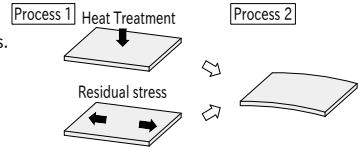


Features

- Reversing the clamp nut assembly in the clamping modules ([CP150](#), [CP151](#), [CP152](#)) enables use of [CP155-LM](#), [CP155-DM](#), and [CP156-M](#) distortion compensation screws. These screws are compatible only with new-version clamp modules.
- Available in two different bushing diameters for first and second processes.
- Even if workpiece distortion occurs after the first machining process, the second process can be performed with the same fixture layout by remachining only the locating hole.



① Process 1

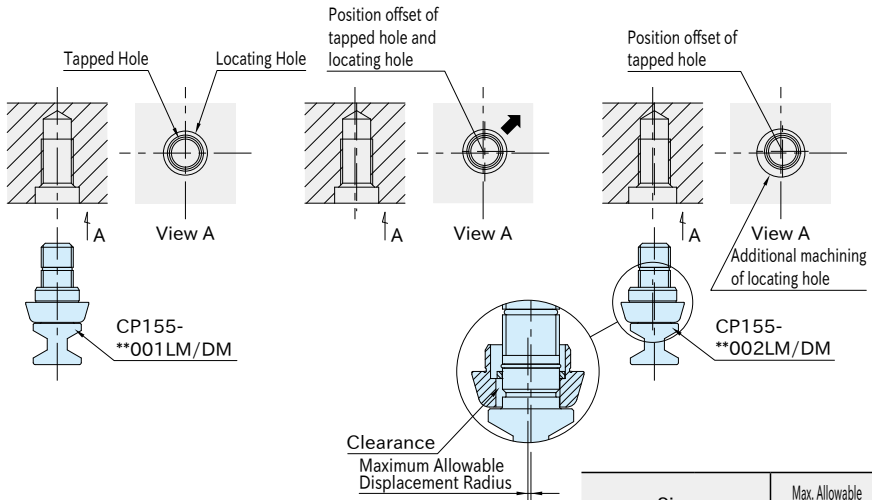
Machine the locating hole and tapped hole, and use the Tapered Floating Screws for Process 1 (CP155-**001LM/DM).

② Distortion Occurs

Hole positions shift due to distortion caused by heat treatment or rough machining.

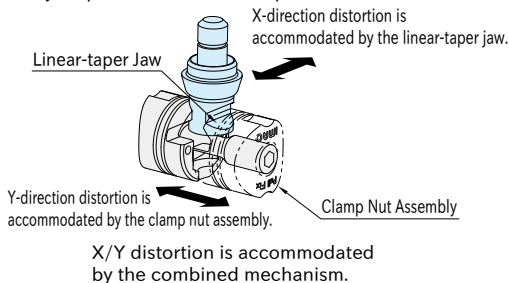
③ Process 2

Remachine the locating hole and use the Tapered Floating Screws for Process 2 (CP155-**002LM/DM).



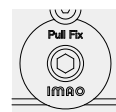
Size		Max. Allowable Displacement Radius
CP155-LM	12002	0.8
	16002	0.8
CP155-DM	20002	1

- Distortion compensation screws provide stable and uniform clamping even when the clamping screw position is offset in the X and Y directions.
- They help accommodate workpiece distortion and minimize its effect on machining accuracy.

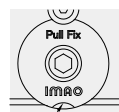


How to Identify Previous- and New-Version Clamp Modules

Previous Version



New Version

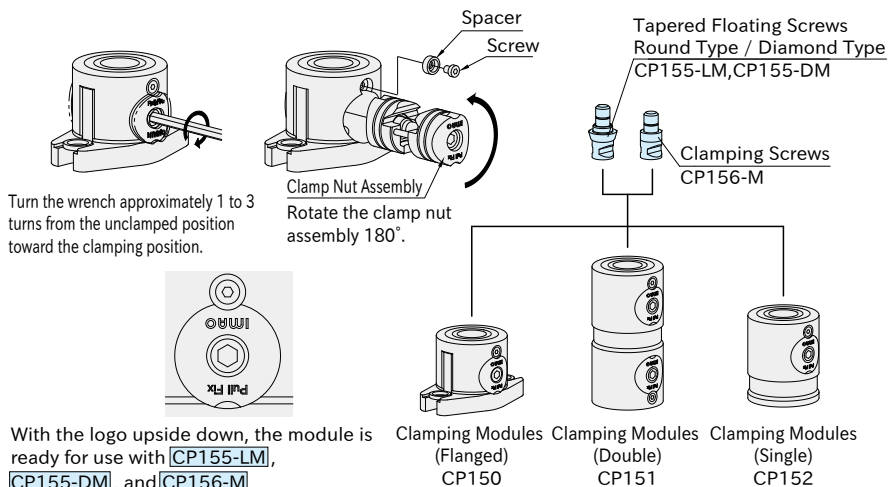


How to Use

■ How to Convert the Clamping Module

1. From the unclamped position, turn the wrench approximately 1 to 3 turns toward the clamping position.
2. Remove the screw and spacer, then take out the clamp nut assembly.
3. Rotate the clamp nut assembly 180°, reinstall it in the original position, and secure it with the screw and spacer.
4. Return the module to the unclamped position before use.

Note: For the CP151 double type, conversion is required on the workpiece side only.



■ How to Use Distortion Compensation Screws

Tapered Floating Screws - Round Type:

Use in combination with the Diamond Type for workpiece locating.

Tapered Floating Screws - Diamond Type:

Use in combination with the Round Type for workpiece locating.

Before tightening, rotate the tapered pin so that the reference faces are aligned with the required locating direction.

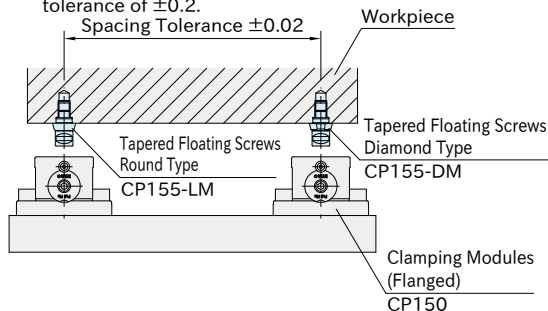
Clamping Screws - Non-locating Type:

Use where locating is not required.

■ Spacing Tolerance

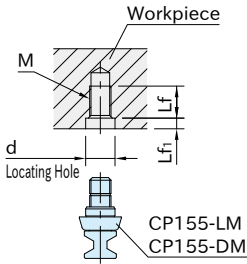
For locating points where Round Type and Diamond Type Tapered Floating Screws are used, machine the holes with a spacing tolerance of ± 0.02 .

Note: For non-locating points where Clamping Screws are used, machine the tapped holes with a spacing tolerance of ± 0.2 .



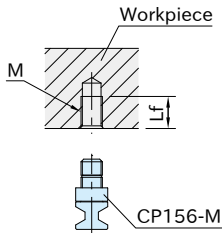
Continuing on Next Page

■ Hole Machining Dimensions



Size	Process	d)	Lf ₁	M	Lf
CP155-LM CP155-DM	12001	Proc. 1	18	6.5	M12×1.75
	12002	Proc. 2	20		—
	16001	Proc. 1	22	8	M16×2
	16002	Proc. 2	24		—
	20001	Proc. 1	30	8	M20×2.5
	20002	Proc. 2	32		—

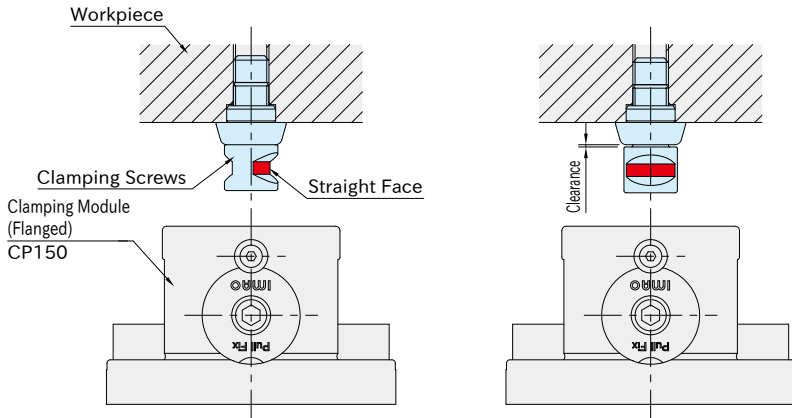
*) If locating repeatability of 5 µm or better is required, use a hole machining tolerance of -0.02 to -0.04. In this case, the bushing may be scratched. An H7 clearance fit can also be used. In this case, installation and removal will be easier, but the above locating repeatability may not be achieved.



Part Number	Process	Lf	M
CP156-12001M	Proc. 1 and 2	19	M12×1.75
CP156-16001M		23	M16×2
CP156-20001M		31	M20×2.5

■ How to Install

1. Screw the clamping screw fully into the workpiece.
2. Turn the clamping screw back no more than half a turn to orient the straight face toward the operating side of the clamping module. A clearance will be created between the clamping screw and the tapered pin.
3. Insert the clamping screw into the clamping module while maintaining its orientation.



The O-ring prevents rotation to maintain the orientation of the clamping screw. When the O-ring loses effectiveness, replace it with a commercially available equivalent.

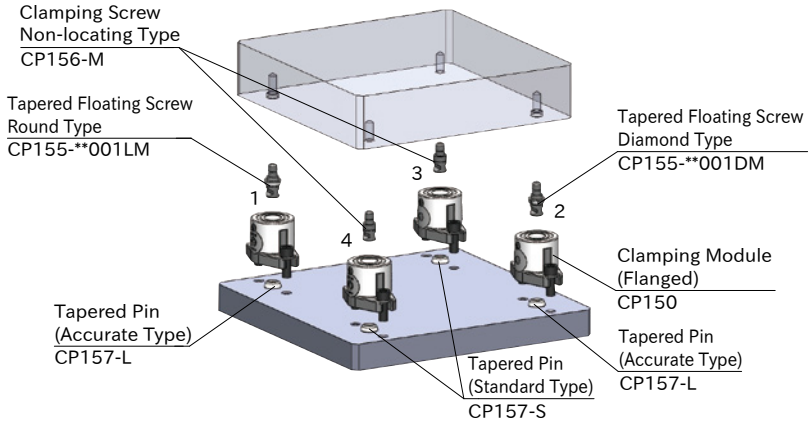
■ Tightening Order

Tighten in the following order:

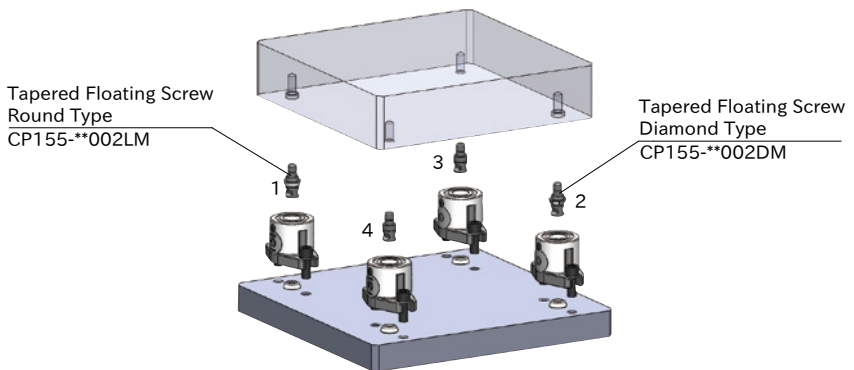
1. Tapered Floating Screw - Round Type
2. Tapered Floating Screw - Diamond Type
3. Clamping Screw - Non-locating Type
4. Clamping Screw - Non-locating Type

Note: If the Round Type is not tightened in the specified order, the specified locating repeatability may not be achieved.

Process 1



Process 2



Related Products

- [CP150](#) Clamping Modules (Flanged)
- [CP151](#) Clamping Modules (Double)
- [CP152](#) Clamping Modules (Single)
- [CP155-LM](#) Tapered Floating Screw - Round Type
- [CP155-DM](#) Tapered Floating Screw - Diamond Type
- [CP156-M](#) Clamping Screw - Non-locating Type