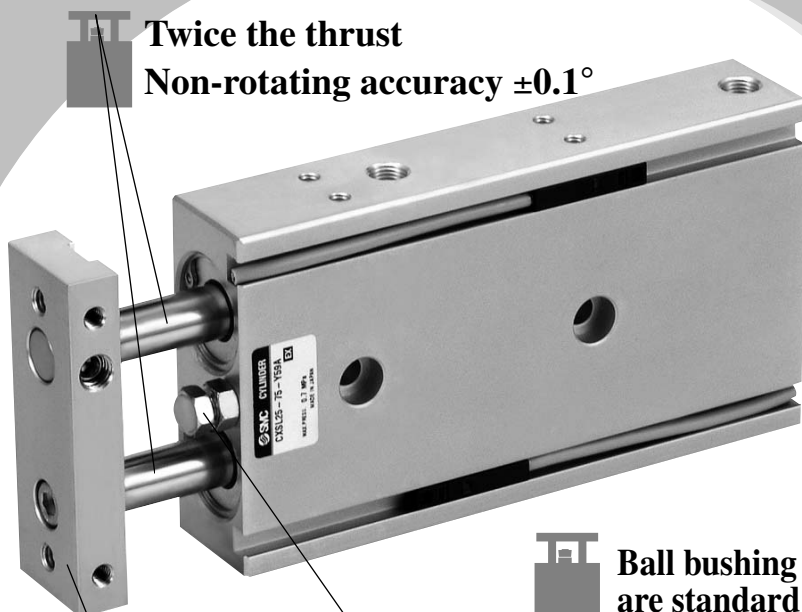


# Dual Rod Cylinder Series CXS

ø6, ø10, ø15, ø20, ø25, ø32

## Dual rod cylinder with guide function for pick & place applications.

### Series CXS



Twice the thrust  
Non-rotating accuracy  $\pm 0.1^\circ$



Ball bushing bearings and slide bearings are standard for all series.

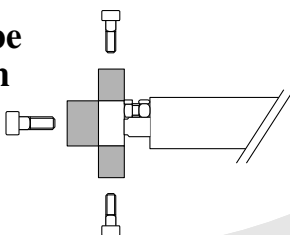
Dimensions for ball bushing bearings and slide bearings are the same.



Adjustable stroke range:  
0 to -5 mm



Work can be mounted on three faces.



MX ☐

MTS

MY ☐

CY ☐

MG ☐

CX ☐

D-

-X

20-

Data

#### Series Variations

| Series           |      | Bore size (mm)<br>6 10 15 20 25 32 | Axial foot<br>piping | Clean Series<br>11- 12-       | Page    |
|------------------|------|------------------------------------|----------------------|-------------------------------|---------|
| Compact type     | CXSJ | ● ● ● ● ● ●                        | ●                    | ● (Ball bushing bearing only) | 8-28-18 |
| Basic type       | CXS  | ● ● ● ● ● ●                        | ● (ø6 only)          | ● (Ball bushing bearing only) | 8-29-1  |
| With air cushion | CXS  | ● ● ● ● ● ●                        |                      |                               | 8-29-11 |
| With end lock    | CXS  | ● ● ● ● ● ●                        |                      |                               | 8-29-18 |
| Double rod type  | CXSW | ● ● ● ● ● ●                        |                      |                               | 8-29-24 |

# Dual Rod Cylinder: Basic Type

## Series CXS

ø6, ø10, ø15, ø20, ø25, ø32

### How to Order

**CXS M 20 100 Y7BW S**

**Bearing type**

|   |                      |
|---|----------------------|
| M | Slide bearing        |
| L | Ball bushing bearing |

**Bore size/Stroke (mm)**

| Bore size (mm) | Standard stroke                                             |
|----------------|-------------------------------------------------------------|
| 6              | 10, 20, 30, 40, 50                                          |
| 10             | 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75              |
| 15, 20, 25, 32 | 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100 |

**Number of auto switches**

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

**Auto switch**

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

\* For the applicable auto switch model, refer to the table below.  
\* Auto switches are shipped together, (but not assembled).

MX□

MTS

MY□

CY□

MG□

CX□

D-

-X

20-

Data

**Applicable Auto Switch**/Refer to page 8-30-1 for further information on auto switches.

| Type               | Special function                           | Electrical entry | Indicator light | Wiring (Output)         | Load voltage |           | Auto switch model |         | Lead wire length (m) * |       |       | Pre-wire connector | Applicable load |            |            |
|--------------------|--------------------------------------------|------------------|-----------------|-------------------------|--------------|-----------|-------------------|---------|------------------------|-------|-------|--------------------|-----------------|------------|------------|
|                    |                                            |                  |                 |                         | DC           | AC        | Perpendicular     | In-line | 0.5 (Nil)              | 3 (L) | 5 (Z) |                    |                 |            |            |
| Reed switch        | —                                          | Grommet          | Yes             | 3-wire (NPN equivalent) | —            | 5 V       | —                 | —       | Z76                    | ●     | ●     | —                  | —               | IC circuit | —          |
|                    |                                            |                  |                 | 2-wire                  | 24 V         | 12 V      | 100 V             | —       | Z73                    | ●     | ●     | ●                  | —               | —          | Relay, PLC |
| Solid state switch | —                                          | Grommet          | Yes             | 3-wire (NPN)            | 24 V         | 5 V, 12 V | —                 | Y69A    | Y59A                   | ●     | ●     | ○                  | ○               | IC circuit | Relay, PLC |
|                    |                                            |                  |                 | 3-wire (PNP)            |              |           |                   | Y7PV    | Y7P                    | ●     | ●     | ○                  | ○               | —          |            |
|                    |                                            |                  |                 | 2-wire                  |              | 12 V      |                   | Y69B    | Y59B                   | ●     | ●     | ○                  | ○               | —          |            |
|                    | 3-wire (NPN)                               |                  |                 | 5 V, 12 V               | Y7NWV        | Y7NW      |                   | ●       | ●                      | ○     | ○     | IC circuit         |                 |            |            |
|                    | 3-wire (PNP)                               |                  |                 |                         | Y7PWV        | Y7PW      |                   | ●       | ●                      | ○     | ○     | —                  |                 |            |            |
|                    |                                            |                  |                 |                         | Y7BWV        | Y7BW      |                   | ●       | ●                      | ○     | ○     | —                  |                 |            |            |
|                    | Diagnostic indication (2-color indication) |                  |                 |                         |              |           |                   |         |                        |       |       |                    |                 |            |            |
|                    | Water resistant (2-color indication)       |                  | 2-wire          |                         | 12 V         |           | —                 | Y7BA    | —                      | ●     | ○     | ○                  | —               |            |            |

\* Lead wire length symbols: 0.5 m ..... Nil (Example) Y59A  
3 m ..... L (Example) Y59AL  
5 m ..... Z (Example) Y59AZ

\* Solid state switches marked with "○" are produced upon receipt of order.

- Since there are other applicable auto switches than listed, refer to page 8-29-10 for details.
- For details about auto switches with pre-wire connector, refer to page 8-30-52.



## Specifications

| Bore size (mm)                | 6                                                              | 10             | 15             | 20       | 25             | 32 |
|-------------------------------|----------------------------------------------------------------|----------------|----------------|----------|----------------|----|
| Fluid                         | Air (Non-lube)                                                 |                |                |          |                |    |
| Proof pressure                | 1.05 MPa                                                       |                |                |          |                |    |
| Maximum operating pressure    | 0.7 MPa                                                        |                |                |          |                |    |
| Minimum operating pressure    | 0.15 MPa                                                       | 0.1 MPa        |                | 0.05 MPa |                |    |
| Ambient and fluid temperature | -10 to 60°C (No freezing)                                      |                |                |          |                |    |
| Piston speed                  | 30 to 300 mm/s                                                 | 30 to 800 mm/s | 30 to 700 mm/s |          | 30 to 600 mm/s |    |
| Cushion                       | Rubber bumper                                                  |                |                |          |                |    |
| Stroke adjustable range       | 0 to -5 mm compared to the standard stroke                     |                |                |          |                |    |
| Port size                     | M5 x 0.8                                                       |                |                |          | Rc 1/8         |    |
| Bearing type                  | Slide bearing, Ball bushing bearing (Same dimensions for both) |                |                |          |                |    |

\* The maximum piston speed shown in the table above is for extension.  
The maximum piston speed for retraction is approximately 70% that of extension.

## Standard Stroke

| Model  | Standard stroke                                | Manufacturable stroke range |
|--------|------------------------------------------------|-----------------------------|
| CXS□6  | 10, 20, 30, 40, 50                             | 60 to 100                   |
| CXS□10 | 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75 | 80 to 150                   |
| CXS□15 |                                                | 110 to 150                  |
| CXS□20 | 10, 15, 20, 25, 30, 35, 40, 45, 50,            | 110 to 200                  |
| CXS□25 | 60, 70, 75, 80, 90, 100                        |                             |
| CXS□32 |                                                |                             |

\* Refer to "Made to Order Specifications" for stroke which exceeds the standard stroke length.  
Non-standard strokes for a size ø6 cylinder are available as a special order.



**Made to Order Specifications**  
(For details, refer to page 8-31-1.)

| Symbol | Specifications                     |
|--------|------------------------------------|
| -XB6   | Heat resistant cylinder (150°C)    |
| -XB9   | Low speed cylinder (10 to 50 mm/s) |
| -XB11  | Long stroke type                   |
| -XB13  | Low speed cylinder (5 to 50 mm/s)  |
| -XB19  | High speed cylinder                |
| -XC18  | NPT finish piping port             |
| -XC22  | Fluoro rubber seals                |
| -X593  | Without plate                      |

## Theoretical Output

| Bore size (mm) | Rod size (mm) | Operating direction | Piston area (mm <sup>2</sup> ) | Operating pressure (MPa) |      |      |      |      |      |      |      |
|----------------|---------------|---------------------|--------------------------------|--------------------------|------|------|------|------|------|------|------|
|                |               |                     |                                | 0.1                      | 0.15 | 0.2  | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  |
| CXS□6          | 4             | OUT                 | 56                             | —                        | 8.4  | 11.2 | 16.8 | 22.4 | 28.0 | 33.6 | 39.2 |
|                |               | IN                  | 31                             | —                        | 4.6  | 6.2  | 9.3  | 12.4 | 15.5 | 18.6 | 21.7 |
| CXS□10         | 6             | OUT                 | 157                            | 15.7                     | —    | 31.4 | 47.1 | 62.8 | 78.5 | 94.2 | 110  |
|                |               | IN                  | 100                            | 10.0                     | —    | 20.0 | 30.0 | 40.0 | 50.0 | 60.0 | 70.0 |
| CXS□15         | 8             | OUT                 | 353                            | 35.3                     | —    | 70.6 | 106  | 141  | 177  | 212  | 247  |
|                |               | IN                  | 252                            | 25.2                     | —    | 50.4 | 75.6 | 101  | 126  | 151  | 176  |
| CXS□20         | 10            | OUT                 | 628                            | 62.8                     | —    | 126  | 188  | 251  | 314  | 377  | 440  |
|                |               | IN                  | 471                            | 47.1                     | —    | 94.2 | 141  | 188  | 236  | 283  | 330  |
| CXS□25         | 12            | OUT                 | 982                            | 98.2                     | —    | 196  | 295  | 393  | 491  | 589  | 687  |
|                |               | IN                  | 756                            | 75.6                     | —    | 151  | 227  | 302  | 378  | 454  | 529  |
| CXS□32         | 16            | OUT                 | 1608                           | 161                      | —    | 322  | 482  | 643  | 804  | 965  | 1126 |
|                |               | IN                  | 1206                           | 121                      | —    | 241  | 362  | 482  | 603  | 724  | 844  |

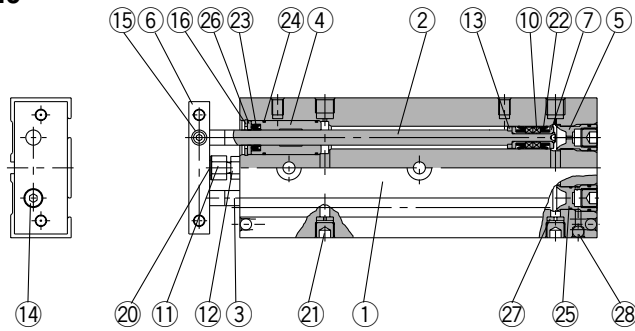
Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm<sup>2</sup>)

## Weight

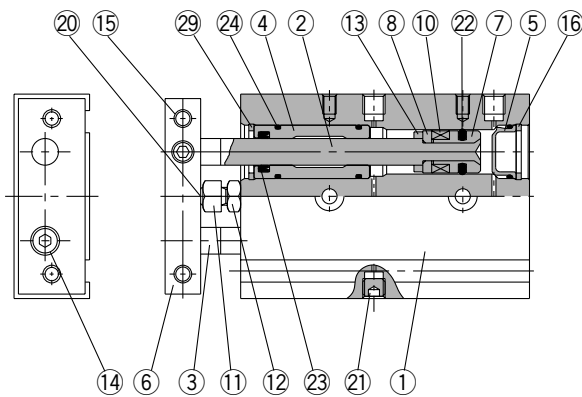
| Model  | Standard stroke (mm) |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
|--------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
|        | 10                   | 15    | 20    | 25    | 30    | 35    | 40    | 45    | 50    | 60    | 70    | 75    | 80    | 90    | 100  |
| CXSM6  | 0.081                | —     | 0.095 | —     | 0.108 | —     | 0.122 | —     | 0.135 | —     | —     | —     | —     | —     | —    |
| CXSL6  | 0.081                | —     | 0.095 | —     | 0.108 | —     | 0.122 | —     | 0.135 | —     | —     | —     | —     | —     | —    |
| CXSM10 | 0.15                 | 0.16  | 0.17  | 0.18  | 0.19  | 0.20  | 0.21  | 0.22  | 0.23  | 0.25  | 0.27  | 0.28  | —     | —     | —    |
| CXSL10 | 0.15                 | 0.16  | 0.17  | 0.18  | 0.19  | 0.20  | 0.21  | 0.22  | 0.23  | 0.25  | 0.27  | 0.28  | —     | —     | —    |
| CXSM15 | 0.25                 | 0.265 | 0.28  | 0.29  | 0.30  | 0.315 | 0.33  | 0.345 | 0.36  | 0.39  | 0.42  | 0.435 | 0.45  | 0.48  | 0.51 |
| CXSL15 | 0.27                 | 0.285 | 0.30  | 0.31  | 0.32  | 0.335 | 0.35  | 0.365 | 0.38  | 0.41  | 0.44  | 0.455 | 0.47  | 0.50  | 0.53 |
| CXSM20 | 0.40                 | 0.42  | 0.44  | 0.46  | 0.48  | 0.495 | 0.51  | 0.53  | 0.55  | 0.585 | 0.62  | 0.64  | 0.66  | 0.70  | 0.74 |
| CXSL20 | 0.43                 | 0.445 | 0.46  | 0.48  | 0.50  | 0.515 | 0.53  | 0.55  | 0.57  | 0.605 | 0.64  | 0.66  | 0.68  | 0.715 | 0.75 |
| CXSM25 | 0.61                 | 0.635 | 0.66  | 0.69  | 0.72  | 0.745 | 0.77  | 0.80  | 0.83  | 0.89  | 0.95  | 0.97  | 0.995 | 1.06  | 1.10 |
| CXSL25 | 0.62                 | 0.645 | 0.67  | 0.70  | 0.73  | 0.755 | 0.78  | 0.81  | 0.84  | 0.895 | 0.955 | 0.98  | 1.005 | 1.065 | 1.11 |
| CXSM32 | 1.15                 | 1.19  | 1.23  | 1.275 | 1.32  | 1.36  | 1.40  | 1.45  | 1.49  | 1.58  | 1.665 | 1.71  | 1.755 | 1.84  | 1.93 |
| CXSL32 | 1.16                 | 1.205 | 1.25  | 1.295 | 1.34  | 1.38  | 1.42  | 1.465 | 1.51  | 1.595 | 1.68  | 1.72  | 1.765 | 1.855 | 1.94 |

## Construction: Slide Bearing

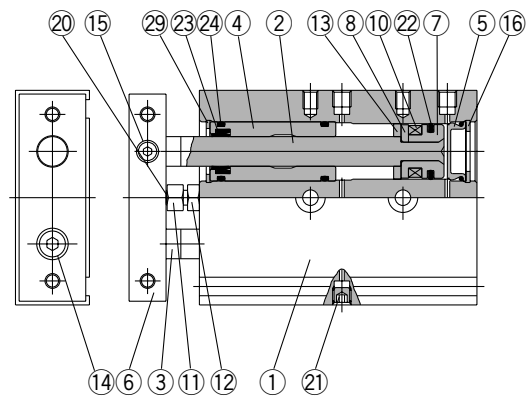
### CXSM6



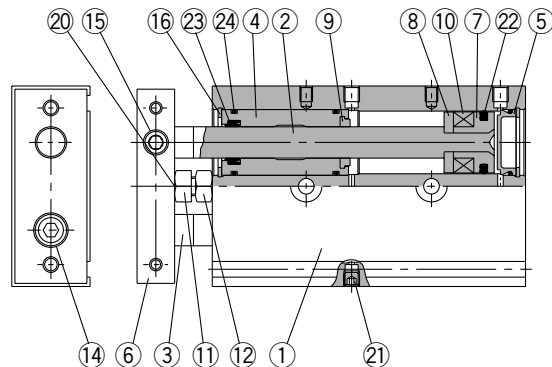
### CXSM10



### CXSM15



### CXSM20 to 32



## Component Parts

| No. | Description                   | Material                     | Note               |
|-----|-------------------------------|------------------------------|--------------------|
| ①   | Housing                       | Aluminum alloy               | Hard anodized      |
| ②   | Piston rod A                  | Carbon steel <sup>(1)</sup>  | Hard chrome plated |
| ③   | Piston rod B                  | Carbon steel <sup>(1)</sup>  | Hard chrome plated |
| ④   | Rod cover                     | Aluminum bearing alloy       |                    |
| ⑤   | Head cover                    | Special steel <sup>(2)</sup> |                    |
| ⑥   | Plate                         | Aluminum alloy               | Hard anodized      |
| ⑦   | Piston A                      | Aluminum alloy               | Chromated          |
| ⑧   | Piston B                      | Aluminum alloy               | Chromated          |
| ⑨   | Bumper A                      | Polyurethane                 |                    |
| ⑩   | Magnet                        | Magnetic material            |                    |
| ⑪   | Bumper bolt                   | Carbon steel                 | Nickel plated      |
| ⑫   | Hexagon nut                   | Carbon steel                 | Nickel plated      |
| ⑬   | Bumper B                      | Polyurethane                 |                    |
| ⑭   | Hexagon socket head cap screw | Chromium steel               | Nickel plated      |
| ⑮   | Hexagon socket head set screw | Chromium steel               | Nickel plated      |
| ⑯   | Snap ring                     | Special steel                | Nickel plated      |
| ⑰   | Bumper holder                 | Aluminum bearing alloy       |                    |



Note 1) Stainless steel for CXSM6.

Note 2) Anodized aluminum alloy for CXSM6.

## Component Parts

| No. | Description    | Material               | Note               |
|-----|----------------|------------------------|--------------------|
| ⑱   | Ball bushing   | —                      |                    |
| ⑲   | Bearing spacer | Aluminum bearing alloy |                    |
| ⑳   | Bumper         | Polyurethane           |                    |
| ㉑   | Plug           | Chromium steel         | Nickel plated      |
| ㉒   | Piston seal    | NBR                    |                    |
| ㉓   | Rod seal       | NBR                    |                    |
| ㉔   | O-ring         | NBR                    |                    |
| ㉕   | Head cover B   | Aluminum alloy         | Nickel plated      |
| ㉖   | Seal retainer  | Aluminum alloy         |                    |
| ㉗   | Port spacer    | Aluminum alloy         |                    |
| ㉘   | Steel ball     | Special steel          | Hard chrome plated |
| ㉙   | Snap ring B    | Special steel          | Nickel plated      |

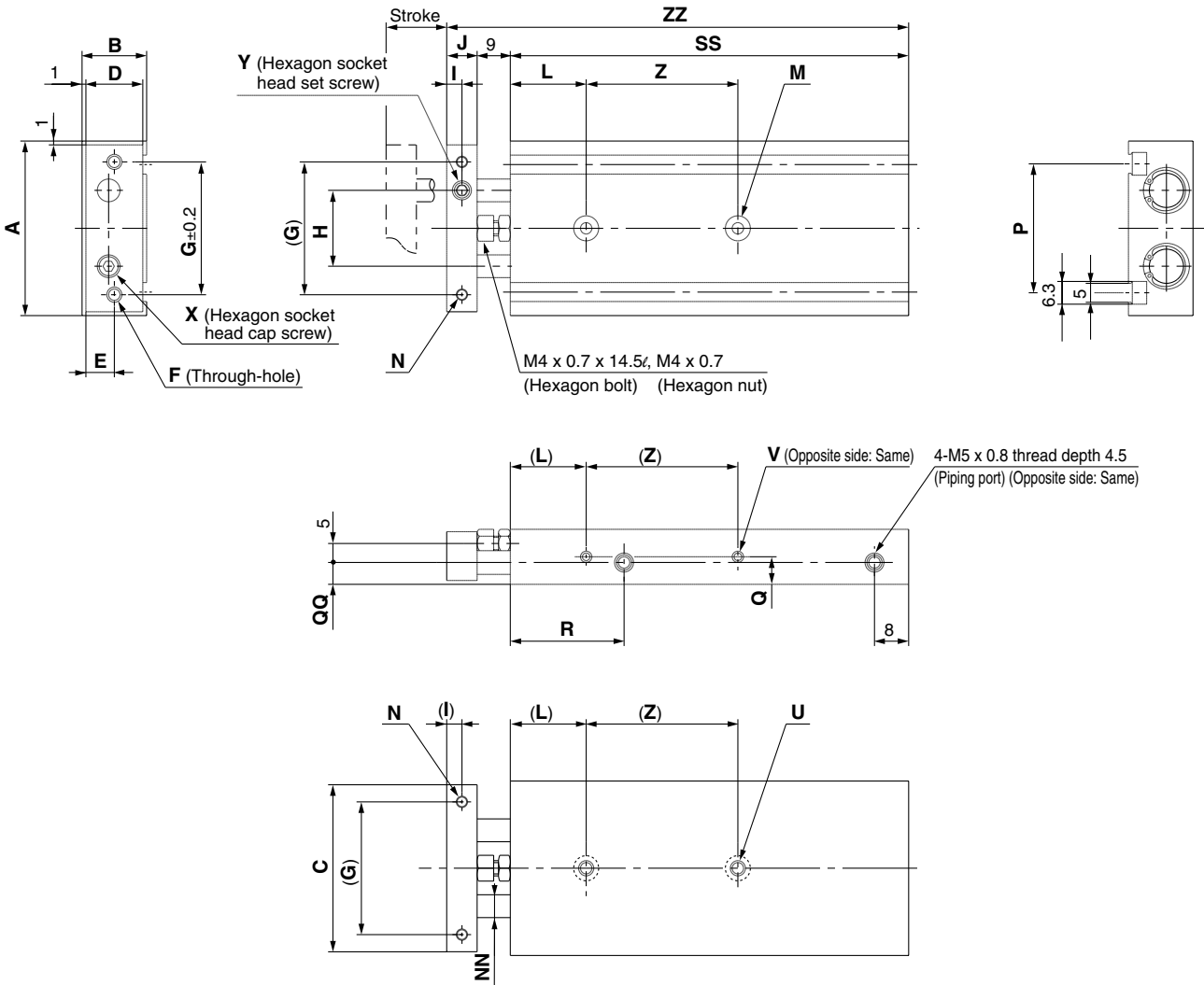
## Replacement Parts: Seal Kit

| Bore size (mm) | Kit no.   | Contents                     |
|----------------|-----------|------------------------------|
| 6              | CXSM6-PS  | Set of nos.<br>above ㉒, ㉓, ㉔ |
| 10             | CXSM10APS |                              |
| 15             | CXSM15-PS |                              |
| 20             | CXSM20-PS |                              |
| 25             | CXSM25-PS |                              |
| 32             | CXSM32-PS |                              |

\* Seal kit includes ㉒, ㉓, ㉔. Order the seal kit, based on each bore size.

Series CXS

Dimensions: ø10, ø15



(mm)

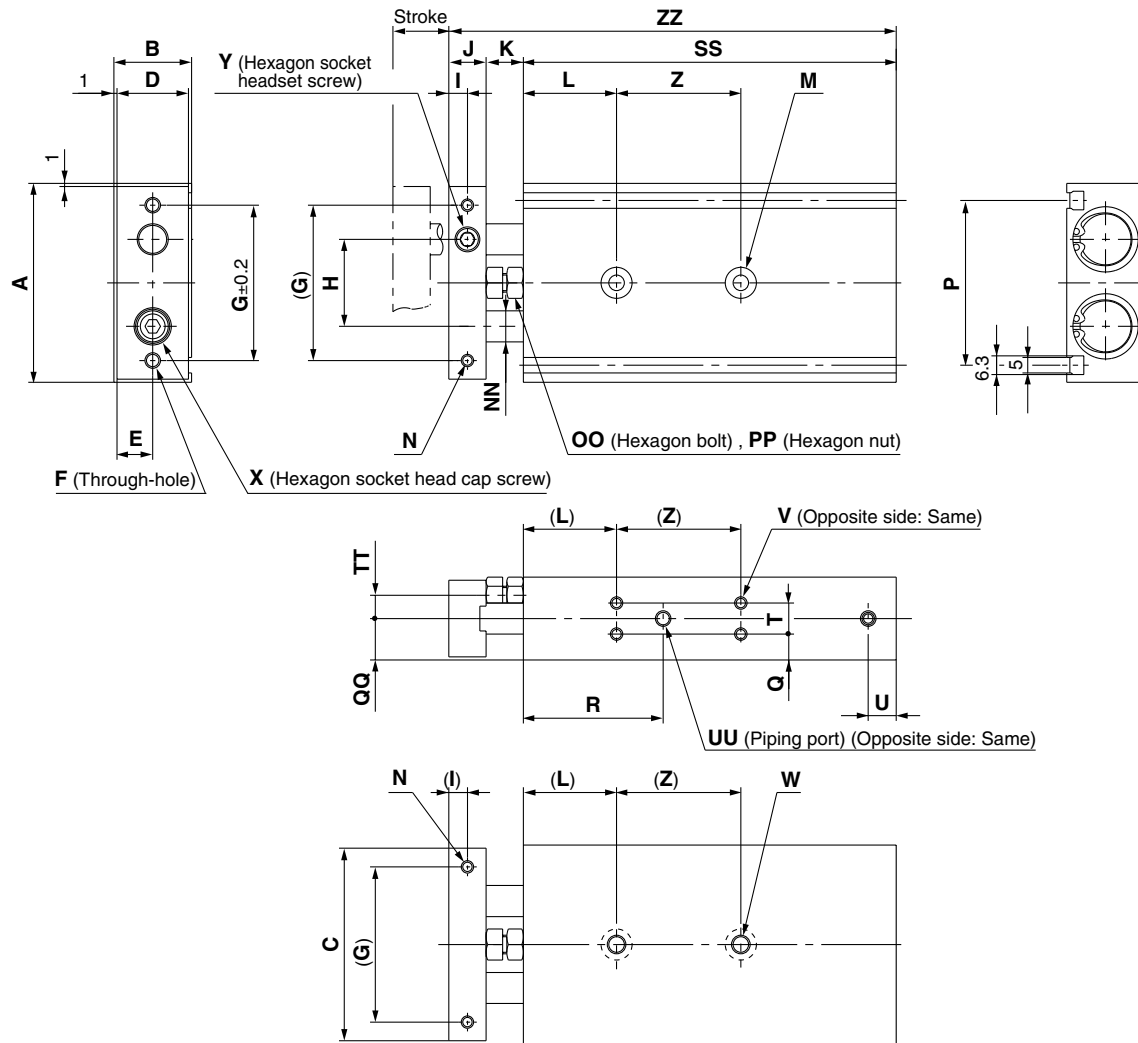
| Model  | A  | B  | C  | D  | E   | F          | G  | H  | I | J  | L  | M                                            | N                         | NN | P    | Q   | QQ | R    | U                         | V                           | X              | Y             |
|--------|----|----|----|----|-----|------------|----|----|---|----|----|----------------------------------------------|---------------------------|----|------|-----|----|------|---------------------------|-----------------------------|----------------|---------------|
| CXS□10 | 46 | 17 | 44 | 15 | 7.5 | 2-M4 x 0.7 | 35 | 20 | 4 | 8  | 20 | 2-ø3.4 through 2-ø6.5 counter-bore depth 3.3 | 2-M3 x 0.5 thread depth 5 | ø6 | 33.6 | 8.5 | 7  | 30   | 2-M4 x 0.7 thread depth 7 | 4-M3 x 0.5 thread depth 4.5 | M3 x 0.5 x 10ℓ | M5 x 0.8 x 5ℓ |
| CXS□15 | 58 | 20 | 56 | 18 | 9   | 2-M5 x 0.8 | 45 | 25 | 5 | 10 | 30 | 2-ø4.3 through 2-ø8 counter-bore depth 4.4   | 2-M4 x 0.7 thread depth 6 | ø8 | 48   | 10  | 10 | 38.5 | 2-M5 x 0.8 thread depth 8 | 4-M4 x 0.7 thread depth 5   | M5 x 0.8 x 10ℓ | M6 x 1.0 x 5ℓ |

Dimensions by Stroke

| Symbol |  | SS |    |    |    |    |    |     |     |     |     |     |     |     |     | Z   |                  |                       |            |    |         | ZZ |    |    |     |     |     |     |     |     |     |     |     |     |     |     |
|--------|--|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------|-----------------------|------------|----|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Stroke |  | 10 | 15 | 20 | 25 | 30 | 35 | 40  | 45  | 50  | 60  | 70  | 75  | 80  | 90  | 100 | 10, 15<br>20, 25 | 30, 35,<br>40, 45, 50 | 60, 70, 75 | 80 | 90, 100 | 10 | 15 | 20 | 25  | 30  | 35  | 40  | 45  | 50  | 60  | 70  | 75  | 80  | 90  | 100 |
| Model  |  | 10 | 15 | 20 | 25 | 30 | 35 | 40  | 45  | 50  | 60  | 70  | 75  | 80  | 90  | 100 | 10, 15<br>20, 25 | 30, 35,<br>40, 45, 50 | 60, 70, 75 | 80 | 90, 100 | 10 | 15 | 20 | 25  | 30  | 35  | 40  | 45  | 50  | 60  | 70  | 75  | 80  | 90  | 100 |
| CXS□10 |  | 65 | 70 | 75 | 80 | 85 | 90 | 95  | 100 | 105 | 115 | 125 | 130 | —   | —   | —   | 30               | 40                    | 50         | —  | —       | 82 | 87 | 92 | 97  | 102 | 107 | 112 | 117 | 122 | 132 | 142 | 147 | —   | —   | —   |
| CXS□15 |  | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 120 | 130 | 135 | 140 | 150 | 160 | 25               | 35                    | 45         | 45 | 55      | 89 | 94 | 99 | 104 | 109 | 114 | 119 | 124 | 129 | 139 | 149 | 154 | 159 | 169 | 179 |

# Dual Rod Cylinder: Basic Type **Series CXS**

**Dimensions: ø20, ø25, ø32**



MX□

MTS

MY□

CY□

MG□

CX□

D-

-X

20-

Data

| Model  | A  | B  | C  | D  | E    | F          | G  | H  | I | J  | K  | L  | M                                              | N                              | NN  | OO               | P  |
|--------|----|----|----|----|------|------------|----|----|---|----|----|----|------------------------------------------------|--------------------------------|-----|------------------|----|
| CXS□20 | 64 | 25 | 62 | 23 | 11.5 | 2-M5 x 0.8 | 50 | 28 | 6 | 12 | 12 | 30 | 2-ø5.5 through<br>2-ø9.5 counterbore depth 5.3 | 2-M4 x 0.7<br>thread depth 6   | ø10 | M6 x 1.0 x 18.5ℓ | 53 |
| CXS□25 | 80 | 30 | 78 | 28 | 14   | 2-M6 x 1.0 | 60 | 35 | 6 | 12 | 12 | 30 | 2-ø6.9 through<br>2-ø11 counterbore depth 6.3  | 2-M5 x 0.8<br>thread depth 7.5 | ø12 | M6 x 1.0 x 18.5ℓ | 64 |
| CXS□32 | 98 | 38 | 96 | 36 | 18   | 2-M6 x 1.0 | 75 | 44 | 8 | 16 | 14 | 30 | 2-ø6.9 through<br>2-ø11 counterbore depth 6.3  | 2-M5 x 0.8<br>thread depth 8   | ø16 | M8 x 1.25 x 23ℓ  | 76 |

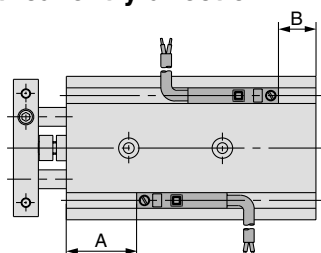
| Model  | PP        | Q    | QQ   | R  | T   | TT   | U  | UU                             | V                              | W                              | X               | Y              |
|--------|-----------|------|------|----|-----|------|----|--------------------------------|--------------------------------|--------------------------------|-----------------|----------------|
| CXS□20 | M6 x 1.0  | 7.75 | 12.5 | 45 | 9.5 | 6.5  | 8  | 4-M5 x 0.8<br>thread depth 4.5 | 8-M4 x 0.7<br>thread depth 5.5 | 2-M6 x 1.0<br>thread depth 10  | M6 x 1.0 x 12ℓ  | M8 x 1.25 x 6ℓ |
| CXS□25 | M6 x 1.0  | 8.5  | 15   | 46 | 13  | 9    | 9  | 4-Rc 1/8<br>thread depth 6.5   | 8-M5 x 0.8<br>thread depth 7.5 | 2-M8 x 1.25<br>thread depth 12 | M6 x 1.0 x 14ℓ  | M8 x 1.25 x 6ℓ |
| CXS□32 | M8 x 1.25 | 9    | 19   | 56 | 20  | 11.5 | 10 | 4-Rc 1/8<br>thread depth 6.5   | 8-M5 x 0.8<br>thread depth 7.5 | 2-M8 x 1.25<br>thread depth 12 | M8 x 1.25 x 16ℓ | M10 x 1.5 x 8ℓ |

## Dimensions by Stroke

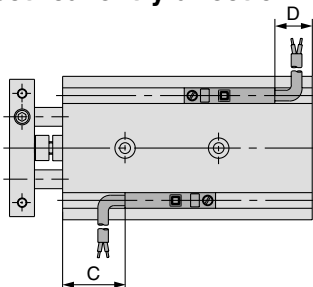
| Symbol<br>Stroke |        | SS |    |     |     |     |     |     |     |     |     |     |     |     |     | Z   |                   |                       |                            |    |     | ZZ  |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------------|--------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------|-----------------------|----------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                  |        | 10 | 16 | 20  | 25  | 30  | 35  | 40  | 45  | 50  | 60  | 70  | 75  | 80  | 90  | 100 | 10, 15,<br>20, 25 | 30, 35, 40,<br>45, 50 | 60, 70, 75,<br>80, 90, 100 | 10 | 15  | 20  | 25  | 30  | 35  | 40  | 45  | 50  | 60  | 70  | 75  | 80  | 90  | 100 |     |
| Model            | CXS□20 | 80 | 85 | 90  | 95  | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 145 | 150 | 160 | 170 | 30                | 40                    | 60                         |    | 104 | 109 | 114 | 119 | 124 | 129 | 134 | 139 | 144 | 154 | 164 | 169 | 174 | 184 | 194 |
|                  | CXS□25 | 82 | 87 | 92  | 97  | 102 | 107 | 112 | 117 | 122 | 132 | 142 | 147 | 152 | 162 | 172 | 30                | 40                    | 60                         |    | 106 | 111 | 116 | 121 | 126 | 131 | 136 | 141 | 146 | 156 | 166 | 171 | 176 | 186 | 196 |
|                  | CXS□32 | 92 | 97 | 102 | 107 | 112 | 117 | 122 | 127 | 132 | 142 | 152 | 157 | 162 | 172 | 182 | 40                | 50                    | 70                         |    | 122 | 127 | 132 | 137 | 142 | 147 | 152 | 157 | 162 | 172 | 182 | 187 | 192 | 202 | 212 |

## Proper Auto Switch Mounting Position (Detection at stroke end)

Electrical entry direction: Inward



Electrical entry direction: Outward



| Bore size (mm) | A    | B   | D-Z7/Z8, D-Y7□W<br>D-Y5□, D-Y7□ |          | D-Y6□, D-Y7□V<br>D-Y7□WV |     | D-Y7BAL |      |
|----------------|------|-----|---------------------------------|----------|--------------------------|-----|---------|------|
|                |      |     | C                               | D        | C                        | D   | C       | D    |
| 6              | 15.5 | 4.5 | 11.5 (10)                       | 0.5 (-1) | 13                       | 2   | 5.5     | -5.5 |
| 10             | 22.5 | 7.5 | 18.5 (17)                       | 3.5 (2)  | 20                       | 5   | 12.5    | -2.5 |
| 15             | 30.5 | 4.5 | 26.5 (25)                       | 0.5 (-1) | 28                       | 2   | 20.5    | -5.5 |
| 20             | 38   | 7   | 34 (32.5)                       | 3 (1.5)  | 36                       | 4.5 | 28      | -3   |
| 25             | 38   | 9   | 34 (32.5)                       | 5 (3.5)  | 36                       | 6.5 | 28      | -1   |
| 32             | 48   | 9   | 44 (42.5)                       | 5 (3.5)  | 46                       | 6.5 | 38      | -1   |



Lead wire entry is inward prior to shipment.

Note 1) Negative figures in the table D indicate an auto switch is mounted inward from the edge of the cylinder body.

Note 2) ( ): Denotes the dimensions of D-Z73.

## Operating Range

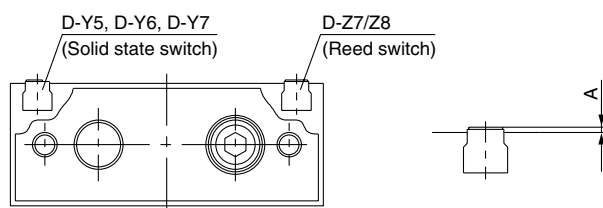
| Auto switch model                            | Bore size (mm) |    |     |     |    |     |
|----------------------------------------------|----------------|----|-----|-----|----|-----|
|                                              | 6              | 10 | 15  | 20  | 25 | 32  |
| D-Z7□/Z80                                    | 9              | 7  | 9   | 9   | 9  | 11  |
| D-Y59□, D-Y69□<br>D-Y7P/Y7PV<br>D-Y7□W/Y7□WV | 3              | 3  | 3.5 | 3.5 | 4  | 4.5 |
| D-Y7BAL                                      | 4              | 4  | 5.5 | 5.5 | 6  | 6   |

\* Since this is a guideline including hysteresis, not meant to be guaranteed.

(assuming approximately ±30% dispersion.)

There may be the case it will vary substantially depending on an ambient environment.

## Dimensions for Mounting of Auto Switch



## A Dimension

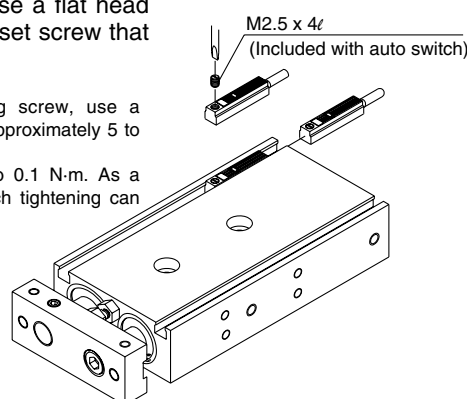
| Auto switch model                                                              | Bore size (mm) |    |    |     |    |    |
|--------------------------------------------------------------------------------|----------------|----|----|-----|----|----|
|                                                                                | 6              | 10 | 15 | 20  | 25 | 32 |
| D-Y59A/Y7P/Y59B<br>D-Y69A/Y7PV/Y69B<br>D-Y7NWV/Y7PWV/Y7BWV<br>D-Y7NW/Y7PW/Y7BW | 0.7            |    |    | 0.2 |    |    |
| D-Y7BAL                                                                        | 6.5            |    |    | 6.0 |    |    |
| D-Z7, D-Z8                                                                     | 1.2            |    |    | 0.7 |    |    |

## Mounting of Auto Switch

When mounting and securing auto switches, they should be inserted into the cylinder's switch mounting rail from the direction shown in the drawing below. After setting in the mounting position, use a flat head watchmakers screwdriver to tighten the set screw that is included.

Note) When tightening an auto switch mounting screw, use a watchmakers' screwdriver with a handle of approximately 5 to 6 mm in diameter.

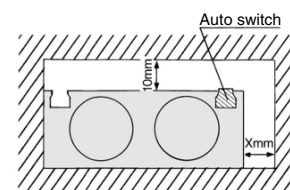
Also, tighten with a torque of about 0.05 to 0.1 N·m. As a guide, turn about 90° past the point at which tightening can first be felt.



## Caution

### 1. Avoid proximity to magnetic objects

shown in the drawing below. If the clearance is less than the values noted in the table below, the auto switch may not function properly.



| Bore size (mm) | X (mm) |
|----------------|--------|
| 6              | 0      |
| 10             | 0      |
| 15             | 10     |
| 20             | 10     |
| 25             | 0      |
| 32             | 0      |

Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted. For detailed specifications, refer to page 8-30-1.

| Type        | Model | Electrical entry (Fetching direction) | Features                |
|-------------|-------|---------------------------------------|-------------------------|
| Reed switch | D-Z80 | Grommet (In-line)                     | Without indicator light |

\* Normally closed (NC = b contact), solid state switch (D-Y7G/Y7H type) are also available. For details, refer to page 8-30-32.