

Discontinue

Large bore size cylinder
Double acting/single rod/lubrication type/pre-lubricated type

SCS Series

- Bore size: 125, 140, 160, 180, 200, 250 mm

JIS symbol



CAD DATA AVAILABLE.

Specifications

| Descriptions | | SCS/SCS-N/SCS-LN | | | | | |
|-----------------------------|-------------|---|----------|----------|----------|----------|----------|
| Bore size | mm | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
| Actuation | | Double acting | | | | | |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure | MPa | 1.0 | | | | | |
| Min. working pressure | MPa | 0.05 | | | | | |
| Withstanding pressure | MPa | 1.6 | | | | | |
| Ambient temperature | °C | -5 to 60 (to be unfrozen) | | | | | |
| Port size | | Rc 1/2 | | Rc 3/4 | | Rc1 | |
| Stroke tolerance (Note 1) | mm | $^{+1.0}_0$ (to 300), $^{+1.4}_0$ (to 500), $^{+1.4}_0$ (to 1000) | | | | | |
| Working piston speed | mm/s | 20 to 1000 (use this within absorbed energy range.) | | | | | |
| Cushion | | Air cushion | | | | | |
| Effective cushion length | mm | 21.6 | 21.6 | 21.6 | 21.6 | 26.6 | 26.6 |
| Lubrication | | Required (when lubrication, use turbine oil Class 1 ISO VG32), For SCS- N/LN, not required | | | | | |
| Allowable energy absorption | Cushioned | 63.5 | 91.5 | 116 | 152 | 233 | 362 |
| | Non cushion | The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device. | | | | | |

Note 1: For type with switches $^{+2.0}_0$ (to 1000), Note 2: For 250 mm bore SCS-LN cylinder, switches are not available.

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | When with switch, min. stroke length (mm)* |
|----------------|---------------------------------|-------------------------|--|
| 125 dia. | 50, 75, 100, 150, 200, 250, 300 | 800 | 20(10) |
| 140 dia. | | | When one switch is installed, refer to the value in (). |
| 160 dia. | | | |
| 180 dia. | | | |
| 200 dia. | | | |
| 250 dia. | | | |

* For types with switch, minimum stroke varies depending on installation method. Refer to the below table.

Min. stroke length of types with switch

| Descriptions | | When same surface installation, stroke length | Stroke length of center trunnion type | Stroke length of rod side trunnion type | Stroke length of head side trunnion type |
|-------------------|--------------------------|---|---------------------------------------|---|--|
| Switch type | Bore size / Rough sketch | | | | |
| | | | | | |
| Reed switch (R *) | 125 dia. | 20 over | 120 over | 70 over | |
| | 140 dia. | | 125 over | 75 over | |
| | 160 dia. | | 130 over | 80 over | |
| | 180 dia. | | 135 over | 85 over | |
| | 200 dia. | | 140 over | 90 over | |

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
JULKP/
JULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

Switch specifications

| Descriptions | Proximity 2 wire | | | Proximity 3 wire | | Proximity 2 wire | |
|--------------------------|--|-----|-----------------------------|--|-----------------------------|--|--|
| | R1K | R2K | R2YK (2 color indicator) | R3K | R3YK (2 color indicator) | T2YDP * (Strong magnetic field proof) | |
| Applications | Programmable controller, relay, small solenoid valve | | Programmable controller | Programmable controller, relay, IC circuit, solenoid valve | | Programmable controller | |
| Power voltage | — | | — | DC4.5V to 28V | | — | |
| Load voltage/ current | AC85V to 265V 5 to 100mA | | DC10 to 30V 5 to 300mA | DC30V or less | | DC24V ± 10%, 5 to 20mA | |
| | | | | 200mA or less | 150mA or less | | |
| Light | LED (ON lighting) | | Red/green LED (ON lighting) | LED (ON lighting) | Red/green LED (ON lighting) | Red/green LED (ON lighting) | |

| Descriptions | Reed 2 wire | | | |
|--------------------------|---|--|---|---|
| | R0 | R4 | R5 | R6 |
| Applications | Relay, programmable controller | High capacity relay, solenoid valve | Programmable controller, relay, IC circuit (without indicator light), serial connection | Programmable controller (DC self hold type) |
| Load voltage/ current | DC12/24V, 5 to 50mA or less AC110V, 7 to 20mA or less AC220V, 7 to 10mA or less | AC110V, 20 to 200mA AC220V, 10 to 200mA | DC5/12/24V, 50mA or less AC110V, 20mA or less AC220V, 10mA or less | DC24V, 5 to 50mA |
| Light | LED ON lighting | | Neon light OFF lighting | LED ON lighting |

Note: Please refer to Ending 1 about other switch specifications.

Cylinder mass

(Unit: Kg)

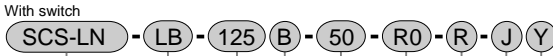
| Descriptions/ mounting style | Product mass when stroke length (S)=0mm | | | | | | Mass per switch (bracket included) | | | | Additional mass per S= 100mm |
|---------------------------------|---|-------------------------|------------------------|---------------------|------------------------|-----------------------------|------------------------------------|--------------|------------------------------------|------|------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA/FB) | Eye bracket (CA) | Clevis bracket (CB) | Trunnion type (TA/TB/TC) | R type | | T2YD (strong magnetic field proof) | | |
| | | | | | | | Grommet | Terminal box | 1m | 3m | |
| 125 dia. | 14.8 | 16.3 | 18.1 | 17.8 | 17.9 | 18.2 | 0.04 | 0.03 | 0.09 | 0.17 | 2.60 |
| 140 dia. | 20.2 | 22.2 | 25.6 | 24.0 | 24.2 | 23.4 | | | | | 2.96 |
| 160 dia. | 26.3 | 29.4 | 33.2 | 31.3 | 31.6 | 32.7 | | | | | 3.57 |
| 180 dia. | 34.8 | 39.3 | 46.8 | 42.2 | 42.7 | 42.9 | | | | | 4.94 |
| 200 dia. | 47.6 | 53.3 | 61.3 | 57.1 | 57.3 | 59.4 | | | | | 5.73 |
| 250 dia. | 83.7 | 92.1 | 109.6 | 107.7 | 102.2 | 112.4 | | | | | 9.06 |

(E. g.) product mass of SCS-LB-125B-300-R0-D

- When S=0mm, product mass is 16.3kg.
- Additional mass at S= 300mm is $2.60 \times \frac{300}{100} = 7.8$ kg
- Mass of two switches is $0.04 \times 2 = 0.08$ kg.
- Product mass is $16.3 + 7.8 + 0.08 = 24.18$ kg

Standard type
Large bore size cylinder

How to order



A Model

B Mounting style
Note 1

C Bore size
Note 2

D Cushion

E Stroke length
Note 3

F Switch model No.
Note 4

G Switch quantity

H Option
Note 5, notes 6

I Accessory

⚠ Cautions for model No. selection

- Note 1: Consult with CKD about supporting hole.
- Note 2: For 250 mm bore cylinder, switches are not available.
- Note 3: When exceeding maximum stroke length, refer to Ending 68.
- Note 4: T2YDP * is a strong magnetic field proof switch. Consult with CKD about details.
- Note 5: Check cushion needle position indication on the dimensional drawing.
- Note 6: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.
- Note 7: Please refer to Ending 81 about custom specifications of rod end form.

<Example of model number>

SCS-LN-LB-125B-50-R0-R-J-Y

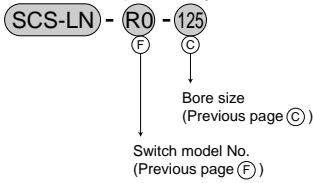
Model: Large bore size cylinder, double acting/lubrication type/pre-lubricated type

- A Model : Pre-lubricated type with switch
- B Mounting style : Axial foot type
- C Bore size : 125mm
- D Cushion : Both sides cushion
- E Stroke length : 50mm
- F Switch model No : Reed R0 switch, lead wire 1m
- G Switch quantity : One on rod side
- H Option : Bellows can be used up to ambient temperature 60 °C.
- I Accessory : Rod clevis

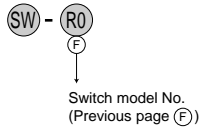
| Symbol | Descriptions | | | |
|---------------------------------|--|----------------------|-----------------------|-------------------|
| A Model | | | | |
| SCS | Lubrication type | Without switch | | |
| SCS-N | Pre-lubricated type | Without switch | | |
| SCS-LN | | With switch | | |
| B Mounting style | | | | |
| 00 | Basic type | | | |
| LB | Axial foot type | | | |
| FA | Rod side flange type | | | |
| FB | Head side flange type | | | |
| CA | Eye bracket type | | | |
| CB | Clevis bracket type | | | |
| TC | Center trunnion type | | | |
| TA | Rod side trunnion type | | | |
| TB | Head side trunnion type | | | |
| C Bore size (mm) | | | | |
| 125 | 125 dia. | | | |
| 140 | 140 dia. | | | |
| 160 | 160 dia. | | | |
| 180 | 180 dia. | | | |
| 200 | 200 dia. | | | |
| 250 | 250 mm bore (switch is not available.) | | | |
| D Cushion | | | | |
| B | Both sides cushion | | | |
| R | Rod side cushion | | | |
| H | Head side cushion | | | |
| N | Non cushion | | | |
| E Stroke length (mm) | | | | |
| 50, 75, 100, 150, 200, 250, 300 | | | | |
| F Switch model No. | | | | |
| Grommet | Terminal box type | Display | Lead wire | |
| Type | Standard type | Splash-proof | Contact | |
| R1K * | R1KB | R1KA | Proximity | |
| R2K * | R2KB | R2KA | | 1 color indicator |
| R2YK * | R2YKB | - | | 2 color indicator |
| T2YDP * | - | - | Strong magnetic field | |
| R3K * | R3KB | R3KA | Reed | |
| R3YK * | R3YKB | - | | 1 color indicator |
| R0 * | R0B | R0A | | 2 color indicator |
| R4 * | R4B | R4A | 1 color indicator | |
| R5 * | R5B | R5A | | 2 wire |
| R6 * | R6B | R6A | | |
| *Lead wire length | | | | |
| Blank | 1m (standard) | | | |
| 3 | 3m (Option) | | | |
| 5 | 5m (Option) | | | |
| G Switch quantity | | | | |
| R | One on rod side | | | |
| H | One on head side | | | |
| D | Two | | | |
| T | Three | | | |
| 4 | 4 pieces | | | |
| H Option | | | | |
| C2 | Check valve on the cushion mechanism | | | |
| J | Bellows | Max. ambient : 60 °C | Instant max. : 100 °C | |
| K | Bellows | 100 °C | 200 °C | |
| L | Bellows | 250 °C | 400 °C | |
| M | Piston rod material change (stainless steel) | | | |
| Blank | Cushion needle position R (standard) | | | |
| S | Cushion needle position S | | | |
| T | Cushion needle position T | | | |
| P6 | Copper and PTFE free | | | |
| I Accessory | | | | |
| I | Rod eye | | | |
| Y | Rod clevis | | | |
| B1 | Eye bracket | | | |
| B2 | Clevis bracket | | | |

How to order discrete switch

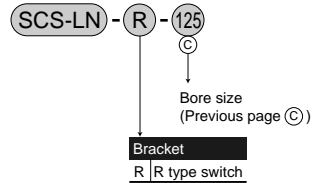
- Switch main body + mounting bracket



- Switch only



- Mounting bracket



- Terminal box only

- For R * B

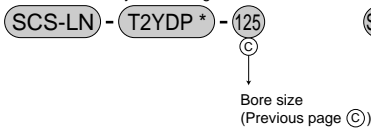


- For R * A

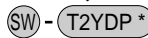


How to order T2YDP * switch

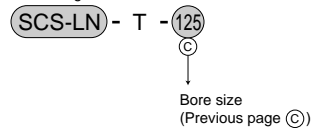
- Switch main body + mounting bracket



- Switch only



- Mounting bracket

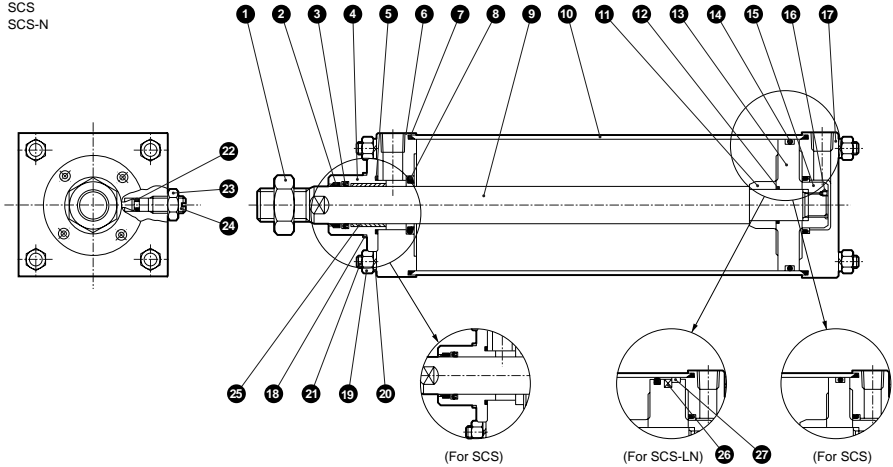


| |
|------------------|
| SCP * 2 |
| CMK2 |
| CMA2 |
| SCM |
| SCA2 |
| SCS |
| CKV2 |
| CAV2/ COV * 2 |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD/ MSDG |
| SSD |
| SSD (large) |
| FC * |
| ULKP/ ULK |
| JSK2/ JSM2 |
| JSC3 (medium) |
| JSC3 (large) |
| JSB3 |
| UCAC |
| STS/ STL |
| LCS |
| LCY |
| STR2 |
| UCA2 |
| STK |
| USSD |
| USC |
| MFC |
| GLC |
| SHC |
| CAC3 |
| HCM |
| HCA |
| MRL2 |
| SRL2 |
| SRG |
| SRM |
| SRT |
| SRB2 |

Standard type
Large bore size cylinder

Internal structure and parts list

- Standard type
SCS
SCS-N



Note: Parts of ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ are not required for non-cushion type.

| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
|-----|----------------------|---|--|-----|----------------------------------|-------------------------------|---------------|
| 1 | Rod nut | Steel | Zinc chromate | 14 | Piston seal | Nitrile rubber | |
| 2 | Dust wiper | Nitrile rubber | | 15 | Cushion ring B | Steel | Zinc chromate |
| 3 | Rod packing | Nitrile rubber | | 16 | Set screw with hexagon head hole | Alloy steel | Blackening |
| 4 | Rod bushing | Cast iron | Painting | 17 | Head cover | Steel | Painting |
| 5 | Metal gasket | Nitrile rubber | | 18 | Hexagon socket head cap screw | Alloy steel | Blackening |
| 6 | Rod cover | Steel | Painting | 19 | Hexagon nut | Steel | Painting |
| 7 | Cylinder gasket | Nitrile rubber | | 20 | Spring washer | Steel | Painting |
| 8 | Cushion packing seal | Nitrile rubber/steel | | 21 | Tie rod | Steel | Painting |
| 9 | Piston rod | Steel | Industrial chrome plated | 22 | Needle gasket | Nitrile rubber | |
| 10 | Cylinder tube | Steel *1 | Painting, industrial chrome plated | 23 | Needle nut | Steel | Zinc chromate |
| 11 | Cushion ring A | Steel | Zinc chromate | 24 | Cushion needle | Steel | Zinc chromate |
| 12 | Piston gasket | Nitrile rubber | | 25 | Bush | Oil impregnated bearing alloy | Note 1 |
| 13 | Piston | 125 to 160 dia., aluminum alloy 180 to 250 dia., cast iron | Rust proof treatment *1 type: 125 to 160 dia., aluminum alloy die casting LN type: 180 to 200 dia., aluminum alloy | 26 | Magnet | | SCS-LN only |
| | | | | 27 | Wear ring | Acetar resin | SCS-LN only |

*1: With switch, for SCS- LN type, aluminum tube is used.

Note 1: For copper and PTFE free specifications, oil impregnated cast iron bearing is used.

Repair parts list

- SCS (lubrication type)

| Bore size (mm) | Kit number | Repair parts number |
|----------------|------------|-----------------------------------|
| 125 dia. | SCS-125K | |
| 140 dia. | SCS-140K | |
| 160 dia. | SCS-160K | ② ③ ⑤ ⑦ ⑧ |
| 180 dia. | SCS-180K | ④ ⑥ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ |
| 200 dia. | SCS-200K | |
| 250 dia. | SCS-250K | |

- SCS-N (pre-lubricated)

| Bore size (mm) | Kit number | Repair parts number |
|----------------|------------|-----------------------------------|
| 125 dia. | SCS-N-125K | |
| 140 dia. | SCS-N-140K | |
| 160 dia. | SCS-N-160K | ② ③ ⑤ ⑦ ⑧ |
| 180 dia. | SCS-N-180K | ④ ⑥ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ |
| 200 dia. | SCS-N-200K | |
| 250 dia. | SCS-N-250K | |

Note 1: In repair parts, the piston packing seal of SCS-N (pre-lubricated) is different from SCS (lubrication type).

Note 2: For 180 to 250mm bore cylinder, ㉔ wear ring is not included.

Mounting bracket material

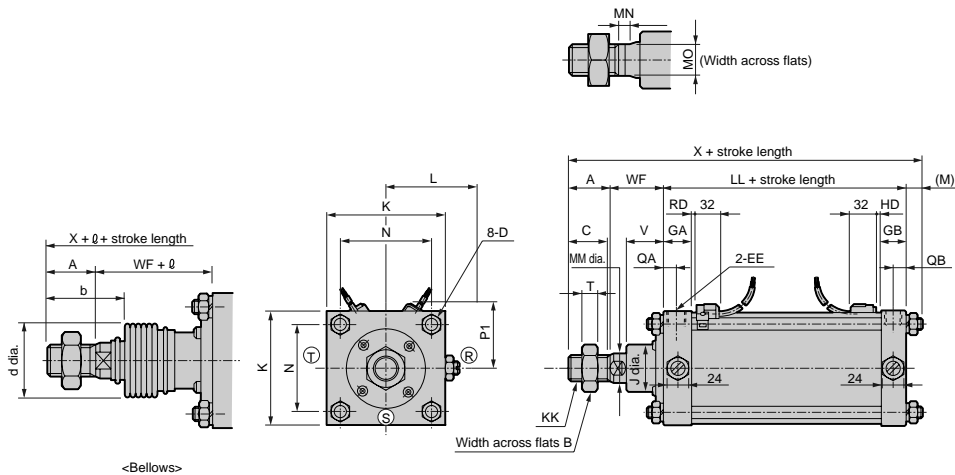
| Mounting style | Material | Remarks |
|----------------|-----------|----------|
| LB | Steel | Painting |
| FA, FB | Steel | Painting |
| CA, CB | Cast iron | Painting |
| TA, TB, TC | Cast iron | Painting |

- SCS-LN (pre-lubricated with switch)

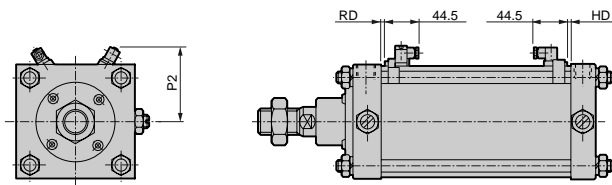
| Bore size (mm) | Kit number | Repair parts number |
|----------------|-------------|-----------------------------------|
| 125 dia. | SCS-LN-125K | |
| 140 dia. | SCS-LN-140K | |
| 160 dia. | SCS-LN-160K | ② ③ ⑤ ⑦ ⑧ |
| 180 dia. | SCS-LN-180K | ④ ⑥ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ |
| 200 dia. | SCS-LN-200K | |

Dimensions

• R type with switch basic type (00)



• R type switch terminal box



RD: Rod side max. sensitive position.
HD: Head side max. sensitive position.

• Note: (R), (S) and (T) show the positions of cushion needle.

• Note: \varnothing dimensions below decimal point are rounded up.


| Symbol | Basic type (00) basic dimensions | | | | | | | | | | | | | | | | | | |
|----------------|----------------------------------|----|----|-----------|--------------------|------|------|------|-----|-----------|----------------|-------|----|----|----|----|-----|------|------|
| Bore size (mm) | A | B | C | D | EE | GA | GB | J | K | KK | L | LL | M | MM | MN | MO | N | QA | QB |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | Rc ³ /4 | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 | 18 | 35 | 14 | 30 | 110 | 14.5 | 15 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | Rc ³ /4 | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 | 18 | 35 | 14 | 30 | 124 | 16.5 | 17 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | Rc ³ /4 | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 | 20 | 40 | 16 | 36 | 142 | 16.5 | 17 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | Rc ³ /4 | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 | 23 | 45 | 18 | 41 | 160 | 16.5 | 17 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | Rc ³ /4 | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 | 24 | 50 | 20 | 46 | 175 | 17.5 | 18 |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | Rc1 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 | 28 | 60 | 22 | 55 | 216 | 20 | 20.5 |

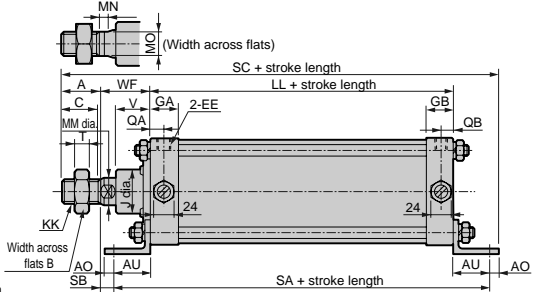
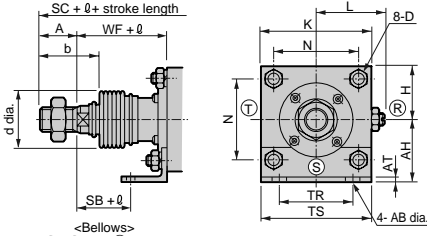
| Symbol | Bellows | | | | | | With switch | | | | |
|----------------|---------|------|----|-------|-----|-----|--------------------------|-----|-----|----|----|
| Bore size (mm) | T | V | WF | X | b | d | \varnothing | P1 | P2 | RD | HD |
| 125 dia. | 18 | 46 | 65 | 224.5 | 74 | 75 | (Stroke length/4.55)+11 | 79 | 99 | 0 | 0 |
| 140 dia. | 18 | 46 | 67 | 237.5 | 74 | 75 | (Stroke length/4.55) + 9 | 84 | 104 | 0 | 0 |
| 160 dia. | 21 | 48.5 | 71 | 252.5 | 82 | 80 | (Stroke length/5.15) + 9 | 91 | 112 | 0 | 0 |
| 180 dia. | 24 | 53.5 | 78 | 273.5 | 91 | 90 | (Stroke length/5.15) + 9 | 102 | 119 | 0 | 0 |
| 200 dia. | 27 | 60.5 | 88 | 306.5 | 102 | 95 | (Stroke length/5.30) + 9 | 107 | 127 | 2 | 1 |
| 250 dia. | 34 | 64.5 | 94 | 350.5 | 120 | 120 | (Stroke length/6.40) + 9 | - | - | - | - |

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

Standard type
Large bore size cylinder

Dimensions

• SCS/SCS-N axial foot type (LB)  (File name: Page 442 or)
Ending 116 to 117



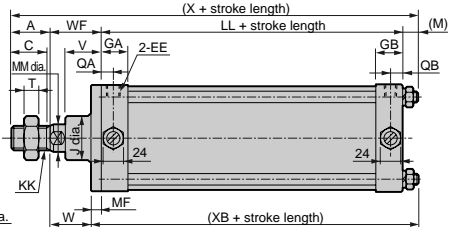
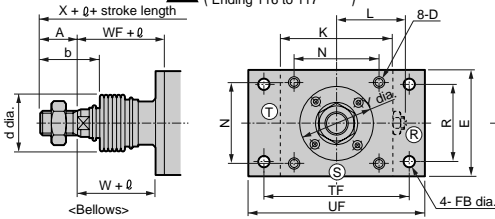
• Note: (R), (S) and (T) show the positions of cushion needle.

• Note: ℓ dimensions below decimal point are rounded up.

| Symbol | Axial foot type (LB) basic dimensions | | | | | | | | | | | | | | | | | |
|----------------|---------------------------------------|----|-----|----|----|----|----|----|-----------|--------|------|------|------|------|-----|-----------|----------------|-------|
| Bore size (mm) | A | AB | AH | AO | AT | AU | B | C | D | EE | GA | GB | H | J | K | KK | L | LL |
| 125 dia. | 50 | 19 | 85 | 20 | 7 | 45 | 46 | 47 | M14 X 1.5 | Rc 1/2 | 32 | 29 | 70 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 |
| 140 dia. | 50 | 19 | 100 | 20 | 8 | 50 | 46 | 47 | M14 X 1.5 | Rc 3/4 | 36 | 36 | 78.5 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 |
| 160 dia. | 56 | 19 | 106 | 20 | 10 | 53 | 55 | 53 | M16 X 1.5 | Rc 3/4 | 38.5 | 36 | 88.5 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 |
| 180 dia. | 63 | 24 | 125 | 27 | 10 | 60 | 60 | 60 | M18 X 1.5 | Rc 3/4 | 39.5 | 38.5 | 100 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 |
| 200 dia. | 72 | 24 | 132 | 27 | 12 | 62 | 70 | 69 | M20 X 1.5 | Rc 3/4 | 44.5 | 45 | 110 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 |
| 250 dia. | 88 | 29 | 160 | 29 | 12 | 70 | 85 | 84 | M24 X 1.5 | Rc1 | 49.5 | 50 | 137 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 |

| Symbol | Bellows | | | | | | | | | | | | | | | | |
|----------------|---------|----|----|-----|------|------|-------|----|-------|----|-----|-----|------|----|-----|-----|-------------------------|
| Bore size (mm) | MM | MN | MO | N | QA | QB | SA | SB | SC | T | TR | TS | V | WF | b | d | ℓ |
| 125 dia. | 35 | 14 | 30 | 110 | 14.5 | 15 | 181.5 | 20 | 271.5 | 18 | 100 | 140 | 46 | 65 | 74 | 75 | (Stroke length/4.55)+11 |
| 140 dia. | 35 | 14 | 30 | 124 | 16.5 | 17 | 202.5 | 17 | 289.5 | 18 | 112 | 157 | 46 | 67 | 74 | 75 | (Stroke length/4.55)+9 |
| 160 dia. | 40 | 16 | 36 | 142 | 16.5 | 17 | 211.5 | 18 | 305.5 | 21 | 118 | 177 | 48.5 | 71 | 82 | 80 | (Stroke length/5.15)+9 |
| 180 dia. | 45 | 18 | 41 | 160 | 16.5 | 17 | 229.5 | 18 | 337.5 | 24 | 132 | 200 | 53.5 | 78 | 91 | 90 | (Stroke length/5.15)+9 |
| 200 dia. | 50 | 20 | 46 | 175 | 17.5 | 18 | 246.5 | 26 | 371.5 | 27 | 150 | 220 | 60.5 | 88 | 102 | 95 | (Stroke length/5.30)+9 |
| 250 dia. | 60 | 22 | 55 | 216 | 20 | 20.5 | 280.5 | 24 | 421.5 | 34 | 180 | 274 | 64.5 | 94 | 120 | 120 | (Stroke length/6.40)+9 |

• Rod side flange type (FA)  (File name: Page 442 or)
Ending 116 to 117



Note 1: Please refer to Page 405 about switch dimensions.

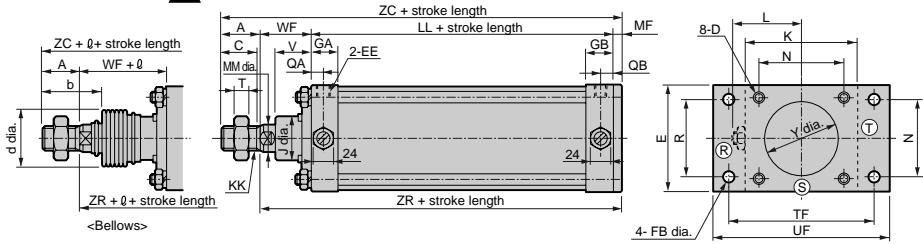
Note 3: ℓ dimensions below decimal point are rounded up.

| Symbol | Rod side flange type (FA) basic dimensions | | | | | | | | | | | | | | | | | |
|----------------|--|----|----|-----------|-----|--------|----|------|------|------|-----|-----------|----------------|-------|----|----|----|-----|
| Bore size (mm) | A | B | C | D | E | EE | FB | GA | GB | J | K | KK | L | LL | M | MF | MM | N |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | 140 | Rc 1/2 | 19 | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 | 18 | 14 | 35 | 110 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | 157 | Rc 3/4 | 19 | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 | 18 | 19 | 35 | 124 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | 177 | Rc 3/4 | 19 | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 | 20 | 19 | 40 | 142 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | 200 | Rc 3/4 | 24 | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 | 23 | 25 | 45 | 160 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | 220 | Rc 3/4 | 24 | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 | 24 | 25 | 50 | 175 |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | 274 | Rc1 | 29 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 | 28 | 30 | 60 | 216 |

| Symbol | Bellows | | | | | | | | | | | | | | | | |
|----------------|---------|------|-----|----|-----|-----|------|----|----|-------|-------|-----|-----|--------|-------------------------|--|--|
| Bore size (mm) | QA | QB | R | T | TF | UF | V | WF | X | XB | Y | b | d | ℓ | | | |
| 125 dia. | 14.5 | 15 | 100 | 18 | 190 | 230 | 46 | 51 | 65 | 224.5 | 123.5 | 94 | 74 | 75 | (Stroke length/4.55)+11 | | |
| 140 dia. | 16.5 | 17 | 112 | 18 | 212 | 250 | 46 | 48 | 67 | 237.5 | 139.5 | 94 | 74 | 75 | (Stroke length/4.55)+9 | | |
| 160 dia. | 16.5 | 17 | 118 | 21 | 236 | 280 | 48.5 | 52 | 71 | 252.5 | 144.5 | 107 | 82 | 80 | (Stroke length/5.15)+9 | | |
| 180 dia. | 16.5 | 17 | 132 | 24 | 265 | 310 | 53.5 | 53 | 78 | 273.5 | 157.5 | 113 | 91 | 90 | (Stroke length/5.15)+9 | | |
| 200 dia. | 17.5 | 18 | 150 | 27 | 280 | 330 | 60.5 | 63 | 88 | 306.5 | 171.5 | 131 | 102 | 95 | (Stroke length/5.30)+9 | | |
| 250 dia. | 20 | 20.5 | 180 | 34 | 355 | 415 | 64.5 | 64 | 94 | 350.5 | 198.5 | 153 | 120 | 120 | (Stroke length/6.40)+9 | | |

Dimensions

• Head side flange type (FB)  (File name: Page 442 or Ending 116 to 117)




Note 1: Please refer to Page 405 about switch dimensions.

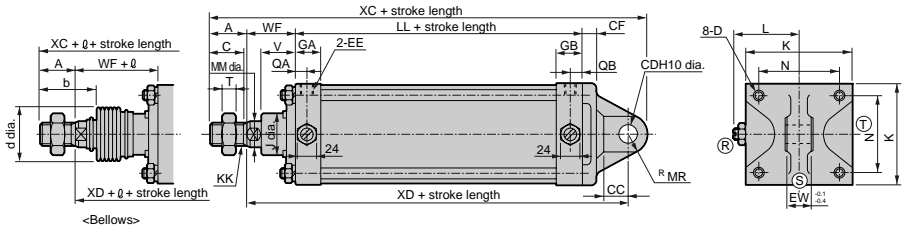
Note 2: (R), (S) and (T) show the positions of cushion need.

Note 3: ℓ dimensions below decimal point are rounded up.

| Symbol | Head side flange type (FB) basic dimensions | | | | | | | | | | | | | | | | |
|----------------|---|----|----|-----------|-----|------------------|----|------|------|------|-----|-----------|----------------|-------|----|----|-----|
| Bore size (mm) | A | B | C | D | E | EE | FB | GA | GB | J | K | KK | L | LL | MF | MM | N |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | 140 | Rc $\frac{3}{4}$ | 19 | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 | 14 | 35 | 110 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | 157 | Rc $\frac{3}{4}$ | 19 | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 | 19 | 35 | 124 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | 177 | Rc $\frac{3}{4}$ | 19 | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 | 19 | 40 | 142 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | 200 | Rc $\frac{3}{4}$ | 24 | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 | 25 | 45 | 160 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | 220 | Rc $\frac{3}{4}$ | 24 | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 | 25 | 50 | 175 |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | 274 | Rc1 | 29 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 | 30 | 60 | 216 |

| Symbol | Bellows | | | | | | | | | | | | | |
|----------------|---------|------|-----|----|-----|-----|------|----|-----|-------|-------|-----|-----|-------------------------|
| Bore size (mm) | QA | QB | R | T | TF | UF | V | WF | Y | ZC | ZR | b | d | ℓ |
| 125 dia. | 14.5 | 15 | 100 | 18 | 190 | 230 | 46 | 65 | 94 | 220.5 | 170.5 | 74 | 75 | (Stroke length/4.55)+11 |
| 140 dia. | 16.5 | 17 | 112 | 18 | 212 | 250 | 46 | 67 | 94 | 238.5 | 188.5 | 74 | 75 | (Stroke length/4.55)+9 |
| 160 dia. | 16.5 | 17 | 118 | 21 | 236 | 280 | 48.5 | 71 | 107 | 251.5 | 195.5 | 82 | 80 | (Stroke length/5.15)+9 |
| 180 dia. | 16.5 | 17 | 132 | 24 | 265 | 310 | 53.5 | 78 | 113 | 275.5 | 212.5 | 91 | 90 | (Stroke length/5.15)+9 |
| 200 dia. | 17.5 | 18 | 150 | 27 | 280 | 330 | 60.5 | 88 | 131 | 307.5 | 235.5 | 102 | 95 | (Stroke length/5.30)+9 |
| 250 dia. | 20 | 20.5 | 180 | 34 | 355 | 415 | 64.5 | 94 | 153 | 327.5 | 264.5 | 120 | 120 | (Stroke length/6.40)+9 |

• Eye bracket (CA)  (File name: Page 442 or Ending 116 to 117)



Note 1: Please refer to Page 405 about switch dimensions.

Note 2: (R), (S) and (T) show the positions of cushion need.


Note 3: ℓ dimensions below decimal point are rounded up.

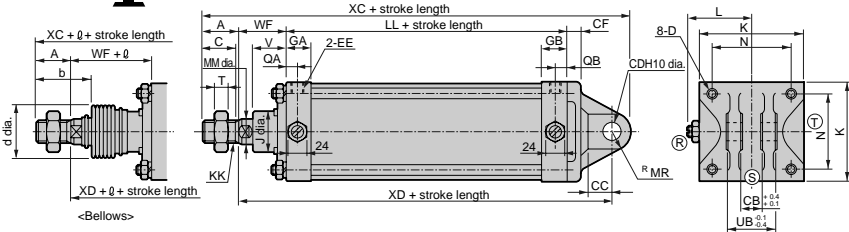
| Symbol | Eye bracket (CA) basic dimensions | | | | | | | | | | | | | | |
|----------------|-----------------------------------|----|----|-----------|----|-----------------------------------|----|------------------|----|------|------|------|-----|-----------|----------------|
| Bore size (mm) | A | B | C | D | CC | CD | CF | EE | EW | GA | GB | J | K | KK | L |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | 35 | 25 ^{+0.084} ₀ | 20 | Rc $\frac{1}{2}$ | 32 | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | 40 | 28 ^{+0.084} ₀ | 22 | Rc $\frac{3}{4}$ | 36 | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | 40 | 32 ^{+0.100} ₀ | 24 | Rc $\frac{3}{4}$ | 40 | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | 55 | 40 ^{+0.100} ₀ | 25 | Rc $\frac{3}{4}$ | 50 | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | 55 | 40 ^{+0.100} ₀ | 30 | Rc $\frac{3}{4}$ | 50 | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | 65 | 50 ^{+0.100} ₀ | 35 | Rc1 | 63 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 |

| Symbol | Bellows | | | | | | | | | | | | | |
|----------------|---------|----|-----|----|------|------|----|------|----|-------|-------|-----|-----|-------------------------|
| Bore size (mm) | LL | MM | N | MR | QA | QB | T | V | WF | XC | XD | b | d | ℓ |
| 125 dia. | 91.5 | 35 | 110 | 25 | 14.5 | 15 | 18 | 46 | 65 | 294.5 | 219.5 | 74 | 75 | (Stroke length/4.55)+11 |
| 140 dia. | 102.5 | 35 | 124 | 28 | 16.5 | 17 | 18 | 46 | 67 | 322.5 | 244.5 | 74 | 75 | (Stroke length/4.55)+9 |
| 160 dia. | 105.5 | 40 | 142 | 32 | 16.5 | 17 | 21 | 48.5 | 71 | 339.5 | 251.5 | 82 | 80 | (Stroke length/5.15)+9 |
| 180 dia. | 109.5 | 45 | 160 | 40 | 16.5 | 17 | 24 | 53.5 | 78 | 380.5 | 277.5 | 91 | 90 | (Stroke length/5.15)+9 |
| 200 dia. | 122.5 | 50 | 175 | 40 | 17.5 | 18 | 27 | 60.5 | 88 | 412.5 | 300.5 | 102 | 95 | (Stroke length/5.30)+9 |
| 250 dia. | 140.5 | 60 | 216 | 50 | 20 | 20.5 | 34 | 64.5 | 94 | 482.5 | 344.5 | 120 | 120 | (Stroke length/6.40)+9 |

SCP * 2
 CMK2
 CMA2
 SCM
 SCA2
SCS
 CKV2
 CAV2/
 COV * 2
 CAT
 MDC2
 MVC
 SMD2
 MSD/
 MSDG
 SSD
 SSD
 (large)
 FC *
 ULKP/
 ULK
 JSK2/
 JSM2
 JSC3
 (medium)
 JSC3
 (large)
 USB3
 UCAC
 STS/
 STL
 LCS
 LCY
 STR2
 UCA2
 STK
 USSD
 USC
 MFC
 GLC
 SHC
 CAC3
 HCM
 HCA
 MRL2
 SRL2
 SRG
 SRM
 SRT
 SRB2
 Large bore size cylinder

Dimensions

• Clevis bracket (CB)  (File name: Page 442 or Ending 116 to 117)



Note 1: Please refer to Page 405 about switch dimensions.

Note 2: A pin and a snap ring are attached.

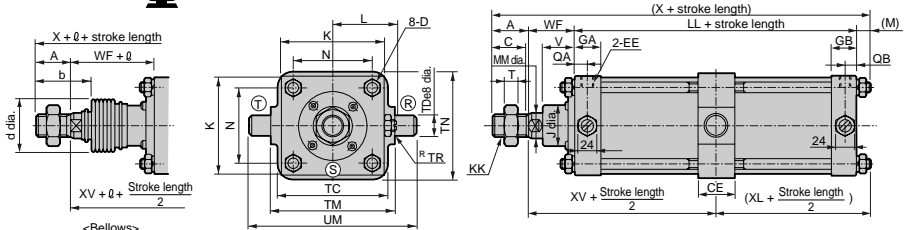
Note 3: (R), (S) and (T) show the positions of cushion needle.

Note 4: \varnothing dimensions below decimal point are rounded up.

| Symbol | Clevis bracket (CB) basic dimensions | | | | | | | | | | | | | | | |
|----------------|--------------------------------------|----|----|-----------|----|----|-----------------------------------|----|------------------|------|------|------|-----|-----------|----------------|-------|
| Bore size (mm) | A | B | C | D | CB | CC | CD | CF | EE | GA | GB | J | K | KK | L | LL |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | 32 | 35 | 25 ^{+0.084} ₀ | 20 | Rc $\frac{1}{2}$ | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | 36 | 40 | 28 ^{+0.084} ₀ | 22 | Rc $\frac{3}{4}$ | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | 40 | 40 | 32 ^{+0.100} ₀ | 24 | Rc $\frac{3}{4}$ | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | 50 | 55 | 40 ^{+0.100} ₀ | 25 | Rc $\frac{3}{4}$ | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | 50 | 55 | 40 ^{+0.100} ₀ | 30 | Rc $\frac{3}{4}$ | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | 63 | 65 | 50 ^{+0.100} ₀ | 35 | Rc1 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 |

| Symbol | Bellows | | | | | | | | | | | | | | |
|----------------|---------|----|-----|------|------|----|-----|------|----|-------|-------|-----|-----|-----|-------------------------|
| Bore size (mm) | MM | MR | N | QA | QB | T | UB | V | WF | XC | XD | XB | Y | d | \varnothing |
| 125 dia. | 35 | 25 | 110 | 14.5 | 15 | 18 | 64 | 46 | 65 | 294.5 | 219.5 | 74 | 75 | 74 | (Stroke length/4.55)+11 |
| 140 dia. | 35 | 28 | 124 | 16.5 | 17 | 18 | 72 | 46 | 67 | 322.5 | 244.5 | 74 | 75 | 74 | (Stroke length/4.55)+9 |
| 160 dia. | 40 | 32 | 142 | 16.5 | 17 | 21 | 80 | 48.5 | 71 | 339.5 | 251.5 | 82 | 80 | 80 | (Stroke length/5.15)+9 |
| 180 dia. | 45 | 40 | 160 | 16.5 | 17 | 24 | 100 | 53.5 | 78 | 380.5 | 277.5 | 91 | 90 | 90 | (Stroke length/5.15)+9 |
| 200 dia. | 50 | 40 | 175 | 17.5 | 18 | 27 | 100 | 60.5 | 88 | 412.5 | 300.5 | 102 | 95 | 95 | (Stroke length/5.30)+9 |
| 250 dia. | 60 | 50 | 216 | 20 | 20.5 | 34 | 126 | 64.5 | 94 | 482.5 | 344.5 | 120 | 120 | 120 | (Stroke length/6.40)+9 |

• Center trunnion type (TC)  (File name: Page 442 or Ending 116 to 117)



Note 1: Please refer to Page 405 about switch dimensions.

Note 2: (R), (S) and (T) show the positions of cushion needle.

Note 3: Refer to Page 400 about minimum stroke length.

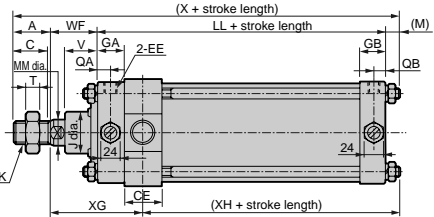
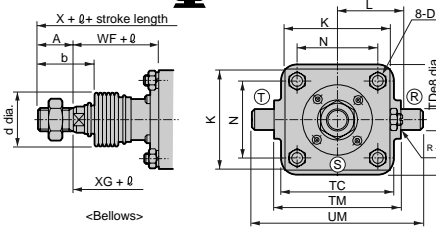
Note 4: \varnothing dimensions below decimal point are rounded up.

| Symbol | Center trunnion type (TC) basic dimensions | | | | | | | | | | | | | | | | | | | |
|----------------|--|----|----|-----------|----|------------------|------|------|------|-----|-----------|----------------|-------|----|----|-----|------|------|----|-----|
| Bore size (mm) | A | B | C | D | CE | EE | GA | GB | J | K | KK | L | LL | M | MM | N | QA | QB | T | TC |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | 50 | Rc $\frac{1}{2}$ | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 | 18 | 35 | 110 | 14.5 | 15 | 18 | 150 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | 55 | Rc $\frac{3}{4}$ | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 | 18 | 35 | 124 | 16.5 | 17 | 18 | 154 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | 60 | Rc $\frac{3}{4}$ | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 | 20 | 40 | 142 | 16.5 | 17 | 21 | 190 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | 65 | Rc $\frac{3}{4}$ | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 | 23 | 45 | 160 | 16.5 | 17 | 24 | 210 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | 70 | Rc $\frac{3}{4}$ | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 | 24 | 50 | 175 | 17.5 | 18 | 27 | 242 |
| 250 dia. | 88 | 80 | 84 | M24 X 1.5 | 80 | Rc1 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 | 28 | 60 | 216 | 20 | 20.5 | 34 | 300 |

| Symbol | Bellows | | | | | | | | | | | | | | |
|----------------|--|-----|-----|----|-----|------|----|-------|------|-------|-----|-----|-------------------------|--|--|
| Bore size (mm) | TD | TM | TN | TR | UM | V | WF | X | XL | XV | Y | d | \varnothing | | |
| 125 dia. | 32 ^{-0.050} _{-0.089} | 170 | 150 | 2 | 234 | 46 | 65 | 224.5 | 64 | 110.5 | 74 | 75 | (Stroke length/4.55)+11 | | |
| 140 dia. | 36 ^{-0.050} _{-0.089} | 190 | 170 | 2 | 262 | 46 | 67 | 237.5 | 69.5 | 118 | 74 | 75 | (Stroke length/4.55)+9 | | |
| 160 dia. | 40 ^{-0.050} _{-0.089} | 212 | 190 | 2 | 292 | 48.5 | 71 | 252.5 | 73 | 123.5 | 82 | 80 | (Stroke length/5.15)+9 | | |
| 180 dia. | 45 ^{-0.050} _{-0.089} | 236 | 210 | 2 | 326 | 53.5 | 78 | 273.5 | 78 | 132.5 | 91 | 90 | (Stroke length/5.15)+9 | | |
| 200 dia. | 45 ^{-0.050} _{-0.089} | 265 | 242 | 2 | 355 | 60.5 | 88 | 306.5 | 85.5 | 149 | 102 | 95 | (Stroke length/5.30)+9 | | |
| 250 dia. | 56 ^{-0.060} _{-0.106} | 335 | 300 | 2 | 447 | 64.5 | 94 | 350.5 | 98.5 | 164 | 120 | 120 | (Stroke length/6.40)+9 | | |

Dimensions

• Rod side trunnion type (TA)  (File name: Page 442 or Ending 116 to 117)



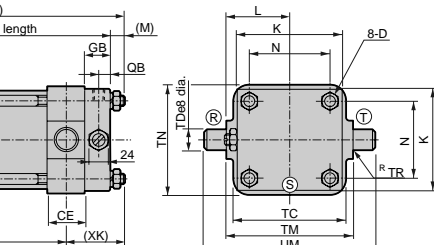
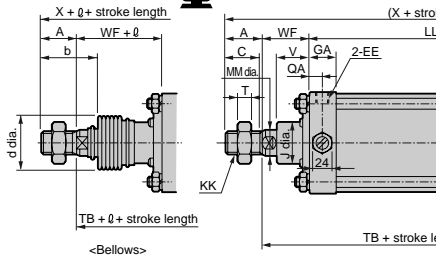
Note 1: Please refer to Page 405 about switch dimensions.
 Note 2: (R), (S) and (T) show the positions of cushion needle.

Note 3: Refer to Page 400 about minimum stroke length.
 Note 4: \varnothing dimensions below decimal point are rounded up.
 Note 5: The position at rod side stroke end cannot be detected.

| Symbol | Rod side trunnion type (TA) basic dimensions | | | | | | | | | | | | | | | | | | | |
|----------------|--|----|----|-----------|----|------------------|------|------|------|-----|-----------|----------------|-------|----|----|-----|------|------|----|-----|
| Bore size (mm) | A | B | C | D | CE | EE | GA | GB | J | K | KK | L | LL | M | MM | N | OA | QB | T | TC |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | 50 | Rc $\frac{1}{2}$ | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 | 18 | 35 | 110 | 14.5 | 15 | 18 | 150 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | 55 | Rc $\frac{3}{4}$ | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 | 18 | 35 | 124 | 16.5 | 17 | 18 | 154 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | 60 | Rc $\frac{3}{4}$ | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 | 20 | 40 | 142 | 16.5 | 17 | 21 | 190 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | 65 | Rc $\frac{3}{4}$ | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 | 23 | 45 | 160 | 16.5 | 17 | 24 | 210 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | 70 | Rc $\frac{3}{4}$ | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 | 24 | 50 | 175 | 17.5 | 18 | 27 | 242 |
| 250 dia. | 88 | 80 | 84 | M24 X 1.5 | 80 | Rc1 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 | 28 | 60 | 216 | 20 | 20.5 | 34 | 300 |

| Symbol | Rod side trunnion type (TA) basic dimensions | | | | | | | | | | | Bellows | | | | |
|----------------|--|------------------------|-----|-----|----|-----|------|----|-----|-------|------|---------|---------------|--------------------------|--|--|
| Bore size (mm) | TD | TM | TN | TR | UM | V | WF | X | XG | XH | b | d | \varnothing | | | |
| 125 dia. | 32 | $32_{-0.050}^{+0.069}$ | 170 | 150 | 2 | 234 | 46 | 65 | 224 | 125.5 | 48.5 | 74 | 75 | (Stroke length/4.55)+11 | | |
| 140 dia. | 36 | $36_{-0.050}^{+0.069}$ | 190 | 170 | 2 | 262 | 46 | 67 | 237 | 134 | 53 | 74 | 75 | (Stroke length/4.55) + 9 | | |
| 160 dia. | 40 | $40_{-0.050}^{+0.069}$ | 212 | 190 | 2 | 292 | 48.5 | 71 | 252 | 140.5 | 55.5 | 82 | 80 | (Stroke length/5.15) + 9 | | |
| 180 dia. | 45 | $45_{-0.050}^{+0.069}$ | 236 | 210 | 2 | 326 | 53.5 | 78 | 273 | 150.5 | 60 | 91 | 90 | (Stroke length/5.15) + 9 | | |
| 200 dia. | 45 | $45_{-0.050}^{+0.069}$ | 265 | 242 | 2 | 355 | 60.5 | 88 | 306 | 167.5 | 66.5 | 102 | 95 | (Stroke length/5.30) + 9 | | |
| 250 dia. | 56 | $56_{-0.060}^{+0.106}$ | 335 | 300 | 2 | 447 | 64.5 | 94 | 350 | 183.5 | 98.5 | 120 | 120 | (Stroke length/6.40) + 9 | | |

• Head side trunnion type (TB)  (File name: Page 442 or Ending 116 to 117)



Note 1: Please refer to Page 405 about switch dimensions.
 Note 2: (R), (S) and (T) show the positions of cushion needle.

Note 3: Refer to Page 400 about minimum stroke length.
 Note 4: \varnothing dimensions below decimal point are rounded up.
 Note 5: The position at head side stroke end cannot be detected.

| Symbol | Head side trunnion type (TB) basic dimensions | | | | | | | | | | | | | | | | | | | |
|----------------|---|----|----|-----------|----|------------------|------|------|------|-----|-----------|----------------|-------|----|----|-----|------|------|----|-------|
| Bore size (mm) | A | B | C | D | CE | EE | GA | GB | J | K | KK | L | LL | M | MM | N | OA | QB | T | TB |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | 50 | Rc $\frac{1}{2}$ | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 | 18 | 35 | 110 | 14.5 | 15 | 18 | 95.5 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | 55 | Rc $\frac{3}{4}$ | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 | 18 | 35 | 124 | 16.5 | 17 | 18 | 102 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | 60 | Rc $\frac{3}{4}$ | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 | 20 | 40 | 142 | 16.5 | 17 | 21 | 106.5 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | 65 | Rc $\frac{3}{4}$ | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 | 23 | 45 | 160 | 16.5 | 17 | 24 | 115 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | 70 | Rc $\frac{3}{4}$ | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 | 24 | 50 | 175 | 17.5 | 18 | 27 | 130.5 |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | 80 | Rc1 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 | 28 | 60 | 216 | 20 | 20.5 | 34 | 144.5 |

| Symbol | Head side trunnion type (TB) basic dimensions | | | | | | | | | | | Bellows | | | | |
|----------------|---|----|------------------------|-----|-----|----|-----|------|----|-------|------|---------|---------------|--------------------------|--|--|
| Bore size (mm) | TC | TD | TM | TN | TR | UM | V | WF | X | XK | b | d | \varnothing | | | |
| 125 dia. | 150 | 32 | $32_{-0.050}^{+0.069}$ | 170 | 150 | 2 | 234 | 46 | 65 | 224.5 | 79 | 74 | 75 | (Stroke length/4.55)+11 | | |
| 140 dia. | 154 | 36 | $36_{-0.050}^{+0.069}$ | 190 | 170 | 2 | 262 | 46 | 67 | 237.5 | 85.5 | 74 | 75 | (Stroke length/4.55) + 9 | | |
| 160 dia. | 190 | 40 | $40_{-0.050}^{+0.069}$ | 212 | 190 | 2 | 292 | 48.5 | 71 | 252.5 | 90 | 82 | 80 | (Stroke length/5.15) + 9 | | |
| 180 dia. | 210 | 45 | $45_{-0.050}^{+0.069}$ | 236 | 210 | 2 | 326 | 53.5 | 78 | 273.5 | 95.5 | 91 | 90 | (Stroke length/5.15) + 9 | | |
| 200 dia. | 242 | 45 | $45_{-0.050}^{+0.069}$ | 265 | 242 | 2 | 355 | 60.5 | 88 | 306.5 | 104 | 102 | 95 | (Stroke length/5.30) + 9 | | |
| 250 dia. | 300 | 56 | $56_{-0.060}^{+0.106}$ | 335 | 300 | 2 | 447 | 64.5 | 94 | 305.5 | 118 | 120 | 120 | (Stroke length/6.40) + 9 | | |

- SCP * 2
- CMK2
- CMA2
- SCM
- SCA2
- SCS
- CKV2
- CAV2/ COV * 2
- CAT
- MDC2
- MVC
- SMD2
- MSP/MSDG
- SSD
- SSD (large)
- FC *
- ULKP/ ULK
- JSK2/ JSM2
- JSC3 (medium)
- JSC3 (large)
- JSB3
- UCAC
- STS/ STL
- LCS
- LCY
- STR2
- UCA2
- STK
- USSD
- USC
- MFC
- GLC
- SHC
- CAC3
- HCM
- HCA
- MRL2
- SRL2
- SRG
- SRM
- SRT
- SRB2
- Standard type
Large bore size cylinder

Discontinue

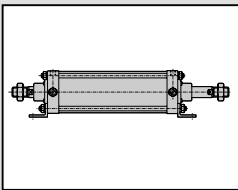
Large bore size cylinder

Double acting/double rod/lubrication type/pre-lubricated type

SCS-D Series

- Bore size: 125, 140, 160, 180, 200, 250 mm

JIS symbol



Specifications

| Descriptions | | SCS-D/SCS-LND (double rod type) | | | | | |
|-----------------------------|-------------|---|----------|--------------------------------|----------|----------|----------|
| Bore size | mm | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
| Actuation | | Double acting | | | | | |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure | MPa | 1.0 | | | | | |
| Min. working pressure | MPa | 0.1 | | | | | |
| Withstanding pressure | MPa | 1.6 | | | | | |
| Ambient temperature | °C | -5 to 60 (to be unfrozen) | | | | | |
| Port size | | Rc ¹ / ₂ | | Rc ³ / ₄ | | Rc1 | |
| Stroke tolerance (Note 1) | mm | ^{+1.0} / ₀ (to 300), ^{+1.4} / ₀ (to 500), ^{+2.0} / ₀ (to 1000) | | | | | |
| Working piston speed | mm/s | 20 to 1000 (use this within absorbed energy range.) | | | | | |
| Cushion | | Air cushion | | | | | |
| Effective cushion length | mm | 21.6 | 21.6 | 21.6 | 21.6 | 26.6 | 26.6 |
| Lubrication | | SCS-D: Required (when lubrication, use turbine oil Class 1 ISO VG32), SCS-LND: Not required | | | | | |
| Allowable energy absorption | Cushioned | 63.5 | 91.5 | 116 | 152 | 233 | 362 |
| | Non cushion | The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device. | | | | | |

Note 1: With switch ^{+2.0}/₀ (to 1000)

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | When with switch, min. stroke length (mm)* |
|----------------|------------------------------------|-------------------------|--|
| 125 dia. | 50, 75, 100, 150, 200, 250, 300 | 800 | 20(10) |
| 140 dia. | | | When one switch is installed, refer to the value in (). |
| 160 dia. | | | |
| 180 dia. | | 900 | |
| 200 dia. | | 1,000 | |
| 250 dia. | | 1,200 | - |

* For types with switch, minimum stroke varies depending on installation method. Refer to the below table.

Min. stroke length of types with switch

| Descriptions | | When same surface installation, stroke length | Stroke length of center trunnion type | Stroke length of rod side trunnion type | Stroke length of head side trunnion type |
|-------------------|---------------------------|---|---------------------------------------|---|--|
| Switch type | Bore size Rough sketch | | | | |
| | | | | The position at rod side stroke end cannot be detected. | The position at head side stroke end cannot be detected. |
| Reed switch (R *) | 125 dia. | 20 over | 120 over | 70 over | |
| | 140 dia. | | 125 over | 75 over | |
| | 160 dia. | | 130 over | 80 over | |
| | 180 dia. | | 135 over | 85 over | |
| | 200 dia. | | 140 over | 90 over | |

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
ST/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

Switch specifications

| Descriptions | Proximity 2 wire | | | Proximity 3 wire | | Proximity 2 wire |
|--------------------------|--|-------------------------|--------------------------------|--|--------------------------------|--|
| | R1K | R2K | R2YK (2 color indicator) | R3K | R3YK (2 color indicator) | T2YDP * (Strong magnetic field proof) |
| Applications | Programmable controller, relay, small solenoid valve | Programmable controller | | Programmable controller, relay, IC circuit, solenoid valve | | Programmable controller |
| Power voltage | — | | — | | DC4.5V to 28V | |
| Load voltage/ current | AC85V to 265V 5 to 100mA | | DC10 to 30V 5 to 300mA | | DC30V or less | |
| | | | | | 200mA or less | 150mA or less |
| Light | LED (ON lighting) | | Red/green LED (ON lighting) | LED (ON lighting) | Red/green LED (ON lighting) | Red/green LED (ON lighting) |

| Descriptions | Reed 2 wire | | | |
|--------------------------|---|--|---|---|
| | R0 | R4 | R5 | R6 |
| Applications | Relay, programmable controller | High capacity relay, solenoid valve | Programmable controller, relay, IC circuit (without indicator light), serial connection | Programmable controller (DC self hold type) |
| Load voltage/ current | DC12/24V, 5 to 50mA or less AC110V, 7 to 20mA or less AC220V, 7 to 10mA or less | AC110V, 20 to 200mA AC220V, 10 to 200mA | DC5/12/24V, 50mA or less AC110V, 20mA or less AC220V, 10mA or less | DC24V, 5 to 50mA |
| Light | LED ON lighting | Neon light OFF lighting | None | LED ON lighting |

Note: Please refer to Ending 1 about other switch specifications.

Cylinder mass

(Unit: Kg)

| Descriptions/mounting style | Product mass when stroke length (S) =0mm | | | | Additional mass per S= 100mm |
|-----------------------------|--|----------------------|---------------------|--------------------------|------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA/FB) | Trunnion type (TA/TB/TC) | |
| 125 dia. | 16.6 | 18.1 | 19.9 | 20.0 | 3.36 |
| 140 dia. | 21.8 | 24.0 | 27.4 | 25.2 | 3.71 |
| 160 dia. | 29.0 | 32.1 | 35.9 | 35.4 | 4.56 |
| 180 dia. | 38.2 | 42.7 | 50.2 | 46.3 | 6.19 |
| 200 dia. | 52.5 | 58.2 | 66.2 | 64.3 | 7.27 |
| 250 dia. | 91.7 | 100.1 | 117.6 | 120.4 | 11.28 |

(E. g.) product mass of SCS-D-LB-125B-300 ————— $\left\{ \begin{array}{l} \bullet \text{ When } S=0\text{mm, product mass is } 18.1\text{kg} \\ \bullet \text{ Additional mass at } S= 300\text{mm is } 3.36 \times \frac{300}{100} = 10.08\text{kg} \\ \bullet \text{ Product mass is } 18.1 + 10.08 = 28.18\text{kg} \end{array} \right.$

Standard type
Large bore size cylinder

How to order

Without switch



With switch



A Mounting style
Note 1

B Bore size
Note 2

C Cushion

D Stroke length
Note 3

E Switch model No.

F Switch quantity

G Option
Note 4

H Accessory

| Symbol | Descriptions |
|-------------------------|-------------------------|
| A Mounting style | |
| 00 | Basic type |
| LB | Axial foot type |
| FA | Rod side flange type |
| FB | Head side flange type |
| TC | Center trunnion type |
| TA | Rod side trunnion type |
| TB | Head side trunnion type |

| B Bore size (mm) | |
|-------------------------|--|
| 125 | 125 dia. |
| 140 | 140 dia. |
| 160 | 160 dia. |
| 180 | 180 dia. |
| 200 | 200 dia. |
| 250 | 250 dia. (with switch is not available.) |

| C Cushion | |
|------------------|--------------------|
| B | Both sides cushion |
| R | Rod side cushion |
| H | Head side cushion |
| N | Non cushion |

| D Stroke length (mm) | |
|---------------------------------|--|
| 50, 75, 100, 150, 200, 250, 300 | |

| E Switch model No. | | | | | |
|---------------------------|-------------------|--------------|-----------|-----------------------|-----------|
| Grommet type | Terminal box type | | Contact | Display | Lead wire |
| | Standard type | Splash-proof | | | |
| R1K * | R1KB | R1KA | Proximity | 1 color indicator | 2 wire |
| R2K * | R2KB | R2KA | | 2 color indicator | |
| R2YK * | R2YKB | - | | Strong magnetic field | |
| T2YDP * | - | - | Reed | 1 color indicator | 3 wire |
| R3K * | R3KB | R3KA | | 2 color indicator | |
| R3YK * | R3YKB | - | | | |
| R0 * | R0B | R0A | Reed | 1 color indicator | 2 wire |
| R4 * | R4B | R4A | | | |
| R5 * | R5 | R5A | | | |
| R6 * | R6B | R6A | | | |
| *Lead wire length | | | | | |
| Blank | 1m (standard) | | | | |
| 3 | 3m (Option) | | | | |
| 5 | 5m (Option) | | | | |

| F Switch quantity | |
|--------------------------|------------------|
| R | One on rod side |
| H | One on head side |
| D | Two |
| T | Three |
| 4 | 4 pieces |

| G Option | |
|-----------------|---|
| C2 | Incorporated check valve on the cushion mechanism |
| | Max. ambient: 60 °C Instant max.: 100 °C |
| J | Bellows : 60 °C : 100 °C |
| K | Bellows : 100 °C : 200 °C |
| L | Bellows : 250 °C : 400 °C |
| M | Piston rod material change (stainless steel) |
| Blank | Cushion needle position R (standard) |
| S | Cushion needle position S |
| T | Cushion needle position T |
| P6 | Copper and PTFE free |

| H Accessory | |
|--------------------|----------------|
| I | Rod eye |
| Y | Rod clevis |
| B1 | Eye bracket |
| B2 | Clevis bracket |

⚠ Cautions for model No. selection

- Note 1: Consult with CKD about supporting hole.
- Note 2: For 250 mm bore cylinder, switches are not available.
- Note 3: When exceeding maximum stroke length, refer to Ending 68.
- Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.
- Note 5: Please refer to Ending 81 about custom specifications of rod end form.

<Example of model number>

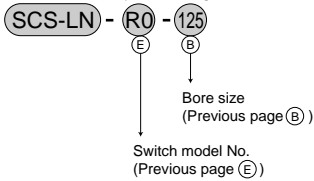
SCS-LND-LB-125B-50-R0-R-JY

Model: Large bore size cylinder, double acting/double rod type with switch

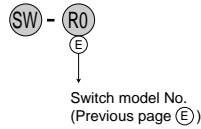
- A** Mounting style : Axial foot type
- B** Bore size : 125mm
- C** Cushion : Both sides cushion
- D** Stroke length : 50mm
- E** Switch model No : Reed R0 switch, lead wire 1m
- F** Switch quantity : One on rod side
- G** Option : Bellows material/max. ambient temperature 60 °C
- H** Accessory : Rod clevis

How to order discrete switch

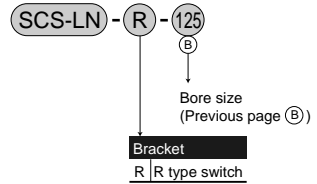
- Switch main body + mounting bracket



- Switch only



- Mounting bracket



- Terminal box only

- For R * B

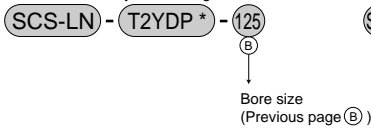


- For R * A

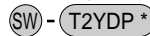


How to order T2YDP * switch

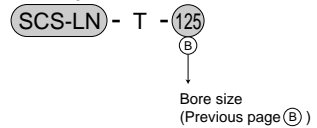
- Switch main body + mounting bracket



- Switch only



- Mounting bracket

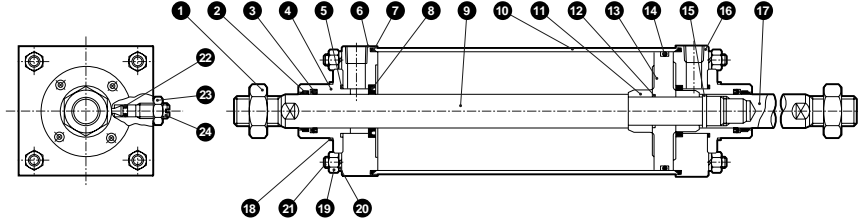


| |
|------------------|
| SCP * 2 |
| CMK2 |
| CMA2 |
| SCM |
| SCA2 |
| SCS |
| CKV2 |
| CAV2/ COV * 2 |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD/ MSDG |
| SSD |
| SSD (large) |
| FC * |
| ULKP/ ULK |
| JSK2/ JSM2 |
| JSC3 (medium) |
| JSC3 (large) |
| JSB3 |
| UCAC |
| STS/ STL |
| LCS |
| LCY |
| STR2 |
| UCA2 |
| STK |
| USSD |
| USC |
| MFC |
| GLC |
| SHC |
| CAC3 |
| HCM |
| HCA |
| MRL2 |
| SRL2 |
| SRG |
| SRM |
| SRT |
| SRB2 |

Standard type
Large bore size cylinder

Internal structure and parts list

• SCS-D (double rod type)



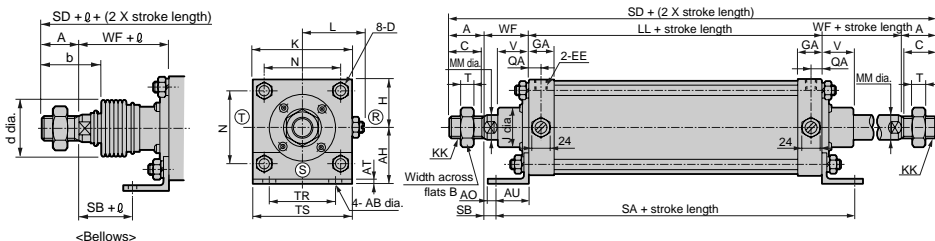
• Note: Part of ① ②③ ④⑤ is not required for non-cushion type.

| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
|-----|----------------------|----------------------|------------------------------------|-----|-------------------------------|----------------|--------------------------|
| 1 | Rod nut | Steel | Zinc chromate | 13 | Piston | Cast iron | |
| 2 | Dust wiper | Nitrile rubber | | 14 | Piston seal | Nitrile rubber | |
| 3 | Rod packing | Nitrile rubber | | 15 | Spring pin | Steel | |
| 4 | Rod bushing | Cast iron | Painting | 16 | Rod cover B | Steel | Painting |
| 5 | Metal gasket | Nitrile rubber | | 17 | Piston rod B | Steel | Industrial chrome plated |
| 6 | Rod cover A | Steel | Painting | 18 | Hexagon socket head cap screw | Alloy steel | |
| 7 | Cylinder gasket | Nitrile rubber | | 19 | Hexagon nut | Steel | Painting |
| 8 | Cushion packing seal | Nitrile rubber/steel | | 20 | Spring washer | Steel | Painting |
| 9 | Piston rod A | Steel | Industrial chrome plated | 21 | Tie rod | Steel | Painting |
| 10 | Cylinder tube | Steel | Painting, industrial chrome plated | 22 | Needle gasket | Nitrile rubber | |
| 11 | Cushion ring A | Steel | Zinc chromate | 23 | Needle nut | Steel | Zinc chromate |
| 12 | Piston gasket | Nitrile rubber | | 24 | Cushion needle | Steel | Zinc chromate |

Repair parts list (refer to Page 404 about pre-lubricated type.)

| Bore size (mm) | Kit number | Repair parts number |
|----------------|------------|---------------------|
| 125 dia. | SCS-D-125K | |
| 140 dia. | SCS-D-140K | |
| 160 dia. | SCS-D-160K | ② ③ ⑤ ⑦ ⑧ |
| 180 dia. | SCS-D-180K | ④ ⑥ ⑨ |
| 200 dia. | SCS-D-200K | ⑩ ⑪ ⑫ ⑬ |
| 250 dia. | SCS-D-250K | ⑭ ⑮ |

Dimensions



<Bellows>

Note 2: Please refer to Page 405 about switch dimensions.

Note 3: The position of both left and right width across flats for applying a spanner is not constant.

Note 1: (R), (S) and (T) show the positions of cushion needle.

| Symbol | Axial foot type (LB) basic dimensions | | | | | | | | | | | | | |
|----------------|---------------------------------------|----|-----|----|----|----|----|----|-----------|------------------|------|------|------|-----|
| Bore size (mm) | A | AB | AH | AO | AT | AU | B | C | D | EE | GA | H | J | K |
| 125 dia. | 50 | 19 | 85 | 20 | 7 | 45 | 46 | 47 | M14 X 1.5 | Rc $\frac{1}{2}$ | 32 | 70 | 57 | 140 |
| 140 dia. | 50 | 19 | 100 | 20 | 8 | 50 | 46 | 47 | M14 X 1.5 | Rc $\frac{3}{4}$ | 36 | 78.5 | 57 | 157 |
| 160 dia. | 56 | 19 | 106 | 20 | 10 | 53 | 55 | 53 | M16 X 1.5 | Rc $\frac{3}{4}$ | 38.5 | 88.5 | 62.5 | 177 |
| 180 dia. | 63 | 24 | 125 | 27 | 10 | 60 | 60 | 60 | M18 X 1.5 | Rc $\frac{3}{4}$ | 39.5 | 100 | 68.5 | 200 |
| 200 dia. | 72 | 24 | 132 | 27 | 12 | 62 | 70 | 69 | M20 X 1.5 | Rc $\frac{3}{4}$ | 44.5 | 110 | 75 | 220 |
| 250 dia. | 88 | 29 | 160 | 29 | 12 | 70 | 85 | 84 | M24 X 1.5 | Rc1 | 49.5 | 137 | 93 | 274 |

| Symbol | Bellows | | | | | | | | | | | | | | | | |
|----------------|-----------|----------------|-----|----|-----|------|-----|----|-----|----|-----|-----|------|----|-----|-----|--------------------------|
| Bore size (mm) | KK | L | LL | MM | N | QA | SA | SB | SD | T | TR | TS | V | WF | b | d | \varnothing |
| 125 dia. | M30 X 1.5 | 83 to 91 | 91 | 35 | 110 | 14.5 | 181 | 20 | 321 | 18 | 100 | 140 | 46 | 65 | 74 | 75 | (Stroke length/4.55)+1 |
| 140 dia. | M30 X 1.5 | 91.5 to 99.5 | 102 | 35 | 124 | 16.5 | 202 | 17 | 336 | 18 | 112 | 157 | 46 | 67 | 74 | 75 | (Stroke length/4.55) + 9 |
| 160 dia. | M36 X 1.5 | 101.5 to 109.5 | 105 | 40 | 142 | 16.5 | 211 | 18 | 359 | 21 | 118 | 177 | 48.5 | 71 | 82 | 80 | (Stroke length/5.15) + 9 |
| 180 dia. | M40 X 1.5 | 113 to 121 | 109 | 45 | 160 | 16.5 | 229 | 18 | 391 | 24 | 132 | 200 | 53.5 | 78 | 91 | 90 | (Stroke length/5.15) + 9 |
| 200 dia. | M45 X 1.5 | 123 to 131 | 122 | 50 | 175 | 17.5 | 246 | 26 | 442 | 27 | 150 | 220 | 60.5 | 88 | 102 | 95 | (Stroke length/5.30) + 9 |
| 250 dia. | M56 X 2.0 | 150 to 158 | 140 | 60 | 216 | 20 | 280 | 24 | 504 | 34 | 180 | 274 | 64.5 | 94 | 120 | 120 | (Stroke length/6.40) + 9 |

Note: Dimensions of each mounting style are as same as double acting SCS series.
Refer to Page 406 to 409.

- SCP * 2
- CMK2
- CMA2
- SCM
- SCA2
- SCS
- CKV2
- CAV2/COV * 2
- CAT
- MDC2
- MVC
- SMD2
- MSP/MSDG
- SSD
- SSD (large)
- FC *
- ULKP/ULK
- JSK2/JSK2
- JSC3 (medium)
- JSC3 (large)
- JSB3
- UCAC
- STS/STL
- LCS
- LCY
- STR2
- UCA2
- STK
- USSD
- USC
- MFC
- GLC
- SHC
- CAC3
- HCM
- HCA
- MRL2
- SRL2
- SRG
- SRM
- SRT
- SRB2

Standard type
Large bore size cylinder

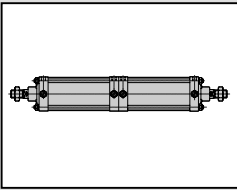
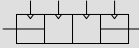
Discontinue

Large bore size cylinder
Double acting/back to back type

SCS-B Series

- Bore size: 125, 140, 160, 180, 200, 250 mm

JIS symbol



Specifications

| Descriptions | | SCS-B (back to back type) | | | | | |
|-----------------------------|-------------|---|----------|--------------------------------|----------|----------|----------|
| Bore size | mm | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
| Actuation | | Double acting | | | | | |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure | MPa | 1.0 | | | | | |
| Min. working pressure | MPa | 0.05 | | | | | |
| Withstanding pressure | MPa | 1.6 | | | | | |
| Ambient temperature | °C | -5 to 60 (to be unfrozen) | | | | | |
| Port size | | Rc ¹ / ₂ | | Rc ³ / ₄ | | | Rc1 |
| Stroke tolerance | mm | + ^{1.0} / ₀ (to 300), + ^{1.4} / ₀ (to 500), + ^{1.4} / ₀ (to 1000) | | | | | |
| Working piston speed | mm/s | 20 to 1000 (use this within absorbed energy range.) | | | | | |
| Cushion | | Air cushion | | | | | |
| Effective cushion length | mm | 21.6 | 21.6 | 21.6 | 21.6 | 26.6 | 26.6 |
| Lubrication | | Required (when lubrication, use turbine oil Class 1 ISO VG32) | | | | | |
| Allowable energy absorption | Cushioned | 63.5 | 91.5 | 116 | 152 | 233 | 362 |
| | Non cushion | The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device. | | | | | |

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | When types with switch, min. stroke length (mm) |
|----------------|------------------------------------|-------------------------|--|
| 125 dia. | 50, 75, 100, 150, 200, 250, 300 | 800 | 20(10) |
| 140 dia. | | | When one switch is installed, refer to the value in (). |
| 160 dia. | | | |
| 180 dia. | | | |
| 200 dia. | | | |
| 250 dia. | | | |

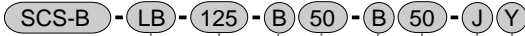
Cylinder mass

(Unit: Kg)

| Descriptions/ mounting style | Product mass when stroke length (S) =0mm | | | | Additional mass per S= 100mm |
|---------------------------------|--|----------------------|---------------------|-----------------------|------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA/FB) | Trunnion type (TA/TB) | |
| Bore size (mm) | | | | | |
| 125 dia. | 31.1 | 32.6 | 36.2 | 36.4 | 2.60 |
| 140 dia. | 42.2 | 44.4 | 51.2 | 46.8 | 2.96 |
| 160 dia. | 55.7 | 58.8 | 66.4 | 65.4 | 3.57 |
| 180 dia. | 74.1 | 78.6 | 93.6 | 85.8 | 4.94 |
| 200 dia. | 100.9 | 106.6 | 122.6 | 118.8 | 5.73 |
| 250 dia. | 175.8 | 184.2 | 219.2 | 224.8 | 9.06 |

How to order

Without switch



A Mounting style
Note 1

B Bore size

C Cushion =S1 **C** Cushion =S2

D Stroke length =S1 **D** Stroke length =S2
Note 2

E Option
Note 3, note 4

F Accessory

| Symbol | Descriptions |
|-------------------------|-------------------------|
| A Mounting style | |
| 00 | Basic type |
| LB | Axial foot type |
| FA | Rod side flange type |
| TA | Rod side trunnion type |
| TB | Head side trunnion type |

| B Bore size (mm) | |
|-------------------------|----------|
| 125 | 125 dia. |
| 140 | 140 dia. |
| 160 | 160 dia. |
| 180 | 180 dia. |
| 200 | 200 dia. |
| 250 | 250 dia. |

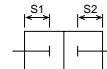
| C Cushion | |
|------------------|--------------------|
| B | Both sides cushion |
| R | Rod side cushion |
| H | Head side cushion |
| N | Non cushion |

| D Stroke length (mm) | |
|-----------------------------|-----|
| 50 | 50 |
| 75 | 75 |
| 100 | 100 |
| 150 | 150 |
| 200 | 200 |
| 250 | 250 |
| 300 | 300 |

| E Option | | | |
|-----------------|--|--|--------|
| C2 | Check valve on the cushion mechanism | Max. ambient ¹ Instant max. | |
| | | 60 °C | 100 °C |
| J | Bellows | 100 °C | 200 °C |
| K | Bellows | 250 °C | 400 °C |
| M | Piston rod material change (stainless steel) | | |
| Blank | Cushion needle position R (standard) | | |
| S | Cushion needle position S | | |
| T | Cushion needle position T | | |
| P6 | Copper and PTFE free | | |

| F Accessory | |
|--------------------|----------------|
| I | Rod eye |
| Y | Rod clevis |
| B1 | Eye bracket |
| B2 | Clevis bracket |

First stage stroke 50mm, indicated by S1
 + Second stage stroke 50mm, indicated by S2
 Total stroke length 100mm S1 + S2



⚠ Cautions for model No. selection

- Note 1: Consult with CKD about supporting hole.
- Note 2: When exceeding maximum stroke length, refer to Ending 68.
- Note 3: Check cushion needle position indications on the dimensions drawing
- Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.
- Note 5: Please refer to Ending 81 about custom specifications of rod end form.

<Example of model number>

SCS-B-LB-125-B50-B50-JY

Model: Large bore size cylinder, double acting/back to back type

- A** Mounting style : Axial foot type
- B** Bore size : 125mm
- C** Cushion : Both sides air cushioned } Cylinder 1
- D** Stroke length S1 : 50mm
- C** Cushion : Both sides air cushioned } Cylinder 2
- D** Stroke length S2 : 50mm
- E** Option : Bellows material/max. ambient temperature 60 °C
- F** Accessory : Rod clevis

SCP * 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/

COV * 2

CAT

MDC2

MVC

SMD2

MSD/

MSDG

SSD

SSD

(large)

FC *

ULKP/

ULK

JSK2/

JSM2

JSC3

(medium)

JSC3

(large)

JSB3

UCAC

STS/

STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

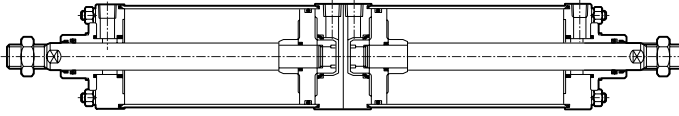
SRM

SRT

SRB2

Standard type
Large bore size cylinder

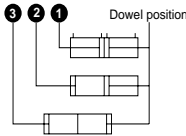
Internal structure



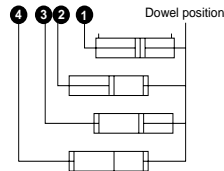
Note: Parts list is as same as double acting SCS. Refer to Page 404.

Application

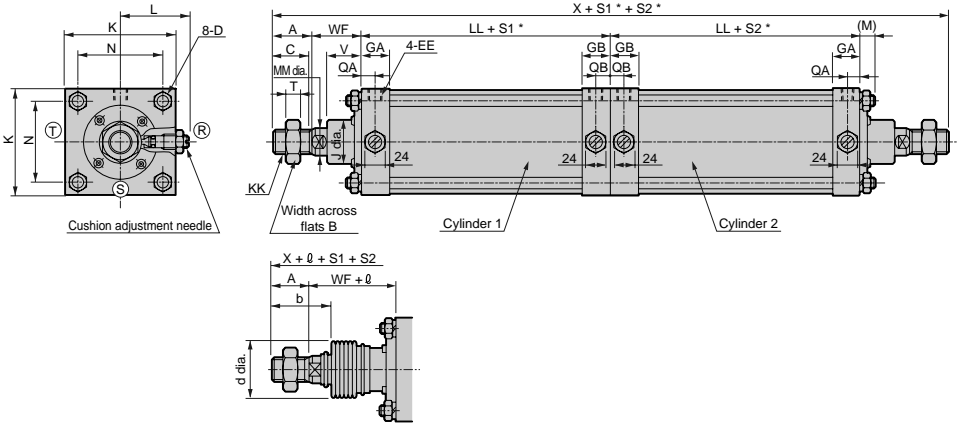
When same stroke length cylinders combined.
3 position possible.



When different stroke length cylinders combined.
4 position possible.



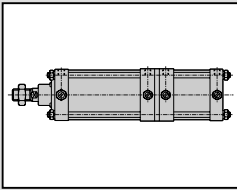
Dimensions



Note: (R), (S) and (T) show the positions of cushion needle. * S1: Stroke length of Cylinder 1, S2: Stroke length of Cylinder 2

| Symbol Bore size (mm) | A | B | C | D | EE | GA | GB | J | K | KK | L | LL | M | MM | N | T | QA | QB | V | WF | X | Bellows | | |
|--------------------------|----|----|----|-----------|------------------|------|------|------|-----|-----------|----------------|-------|----|----|-----|----|------|------|------|----|-----|---------|-----|--------------------------|
| | | | | | | | | | | | | | | | | | | | | | | b | d | ∅ |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | Rc $\frac{1}{2}$ | 32 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91.5 | 18 | 35 | 110 | 18 | 14.5 | 15 | 46 | 65 | 413 | 74 | 75 | (Stroke length(4.55))+11 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | Rc $\frac{1}{4}$ | 36 | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102.5 | 18 | 35 | 124 | 18 | 16.5 | 17 | 46 | 67 | 439 | 74 | 75 | (Stroke length(4.55))+9 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | Rc $\frac{3}{4}$ | 38.5 | 36 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105.5 | 20 | 40 | 142 | 21 | 16.5 | 17 | 48.5 | 71 | 465 | 82 | 80 | (Stroke length(5.15))+9 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | Rc $\frac{1}{2}$ | 39.5 | 38.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109.5 | 23 | 45 | 160 | 24 | 16.5 | 17 | 53.5 | 78 | 501 | 91 | 90 | (Stroke length(5.15))+9 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | Rc $\frac{3}{4}$ | 44.5 | 45 | 75 | 220 | M45 X 1.5 | 123 to 131 | 122.5 | 24 | 50 | 175 | 27 | 17.5 | 18 | 60.5 | 88 | 565 | 102 | 95 | (Stroke length(5.30))+9 |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | Rc1 | 49.5 | 50 | 93 | 274 | M56 X 2 | 150 to 158 | 140.5 | 28 | 60 | 216 | 34 | 20 | 20.5 | 64.5 | 94 | 645 | 120 | 120 | (Stroke length(6.40))+9 |

Note: Dimensions of each mounting style are as same as double acting SCS series.
Refer to Page 406 to 409.



Discontinue

Large bore size cylinder
Double acting/two stage type

SCS-W Series

- Bore size: 125, 140, 160, 180, 200, 250 mm

Specifications

| Descriptions | | SCS-W (two stage type) | | | | | |
|-----------------------------|-------------|---|--------------------------------|----------|----------|----------|----------|
| Bore size | mm | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
| Actuation | | Double acting | | | | | |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure | MPa | 1.0 | | | | | |
| Min. working pressure | MPa | 0.1 | | | | | |
| Withstanding pressure | MPa | 1.6 | | | | | |
| Ambient temperature | °C | -5 to 60 (to be unfrozen) | | | | | |
| Port size | | Rc ¹ / ₂ | Rc ³ / ₄ | | | Rc1 | |
| Stroke tolerance | mm | $^{+1.0}_0$ (to 300), $^{+1.4}_0$ (to 500), $^{+1.4}_0$ (to 1000) | | | | | |
| Working piston speed | mm/s | 20 to 1000 (use this within absorbed energy range.) | | | | | |
| Cushion | | Air cushion | | | | | |
| Effective cushion length | mm | 21.6 | 21.6 | 21.6 | 21.6 | 26.6 | 26.6 |
| Lubrication | | Required (when lubrication, use turbine oil Class 1 ISO VG32) | | | | | |
| Allowable energy absorption | Cushioned | 63.5 | 91.5 | 116 | 152 | 233 | 362 |
| | Non cushion | The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device. | | | | | |

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | When types with switch min. stroke length (mm) |
|----------------|---------------------------------|-------------------------|--|
| 125 dia. | 50, 75, 100, 150, 200, 250, 300 | 800 | 20(10) When one switch is installed, refer to the value in (). |
| 140 dia. | | | |
| 160 dia. | | | |
| 180 dia. | | | |
| 200 dia. | | | |
| 250 dia. | | | |

Cylinder mass

(Unit: Kg)

| Descriptions mounting style | Product mass when stroke length (S) =0mm | | | | | | | | Additional mass per S= 100mm. |
|-----------------------------|--|-----------|-----------------|-------------|-------------|----------------|---------------|-----------|-------------------------------|
| | Basic type (00) | | Axial foot type | Flange type | Eye bracket | Clevis bracket | Trunnion type | | |
| | 1st stage | 2nd stage | (LB) | (FA/FB) | (CA) | (CB) | (TA/TB) | 1st stage | |
| 125 dia. | 14.8 | 17.2 | 33.5 | 35.3 | 35.0 | 35.1 | 35.4 | 2.60 | 2.60 |
| 140 dia. | 20.0 | 23.5 | 45.7 | 49.1 | 47.5 | 47.7 | 46.9 | 2.96 | 2.96 |
| 160 dia. | 26.3 | 30.3 | 59.7 | 63.5 | 61.6 | 61.9 | 63.0 | 3.57 | 3.57 |
| 180 dia. | 34.8 | 41.0 | 80.3 | 87.8 | 83.2 | 83.7 | 83.9 | 4.94 | 4.94 |
| 200 dia. | 47.6 | 55.0 | 108.3 | 116.3 | 112.1 | 112.3 | 114.4 | 5.73 | 5.73 |
| 250 dia. | 83.7 | 96.4 | 188.5 | 206.0 | 204.1 | 198.6 | 208.8 | 9.06 | 9.06 |

Discontinue

SCS-W Series

How to order

How to order

Without switch

SCS-W - LB - 125 - B - 200 - B - 50 - J - Y

Total stroke length S1
First stage stroke length S2

A Mounting style

B Bore size

C Cushion =S1 C Cushion =S2

D Stroke length =S1 Note 2 D Stroke length =S2 Note 2

E Option Note 3, note 4

F Accessory

| Symbol | Descriptions | | |
|-----------------------------|--|--------------|--------------|
| A Mounting style | | | |
| 00 | Basic type | | |
| LB | Axial foot type | | |
| FA | Rod side flange type | | |
| FB | Head side flange type | | |
| CA | Eye bracket type | | |
| CB | Clevis bracket type | | |
| TA | Rod side trunnion type | | |
| TB | Head side trunnion type | | |
| B Bore size (mm) | | | |
| 125 | 125 dia. | | |
| 140 | 140 dia. | | |
| 160 | 160 dia. | | |
| 180 | 180 dia. | | |
| 200 | 200 dia. | | |
| 250 | 250 dia. | | |
| C Cushion | | | |
| B | Both sides cushion | | |
| R | Rod side cushion | | |
| H | Head side cushion | | |
| N | Non cushion | | |
| D Stroke length (mm) | | | |
| 50 | 50 | | |
| 75 | 75 | | |
| 100 | 100 | | |
| 150 | 150 | | |
| 200 | 200 | | |
| 250 | 250 | | |
| 300 | 300 | | |
| E Option | | | |
| C2 | Check valve on the cushion mechanism | | |
| | | Max. ambient | Instant max. |
| J | Bellocs | 60 °C | 100 °C |
| K | Bellocs | 100 °C | 200 °C |
| L | Bellocs | 250 °C | 400 °C |
| M | Piston rod material change (stainless steel) | | |
| Blank | Cushion needle position R (standard) | | |
| S | Cushion needle position S | | |
| T | Cushion needle position T | | |
| P6 | Copper and PTFE free | | |
| F Accessory | | | |
| I | Rod eye | | |
| Y | Rod clevis | | |
| B1 | Eye bracket | | |
| B2 | Clevis bracket | | |

⚠ Cautions for model No. selection

- Note 1: Consult with CKD about supporting hole.
 Note 2: When exceeding maximum stroke length, refer to Ending 68.
 Note 3: Check cushion needle position indications on the dimensions drawing
 Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.
 Note 5: Please refer to Ending 81 about custom specifications of rod end form.

<Example of model number>

SCS-W-LB-125-B200-B50-J-Y

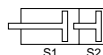
Model: Large bore size cylinder double acting/two stage type

- A Mounting style : Axial foot type
 B Bore size : 125mm
 C Cushion : Both sides cushion
 D Stroke length S1 : Total stroke length 200mm
 C Cushion : Both sides cushion
 D Stroke length S2 : First stage stroke length 50mm
 E Option : Bellows material/max. ambient temperature 60 °C
 F Accessory : Rod clevis

Cylinder 1

Cylinder 2

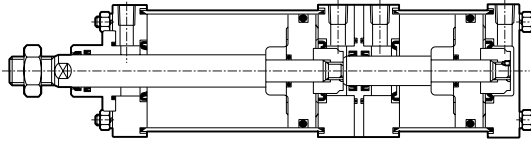
First stage stroke 50mm, indicated by S2
 +Second stage stroke 150mm
 Total stroke length 200mm, indicated by S1



SCP * 2
 CMK2
 CMA2
 SCM
 SCA2
SCS
 CKV2
 CAV2/
 COV * 2
 CAT
 MDC2
 MVC
 SMD2
 MSD/
 MSDG
 SSD
 SSD
 (large)
 FC *
 ULKP/
 ULK
 JSK2/
 JSM2
 JSC3
 (medium)
 JSC3
 (large)
 JSB3
 UCAC
 STS/
 STL
 LCS
 LCY
 STR2
 UCA2
 STK
 USSD
 USC
 MFC
 GLC
 SHC
 CAC3
 HCM
 HCA
 MRL2
 SRL2
 SRG
 SRM
 SRT
 SRB2

Standard type
 Large bore size cylinder

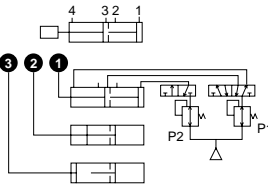
Internal structure



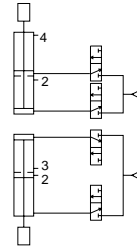
• Parts list is as same as double acting SCS. Refer to Page 404.

Application

- Set pressure should be P2>P1.
- First stage push-out
Supply pressure to Port 1 at the state that Port 4 is pressurized.
- Second stage push-out
Supply pressure to Port 3 at the state that Port 1 is pressurized.



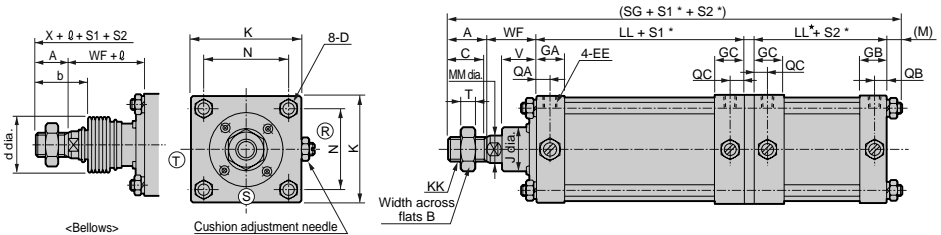
P2 = P1 is acceptable depending on load direction.
When using a single acting type which drops by its self weight, on the above drawing, Port 2 and 4 are bleed holes, while on the below drawing, Port 2 and 3 are bleed holes.
Basically, even for unnecessary port (Port 2), providing piping increases the efficiency of cushioning.



⚠ Cautions for two stage type

Max. stroke length of S2 (first stage) is 200mm.

Dimensions



Note: (R), (S) and (T) show the position of cushion needle.

| Symbol | Basic dimensions | | | | | | | | | | | Bellows | |
|----------|------------------|----|----|-----------|--------|------|------|------|----|------|-----|-----------|----------------|
| | A | B | C | D | EE | GA | GB | GC | H | J | K | | |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | Rc 1/2 | 32 | 29 | 27.6 | 29 | 57 | 140 | M30 X 1.5 | 83 to 91 |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | Rc 3/4 | 36 | 36 | 34.5 | 29 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | Rc 3/4 | 38.5 | 36 | 34.5 | 29 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | Rc 3/4 | 39.5 | 38.5 | 37 | 34 | 68.5 | 200 | M40 X 1.5 | 113 to 121 |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | Rc 3/4 | 44.5 | 45 | 43.5 | 36 | 75 | 220 | M45 X 1.5 | 123 to 131 |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | Rc1 | 49.5 | 50 | 48.5 | 40 | 93 | 274 | M56 X 2 | 150 to 158 |

| Symbol | Basic dimensions | | | | | | | | | | | Bellows | | | |
|----------|------------------|-------|----|----|------|------|------|-----|-------|----|------|---------|-----|-----|-------------------------|
| | LL | LL* | MM | M | QA | QB | QC | N | SG | T | V | WF | b | d | ℓ |
| 125 dia. | 90 | 91.5 | 35 | 18 | 14.5 | 15 | 13.5 | 110 | 343.5 | 18 | 46 | 65 | 74 | 75 | (Stroke length)4.55)+11 |
| 140 dia. | 101 | 102.5 | 35 | 18 | 16.5 | 17 | 15.5 | 124 | 367.5 | 18 | 46 | 67 | 74 | 75 | (Stroke length)4.55)+9 |
| 160 dia. | 104 | 105.5 | 40 | 20 | 16.5 | 17 | 15.5 | 142 | 385.5 | 21 | 48.5 | 71 | 82 | 80 | (Stroke length)5.15)+9 |
| 180 dia. | 108 | 109.5 | 45 | 23 | 16.5 | 17 | 15.5 | 160 | 415.5 | 24 | 53.5 | 78 | 91 | 90 | (Stroke length)5.15)+9 |
| 200 dia. | 121 | 122.5 | 50 | 24 | 17.5 | 18 | 16.5 | 175 | 463.5 | 27 | 60.5 | 88 | 102 | 95 | (Stroke length)5.30)+9 |
| 250 dia. | 139 | 140.5 | 60 | 28 | 20 | 20.5 | 19 | 216 | 529.5 | 34 | 64.5 | 94 | 120 | 120 | (Stroke length)6.40)+9 |

Note: Mounting dimensions of each mounting style are as same as SCS (double acting).
Refer to Page 406 to 409.

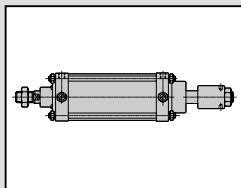
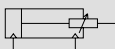
Discontinue

Large bore size cylinder
Double acting/stroke adjustable type

SCS-P Series

• Bore size: 125, 140, 160, 180, 200, 250 mm

JIS symbol



Specifications

| Descriptions | | SCS-P (stroke adjustable type) | | | | | |
|-----------------------------|-------------|---|--------------------------------|----------|----------|----------|----------|
| Bore size | mm | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
| Actuation | | Double acting | | | | | |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure | MPa | 1.0 | | | | | |
| Min. working pressure | MPa | 0.1 | | | | | |
| Withstanding pressure | MPa | 1.6 | | | | | |
| Ambient temperature | °C | -5 to 60 (to be unfrozen) | | | | | |
| Port size | | Rc ¹ / ₂ | Rc ³ / ₄ | | | Rc1 | |
| Stroke tolerance (Note 1) | mm | + ^{1.0} / ₀ (to 300), + ^{1.4} / ₀ (to 500), + ^{1.4} / ₀ (to 1000) | | | | | |
| Working piston speed | mm/s | 20 to 1000 (use this within absorbed energy range.) | | | | | |
| Cushion | | Air cushion (when adjustable stroke, rod side cushion is not provided.) | | | | | |
| Effective cushion length | mm | 21.6 | 21.6 | 21.6 | 21.6 | 26.6 | 26.6 |
| Adjustable stroke range | mm | 25, 50, 75, 100 | | | | | |
| Lubrication | | Required (when lubrication, use turbine oil Class 1 ISO VG32) | | | | | |
| Allowable energy absorption | Cushioned | 63.5 | 91.5 | 116 | 152 | 233 | 362 |
| | Non cushion | The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device. | | | | | |

Note 1: With switch +^{2.0}/₀ (to 1000)

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | When with switch, min. stroke length (mm)* |
|----------------|---------------------------------|-------------------------|--|
| 125 dia. | 50, 75, 100, 150, 200, 250, 300 | 800 | 20(10) |
| 140 dia. | | | When one switch is installed, refer to the value in (). |
| 160 dia. | | | |
| 180 dia. | | 900 | |
| 200 dia. | | 1,000 | |
| 250 dia. | | 1,200 | — |

Cylinder mass

(Unit: Kg)

| Descriptions/ outing style | Stroke length (S)=0mm | | Product mass when | | | | Additional mass per S= 100mm |
|-------------------------------|------------------------------------|----------------------|---------------------|-----------------------|--|-------|------------------------------|
| | Stroke length (S) adjustment =25mm | | | | | | |
| Bore size (mm) | Basic type (00) | Axial foot type (LB) | Flange type (FA/FB) | Trunnion type (TA/TB) | Stroke length (S) adjustment Mass per 25mm | | |
| 125 dia. | 19.0 | 20.5 | 22.3 | 22.4 | 0.51 | 3.35 | |
| 140 dia. | 24.2 | 26.5 | 29.9 | 27.7 | 0.51 | 3.71 | |
| 160 dia. | 32.4 | 35.5 | 39.3 | 38.8 | 0.72 | 4.55 | |
| 180 dia. | 42.7 | 47.2 | 54.7 | 50.8 | 0.93 | 6.18 | |
| 200 dia. | 58.8 | 64.5 | 72.5 | 70.6 | 1.09 | 7.26 | |
| 250 dia. | 101.0 | 109.4 | 126.9 | 129.7 | 1.53 | 11.27 | |

(E. g.) product mass of SCS-P-LB-125B-300-25

- When S=0mm, product mass is 20.5kg.
- S= additional mass at 300mm is $3.35 \times \frac{300}{100} = 10.05\text{kg}$
- Mass of adjustable stroke 25mm is 0.51kg
- Product mass is $20.5 + 10.05 + 0.51 = 31.06\text{kg}$

How to order

Without switch

SCS-P - LB - 125 B - 50 - 25 - J Y

A Mounting style
Note 1

B Bore size

C Cushion

D Stroke length
Note 2

E Adjustable stroke range

F Option
Note 3, note 4

G Accessory

⚠ Cautions for model No. selection

- Note 1: Consult with CKD about supporting hole.
 Note 2: When exceeding maximum stroke length, refer to Ending 68.
 Note 3: Check cushion needle position indications on the dimensions drawing
 Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.
 Note 5: Please refer to Ending 81 about custom specifications of rod end form.

<Example of model number>

SCS-P-LB-125B-50-25-JY

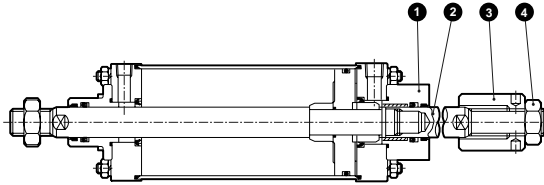
Model: Large bore size cylinder, stroke adjustable type

- A** Mounting style : Axial foot type
- B** Bore size : 125mm
- C** Cushion : Both sides air cushioned
- D** Stroke length : 50mm
- E** Adjustable stroke range : 25mm
- F** Option : Bellows material/max. ambient temperature 60 °C
- G** Accessory : Rod clevis

| Symbol | Descriptions | | |
|---------------------------------------|---|--------------|--------------|
| A Mounting style | | | |
| 00 | Basic type | | |
| LB | Axial foot type | | |
| FA | Rod side flange type | | |
| FB | Head side flange type | | |
| TC | Center trunnion type | | |
| TA | Rod side trunnion type | | |
| TB | Head side trunnion type | | |
| B Bore size (mm) | | | |
| 125 | 125 dia. | | |
| 140 | 140 dia. | | |
| 160 | 160 dia. | | |
| 180 | 180 dia. | | |
| 200 | 200 dia. | | |
| 250 | 250 dia. | | |
| C Cushion | | | |
| B | Both sides cushion | | |
| R | Rod side cushion | | |
| H | Head side cushion | | |
| N | Non cushion | | |
| D Stroke length (mm) | | | |
| 50 | 50 | | |
| 75 | 75 | | |
| 100 | 100 | | |
| 150 | 150 | | |
| 200 | 200 | | |
| 250 | 250 | | |
| 300 | 300 | | |
| E Adjustable stroke range (mm) | | | |
| 25 | 25 | | |
| 50 | 50 | | |
| 75 | 75 | | |
| 100 | 100 | | |
| F Option | | | |
| C2 | Incorporated check valve on the cushion mechanism | | |
| | | Max. ambient | Instant max. |
| J | Bellows | 60 °C | 100 °C |
| K | Bellows | 100 °C | 200 °C |
| L | Bellows | 250 °C | 400 °C |
| M | Piston rod material change (stainless steel) | | |
| Blank | Cushion needle position R (standard) | | |
| S | Cushion needle position S | | |
| T | Cushion needle position T | | |
| P6 | Copper and PTFE free | | |
| G Accessory | | | |
| I | Rod eye | | |
| Y | Rod clevis | | |
| B1 | Eye bracket | | |
| B2 | Clevis bracket | | |

SCP * 2
 CMK2
 CMA2
 SCM
 SCA2
SCS
 CKV2
 CAV2/
 COV * 2
 CAT
 MDC2
 MVC
 SMD2
 MSD/
 MSDG
 SSD
 SSD
 (large)
 FC *
 ULKP/
 ULK
 JSK2/
 JSM2
 JSC3
 (medium)
 JSC3
 (large)
 JSB3
 UCAC
 STS/
 STL
 LCS
 LCY
 STR2
 UCA2
 STK
 USSD
 USC
 MFC
 GLC
 SHC
 CAC3
 HCM
 HCA
 MRL2
 SRL2
 SRG
 SRM
 SRT
 SRB2
 Standard type
 Large bore size cylinder

Internal structure and parts list



• Note: Materials other than the table below are as same as double acting SCS. Refer to Page 404.

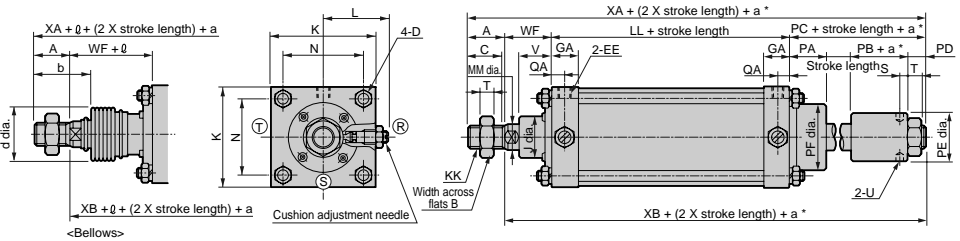
| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
|-----|-------------|----------|----------------------------------|-----|--------------------|----------|----------------------------------|
| 1 | Rod bushing | Steel | Phosphoric acid mangan treatment | 3 | Adjustable stopper | Steel | Phosphoric acid mangan treatment |
| 2 | Piston rod | Steel | Industrial chrome plated | 4 | Lock nut | Steel | |

Repair parts list

As same as SCS-D series. Refer to Page 414.

Dimensions

• Stroke adjustable type



• Note: (R), (S) and (T) show position of cushion needle.

* a shows adjustable stroke length.

| Symbol | A | B | C | D | EE | GA | J | K | KK | L | LL | MM | PA | PB | PC | PD | PE | PF | QA | |
|----------------|----|----|----|-----------|------------------|------|------|-----|-----------|----------------|-----|----|------|------|-------|----|-----|-----|------|--|
| Bore size (mm) | | | | | | | | | | | | | | | | | | | | |
| 125 dia. | 50 | 46 | 47 | M14 X 1.5 | Rc $\frac{1}{2}$ | 32 | 57 | 140 | M30 X 1.5 | 83 to 91 | 91 | 35 | 46 | 35.5 | 102.5 | 21 | 70 | 93 | 14.5 | |
| 140 dia. | 50 | 46 | 47 | M14 X 1.5 | Rc $\frac{3}{4}$ | 36 | 57 | 157 | M30 X 1.5 | 91.5 to 99.5 | 102 | 35 | 46 | 35.5 | 103 | 21 | 70 | 93 | 16.5 | |
| 160 dia. | 56 | 55 | 53 | M16 X 1.5 | Rc $\frac{3}{4}$ | 38.5 | 62.5 | 177 | M36 X 1.5 | 101.5 to 109.5 | 105 | 40 | 48.5 | 40 | 114.5 | 26 | 80 | 106 | 16.5 | |
| 180 dia. | 63 | 60 | 60 | M18 X 1.5 | Rc $\frac{3}{4}$ | 39.5 | 68.5 | 200 | M40 X 1.5 | 113 to 121 | 109 | 45 | 53.5 | 44 | 126.5 | 29 | 90 | 112 | 16.5 | |
| 200 dia. | 72 | 70 | 69 | M20 X 1.5 | Rc $\frac{3}{4}$ | 44.5 | 75 | 220 | M45 X 1.5 | 121 to 131 | 122 | 50 | 60.5 | 48 | 140.5 | 32 | 100 | 130 | 17.5 | |
| 250 dia. | 88 | 85 | 84 | M24 X 1.5 | Rc1 | 49.5 | 93 | 274 | M56 X 2 | 150 to 158 | 140 | 60 | 64.5 | 58 | 161.5 | 39 | 115 | 152 | 20 | |

| Symbol | S | T | U | V | WF | XA | XB | Bellows | | ϕ |
|----------------|------|----|------------------|------|----|-------|-------|---------|-----|------------------------|
| | | | | | | | | b | d | |
| Bore size (mm) | | | | | | | | | | |
| 125 dia. | 12 | 18 | 10 dia. depth 10 | 46 | 65 | 308.5 | 258.5 | 74 | 75 | (Stroke length)4.55+11 |
| 140 dia. | 12 | 18 | 10 dia. depth 10 | 46 | 67 | 322 | 272 | 74 | 75 | (Stroke length)4.55+9 |
| 160 dia. | 14.5 | 21 | 14 dia. depth 15 | 48.5 | 71 | 346.5 | 290.5 | 82 | 80 | (Stroke length)5.15+9 |
| 180 dia. | 16 | 24 | 14 dia. depth 15 | 53.5 | 78 | 376.5 | 313.5 | 91 | 90 | (Stroke length)5.15+9 |
| 200 dia. | 18 | 27 | 14 dia. depth 15 | 60.5 | 88 | 422.5 | 350.5 | 102 | 95 | (Stroke length)5.30+9 |
| 250 dia. | 22.5 | 34 | 14 dia. depth 15 | 64.5 | 94 | 483.5 | 395.5 | 120 | 120 | (Stroke length)6.40+9 |

• Note: Mounting dimensions of each mounting style are as same as SCS (standard type). Refer to Page 406 to 409.

Discontinue

Large bore size cylinder
Double acting/low hydraulic type

SCS-H Series

- Bore size: 125, 140, 160, 180, 200, 250 mm

JIS symbol



Specifications

| Descriptions | | SCS-H/SCS-LH (low hydraulic type) | | | | | |
|-----------------------------|-------------|---|----------|--------------------------------|----------|----------|----------|
| Bore size | mm | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
| Actuation | | Double acting | | | | | |
| Working fluid | | Hydraulic fluid | | | | | |
| Max. working pressure | MPa | 1.0 | | | | | |
| Min. working pressure | MPa | 0.1 | | | | | |
| Withstanding pressure | MPa | 1.6 | | | | | |
| Ambient temperature | °C | 5 to 50 | | | | | |
| Port size | | Rc ¹ / ₂ | | Rc ² / ₄ | | Rc1 | |
| Stroke tolerance (Note 1) | mm | $^{+1.0}_0$ (to 300), $^{+1.4}_0$ (to 500), $^{+1.4}_0$ (to 1000) | | | | | |
| Cushion | | Air cushion | | | | | |
| Effective cushion length | mm | 21.6 | 21.6 | 21.6 | 21.6 | 26.6 | 26.6 |
| Allowable energy absorption | Cushioned | Cushion faculty of low hydraulic cylinder cannot absorb a large energy. We recommend installation of an external shock absorbing device. | | | | | |
| | Non cushion | The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device. | | | | | |

Note 1: With switch $^{+2.0}_0$ (to 1000)

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) |
|----------------|------------------------------------|-------------------------|
| 125 dia. | 50, 75, 100, 150, 200, 250, 300 | 800 |
| 140 dia. | | |
| 160 dia. | | |
| 180 dia. | | |
| 200 dia. | | |
| 250 dia. | 1,000 | |
| 250 dia. | 1,200 | |

* For types with switch, minimum stroke varies depending on installation method. Refer to the below table.

Min. stroke length of types with switch

| Descriptions | | When same surface installation, stroke length | Stroke length of center trunnion type | Stroke length of rod side trunnion type | Stroke length of head side trunnion type |
|-------------------|--------------|---|---------------------------------------|---|--|
| Bore size (mm) | | | | | |
| Switch type | Rough sketch | | | | |
| | | | | | |
| Reed switch (R *) | 125 dia. | 20 over | 120 over | | 70 over |
| | 140 dia. | | 125 over | | 75 over |
| | 160 dia. | | 130 over | | 80 over |
| | 180 dia. | | 135 over | | 85 over |
| | 200 dia. | | 140 over | | 90 over |

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

Switch specifications

| Descriptions | Proximity 2 wire | | | Proximity 3 wire | | Proximity 2 wire |
|--------------------------|--|---------------------------|--------------------------------|--|--------------------------------|--|
| | R1K | R2K | R2YK (2 color indicator) | R3K | R3YK (2 color indicator) | T2YDP * (Strong magnetic field proof) |
| Applications | Programmable controller, relay, small solenoid valve | Programmable controller | | Programmable controller, relay, IC circuit, solenoid valve | | Programmable controller |
| Power voltage | — | | | DC4.5V to 28V | | — |
| Load voltage/ current | AC85V to 265V 5 to 100mA | DC10 to 30V 5 to 300mA | DC30V or less | | DC24V ± 10%, 5 to 20mA | |
| | | | 200mA or less | 150mA or less | | |
| Light | LED (ON lighting) | | Red/green LED (ON lighting) | LED (ON lighting) | Red/green LED (ON lighting) | Red/green LED (ON lighting) |

| Descriptions | Reed 2 wire | | | |
|--------------------------|---|--|---|---|
| | R0 | R4 | R5 | R6 |
| Applications | Relay, programmable controller | High capacity relay, solenoid valve | Programmable controller, relay, IC circuit (without indicator light), serial connection | Programmable controller (DC self hold type) |
| Load voltage/ current | DC12/24V, 5 to 50mA or less AC110V, 7 to 20mA or less AC220V, 7 to 10mA or less | AC110V, 20 to 200mA AC220V, 10 to 200mA | DC5/12/24V, 50mA or less AC110V, 20mA or less AC220V, 10mA or less | DC24V, 5 to 50mA |
| Light | LED ON lighting | Neon light OFF lighting | None | LED ON lighting |

Note: Please refer to Ending 1 about other switch specifications.

Cylinder mass

(Unit: Kg)

| Descriptions/ mounting style | Product mass when stroke length (S) =0mm | | | | | | Mass per switch (bracket included) | | | | Additional mass per S= 100mm |
|---------------------------------|--|----------------------|---------------------|------------------|---------------------|--------------------------|------------------------------------|--------------|------------------------------------|------|------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA/FB) | Eye bracket (CA) | Clevis bracket (CB) | Trunnion type (TA/TB/TC) | R type | | T2YD (strong magnetic field proof) | | |
| | | | | | | | Grommet | Terminal box | 1m | 3m | |
| 125 dia. | 14.8 | 16.3 | 18.1 | 17.8 | 17.9 | 18.2 | 0.04 | 0.03 | 0.09 | 0.17 | 2.60 |
| 140 dia. | 20.2 | 22.2 | 25.6 | 24.0 | 24.2 | 23.4 | | | | | 2.96 |
| 160 dia. | 26.3 | 29.4 | 33.2 | 31.3 | 31.6 | 32.7 | | | | | 3.57 |
| 180 dia. | 34.8 | 39.3 | 46.8 | 42.2 | 42.7 | 42.9 | | | | | 4.94 |
| 200 dia. | 47.6 | 53.3 | 61.3 | 57.1 | 57.3 | 59.4 | | | | | 5.73 |
| 250 dia. | 83.7 | 92.1 | 109.6 | 107.7 | 102.2 | 112.4 | | | | | - |

(E. g.) product mass of SCS-H-LB-125B-300-R0-D

- When S=0mm, product mass is 16.3kg.
- Additional mass at S= 300mm is $2.60 \times \frac{300}{100} = 7.8\text{kg}$
- Mass of two switches is $0.04 \times 2 = 0.08\text{kg}$.
- Product mass is $16.3 + 7.8 + 0.08 = 24.18\text{kg}$

Standard type
Large bore size cylinder

How to order

• Types with switches are custom order. Dimensions are different.

Without switch



With switch



A Mounting style
Note 1

B Bore size
Note 2

C Cushion

D Stroke length
Note 3

E Switch model No.

F Switch quantity

G Option
Note 4, Note 5

⚠ Cautions for model No. selection

- Note 1: Consult with CKD about supporting hole.
- Note 2: For 250 mm bore cylinder, switches are not available.
- Note 3: When exceeding maximum stroke length, refer to Ending 68.
- Note 4: Check cushion needle position indications on the dimensions drawing
- Note 5: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.
- Note 6: Please refer to Ending 81 about custom specifications of rod end form.

<Example of model number>

SCS-LH-LB-125B-50-R0-R-JY

Model: Large bore size cylinder, double acting/low hydraulic type with switch

- A** Mounting style : Axial foot type
- B** Bore size : 125mm
- C** Cushion : Both sides air cushioned
- D** Stroke length : 50mm
- E** Switch model No. : Proximity R0 switch, lead wire 1m
- F** Switch quantity : One on rod side
- G** Option : Bellows material/max. ambient temperature 60 °C
- H** Accessory : Rod clevis

| Symbol | Descriptions |
|-------------------------|-------------------------|
| A Mounting style | |
| 00 | Basic type |
| LB | Axial foot type |
| FA | Rod side flange type |
| FB | Head side flange type |
| CA | Eye bracket type |
| CB | Clevis bracket type |
| TC | Center trunnion type |
| TA | Rod side trunnion type |
| TB | Head side trunnion type |

| B Bore size (mm) | |
|-------------------------|-------------------------------------|
| 125 | 125 dia. |
| 140 | 140 dia. |
| 16 | 160 dia. |
| 180 | 180 dia. |
| 200 | 200 dia. |
| 250 | 250 dia. (switch is not available.) |

| C Cushion | |
|------------------|--------------------|
| B | Both sides cushion |
| R | Rod side cushion |
| H | Head side cushion |
| N | Non cushion |

| D Stroke length (mm) | |
|---------------------------------|--|
| 50, 75, 100, 150, 200, 250, 300 | |

| E Switch model No. | | | | | |
|---------------------------|-------------------|--------------|-----------------------|------|-----------|
| Grommet type | Terminal box type | | Proximity | Reed | Lead wire |
| | STD type | Splash-proof | | | |
| R1K * | R1KB | R1KA | 1 color indicator | | 2 wire |
| R2K * | R2KB | R2KA | | | |
| R2YK * | R2YKB | - | 2 color indicator | | |
| T2YDP * | - | - | Strong magnetic field | | |
| R3K * | R3KB | R3KA | 1 color indicator | | 3 wire |
| R3YK * | R3YKB | - | | | |
| R0 * | R0B | R0A | 2 color indicator | | |
| R4 * | R4B | R4A | | | |
| R5 * | R5B | R5A | 1 color indicator | | 2 wire |
| R6 * | R6B | R6A | | | |

| *Lead wire length | |
|--------------------------|---------------|
| Blank | 1m (standard) |
| 3 | 3m (Option) |
| 5 | 5m (Option) |

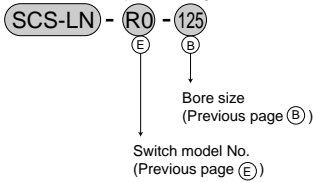
| F Switch quantity | |
|--------------------------|------------------|
| R | One on rod side |
| H | One on head side |
| D | Two |
| T | Three |
| 4 | 4 pieces |

| G Option | | |
|-----------------|--|---|
| C2 | Check valve on the cushion mechanism | |
| J | Bellows | Max. ambient : 100 °C Instant max. : 60 °C |
| K | Bellows | 100 °C : 200 °C |
| L | Bellows | 250 °C : 400 °C |
| M | Piston rod material change (stainless steel) | |
| Blank | Cushion needle position R (standard) | |
| S | Cushion needle position S | |
| T | Cushion needle position T | |

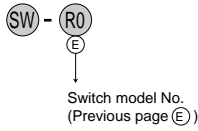
| H Accessory | |
|--------------------|----------------|
| I | Rod eye |
| Y | Rod clevis |
| B1 | Eye bracket |
| B2 | Clevis bracket |

How to order discrete switch

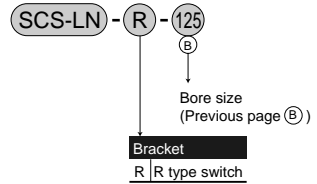
- Switch main body + mounting bracket



- Switch only



- Mounting bracket



- Terminal box only

- For R * B

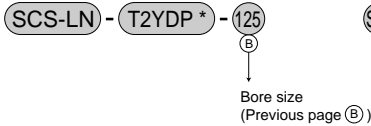


- For R * A

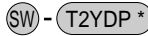


How to order T2YDP * switch

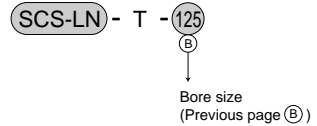
- Switch main body + mounting bracket



- Switch only



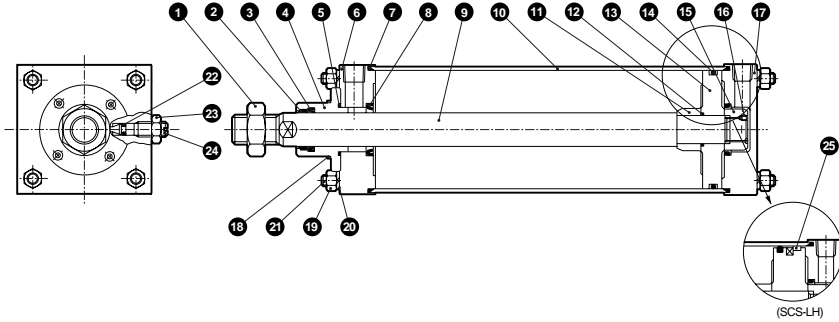
- Mounting bracket



| |
|------------------|
| SCP * 2 |
| CMK2 |
| CMA2 |
| SCM |
| SCA2 |
| SCS |
| CKV2 |
| CAV2/ COV * 2 |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD/ MSDG |
| SSD |
| SSD (large) |
| FC * |
| ULKP/ ULK |
| JSK2/ JSM2 |
| JSC3 (medium) |
| JSC3 (large) |
| JSB3 |
| UCAC |
| STS/ STL |
| LCS |
| LCY |
| STR2 |
| UCA2 |
| STK |
| USSD |
| USC |
| MFC |
| GLC |
| SHC |
| CAC3 |
| HCM |
| HCA |
| MRL2 |
| SRL2 |
| SRG |
| SRM |
| SRT |
| SRB2 |

Standard type
Large bore size cylinder

Internal structure and parts list



• Note: Parts of ① ② ③ ④ are not required for non-cushion type. For types with switch (custom order), different piston and piston packing seal are used.

| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
|-----|----------------------|----------------------|------------------------------------|-----|----------------------------------|----------------|---------------|
| 1 | Rod nut | Steel | Zinc chromate | 13 | Piston | Cast iron | |
| 2 | Dust wiper | Nitrile rubber | | 14 | Piston seal | Nitrile rubber | |
| 3 | Rod packing | Nitrile rubber | | 15 | Cushion ring B | Steel | Zinc chromate |
| 4 | Rod bushing | Cast iron | Painting | 16 | Set screw with hexagon head hole | Alloy steel | Blackening |
| 5 | Metal gasket | Nitrile rubber | | 17 | Head cover | Steel | Painting |
| 6 | Rod cover | Steel | Painting | 18 | Hexagon socket head cap screw | Alloy steel | Blackening |
| 7 | Cylinder gasket | Nitrile rubber | | 19 | Hexagon nut | Steel | Painting |
| 8 | Cushion packing seal | Nitrile rubber/steel | | 20 | Spring washer | Steel | Painting |
| 9 | Piston rod | Steel | Industrial chrome plated | 21 | Tie rod | Steel | Painting |
| 10 | Cylinder tube | Steel | Painting, industrial chrome plated | 22 | Needle gasket | Nitrile rubber | |
| 11 | Cushion ring A | Steel | Zinc chromate | 23 | Needle nut | Steel | Zinc chromate |
| 12 | Piston gasket | Nitrile rubber | | 24 | Cushion needle | Steel | Zinc chromate |
| | | | | 25 | Wear ring | Acetar resin | |

SCS-H repair parts list

| Bore size (mm) | Kit number | Repair parts number |
|----------------|------------|---------------------|
| 125 dia. | SCS-H-125K | |
| 140 dia. | SCS-H-140K | |
| 160 dia. | SCS-H-160K | |
| 180 dia. | SCS-H-180K | |
| 200 dia. | SCS-H-200K | |
| 250 dia. | SCS-H-250K | |

SCS-LH repair parts list

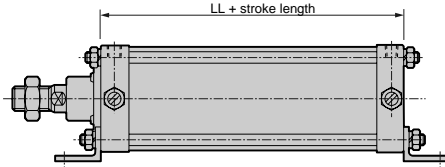
| Bore size (mm) | Kit number | Repair parts number |
|----------------|-------------|---------------------|
| 125 dia. | SCS-LH-125K | |
| 140 dia. | SCS-LH-140K | |
| 160 dia. | SCS-LH-160K | |
| 180 dia. | SCS-LH-180K | |
| 200 dia. | SCS-LH-200K | |

Note 1: Repair parts of SCS-LH contain the specifications changed piston packing seal and the additional wear ring in addition to repair parts of SCS-H.

Dimensions

As same as double acting SCS. Refer to Page 405 to 409.

Dimensions of SCS-LH (with switch) (custom order)



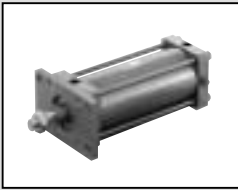
Note 1: For center trunnion type, the installation position is on the center between covers.

Note 2: For types with switch, LL dimensions on Page 405 to 409 are as follows.

| | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
|--------|----------|----------|----------|----------|----------|----------|
| SCS-H | 91.5 | 102.5 | 105.5 | 109.5 | 122.5 | 140.5 |
| SCS-LH | 111.5 | 122.5 | 122.5 | 124.5 | 143.5 | |

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

Standard type
Large bore size cylinder



Discontinue

Large bore size cylinder
Double acting/heat resistance type

SCS-T Series

- Bore size: 125, 140, 160, 180, 200, 250 mm

JIS symbol



Specifications

| Descriptions | | SCS-T (heat resistance type) | | | | | |
|-----------------------------|-------------|---|--------------------------------|----------|----------|----------|----------|
| Bore size | mm | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
| Actuation | | Double acting | | | | | |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure | MPa | 1.0 | | | | | |
| Min. working pressure | MPa | 0.05 | | | | | |
| Withstanding pressure | MPa | 1.6 | | | | | |
| Ambient temperature | °C | 5 to 120 | | | | | |
| Port size | | Rc ¹ / ₂ | Rc ³ / ₄ | | | Rc1 | |
| Stroke tolerance | mm | + ^{1.0} / ₀ (to 300), + ^{1.4} / ₀ (to 500), + ^{1.4} / ₀ (to 1000) | | | | | |
| Working piston speed | mm/s | 20 to 1000 (use this within absorbed energy range.) | | | | | |
| Cushion | | Air cushion | | | | | |
| Effective cushion length | mm | 21.6 | 21.6 | 21.6 | 21.6 | 26.6 | 26.6 |
| Lubrication | | Not available Note 1 | | | | | |
| Allowable energy absorption | Cushioned | 63.5 | 91.5 | 116 | 152 | 233 | 362 |
| | Non cushion | The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device. | | | | | |

Note 1: Apply heat proof grease periodically.

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) |
|----------------|------------------------------------|-------------------------|
| 125 dia. | 50, 75, 100, 150, 200, 250, 300 | 800 |
| 140 dia. | | |
| 160 dia. | | |
| 180 dia. | | 900 |
| 200 dia. | | 1000 |
| 250 dia. | | 1200 |

Cylinder mass

| Descriptions/ mounting style | Product mass when stroke length (S) =0mm | | | | | | Additional mass per S= 100mm |
|---------------------------------|--|-------------------------|------------------------|---------------------|------------------------|--------------------------|---------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA/FB) | Eye bracket (CA) | Clevis bracket (CB) | Trunnion type (TA/TB) | |
| 125 dia. | 14.8 | 16.3 | 18.1 | 17.8 | 17.9 | 18.2 | 2.60 |
| 140 dia. | 20.2 | 22.2 | 25.6 | 24.0 | 24.2 | 23.4 | 2.96 |
| 160 dia. | 26.3 | 29.4 | 33.2 | 31.3 | 31.6 | 32.7 | 3.57 |
| 180 dia. | 34.8 | 39.3 | 46.8 | 42.2 | 42.7 | 42.9 | 4.94 |
| 200 dia. | 47.6 | 53.3 | 61.3 | 57.1 | 57.3 | 59.4 | 5.73 |
| 250 dia. | 83.7 | 92.1 | 109.6 | 107.7 | 102.2 | 112.4 | 9.06 |

(Unit: Kg)

(E. g.) product mass of SCS-T-LB-125B-300

- When S=0mm, product mass is 16.3kg.
- Additional mass at S= 300mm is 2.60 X $\frac{300}{100}$ =7.8kg
- Product mass is 16.3 + 7.8 = 24.1kg

How to order

SCS-T - LB - 125 B - 50 - M Y

A Mounting style
Note 1

B Bore size

C Cushion

D Stroke length
Note 2

E Option
Note 3, note 4

F Accessory

| Symbol | Descriptions |
|-----------------------------|---|
| A Mounting style | |
| 00 | Basic type |
| LB | Axial foot type |
| FA | Rod side flange type |
| FB | Head side flange type |
| CA | Eye bracket type |
| CB | Clevis bracket type |
| TC | Center trunnion type |
| TA | Rod side trunnion type |
| TB | Head side trunnion type |
| B Bore size (mm) | |
| 125 | 125 dia. |
| 140 | 140 dia. |
| 160 | 160 dia. |
| 180 | 180 dia. |
| 200 | 200 dia. |
| 250 | 250 dia. |
| C Cushion | |
| B | Both sides cushion |
| R | Rod side cushion |
| H | Head side cushion |
| N | Non cushion |
| D Stroke length (mm) | |
| 50 | 50 |
| 75 | 75 |
| 100 | 100 |
| 150 | 150 |
| 200 | 200 |
| 250 | 250 |
| 300 | 300 |
| E Option | |
| C2 | Incorporated check valve on the cushion mechanism |
| L | Bellows Max. ambient 250 °C Instant max. 400 °C |
| M | Piston rod material change (stainless steel) |
| Blank | Cushion needle position R (standard) |
| S | Cushion needle position S |
| T | Cushion needle position T |
| F Accessory | |
| I | Rod eye |
| Y | Rod clevis |
| B1 | Eye bracket |
| B2 | Clevis bracket |

⚠ Cautions for model No. selection

- Note 1: Consult with CKD about supporting hole.
 Note 2: When exceeding maximum stroke length, refer to Page ending 68.
 Note 3: Check cushion needle position indications on the dimensions drawing
 Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.
 Note 5: Please refer to Ending 81 about custom specifications of rod end form.

<Example of model number> SCS-T-LB-125 B-50-MY

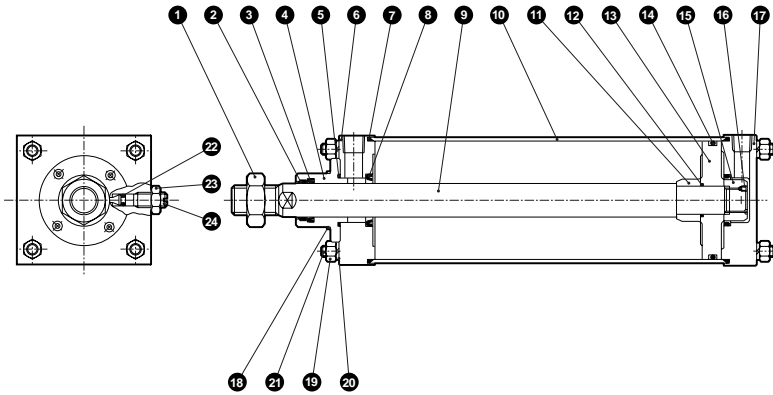
Model: Large bore size cylinder, double acting/heat resistance type

- A** Mounting style : Axial foot type
B Bore size : 125mm
C Cushion : Both sides cushion
D Stroke length : 50mm
E Option : Piston rod material change (stainless steel)
F Accessory : Rod clevis

SCP * 2
 CMK2
 CMA2
 SCM
 SCA2
SCS
 CKV2
 CAV2/
 COV * 2
 CAT
 MDC2
 MVC
 SMD2
 MSD/
 MSDG
 SSD
 SSD
 (large)
 FC *
 ULKP/
 ULK
 JSK2/
 JSM2
 JSC3
 (medium)
 JSC3
 (large)
 JSB3
 UCAC
 STS/
 STL
 LCS
 LCY
 STR2
 UCA2
 STK
 USSD
 USC
 MFC
 GLC
 SHC
 CAC3
 HCM
 HCA
 MRL2
 SRL2
 SRG
 SRM
 SRT
 SRB2

Standard type
 Large bore size cylinder

Internal structure and parts list



• Note: Parts of 8, 22, 23 and 24 are not required for non-cushion type.

| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
|-----|----------------------|---------------|------------------------------------|-----|----------------------------------|---------------|---------------|
| 1 | Rod nut | Steel | Zinc chromate | 13 | Piston | Cast iron | |
| 2 | Dust wiper | Fluoro rubber | | 14 | Piston seal | Fluoro rubber | |
| 3 | Rod packing | Fluoro rubber | | 15 | Cushion ring B | Steel | Zinc chromate |
| 4 | Rod bushing | Cast iron | Painting | 16 | Set screw with hexagon head hole | Alloy steel | Blackening |
| 5 | Metal gasket | Fluoro rubber | | 17 | Head cover | Steel | Painting |
| 6 | Rod cover | Steel | Painting | 18 | Hexagon socket head cap screw | Alloy steel | Blackening |
| 7 | Cylinder gasket | Fluoro rubber | | 19 | Hexagon nut | Steel | Painting |
| 8 | Cushion packing seal | Fluoro rubber | | 20 | Spring washer | Steel | Painting |
| 9 | Piston rod | Steel | Industrial chrome plated | 21 | Tie rod | Steel | Painting |
| 10 | Cylinder tube | Steel | Painting, industrial chrome plated | 22 | Needle gasket | Fluoro rubber | |
| 11 | Cushion ring A | Steel | Zinc chromate | 23 | Needle nut | Steel | Zinc chromate |
| 12 | Piston gasket | Fluoro rubber | | 24 | Cushion needle | Steel | Zinc chromate |

Repair parts list

| Bore size (mm) | Kit number | Repair parts number |
|----------------|------------|---------------------|
| 125 dia. | SCS-T-125K | |
| 140 dia. | SCS-T-140K | |
| 160 dia. | SCS-T-160K | 2 3 5 7 8 |
| 180 dia. | SCS-T-180K | 14 22 |
| 200 dia. | SCS-T-200K | |
| 250 dia. | SCS-T-250K | |

Dimensions

As same as double acting/single rod type SCS dimensions. Refer to Page 405 to 409.

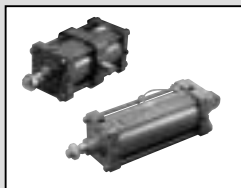
Discontinue

Large bore size cylinder
Double acting/heavy duty scraper type

SCS-G Series

• Bore size: 125, 140, 160, 180, 200, 250 mm

JIS symbol



Specifications

| Descriptions | | SCS-G (heavy duty scraper type) | | | | | |
|-----------------------------|-------------|---|--------------------------------|----------|----------|----------|----------|
| Bore size | mm | 125 dia. | 140 dia. | 160 dia. | 180 dia. | 200 dia. | 250 dia. |
| Actuation | | Double acting | | | | | |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure | MPa | 1.0 | | | | | |
| Min. working pressure | MPa | 0.05 | | | | | |
| Withstanding pressure | MPa | 1.6 | | | | | |
| Ambient temperature | °C | -5 to 60 (to be unfrozen) | | | | | |
| Port size | | Rc ¹ / ₂ | Rc ³ / ₄ | | | Rc1 | |
| Stroke tolerance | mm | ^{+1.0} / ₀ (to 300), ^{+1.4} / ₀ (to 500), ^{+1.4} / ₀ (to 1000) | | | | | |
| Working piston speed | mm/s | 20 to 1000 (use this within absorbed energy range.) | | | | | |
| Cushion | | Air cushion | | | | | |
| Effective cushion length | mm | 21.6 | 21.6 | 21.6 | 21.6 | 26.6 | 26.6 |
| Lubrication | | Required (when lubrication, use turbine oil Class 1 ISO VG32) | | | | | |
| Allowable energy absorption | Cushioned | 63.5 | 91.5 | 116 | 152 | 233 | 362 |
| | Non cushion | The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device. | | | | | |

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | When types with switch, min. stroke length (mm) |
|----------------|------------------------------------|-------------------------|--|
| 125 dia. | 50, 75, 100, 150, 200, 250, 300 | 800 | 20(10) |
| 140 dia. | | | When one switch is installed, refer to the value in (). |
| 160 dia. | | | |
| 180 dia. | | | |
| 200 dia. | | | |
| 250 dia. | | | |

Cylinder mass

(Unit: Kg)

| Descriptions/ mounting style | Product mass when stroke length (S) =0mm | | | | | | Additional mass per S= 100mm |
|---------------------------------|--|----------------------|---------------------|------------------|---------------------|--------------------------|------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA/FB) | Eye bracket (CA) | Clevis bracket (CB) | Trunnion type (TA/TB/TC) | |
| 125 dia. | 14.8 | 16.3 | 18.1 | 17.8 | 17.9 | 18.2 | 2.60 |
| 140 dia. | 20.0 | 22.2 | 25.6 | 24.0 | 24.2 | 23.4 | 2.96 |
| 160 dia. | 26.3 | 29.4 | 33.2 | 31.3 | 31.6 | 32.7 | 3.57 |
| 180 dia. | 34.8 | 39.3 | 46.8 | 42.2 | 42.7 | 42.9 | 4.94 |
| 200 dia. | 47.6 | 53.3 | 61.3 | 57.1 | 57.3 | 59.4 | 5.73 |
| 250 dia. | 83.7 | 92.1 | 109.6 | 107.7 | 102.2 | 112.4 | 9.06 |

(E. g.) product mass of SCS-G-LB-125B-300 —————

- When S=0mm, product mass is 16.3kg.
- Additional mass at S= 300mm is $2.60 \times \frac{300}{100} = 7.8$ kg
- Product mass is 16.3 + 7.8 = 24.1kg

Dimensions

As same as double acting/standard single rod type SCS. Refer to Page 405 to 409.

How to order

SCS-G - LB - 125 B - 50 - M Y

A Mounting style
Note 1

B Bore size
Note 2

C Cushion

D Stroke length

E Option
Note 3, Note 5

F Accessory

⚠ Cautions for model No. selection

Note 1: Consult with CKD about supporting hole.
Note 2: When exceeding maximum stroke length, refer to Page ending 68.

Note 3: Please refer to dimensional drawings on Page 405 to 409 about cushion needle position indications.

Note 4: Rod metal bush is compatible with double acting single rod standard type.

Note 5: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.

Note 6: Please refer to Ending 81 about custom specifications of rod end form.

<Example of model number>

SCS-G-LB-125B-50-JY

Model: Large bore size cylinder, heavy duty scraper type

A Mounting style : Axial foot type

B Bore size : 125mm

C Cushion : Both sides cushion

D Stroke length : 50mm

E Option : Bellows material/max. ambient temperature 60 °C

F Accessory : Rod clevis

| Symbol | Descriptions |
|-------------------------|-------------------------|
| A Mounting style | |
| LB | Axial foot type |
| FA | Rod side flange type |
| FB | Head side flange type |
| CA | Eye bracket type |
| CB | Clevis bracket type |
| TC | Center trunnion type |
| TA | Rod side trunnion type |
| TB | Head side trunnion type |

| B Bore size (mm) | |
|-------------------------|----------|
| 125 | 125 dia. |
| 140 | 140 dia. |
| 160 | 160 dia. |
| 180 | 180 dia. |
| 200 | 200 dia. |
| 250 | 250 dia. |

| C Cushion | |
|------------------|--------------------|
| B | Both sides cushion |
| R | Rod side cushion |
| H | Head side cushion |
| N | Non cushion |

| D Stroke length (mm) | |
|-----------------------------|-----|
| 50 | 50 |
| 75 | 75 |
| 100 | 100 |
| 150 | 150 |
| 200 | 200 |
| 250 | 250 |
| 300 | 300 |

| E Option | | | |
|-----------------|---|--------------|--------------|
| C2 | Incorporated check valve on the cushion mechanism | | |
| | | Max. ambient | Instant max. |
| J | Bellows | 60 °C | 100 °C |
| K | Bellows | 100 °C | 200 °C |
| L | Bellows | 250 °C | 400 °C |
| M | Piston rod material change (stainless steel) | | |
| Blank | Cushion needle position R (standard) | | |
| S | Cushion needle position S | | |
| T | Cushion needle position T | | |
| P6 | Copper and PTFE free | | |

| F Accessory | |
|--------------------|----------------|
| I | Rod eye |
| Y | Rod clevis |
| B1 | Eye bracket |
| B2 | Clevis bracket |

SCP * 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/

COV * 2

CAT

MDC2

MVC

SMD2

MSD/

MSDG

SSD

SSD

SSD (large)

FC *

ULKP/

ULK

JSK2/

JSM2

JSC3

(medium)

JSC3

(large)

JSB3

UCAC

STS/

STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

SRT

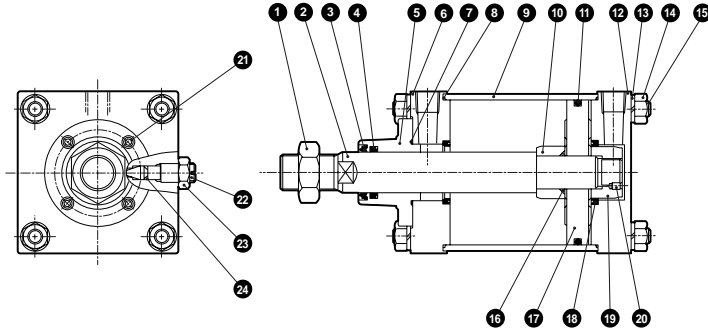
SRB2

Standard type

Large bore size cylinder

Internal structure and parts list

• SCS-G




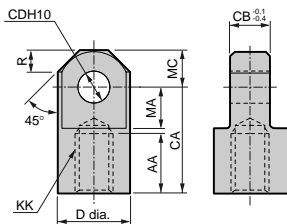
| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
|-----|-----------------|----------------------|--------------------------|-----|---------------------------------|----------------------|---------------|
| 1 | Rod nut | Steel | Zinc chromate | 13 | Spring washer | Steel | Painting |
| 2 | Piston rod | Steel | Industrial chrome plated | 14 | Hexagon nut | Steel | Painting |
| 3 | Dust wiper | Nitrile rubber/steel | | 15 | Tie rod | Steel | Painting |
| 4 | Rod packing | Nitrile rubber | | 16 | Piston gasket | Nitrile rubber | |
| 5 | Rod bushing | Cast iron | Painting | 17 | Piston | Cast iron | |
| 6 | Rod cover | Steel | Painting | 18 | Piston seal | Nitrile rubber/steel | |
| 7 | Metal gasket | Nitrile rubber | | 19 | Cushion ring B | Steel | Zinc chromate |
| 8 | Cylinder gasket | Nitrile rubber | | 20 | Button bolt with hexagon indent | Alloy steel | Blackening |
| 9 | Cylinder tube | Steel | Industrial chrome plated | 21 | Hexagon socket head cap screw | Alloy steel | Blackening |
| 10 | Cushion ring A | Steel | Zinc chromate | 22 | Cushion needle | Steel | Zinc chromate |
| 11 | Piston seal | Nitrile rubber | | 23 | Needle nut | Steel | Zinc chromate |
| 12 | Head cover | Steel | Steel | 24 | Needle gasket | Nitrile rubber | |


Repair parts list

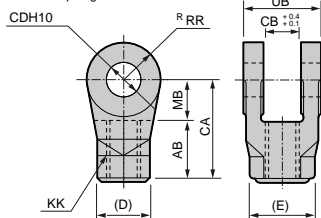
| Bore size (mm) | Kit number | Repair parts number |
|----------------|------------|---------------------|
| 125 dia. | SCS-G-125K | |
| 140 dia. | SCS-G-140K | |
| 160 dia. | SCS-G-160K | 3 4 7 8 11 |
| 180 dia. | SCS-G-180K | 1B 24 |
| 200 dia. | SCS-G-200K | |
| 250 dia. | SCS-G-250K | |

SCS series common accessory dimensions

• Rod eye (I) for SCS  (File name: Page 442 or Ending 117)
Material: Steel




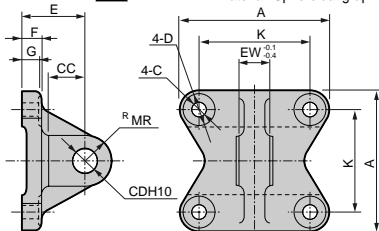
• Rod clevis (Y) for SCS  (File name: Page 442 or Ending 117)
Material: Spheroidal graphite iron casting




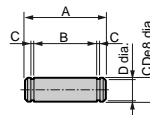
| Model No. | Bore size (mm) | AA | CA | CB | CD | D | KK | MA | MC | R |
|-----------|----------------|----|-----|----|-----------------------------------|-----|-----------|------|------|------|
| SCS-125-I | 125 dia. | 50 | 85 | 32 | 25 ^{+0.084} ₀ | 55 | M30 X 1.5 | 32 | 27.5 | 15.5 |
| SCS-140-I | 140 dia. | 50 | 90 | 36 | 28 ^{+0.084} ₀ | 60 | M30 X 1.5 | 35 | 30 | 18 |
| SCS-160-I | 160 dia. | 60 | 105 | 40 | 32 ^{+0.100} ₀ | 70 | M36 X 1.5 | 40 | 35 | 21 |
| SCS-180-I | 180 dia. | 65 | 115 | 50 | 40 ^{+0.100} ₀ | 85 | M40 X 1.5 | 47.5 | 42.5 | 29 |
| SCS-200-I | 200 dia. | 75 | 125 | 50 | 40 ^{+0.100} ₀ | 85 | M45 X 1.5 | 47.5 | 42.5 | 29 |
| SCS-250-I | 250 dia. | 88 | 150 | 63 | 50 ^{+0.100} ₀ | 105 | M56 X 2 | 57.5 | 52.5 | 36.5 |

| Model No. | Bore size (mm) | AB | CA | CB | CD | D | E | KK | MB | RR | UB |
|-----------|----------------|----|-----|----|-----------------------------------|----|------|-----------|----|------|-----|
| SCS-125-Y | 125 dia. | 50 | 85 | 32 | 25 ^{+0.084} ₀ | 46 | 53.1 | M30 X 1.5 | 35 | 27.5 | 64 |
| SCS-140-Y | 140 dia. | 50 | 90 | 36 | 28 ^{+0.084} ₀ | 46 | 53.1 | M30 X 1.5 | 40 | 30 | 72 |
| SCS-160-Y | 160 dia. | 60 | 105 | 40 | 32 ^{+0.100} ₀ | 55 | 63.5 | M36 X 1.5 | 45 | 35 | 80 |
| SCS-180-Y | 180 dia. | 65 | 115 | 50 | 40 ^{+0.100} ₀ | 60 | 69.3 | M40 X 1.5 | 50 | 42.5 | 100 |
| SCS-200-Y | 200 dia. | 75 | 125 | 50 | 40 ^{+0.100} ₀ | 70 | 80.8 | M45 X 1.5 | 50 | 42.5 | 100 |
| SCS-250-Y | 250 dia. | 88 | 150 | 63 | 50 ^{+0.100} ₀ | 85 | 98.1 | M56 X 2 | 62 | 52.5 | 126 |

• Eye bracket (B1) for SCS  (File name: Page 442 or Ending 117)
Material: Spheroidal graphite iron casting




• Pin (P)  (File name: Page 442 or Ending 117)
Material: Carbon steel

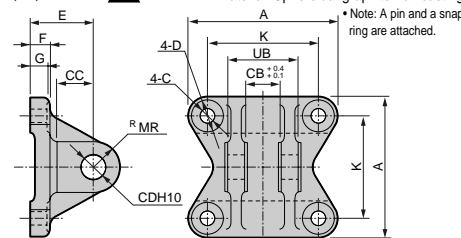


| Symbol | A | C | CC | CD | D | E | EW | F | G | K | MR |
|------------|-----|----|----|-----------------------------------|----|-----|----|----|----|-----|----|
| SCS-125-B1 | 140 | 16 | 35 | 25 ^{+0.084} ₀ | 23 | 63 | 32 | 20 | 18 | 110 | 25 |
| SCS-140-B1 | 154 | 16 | 40 | 28 ^{+0.084} ₀ | 23 | 75 | 36 | 22 | 20 | 124 | 28 |
| SCS-160-B1 | 174 | 18 | 40 | 32 ^{+0.100} ₀ | 26 | 75 | 40 | 24 | 22 | 142 | 32 |
| SCS-180-B1 | 196 | 20 | 55 | 40 ^{+0.100} ₀ | 29 | 90 | 50 | 25 | 23 | 160 | 40 |
| SCS-200-B1 | 220 | 22 | 55 | 40 ^{+0.100} ₀ | 32 | 90 | 50 | 30 | 28 | 175 | 40 |
| SCS-250-B1 | 274 | 26 | 65 | 50 ^{+0.100} ₀ | 39 | 110 | 63 | 35 | 33 | 216 | 50 |

| Symbol | A | B | C | CD | D | Applicable snap rings | Applicable model |
|-----------|-----|-------|------|-----------------------------------|------|-----------------------|------------------|
| SCS-125-P | 75 | 66.3 | 1.35 | 25 ^{+0.040} ₀ | 23.9 | Shaft C 25 | SCS-125 |
| SCS-140-P | 84 | 74.7 | 1.65 | 28 ^{+0.040} ₀ | 26.6 | Shaft C 28 | SCS-140 |
| SCS-160-P | 92 | 82.7 | 1.65 | 32 ^{+0.050} ₀ | 30.3 | Shaft C 32 | SCS-160 |
| SCS-180-P | 115 | 103.2 | 1.9 | 40 ^{+0.050} ₀ | 38 | Shaft C 40 | SCS-180 |
| SCS-250-P | 144 | 128.6 | 2.2 | 50 ^{+0.050} ₀ | 47 | Shaft C 50 | SCS-250 |

Note: For clevis bracket, clevis bracket, rod clevis types, a pin and a snap ring are attached.

• Clevis bracket (B2) for SCS  (File name: Page 442 or Ending 117)
Material: Spheroidal graphite iron casting



Trunnion type (TC, TA, TB) Min. stroke length

| Bore size (mm) | Min. stroke (mm) |
|----------------|------------------|
| 125 dia. | 30 |
| 140 dia. | 32 |
| 160 dia. | 34 |
| 180 dia. | 35 |
| 200 dia. | 37 |
| 250 dia. | 39 |

| Symbol | A | C | CB | CC | CD | D | E | F | G | K | MR | UB |
|------------|-----|----|----|----|-----------------------------------|----|-----|----|----|-----|----|-----|
| SCS-125-B2 | 140 | 16 | 32 | 35 | 25 ^{+0.084} ₀ | 23 | 63 | 20 | 18 | 110 | 25 | 64 |
| SCS-140-B2 | 154 | 16 | 36 | 40 | 28 ^{+0.084} ₀ | 23 | 75 | 22 | 20 | 124 | 28 | 72 |
| SCS-160-B2 | 174 | 18 | 40 | 40 | 32 ^{+0.100} ₀ | 26 | 75 | 24 | 22 | 142 | 32 | 80 |
| SCS-180-B2 | 196 | 20 | 50 | 55 | 40 ^{+0.100} ₀ | 29 | 90 | 25 | 23 | 160 | 40 | 100 |
| SCS-200-B2 | 220 | 22 | 50 | 55 | 40 ^{+0.100} ₀ | 32 | 90 | 30 | 28 | 175 | 40 | 100 |
| SCS-250-B2 | 274 | 26 | 63 | 65 | 50 ^{+0.100} ₀ | 39 | 110 | 35 | 33 | 216 | 50 | 126 |

Cushion mechanism with check valve (C2)

Larger load results in more delayed starting time. When larger starting time is required, use the check valve integrated cushion mechanism (C2).

- SCP * 2
- CMK2
- CMA2
- SCM
- SCA2
- SCS
- CKV2
- CAV2/COV * 2
- CAT
- MDC2
- MVC
- SMD2
- MSP/MSDG
- SSD
- SSD (large)
- FC *
- ULKP/ULK
- JSK2/JSK2
- JSC3 (medium)
- JSC3 (large)
- JSB3
- UCAC
- STS/STL
- LCS
- LCY
- STR2
- UCA2
- STK
- USSD
- USC
- MFC
- GLC
- SHC
- CAC3
- HCM
- HCA
- MRL2
- SRL2
- SRG
- SRM
- SRT
- SRB2

Standard type
Large bore size cylinder