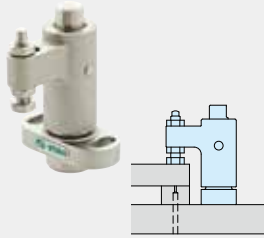


# PNEUMATIC CLAMPS

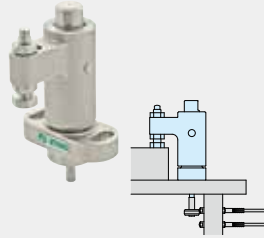


# PNEUMATIC CLAMPS



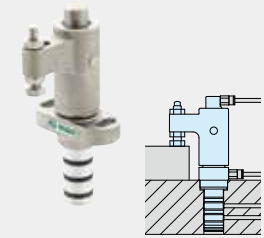
COMPACT PNEUMATIC SWING CLAMPS

Part No. AMWSW-W



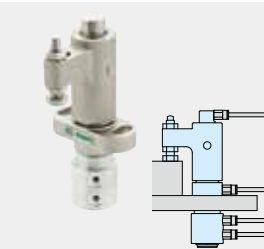
COMPACT PNEUMATIC SWING CLAMPS  
WITH ROD

Part No. AMWSW-W-D



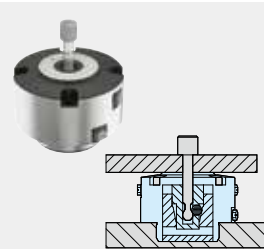
COMPACT PNEUMATIC SWING CLAMPS  
WITH DETECTING PORTS (Gasket Piping)

Part No. AMWSW-W-AG



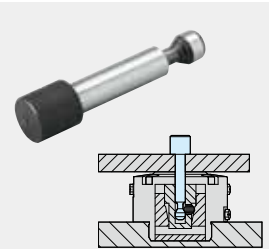
COMPACT PNEUMATIC SWING CLAMPS  
WITH DETECTING PORTS (Thread Piping)

Part No. AMWSW-W-AC



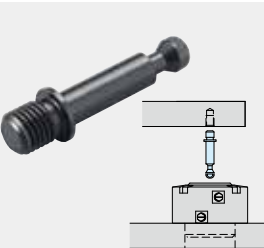
PNEUMATIC PULL  
CLAMPS

Part No. AMWPD-W



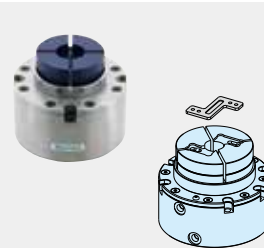
CLAMPING PINS

Part No. AMWPD-X



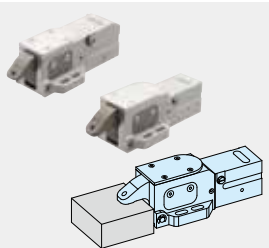
CLAMPING SCREWS

Part No. AMWPD-M



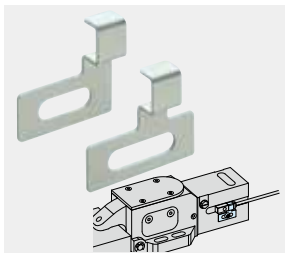
PNEUMATIC OD HOLDING  
CLAMPS

Part No. AMCH-W



PNEUMATIC HOLD DOWN  
CLAMPS

Part No. AMWD-WS



## SENSOR BRACKETS

Part No. AMWD-WS-B

## AIR ASSISTED CLAMPS



## AIR ASSISTED CLAMPS

[Mechanical + Air = Hybrid]

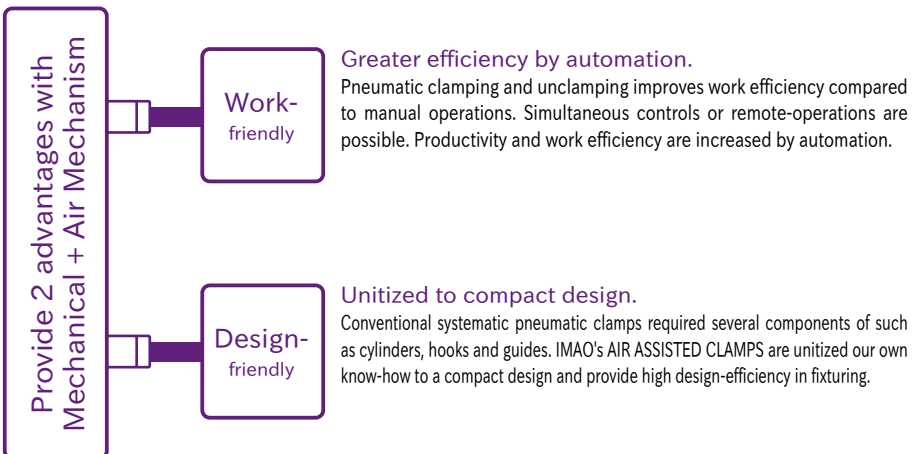


AIR ASSISTED CLAMPS are IMAO's automated clamps that satisfy needs for much more efficiency and automation in production.

Our original mechanical clamp technology in combination with air provides diverse lineup of products.

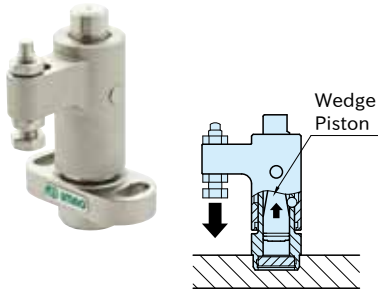
With our own know-how as a clamping tools manufacturer, we unitized the clamping devices to support making compact automated fixtures.

### Feature



### COMPACT PNEUMATIC SWING CLAMPS

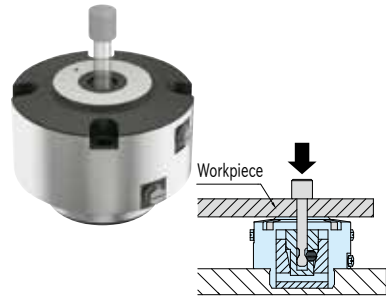
High clamping force with small body



Wedge mechanism provides high holding capacity.

### PNEUMATIC PULL CLAMPS

Clamping workpiece with through hole allows multi-surface machining.



Wedge mechanism provides high clamping force.

### PNEUMATIC OD HOLDING CLAMPS

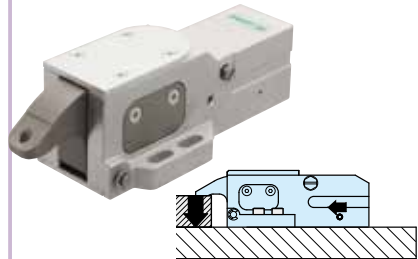
Ideal for irregular-shaped or small workpieces.



Machine the jaw to custom fit a workpiece.

### PNEUMATIC HOLD DOWN CLAMPS

Magnetic sensor mountable.



Wedge mechanism provides high holding capacity.

### More air-assisted products!

COMPACT  
PNEUMATIC  
WORK SUPPORTS



PNEUMATIC WORK  
SUPPORTS



PNEUMATIC FLEX LOCATORS



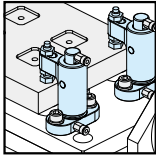
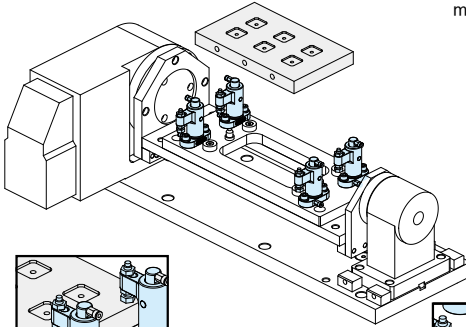
# APPLICATION EXAMPLE for AIR ASSISTED CLAMPS



## COMPACT PNEUMATIC SWING CLAMPS

Vertical machining center + NC rotary table

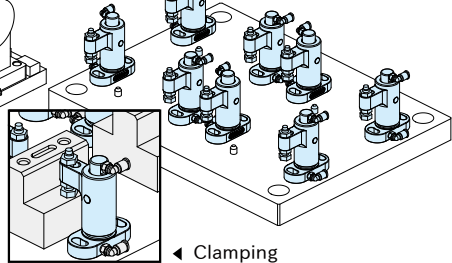
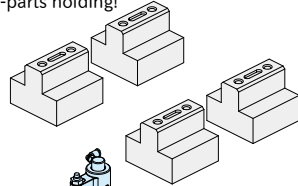
Wedge style locking provides machining from 4 sides!



▲ Clamping

Vertical machining center

Small body provides high productivity by multiple-parts holding!



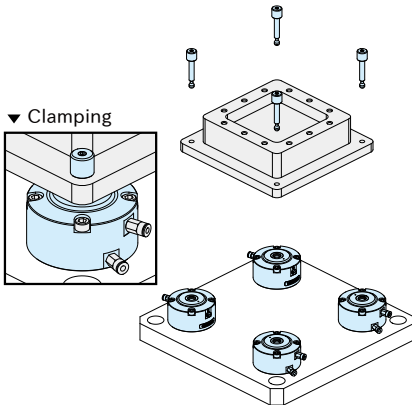
◀ Clamping



## PNEUMATIC PULL CLAMPS

Assembling line

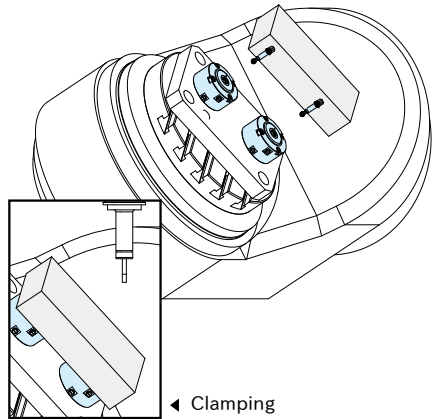
Easy workpiece loading without screw provides shorter setup time.  
Stable clamping force offers accurate machining!



▼ Clamping

5-axis machining center

Clamping and holding with wedge mechanism enables 5-sides machining!



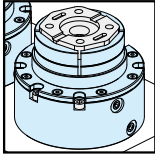
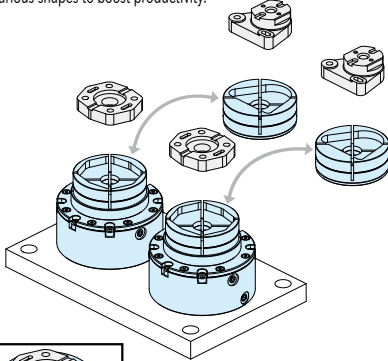
◀ Clamping



### PNEUMATIC OD HOLDING CLAMPS

#### Vertical machining center

Machinable jaws allow clamping workpieces of various shapes to boost productivity.



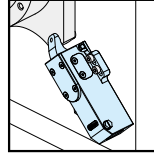
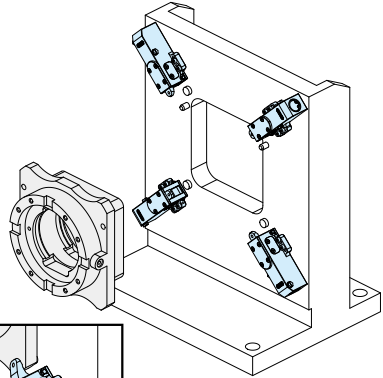
◀ Clamping



### PNEUMATIC HOLD DOWN CLAMPS

#### Horizontal machining center

Less tool interference by low profile body!



◀ Clamping

COMPACT PNEUMATIC SWING CLAMPS

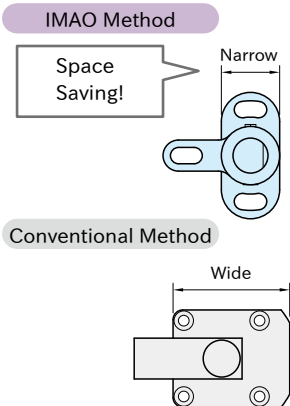
# COMPACT PNEUMATIC SWING CLAMPS

In addition to IMAO's long selling swing clamps, we provide the new Pneumatic Swing Clamps!



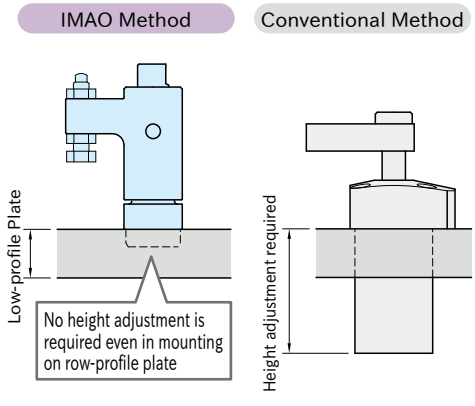
Feature 1

Compact Design



Feature 2

Easy Mounting

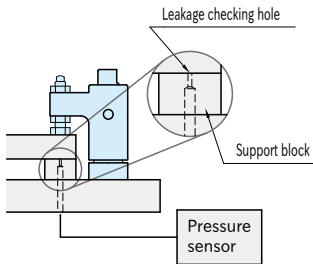




## Application Example

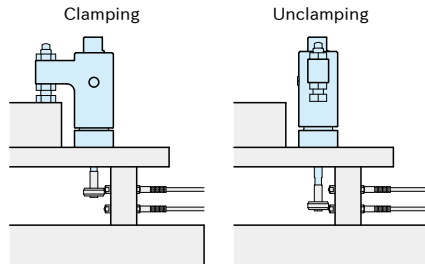
### Standard, Air leakage cheking

Pressure sensor detects the clamping/unclamping conditions by preparing air leakage checking hole.



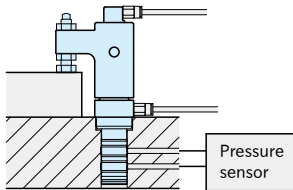
### With Rod

Clamping/unclamping conditions can be detected by switch.

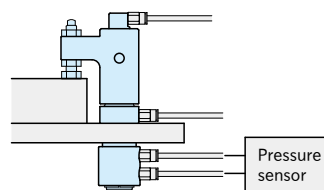


### With Detecting Ports Using with pressure sensors, clamping/unclamping conditions can be detected.

(Gasket piping)

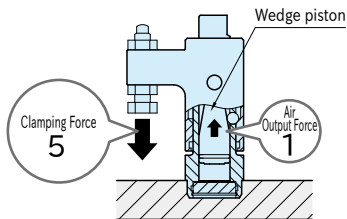


(Thread piping)



## Feature 3

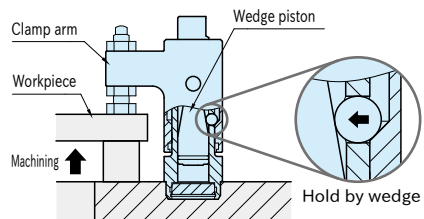
### High Clamping Force



Wedge mechanism generates approx. 5 times clamping force of the same size of air cylinder.

## Feature 4

### High Holding Capacity (Double of clamping force)



The clamp arm stays still against reaction force due to wedge mechanism.

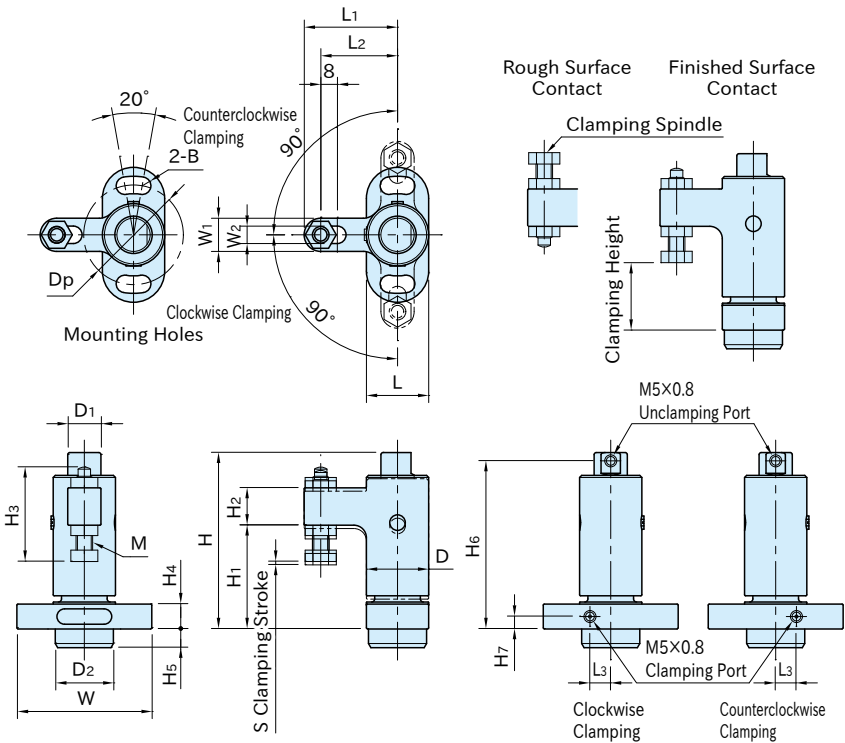
# AMWSW-W

## COMPACT PNEUMATIC SWING CLAMPS



Body / Clamp Arm / Piston	Clamping Spindle
SCM440 steel Electroless nickel plated	S45C steel Quenched and tempered Electroless nickel plated

★Key Point  
Compact design!



Part Number	Clamping Direction	Clamping Height *)				S	L <sub>2</sub>	L <sub>1</sub>	W	L	H <sub>4</sub>	B	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>
		Finished Surface Contact		Rough Surface Contact															
		Min.	Max.	Min.	Max.														
AMWSW16R-W	CW	32.5	39	33.5	40	1.2	37	45	65	30	12	8.4	48	85	30	16	8.4	18	50
AMWSW16L-W	CCW																		
AMWSW20R-W	CW	41.5	51	44	53.5	1.6	45	55	85	40	15	10.5	64	106	40	20	10.4	22	65
AMWSW20L-W	CCW																		

Part Number	M	H <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	H <sub>5</sub>	L <sub>3</sub>	H <sub>6</sub>	H <sub>7</sub>	Operating Air Pressure (MPa)	Clamping Force (kN **)	Holding Capacity (kN **)	Weight (g)
AMWSW16R-W	M 8×1.25	45.5	16	28	9	10	81	6	0.5~0.7	0.4	0.8	500
AMWSW16L-W												
AMWSW20R-W												
AMWSW20L-W	M10×1.5	57	22	35	11	13	101	8		0.65	1.3	1120

\*) Clamping height can be adjusted within this range.

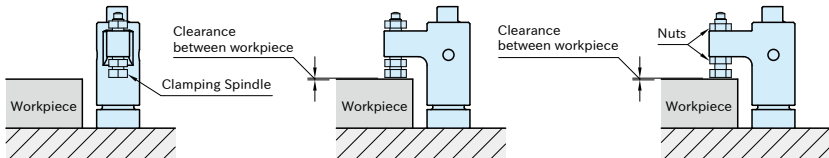
\*\*) The clamping force and the holding capacity above are at 0.5 MPa.

### How To Use

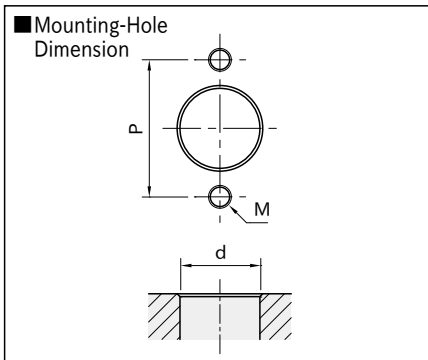
#### ■ Setting Clearance between Workpiece

A clearance between clamping spindle and workpiece should be roughly half of the clamping stroke. The clamp arm swings horizontally.

Follow the steps below to adjust the clamping spindle to create proper clearance.

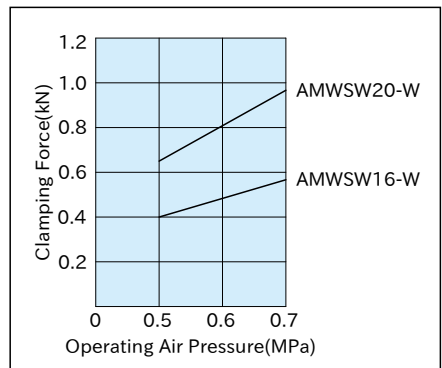


1. Apply air to the unclamping port with an air blow gun to move the clamp to unclamping position.
2. Rotate the arm manually to straight direction, and create an appropriate clearance to the workpiece. Putting a feeler gauge between the workpiece and the clamping spindle facilitates this setting.
3. Fix the clamping spindle with nuts.



Part No.	d (+0.2/0)	M	P
AMWSW16-W	28	M 8×1.25	48
AMWSW20-W	35	M10×1.5	64

### Performance Curve



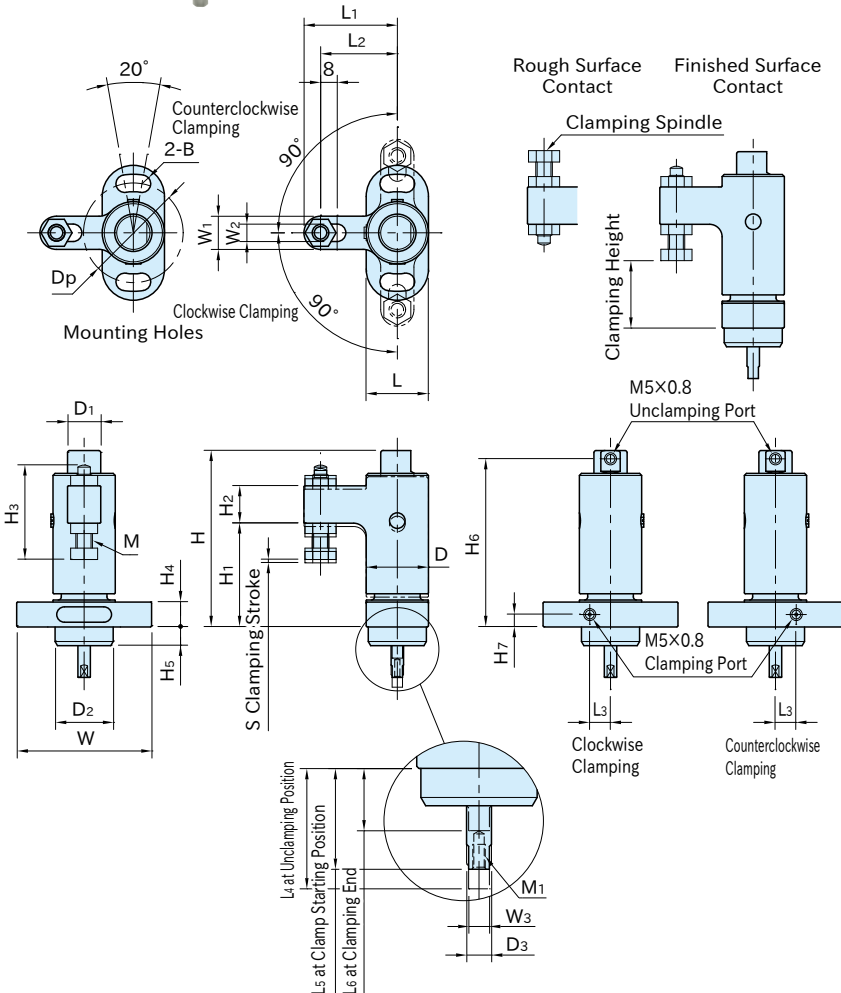
AMWSW-W-D

COMPACT PNEUMATIC SWING CLAMPS WITH ROD



★Key Point  
Compact design!

Body / Clamp Arm / Piston	Rod	Clamping Spindle
SCM440 steel Electroless nickel plated	S45C steel Electroless nickel plated	S45C steel Quenched and tempered Electroless nickel plated



Part Number	Clamping Direction	Clamping Height *)				S	L <sub>2</sub>	L <sub>1</sub>	W	L	H <sub>4</sub>	B	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>	M
		Finished Surface Contact		Rough Surface Contact																
		Min.	Max.	Min.	Max.															
AMWSW16R-W-D	CW	32.5	39	33.5	40	1.2	37	45	65	30	12	8.4	48	85	30	16	8.4	18	50	M 8×1.25
AMWSW16L-W-D	CCW																			
AMWSW20R-W-D	CW	41.5	51	44	53.5	1.6	45	55	85	40	15	10.5	64	106	40	20	10.4	22	65	M10×1.5
AMWSW20L-W-D	CCW																			

Part Number	H <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	H <sub>5</sub>	L <sub>3</sub>	H <sub>6</sub>	H <sub>7</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	M <sub>1</sub>	D <sub>3</sub>	W <sub>3</sub>	Operating Air Pressure(MPa)	Clamping Force(kN)**	Holding Capacity(kN)**	Weight (g)
AMWSW16R-W-D	45.5	16	28	9	10	81	6	29	24	17	M3×0.5	6	5	0.5~0.7	0.35	0.7	510
AMWSW16L-W-D											Depth 6						
AMWSW20R-W-D	57	22	35	11	13	101	8	35	29	19.5	M4×0.7	8	7		0.55	1.1	1130
AMWSW20L-W-D											Depth 8						

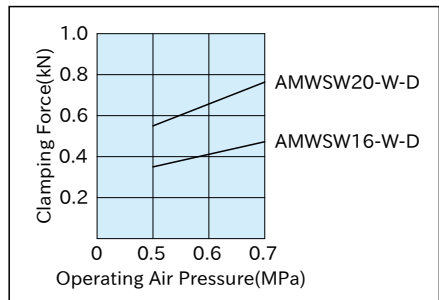
\*) Clamping height can be adjusted within this range.

\*\*) The clamping force and the holding capacity above are at 0.5 MPa.

### Feature

The rod on the bottom of the clamp can be used for detecting clamping/unclamping with switches.

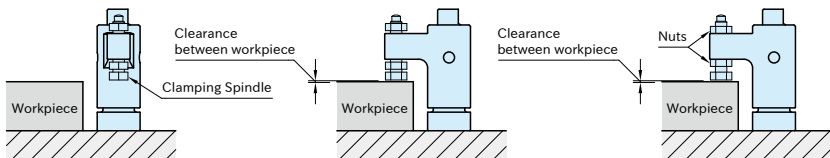
### Performance Curve



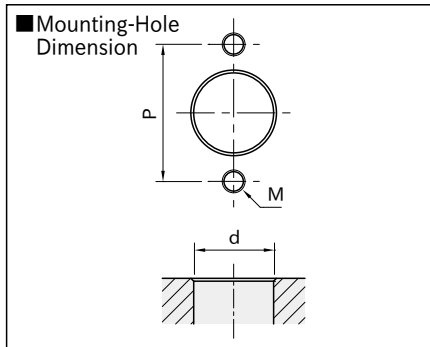
### How To Use

#### Setting Clearance between Workpiece

A clearance between clamping spindle and workpiece should be roughly half of the clamping stroke. The clamp arm swings horizontally. Follow the steps below to adjust the clamping spindle to create proper clearance.



1. Apply air to the unclamping port with an air blow gun to move the clamp to unclamping position.
2. Rotate the arm manually to straight direction, and create an appropriate clearance to the workpiece. Putting a feeler gauge between the workpiece and the clamping spindle facilitates this setting.
3. Fix the clamping spindle with nuts.



Part No.	d (+0.2)	M	P
AMWSW16-W-D	28	M 8×1.25	48
AMWSW20-W-D	35	M10×1.5	64

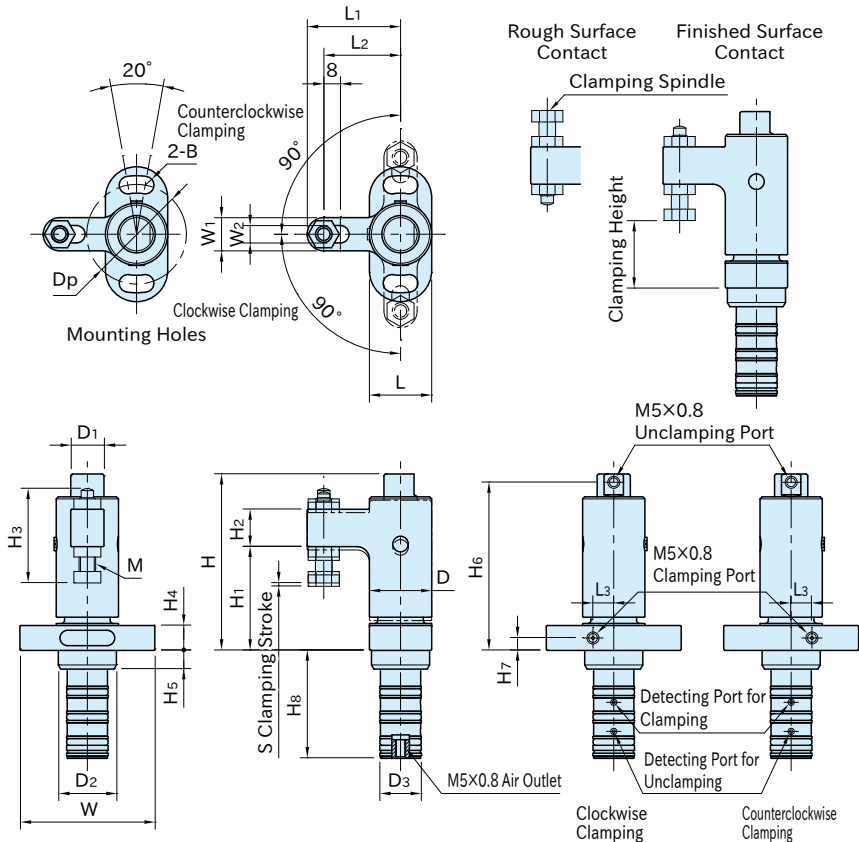
**AMSW-W-AG**

**COMPACT PNEUMATIC SWING CLAMPS WITH DETECTING PORTS (Gasket Piping)**



★Key Point  
Compact design!

Body / Clamp Arm / Piston	Holder	Clamping Spindle
SCM440 steel Electroless nickel plated	A5056 aluminum Anodized	S45C steel Quenched and tempered Electroless nickel plated



Part Number	Clamping Direction	Clamping Height *)								S	L <sub>2</sub>	L <sub>1</sub>	W	L	H <sub>4</sub>	B	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>
		Finished Surface Contact				Rough Surface Contact																	
		Min.	Max.	Min.	Max.																		
AMWSW16R-W-AG	CW	32.5	39	33.5	40	1.2	37	45	65	30	12	8.4	48	85	30	16	8.4	18	50				
AMWSW16L-W-AG	CCW																						
AMWSW20R-W-AG	CW	41.5	51	44	53.5	1.6	45	55	85	40	15	10.5	64	106	40	20	10.4	22	65				
AMWSW20L-W-AG	CCW																						

Part Number	M	H <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	H <sub>5</sub>	L <sub>3</sub>	H <sub>6</sub>	H <sub>7</sub>	H <sub>8</sub>	D <sub>3</sub>	Operating Air Pressure(MPa)	Clamping Force(kN)**	Holding Capacity(kN)**	Weight (g)
AMWSW16R-W-AG	M 8×1.25	45.5	16	28	9	10	81	6	52	20	0.5~0.7	0.35	0.7	540
AMWSW16L-W-AG														
AMWSW20R-W-AG	M10×1.5	57	22	35	11	13	101	8	62	25	0.5~0.7	0.55	1.1	1180
AMWSW20L-W-AG														

\*) Clamping height can be adjusted within this range. \*\*) The clamping force and the holding capacity above are at 0.5 MPa.

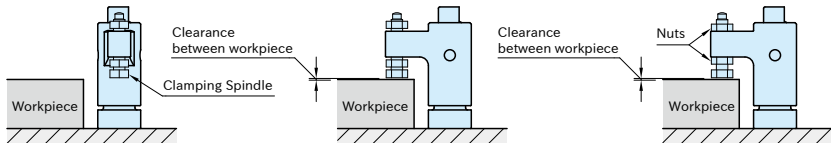
### Feature

Using with pressure sensors, clamping/unclamping conditions can be detected.

### How To Use

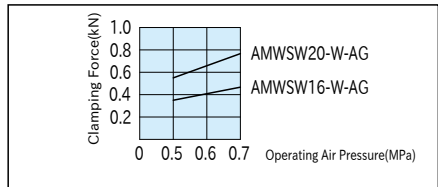
#### ■ Setting Clearance between Workpiece

A clearance between clamping spindle and workpiece should be roughly half of the clamping stroke. The clamp arm swings horizontally. Follow the steps below to adjust the clamping spindle to create proper clearance.

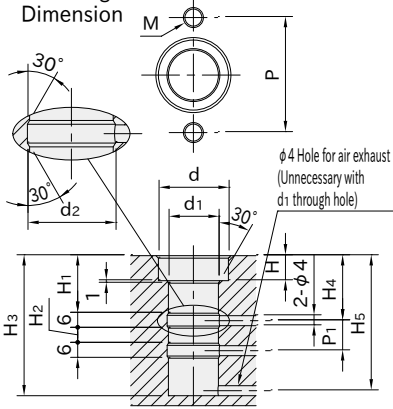


1. Apply air to the unclamping port with an air blow gun to move the clamp to unclamping position.
2. Rotate the arm manually to straight direction, and create an appropriate clearance to the workpiece. Putting a feeler gauge between the workpiece and the clamping spindle facilitates this setting.
3. Fix the clamping spindle with nuts.

### Performance Curve

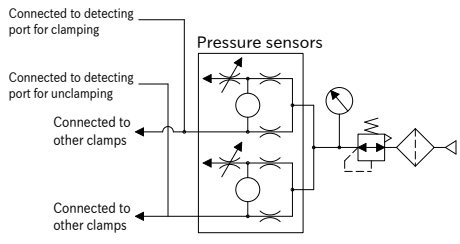


#### ■ Mounting-Hole Dimension



#### ■ Connection with Pressure Sensors

To check clamping/unclamping conditions, pressure sensor is required. Please contact us for the detail.



Part No.	d <sub>(H9/d9)</sub>	H	d <sub>1</sub> (H8)	H <sub>1</sub>	H <sub>2</sub>	d <sub>2</sub>	H <sub>3</sub>	P <sub>1</sub>	H <sub>4</sub>	H <sub>5</sub>	M	P
AMWSW16-W-AG	28	10	20	23	6	21	56 or more	12	26	54	M 8×1.25	48
AMWSW20-W-AG	35	12	25	29	10	26	66 or more	16	32	64	M10×1.5	64

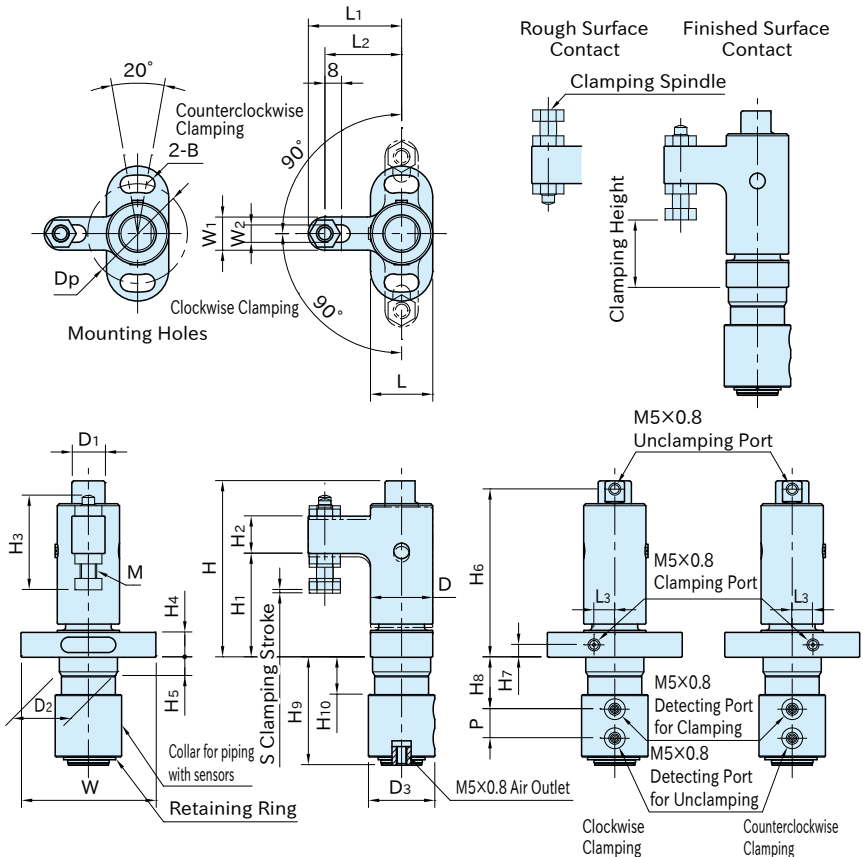
**AMSW-W-AC**

**COMPACT PNEUMATIC SWING CLAMPS WITH DETECTING PORTS (Thread Piping)**



★Key Point  
Compact design!

Body / Clamp Arm / Piston	Collar	Clamping Spindle
SCM440 steel Electroless nickel plated	A5056 aluminum Anodized	S45C steel Quenched and tempered Electroless nickel plated





Part Number	Clamping Direction	Clamping Height *)				S	L <sub>2</sub>	L <sub>1</sub>	W	L	H <sub>4</sub>	B	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>
		Finished Surface Contact		Rough Surface Contact															
		Min.	Max.	Min.	Max.														
AMWSW16R-W-AC	CW	32.5	39	33.5	40	1.2	37	45	65	30	12	8.4	48	85	30	16	8.4	18	50
AMWSW16L-W-AC	CCW																		
AMWSW20R-W-AC	CW	41.5	51	44	53.5	1.6	45	55	85	40	15	10.5	64	106	40	20	10.4	22	65
AMWSW20L-W-AC	CCW																		

Part Number	M	H <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	H <sub>5</sub>	L <sub>3</sub>	H <sub>6</sub>	H <sub>7</sub>	H <sub>8</sub>	P	H <sub>9</sub>	D <sub>3</sub>	H <sub>10</sub>	Operating Air Pressure (MPa)	Clamping Force (kN **)	Holding Capacity (kN **)	Weight (g)
AMWSW16R-W-AC	M 8X1.25	45.5	16	28	9	10	81	6	25	14	52	32	18	0.5~0.7	0.35	0.7	580
AMWSW16L-W-AC																	
AMWSW20R-W-AC	M10X1.5	57	22	35	11	13	101	8	31	18	62	38	24		0.55	1.1	1240
AMWSW20L-W-AC																	

\*) Clamping height can be adjusted within this range.

\*\*) The clamping force and the holding capacity above are at 0.5 MPa.

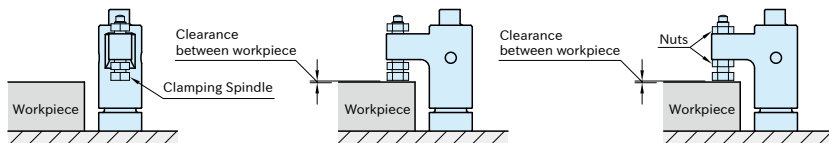
### Feature

Using with pressure sensors, clamping/unclamping conditions can be detected.

### How To Use

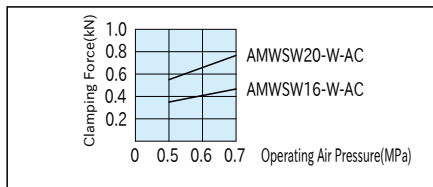
#### ■ Setting Clearance between Workpiece

A clearance between clamping spindle and workpiece should be roughly half of the clamping stroke. The clamp arm swings horizontally. Follow the steps below to adjust the clamping spindle to create proper clearance.

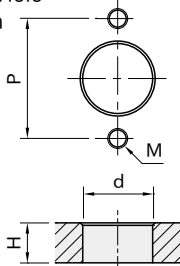


1. Apply air to the unclamping port with an air blow gun to move the clamp to unclamping position.
2. Rotate the arm manually to straight direction, and create an appropriate clearance to the workpiece. Putting a feeler gauge between the workpiece and the clamping spindle facilitates this setting.
3. Fix the clamping spindle with nuts.

### Performance Curve



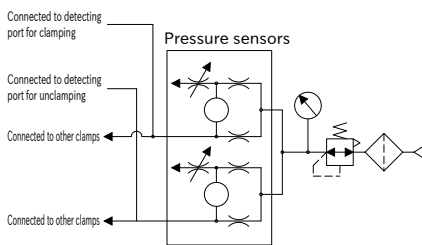
#### ■ Mounting-Hole Dimension



Part No.	d (+0.2/0)	M	P	H
AMWSW16-W-AC	28	M 8X1.25	48	16 or less
AMWSW20-W-AC	35	M10X1.5	64	22 or less

#### ■ Connection with Pressure Sensors

To check clamping/unclamping conditions, pressure sensor is required. Please contact us for the detail.



### Note

Attach the collar and the retaining ring to the product by yourself. The collar rotates for 360° freely. Set the collar to your desired position.

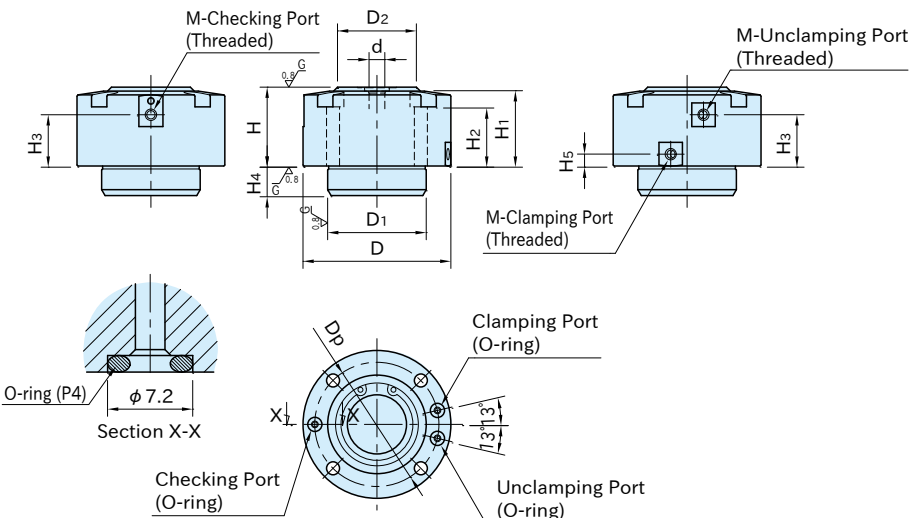
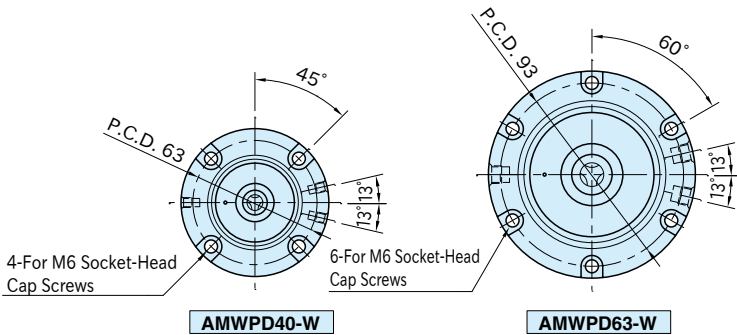
AMWPD-W

PNEUMATIC PULL CLAMPS



★Key Point  
High clamping force by wedge mechanism.

Body	Cylinder
S45C steel Induction hardened (top surface) Black oxide finished Precision ground	SCM440 steel ISONITE treated



Part Number	d (F7)	D <sub>2</sub>	H (±0.01)	D	H <sub>1</sub>	D <sub>1</sub> (g6)	H <sub>4</sub>	H <sub>2</sub>	Dp *)	M	H <sub>3</sub>	H <sub>5</sub>
<b>AMWPD40-W</b>	8	40	40	75	38	50	15	30	63	M5×0.8	26	6
<b>AMWPD63-W</b>	12	63	50	105	47	75	19	35	88	Rc1/8	31	10

Part Number	Furnished O-ring	Operating Air Pressure (MPa)	Clamping Force (kN)**	Weight (kg)
<b>AMWPD40-W</b>	P4	0.3~1.0	1	1.3
<b>AMWPD63-W</b>			2.5	3.2

\*) The dimensions above are for ports with o-ring.

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

## Feature

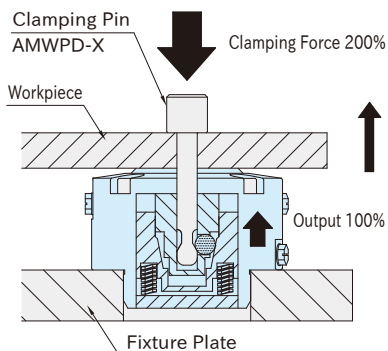
### ■ High Clamping Force

- Wedge mechanism increases clamping force to 200% compared to the air cylinder of the same size.
- When the air pressure is lowered by such as an air leakage, wedge mechanism prevents prompt lowering of the clamping force.

Clamping Force at 0 Mpa Air Pressure (by spring force)

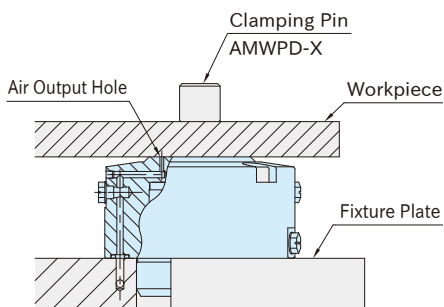
·AMWPD40-W···160N

·AMWPD63-W···500N



### ■ Checking Hole

Can check if the workpiece is clamped properly by applying air through the checking hole.



## Technical Information

### ■ Allowable Counterforce (Per Clamp)

Part Number	Max. load(N)
<b>AMWPD40-W</b> <b>AMWPD63-W</b>	Clamping force × 2

## Related Product

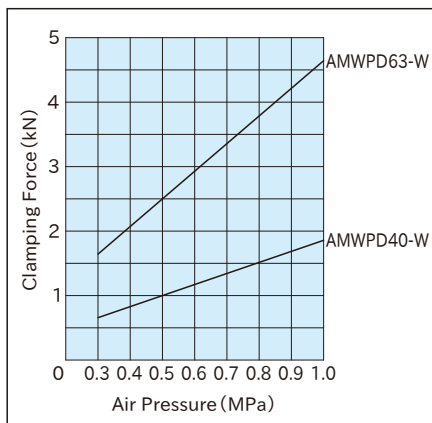
·**AMWPD-X** CLAMPING PINS

·**AMWPD-M** CLAMPING SCREWS

## Note

- 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.

## Performance Curve

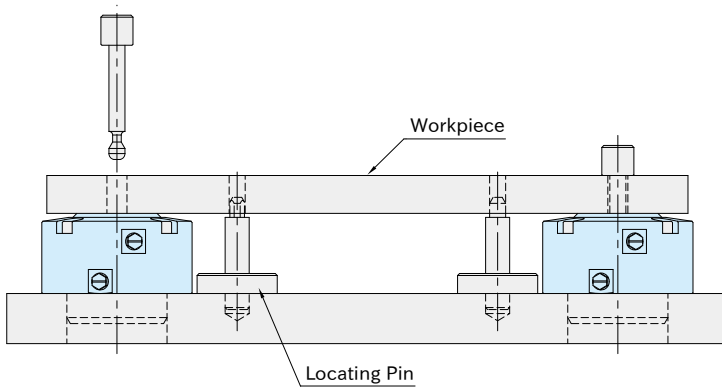


Continuing on Next Page

**How To Use**

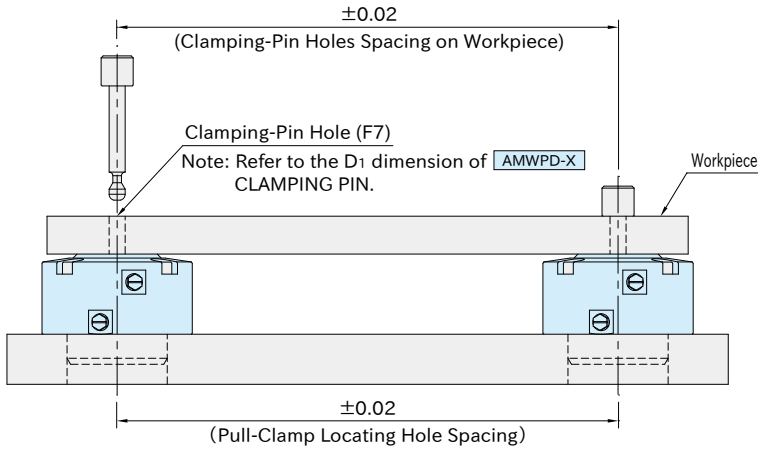
■ **How to Locate Workpiece**

1. Basic Method



2. Method for clamping and locating at a time

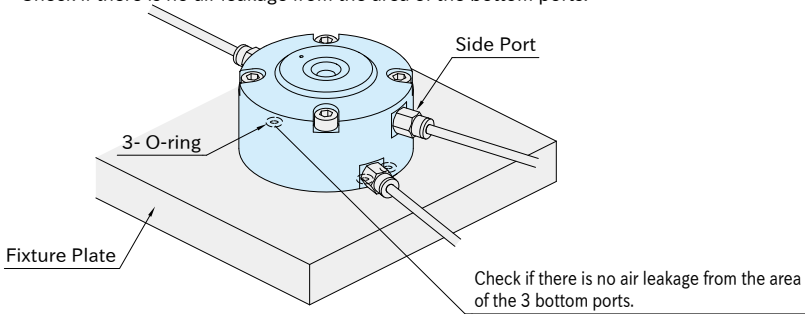
Locating Accuracy  $\pm 0.08$



### How to Install

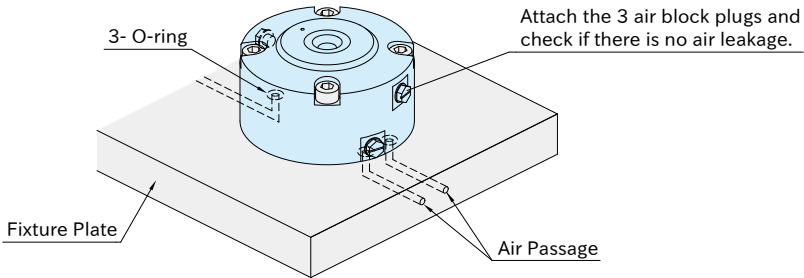
#### 1. With Side Ports

- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ( $\frac{6.3}{\sqrt{3}}$ ) to get the bottom ports sealed up.
- Check if there is no air leakage from the area of the bottom ports.

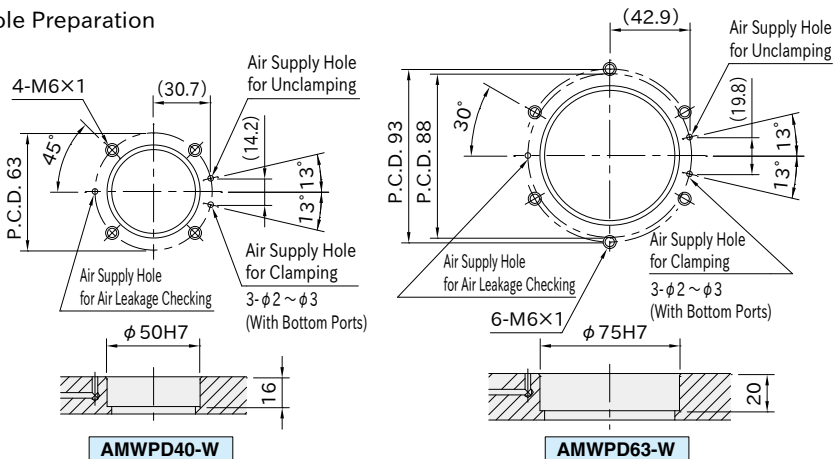


#### 2. With Bottom Ports

- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ( $\frac{6.3}{\sqrt{3}}$ ) to get the bottom ports sealed up.
- Refer to the figure below for the hole details.
- Ensure that the furnished air block plugs are attached to the side ports.



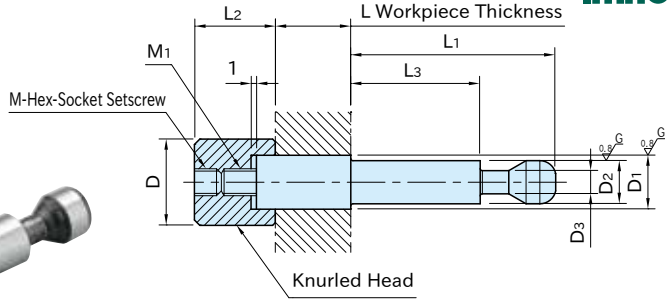
### Hole Preparation



# AMWPD-X

## CLAMPING PINS

On Request 



Note: L dimension is adjustable by  $\pm 1$ mm to fit actual workpiece thickness.

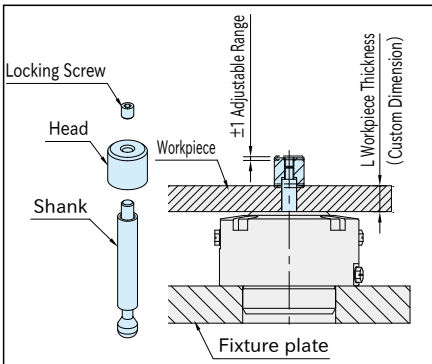
Shank	Head
SCM435 steel Induction hardened (taper seat) Precision ground	S45C steel Quenched and tempered Black oxide finish

Part Number	D <sub>2</sub> (f7)	D <sub>1</sub> (f7)	L* (By 0.1mm)	D	L <sub>2</sub>	L <sub>1</sub>	L <sub>3</sub>	D <sub>3</sub>	M
AMWPD40- 8-(L Dim. in mm)	8	8	4 ≤ L ≤ 64	16	15	38	24	4.3	M5×0.8 -5L
AMWPD40-10-(L Dim. in mm)		10							
AMWPD63-12-(L Dim. in mm)	12	12	0 < L ≤ 90	18	23	48	31.5	6.5	M8×1.25-8L
AMWPD63-16-(L Dim. in mm)		16		24					

Part Number	M <sub>1</sub>	Proper Pull Clamps	Weight (g)
AMWPD40- 8-(L Dim. in mm)	M5×0.8	AMWPD40-W	min. 30~max. 60
AMWPD40-10-(L Dim. in mm)			min. 31~max. 77
AMWPD63-12-(L Dim. in mm)	M8×1.25	AMWPD63-W	min. 70~max.160
AMWPD63-16-(L Dim. in mm)			min.175~max.265

\* For ordering, specify workpiece thickness.

### How To Use



### Note

The length of L dimension should be decided depending on the workpiece thickness.

### Ordering Example

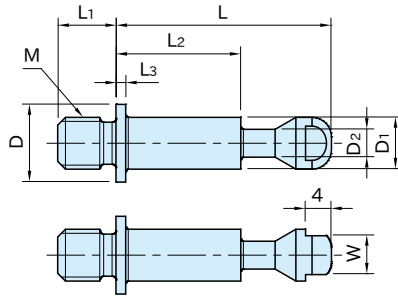
**AMWPD40-8 - 10.5**

Shank Size                      L Dim.

AMWPD40-8 for 10.5mm  
thickness workpiece.

AMWPD-M

CLAMPING SCREWS

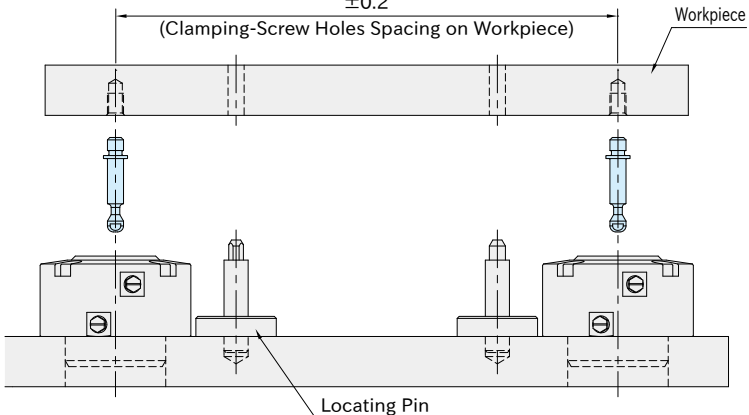


Body
SCM435 steel
Quenched and tempered
Black oxide finish

Part Number	D <sub>1</sub>	M	L <sub>1</sub>	L	D	L <sub>2</sub>	L <sub>3</sub>	D <sub>2</sub>	W	Proper Pull Clamps	Weight (g)
<b>AMWPD40-M 8</b>	8	M 8x1.25	9	38	12	24	1.5	4.3	6	AMWPD40-W	16
<b>AMWPD40-M10</b>		M10x1.5	11								20
<b>AMWPD63-M12</b>	12	M12x1.75	13	48	20	31.5	2	6.5	10	AMWPD63-W	50
<b>AMWPD63-M16</b>		M16x2	17								64

How To Use

Recommended Spacing Tolerance in Use of Clamping Screws ±0.2



Note

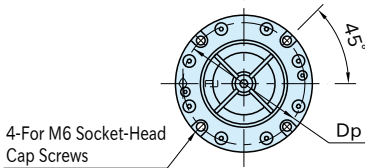
Custom Clamping Screws (different screw thread sizes) are available on request.

AMCH-W

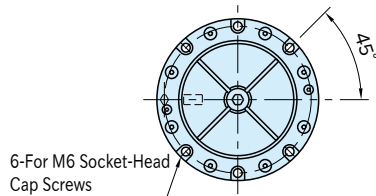
PNEUMATIC OD HOLDING CLAMPS



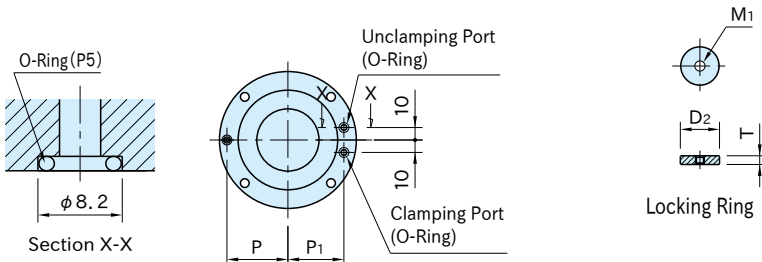
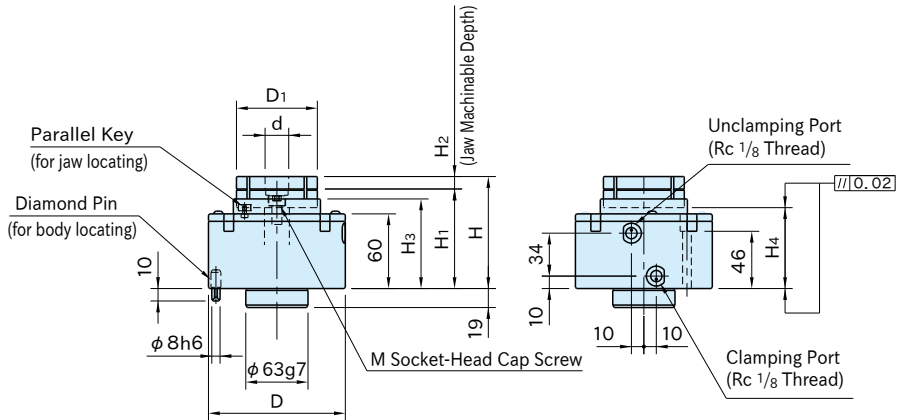
Body	Jaw
S45C steel Electroless nickel plated	A7075 aluminum Anodized Blue



AMCH080-5W



AMCH100-5W





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

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

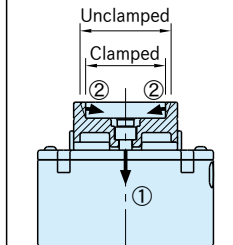
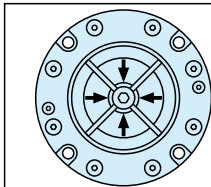
## Technical Information

- 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 **CPI21** 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.

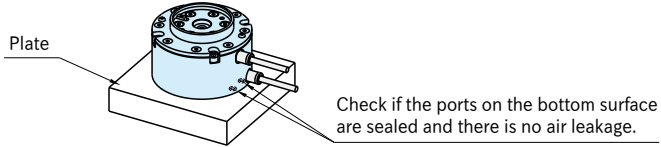
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**How To Use**

**Body Installing**

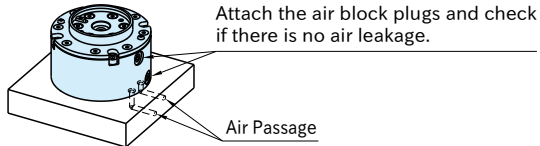
With Side Ports

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

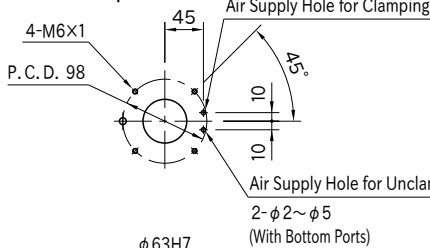


With Bottom Ports

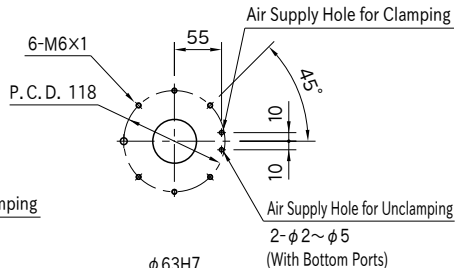
- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ( $\frac{6.3}{\sqrt{}}$ ) to get the bottom ports sealed up.
- Refer to the figure below for the hole positions for ports.
- Ensure that the furnished air block plugs are attached to the side ports.



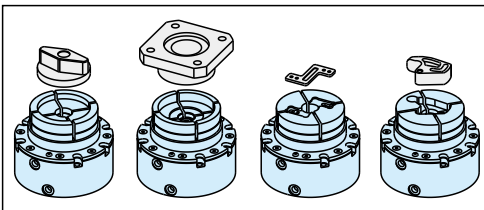
**Hole Preparation**



AMCH080-5W



AMCH100-5W

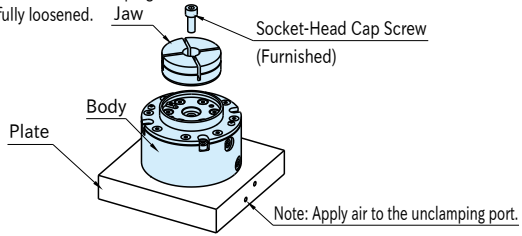


- Machinable jaws allow clamping workpieces of various shapes.
- Ideal way to hold workpieces for machining on small-size machining centers, tapping centers, small-size 5-axis machines, CNC rotary tables, etc.

Changeable Jaws [CP121](#) are available.

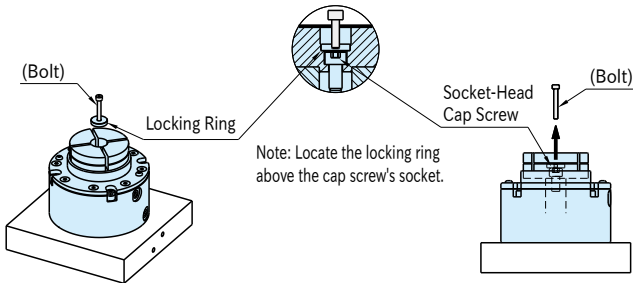
### ■ Jaw Setting

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

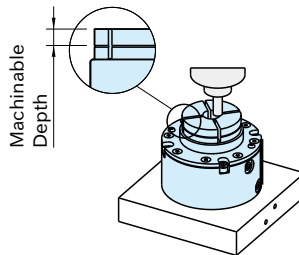


### ■ Jaw Machining

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.)

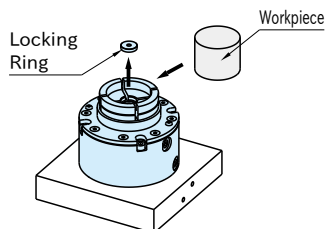


3. Machine the jaw to custom fit a workpiece.



### ■ 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.



AMWD-WS

PNEUMATIC HOLD DOWN CLAMPS



★ One Point  
Magnetic sensor mountable!

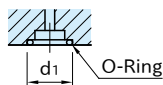
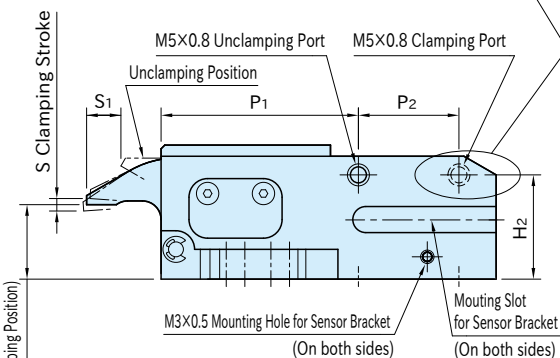
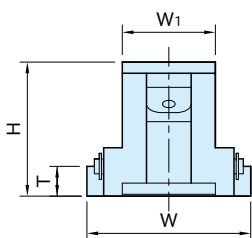
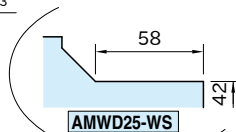
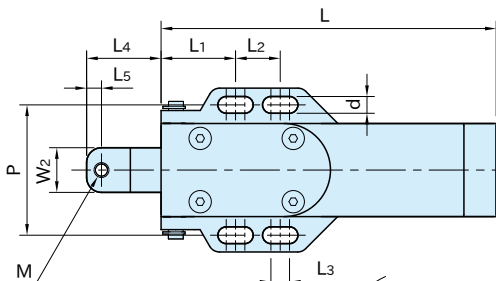


AMWD16-WS

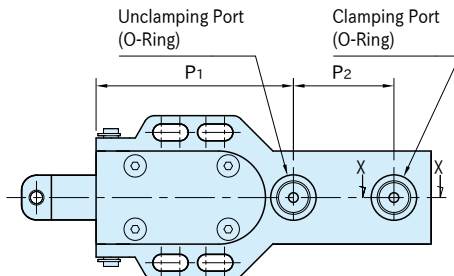


AMWD25-WS

Body	Clamp Arm
AC7A aluminum Anodized	SCM415 steel Carburized-hardened Electroless Nickel Plated



Section X-X



Part Number	W <sub>2</sub>	L <sub>4</sub>	M	L <sub>5</sub>	H <sub>1</sub>	S	S <sub>1</sub>	L	W <sub>1</sub>	H	W	T	d	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
<b>AMWD16-WS</b>	12	20	M4×0.7	4	20	2	9	90	25	36	44	8	4.5	20	12	5
<b>AMWD25-WS</b>	18	32	M6×1	6	30	3	15	135	40	54	65	12	6.5	30	20	8

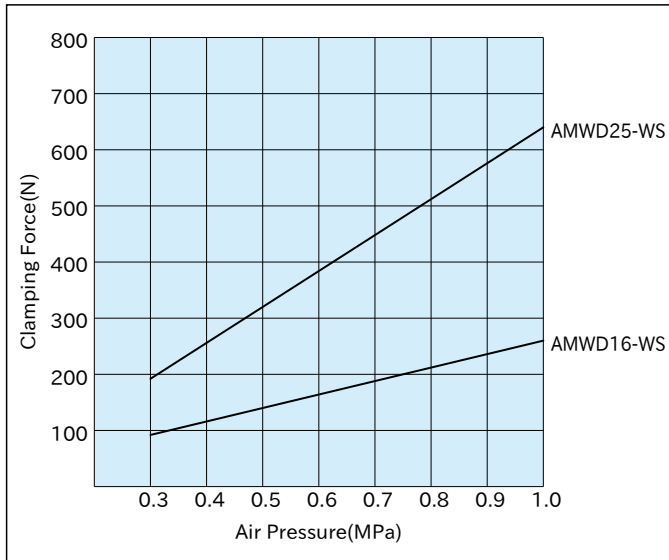
Part Number	P	d <sub>1</sub>	P <sub>1</sub>	P <sub>2</sub>	H <sub>2</sub>	Operating Air Pressure (MPa)	Clamping Force (N) *	Furnished O-Ring	Weight (g)
<b>AMWD16-WS</b>	35	12.2	53	27	28	0.3 - 1.0	140	P 9	250
<b>AMWD25-WS</b>	53	18	84	38	33		320	P14	850

### Supplied With

2 of O-Ring


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

### Performance Curve



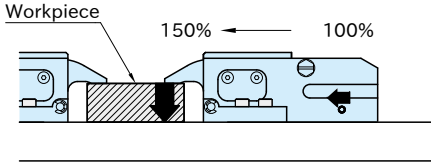
### Related Product Page

[AMWD-WS-B](#) SENSOR BRACKETS

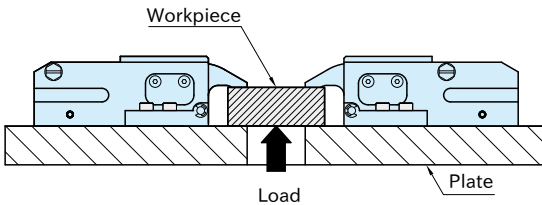
 Continuing on Next Page

**Feature**

- Wedge mechanism provides 150% clamping force.



- The allowable counterforce is shown in the chart below.
- Wedge mechanism prevents the clamping force from immediate decrease if air pressure lowers.  
Note: The clamping force may be decreased by excessive vibration.

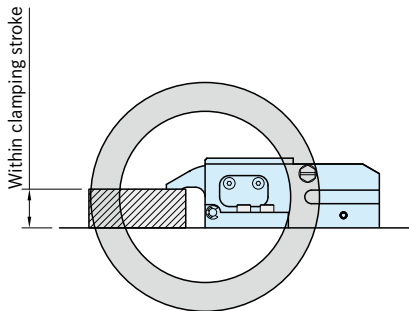


Allowable Counterforce (Per Clamp)

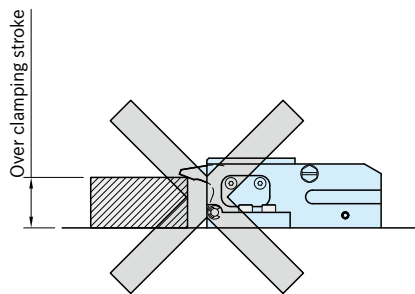
Part Number	Allowable Force (kN)
<b>AMWD16-WS</b>	1
<b>AMWD25-WS</b>	2.2

**Note**

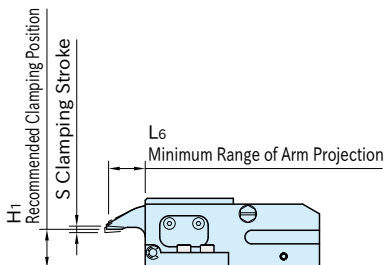
- Use clean air by removing dust with filter or draining with dryer.
- Impure compressed air may cause malfunction of the products.
- Using lubricator is recommended.
- Use the clamp within the clamping stroke.



The wedge mechanism works to clamp the workpiece securely.



The wedge mechanism does not work.

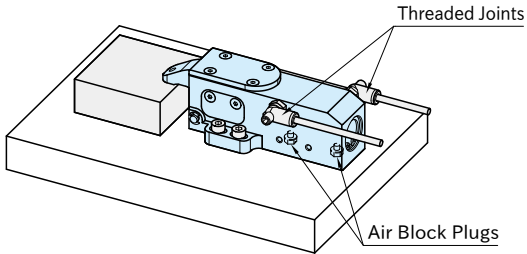


Part Number	S	H <sub>1</sub>	L <sub>6</sub>
<b>AMWD16-WS</b>	2	20	19
<b>AMWD25-WS</b>	3	30	30.5

## How To Use

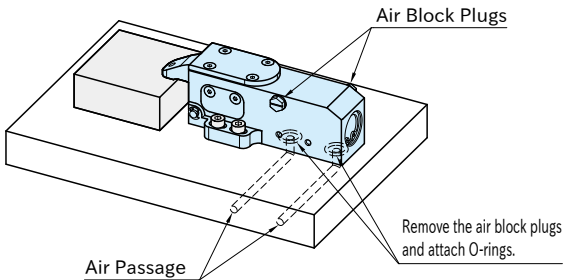
### ■ With Side Ports

- Ensure that the furnished air block plugs are attached to the bottom ports.
- Remove the air block plugs on the side ports and connect the piping.
- Refer to the figure below for the hole preparation.

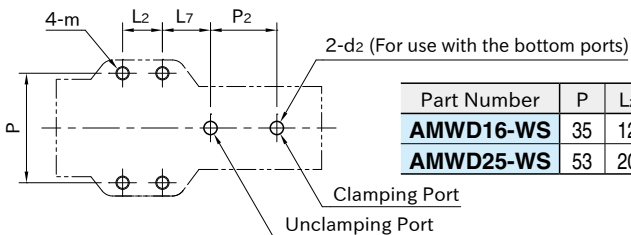


### ■ With Bottom Ports

- Ensure that the furnished air block plugs are attached to the side ports.
- Remove the air block plugs on the bottom ports and attach O-rings (included) to it.
- Plate surface must be flat ( $\nabla^{6.3}$ ) to get the bottom ports sealed up.
- Refer to the figure below for the hole preparation.



### ■ Hole Preparation



Part Number	P	L <sub>2</sub>	L <sub>7</sub>	P <sub>2</sub>	m	d <sub>2</sub>
<b>AMWD16-WS</b>	35	12	21	27	M4×0.7	φ2 - φ4
<b>AMWD25-WS</b>	53	20	34	38	M6×1	φ2 - φ6

# AMWD-WS-B

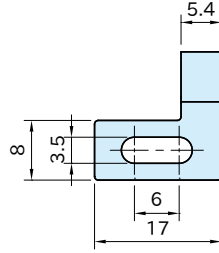
# SENSOR BRACKETS



Stainless  
Steel



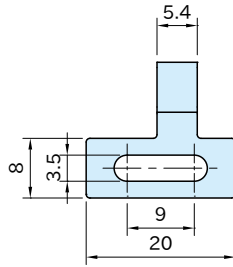
AMWD16-WS-B



AMWD16-WS-B



AMWD25-WS-B



AMWD25-WS-B

Body
SUS304 stainless steel

Part Number	Weight (g)	Proper Sensor *)
AMWD16-WS-B	5.5	AH006-S, N
AMWD25-WS-B	6	

\*)Magnetic Proximity Sensors of ASA ELECTRONICS INDUSTRY CO., LTD.  
Please refer to their catalog for details of sensors.

### Feature

- Using proper sensors enables to detect the piston positions.
- Prepare the sensors as needed.(Not available from Imao.)

### Supplied With

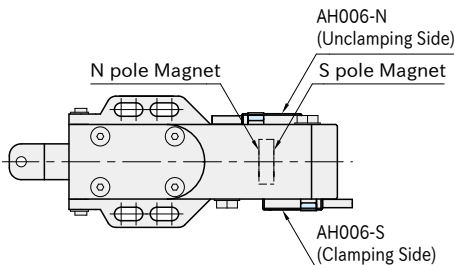
2 of M3x0.5-5L Hex socket button head screw

### Related Product

AMWD-WS PNEUMATIC HOLD DOWN CLAMPS

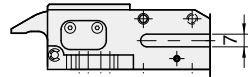
### How To Use

- Must be used with 1 pc. each of AH006-S (S pole) and AH006-N (N pole).
- Adjust the detecting positions by mounting sensors of S and N poles as shown below.



### Note

- Only Magnetic Proximity Sensors AH-006 of ASA ELECTRONICS was tested with AMWD-WS PNEUMATIC HOLD DOWN CLAMPS.
- Ensure to follow the criteria below before using other magnetic sensors.
  - Can be mounted in the 7mm slot of the clamp body.



- Can detect the internal magnet of the clamp.
- Brackets should be made by the customer referring to the datasheet of AMWD-WS-B SENSOR BRACKETS.

