PNEUMATIC CLAMPING MODULES
[AMWFH-WP] Instructions

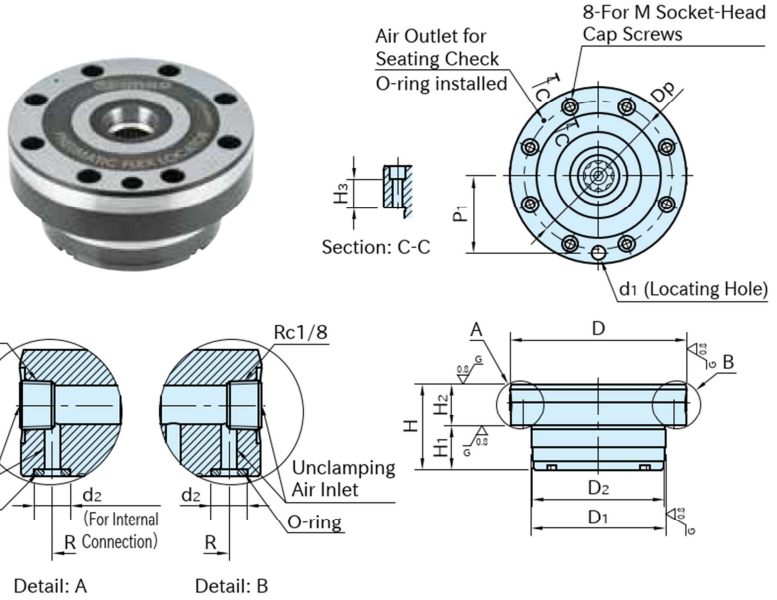
For Safe operation of the AMWFH-WP,please read this instructions carefully before using.
Please keep this instruction manual handy for future reference.

Mounting Instructions

・Clean the inside of the mounting hole and put a grease.
・Install o-rings in the air inlets that are located on the bottom of the flange.
・Insert the module in the mounting hole and fix with screws.
・Mount the hole caps to keep the top surface clean.

Maintenance

・Put a grease on the center hole of the module and the clamping pin on regular basis to prevent rust.



★Key Point
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

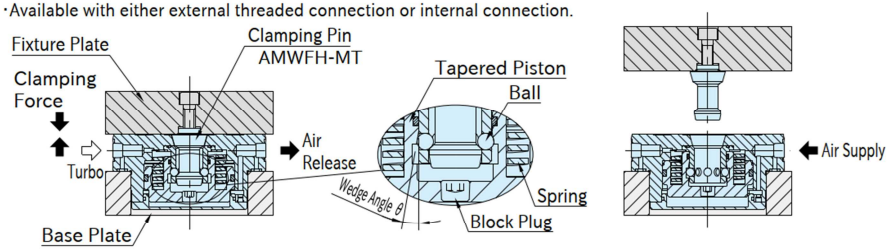
Part Number	D (h7)	D_1 (h6)	D_2	H	H_1	H_2 (±0.005)	M	H_3	Dp	P_1 (±0.02)	R	d_1 (G6)	d_2	O-ring
AMWFH105-WP	105	80	79.5	51	26	25	M5	17	88	46	46	8	7.2	P4
AMWFH140-WP	140	110	109.5	65	33	32	M6	23	120	62	62	10	8.2	P5

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

Feature

■ Clamping Mechanism

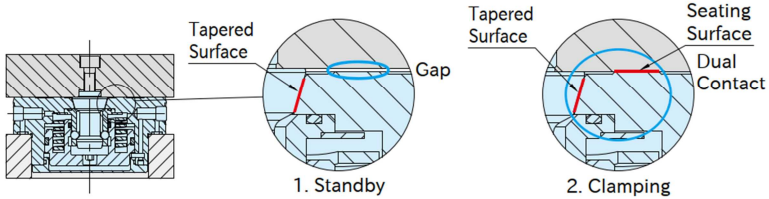
・This module clamps the plate with spring force, and can be boosted by supplying air to the turbo port. Supplying air to the unclamping port opens the module, and releasing air allows the spring to hold the clamping pin for clamping.
・Available with either external threaded connection or internal connection.



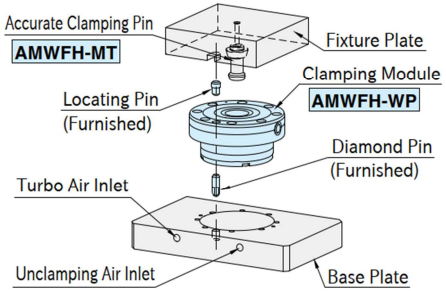
Releasing air allows the spring to push the tapered piston downward, which presses the balls and retracts the clamping pin.
The clamping force can be boosted by supplying air to the turbo port.

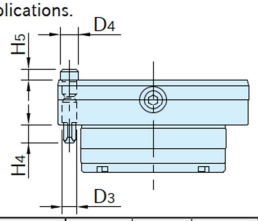
Supplying air raises the tapered piston, releasing the pressure on the balls and unclamping the clamping pin.

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



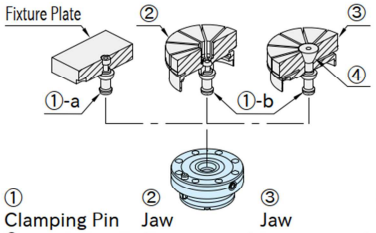
・Use the furnished diamond pin and the locating pin for single module applications.



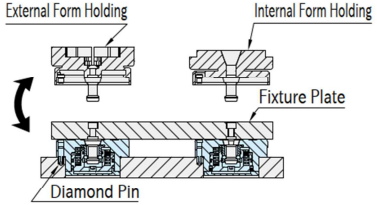


Part Number	D (h6)	H4	D4 (h6)	H5
AMWFH105-WP	8	10	10	6
AMWFH140-WP	10	12	12	7

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

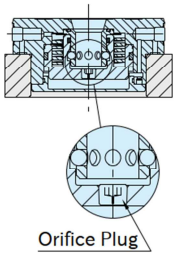


①	②	③	④
Clamping Pin	Jaw	Jaw	Tapered Screw
①-a : AMWFH-MT	(External Holding)	(Internal Holding)	(Internal Holding)
①-b : AMWFH-MS	AMWFH-O	AMWFH-I	AMWFH-IB



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.

■ Blow-out Function



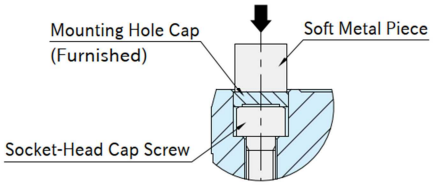
Replace the installed plug with the supplied orifice plug to enable air blow at the clamp pin insertion hole.

■ Mounting Hole Cap

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

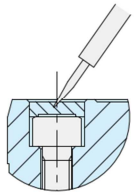
Installation

Tap in with plastic hammer



・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.

Removal



・Insert a pointed tool into the cap to remove it.

Note

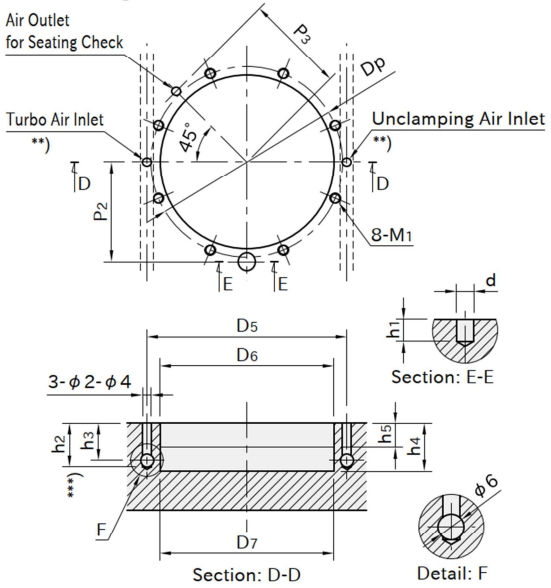
・Do not plug the turbo port as it functions as an air vent even when not using turbo function.
Mounting a filter prevents contamination.
・If seating confirmation by monitoring air flow is required, internal air supply must be provided. The detection switch and related components should be prepared by 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

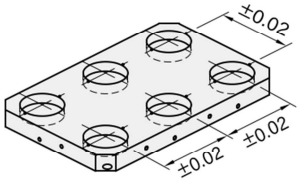
・AMWFH105-WP : 1 of diamond pin BJ722-08001
・AMWFH140-WP : 1 of diamond pin BJ722-10001
・1 of locating pin
・1 of orifice plug
・8 of plastic mounting hole caps
・1 of plastic locating hole cap

How To Use

■Mounting Hole Dimensions



■ Machining Accuracy



Spacing tolerance between mounting holes should be ±0.02.

**) Not required for external connection with Rc1/8 ports.
***) Refer to Internal Pneumatic Connection for the details of h_2 and h_3.

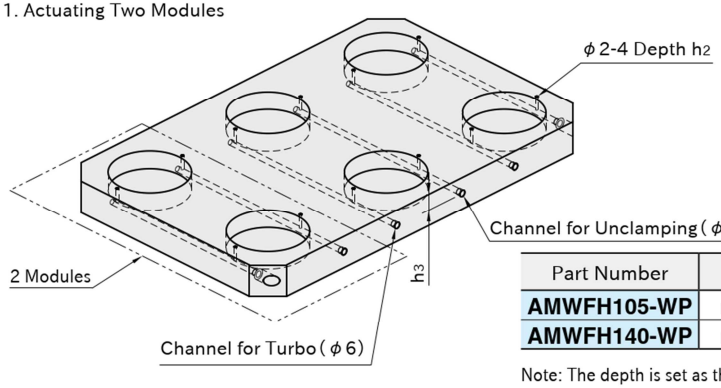
Part Number	P_2 (±0.02)	P_3	Dp	M_1	d (G7)	h_1	D_5	D_6 (H7)	D_7	h_4	h_5
AMWFH105-WP	46	46	88	M5×0.8 Depth 10(Hole Depth 14)	8	10	92	80	79.8	27	14
AMWFH140-WP	62	62	120	M6×1.0 Depth 13(Hole Depth 18)	10	12	124	110	109.8	34	19

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 φ2-4.

1. Actuating Two Modules

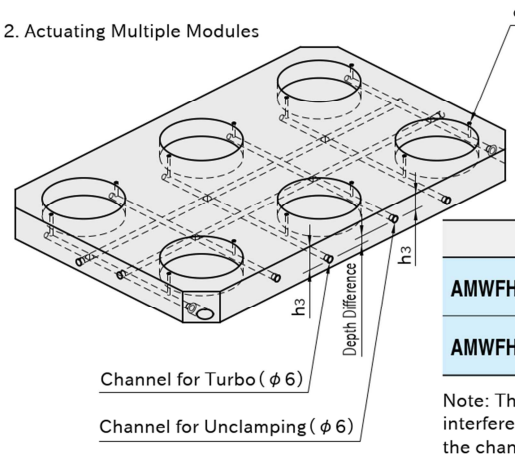


Part Number	h_2	h_3
AMWFH105-WP	min.21	min.18
AMWFH140-WP	min.23	min.20

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 (φ2-4) 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.

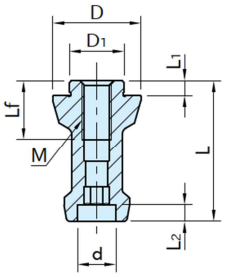
- The depth of vertical holes (φ2-4) should be h_2.
- Make sure to set different depths for the turbo and unclamping channels to avoid interference.
- Use one air supply port each for turbo and unclamping, and plug the unused ports. Screw plugs should be prepared by the customer.

Related Products

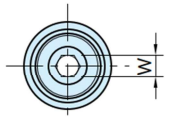
- AMWFH-M CLAMPING PINS
- BJ722 DIAMOND LOCATING PINS
- AMWFH-O JAWS FOR EXTERNAL FORM HOLDING
- AMWFH-I JAWS FOR INTERNAL FORM HOLDING

AMWFH-M CLAMPING PINS

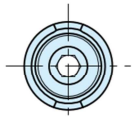
(Locating, Round) (Locating, Diamond) (Clamping)



Body
SCM415 Steel Carburized-hardened Black oxide finished



AMWFH-MT (Round)



AMWFH-MS (Clamping)

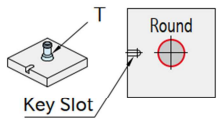
AMWFH-MD (Diamond)

Part Number	Type	M	D1	L1	D	L	d	L2	W	Lf	Weight (g)	Pneumatic Clamping Modules
AMWFH105-M 8T	Round	M 8×1.25	15g6	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		24							
AMWFH140-M12T	Round	M12×1.75	25g6	5	34.2	51.5	16.5	6.5	10	24	170	AMWFH140-WP
AMWFH140-M12D	Diamond											
AMWFH140-M12S	Clamping		25 -0.1		34							
AMWFH140-M16T	Round	M16×2	25g6		34.2		18.5	7.5	12	30	140	
AMWFH140-M16D	Diamond											
AMWFH140-M16S	Clamping		25 -0.1		34							

How To Use

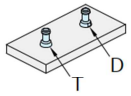
■ Use of Single Pin

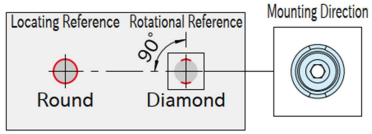
Type T Round Pin: 1 pc



■ Use of 2 Pins

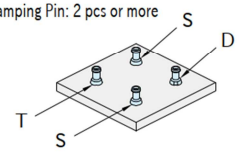
Type T Round Pin:1 pc
Type D Diamond Pin:1 pc

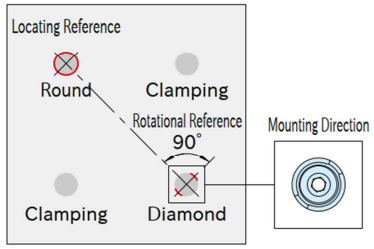




■ Use of 4 or More Pins

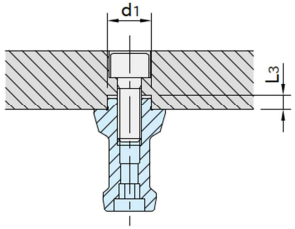
Type T Round Pin:1 pc
Type D Diamond Pin:1 pc
Type S Non-Locating Clamping Pin: 2 pcs or more





How To Use

■ Mounting Hole Dimension

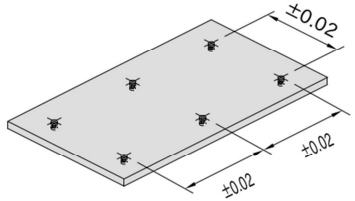


Size	d1 (H7)	L3
AMWFH105-M8	15	4.5
AMWFH140-M12	25	5.5
AMWFH140-M16		

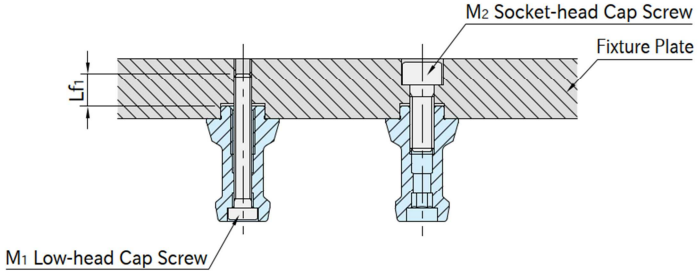
Note: The tolerance of d1 for Type S non-locating Clamping Pin is $^{+0.1}_{0}$.

■ 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



Top Fixing Bottom Fixing

Size	M1	Lf1	M2
AMWFH105-M8	M 6×1 -45L	11	M 8
AMWFH140-M12	M10×1.5 -60L	15	M12
AMWFH140-M16	M12×1.75-65L	21	M16

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

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