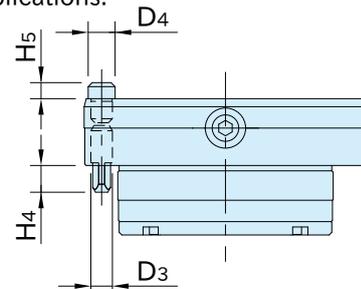
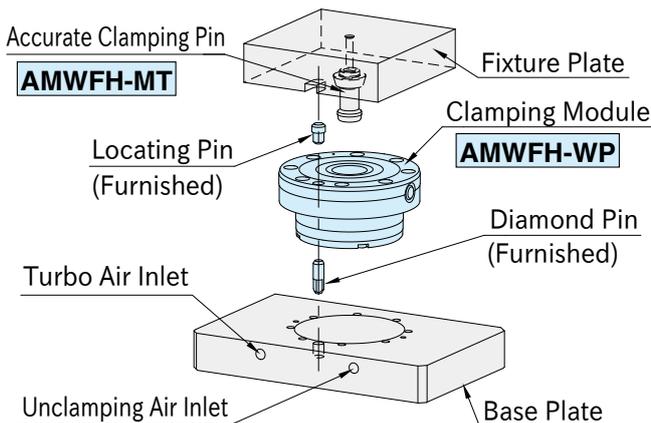
Releasing air allows the spring to push the tapered piston downward, which presses the balls and retracts the clamping pin. The clamping force can be boosted by supplying air to the turbo port.

Supplying air raises the tapered piston, releasing the pressure on the balls and unclamping the clamping pin.

- Precise dual contact provides excellent locating repeatability at 5µm.

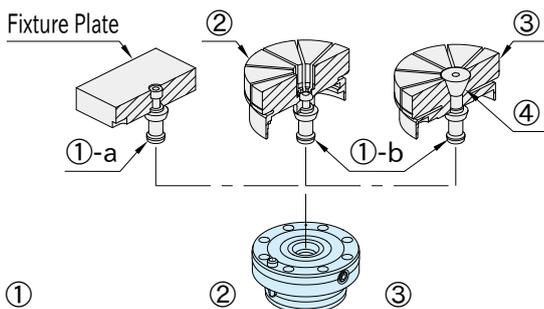


- Use the furnished diamond pin and the locating pin for single module applications.

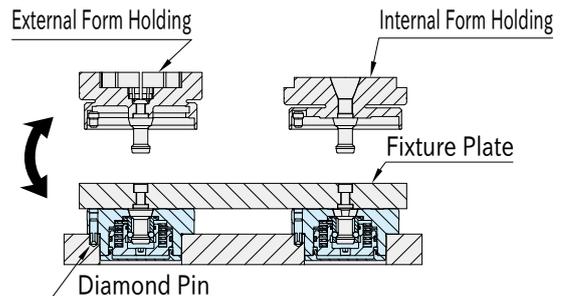


Part Number	D ₃ (h6)	H ₄	D ₄ (h6)	H ₅
AMWFH105-WP	8	10	10	6
AMWFH140-WP	10	12	12	7

- This module works as a form holding clamp for O.D. clamping or I.D. clamping by mounting optional jaws.



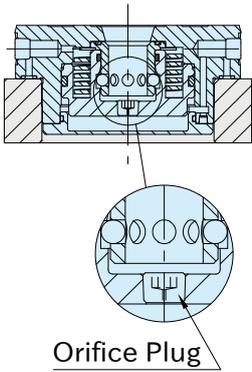
- ① Clamping Pin
 ①-a : AMWFH-MT
 ①-b : AMWFH-MS
- ② Jaw (External Holding)
 AMWFH-O
- ③ Jaw (Internal Holding)
 AMWFH-I
- ④ Tapered Screw (Internal Holding)
 AMWFH-IB



Diamond pins are not required for rotational positioning when using multiple modules. If the modules are also used for O.D. clamping or I.D. clamping, install diamond pins beforehand.

Continuing on Next Page

Blow-out Function



Orifice Plug

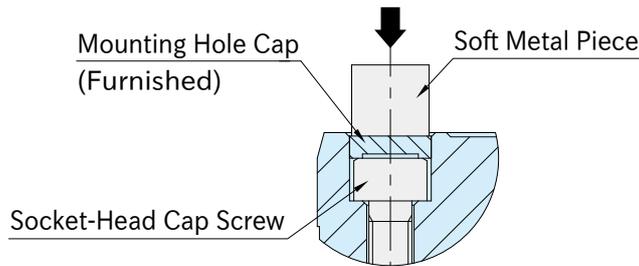
Replace the installed plug with the supplied orifice plug to enable air blow at the clamp pin insertion hole.

Mounting Hole Cap

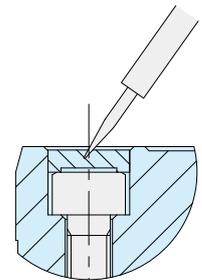
Keep the top surface of the module clean by inserting the plastic cap into the mounting hole.

Installation

Tap in with plastic hammer



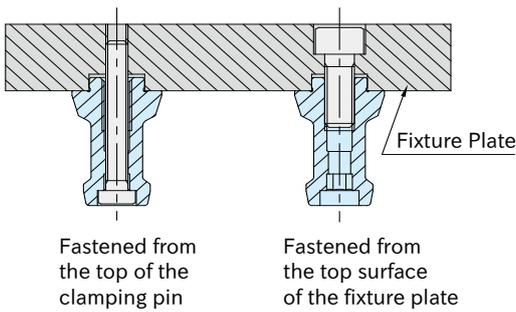
Removal



Place the mounting hole cap over the socket-head cap screw hole and tap it in using a plastic hammer. When tapping, always place a piece of soft metal between the hammer and the plastic cap.

Insert a pointed tool into the cap to remove it.

Technical Information



Fastened from the top of the clamping pin

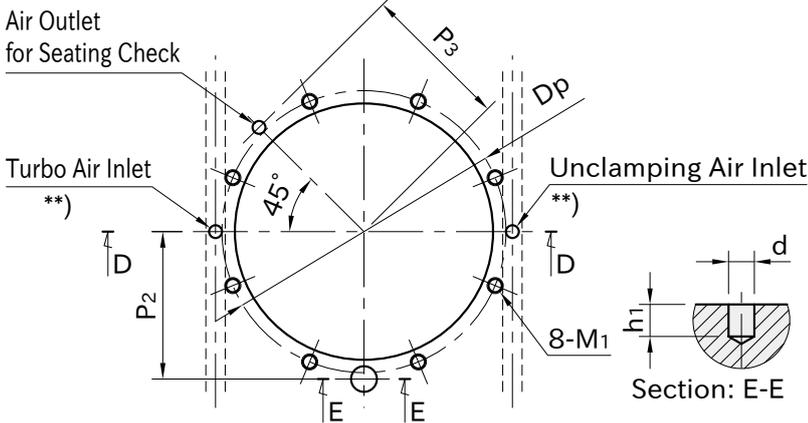
Fastened from the top surface of the fixture plate

Clamping Modules	Clamping Pin Size	Holding Force (kN)*	
		Fastened From the Clamping Pin Top (Class 8.8 Screw)	Fastened From the Fixture Plate Top (Class 12.9 Screw)
AMWFH105-WP	AMWFH105-M8	17	21
AMWFH140-WP	AMWFH140-M12	47	100
	AMWFH140-M16	74	140

*) Exceeding the holding force will result in product or screw failure. This value does not include a safety factor. Measured at 0.6 MPa.

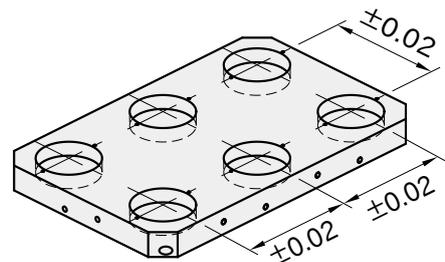
How To Use

Mounting Hole Dimensions

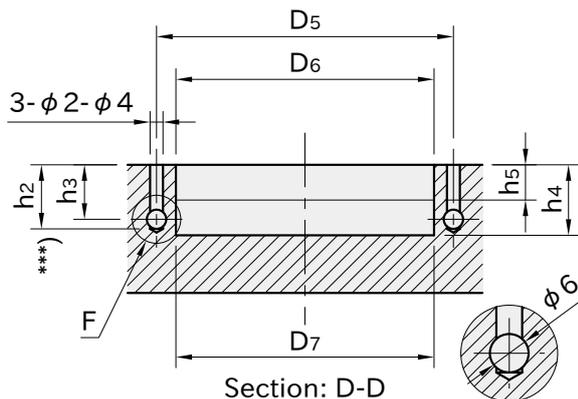


Section: E-E

Machining Accuracy



Spacing tolerance between mounting holes should be ± 0.02 .



Section: D-D

Detail: F

Part Number	P ₂ (±0.02)	P ₃	D _p	M ₁
AMWFH105-WP	46	46	88	M5×0.8 Depth 10 (Hole Depth 14)
AMWFH140-WP	62	62	120	M6×1.0 Depth 13 (Hole Depth 18)

Part Number	d (G7)	h ₁	D ₅	D ₆ (H7)	D ₇	h ₄	h ₅
AMWFH105-WP	8	10	92	80	79.8	27	14
AMWFH140-WP	10	12	124	110	109.8	34	19

**) Not required for external connection with Rc1/8 ports.

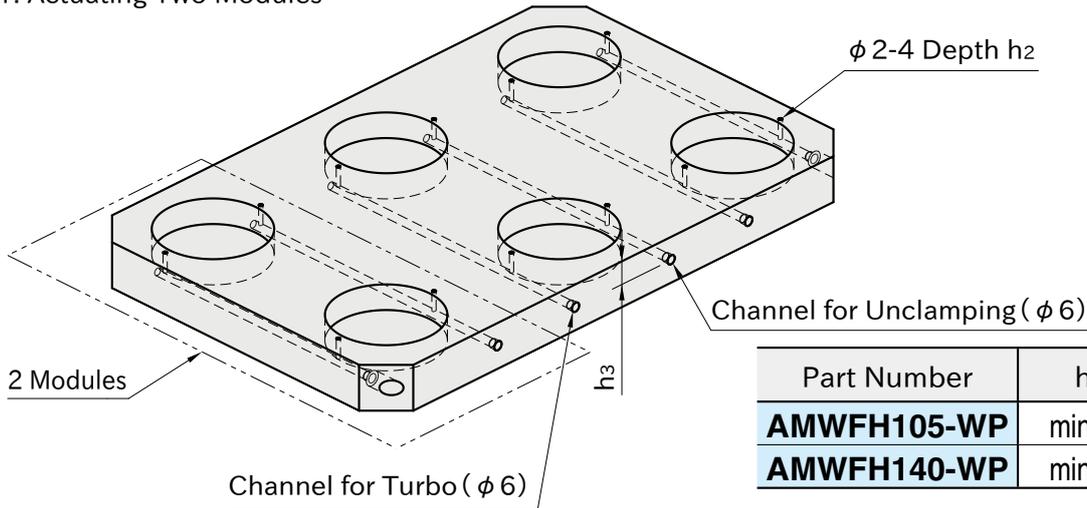
**) Refer to Internal Pneumatic Connection for the details of h₂ and h₃.

How To Use

Internal Pneumatic Connection

Prepare channel holes for turbo, unclamping, and (if needed) seating check in the base plate. Each channel should connect to a vertical hole with a diameter of $\phi 2-4$.

1. Actuating Two Modules

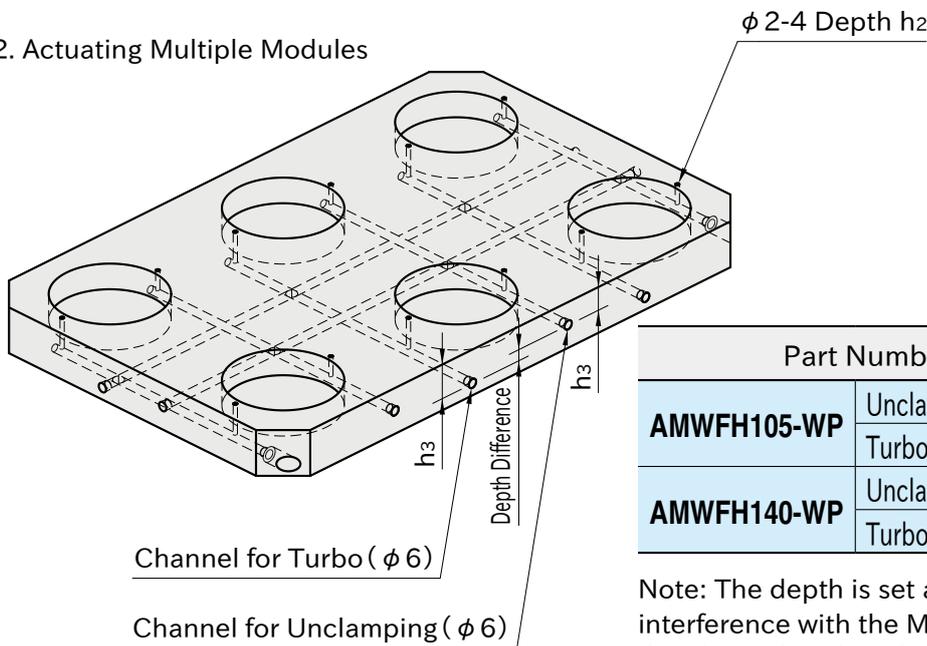


Part Number	h_2	h_3
AMWFH105-WP	min.21	min.18
AMWFH140-WP	min.23	min.20

Note: The depth is set as the minimum to avoid interference with the M_1 tapped holes. Make sure the channel is placed at this depth or deeper.

The depth of vertical holes ($\phi 2-4$) should be h_2 .

2. Actuating Multiple Modules



Part Number		h_2	h_3
AMWFH105-WP	Unclamping Channel	min.21	min.18
	Turbo Channel	min.31	min.28
AMWFH140-WP	Unclamping Channel	min.23	min.20
	Turbo Channel	min.33	min.30

Note: The depth is set as the minimum to avoid interference with the M_1 tapped holes. Make sure the channel is placed at this depth or deeper. The hole depths for the unclamping and turbo sides can be reversed if needed.

- The depth of vertical holes ($\phi 2-4$) should be h_2 .
- Make sure to set different depths for the turbo and unclamping channels to avoid interference.
- Use one air supply port each for turbo and unclamping, and plug the unused ports. Screw plugs should be prepared by the customer.

Related Products

- [AMWFH-M](#) CLAMPING PINS
- [BJ722](#) DIAMOND LOCATING PINS
- [AMWFH-O](#) JAWS FOR EXTERNAL FORM HOLDING
- [AMWFH-I](#) JAWS FOR INTERNAL FORM HOLDING

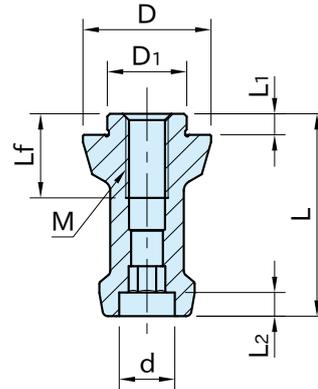
AMWFH-M

CLAMPING PINS

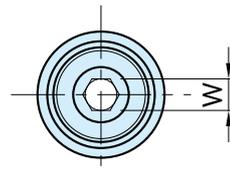
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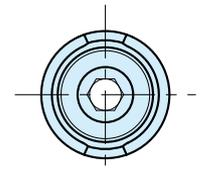
(Locating, Round) (Locating, Diamond) (Clamping)



Body
SCM415 Steel Carburized- hardened Black oxide finished



AMWFH-MT
(Round)



AMWFH-MS
(Clamping)

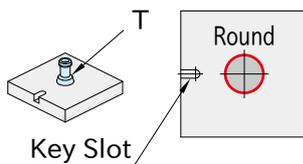
AMWFH-MD
(Diamond)

Part Number	Type	M	D ₁	L ₁	D	L	d	L ₂	W	L _f	Weight (g)	Pneumatic Clamping Modules
AMWFH105-M 8T	Round	M 8×1.25	15g ₆	4	24.2	38.5	10.5	4.5	6	16	55	AMWFH105-WP
AMWFH105-M 8D	Diamond											
AMWFH105-M 8S	Clamping		15- _{0.1}									
AMWFH140-M12T	Round	M12×1.75	25g ₆	5	34.2	51.5	16.5	6.5	10	24	170	AMWFH140-WP
AMWFH140-M12D	Diamond											
AMWFH140-M12S	Clamping		25- _{0.1}									
AMWFH140-M16T	Round	M16×2	25g ₆	5	34.2	51.5	18.5	7.5	12	30	140	AMWFH140-WP
AMWFH140-M16D	Diamond											
AMWFH140-M16S	Clamping		25- _{0.1}									

How To Use

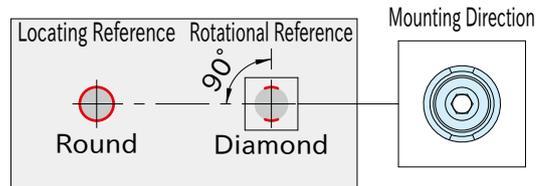
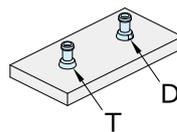
■ Use of Single Pin

Type T Round Pin: 1 pc



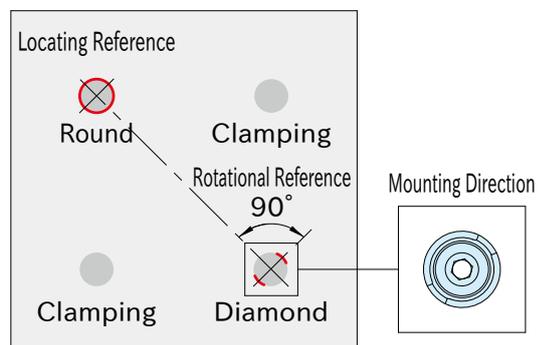
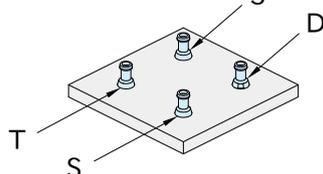
■ Use of 2 Pins

Type T Round Pin: 1 pc
Type D Diamond Pin: 1 pc



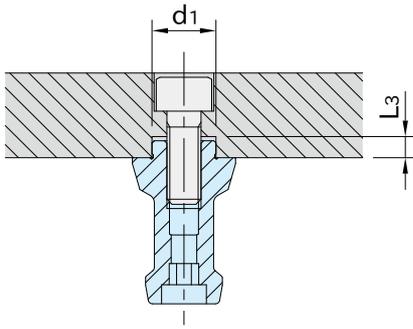
■ Use of 4 or More Pins

Type T Round Pin: 1 pc
Type D Diamond Pin: 1 pc
Type S Non-Locating Clamping Pin: 2 pcs or more



How To Use

■ Mounting Hole Dimension

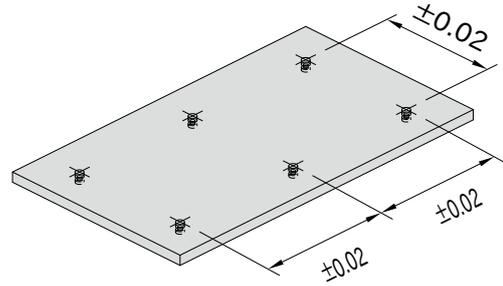


Size	d ₁ (H7)	L ₃
AMWFH105-M8	15	4.5
AMWFH140-M12	25	5.5
AMWFH140-M16		

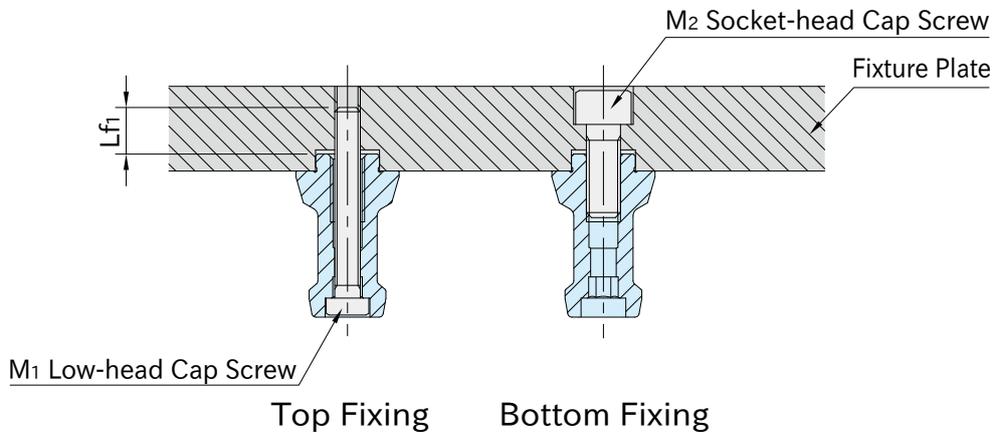
Note: The tolerance of d₁ for Type S non-locating Clamping Pin is $^{+0.1}_0$.

■ Spacing Tolerance

Should be ± 0.02 for Type T and D Locating Pins. The required tolerance for Type S non-locating Clamping Pin is ± 0.1 .



■ How To Install

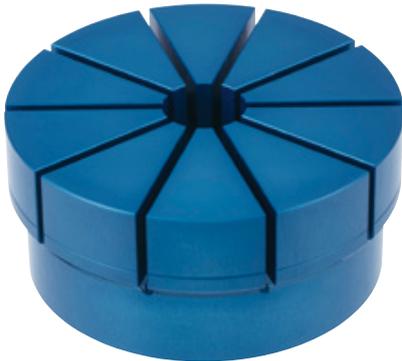


Size	M ₁	Lf ₁	M ₂
AMWFH105-M8	M 6X1 -45L	11	M 8
AMWFH140-M12	M10X1.5 -60L	15	M12
AMWFH140-M16	M12X1.75-60L	16	M16

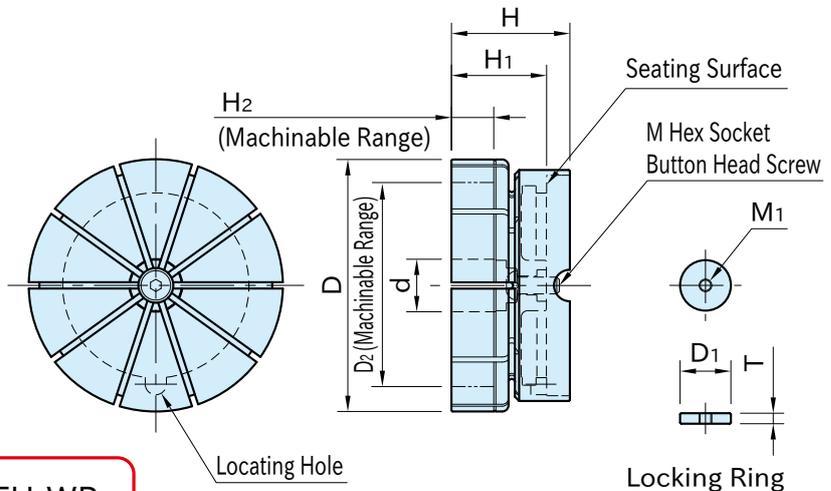
The screws should be prepared by the customer.
The length of screw differs by the thickness of fixture plate.

AMWFH-O

JAWS FOR EXTERNAL FORM HOLDING



Jaw	Locking Ring
A7075 aluminum Anodized Blue	S45C steel Black oxide finish



★ **Key Point**
Machinable jaws for AMWFH-WP

Part Number	D	d	H	H ₁	H ₂	D ₂ *)		M	M ₁	D ₁	T	Weight (kg)	Pneumatic Clamping Modules	Clamping Pins
						min.	max.							
AMWFH105-1200	120	25	56	45	20	26	110	M 8×20L Across Flats 5	M6×1	24	5	1	AMWFH105-WP	AMWFH105-M 8S
AMWFH140-1600	160	29	64	53	25	30	150	M12×25L Across Flats 8	M8×1.25	28	6	2.2	AMWFH140-WP	AMWFH140-M12S

*) Values are for reference only. The remaining jaw thickness should be determined considering the machining load.

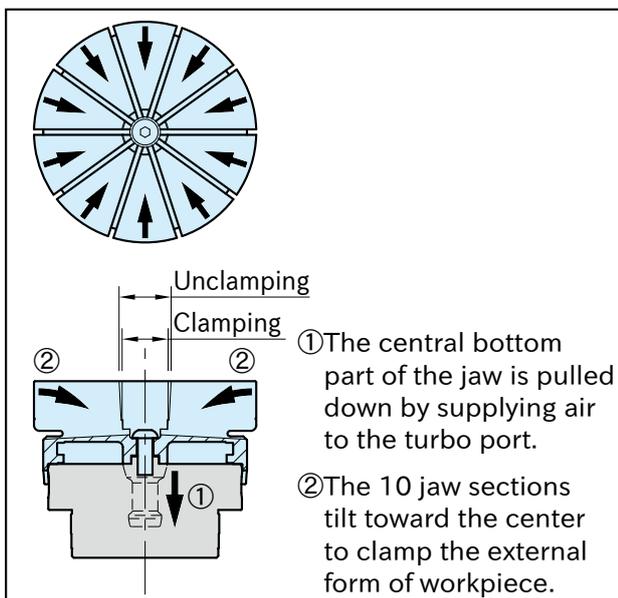
Supplied With

- 1 of Locking Ring
- 1 of Hex Socket Button Head Screw

Technical Information

- Workpiece locating repeatability: ±0.03
- Jaw locating repeatability: ±0.02

Feature



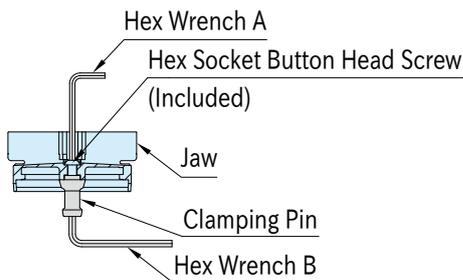
- The diaphragm clamping mechanism allows to clamp the workpiece securely with 10 jaw sections.
- Various shapes can be held.
- The allowable compression diameter is 0.6 mm, making it ideal for lost wax, die cast, extruded, drawn, and premachined workpieces.

How To Use

Jaw Mounting

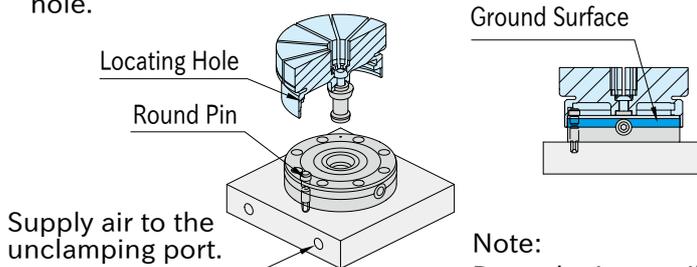
1. Fix Clamping Pin

- Fix clamping pin with the furnished button head screw.



2. Mount on Clamping Module

- Supply air to the unclamping port and mount the jaw.
- Mount the jaw by inserting the round pin into the locating hole.



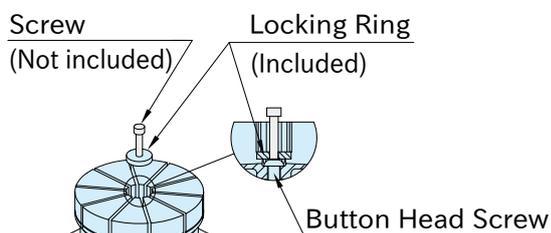
Note:
Press the jaw until the ground surface of the module is covered.

Jaw	Clamping Pin	Hex Wrench A	Hex Wrench B
AMWFH105-1200	AMWFH105-M 8S	Size 5	Size 6
AMWFH140-1600	AMWFH140-M12S	Size 8	Size 10

For mounting instruction of Clamping Module, see [AMWFH-WP](#) datasheet.

Jaw Machining

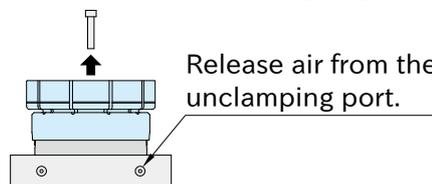
1. Set the locking ring in the jaw. (Using a screw facilitates setting.)



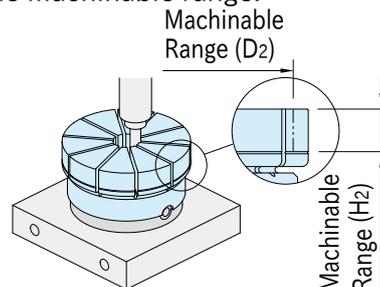
Note:
Be sure to securely set the locking ring at the bottom of the hole in the jaw.

Supply air to the unclamping port.

2. Release air from the unclamping port and clamp the locking ring by spring force of the module. Remove the screw from the locking ring after clamping.

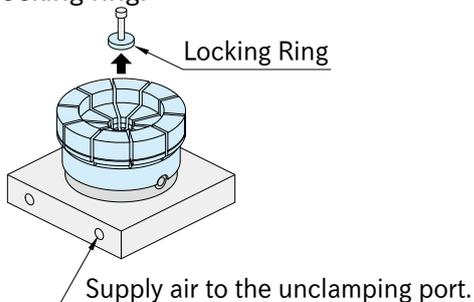


3. Machine the jaw to the contours of the workpiece, within the machinable range.

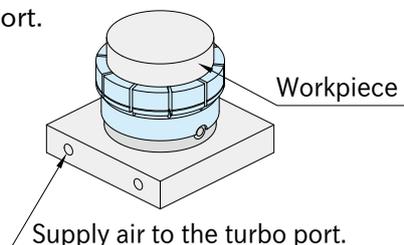


Workpiece Loading

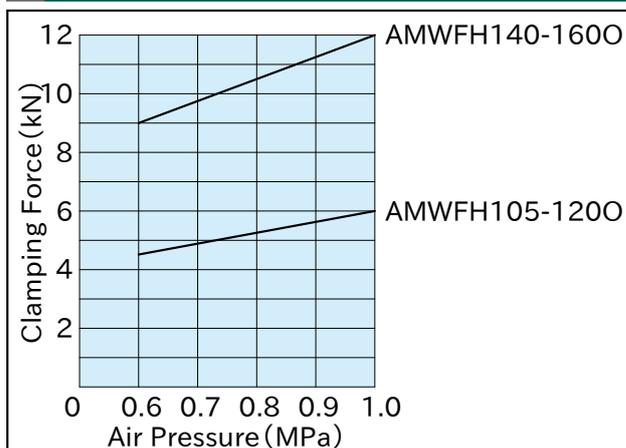
1. Supply air to the unclamping port and remove the locking ring.



2. Load the workpiece and supply air to the turbo port.



Performance Curve

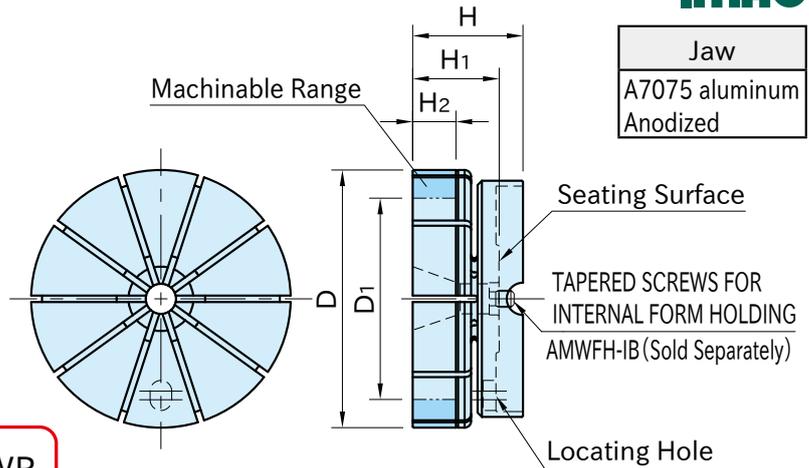


Note

Do not actuate clamping without a workpiece to avoid damage and deformation.

AMWFH-I

JAWS FOR INTERNAL FORM HOLDING



Jaw
A7075 aluminum Anodized

★Key Point

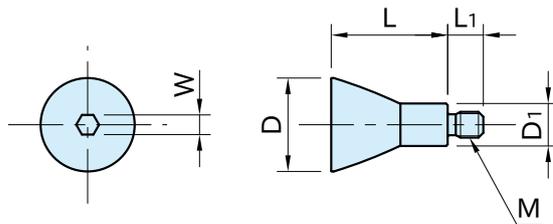
Machinable jaws for AMWFH-WP

Part Number	D	H	H ₁	H ₂	D ₁ *)		Weight (kg)	Pneumatic Clamping Modules	Tapered Screws	Clamping Pins
					min.	max.				
AMWFH105-120I	120	51	40	20	36	119	1	AMWFH105-WP	AMWFH105-120IB	AMWFH105-M 8S
AMWFH140-160I	160	59	48	25	40	159	2.1	AMWFH140-WP	AMWFH140-160IB	AMWFH140-M12S

*) Values are for reference only. The remaining jaw thickness should be determined considering the machining load.

AMWFH-IB

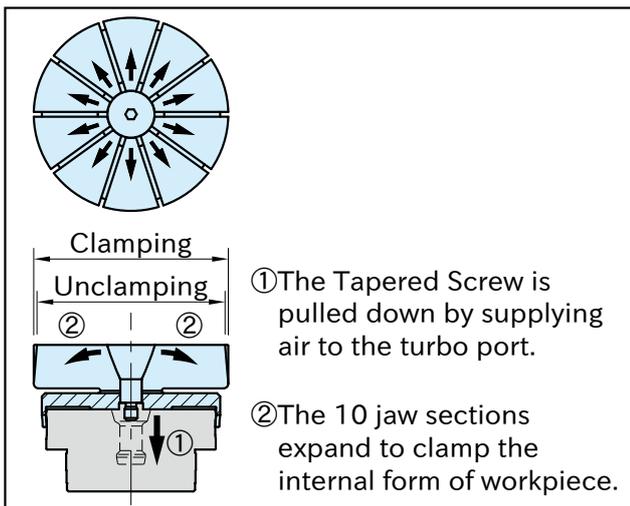
TAPERED SCREWS FOR INTERNAL FORM HOLDING



Part Number	D	L	M	L ₁	D ₁	W	Weight (g)	Jaws
AMWFH105-120IB	29	36	M 8×1.25	11	13.2	6	85	AMWFH105-120I
AMWFH140-160IB	33	43	M12×1.75	15	18	10	140	AMWFH140-160I

Body
SCM435 steel Quenched and tempered Electroless nickel plated

Feature



- The jaw sections expanded by the tapered surface hold the workpiece securely.
- Various shapes can be held.
- The allowable expansion diameter is 0.6 mm, making it ideal for lost wax, die cast, extruded, drawn, and premachined workpieces.

Technical Information

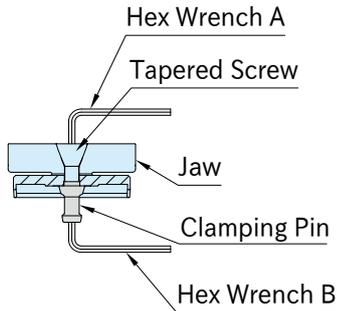
- Workpiece locating repeatability: ±0.03
- Jaw locating repeatability: ±0.02

How To Use

Jaw Mounting

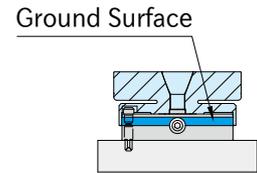
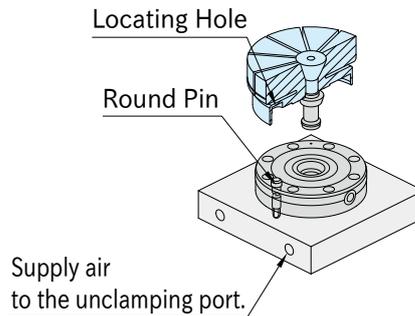
1. Fix Clamping Pin

- Fix clamping pin with the Tapered Screw.



2. Mount on Clamping Module

- Supply air to the unclamping port and mount the jaw.
- Mount the jaw by inserting the round pin into the locating hole.



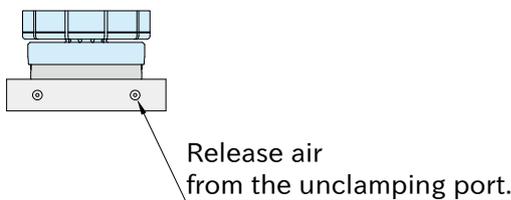
Note:
Press the jaw until the ground surface of the module is covered.

Jaw	Clamping Pin	Tapered Screws	Hex Wrench A	Hex Wrench B
AMWFH105-120I	AMWFH105-M 8S	AMWFH105-120IB	Size 6	Size 6
AMWFH140-160I	AMWFH140-M12S	AMWFH140-160IB	Size 10	Size 10

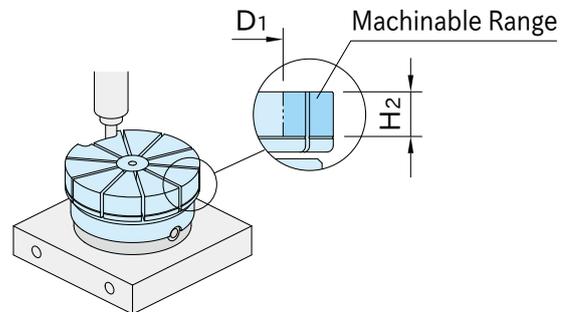
For mounting instruction of Clamping Module, see [AMWFH-WP](#) datasheet.

Jaw Machining

- #### 1. Release air from the unclamping port. The Tapered Screw is pulled down and the jaw expands.

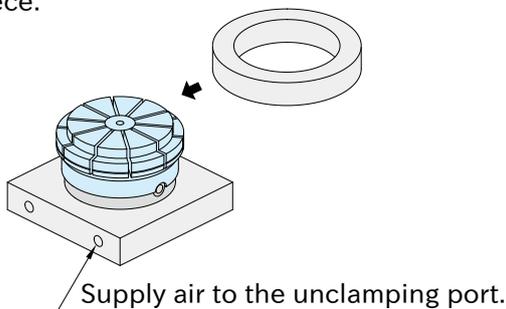


- #### 2. Machine the jaw to the contours of the workpiece, within the machinable range.

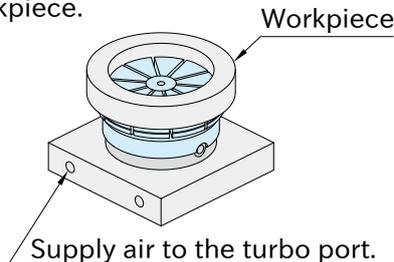


Workpiece Loading

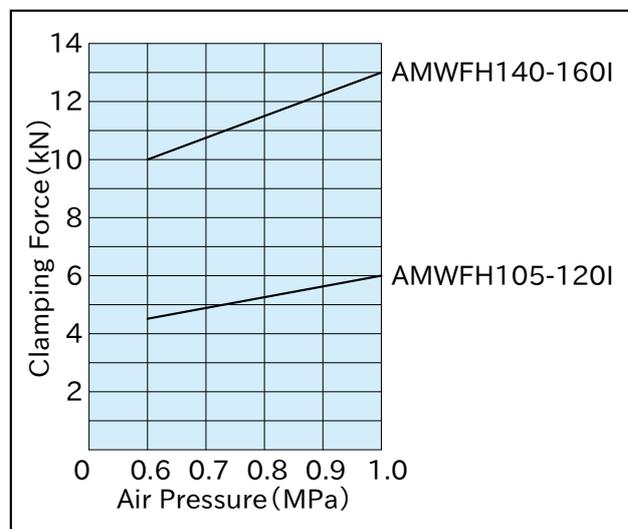
- #### 1. Supply air to the unclamping port and load the workpiece.



- #### 2. Supply air to the turbo port and clamp the workpiece.



Performance Curve

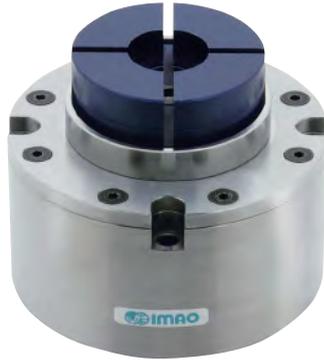


Note

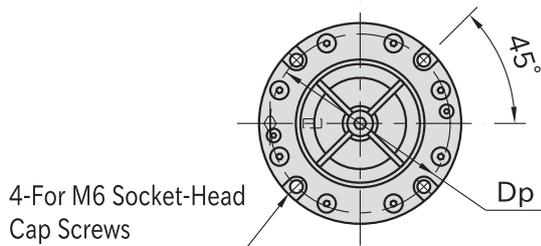
Do not actuate clamping without a workpiece to avoid damage and deformation.

AMCH-W

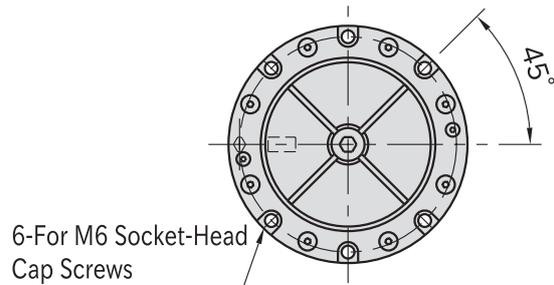
PNEUMATIC OD HOLDING CLAMPS



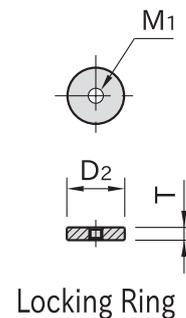
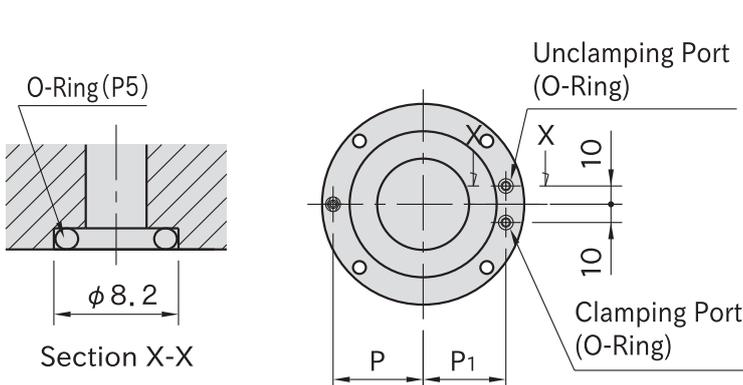
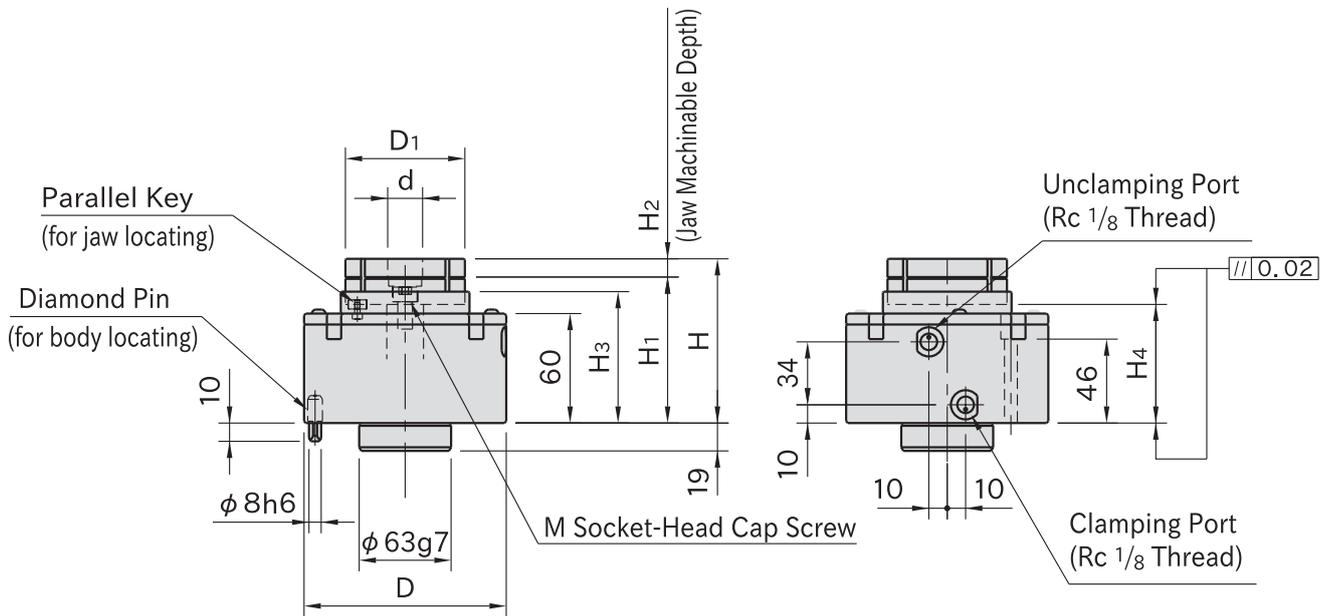
Body	Jaw
S45C steel Electroless nickel plated	A7075 aluminum Anodized Blue



AMCH080-5W



AMCH100-5W



Part Number	D ₁	d	H	H ₂	D	H ₁	H ₃	H ₄ (±0.02)	D _p	P (±0.02)	P ₁	M	M ₁
AMCH080-5W	65	19	90	10	110	80	72	65	98	49	45	M 8×1.25-15L	M4×0.7
AMCH100-5W	90	23	100	15	130	85	74	66	118	59	55	M10×1.5 -20L	M5×0.8

Part Number	D ₂	T	Furnished O-Ring	Operating Air Pressure(MPa) *	Clamping Force (kN) **	Weight (kg)
AMCH080-5W	18	4	P5	0.5	4	4.2
AMCH100-5W	22	6			6	6

*) Operating air pressure range: 0.45 - 0.55 MPa.

***) The clamping forces above are at 0.5 MPa.

Supplied With

- 1 of locking ring
- 2 of O-Ring
- 1 of diamond pin

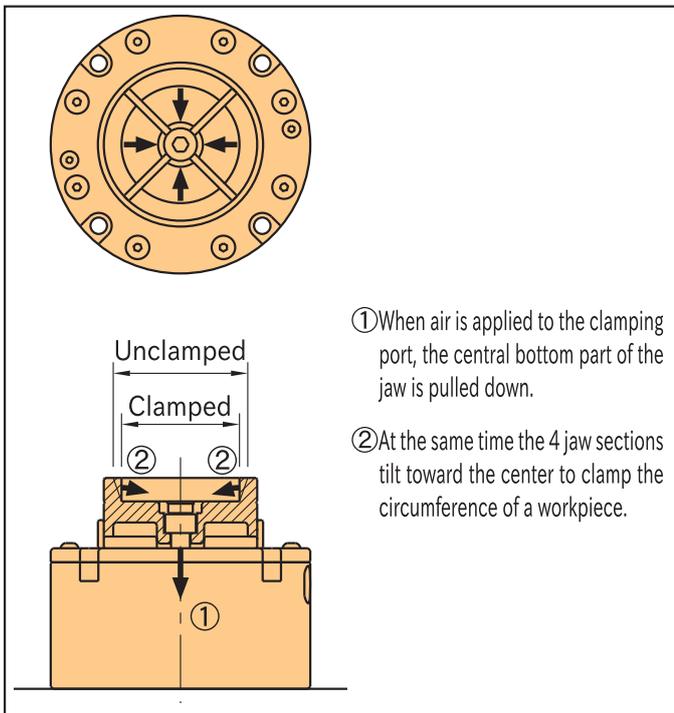
Technical Information

- Workpiece locating repeatability : ±0.03
- Jaw locating repeatability : ±0.02

Note

- Do not actuate clamping without a workpiece inserted to avoid damage and deformation.
- Do not machine the jaw beyond the machinable area.
- Changeable Jaws [CP121](#) are available.
- Use clean air by removing dust with filter or draining with dryer.
- Impure compressed air may cause malfunction of the products.
- Using lubricator is recommended.

Feature



① When air is applied to the clamping port, the central bottom part of the jaw is pulled down.

② At the same time the 4 jaw sections tilt toward the center to clamp the circumference of a workpiece.

- The diaphragm clamping mechanism allows securely clamping a workpiece with 4 jaw sections.
- Different irregularly-shaped workpieces can be clamped.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.

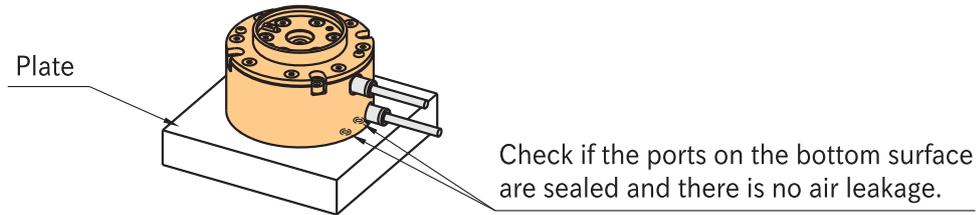
Continuing on Next Page

How To Use

■ Body Installing

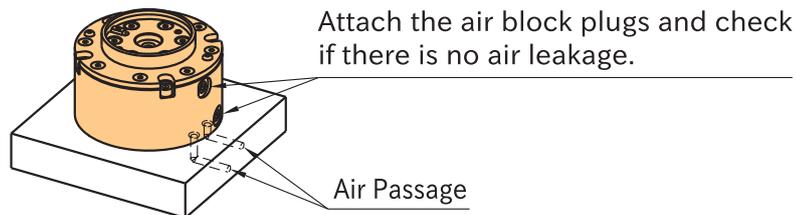
With Side Ports

- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ($\sqrt{6.3}$) to get the bottom ports sealed up.
- Check if there is no air leakage from the area of the bottom ports.

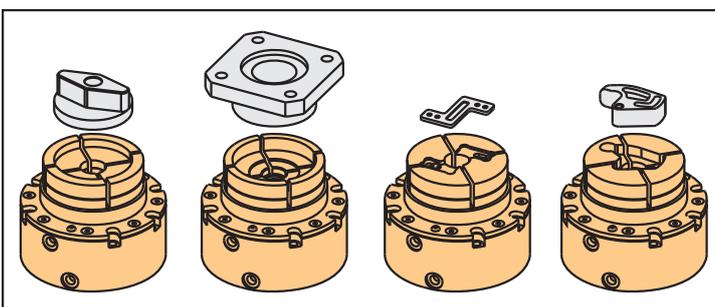
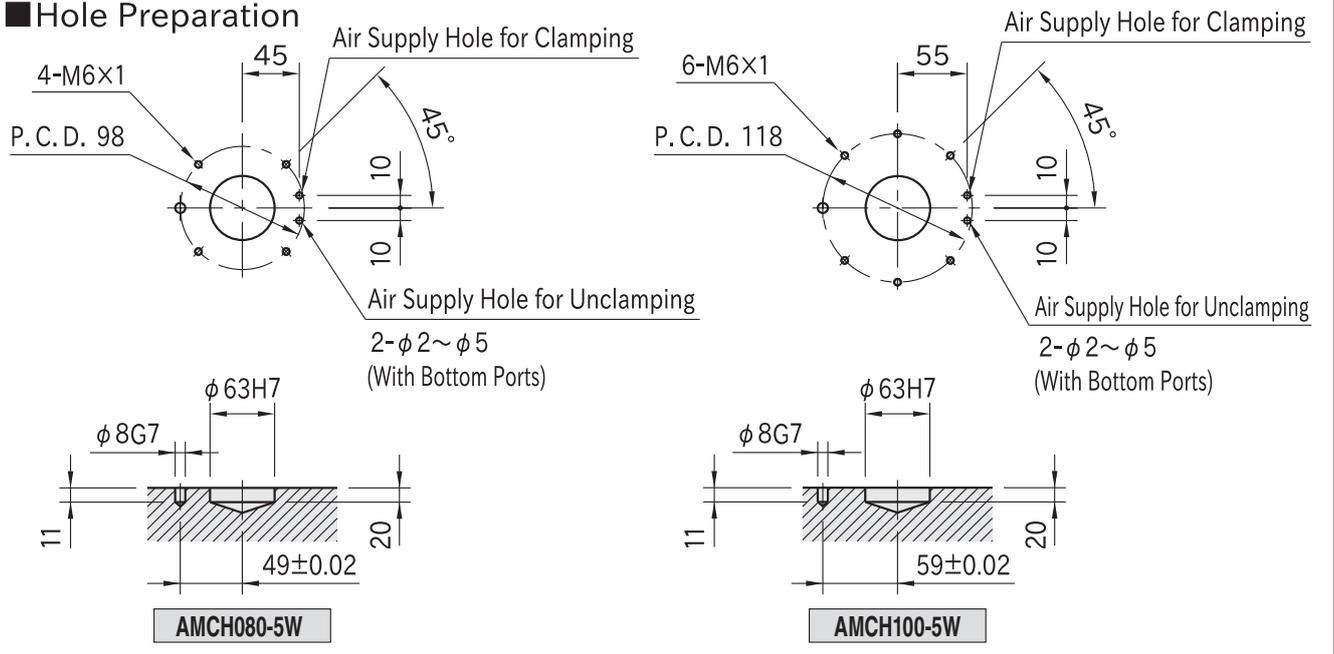


With Bottom Ports

- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ($\sqrt{6.3}$) to get the bottom ports sealed up.
- Refer to the figure below for the hole positions for ports.
- Ensure that the furnished air block plugs are attached to the side ports.



■ Hole Preparation

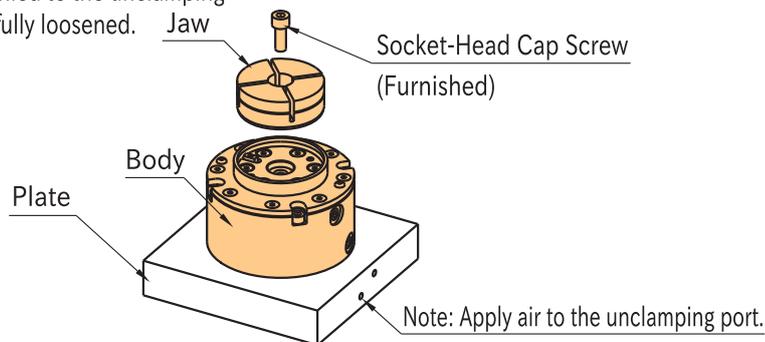


- Machinable jaws allow clamping workpieces of various shapes.
- Ideal way to hold workpieces for machining on small-size machining centers, tapping centers, small-size 5-axis machines, CNC rotary tables, etc.

Changeable Jaws [CP121](#) are available.

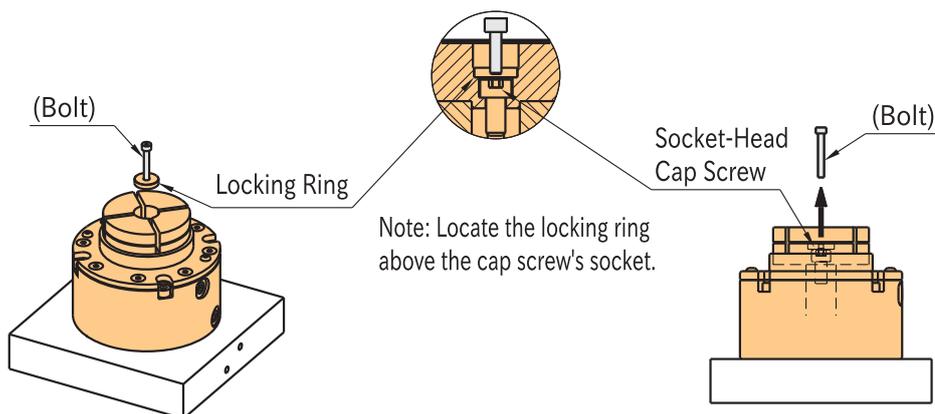
■ Jaw Setting

At jaw installation, ensure that air is applied to the unclamping port and the socket-head cap screw is fully loosened.

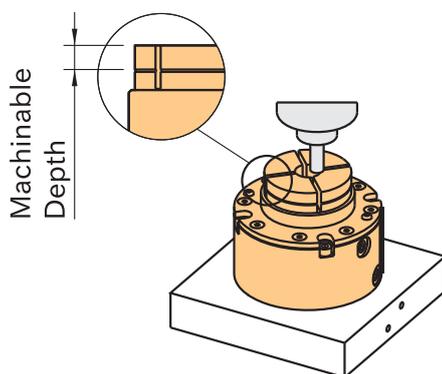


■ Jaw Machining

1. Set the locking ring in the jaw.
(using a bolt facilitates setting)
2. Apply air to the clamping port to clamp the locking ring.
(After clamping, remove the bolt from the locking ring.)

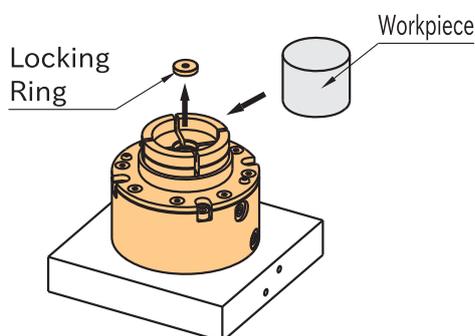


3. Machine the jaw to custom fit a workpiece.



■ Workpiece Setting

1. After machining apply air to the unclamping port to take out the locking ring.
2. Mount a workpiece and then apply air to the clamping port for clamping.



CP131

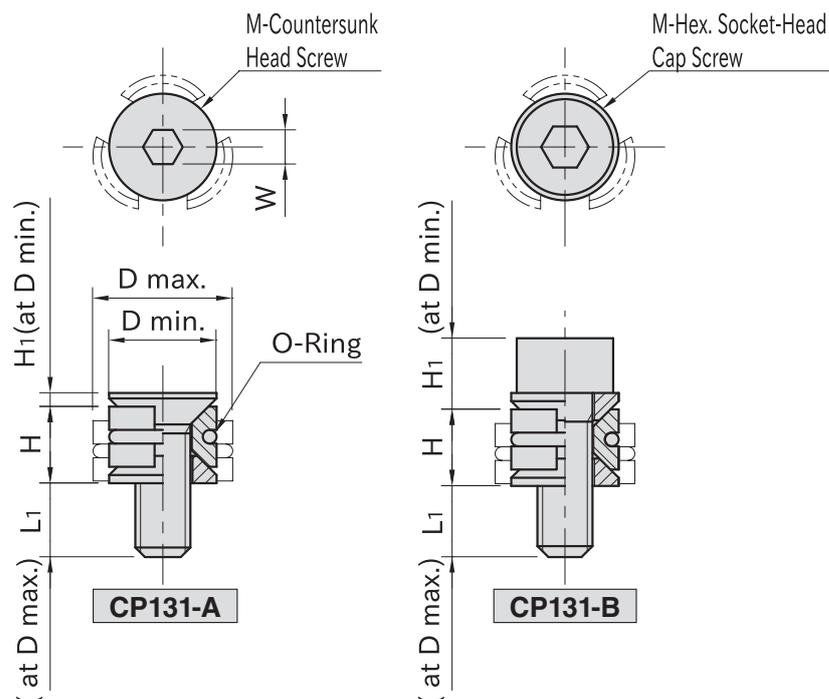
COMPACT ID HOLDING CLAMPS



CP131-A



CP131-B



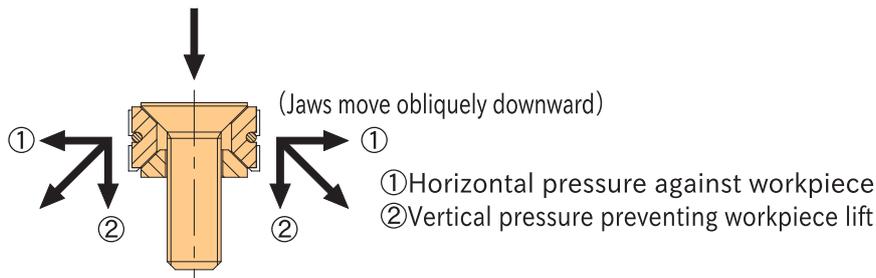
Jaw	Washer	O-Ring
SNCM439 steel Black oxide finished HRC33-39	SCM435 steel Black oxide finished	Fluoro rubber

Part Number	D		H		H ₁	M	L ₁	W
	min.	max.	D min.	D max.				
CP131-04001A	8	10.3	5.5	4.6	0.9	M4×0.7 -12L	7.3	2.5
CP131-05001A	10	12.3	6.4	5.6	1.1	M5×0.8 -15L	9.1	3
CP131-06001A	12	16.3	8.6	7	1.3	M6×1 -18L	11.2	4
CP131-08001A	16	22	11.5	9.4	1.6	M8×1.25-25L	16.2	5
CP131-04001B	8	10.3	5.5	4.6	5.1	M4×0.7 -12L	7.1	3
CP131-05001B	10	12.3	6.4	5.6	6.2	M5×0.8 -15L	9	4
CP131-06001B	12	16.3	8.6	7	7.9	M6×1 -18L	10.6	5
CP131-08001B	16	22	11.5	9.4	10.4	M8×1.25-25L	15.4	6

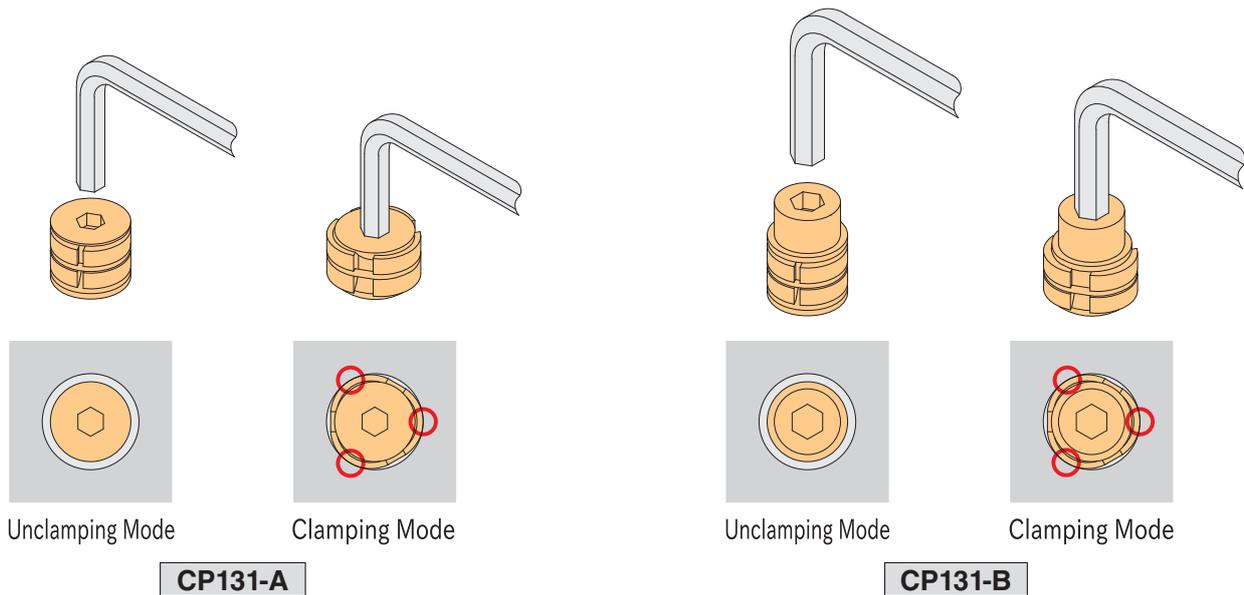
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)	Proper O-ring
CP131-04001A	0.9	2.1	3	SS050(CS1 /ID 5)
CP131-05001A	1.5	4.3	5	SS070(CS1 /ID 7)
CP131-06001A	2.1	7.3	9	S 8 (CS1.5 /ID 7.5)
CP131-08001A	4	18	22	S 12 (CS1.5 /ID11.5)
CP131-04001B	1.5	2.7	4	SS050(CS1 /ID 5)
CP131-05001B	2.5	5.4	7	SS070(CS1 /ID 7)
CP131-06001B	5	9.1	11	S 8 (CS1.5 /ID 7.5)
CP131-08001B	9	25	28	S 12 (CS1.5 /ID11.5)

Feature

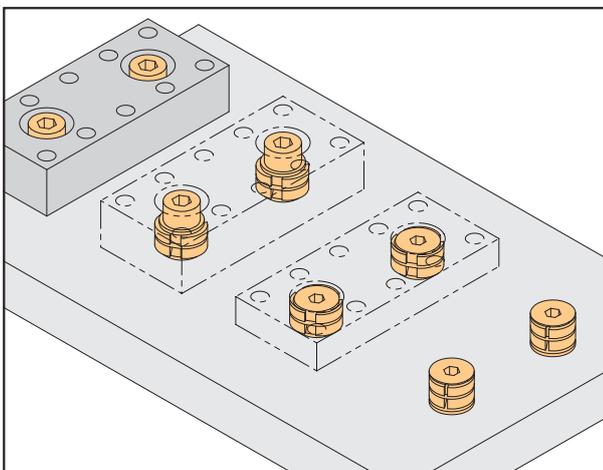
- These clamps hold the inside diameter of the workpiece.
- The wedge construction allows powerfully clamping the workpiece.
- Long clamping stroke is ideal for holding as-cast or roughly-finished holes.



How To Use



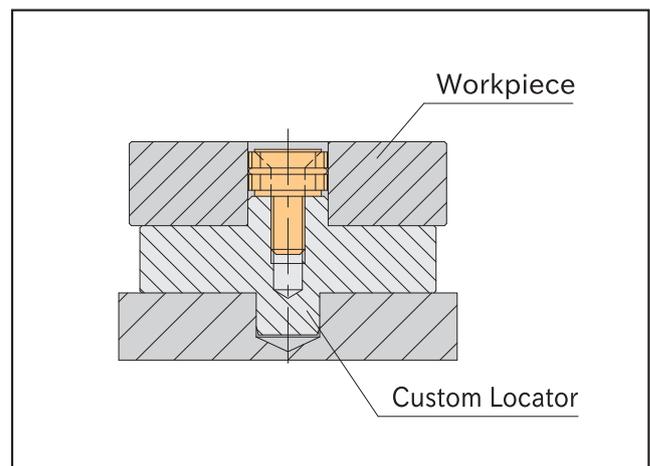
Note: The clamp makes a line contact with the workpiece at the clamping mode. This contact can mark the surface of the workpiece depending on its materials, and using these clamps for accurately finished holes is not recommended.



Example of application where two Compact ID Holding Clamps are used.

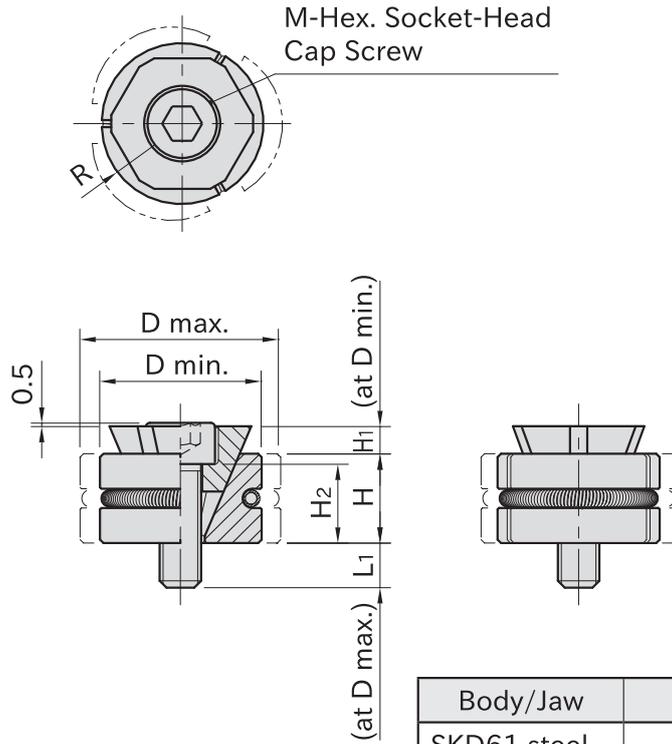
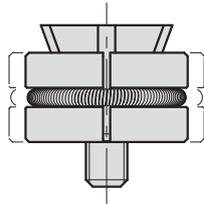
Note

For accurate locating, use these clamps with a locator as shown below.



CP130

ID HOLDING CLAMPS



Body/Jaw	Spring
SKD61 steel Quenched & tempered Black oxide finished HRC47-53	SUS304 stainless steel

Part Number	D		H	H ₁	R	H ₂		L ₁ *)	M
	min.	max.				min.	max.		
CP130-04001	19.5	24	9	2.5	R 9.5	8	2.6	9.4	M4×12L
CP130-06001	23.5	29	13	4	R11.5	11.5	5	13	M6×18L
CP130-08001	28.5	36	17	5.5	R14	15	6	19	M8×25L

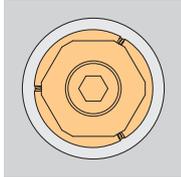
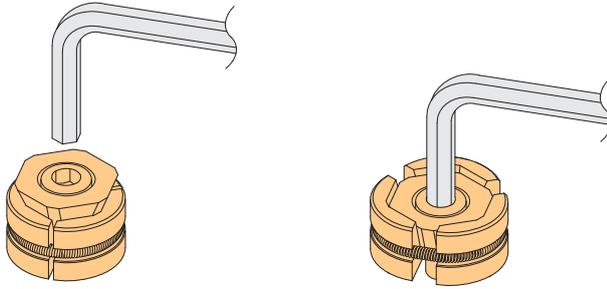
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)
CP130-04001	2	3.2	19
CP130-06001	5	10.5	43
CP130-08001	9	25	89

*) The stated values are only for use of the proper cap screws.

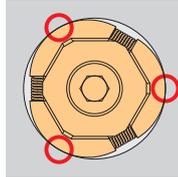
Feature

- These clamps hold the inside diameter of the workpiece.
- The wedge construction allows powerfully clamping the workpiece.
- Long clamping stroke is ideal for holding as-cast or roughly-finished holes.

How To Use

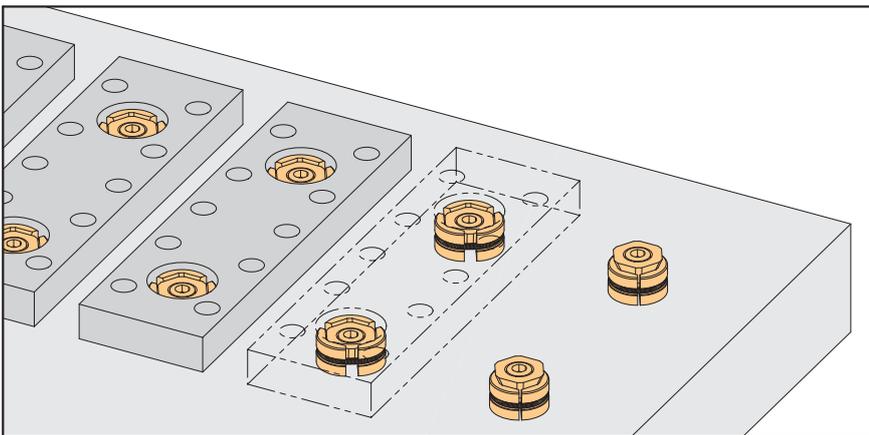


Unclamping Mode



Clamping Mode

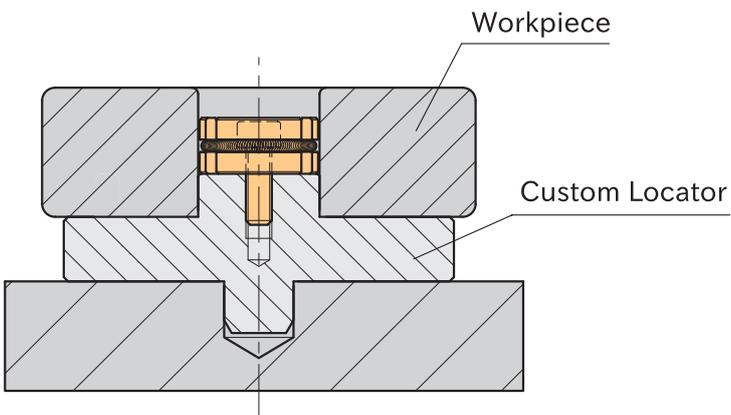
Note: The clamp makes a line contact with the workpiece at the clamping mode. This contact can mark the surface of the workpiece depending on its materials, and using these clamps for accurately finished holes is not recommended.



Example of application where two ID Holding Clamps are used.

Note

For accurate locating, use these clamps with a locator as shown below.



MBID

ID HOLDING CLAMPS



MBID 02~06



MBID 08~16B



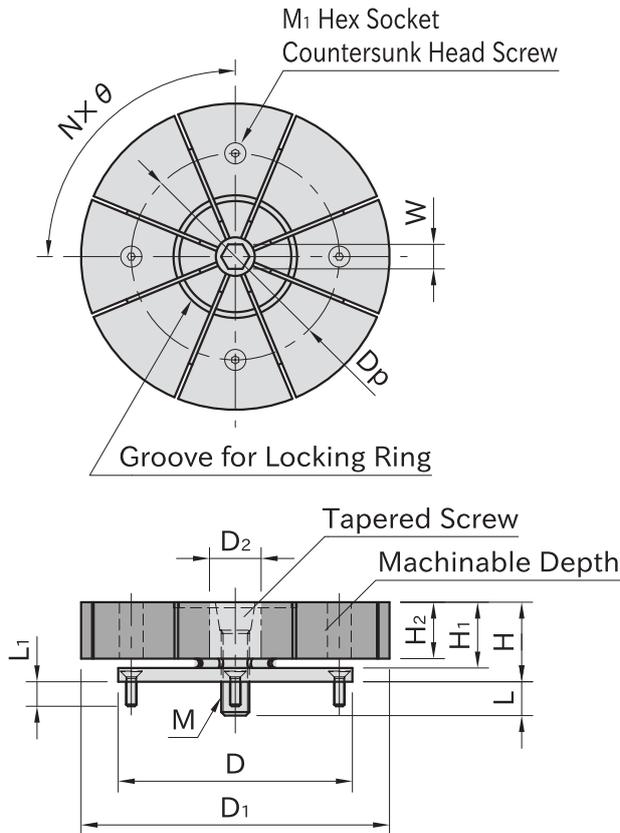
MBID 16C,16D



MBID 16E



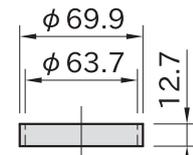
MBID 16F



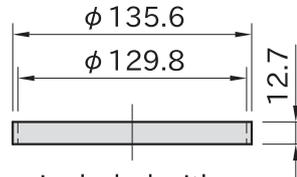
■ Locking Ring(2 sizes for MBID16E,F)



included with
MBID 16C



included with
MBID 16D~F



included with
MBID 16E,16F

Body	Tapered Screw
SUM24L steel	SCM440 steel
Black oxide finished	Quenched & tempered
MBID16F	Fluoroplastic coated
A7075-T6 aluminum	HRC39~45
Anodized	
Black	

Part Number	Adaptable Workpiece Dia. *)	D1	D2	H2	H1	D ($_{-0.05}$)	H	M	L	W
MBID02	$\phi 4.1 \sim \phi 7.4$	7.4	4.1	6.1	7.6	20	10.7	M 2X0.4	4.1	1.5
MBID04	$\phi 7.1 \sim \phi 12.4$	12.4	7.1	15	16	29.72	21.8	M 4X0.7	7.2	3
MBID06	$\phi 12.2 \sim \phi 14.2$	14.2	12.2		19	31.5	24.9	M 6X1	11.2	5
MBID08	$\phi 13.5 \sim \phi 20$	20	13.5		37.5	M 8X1.25		13.2	6	
MBID10	$\phi 18 \sim \phi 27$	27	18	17.5	22.2	50	28.6	M10X1.5	16.3	8
MBID12	$\phi 23 \sim \phi 35.3$	35.3	23	20.6	25.4	56	31.8	M12X1.75	20.3	10
MBID16A	$\phi 29.3 \sim \phi 42$	42	29.3	27	31.8	69.5	39.6	M16X2	21.4	14
MBID16B	$\phi 29.3 \sim \phi 51.5$	51.5				75.5				
MBID16C	$\phi 29.3 \sim \phi 77.7$	77.7				107.5				
MBID16D	$\phi 29.3 \sim \phi 103$	103		32.3	37.6	132.9	45.5			
MBID16E	$\phi 29.3 \sim \phi 175$	175				152.4				
MBID16F	$\phi 29.3 \sim \phi 250.2$	250.2								

*) You need to machine the clamp to suit the diameter of your workpieces in consideration of the range of expansion.

Part Number	M ₁	L ₁	D _p	N	θ	Clamping Force (kN)	Allowable Screw Torque (N·m)	Recommended Expansion Range of Dia	Number of Groove ^{***})	Allowable Expansion of Dia.	Weight (g)		
MBID02	M2	4	13.7	3	120°	1.1	0.7	0.05	—	0.13	10		
MBID04	M3	6	21			4.2	5	0.07			45		
MBID06			23.1			8.4	17	60			0.23	60	
MBID08	M4	7	29			11	34	0.3			95		
MBID10			39.4			20	60	0.35		190			
MBID12	M5	13	45.5			26	150	0.15~0.4 **)		0.35	300		
MBID16A			55.9			44	280				570		
MBID16B	63.9	750											
MBID16C	M6	14	92.6			4	90°			26	170	1	0.6
MBID16D			118.1					2				0.8	2900
MBID16E			133.4	6500									
MBID16F			4800										

**) The recommended tightening torque to machine the jaws for custom fit is 20 N·m.

***) The groove for locking ring (width/depth 3.2mm) is only for **MBID16C~F**.

Furnished With

- 1 of hex nut
- **MBID16C,16D**: 1 of locking ring
- **MBID16E,16F**: 2 of locking rings (different sizes)

Feature

- Can hold workpieces on an inside diameter.
- Perfect for multiple-parts holding arrangement.
- Using hydraulic pull cylinders to clamp instead of using hex wrenches allows automation.
- Can be machined to suit your workpieces.
- The fluoroplastic coated of the tapered screw helps to prevent the fixation of parts.

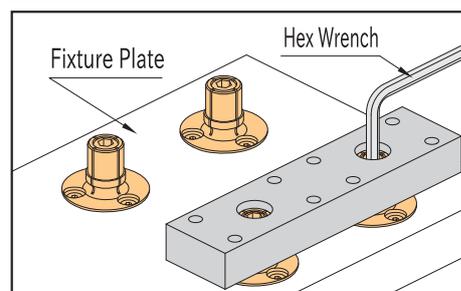
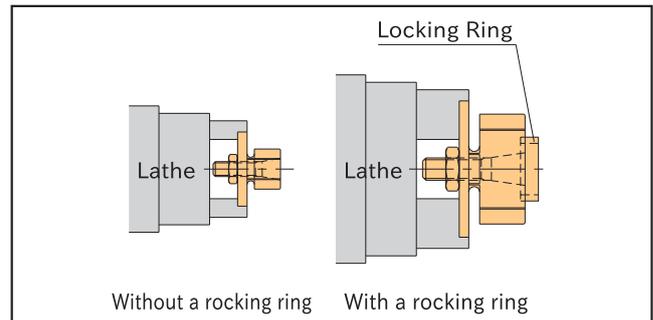
Note

- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- The minimum radius of corners at the machined part should be 0.5mm for clamping small workpieces. To prevent stress concentration on these corners, make the radius as large as possible.
- If the radius will interfere with the bottom of the workpiece bore, we suggest a ring or rest-pads be fixed to the flange.
- If the application has minimal clamping surface (shallow bore) and the ring groove and the cutout interfere or come close to each other, we suggest machining the top of the clamp clean to remove the grooves, and then machine the clamp to suit your workpieces.
- For **MBID16C,16D** insert the locking ring provided to the groove and tighten the tapered screw and then machine the clamp to the size. When the workpiece bore is smaller than the locking ring bore, machine the clamp without the locking ring, as stated in the Machining Instructions
- **MBID16E,16F** have 2 locking rings, but only single ring is needed for machining the clamp. The bigger locking ring is recommended.

How To Use

<Machining and Installation Instructions>

1. Measure the diameter of the clamp without tapered screw.
2. Use the nut provided, on the back of the clamp, and tighten the tapered screw to expand the clamp to the recommended expansion of diameter. (For **MBID16C~F**, insert the locking ring provided and tighten the tapered screw.)
3. Machine a pocket in the fixture with the close tolerance "D" dimension and make tapped holes per "M 1" column. Make a tapped hole from the "M" column in the center of the pocket for the tapered screw.



MBSID

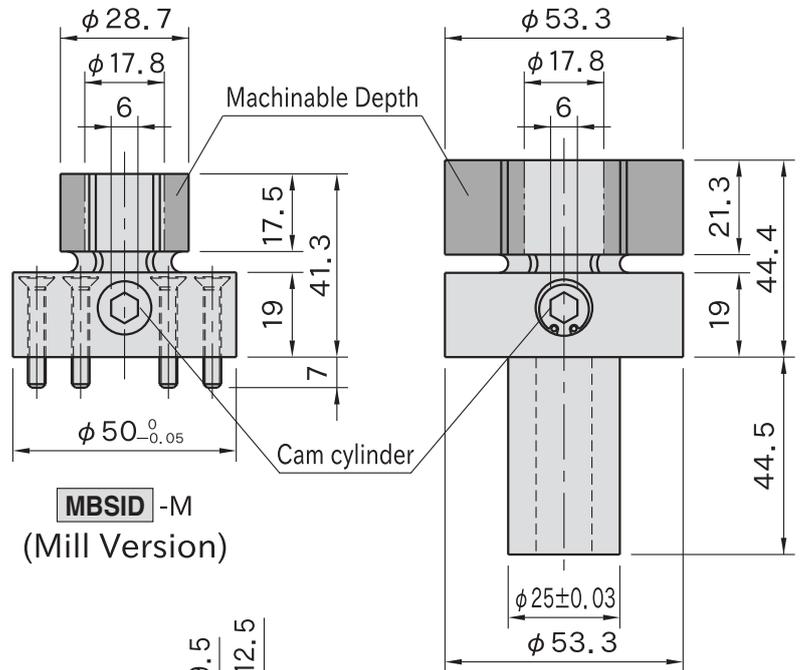
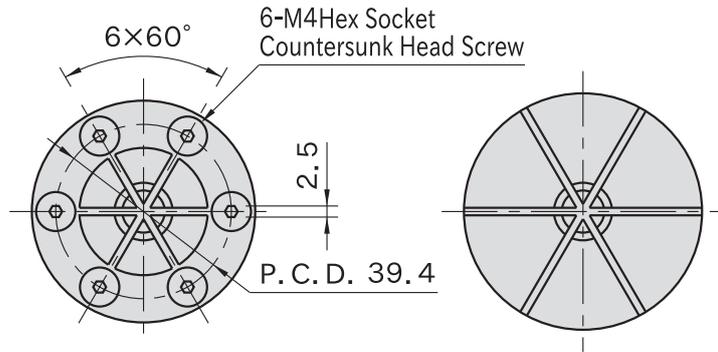
SIDE LOCK ID HOLDING CLAMPS



MBSID -M
(Mill Version)

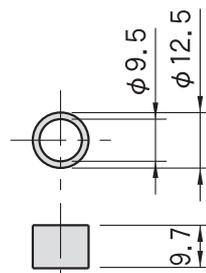


MBSID -L
(Lathe Version)



MBSID -M
(Mill Version)

MBSID -L
(Lathe Version)



Locking Ring

Body	Cam cylinder	Tapered Plunger	Spring
SUM24L Steel Black oxide finished	SCM440 steel Black oxide finished HRC39~45	SCM440 steel Fluoroplastic coated HRC52	SWP

Part Number	Adaptable Workpiece Dia. *)	Clamping Force (kN)	Allowable Screw Torque (N·m)	Recommended Expansion Range of Dia. **)	Allowable Expansion of Dia.	Weight (g)
MBSID-M	φ 17.8~ φ 28.7	15	47	0.02~0.18	0.30	358
MBSID-L	φ 17.8~ φ 53.3					720

*) You need to machine the clamp to suit the diameter of your workpieces.

**) The recommended tightening torque to machine the diameter for custom fit is 13.5N·m.

Furnished Parts

1 of locking ring

Features:

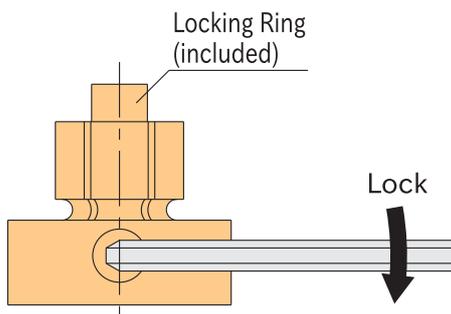
- Can hold workpieces on an inside diameter by turning a socket head cam cylinder on the side.
- Perfect for multiple-parts holding arrangement.
- Can be machinable to suit your workpieces.

Notes:

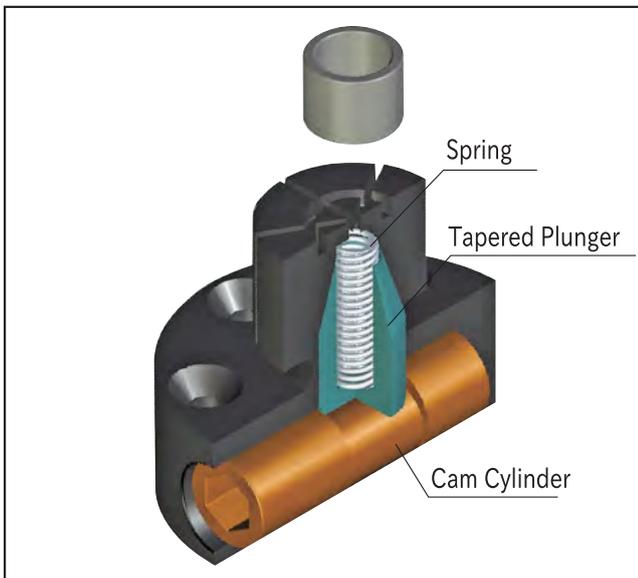
- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- The minimum radius of corners at the machined part should be 0.5mm for clamping small workpieces. To prevent stress concentration on these corners, make the radius as large as possible.
- If the radius will interfere with the bottom of the workpiece bore, we suggest a ring or rest-pads be fixed to the flange.

How To Use

Machining Instructions



Insert the locking ring to the groove of the upper surface and clamp it, and then machine the clamp to your bore size.



Rotating the cam cylinder both clockwise and counterclockwise expands the clamp.



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