

## Technical Data

### Engineering Specifications

| Bore Size (mm)              | 16  | 20           | 25 | 32                             | 40 | 50 | 63 |
|-----------------------------|---|--------------|----|--------------------------------|----|----|----|
| Acting Type                 | Double Acting                               |              |    |                                |    |    |    |
| Fluid                       | Air (to be filtered by 40µm filter element) |              |    |                                |    |    |    |
| Operating Pressure          | 28 to 100 PSI (0.2 to 0.7MPa)               |              |    | 22 to 100 PSI (0.15 to 0.7MPa) |    |    |    |
| Temperature                 | 14°F to 140°F (-10°C to 60°C)               |              |    |                                |    |    |    |
| Lubrication                 | Not Required                                |              |    |                                |    |    |    |
| Repeatability               | ±0.01mm                                     |              |    |                                |    |    |    |
| Max. frequency              | 120 cycles per minute                       |              |    | 60 cycles per minute           |    |    |    |
| Port Size                   | M3x0.5                                      | M3x0.8       |    |                                |    |    |    |
| Sensor Switch Compatibility | Reed Switch                                 | MWF-G        |    |                                |    |    |    |
|                             | Solid State Switch                          | MWK-G, MWC-G |    |                                |    |    |    |



### Gripping Force and Stroke

1 MPa = 145.04 PSI

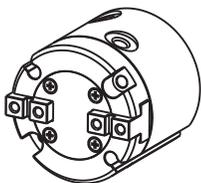
1 N-cm = 0.089 lb-in

| Model             |   |          | Double Acting (MHFC) |    |    |     |     |     |     |
|-------------------|---|----------|----------------------|----|----|-----|-----|-----|-----|
| Bore Size (mm)    |   |          | 16                   | 20 | 25 | 32  | 40  | 50  | 63  |
| 2 Gripper Fingers | Gripping Force per finger Effective valve (N) | Internal | 23                   | 42 | 71 | 123 | 195 | 306 | 537 |
|                   |   | External | 21                   | 37 | 63 | 111 | 177 | 280 | 502 |
|                   | Opening/Closing stroke (both sides) (mm)      |          | 4                    | 4  | 6  | 8   | 8   | 12  | 16  |
| 3 Gripper Fingers | Gripping Force per finger Effective valve (N) | Internal | 16                   | 28 | 47 | 82  | 130 | 204 | 359 |
|                   |   | External | 14                   | 25 | 42 | 74  | 118 | 187 | 335 |
|                   | Opening/Closing stroke (both sides) (mm)      |          | 4                    | 4  | 6  | 8   | 8   | 12  | 16  |
| 4 Gripper Fingers | Gripping Force per finger Effective valve (N) | Internal | 12                   | 21 | 35 | 61  | 97  | 153 | 268 |
|                   |   | External | 10                   | 19 | 31 | 55  | 88  | 140 | 251 |
|                   | Opening/Closing stroke (both sides) (mm)      |          | 4                    | 4  | 6  | 8   | 8   | 12  | 16  |

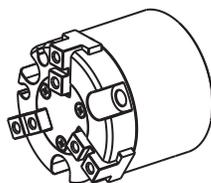
Note: The gripping force in the above table is in the working pressure of 75 PSI and with a gripping point of L=20mm (bore sizes 16mm to 25mm) or L=30mm (bore sizes 32mm to 63mm). Please reference dimensional drawings pages 105-107 for definition of "L".

### Finger Styles

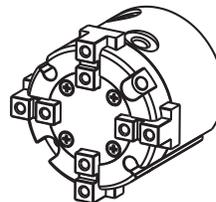
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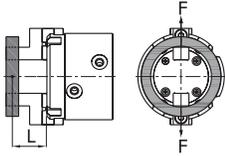
#### 3 Finger Style



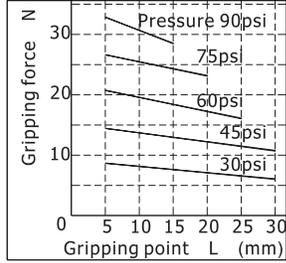
#### 4 Finger Style



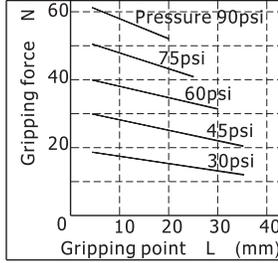
## Opened Gripping Force (Two Finger)



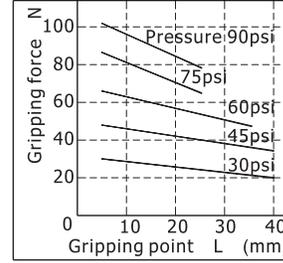
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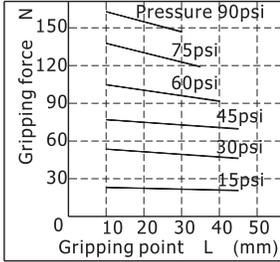
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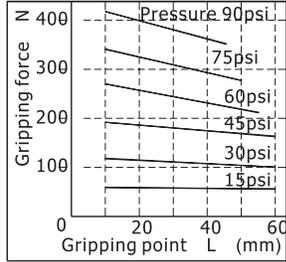
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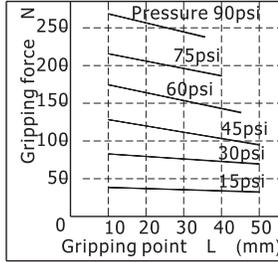
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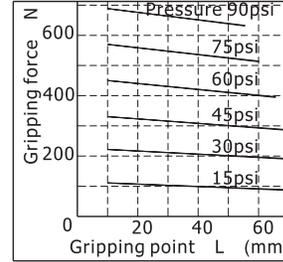
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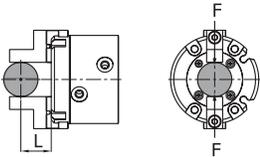
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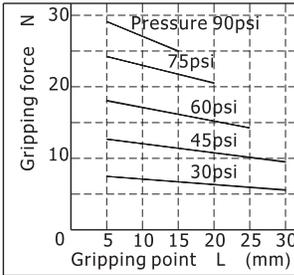
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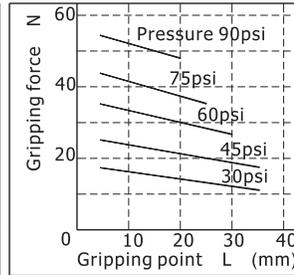
## Closed Gripping Force (Two Finger)



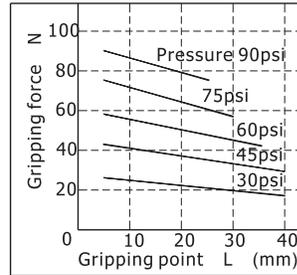
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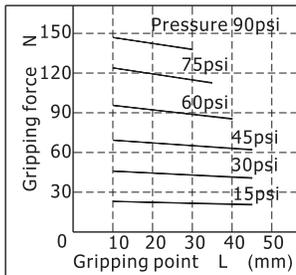
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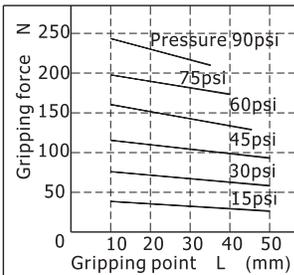
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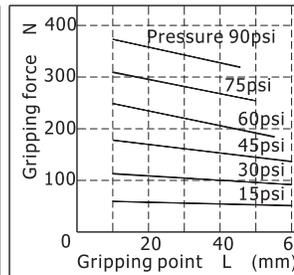
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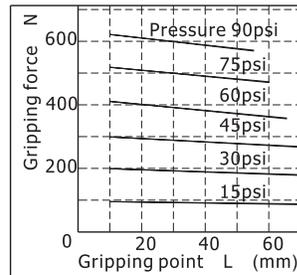
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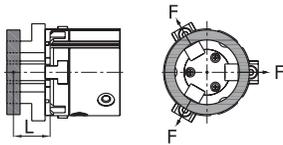
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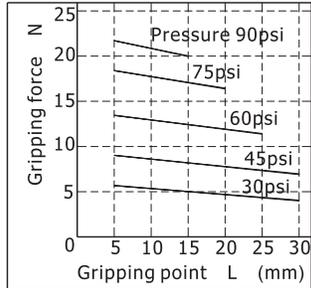
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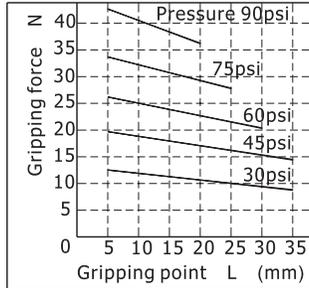
## Opened Gripping Force (Three Finger)



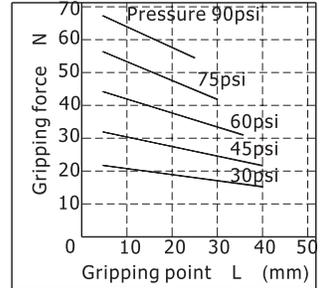
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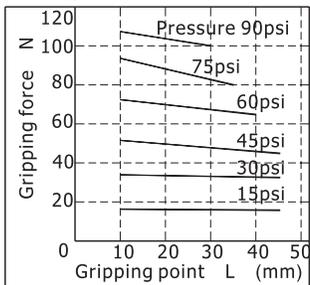
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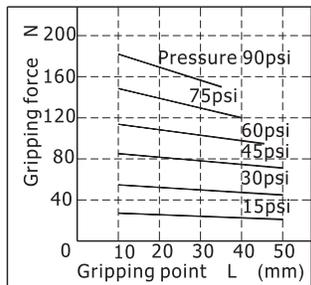
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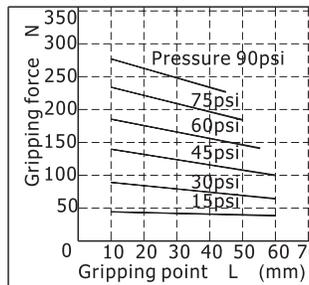
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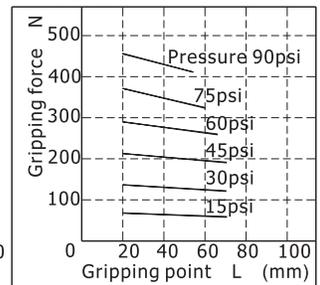
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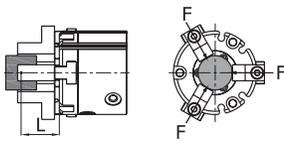
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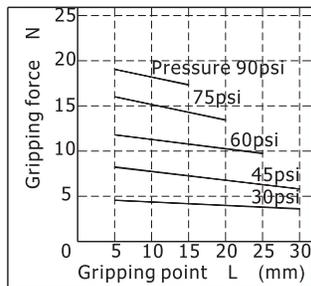
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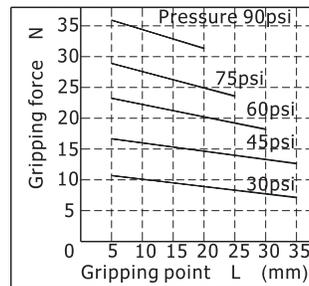
## Closed Gripping Force (Three Finger)



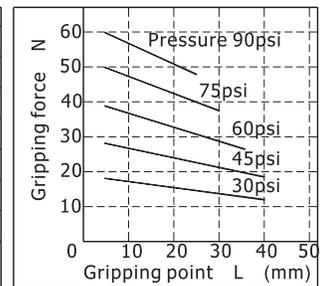
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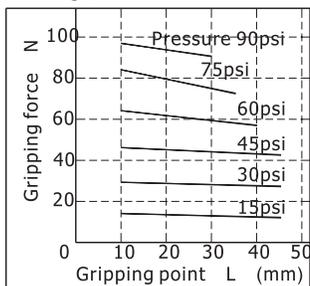
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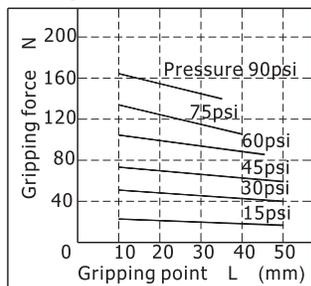
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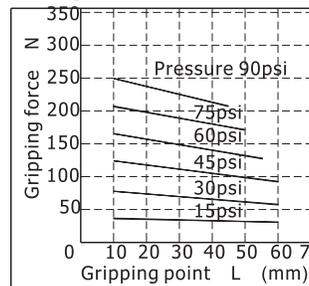
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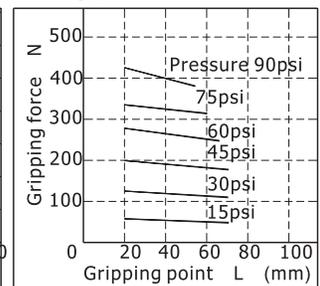
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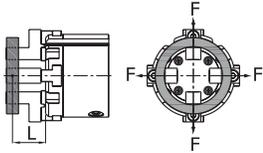
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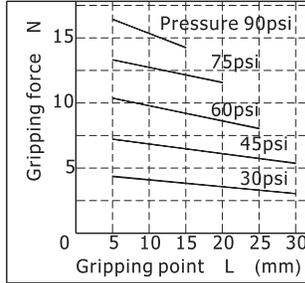
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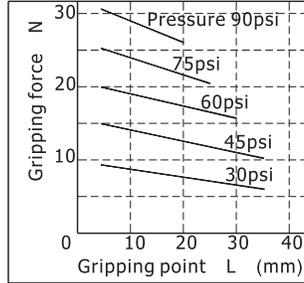
## Opened Gripping Force (Four Finger)



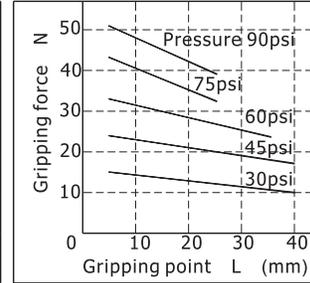
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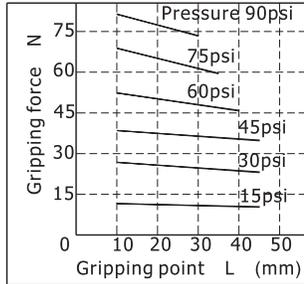
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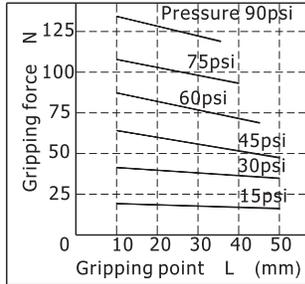
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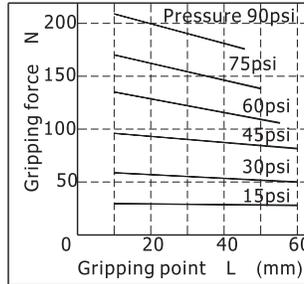
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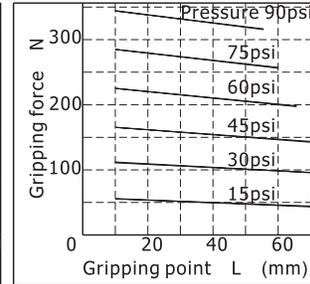
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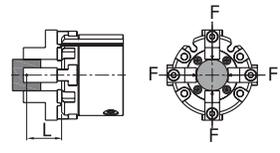
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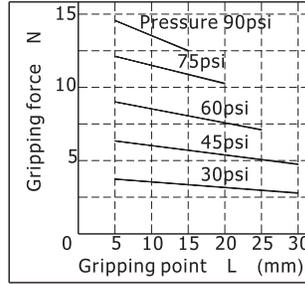
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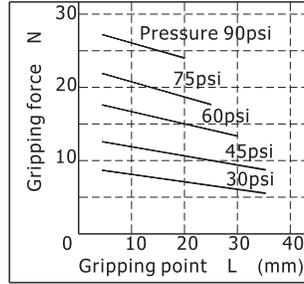
## Closed Gripping Force (Four Finger)



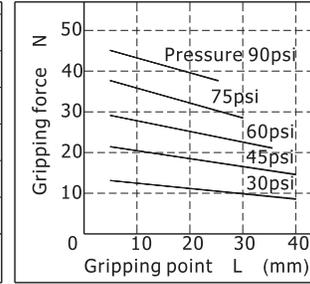
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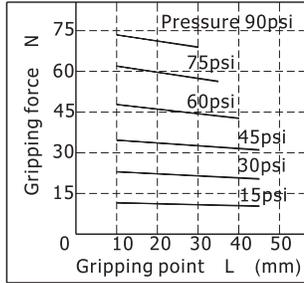
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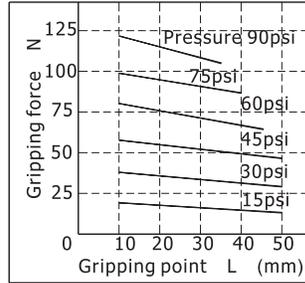
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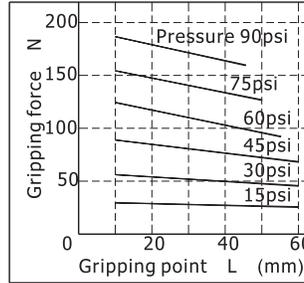
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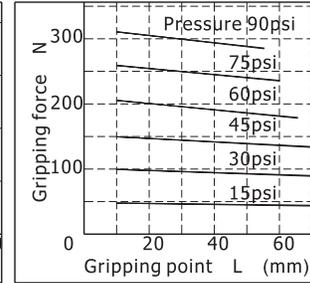
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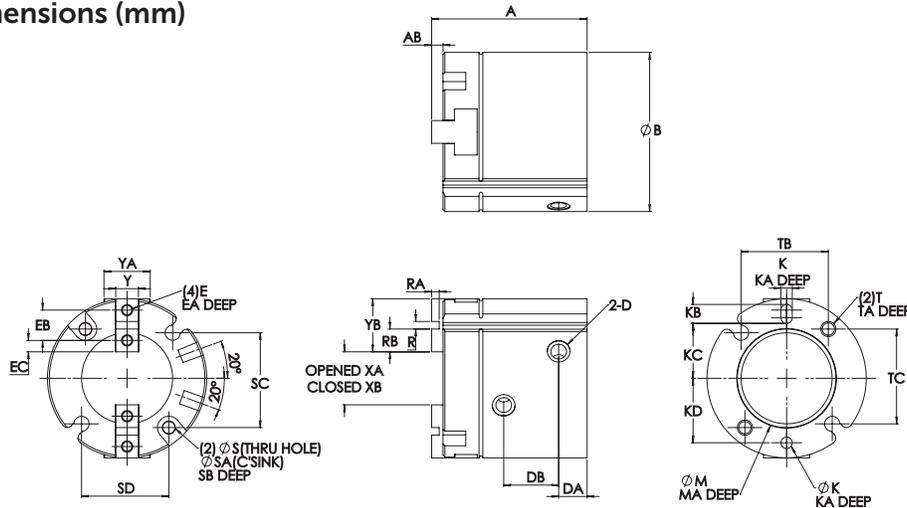


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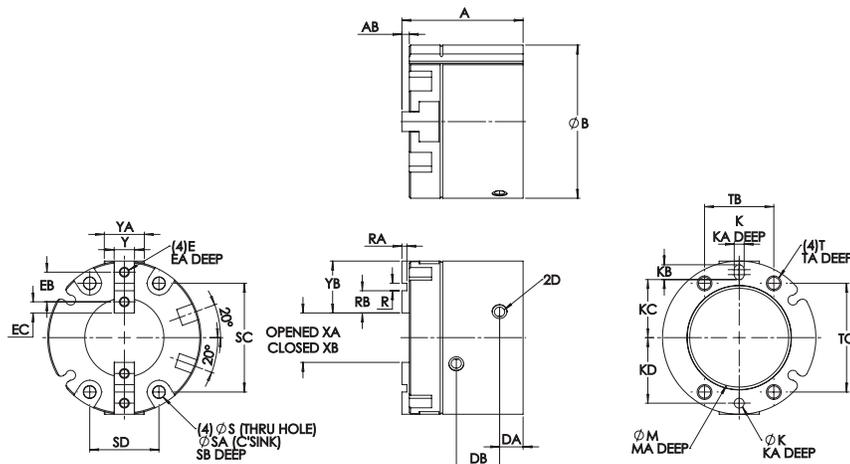
# Product Information

## Two Gripper Dimensions (mm)



| Bore Size (mm) | A  | AB | B  | D      | DA  | DB   | E      | EA | EB | EC  | K | KA | KB | KC   | KD   | M      | MA  | R |
|----------------|----|----|----|--------|-----|------|--------|----|----|-----|---|----|----|------|------|--------|-----|---|
| 16             | 35 | 3  | 30 | M3x0.5 | 7   | 10   | M3x0.5 | 5  | 6  | 2   | 2 | 2  | 3  | 11   | 12.5 | 17 DIA | 1.5 | 2 |
| 20             | 39 | 3  | 36 | M5x0.8 | 7   | 13   | M3x0.5 | 5  | 7  | 2.5 | 2 | 2  | 3  | 13   | 14.5 | 21 DIA | 1.5 | 2 |
| 25             | 41 | 3  | 42 | M5x0.8 | 7.5 | 14.5 | M3x0.5 | 5  | 8  | 3   | 3 | 3  | 5  | 14.5 | 17   | 26 DIA | 1.5 | 2 |

| Bore Size (mm) | RA | RB | S   | SA | SB | SC | SD | T      | TA | TB | TC | Y | YA | YB | XA | XB |
|----------------|----|----|-----|----|----|----|----|--------|----|----|----|---|----|----|----|----|
| 16             | 2  | 4  | 3.4 | 6  | 6  | 18 | 16 | M4x0.7 | 8  | 18 | 16 | 5 | 8  | 10 | 14 | 10 |
| 20             | 2  | 5  | 3.4 | 6  | 6  | 24 | 18 | M4x0.7 | 8  | 24 | 18 | 6 | 10 | 12 | 16 | 12 |
| 25             | 2  | 6  | 3.4 | 6  | 6  | 26 | 22 | M4x0.7 | 8  | 26 | 22 | 6 | 12 | 14 | 20 | 14 |

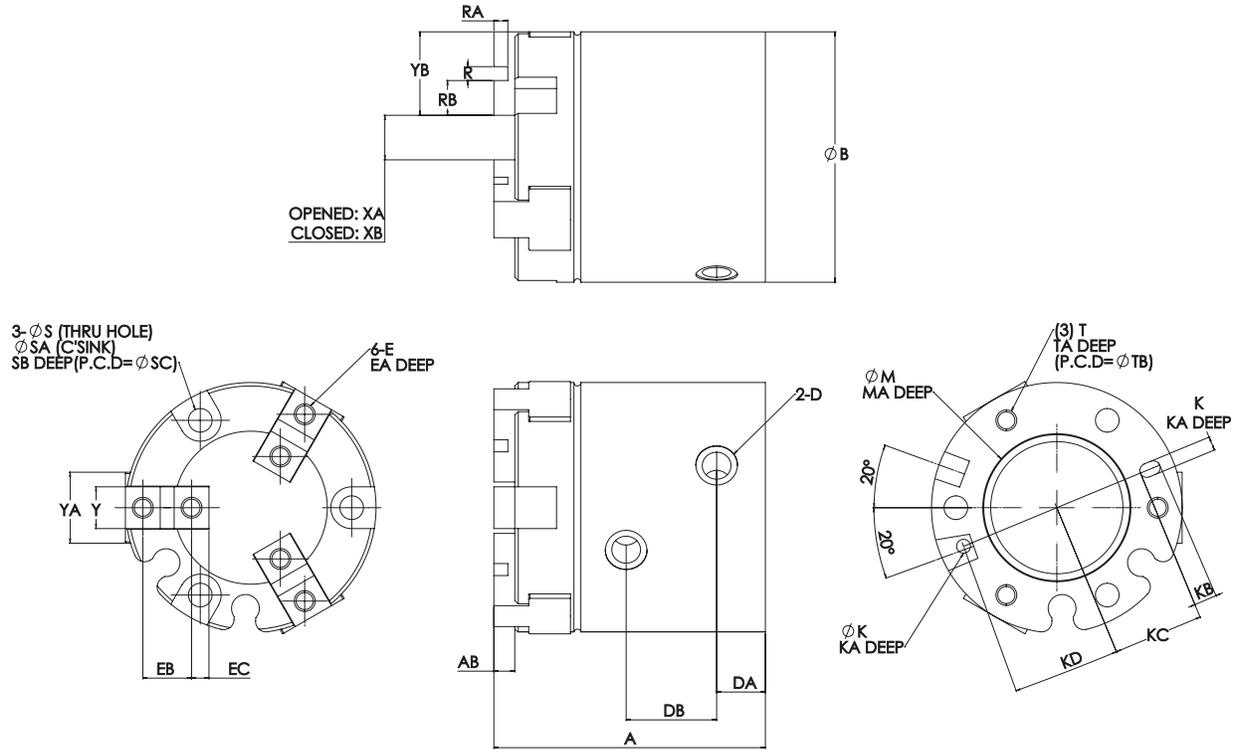


| Bore Size (mm) | A  | AB | B  | D      | DA  | DB   | E      | EA | EB | EC  | K | KA | KB | KC   | KD   | M      | MA  | R |
|----------------|----|----|----|--------|-----|------|--------|----|----|-----|---|----|----|------|------|--------|-----|---|
| 32             | 45 | 3  | 55 | M5x0.8 | 8.5 | 16   | M4x0.7 | 8  | 11 | 4.5 | 3 | 3  | 5  | 20.5 | 23   | 34 DIA | 2   | 2 |
| 40             | 49 | 3  | 62 | M5x0.8 | 9.5 | 17.5 | M4x0.7 | 8  | 12 | 4.5 | 4 | 4  | 6  | 23.5 | 26.5 | 42 DIA | 2   | 3 |
| 50             | 57 | 3  | 70 | M5x0.8 | 9.5 | 21   | M5x0.8 | 9  | 14 | 5   | 4 | 4  | 6  | 28   | 31   | 52 DIA | 2   | 4 |
| 63             | 68 | 4  | 86 | M5x0.8 | 12  | 24   | M5x0.8 | 9  | 17 | 5.5 | 5 | 5  | 7  | 34.5 | 38   | 65 DIA | 2.5 | 6 |

| Bore Size (mm) | RA | RB | S   | SA  | SB | SC | SD | T      | TA | TB | TC | Y  | YA | YB | XA | XB |
|----------------|----|----|-----|-----|----|----|----|--------|----|----|----|----|----|----|----|----|
| 32             | 2  | 9  | 4.2 | 8   | 9  | 38 | 25 | M5x0.8 | 10 | 38 | 25 | 8  | 14 | 20 | 24 | 16 |
| 40             | 2  | 9  | 5.2 | 9.5 | 9  | 44 | 28 | M6x1.0 | 12 | 44 | 28 | 8  | 16 | 21 | 28 | 20 |
| 50             | 2  | 10 | 5.2 | 9.5 | 9  | 52 | 34 | M6x1.0 | 12 | 52 | 34 | 10 | 18 | 24 | 34 | 22 |
| 63             | 3  | 11 | 5.2 | 9.5 | 9  | 66 | 38 | M6x1.0 | 12 | 66 | 38 | 12 | 24 | 28 | 46 | 30 |

# Product Information

## Three Gripper Dimensions (mm)

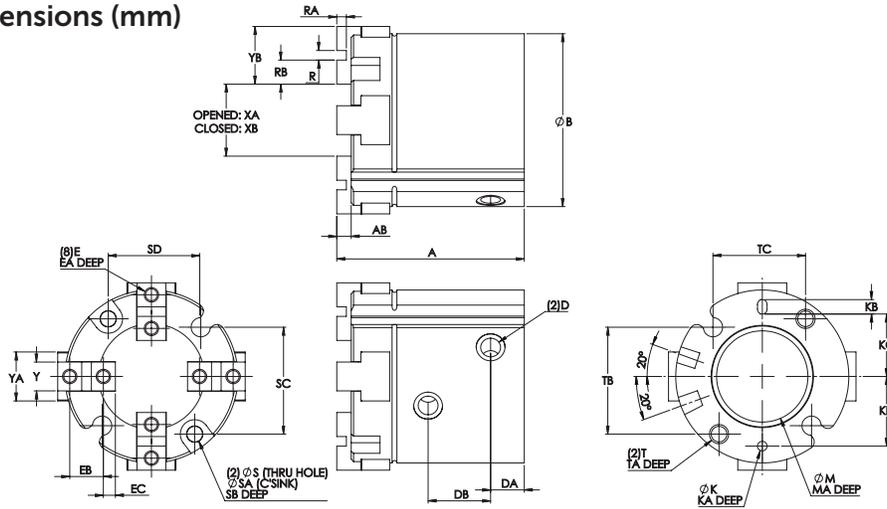


| Bore Size (mm) | A  | AB | B  | D      | DA  | DB   | E      | EA | EB | EC  | K | KA | KB | KC   | KD   |
|----------------|----|----|----|--------|-----|------|--------|----|----|-----|---|----|----|------|------|
| 16             | 35 | 3  | 30 | M3x0.5 | 7   | 10   | M3x0.5 | 5  | 6  | 2   | 2 | 2  | 3  | 11   | 12.5 |
| 20             | 39 | 3  | 36 | M5x0.8 | 7   | 13   | M3x0.5 | 5  | 7  | 2.5 | 2 | 2  | 3  | 13   | 14.5 |
| 25             | 41 | 3  | 42 | M5x0.8 | 7.5 | 14.5 | M3x0.5 | 5  | 8  | 3   | 3 | 3  | 5  | 14.5 | 17   |
| 32             | 45 | 3  | 52 | M5x0.8 | 8.5 | 16   | M4x0.7 | 8  | 11 | 4.5 | 3 | 3  | 5  | 19.5 | 22   |
| 40             | 49 | 3  | 62 | M5x0.8 | 9.5 | 17.5 | M4x0.7 | 8  | 12 | 4.5 | 4 | 4  | 6  | 23.5 | 26.5 |
| 50             | 57 | 3  | 70 | M5x0.8 | 9.5 | 21   | M5x0.8 | 9  | 14 | 5   | 4 | 4  | 6  | 28   | 31   |
| 63             | 68 | 4  | 86 | M5x0.8 | 12  | 24   | M5x0.8 | 9  | 17 | 5.5 | 5 | 5  | 7  | 34.5 | 38   |

| Bore Size (mm) | M      | MA  | R | RA | RB | S   | SA  | SB | SC | T      | TA | TB | Y  | YA | YB | XA | XB |
|----------------|--------|-----|---|----|----|-----|-----|----|----|--------|----|----|----|----|----|----|----|
| 16             | 17 DIA | 1.5 | 2 | 2  | 4  | 3.4 | 6   | 6  | 25 | M3x0.5 | 6  | 25 | 5  | 8  | 10 | 7  | 5  |
| 20             | 21 DIA | 1.5 | 2 | 2  | 5  | 3.4 | 6   | 6  | 29 | M3x0.5 | 6  | 29 | 6  | 10 | 12 | 8  | 6  |
| 25             | 26 DIA | 1.5 | 2 | 2  | 6  | 4.5 | 8   | 9  | 34 | M4x0.7 | 8  | 34 | 6  | 12 | 14 | 10 | 7  |
| 32             | 34 DIA | 2   | 2 | 2  | 9  | 4.5 | 8   | 9  | 44 | M4x0.7 | 8  | 44 | 8  | 14 | 20 | 12 | 8  |
| 40             | 42 DIA | 2   | 3 | 2  | 9  | 5.5 | 9.5 | 9  | 53 | M5x0.8 | 10 | 53 | 8  | 16 | 21 | 14 | 10 |
| 50             | 52 DIA | 2   | 4 | 2  | 10 | 5.5 | 9.5 | 12 | 62 | M5x0.8 | 10 | 62 | 10 | 18 | 24 | 17 | 11 |
| 63             | 65 DIA | 2.5 | 6 | 3  | 11 | 6.6 | 11  | 14 | 76 | M6x1.0 | 12 | 76 | 12 | 24 | 28 | 23 | 15 |

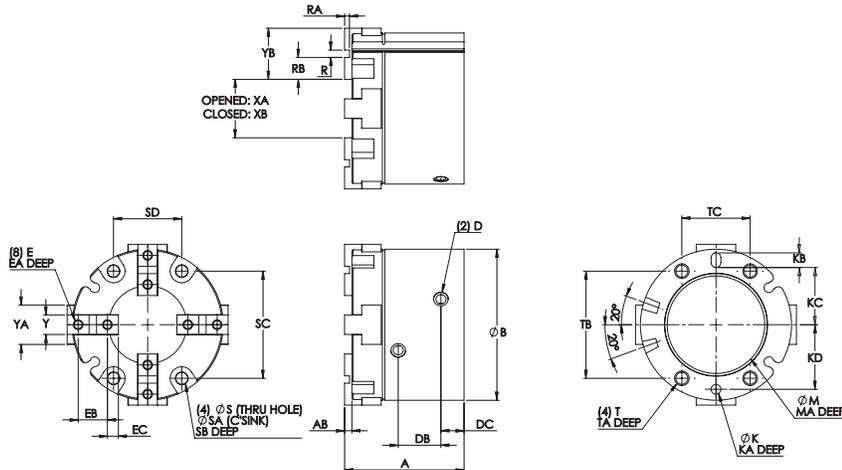
# Product Information

## Four Gripper Dimensions (mm)



| Bore Size (mm) | A  | AB | B  | D      | DA  | DB   | E      | EA | EB | EC  | K | KA | KB | KC   | KD   | M      | MA  | R | RA |
|----------------|----|----|----|--------|-----|------|--------|----|----|-----|---|----|----|------|------|--------|-----|---|----|
| 16             | 35 | 3  | 30 | M3x0.5 | 7   | 10   | M3x0.5 | 5  | 6  | 2   | 2 | 2  | 3  | 11   | 12.5 | 17 DIA | 1.5 | 2 | 2  |
| 20             | 39 | 3  | 36 | M5x0.8 | 7   | 13   | M3x0.5 | 5  | 7  | 2.5 | 2 | 2  | 3  | 13   | 14.5 | 21 DIA | 1.5 | 2 | 2  |
| 25             | 41 | 3  | 42 | M5x0.8 | 7.5 | 14.5 | M3x0.5 | 5  | 8  | 3   | 3 | 3  | 5  | 14.5 | 17   | 26 DIA | 1.5 | 2 | 2  |

| Bore Size (mm) | RB | S   | SA | SB | SC | SD | T      | TA |
|----------------|----|-----|----|----|----|----|--------|----|
| 16             | 4  | 3.4 | 6  | 6  | 18 | 16 | M4x0.7 | 8  |
| 20             | 5  | 3.4 | 6  | 6  | 24 | 18 | M4x0.7 | 8  |
| 25             | 6  | 3.4 | 6  | 6  | 26 | 22 | M4x0.7 | 8  |



| Bore Size (mm) | A  | AB | B  | D      | DA  | DB   | E      | EA | EB | EC  | K | KA | KB | KC   | KD   | M      | MA  | R | RA |
|----------------|----|----|----|--------|-----|------|--------|----|----|-----|---|----|----|------|------|--------|-----|---|----|
| 32             | 45 | 3  | 55 | M5x0.8 | 8.5 | 16   | M4x0.7 | 8  | 11 | 4.5 | 3 | 3  | 5  | 20.5 | 23   | 34 DIA | 2   | 2 | 2  |
| 40             | 49 | 3  | 62 | M5x0.8 | 9.5 | 17.5 | M4x0.7 | 8  | 12 | 4.5 | 4 | 4  | 6  | 26.5 | 26.5 | 42 DIA | 2   | 3 | 2  |
| 50             | 57 | 3  | 70 | M5x0.8 | 9.5 | 21   | M5x0.8 | 9  | 14 | 5   | 4 | 4  | 6  | 31   | 31   | 52 DIA | 2   | 4 | 2  |
| 63             | 68 | 4  | 86 | M5x0.8 | 12  | 24   | M5x0.8 | 9  | 17 | 5.5 | 5 | 5  | 7  | 38   | 38   | 65 DIA | 2.5 | 6 | 3  |

| Bore Size (mm) | RB | S   | SA  | SB | SC | SD | T      | TA |
|----------------|----|-----|-----|----|----|----|--------|----|
| 32             | 9  | 4.2 | 8   | 9  | 38 | 25 | M5x0.8 | 10 |
| 40             | 9  | 5.2 | 9.5 | 9  | 44 | 28 | M6x1.0 | 12 |
| 50             | 10 | 5.2 | 9.5 | 12 | 52 | 34 | M6x1.0 | 12 |
| 63             | 11 | 5.2 | 9.5 | 14 | 66 | 38 | M6x1.0 | 12 |

**MHFC - 2 - 16**

| Model             |
|-------------------|
| MHFC Series       |
| Number of Fingers |
| 2                 |
| 3                 |
| 4                 |



| Bore Size | Substitute |
|-----------|------------|
| 16mm      | <b>16</b>  |
| 20mm      | <b>20</b>  |
| 25mm      | <b>25</b>  |
| 32mm      | <b>32</b>  |
| 40mm      | <b>40</b>  |
| 50mm      | <b>50</b>  |
| 63mm      | <b>63</b>  |