## Free Holder

## Features

-This holder is suited for a case when the part is not placed perpendicularly toward the pad or when the angular relationship between the pad and parts varies.


Model Designation (Example)

(1)Type

FH: $30^{\circ}$ type
FHH: $15^{\circ}$ type
(2)Holder size

| Holder size | 10 | 20 | 60 |
| :---: | :---: | :---: | :---: |
| Applicable pad dia. | $\phi 10 \mathrm{~mm}, \phi 15 \mathrm{~mm}$ | $\phi 20 \mathrm{~mm} \sim \phi 50 \mathrm{~mm}$ | $\phi 60 \mathrm{~mm} \sim \phi 100 \mathrm{~mm}$ |

## Detailed Saiety Instructions

Before using the PISCO device, be sure to read the "Safety Instructions", "Common Safety Instructions for Products Listed in This Manual" on pages 23~24 and "Common Safety Instructions for Vacuum Pads" on page 439~440.

## \. Warning

1. Do not use Free Holder for uses other than in combination with our Vacuum Pad or direct mounting Pad Filter. Free Holder is designed for use with Vacuum Pad, so that improper use can cause damage to the device body.
2. For transport by Free Holder, take acceleration, shocks and draft pressure into cosideration. Otherwise work may drop during transport, thus causing damage to the body.
3. Do not give excessive forces to Free Holder. Otherwise damage to the body may result.

## 1. Caution

1. Pay attention to the angle of free holder while it holds the work. The angle varies according to the weight of the work, acceleration during conveyance, or impact.
2. For attachment or replacement, apply the recommended torque specified in the following table to flat edges of the holder with correct tool.

- Table Recommended tightening torque

| Thread size $(\mathrm{mm})$ | Tightening touque |
| :---: | :---: |
| $\mathrm{M} 4 \times 0.7$ | $0.4 \sim 0.6 \mathrm{~N} \cdot \mathrm{~m}(0.30 \sim 0.44 \mathrm{lbf} \cdot \mathrm{ft})$ |
| $\mathrm{M} 6 \times 1$ | $1 \sim 1.2 \mathrm{~N} \cdot \mathrm{~m}(0.74 \sim 0.88 \mathrm{lbf} \cdot \mathrm{ft})$ |
| $\mathrm{M} 10 \times 1.5$ | $3 \sim 4 \mathrm{~N} \cdot \mathrm{~m}(2.21 \sim 2.95 \mathrm{lbf} \cdot \mathrm{ft})$ |

3. Use free holder in combination with pad-diret-mounting filter or sponge pad with filter. Without filter, leakage may occur due to suction of foreign materials.
unit:mm


| Type | M1 | M2 | A1 | A2 | B | L1 | L2 | фP | H1 | H2 | mass <br> (g) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FH 10 | M4×0.7 M $4 \times 0.7$ |  | 4 | 7 | 23 | 19 | 11 | 15 | 4 | - | 9 |
| FH 20 | M6×1 | M6x1 | 6 | 6.5 | 28.5 | 22.5 | 12.5 | 20 | 7 | - | 19.5 |
| FH 60 | M10×1.5 | M10x1.5 | 10 | 9.5 | 40.5 | 30.5 | 18.5 | 28 | 12 | 24 | 57.5 |

*Swing angle: 30 degrees (The 15-degree type is produced to order.)


