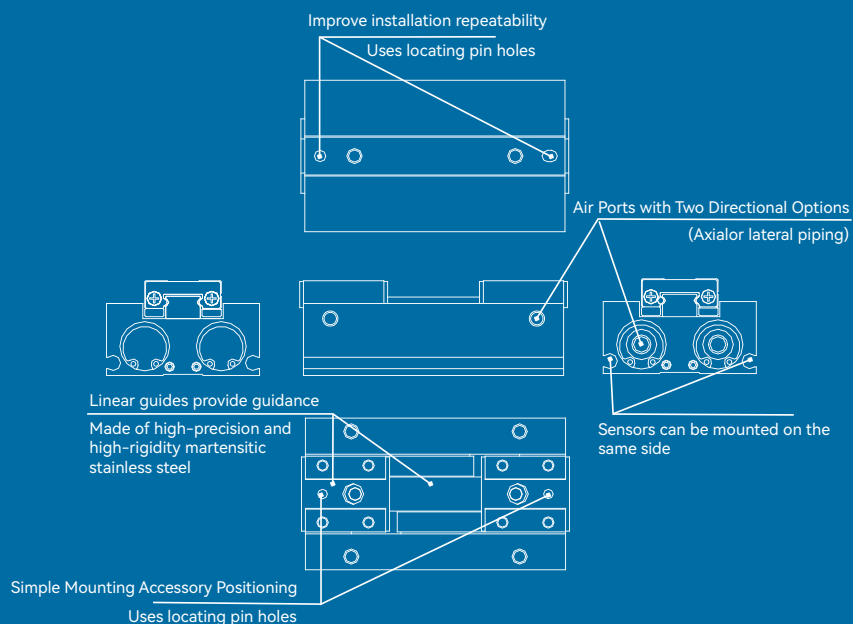
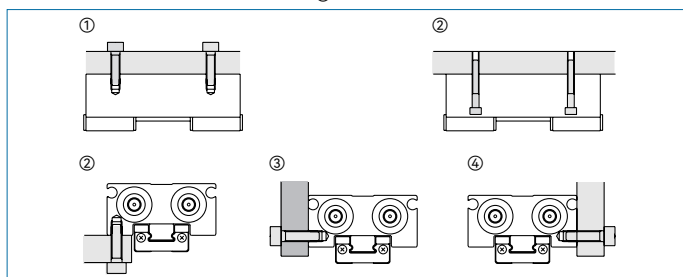
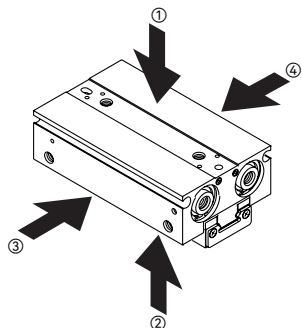


## ► AHF2 Series



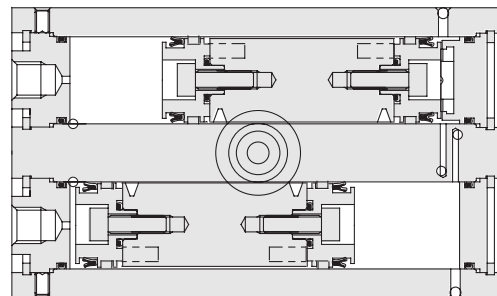
### Mounting Features

Mounting flexibility, no bracket required, Mounting height can be minimized, Can be mounted from four directions



### Product Features

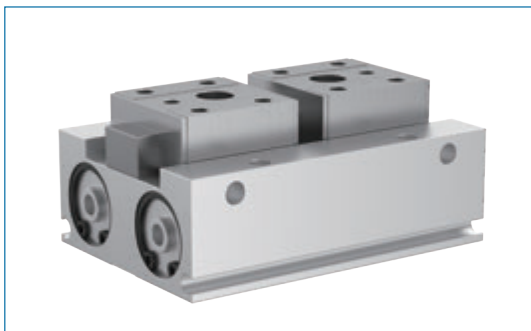
Double piston design, compact with strong support force, Gear rack made of high-quality alloy steel, coated to improve service life



| Model     | Bore(mm) | Clamping force(N) |
|-----------|----------|-------------------|
| AHF2-8D□  | 8        | 19                |
| AHZ2-10D□ | 10       | 11                |
| AHF2-12D□ | 12       | 48                |
| AHZ2-20D□ | 20       | 42                |
| AHF2-16D□ | 16       | 90                |
| AHZ2-25D□ | 25       | 65                |
| AHF2-20D□ | 20       | 141               |
| AHZ2-32D□ | 32       | 158               |

## CompactGripper

## AHF2 Series



Compared to the AHZ2series, the height is reduced by about 1/3, not only saving space but also reducing bending moments and improving accuracy.  
Each bore size has three stroke options: Long, Medium, and Short.

## Specifications

|                                  |             |            |                          |         |    |    |                 |
|----------------------------------|-------------|------------|--------------------------|---------|----|----|-----------------|
| Bore (mm)                        |             |            | 8                        | 12      | 16 | 20 | 25              |
| Operating Mode                   |             |            | Double-acting            |         |    |    |                 |
| Working Fluid                    |             |            | Air                      |         |    |    |                 |
| Operating Pressure Range (MPa)   |             |            | 0.15~0.7                 | 0.1~0.7 |    |    |                 |
| Environment& Fluid Temperature   |             |            | -10~60℃(Non-freezing)    |         |    |    |                 |
| Repeat Accuracy(mm)              |             |            | ±0.05*                   |         |    |    |                 |
| Max. Operating Frequency (c.p.m) |             |            | Short/Medium Stroke: 120 |         |    |    | Long Stroke: 60 |
| Magnetic Switch Model            | Non-contact | 2-wire     | M9B                      |         |    |    |                 |
|                                  |             | 3-wire NPN | M9N                      |         |    |    |                 |

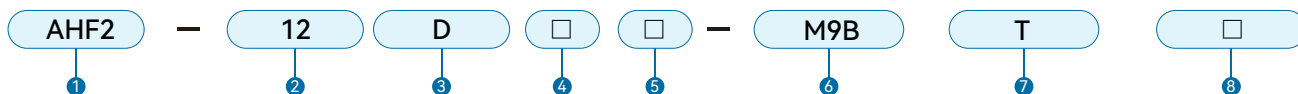
When no external moment is applied, if a moment acts on the fingers, the maximum deviation due to backlash is ±0.05mm.

\*Note: When the cylinder is mounted sideways and not used at full stroke, the minimum operating pressure must not be lower than 0.4 MPa.

## OrderingExample

|                                                         |                       |                              |
|---------------------------------------------------------|-----------------------|------------------------------|
| Required: Bore 8, Short Stroke                          | Correct Model:AHF2-8D | -                            |
| Required: Bore 16, Short Stroke, with Magnetic Switches | Correct Model:SW-M9B  | 1 cylinder 2 magnetic switch |

## Model Designation Method



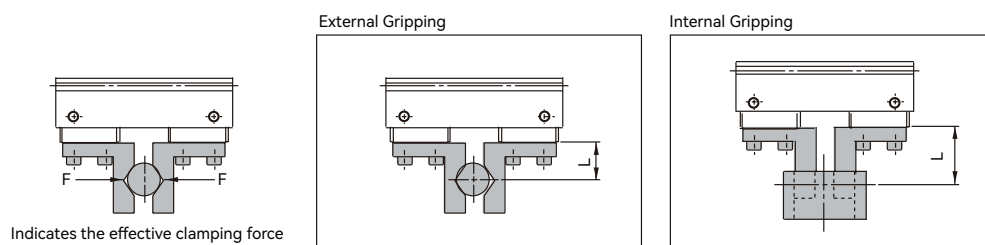
| 1 2-Finger | 2 Bore | 3 Double-Acting | 4 Stroke |        | 5 Gripper Body Port Configuration |              | 6 Sensor Switch Model |           | 7 T   |                                               | 8 Sensor Switch Quantity |    |
|------------|--------|-----------------|----------|--------|-----------------------------------|--------------|-----------------------|-----------|-------|-----------------------------------------------|--------------------------|----|
| 2-Finge    | Bore   | Double-Acting   | No Mark  | Short  | Gripper Body Port Configuration   |              | No Mark               | No Switch | Blank | Stranacdbard (Not suitable for cable carrier) | No Mark                  | 2↑ |
|            |        |                 | 1        | Medium | No Mark                           | Axial Piping | M9B                   | 2-wire    | T     | cable suitable for cable carrier              | S                        | 1↑ |
|            |        |                 | 2        | Long   | R                                 | Side Piping  | M9N                   | 3-wire    |       |                                               | n                        | n↑ |

[Note] Standard cable length is 2m. For models requiring 1m, 3m, or 5m cable lengths, please refer to the magnetic switch series in the catalog.

| Operating Mode | Model     | Bore(mm) | Clamping Force*                      | Open/Close Stroke (Both Sides) (mm) | Mass (g) | Flow Capacity (cm <sup>3</sup> ) |                    |
|----------------|-----------|----------|--------------------------------------|-------------------------------------|----------|----------------------------------|--------------------|
|                |           |          | Effective Clamping Force per Gripper |                                     |          | Gripper Open Side                | Gripper Close Side |
| Double-acting  | AHF2-8D   | 8        | 19                                   | 8                                   | 65       | 0.7                              | 0.6                |
|                | AHF2-8D1  |          |                                      | 16                                  | 85       | 1.1                              | 1.0                |
|                | AHF2-8D2  |          |                                      | 32                                  | 120      | 2.0                              | 1.9                |
|                | AHF2-12D  | 12       | 48                                   | 12                                  | 155      | 1.9                              | 1.6                |
|                | AHF2-12D1 |          |                                      | 24                                  | 190      | 3.3                              | 3.0                |
|                | AHF2-12D2 |          |                                      | 48                                  | 275      | 6.1                              | 5.8                |
|                | AHF2-16D  | 16       | 90                                   | 16                                  | 350      | 4.9                              | 4.1                |
|                | AHF2-16D1 |          |                                      | 32                                  | 445      | 8.2                              | 7.4                |
|                | AHF2-16D2 |          |                                      | 64                                  | 650      | 14.9                             | 14.0               |
|                | AHF2-20D  | 20       | 141                                  | 20                                  | 645      | 8.47                             | 7.3                |
|                | AHF2-20D1 |          |                                      | 40                                  | 850      | 15.1                             | 13.7               |
|                | AHF2-20D2 |          |                                      | 80                                  | 1225     | 28.0                             | 26.6               |
|                | AHF2-25D  | 25       | 236                                  | 60                                  | 1650     | 30.0                             | 27.3               |

\*At 0.5MPa pressure and 20mm grip point distance.

## Effective Clamping Force (1)

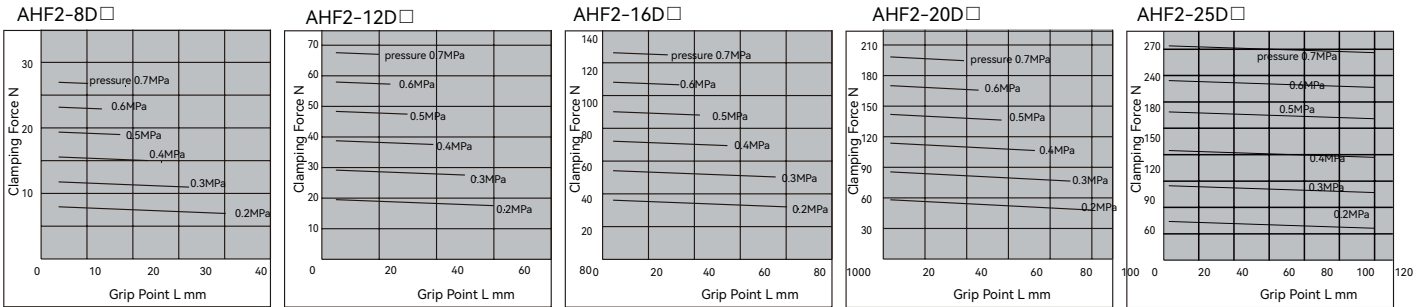


Indicates the effective clamping force

# CompactGripper

# AHF2 Series

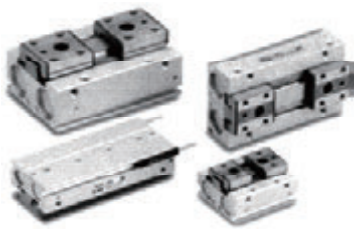
## Effective Clamping Force (1)



## Model / Specifications

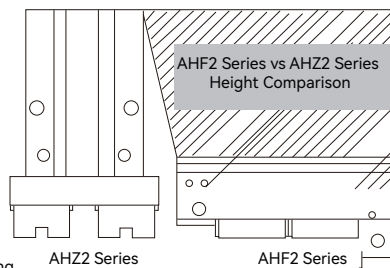
| Model     | Bore (mm) | Operation     | Fluid | Operating Pressure Mpa | Environment & Fluid Temp °C | Repeat Accuracy mm | Max. Operating Freq. c.p.m | Clamping Force N | Open/Close Stroke mm | Magnetic Switch Model |
|-----------|-----------|---------------|-------|------------------------|-----------------------------|--------------------|----------------------------|------------------|----------------------|-----------------------|
| AHF2-8D   | 8         | Double-acting | Air   | 0.15~0.7               | -10~60 (Non-freezin)        | ±0.05              | 120                        | 19               | 8                    | SW-M9B<br>SW-M9N      |
| AHF2-8D1  |           |               |       |                        |                             |                    | 120                        |                  | 16                   |                       |
| AHF2-8D2  |           |               |       |                        |                             |                    | 60                         |                  | 32                   |                       |
| AHF2-12D  | 12        |               |       | 0.1~0.7                |                             |                    | 120                        | 48               | 12                   |                       |
| AHF2-12D1 |           |               |       |                        |                             |                    | 120                        |                  | 24                   |                       |
| AHF2-12D2 |           |               |       |                        |                             |                    | 60                         |                  | 48                   |                       |
| AHF2-16D  | 16        |               |       |                        |                             |                    | 120                        | 90               | 16                   |                       |
| AHF2-16D1 |           |               |       |                        |                             |                    | 120                        |                  | 32                   |                       |
| AHF2-16D2 |           |               |       |                        |                             |                    | 60                         |                  | 64                   |                       |
| AHF2-20D  | 20        |               |       |                        |                             |                    | 120                        | 141              | 20                   |                       |
| AHF2-20D1 |           |               |       |                        |                             |                    | 120                        |                  | 40                   |                       |
| AHF2-20D2 |           |               |       |                        |                             |                    | 60                         |                  | 80                   |                       |
| AHF2-25D  | 25        |               |       |                        |                             |                    | 120                        | 236              | 60                   |                       |

[Note1] Data at 0.5MPa pressure, grip point distance L=10mm, stroke center.

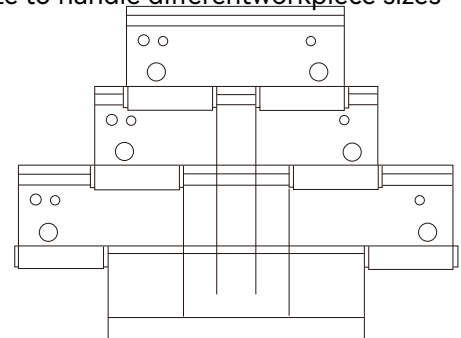


- Compact, space-saving design
  - Strong clamping force
  - Centralized piping and wiring directions
  - Three stroke options available: Short, Medium, Long
- [Note] AHF2-25D has only short stroke.

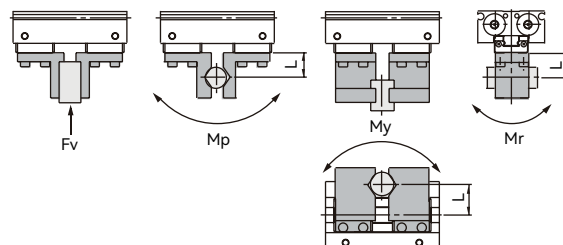
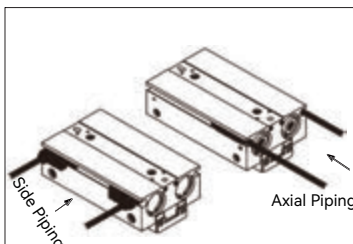
►Significantly lower height compared to AHZ2 series



►Different stroke options for the same bore size to handle different workpiece sizes



►Piping and wiring can be concentrated on one side



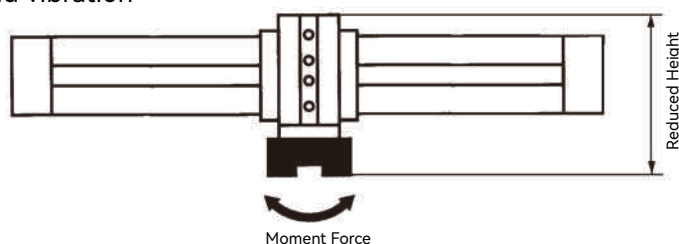
## CompactGripper

## AHF2 Series

## Model / Specifications

| Model     | Allowable Vertical Load $F_v$ (N) | Maximum Allowable Moment   |                               |                                |
|-----------|-----------------------------------|----------------------------|-------------------------------|--------------------------------|
|           |                                   | Bending Moment $M_p$ (N·m) | Deflection Moment $M_y$ (N·m) | Rotation Moment $M_{yr}$ (N·m) |
| AHF2-8D□  | 58                                | 0.26                       | 0.26                          | 0.53                           |
| AHF2-12D□ | 95                                | 0.68                       | 0.68                          | 1.4                            |
| AHF2-16D□ | 176                               | 1.4                        | 1.4                           | 2.8                            |
| AHF2-20D□ | 284                               | 2                          | 2                             | 4                              |
| AHF2-25D  | 423                               | 3.2                        | 3.2                           | 6.4                            |

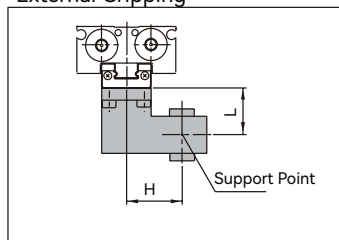
► Reduces moment force and vibration



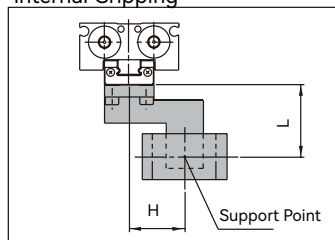
## Effective Clamping Force (2)

Indicates the effective clamping force

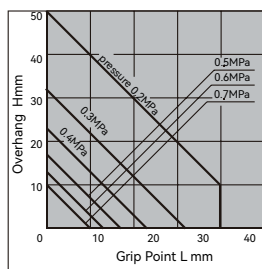
External Gripping



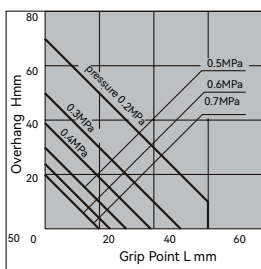
Internal Gripping



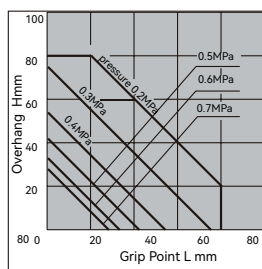
AHF2-8D□



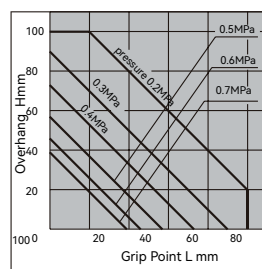
AHF2-12D□



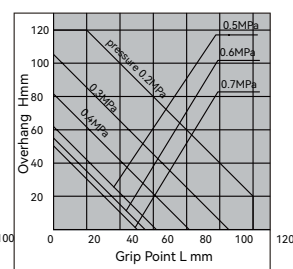
AHF2-16D□



AHF2-20D□



AHF2-25D□

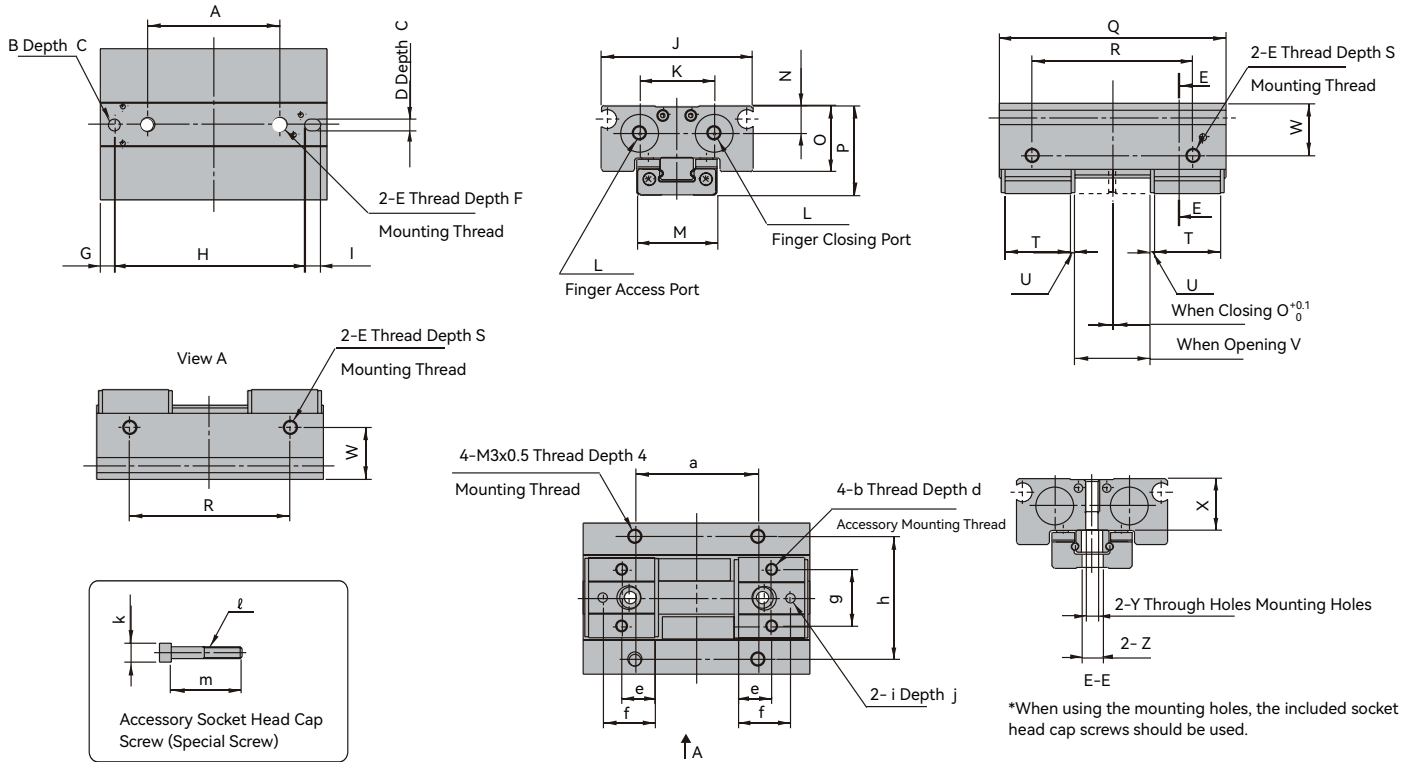


# CompactGripper

## AHF2 Series

### Outline Dimension Drawing(mm)

#### ►AHF2 -8D 8D1 12D



| Model    | A  | B                                    | C   | D                                    | E       | F  | G | H    | I   | J  | K    | L       | M                               | N   | O  | P  | Q  | R  | S |
|----------|----|--------------------------------------|-----|--------------------------------------|---------|----|---|------|-----|----|------|---------|---------------------------------|-----|----|----|----|----|---|
| AHF2-8D  | 16 | ∅2.5H9 <sup>0.025</sup> <sub>0</sub> | 2.5 | ∅2.5H9 <sup>0.025</sup> <sub>0</sub> | M3x 0.5 | 7  | 3 | 28.3 | 3.4 | 32 | 15.8 | M3x 0.5 | 17 <sup>0</sup> <sub>-0.1</sub> | 5.9 | 14 | 19 | 36 | 22 | 4 |
| AHF2-8D1 | 28 | ∅2.5H9 <sup>0.025</sup> <sub>0</sub> | 2.5 | ∅2.5H9 <sup>0.025</sup> <sub>0</sub> | M3x 0.5 | 7  | 3 | 40.3 | 3.4 | 32 | 15.8 | M3x 0.5 | 17 <sup>0</sup> <sub>-0.1</sub> | 5.9 | 14 | 19 | 48 | 38 | 4 |
| AHF2-12D | 26 | ∅3H9 <sup>+0.030</sup> <sub>0</sub>  | 3   | ∅3H9 <sup>+0.030</sup> <sub>0</sub>  | M4x 0.7 | 10 | 4 | 42   | 4   | 40 | 20   | M5x 0.8 | 20                              | 7.7 | 19 | 25 | 52 | 34 | 5 |

| Model    | T  | U                 | V  | W  | X    | Y    | Z    | a  | b           | d | e | f  | g  | h  | i                                   | j   | k  | φ          | m  |
|----------|----|-------------------|----|----|------|------|------|----|-------------|---|---|----|----|----|-------------------------------------|-----|----|------------|----|
| AHF2-8D  | 12 | 0.8 <sup>±1</sup> | 8  | 11 | 11   | ∅2.6 | ∅4.5 | 14 | M2.5 x 0.45 | 3 | 6 | 10 | 12 | 26 | ∅2H9 <sup>+0.025</sup> <sub>0</sub> | 2   | ∅4 | M2.5x 0.45 | 15 |
| AHF2-8D1 | 14 | 0.8 <sup>±1</sup> | 16 | 11 | 11   | ∅2.6 | ∅4.5 | 26 | M2.5 x 0.45 | 3 | 7 | 11 | 12 | 26 | ∅2H9 <sup>+0.025</sup> <sub>0</sub> | 2   | ∅4 | M2.5x 0.45 | 15 |
| AHF2-12D | 18 | 1 <sup>±1</sup>   | 12 | 15 | 14.8 | ∅3.4 | ∅5.5 | 28 | M3 x 0.5    | 4 | 9 | 14 | 15 | 33 | ∅2H9 <sup>+0.025</sup> <sub>0</sub> | 2.5 | ∅5 | M3x 0.5    | 20 |

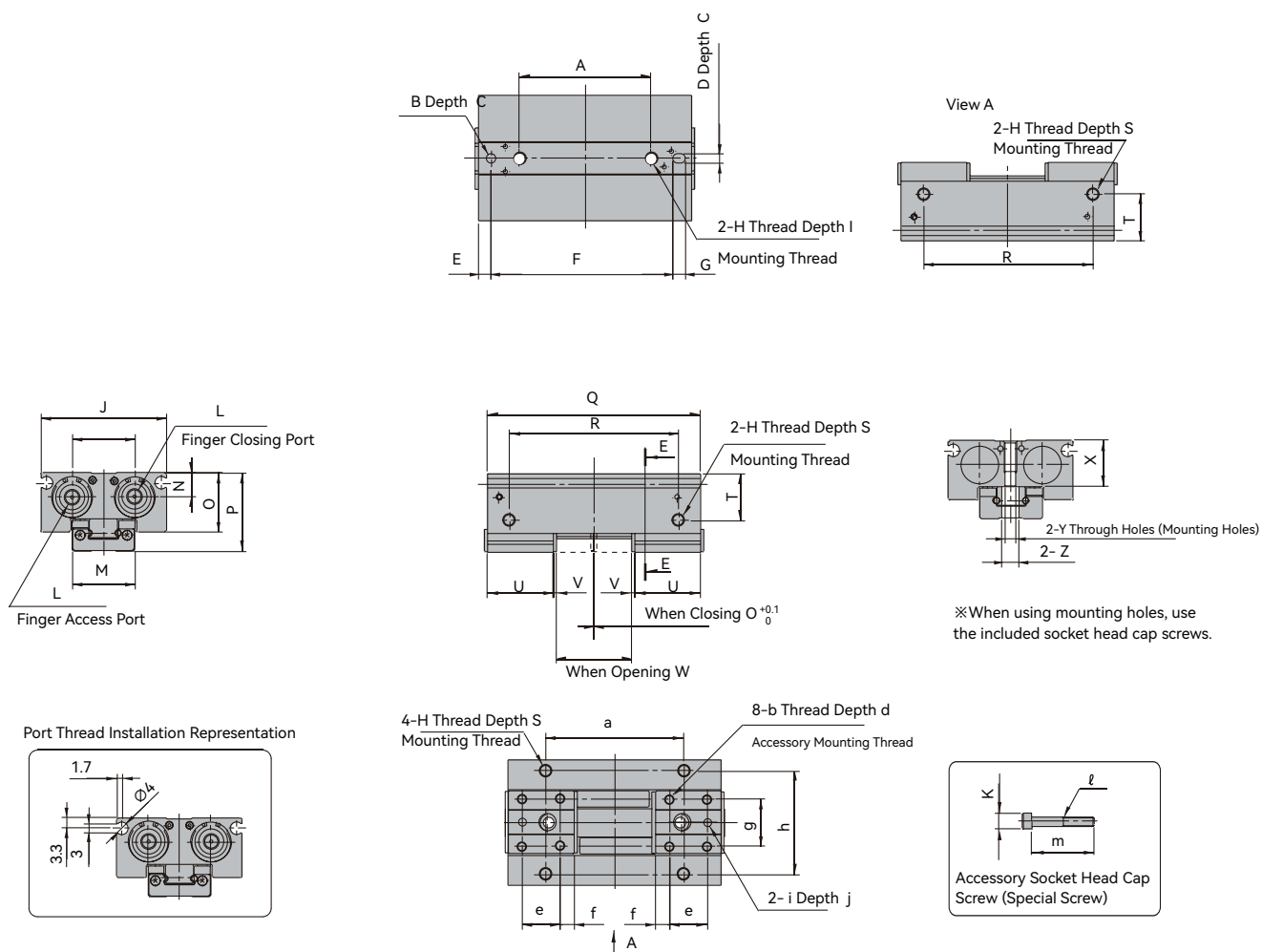
[Note] AHF2-12D Mounting Thread M4 x 0.7 Thread Depth 5

## CompactGripper

## AHF2 Series

## Model / Specifications

► AHF2 -12D1 16D 16D1 20D 20D1



| Model     | A  | B                                   | C | D                                   | E | F    | G | H       | I  | J  | K  | L       | M                               | N    | O  | P  | Q   | R  | S   |
|-----------|----|-------------------------------------|---|-------------------------------------|---|------|---|---------|----|----|----|---------|---------------------------------|------|----|----|-----|----|-----|
| AHF2-12D1 | 42 | Ø3H9 <sup>+0.030</sup> <sub>0</sub> | 3 | Ø3H9 <sup>+0.025</sup> <sub>0</sub> | 4 | 58   | 4 | M4x 0.7 | 10 | 40 | 20 | M5x 0.8 | 20 <sup>0</sup> <sub>-0.1</sub> | 7.7  | 19 | 25 | 68  | 54 | 5   |
| AHF2-16D  | 38 | Ø4H9 <sup>+0.030</sup> <sub>0</sub> | 3 | Ø4H9 <sup>+0.030</sup> <sub>0</sub> | 6 | 57.5 | 5 | M5x 0.8 | 12 | 50 | 26 | M5x 0.8 | 27 <sup>0</sup> <sub>-0.1</sub> | 10.6 | 24 | 33 | 72  | 52 | 5.5 |
| AHF2-16D1 | 60 | Ø4H9 <sup>+0.030</sup> <sub>0</sub> | 3 | Ø4H9 <sup>+0.030</sup> <sub>0</sub> | 6 | 79.5 | 5 | M5x 0.8 | 12 | 50 | 26 | M5x 0.8 | 27 <sup>0</sup> <sub>-0.1</sub> | 10.6 | 24 | 33 | 94  | 74 | 5.5 |
| AHF2-20D  | 38 | Ø4H9 <sup>+0.030</sup> <sub>0</sub> | 3 | Ø4H9 <sup>+0.030</sup> <sub>0</sub> | 6 | 71   | 6 | M6x 1   | 15 | 62 | 33 | M5x 0.8 | 32 <sup>0</sup> <sub>-0.1</sub> | 13   | 30 | 41 | 86  | 56 | 6   |
| AHF2-20D1 | 66 | Ø5H9 <sup>+0.030</sup> <sub>0</sub> | 3 | Ø5H9 <sup>+0.030</sup> <sub>0</sub> | 6 | 99   | 6 | M6x 1   | 15 | 62 | 33 | M5x 0.8 | 32 <sup>0</sup> <sub>-0.1</sub> | 13   | 30 | 41 | 114 | 84 | 6   |

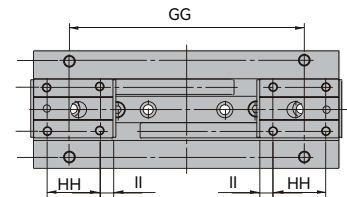
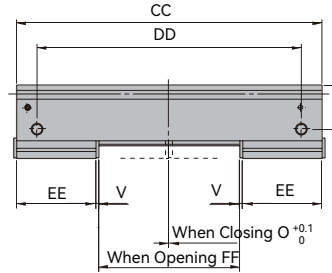
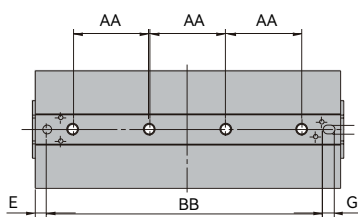
| Model     | T  | U  | V   | W    | X    | Y    | Z    | a  | b        | d | e  | f   | g  | h  | i                                     | j   | k  | φ       | m  |
|-----------|----|----|-----|------|------|------|------|----|----------|---|----|-----|----|----|---------------------------------------|-----|----|---------|----|
| AHF2-12D1 | 15 | 21 | 1   | 24±1 | 14.8 | Ø3.4 | Ø5.5 | 44 | M3 x 0.5 | 4 | 12 | 4.5 | 15 | 33 | Ø2.5H9 <sup>+0.025</sup> <sub>0</sub> | 2.5 | Ø5 | M3x 0.5 | 20 |
| AHF2-16D  | 20 | 25 | 1.2 | 16±1 | 20   | Ø4.3 | Ø7.5 | 36 | M4 x 0.7 | 4 | 15 | 5   | 20 | 43 | Ø3H9 <sup>+0.025</sup> <sub>0</sub>   | 3   | -  | -       | -  |
| AHF2-16D1 | 20 | 29 | 1.2 | 32±1 | 20   | Ø4.3 | Ø7.5 | 58 | M4 x 0.7 | 4 | 18 | 5.5 | 20 | 43 | Ø3H9 <sup>+0.025</sup> <sub>0</sub>   | 3   | -  | -       | -  |
| AHF2-20D  | 25 | 31 | 1.2 | 20±1 | 25   | Ø5.2 | Ø10  | 40 | M4 x 0.7 | 4 | 16 | 7.5 | 24 | 52 | Ø3H9 <sup>+0.025</sup> <sub>0</sub>   | 3   | -  | -       | -  |
| AHF2-20D1 | 25 | 36 | 2   | 40±1 | 25   | Ø5.2 | Ø10  | 68 | M4 x 0.7 | 4 | 20 | 8   | 24 | 52 | Ø3H9 <sup>+0.025</sup> <sub>0</sub>   | 3   | -  | -       | -  |

# CompactGripper

## AHF2 Series

### Model / Specifications (mm)

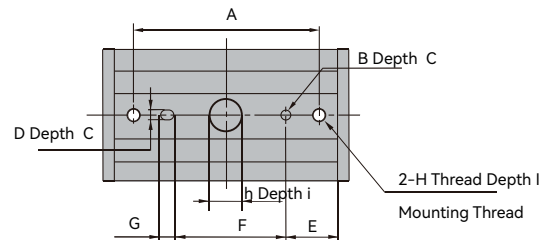
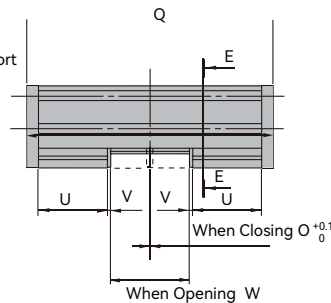
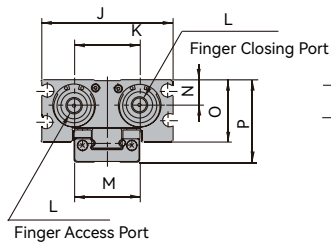
#### ►AHF2 -8D2 12D2 16D2 20D2



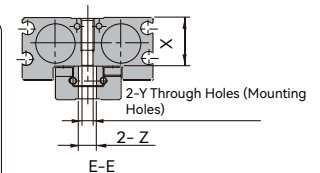
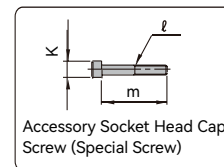
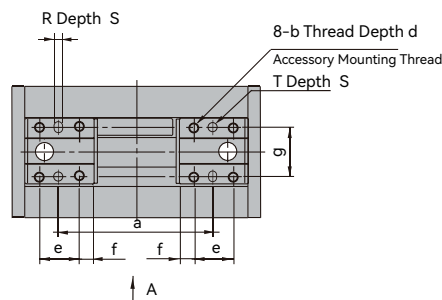
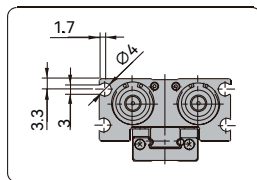
[Note] Dimensions not specified are the same as the D1 series of the same bore size  
[Note] Dimensions not specified are the same as the D1 series of the same bore size

| Model     | AA | BB    | CC  | DD  | EE | FF | GG  | HH | II  |
|-----------|----|-------|-----|-----|----|----|-----|----|-----|
| AHF2-8D   | 17 | 64.3  | 72  | 58  | 18 | 32 | 50  | 8  | 8   |
| AHF2-12D2 | 26 | 94    | 104 | 90  | 27 | 48 | 80  | 18 | 4.5 |
| AHF2-16D2 | 36 | 127.5 | 142 | 122 | 37 | 64 | 106 | 26 | 5.5 |
| AHF2-20D2 | 42 | 159   | 174 | 144 | 46 | 80 | 128 | 30 | 8   |

#### ►AHF2 -25D



Port Thread Installation Representation



※ When using mounting holes, use the included socket head cap screws.

| Model    | A   | B                                   | C | D    | E  | F  | G | H       | I  | J  | K    | L       | M                              | N  | O  | P    | Q   | R | S |
|----------|-----|-------------------------------------|---|------|----|----|---|---------|----|----|------|---------|--------------------------------|----|----|------|-----|---|---|
| AHF2-25D | 122 | Ø5H9 <sup>+0.030</sup> <sub>0</sub> | 5 | Ø5H9 | 38 | 77 | 6 | M8x1.25 | 16 | 80 | 42.5 | M5x 0.8 | 52 <sup>0.1</sup> <sub>0</sub> | 22 | 41 | 63.5 | 156 | 4 | 4 |

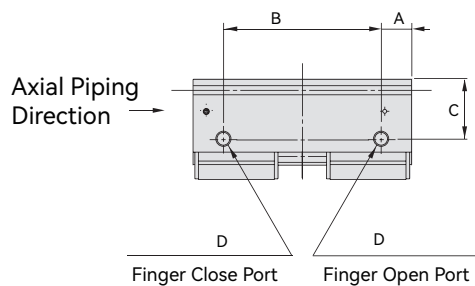
| Model    | T                                   | U  | V   | W                | X  | Y  | Z   | a   | b        | d    | e  | f   | g  | h  | i | k | φ       | m |
|----------|-------------------------------------|----|-----|------------------|----|----|-----|-----|----------|------|----|-----|----|----|---|---|---------|---|
| AHF2-25D | Ø5H9 <sup>+0.030</sup> <sub>0</sub> | 38 | 1.5 | 60 <sup>±1</sup> | 38 | 12 | 6.5 | 101 | M5 x 0.8 | 10.5 | 29 | 4.5 | 24 | 15 | 4 | 5 | M3x 0.5 | 6 |

## CompactGripper

## AHF2 Series

## GripperBodyPort Configuration: SidePiping

## ► AHF2 - □D□R



\* For dimensions not listed above, please refer to the tables on the previous pages.  
 \* 25mm bore size does not have side piping configuration.

| Model      | A   | B   | C    | D        |
|------------|-----|-----|------|----------|
| AHF2-8DR   | 5.5 | 25  | 11   | M3 x 0.5 |
| AHF2-8D1R  |     | 37  |      |          |
| AHF2-8D2R  |     | 61  |      |          |
| AHF2-12DR  | 7   | 38  | 14.8 | M5 x 0.8 |
| AHF2-12D1R |     | 54  |      |          |
| AHF2-12D2R |     | 90  |      |          |
| AHF2-16DR  | 9   | 54  | 19   | M5 x 0.8 |
| AHF2-16D1R |     | 76  |      |          |
| AHF2-16D2R |     | 124 |      |          |
| AHF2-20DR  | 10  | 66  | 23   | M5 x 0.8 |
| AHF2-20D1R |     | 94  |      |          |
| AHF2-20D2R |     | 154 |      |          |