

Series MHSL3

ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125

How to Order

Cylinder Bore Size

ø16 to ø25

MHSL 3 — 20 D — F9N

Number of fingers
3 3 fingers

Cylinder bore size
16 16mm
20 20mm
25 25mm

Action
D Double acting

Number of auto switches

| | |
|-----|--------|
| Nil | 2 pcs. |
| S | 1 pc. |

Auto switch type

| | |
|-----|---------------------------------------|
| Nil | Without auto switch (built-in magnet) |
|-----|---------------------------------------|

Auto switch specifications

| Type | Special function | Electrical entry | Indicator light | Wiring (output) | Load voltage | | Auto switch models | | Lead wire length (m)* | | | Applicable loads |
|-------------|------------------|------------------|-----------------|-----------------|--------------|---------|----------------------------|---------|-----------------------|-------|-------|------------------|
| | | | | | DC | AC | Electrical entry direction | | 0.5 (Nil) | 3 (L) | 5 (Z) | |
| | | | | | | | Perpendicular | In-line | | | | |
| Solid state | — | Grommet | Yes | 3 wire (NPN) | 24V | 5V, 12V | F9NV | F9N | ● | ● | — | Relay, PLC |
| | | | | 3 wire (PNP) | | | F9PV | F9P | ● | ● | — | |
| | | | | 2 wire | F9BV | F9B | ● | ● | — | | | |
| | | | | | — | F9BA | — | ● | ○ | — | | |

* Lead wire length symbols: 0.5m..... Nil (Example) F9B
3m..... L (Example) F9BL
5m..... Z (Example) F9BZ

D-F9BA is available only as "L".

* Auto switches marked with a "○" symbol are produced upon receipt of order.

Note 1) Take note of hysteresis with 2 color indication type switches.

Note 2) Refer to pages 53 through 65 for detailed auto switch specifications.

Cylinder Bore Size

ø32 to ø125

MHSL 3 — 50 D — Y59A

Number of fingers
3 3 fingers

Cylinder bore size
32 32mm
40 40mm
50 50mm
63 63mm
80 80mm
100 100mm
125 125mm

Action
D Double acting

Number of auto switches

| | |
|-----|----------|
| Nil | 2 pcs. |
| S | 1 pc. |
| n | "n" pcs. |

Auto switch type

| | |
|-----|---------------------------------------|
| Nil | Without auto switch (built-in magnet) |
|-----|---------------------------------------|

Auto switch specifications

| Type | Special function | Electrical entry | Indicator light | Wiring (output) | Load voltage | | Auto switch models | | Lead wire length (m)* | | | Applicable loads |
|-------------|------------------|------------------|-----------------|-----------------|--------------|---------|----------------------------|---------------|-----------------------|-------|-------|------------------|
| | | | | | DC | AC | Electrical entry direction | | 0.5 (Nil) | 3 (L) | 5 (Z) | |
| | | | | | | | In-line | Perpendicular | | | | |
| Solid state | — | Grommet | Yes | 3 wire (NPN) | 24V | 5V, 12V | Y69A | Y59A | ● | ● | ○ | Relay, PLC |
| | | | | 3 wire (PNP) | | | Y7PV | Y7P | ● | ● | ○ | |
| | | | | 2 wire | Y69B | Y59B | ● | ● | ○ | | | |
| | | | | | Y7NWV | Y7NW | ● | ● | ○ | | | |
| | | | | 3 wire (NPN) | Y7PWV | Y7PW | ● | ● | ○ | | | |
| | | | | | 3 wire (PNP) | Y7BWV | Y7BW | ● | ● | ○ | | |
| 2 wire | — | Y7BA | — | ● | ○ | — | | | | | | |

* Lead wire length symbols: 0.5m..... Nil (Example) Y59B
3m..... L (Example) Y59BL
5m..... Z (Example) Y59BZ

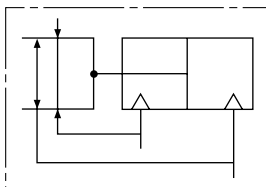
D-Y7BA is available only as "L".

* Auto switches marked with a "○" symbol are produced upon receipt of order.

Note 1) Take note of hysteresis with 2 color indication type switches.

Note 2) Refer to pages 53 through 65 for detailed auto switch specifications.

Symbol



Models and Specifications



| Model | MHSL3-16D | MHSL3-20D | MHSL3-25D | MHSL3-32D | MHSL3-40D | MHSL3-50D | MHSL3-63D | MHSL3-80D | MHSL3-100D | MHSL3-125D |
|--|---------------------------|-----------|-----------|------------|-----------------------|-----------|------------|-------------|-------------|--------------|
| Cylinder bore size mm | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| Fluid | Air | | | | | | | | | |
| Operating pressure MPa (psi) | 0.2 to 0.6 (29 to 87) | | | | 0.1 to 0.6 (14 to 87) | | | | | |
| Ambient and fluid temperature | -10 to 60°C (14 to 140°F) | | | | | | | | | |
| Repeatability mm | ±0.01 | | | | | | | | | |
| Max. operating frequency c.p.m. | 120 | | | | 60 | | | 30 | | |
| Lubrication | Non-lube | | | | | | | | | |
| Action | Double acting | | | | | | | | | |
| Effective gripping force N (lb) at pressure of 0.5MPa (72psi) | 14 (3.1) | 25 (5.6) | 42 (9.4) | 74 (16.6) | 118 (26.5) | 187 (42) | 335 (75) | 500 (112) | 750 (169) | 1,270 (285) |
| External gripping force Internal gripping force | 16 (3.6) | 28 (6.3) | 47 (10.6) | 82 (18.4) | 130 (29.2) | 204 (46) | 359 (81) | 525 (118) | 780 (175) | 1,320 (297) |
| Opening/closing stroke mm (diameter) | 10 | 10 | 12 | 16 | 20 | 28 | 32 | 40 | 48 | 64 |
| Weight g (oz) | 80 (2.8) | 135 (4.8) | 180 (6.4) | 370 (13.1) | 550 (19.4) | 930 (32) | 1,550 (55) | 2,850 (101) | 5,500 (194) | 11,300 (399) |

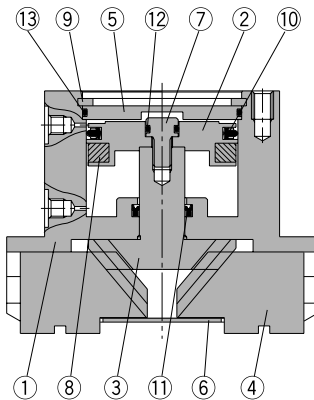
Note 1) Values for ø16 to ø25 are with gripping point L = 20mm, for ø32 to ø63 with gripping point L = 30mm, and for ø80 to ø125 with gripping point L = 50mm.

Refer to the "Effective Gripping Force" data on pages 40 through 42 for the gripping force at each gripping position.

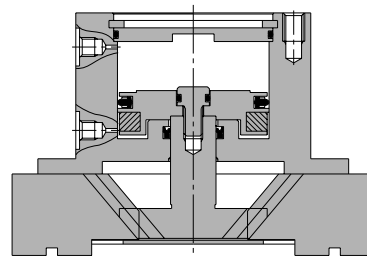
Note 2) Open and closed diameter values apply for external gripping of work pieces.

Construction

Closed condition



Open condition



Parts list

| No. | Description | Material | Note |
|-----|-------------|-----------------|---------------------------------|
| 1 | Body | Aluminum alloy | Hard anodized |
| 2 | Piston | Aluminum alloy | Hard anodized |
| 3 | Cam | Carbon steel | Heat treated, Specially treated |
| 4 | Finger | Carbon steel | Heat treated, Specially treated |
| 5 | Cap | Aluminum alloy | Hard anodized |
| 6 | End plate | Stainless steel | |
| 7 | Piston bolt | Stainless steel | |

| No. | Description | Material | Note |
|-----|------------------|------------------|---------------|
| 8 | Rubber magnet | Synthetic rubber | |
| 9 | C type snap ring | Carbon steel | Nickel plated |
| 10 | Piston seal | NBR | |
| 11 | Rod seal | NBR | |
| 12 | Gasket | NBR | |
| 13 | Gasket | NBR | |

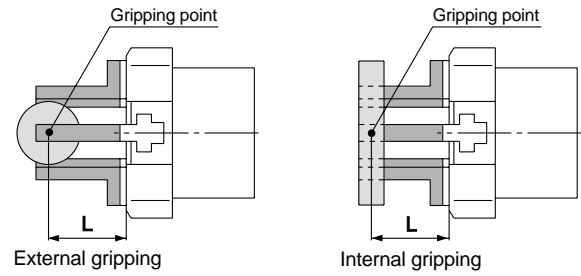
Replacement parts/Seal kits

| Kit Number | | | | | | | | | | Contents |
|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|--|
| MHSL3-16D | MHSL3-20D | MHSL3-25D | MHSL3-32D | MHSL3-40D | MHSL3-50D | MHSL3-63D | MHSL3-80D | MHSL3-100D | MHSL3-125D | |
| MHSL16-PS | MHSL20-PS | MHSL25-PS | MHSL32-PS | MHSL40-PS | MHSL50-PS | MHSL63-PS | MHSL80-PS | MHSL100-PS | MHSL125-PS | A set of the above Nos. 10, 11, 12 and 13 |

* Seal kits are sets consisting of items 10, 11, 12 and 13, which can be ordered using the kit number for each cylinder bore size.

Gripping Point

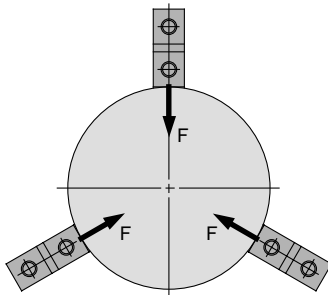
- The work piece gripping point distance should be within the gripping force ranges given for each pressure in the effective gripping force graphs below.
- If operated with the work piece gripping point beyond the indicated ranges, an excessive offset load will be applied to the sliding section of the fingers, which can have an adverse effect on the service life of the product.



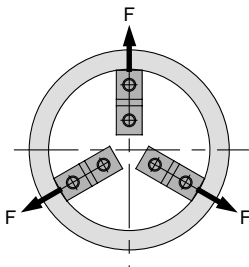
L: Gripping point distance

Effective Gripping Force

- Expressing the effective gripping force
- The effective gripping force shown in the graphs to the right is expressed as F, which is the impellent force of one finger when all 3 of the fingers and attachments are in full contact with the work piece as shown in the figure below.



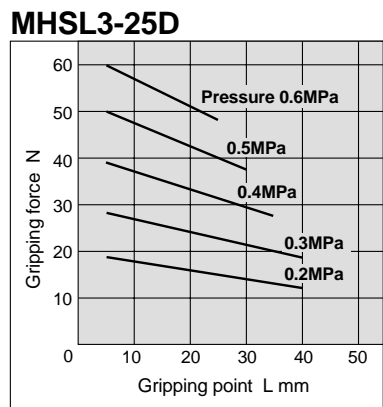
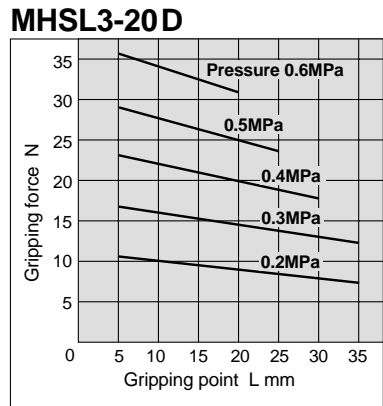
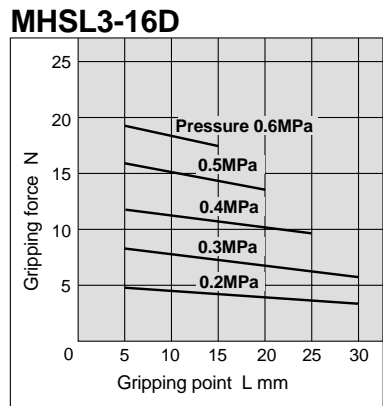
External gripping



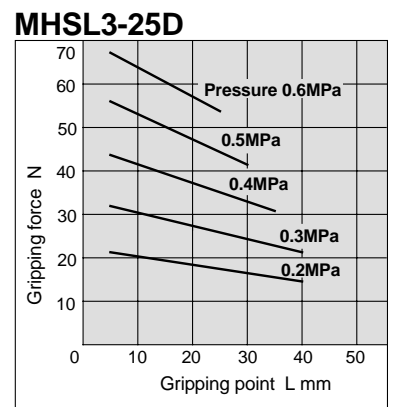
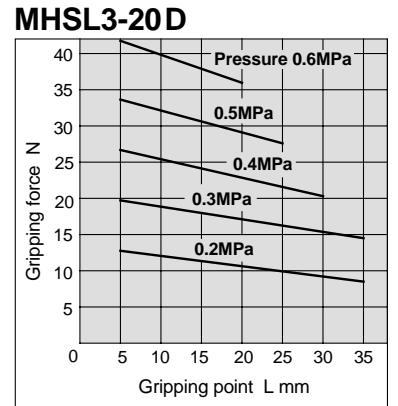
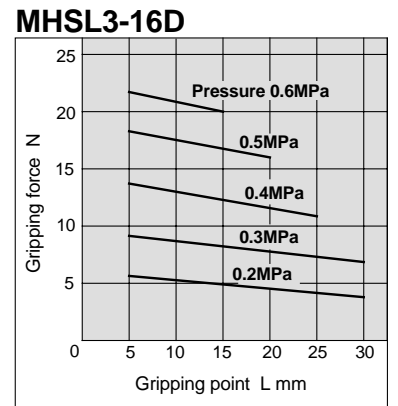
Internal gripping

Note: 1N = 0.2248lbr
1in = 25.4mm
1MPa = 145psi

External gripping force



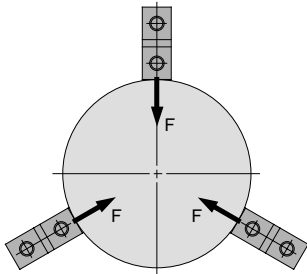
Internal gripping force



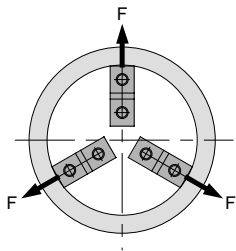
Effective Gripping Force

- Expressing the effective gripping force

The effective gripping force shown in the graphs to the right is expressed as F , which is the impellent force of one finger when all 3 of the fingers and attachments are in full contact with the work piece as shown in the figure below.



External gripping

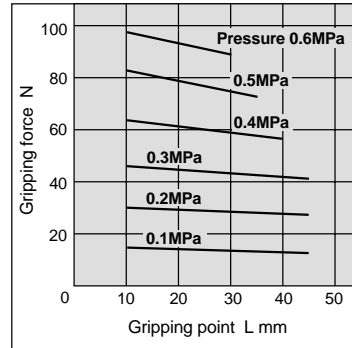


Internal gripping

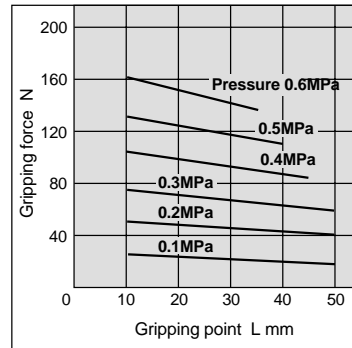
Note: 1N = 0.2248lbf
 1in = 25.4mm
 1MPa = 145psi

External gripping force

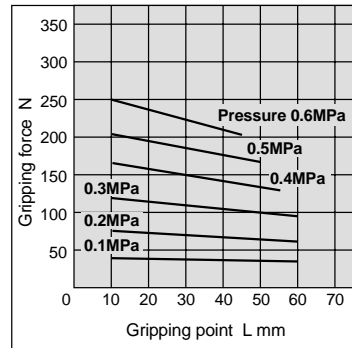
MHSL3-32D



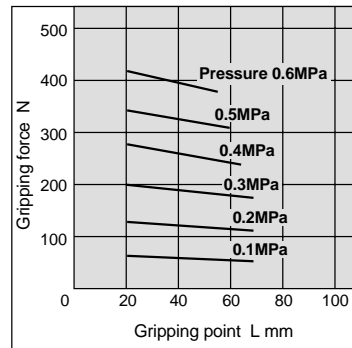
MHSL3-40D



MHSL3-50D

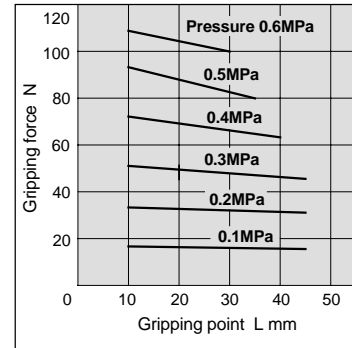


MHSL3-63D

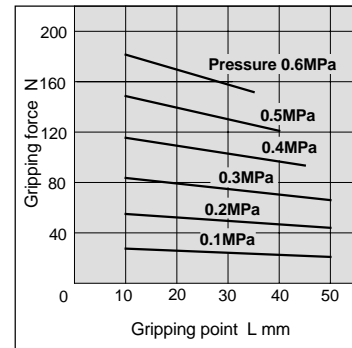


Internal gripping force

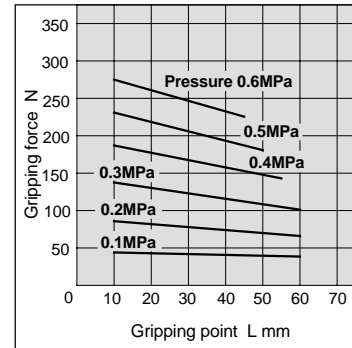
MHSL3-32D



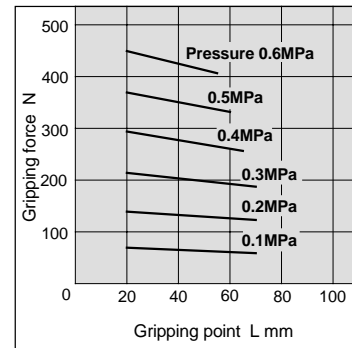
MHSL3-40D



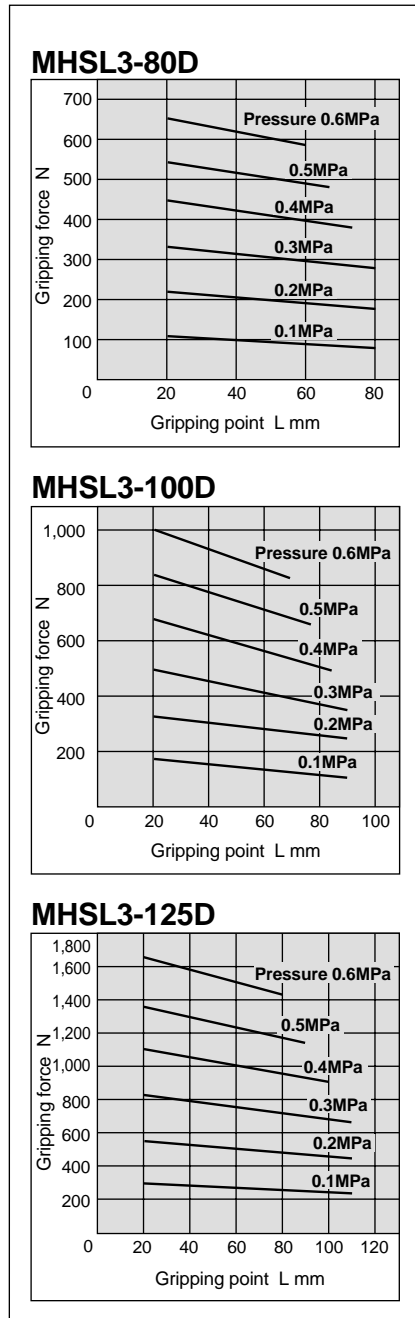
MHSL3-50D



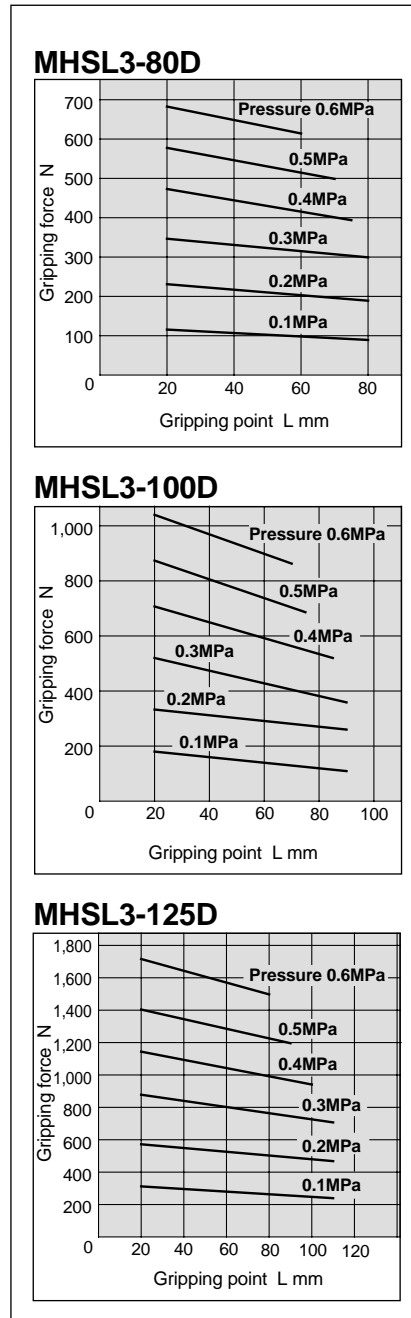
MHSL3-63D



External gripping force



Internal gripping force



Note: 1N = 0.2248lbf
 1in = 25.4mm
 1MPa = 145psi

2 finger MHS2

3 finger MHS3

With dust cover
MHSJ3

Through hole
MHSH3

Long stroke
MHSL3

4 finger MHS4

Auto switches

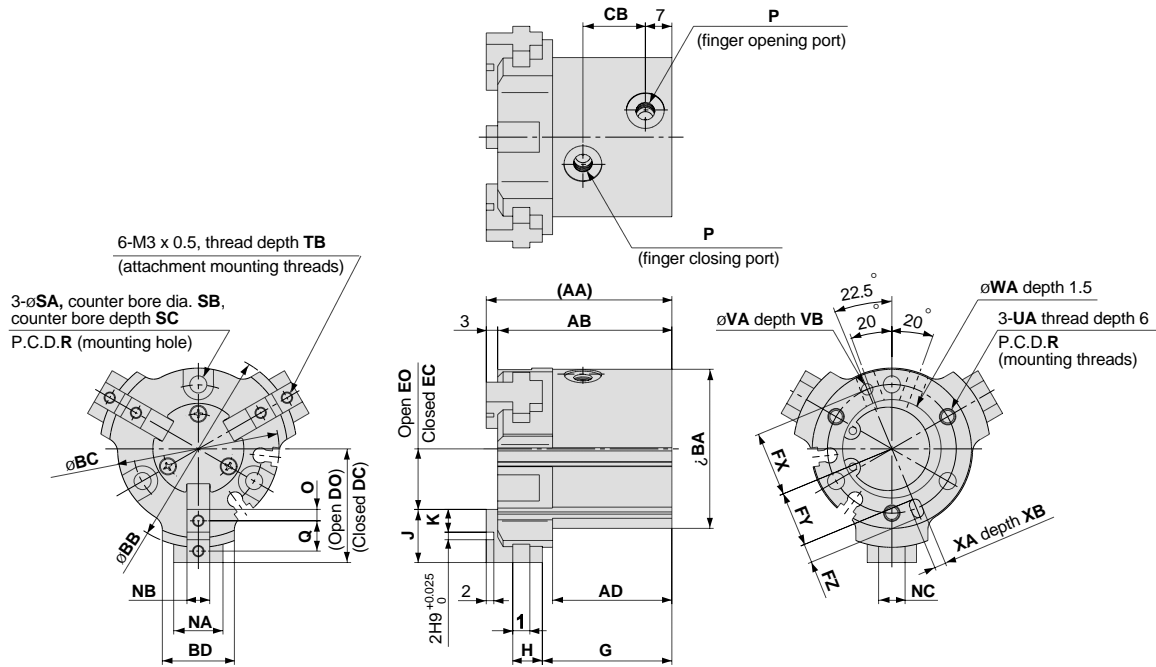
Model selection

Precautions

Dimensions (mm)

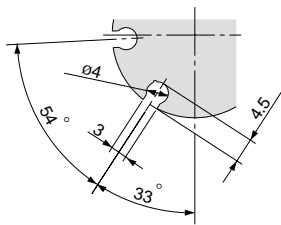
1in = 25.4mm

MHSL3-16D to 25D

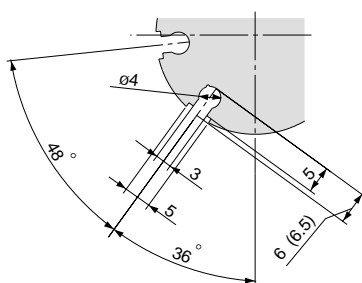


Auto switch mounting groove positions (2 locations)

MHSL3-16D



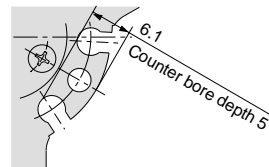
MHSL3-20D, 25D



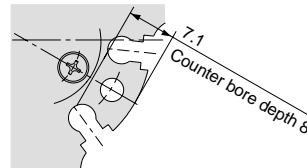
Dimensions inside () are for ø25

Mounting hole counter bore dimensions

MHSL3-16D



MHSL3-20D



Note) The counter bore configuration differs only for the mounting hole section between the auto switch mounting grooves. (ø16 and ø20 only)

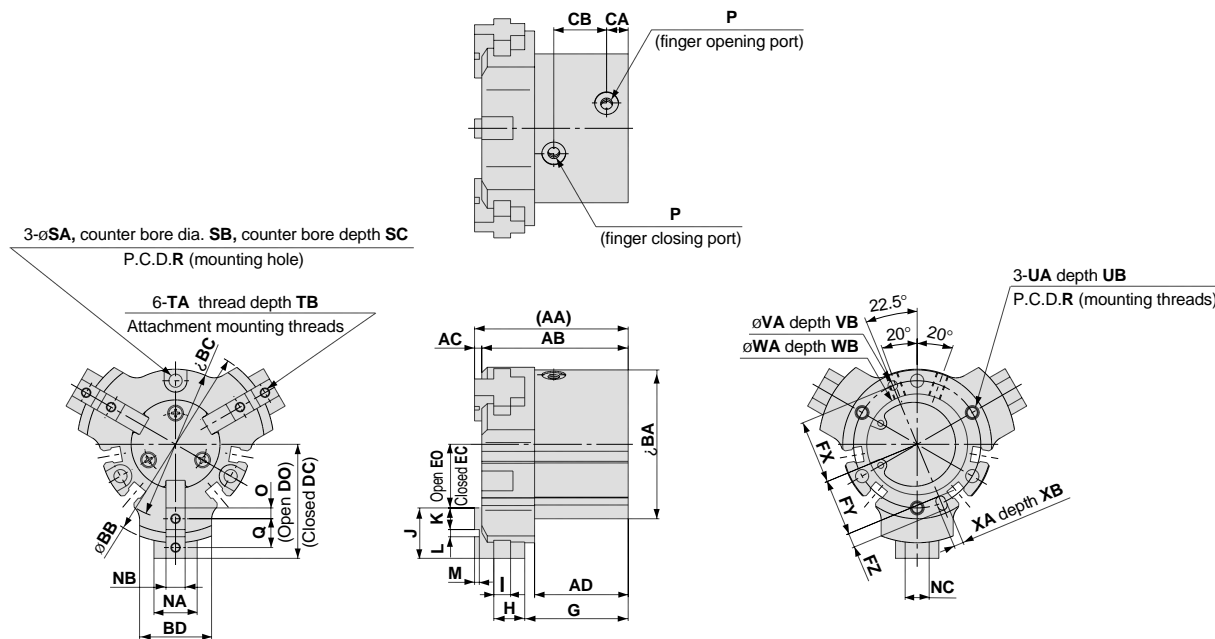
| Model | AA | AB | AD | BA | BB | BC | BD | CB | DO | DC | EO | EC | FX | FY | FZ | G | H | 1 | J | K | NA | NB |
|-----------|------|------|------|----|----|------|----|------|------|------|------|-----|------|------|----|------|-----|-----|----|---|----|---|
| MHSL3-16D | 43.5 | 40.5 | 28 | 30 | 40 | 30.6 | 12 | 14 | 23.5 | 18.5 | 13.5 | 8.5 | 12.5 | 11 | 3 | 30.5 | 7 | 4 | 10 | 4 | 8 | 5h9 ₀ ⁰ / _{-0.030} |
| MHSL3-20D | 46 | 43 | 29 | 36 | 45 | 36.6 | 16 | 14 | 26 | 21 | 14 | 9 | 14.5 | 13 | 3 | 32 | 8 | 4 | 12 | 5 | 11 | 6h9 ₀ ⁰ / _{-0.030} |
| MHSL3-25D | 49 | 46 | 31.5 | 42 | 52 | 42.6 | 19 | 16.5 | 30 | 24 | 16 | 10 | 17 | 14.5 | 5 | 34.2 | 7.8 | 4.5 | 14 | 6 | 13 | 6h9 ₀ ⁰ / _{-0.030} |

| Model | NC | O | P | Q | R | SA | SB | SC | TB | UA | VA | VB | WA | XA | XB |
|-----------|----|-----|----------|---|----|-----|-----|----|----|----------|------------------------------------|----|-------------------------------------|------------------------------------|----|
| MHSL3-16D | 5 | 2 | M3 x 0.5 | 6 | 25 | 3.4 | 6.5 | 5 | 5 | M3 x 0.5 | 2H9 ₀ ^{+0.025} | 2 | 17H9 ₀ ^{+0.043} | 2H9 ₀ ^{+0.025} | 2 |
| MHSL3-20D | 7 | 2.5 | M5 x 0.8 | 7 | 29 | 3.4 | 6.5 | 8 | 6 | M3 x 0.5 | 2H9 ₀ ^{+0.025} | 2 | 21H9 ₀ ^{+0.052} | 2H9 ₀ ^{+0.025} | 2 |
| MHSL3-25D | 7 | 3 | M5 x 0.8 | 8 | 34 | 4.5 | 8 | 8 | 6 | M4 x 0.7 | 3H9 ₀ ^{+0.025} | 3 | 26H9 ₀ ^{+0.052} | 3H9 ₀ ^{+0.025} | 3 |

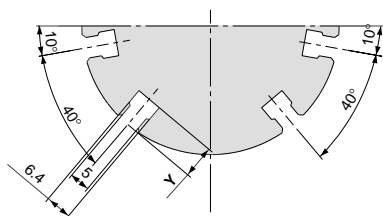
Dimensions (mm)

1in = 25.4mm

MHSL3-32D to 80D

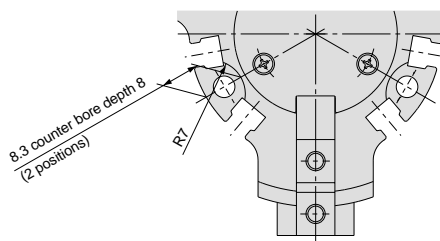


Auto switch mounting groove positions (4 locations)



Auto switch mounting groove positions

Mounting hole counter bore dimensions MHSL3-32D



Note) The counter bore configuration differs only for the mounting hole section between the auto switch mounting grooves. (ø32 only)

| Model | AA | AB | AC | AD | BA | BB | BC | BD | CA | CB | DO | DC | EO | EC | FX | FY | FZ | G | H | 1 | J | K |
|-----------|------|------|----|------|-----|-----|-------|----|----|------|------|------|------|------|------|------|----|------|------|----|----|----|
| MHSL3-32D | 58 | 55 | 3 | 35.5 | 52 | 72 | 52.6 | 24 | 8 | 20 | 42 | 34 | 22 | 14 | 22 | 19.5 | 5 | 39.6 | 10.4 | 5 | 20 | 9 |
| MHSL3-40D | 64 | 61 | 3 | 38.5 | 62 | 82 | 62.6 | 30 | 9 | 22 | 47.5 | 37.5 | 26.5 | 16.5 | 26.5 | 23.5 | 6 | 42.5 | 13.5 | 7 | 21 | 9 |
| MHSL3-50D | 77.5 | 74.5 | 3 | 46.5 | 70 | 104 | 70.6 | 32 | 9 | 29 | 60 | 46 | 36 | 22 | 31 | 28 | 6 | 51.3 | 17.7 | 8 | 24 | 10 |
| MHSL3-63D | 89 | 85 | 4 | 51 | 86 | 120 | 86.6 | 40 | 12 | 30.5 | 70 | 54 | 42 | 26 | 38 | 34.5 | 7 | 58.5 | 19.5 | 10 | 28 | 11 |
| MHSL3-80D | 116 | 111 | 5 | 70 | 106 | 140 | 106.6 | 50 | 14 | 37.5 | 80.5 | 60.5 | 48.5 | 28.5 | 47.5 | 43.5 | 8 | 78.5 | 23.5 | 11 | 32 | 12 |

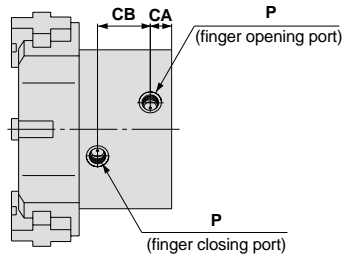
| Model | L | M | NA | NB | NC | O | P | Q | R | SA | SB | SC | TA | TB | UA | UB | VA | VB |
|-----------|------------------------------------|---|----|-------------------------------------|----|-----|----------|----|----|-----|-----|-----|----------|----|----------|----|------------------------------------|----|
| MHSL3-32D | 2H9 ^{+0.025} ₀ | 2 | 16 | 8h9 ⁰ _{-0.036} | 10 | 4.5 | M5 x 0.8 | 11 | 44 | 4.5 | 8 | 8 | M4 x 0.7 | 8 | M4 x 0.7 | 6 | 3H9 ^{+0.025} ₀ | 3 |
| MHSL3-40D | 3H9 ^{+0.025} ₀ | 2 | 18 | 8h9 ⁰ _{-0.036} | 10 | 4.5 | M5 x 0.8 | 12 | 53 | 5.5 | 9.5 | 9.5 | M4 x 0.7 | 8 | M5 x 0.8 | 10 | 4H9 ^{+0.030} ₀ | 4 |
| MHSL3-50D | 4H9 ^{+0.030} ₀ | 2 | 20 | 10h9 ⁰ _{-0.036} | 12 | 5 | M5 x 0.8 | 14 | 62 | 5.5 | 9.5 | 9.5 | M5 x 0.8 | 10 | M5 x 0.8 | 10 | 4H9 ^{+0.030} ₀ | 4 |
| MHSL3-63D | 6H9 ^{+0.036} ₀ | 3 | 26 | 12h9 ⁰ _{-0.043} | 14 | 5.5 | M5 x 0.8 | 17 | 76 | 6.6 | 11 | 17 | M5 x 0.8 | 10 | M6 x 1 | 12 | 5H9 ^{+0.030} ₀ | 5 |
| MHSL3-80D | 8H9 ^{+0.036} ₀ | 4 | 30 | 14h9 ⁰ _{-0.043} | 16 | 6 | Rc 1/8 | 20 | 95 | 6.6 | 11 | 23 | M6 x 1 | 12 | M6 x 1 | 12 | 6H9 ^{+0.030} ₀ | 6 |

| Model | WA | WB | XA | XB | Y |
|-----------|-------------------------------------|-----|------------------------------------|----|-----|
| MHSL3-32D | 34H9 ^{+0.062} ₀ | 2 | 3H9 ^{+0.025} ₀ | 3 | 6 |
| MHSL3-40D | 42H9 ^{+0.062} ₀ | 2 | 4H9 ^{+0.030} ₀ | 4 | 8 |
| MHSL3-50D | 52H9 ^{+0.074} ₀ | 2 | 4H9 ^{+0.030} ₀ | 4 | 7 |
| MHSL3-63D | 65H9 ^{+0.074} ₀ | 2.5 | 5H9 ^{+0.030} ₀ | 5 | 7.5 |
| MHSL3-80D | 82H9 ^{+0.087} ₀ | 3 | 6H9 ^{+0.030} ₀ | 6 | 9 |

Dimensions (mm)

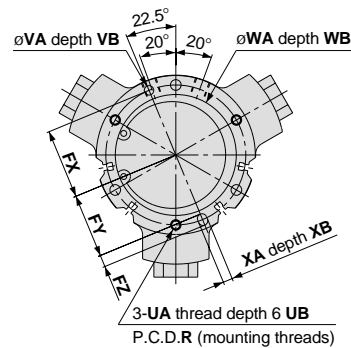
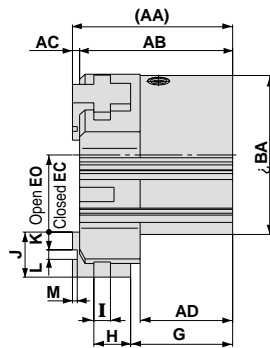
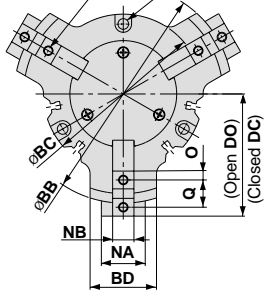
1in = 25.4mm

MHSL3-100D, 125D



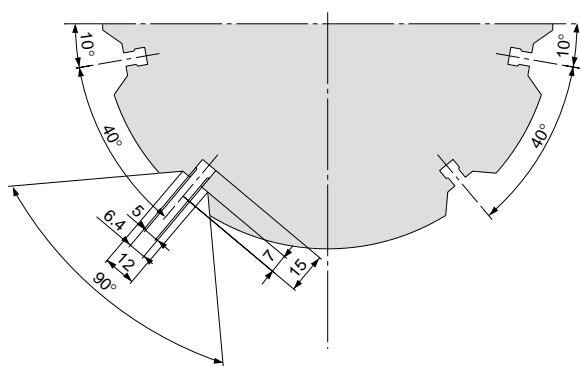
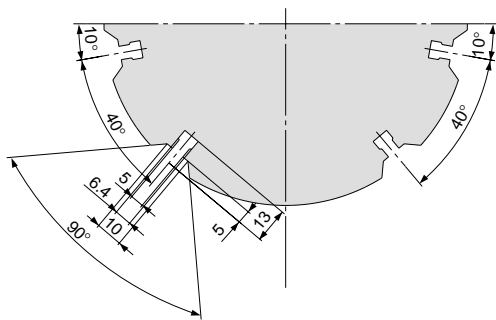
3- ϕ SA, counter bore dia. SB, counter bore depth SC
P.C.D.R (mounting hole)

6-TA thread depth TB
(attachment mounting threads)



MHSL3-100D

MHSL3-125D



(mm)

| Model | AA | AB | AC | AD | BA | BB | BC | BD | CA | CB | DO | DC | EO | EC | FX | FY | FZ | G | H | I | J | K |
|------------|-------------------------------------|--------------------------------------|----|-------------------------------------|-----|------|--------|----|-----|------|------|-----|-----------|----|-----------|----|-------------------------------------|-----|----|----|----|----|
| MHSL3-100D | 135 | 129 | 6 | 78 | 134 | 184 | 134.6 | 56 | 18 | 44.5 | 103 | 79 | 65 | 41 | 59 | 54 | 10 | 86 | 31 | 14 | 38 | 15 |
| MHSL3-125D | 175 | 167 | 8 | 102 | 166 | 234 | 166.6 | 66 | 24 | 54 | 132 | 100 | 80 | 48 | 74 | 68 | 12 | 112 | 43 | 17 | 52 | 21 |
| Model | L | M | NA | NB | NC | O | P | Q | R | SA | SB | SC | TA | TB | UA | UB | VA | | | | | |
| MHSL3-100D | 8H9 ^{+0.036} ₀ | 4 | 37 | 18h9 ⁰ _{-0.043} | 21 | 7.5 | Rc 1/4 | 23 | 118 | 9 | 14 | 31 | M8 x 1.25 | 16 | M8 x 1.25 | 16 | 8H9 ^{+0.036} ₀ | | | | | |
| MHSL3-125D | 10H9 ^{+0.036} ₀ | 6 | 43 | 22h9 ⁰ _{-0.052} | 25 | 10.5 | Rc 3/8 | 31 | 148 | 11 | 17.5 | 32 | M10 x 1.5 | 20 | M10 x 1.5 | 20 | 10H9 ^{+0.036} ₀ | | | | | |
| Model | VB | WA | WB | XA | XB | | | | | | | | | | | | | | | | | |
| MHSL3-100D | 6 | 102H9 ^{+0.087} ₀ | 4 | 8H9 ^{+0.036} ₀ | 6 | | | | | | | | | | | | | | | | | |
| MHSL3-125D | 8 | 130H9 ^{+0.100} ₀ | 6 | 10H9 ^{+0.036} ₀ | 8 | | | | | | | | | | | | | | | | | |

Solid-state Auto Switches for Direct Mounting Series D-M9N(V)/D-M9P(V)/D-M9B(V)



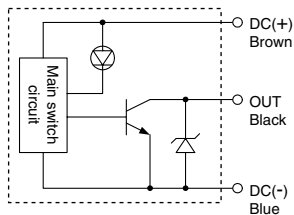
Grommet

- Reduced load currents for two-wire model (2.5 to 40 mA)
- Compliance with lead-free requirements
- Use of UL-approved lead wires (style 2844)

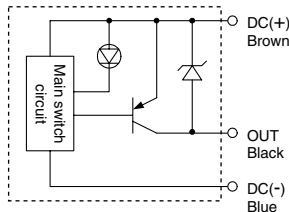


Internal circuits

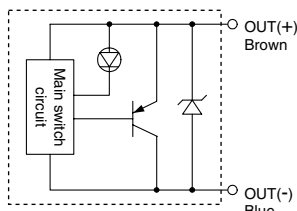
D-M9N/M9NV



D-M9P/M9PV



D-M9B/M9BV



Auto Switch Specifications

PLC: Programmable Logic Controller

| D-M9□/D-M9□V (with Indicator light) | | | | | | |
|-------------------------------------|------------------------------------|---------------|---------|---------------|-------------------------|---------------|
| Model number | D-M9N | D-M9NV | D-M9P | D-M9PV | D-M9B | D-M9BV |
| Electrical entry | In-line | Perpendicular | In-line | Perpendicular | In-line | Perpendicular |
| Wiring | Three-wire | | | Two-wire | | |
| Output | NPN | | PNP | | — | |
| Applicable load | Integrated circuit, relay and PLC | | | | 24 V DC relay and PLC | |
| Power voltage | 5, 12, or 24 V DC (4.5 to 28 V DC) | | | | — | |
| Current consumption | 10 mA or less | | | | — | |
| Load voltage | 28 V DC or less | | — | | 24 V DC (10 to 28 V DC) | |
| Load current | 40 mA or less | | | | 2.5 to 40 mA | |
| Internal voltage drop | 0.8 V or less | | | | 4 V or less | |
| Leakage current | 100 μA max. at 24 V DC | | | | 0.8 mA or less | |
| Indicator light | Red LED lights when ON. | | | | | |

- Lead wire: oil-proof heavy-duty vinyl cable
2.7 x 3.2 with elliptic cross-section, 0.15 mm², two cores (D-M9B),
or three cores (D-M9N and D-M9P)

Solid state switch specifications

| | |
|-----------------------|--|
| Leakage current | 3-wire: 100 μA or less; 2-wire: 0.8 mA max. |
| Operating time | 1 ms or less |
| Impact resistance | 1000 m/s ² |
| Insulation resistance | 50 MΩ or more at 500 V DC (between lead wire and case) |
| Withstand voltage | 1000 V AC for 1 min. (between lead wire and case) |
| Ambient temperature | -10°C to 60°C |
| Enclosure | IEC529 standard IP67, JIS C 0920 watertight construction |

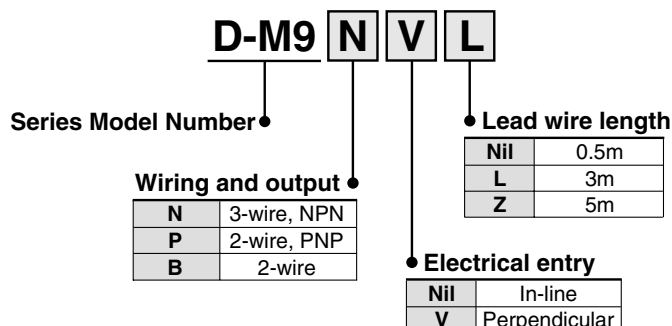
Weight

Unit: g

| Model | D-M9N(V) | D-M9P(V) | D-M9B(V) | |
|----------------------|----------|----------|----------|----|
| Lead wire length (m) | 0.5 | 8 | 8 | 7 |
| | 3 | 41 | 41 | 38 |
| | 5 | 68 | 68 | 63 |

How to Order

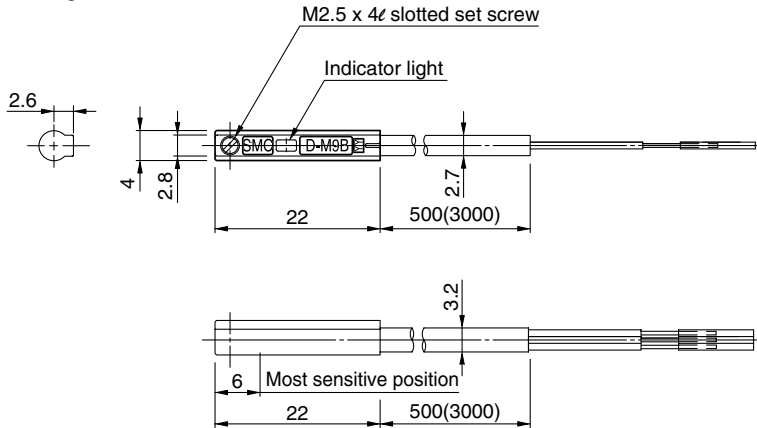
Standard Model Number



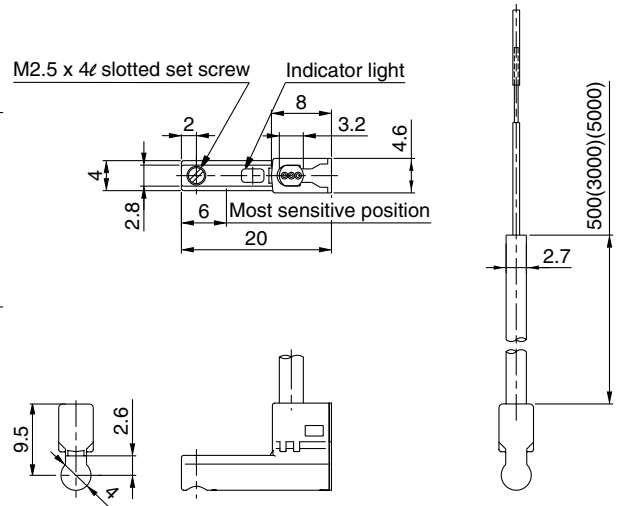
Series D-M9

Auto Switch Dimensions

D-M9□



D-M9□V



⚠ Specific Product Precautions

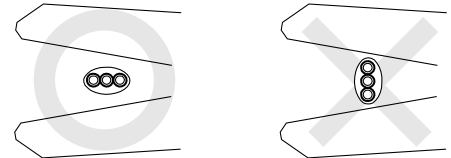
Be sure to read before handling. Contact SMC when the required specification is out of range.

Handling

⚠ Caution

Observe the following precautions when handling the product.

- The D-M9 series of auto switches is not overcurrent-protected. Faulty wiring or short circuit may result in breakage or burning-out of the switch.
- When stripping the cable clad, be careful about the orientation of the cable being stripped. The insulator may be accidentally torn or damaged depending on the orientation, as shown on the right.



- We recommend the following tools

| Manufacturer | Product name | Product number |
|--------------|---------------|----------------|
| VESSEL | Wire stripper | No 3000G |
| Tokyo Ideal | Strip master | 45-089 |

* The stripper for the round shape cords (ø2.0) is for a 2-wire style.

- Please do not attach the switch with any other screws than those already attached to the auto switch body.

The operation range is shorter than that of the conventional models.

If the auto switch replaces the conventional model, it may not function depending on its application because the operation range is shorter. Refer to the examples below.

- In an application where at the end, the stopping position shifting range is larger than the operation range. For example, pushing a work against something, or pressing a work into a hole, or clamping a work.
- In an application where the auto switch is used to detect an intermediate stopping position. (Detecting time is shortened.)

Note) Please contact SMC for the operation range details for each actuator.

The switch is damaged instantly when a load is shortened since short circuit protection is not built-in. Pay special attention to avoid reversing the connection of the brown lead of the power supply line and the black output line connection.